

PN-ABS-752

**AGRICULTURAL SECTOR SUPPORT PROJECT  
PRIVATE SECTOR AGRIBUSINESS**

**Cash Crops  
Feasibility  
Study**

**Agricultural Sector Support Project  
Private Sector Agribusiness**

**Prepared by High Value Horticulture plc for Development Alternatives, Inc.  
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## TABLE OF CONTENTS

	PAGE
Acknowledgements	iv
Executive Summary	v
<b>DESCRIPTIVE ANALYSIS OF AFGHAN CASH CROP EXPORT TRADE</b>	
THE LEVEL AND PATTERN OF AFGHAN CASH CROPS EXPORTS	1
THE PRODUCTION OF CASH CROPS IN AFGHANISTAN	22
DAMAGE ASSESSMENT	33
MAJOR AFGHAN TRADE ROUTES	38
CHANGES IN THE REGIONAL AND INTERNATIONAL MARKET	41
<b>APPENDIXES</b>	
Appendix 1 - Interim Report on Horticultural Production and Export Potential in Afghanistan	
Appendix 2 - Market Survey: India and Pakistan	
Appendix 3 - International Market Profile	
Appendix 4 - Characteristics of Afghan Dried Fruit and Nuts	
Appendix 5 - Crop Profiles	
Appendix 6 - Sun Drying of Fruit	
Appendix 7 - Selected Bibliography	

## LIST OF TABLES

	PAGE
Table 1. Afghanistan Value and Quantity of Exports by Commodities	3
Table 2. Major Exports of Horticultural Crops, 1981-82	5
Table 3. Exports of Selected Afghan Produce, 1980-81	19
Table 4. Reported Export Prices for Selected Afghan Exports	21
Table 5. Province-Wide Information on Selected Cash Crops	23
Table 6. Area and Production of Horticultural Crops in Afghanistan	25
Table 7. Province-Wide Assessment of Damage to Horticultural Crops	33
Table 8. Comparison of Grape Production, 1974 and 1990	34
Table 9. Activity and Status of Processing Facilities	37

## LIST OF FIGURES

- Figure 1. Value of Exports by Commodities: As a Percentage of Total Export
- Figure 2. Value of Exports by Countries
- Figure 3. Volume of Horticulture Exports from Afghanistan, 1981-1982
- Figure 4. Value of Horticulture Exports from Afghanistan, 1981-1982
- Figure 5. Imports from Afghanistan: As a Percentage of Total Import (India)
- Figure 6. Pakistan Imports from Afghanistan: Melons
- Figure 7. Pakistan Imports from Afghanistan: Fresh Apricots
- Figure 8. Pakistan Imports from Afghanistan: Fresh Pomegranate
- Figure 9. Pakistan Imports from Afghanistan: Grapes
- Figure 10. Pakistan Imports from Afghanistan: Almonds in Shell
- Figure 11. Pakistan Imports From Afghanistan: Liquorice Root
- Figure 12. Pakistan Imports from Afghanistan: Raisins
- Figure 13. Pakistan Imports from Afghanistan; Dried Apricots
- Figure 14. Approx. Horticultural Crop Area in Afghanistan
- Figure 15. Approx. Production of Fruit and Nuts in Afghanistan
- Figure 16. Afghan Cash Crops (Map)
- Figure 17. Annual Activities for Cash Crop Production and Harvesting
- Figure 18. Estimated Pre and Post War Production of Grapes
- Figure 19. Afghan Trade Routes (Map)
- Figure 20. World Trade: Market Shares and Tonnages

## LIST OF KEY INFORMANTS

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## EXECUTIVE SUMMARY

The Afghan Cash Crop Feasibility Study is one of a series of studies initiated by Development Alternatives, Inc. as part of the Private Sector Agribusiness component of the Afghanistan Agricultural Sector Support Project (ASSP) funded by the Office of the AID Representative for Afghanistan.

This study provides a descriptive analysis of Afghan export trade before, during, and after the Soviet invasion of Afghanistan. The report includes seven appendices.

Afghan annual exports prior to the war averaged around \$580 million annually and consisted of natural gas (35 percent); dried fruits (30 percent); carpets and rugs (13 percent); fresh fruit (7 percent); ginned cotton (5 percent); and other products such as medicinal herbs, oilseeds, animal casings, karakul wool and leather (10 percent).

The Soviet Bloc countries consumed roughly 60 percent of these exports with the remainder split between Western Europe (16 percent), Pakistan (12 percent), India (9 percent) and Saudi Arabia (3 percent). Neither the United States nor Japan has ever been a major importer from Afghanistan.

In 1981/82, the major cash crop exports from Afghanistan EXCLUDING cotton were valued at more than \$110 million. Raisins, fresh grapes, almonds, melons, liquorice, asa foetida, dried apricots and fresh apricots were the eight most important items<sup>1</sup> exported in order of importance.

Since 1979, agricultural exports from Afghanistan have probably fallen 30 - 40 percent of the prewar total - greater than the estimated 50 percent overall decline in agricultural production.

Not only has crop production declined due to lack of inputs and manpower, but destruction and dilapidation of post harvest storage, grading, and processing facilities has made many Afghan products unfit for sale in Western markets.

Trade with Western Europe and the United States, which consists largely of raisins and liquorice, has fallen dramatically. In 1984, Afghanistan captured 60 percent of the world market for raisins but today has little more than 16 percent. A large volume of Afghan - European and Afghan - American trade is in the hands of Afghan carpet or fur traders

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<sup>1</sup>. Cotton has not been included in this study because, a) All Afghan cotton has been used domestically or sent to the Soviet Union. b) Rehabilitation of cotton ginning and textile mills was considered impossible under the present political situation.

residing in the West. Exports to the Soviet Union have declined less than to many other destinations as Afghan resources have been siphoned off into the Soviet economy.

"Official" exports to Pakistan have also dropped dramatically, from a prewar figure of around \$50 - \$60 million dollars to nearer \$10 million today. "Unofficial" exports to Pakistan have greatly increased.

Exports to India have declined from a prewar figure of \$40 - \$50 million to an estimated \$17 million in 1989. The closure of the Torkham-Khyber road and problems in the Indian Punjab have accelerated this decline.

The four main overland routes for Afghan export trade are: 1) northward to the USSR, Europe and the Baltic ports; 2) the now-blocked link via the Khyber Pass to Peshawar, northern Pakistan and India; 3) southward to Quetta and the seaport of Karachi; and 4) from Herat to Iran and onward to the eastern Mediterranean. The route north to the USSR and the crossing into Baluchistan (leading to Quetta, Karachi or the Punjab), are now the only useable overland routes for large scale traffic. Fresh fruits and vegetables have been air-freighted throughout the war from Kabul to New Delhi, Amritsar, Moscow, and occasionally to Dubai.

Afghanistan will not find it easy to recapture its lost cash crop export markets. Quality standards have risen significantly during the last ten years, and new regional and international competitors have had more than a decade to establish themselves in the market.

Both Pakistan and India have significantly increased their production of fresh fruit and vegetables. Domestic supplies of apples, melons, green vegetables and, to a lesser extent, grapes now meet most of the demand.

The USA and Turkey now dominate the international market for dried fruit and nuts. Turkey has more than 60 percent of the world market for dried apricots and figs, and the USA more than 60 percent of the world market for raisins/sultanas and almonds. These were all products which Afghanistan exported in significant quantities in the past. Promoting the unique flavor qualities of some Afghan produce and developing new markets in the Middle East and the Far East are required to recapture the lost market share.

Available data from Afghanistan are extremely inaccurate and provide only a rough approximation of production and area of horticultural crops. Better information can only be found by more detailed satellite analysis and in-country survey work.

Total area under grape cultivation is between 70,000 and 80,000 hectares, making this by far the most important cash crop in Afghanistan. Melon, almond, apricot, pomegranate, apple, and

cumin are the other major cultivated crops in rough order of importance. The major fruit growing areas in Afghanistan are the Kandahar/Zabul region, the Kabul/Parwan/Kapisa/Logar region, and Samangan Province. The other main horticultural export products, including pistachio, asa foetida, pinenuts, and morel mushrooms are not cultivated crops, but are collected forest products.

The only export crop (other than cotton) which is processed in industrial-scale plants is raisins. There were thirteen raisin processing plants in Afghanistan in the late 1970s. Most of these are not functioning today, with a resulting drastic decline in raisins suitable for export.

There have been no systematic damage assessment surveys targeted at export cash crops. Subjective opinion is that the worst hit provinces are Kabul, Kandahar, Herat, Kunduz, Baghlan, Parwan and Kapisa. Those provinces least affected are probably Ghazni, Faryab, and Jawzjan. Most of the actual war damage has been restricted to orchards and vineyards close to the roadsides or other strategic locations. Crop losses due to lack of water and other vital production inputs are likely to have been much more widespread.

## THE LEVEL AND PATTERN OF AFGHAN CASH CROP EXPORTS

### Overall Prewar Pattern

Afghan annual exports prior to the war averaged around \$580 million annually and consisted of natural gas (35 percent), dried fruits (30 percent), carpets and rugs (13 percent), fresh fruit (7 percent), ginned cotton (5 percent), and other products such as medicinal herbs, oilseeds, animal casings, karakul wool, and leather (10 percent). (See table 1.) N.B. Cotton exports varied greatly from year to year. In some years they exceeded those of fresh fruits.

The Soviet Bloc countries consumed roughly 60 percent of these exports with the bulk of the remainder split between Western Europe (15 percent), Pakistan (10 percent), India (8 percent), and Saudi Arabia (3 percent). Neither the United States nor Japan has ever been a major importer from Afghanistan. (See diagram.)

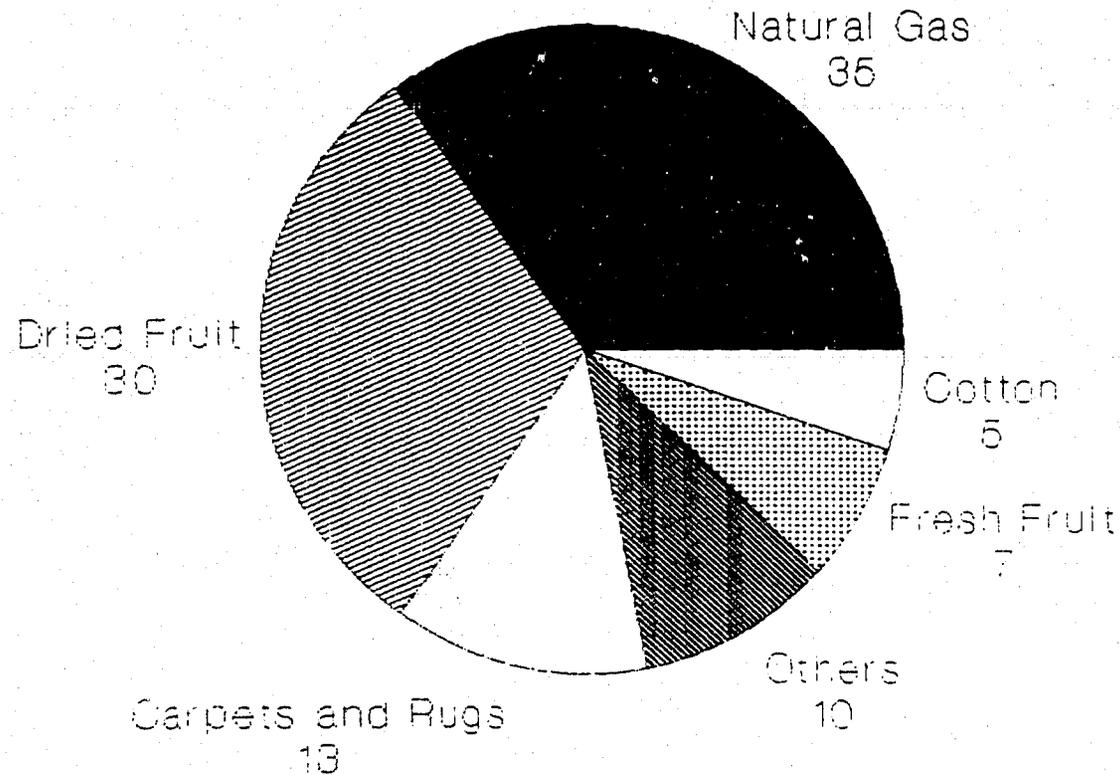
The direction of this trade was dependent upon the items exported. All of the natural gas and cotton were exported to the Soviet Union or Eastern Europe. Karakul wool, hides, skins, and casings were sent to both the Soviet Union and to Western Europe (especially West Germany) while rugs and carpets were re-exported via Pakistan and Iran, or shipped directly to Europe and the USA.

Fresh fruit exports were largely destined for Pakistani markets, although India and the Soviet Union took sizable quantities of items such as grape and pomegranate.

The export trade of dried fruit and nuts was more diversified with both Western and Eastern Europe taking large quantities (particularly the United Kingdom, West Germany, and Czechoslovakia). The Soviet Union, India, and Pakistan, and, to a lesser extent, Saudi Arabia, were also major buyers.

# Value of Exports by Commodities

## As a percentage of Total Export



**Average Total Export: \$621 Million**  
Averaged over 1979 to 1981

TABLE 1

**AFGHANISTAN**  
**VALUE AND QUANTITY OF EXPORTS BY COMMODITIES**  
(million dollars)

COMMODITY	79/80		80/81		81/82	
	Value	Unit	Value	Unit	Value	Unit
Natural Gas***	102.8	2,182	233.1	2,524	272.5	2,354
Dry Fruits	177.0	94,862	169.4	89,084	174.9	101,212
Carpets and Rugs ****	57.1	619	103.5	1,139	72.6	944
Fresh Fruits	31.3	79,865	39.7	87,333	50.5	96,806
Cotton	36.7	21,011	39.6	25,012	22.5	12,877
Wool and Animal Hair	10.9	4,453	12.3	5,579	23.3	9,010
Karakul*	24.9	1,247	33.2	1,589	18.8	1,431
Skins, excluding Karakul*	15.4	3,963	14.4	3,284	11.7	2,942
Medical Herbs	4.9	8,341	4.2	5,405	11.5	13,965
Casing**	4.2	2,157	5.3	2,150	4.6	1,870
Oil Seeds	1.7	2,576	6.4	7,616	2.0	1,879
TOTAL	<u>466.9</u>		<u>611.1</u>		<u>664.9</u>	

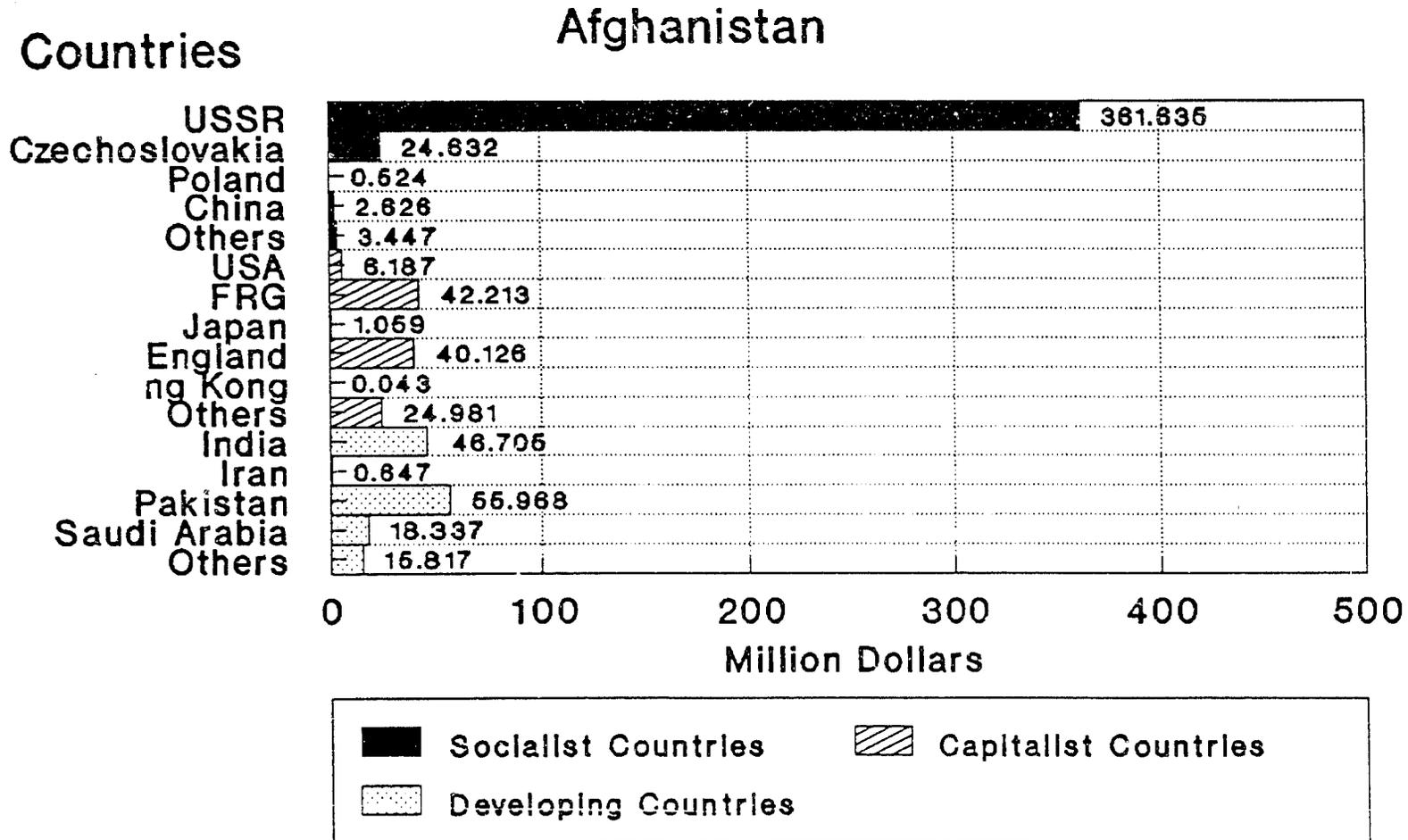
Source: Official Trade Statistics

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\* 000 pcs  
\*\* Million coils  
\*\*\* Million cubic meters  
\*\*\*\* 000 square meters.  
All other units in tons

# Value of Exports by Countries

## Millions of Dollars



Averaged over 1979 to 1981

## Prewar Horticultural Exports

In 1981/82, the major cash crop exports from Afghanistan, excluding cotton, were valued at more than \$110 million. Raisins, fresh grapes, almonds, melons, liquorice, asa foetida, dried apricots, and fresh apricots were the eight most important items exported, listed in the order of importance. This represented more than 37 percent of Afghanistan's total export trade.

The table below provides a summary of the situation; more details are provided in the market profiles supplied in Appendix 3 of this report.

TABLE 2

### MAJOR EXPORTS OF HORTICULTURAL CROPS 1981-82

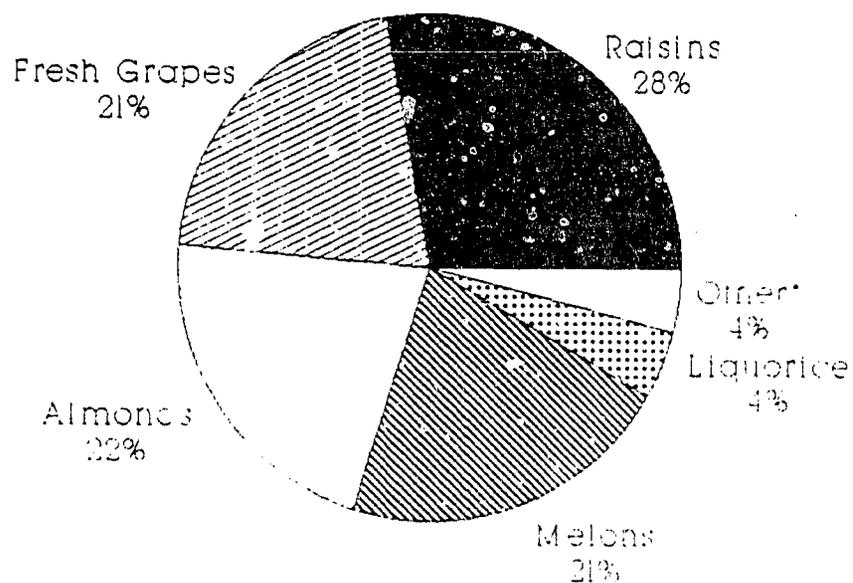
<u>Product</u>	<u>Volume</u> (tons)	<u>%</u>	<u>Value</u> (\$m)	<u>%</u>	<u>Major Destination</u>
Raisins	36,000	33	70.0	64	UK, FRG, India
Fresh Grapes	27,000	21	14.0	13	Pakistan, India, USSR
Almonds	28,000	21	7.0	6	Pakistan, India, UAE
Melons	27,800	21	5.6	5	Pakistan
Liquorice	5,700	4	2.8	2	USA, EEC, India, USSR
Asa foetida	900*	1	2.0*	2	India
Dried Apricots	1,000	1	1.6	2	India, EEC, Pakistan
Fresh Apricots	1,900	1	1.0	1	Pakistan, India, USSR
Apples	1,400	1	0.9	1	Pakistan
TOTAL	130,000		110.0		

#### Raisins

Production in the early 1980s, expanded greatly due to the erection of no less than 12 modern processing plants. As a result, by 1982/83, Afghanistan had captured more than 60 percent of the international market for raisins. The bulk of these high-quality raisins were exported via Kabul where quality control, international finance, packaging, and export promotion were centered. Raisins exported via Pakistan tended to be the lower-quality products which did not pass through modern processing plants.

# VOLUME OF HORTICULTURE EXPORTS FROM AFGHANISTAN 1981/1982 (TONNAGE)

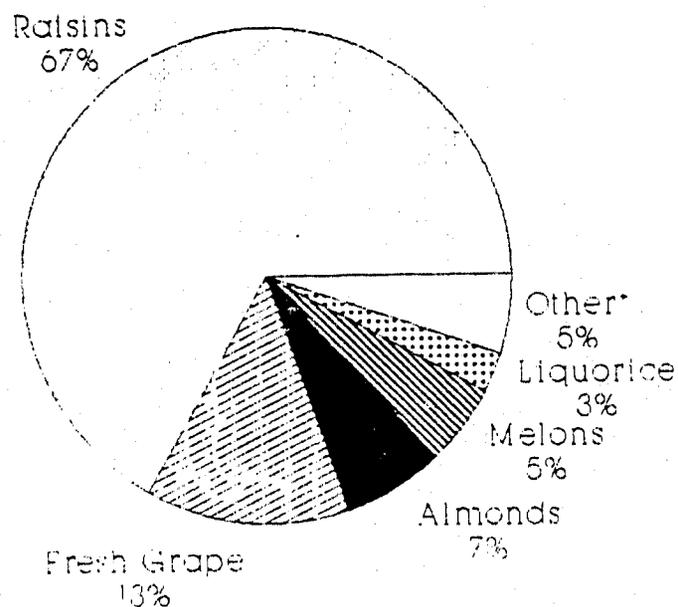
PRODUCT	VOLUME (Tonnes)
Raisins	36,000
Fresh Grape	27,000
Almonds	28,000
Melons	27,800
Liquorice	5,700
Asa foetida	900
Dried Apricots	1,000
Fresh Apricots	1,900
Apples	1,400



\* Other includes Asa Foetida, Dried Apricots, Fresh Apricots and Apples

# VALUE OF HORTICULTURE EXPORTS FROM AFGHANISTAN 1981/1982

PRODUCTS	VALUE (\$ m)
Raisins	70.0
Fresh Grape	14.0
Almonds	7.0
Melons	5.6
Liquorice	2.8
Asa Feotida	2.0
Dried Apricots	1.6
Fresh Apricots	1.0
Apples	0.9



\* Other includes Asa feotida, Dried Apricots, Fresh Apricots and Apples

## **Fresh Fruits**

Fresh fruits such as grapes, apricots, and pomegranates grown in the Kabul, Parawan, and Kapisa Provinces were regularly shipped by air and overland routes to India and the Soviet Union, but liquorice and other medicinal plants, grown in the northern Hindu Kush, were trucked out directly to the Soviet Union or sent by truck overland via Kabul to India. Almonds and dried apricots grown in regions near Kabul were also exported overland in sizable quantities to India and northern Pakistan. Much of the trade with India was handled by Indian traders based in Kabul. Over fifty Indian companies in Kabul handled fruit, nuts, and medicinal plants.

A range of fresh fruit and vegetables were exported to northern Pakistan via Peshawar. These included apricots, apples, potatoes, okra, carrots, eggplant, peas, tomatoes, and melons grown in Kabul, Wardak, Logar, and near Jalalabad. Melons were also sent from Kunduz, Balkh, and Samangan via Kabul. Dry mash beans were also important exports to Pakistan from this area. Peshawar was the transshipment point for the majority of goods coming southward out of Afghanistan.

A further, less-important outlet for Afghan exports was the supply of fruits and vegetables to Quetta and through to southern Pakistan. These included (most importantly) melons, but also tomatoes, carrots, onions, pulses, and other vegetables grown in the river valleys of Kandahar and Helmand Provinces.

## **Dried Apricots, Almonds, Pistachio, Cumin, and Liquorice**

Dried apricots, almonds, pistachios, cumin, and liquorice destined for export to southern Pakistan or onward to the Middle East, as well as Western Europe and the USA, were trucked down to Quetta from the main collecting and processing centers of Kandahar, Zabul, and Herat. Quetta was always a transshipment point for imports and exports from southern and western Afghanistan.

Other items regularly exported from Afghanistan included pistachio nuts which were sent either via Iran (and onward to Europe), to Pakistan for local consumption, or air-freighted to India from Kabul. Asa foetida, a wild gum resin from the Northwest was destined almost entirely for the Indian market, although in 1981/82, over 183 tons of Asa foetida were imported into Pakistan either for domestic consumption or for reexport to the West. Fodder seeds, significant exports from time to time, were sent to Quetta and Lahore. Small quantities of a local, sour, dried plum were also sold in Pakistan.

## 1982-1990 Situation

Official trade statistics for Afghanistan have not been published since 1982, so official figures of the change in volume and value of exports are not available. Even figures of Afghan imports into recipient countries are seldom accurate as large quantities of Afghan produce are reexported from Pakistan, India, the Soviet Bloc countries and Iran, without information as to their point of origin.

Nevertheless, piecing together information gathered from official and unofficial sources, it is possible to gain a picture of the change in the level and pattern of trade, during and after the Soviet invasion of Afghanistan.

Agricultural exports from Afghanistan have probably fallen to between 60 percent and 70 percent of the prewar total - greater than the estimated overall decline in agricultural production, (estimated at 50 percent). Both the Mujahideen and the Kabul governments have concentrated limited agricultural resources on food production to supply both the remaining local population and the army.

A shortage of fresh fruit and vegetables in the rapidly-growing towns of Afghanistan has resulted in a steep rise in prices. It is now usually more profitable to sell a product on the local market than to sell it to processors or exporters. Exports are said to have been increasingly diverted onto the local market.

Not only has production declined due to lack of inputs and person-power, but the destruction or dilapidation of postharvest storage, grading, and processing facilities has made many Afghan products unfit for sale in Western markets. An example of this was one large consignment of pistachios sent from Kabul to New York (via Riga and Hamburg); the consignment was improperly packed and arrived after three months, moldy and unfit for consumption.

A massive exodus of skilled managers and technicians, as well as large landowners, has taken place. Many of the larger commercial farms or more sophisticated export businesses are either lying unused or have been taken over by the government or the Mujahideen (depending on the location). It has been reported that perhaps a third of the large vineyard owners in Kandahar are now living in Karachi. Their lands are either being cultivated by their tenants or have been taken over by the Mujahideen.

Exporters, moreover, have seldom had the opportunity to travel abroad to service their existing clients or to find new markets, because official trade finance, export permits, and other state support for exports have been difficult to obtain. Afghan traders in Pakistan have no travel papers unless they unofficially obtain a Pakistani passport.

## Official Trade

Surprisingly, official trade via Kabul has still managed to function. Institutions like the Afghan National Bank (with offices in Hamburg, Zurich, Delhi and London) have become the focal point for official Afghan trade. State trading companies like the Afghan-American Corporation in New York and even the Export Promotion Board in Kabul are also still functioning, albeit, mainly as conduits for imports rather than exports.

Raisin exports grew to a peak in 1986/87, partly due to good harvests in 1985, but have dropped sharply. This is confirmed by import figures for Afghan raisins into Europe, which drop sharply after 1986-87. (Raisin exports in 1987, were, according to the Kabul radio, worth more than \$130 million. Sixty percent of this was reportedly sent to the Soviet Union; the remainder was sent to India, Pakistan, and Western markets).

## Unofficial Trade

Unofficial trade outside government-controlled areas has survived and prospered. New informal mechanisms of international trade finance and new trade routes and mechanisms have been established to partly offset formal trade operations. Most of this trade has been of poorly-graded and poorly-packed goods which have not passed through any industrial processing, cleaning, or packing plants. Most of these items have been traded through Pakistan. Almost all buyers of Afghan goods in Karachi reported a marked deterioration in quality of most horticultural exports arriving there.

## Direction of Trade

Exports to the Soviet Union have declined less than to many other destinations as Afghan resources have been siphoned off into the Soviet economy in an attempt to offset the cost of providing food and military support to the Kabul regime. Even so, damage to natural gas installations and a drastic fall in cotton production denied the Soviet Union some of the most important export items. Exports of dried fruits and nuts to the Soviet Union, however, increased between 1970 and 1987. In 1987, imports of dried fruits and nuts to the Soviet Union were reported to be more than 37,000 tons. This is nearly as much as the total world-wide imports of Afghan raisins in 1979/80.

Fresh fruit exports from around Kabul have not been severely affected until recently. In 1985, there were official reports of more than 28,000 tons of apples, pomegranates, melons, citrus, and olives valued at \$9.8 million dollars being exported to India and the Soviet Union. The citrus and olives came from the Soviet-assisted, 3,500 hectare state farm near Jalalabad. According to 1989, Soviet figures, exports of fresh fruit from Afghanistan have, however, dropped substantially. Pomegranate sales in the early 1980s, were over 2,000 tons, but have now

dropped to a few hundred - largely replaced by supplies from Iran. Citrus imports have also largely disappeared.

Exports to India have declined from a prewar figure of \$40 - \$50 million to an estimated \$17 million in 1989. The closure of the Torkham-Khyber road and problems in Indian Punjab have accelerated this decline. According to Indian importers, the fall in trade has been due more to problems of shipping goods across Pakistan than to any war damage in Afghanistan. The decline has only taken place since 1988. In 1985/86, exports of pomegranate to India had reached nearly 2,000 tons, and raisin exports to India were considerably more than in 1979/80.

Air-freighted, fresh fruit exports have also declined, partly due to problems of reaching the Kabul airport from the growing areas. Another reason, just as important, is the increasing substitution of Afghan, fresh fruits with local, Indian-produced, fresh fruit.

"Official" exports to Pakistan have also dropped dramatically from a prewar figure of around \$50 - \$60 million dollars to approximately \$10 million today. (See enclosed table.) The size of this decline partly reflects an underlying trend of increased domestic production in Pakistan. It is exaggerated by the fact that most official imports into Pakistan came via the Torkham-Khyber route which is now closed. Trade in almonds, raisins, dried apricots, liquorice, and fresh pomegranates and grapes has declined almost continuously since 1978. (See enclosed bar charts.) Fresh apricot and melon exports appear to have picked up in the last two years, nearing or surpassing prewar figures. Some items such as mash beans and fodder seeds, which were not important exports before the war, grew in importance until 1987, only to fall back sharply in recent years.

"Official" exports to Pakistan have also dropped dramatically from a prewar figure of around \$50 - \$60 million dollars to nearer \$10 million today. "Unofficial" exports to Pakistan have, however, greatly increased, partly offsetting the decline in official trade. Considerable quantities of goods which formerly went via Iran to Europe, or were trucked directly to India, have since the war been routed through Pakistan - particularly Karachi. Here a large number of Afghan traders have established their own export businesses, either in partnership with, or under the patronage of, a Pakistani operator. Export licenses, passports, and trade finance are not officially issued to Afghan refugees in Pakistan, so goods must either be sold to Pakistani companies or sold through Pakistani front men.

Trade with Western Europe and the United States, which largely consists of raisins and liquorice has fallen dramatically. In 1983, Afghanistan exported over 14,000 tons of raisins valued at over \$80 million, thereby capturing 60 percent of the world raisin market. (See enclosed chart.) By 1988/89, raisin exports had dropped to little more than 4,500 tons and

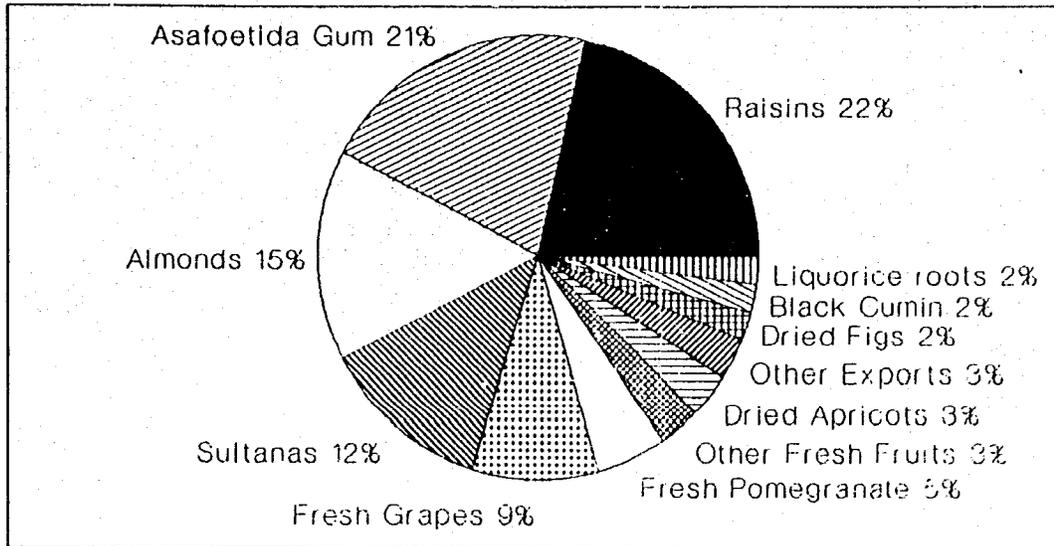
Afghanistan's share of the world market had fallen to around 16 percent. Surprisingly, exports of dried apricots have risen, particularly into the UK. In 1982, exports were only 20 tons but reached over 250 tons in 1985. In recent years, exports of dried apricots has slipped back to around 30 tons. Liquorice exports have declined due to the decline in amount of liquorice roots being harvested and the high cost of transporting this bulky item all the way from the Soviet border to Karachi. MacAndrews and Forbes, the largest importer of liquorice in the world, reports that shipments in 1990, are beginning to build up rapidly and stocks of over 5,000 tons of liquorice are now available in Karachi.

Formal trade between Western firms and Kabul is usually handled through the overseas branches of the Afghan National Bank against letters of credit and official invoicing. Another increasingly important method of sourcing Afghan exports is through barter deals with trading houses in Eastern Europe. The liberalization of the economies (particularly of Hungary, Poland, and Czechoslovakia) has meant that many of Afghanistan's furs, carpets, dried fruits, and nuts are being sold for hard currency or barter in Prague, Vienna, and Budapest. One Afghan trading house, Quarshi, Ltd of Kabul, actually has its own warehouse and sales office in Prague, and this export route is expected to grow in importance.

A large volume of Afghan - European and Afghan - American trade is in the hands of Afghan carpet or fur traders residing in New York, Los Angeles, Frankfurt, London, and other Afghan expatriate centers. They are involved in "huge fiddles" according to reputable European wholesalers of dried fruits and nuts. With their importation of mixed consignments under one name, under invoicing, and drastic undercutting in price, these traders are reportedly spoiling the reputation of Afghan exports in Europe.

# Imports from Afghanistan As a Percentage of Total Import

India



**Total**

**212 Million Rupees**

From April 87 to March 88

## INDIA'S IMPORTS OF HORTICULTURAL PRODUCTS FROM AFGHANISTAN

APRIL 1987 - MARCH 1988

No	Product	Quantity (MT)	Quantity (000 IRS)	% of Total	% from Afghan
1	Raisins	3,487	43,684	21%	85%
2	Asafoetida(Gum)	681	43,135	20%	94%
3	Sultanas & Other Dried Grapes	2,399	25,809	12%	45%
4	Almonds (in shell)	1,860	24,000	11%	24%
5	Grapes (Fresh)	3,179	19,955	9%	100%
6	Pomegranate (Fresh)	1,478	9,632	5%	100%
7	Almonds (Shelled)	558	7,570	4%	80%
8	Other Fresh Fruits N.E.S	777	5,774	3%	93%
9	Apricots (Dried)	365	5,665	3%	93%
10	Figs (Dried)	326	4,628	2%	100%
11	Cumin (Black)	243	4,115	2%	99%
12	Cumin (other than Black)	151	3,582	2%	96%
13	Liquorice Roots	631	3,286	2%	70%
14	Other Dried Fruit NES	232	2,514	1%	95%
15	Hazlenuts	156	1,675	<1%	100%
16	Mixtures of Dried	59	1,156	<1%	100%
17	Other Balsam/Oleo Resins, NES	24	1,069	<1%	<1%
<b>TOTAL</b>		17,072	211,539	100%	n.a

Source: Official Trade Statistics : Governemnt of India

## Recorded Official Imports to Pakistan Afghanistan for Selected Products

(thousands of rupees)

Product	1986-87	1987-88	1988-89
Dry mash (bean)	11,915	13,910	8,870
Dried legumes	3,339	224	14
Apples	15,001	22,948	13,168
Grapes	104,211	89,202	56,034
Raisins	4,188	3,722	2,110
Almonds	619	2,724	861
Apricots	4,193	1,353	5,738
Pomegranate	6,016	12,035	4,232
Musk melon	20,161	15,907	21,652
Other fresh fruits/vegetables	999	1,708	333
Other dried fruit	1,668	2,258	626
Raw hides	41,274	23,624	6,661
Spices	4,731	5,389	6,680
Poppy seed	2,695	2,358	431
Mulhati	5,607	1,540	2,718
Other food products	944	737	2,971
Plant parts for perfumes	3,936	2,612	860
Other agricultural products	582	481	0
<b>Total agricultural imports</b>	<b>232,079</b>	<b>202,732</b>	<b>133,959</b>
Crop seed	1,075	7,356	6,126
Total fuels	N/R	N/R	N/R
<b>Total selected imports</b>	<b>233,154</b>	<b>210,088</b>	<b>140,085</b>

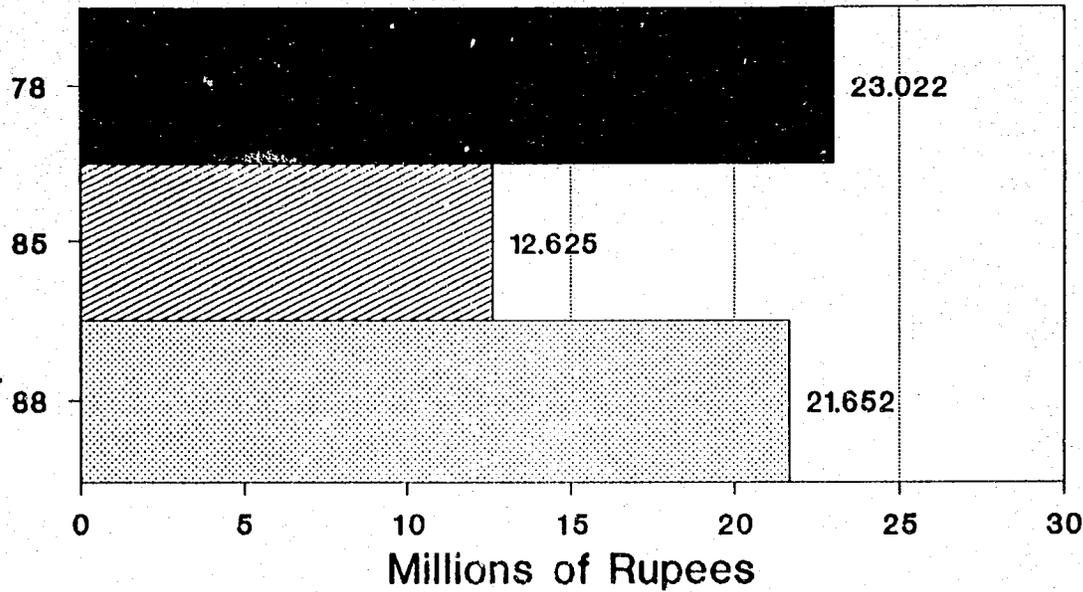
Note: Specifies all single items in the agricultural products, agricultural inputs, and fuels categories for which total exports or imports exceeded Rs. 1.0 million in either year. Remaining items summed as residuals. Fiscal years end June 30.

N/R = not recorded.

Source: Federal Bureau of Statistics, "Foreign Trade Statistics of Pakistan."

# Pakistan Imports from Afghanistan Melons

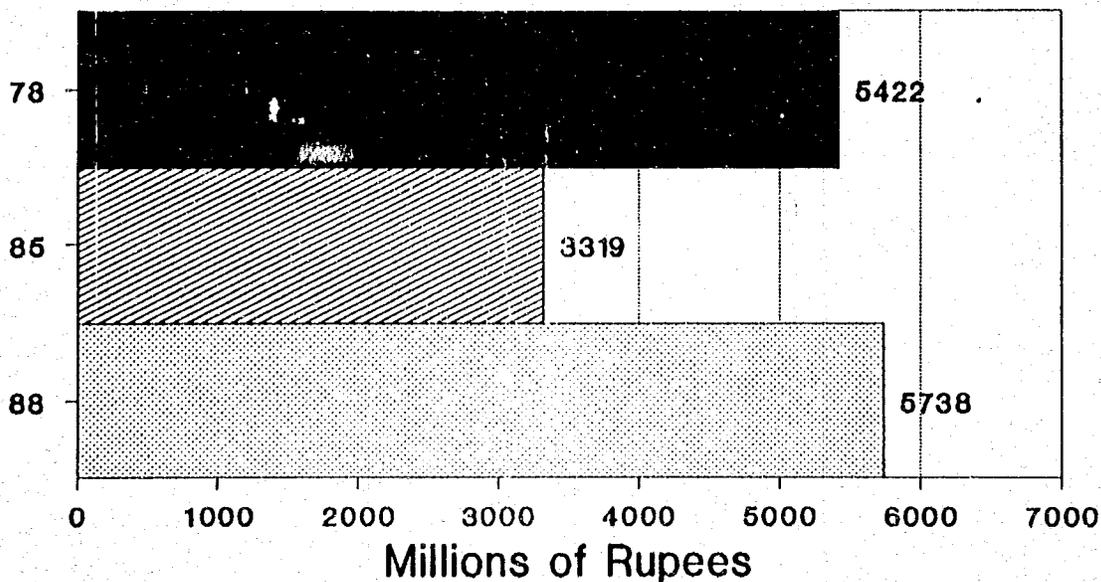
Years



During 1978, 1985 and 1988

# Pakistan Imports from Afghanistan Fresh Apricots

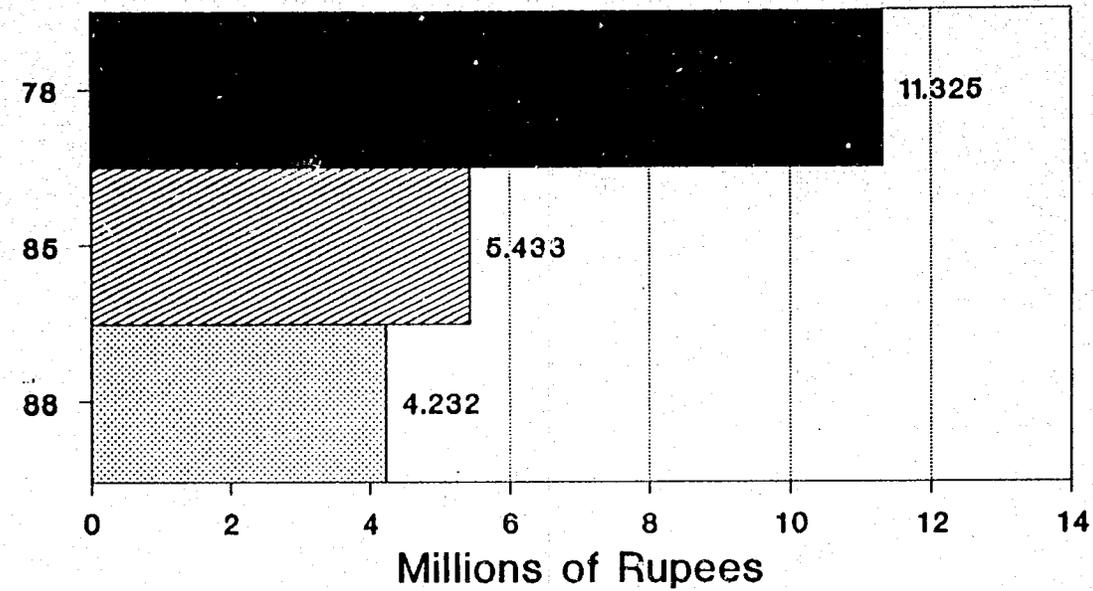
Years



During 1978, 1985 and 1988

# Pakistan Imports from Afghanistan Fresh Pomegranate

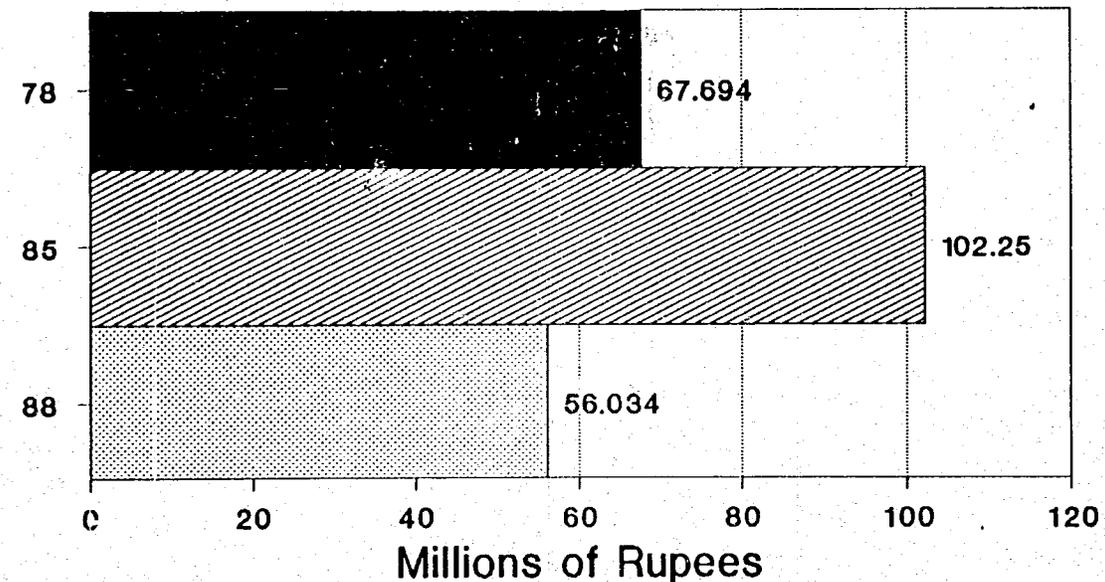
Years



Millions of Rupees  
During 1978, 1985 and 1988

# Pakistan Imports from Afghanistan Grapes

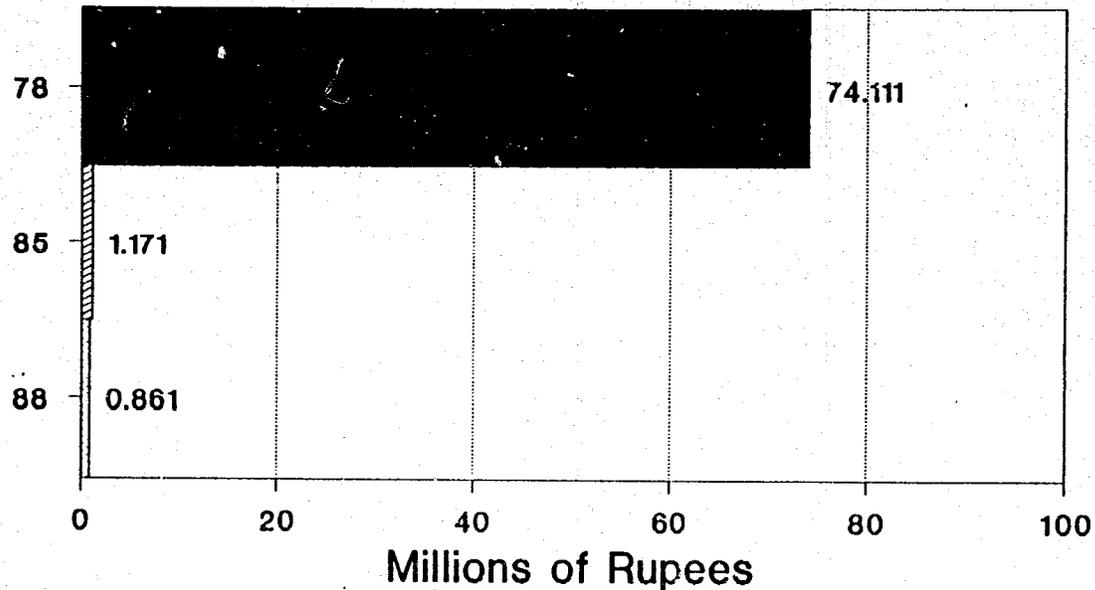
Years



Millions of Rupees  
During 1978, 1985 and 1988

# Pakistan Imports from Afghanistan Almonds in Shell

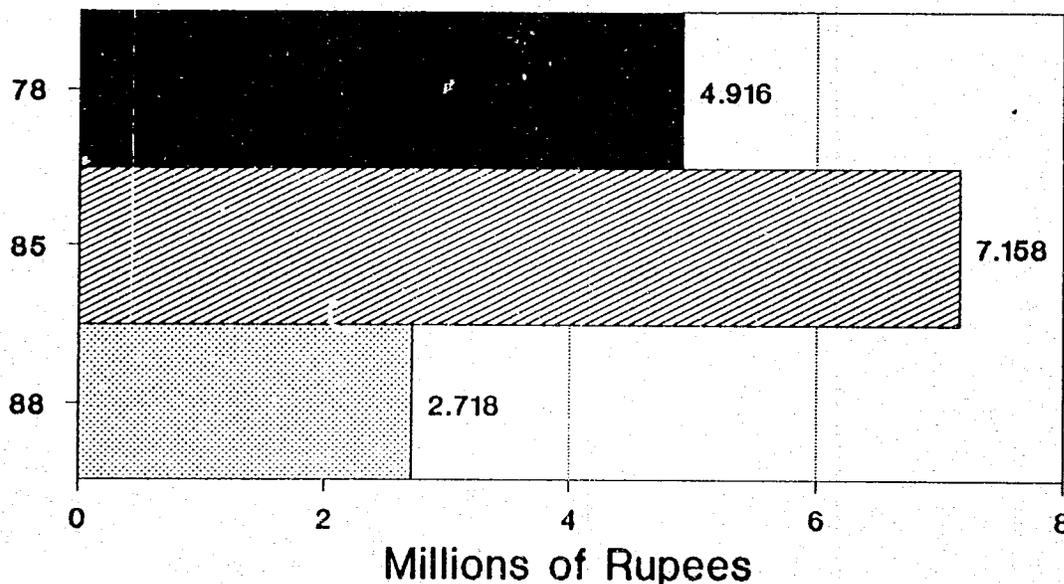
Years



During 1978, 1985 and 1988

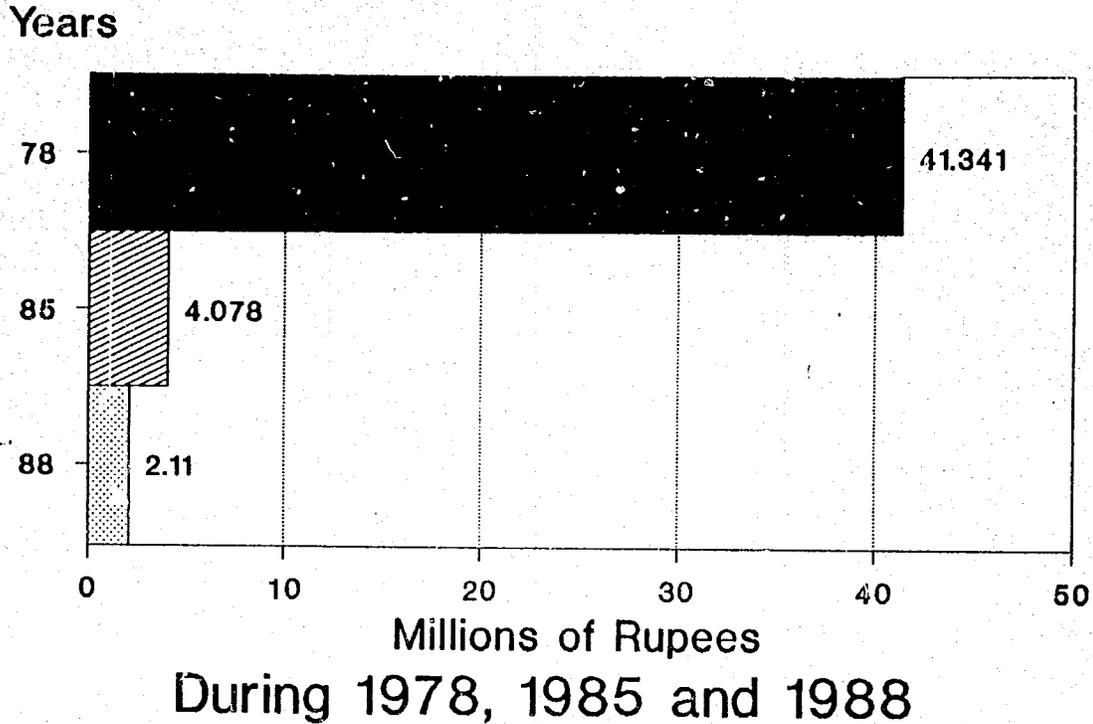
# Pakistan Imports from Afghanistan Liquorice Root

Years



During 1978, 1985 and 1988

# Pakistan Imports from Afghanistan Raisins



# Pakistan Imports from Afghanistan Dried Apricots

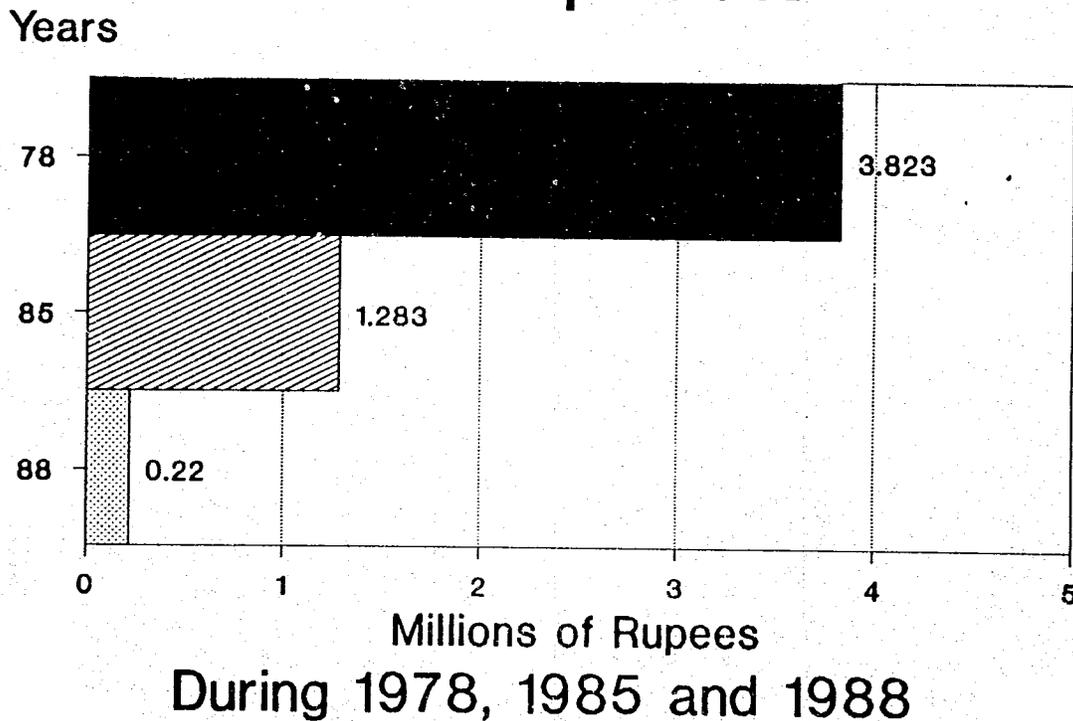


TABLE 3

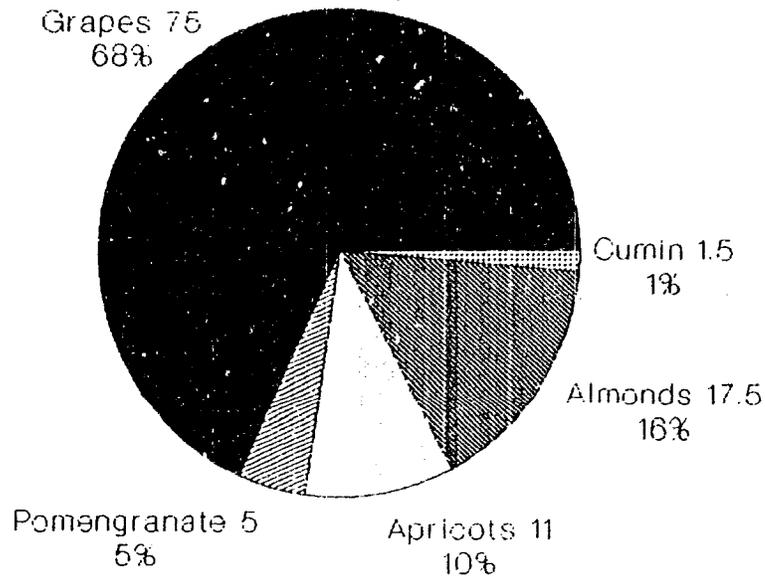
## EXPORTS OF SELECTED AFGHAN PRODUCE 1980-81

<u>PRODUCTS</u>	<u>Tons</u>	<u>US \$</u>
<u>Raisins</u>		
Raisins Red	31,410.4	51.5
Raisins Green	4,739.3	9.8
Raisins Black	421.1	0.6
<u>Dried Apricots</u>		
Apricot Nuts, Shelled	163.7	1.4
Apricots, Pitted, Khasta Dried	746.5	1.2
Apricot Nuts, Bitter, Unshelled	60.2	0.8
<u>Fresh fruit</u>		
Grapes, Fresh	27,048.6	13.8
Melons Nes Fresh	27,682.5	5.6
Apricots White, Fresh	,885.4	1.0
Apples, Fresh	1,391.6	0.9
Pomegranates Fresh	1,006.4	0.4
<u>Nuts</u>		
Almonds, Thin Shell	1,110.5	3.4
Almonds, Hard Shell	1,408.5	2.0
Almonds, Shelled	314.4	1.6
Pistachios, Shelled	114.7	1.3
<u>Seeds</u>		
Alfalfa Seeds	671.6	1.0
Trefoil Seeds (Shadar)	706.9	0.5
<u>Spices and Medicinals</u>		
Caraway/Cumin Seeds	196.9	0.6.
Asa foetida	130.0	0.6
Liquorice Roots	5,791.7	2.8

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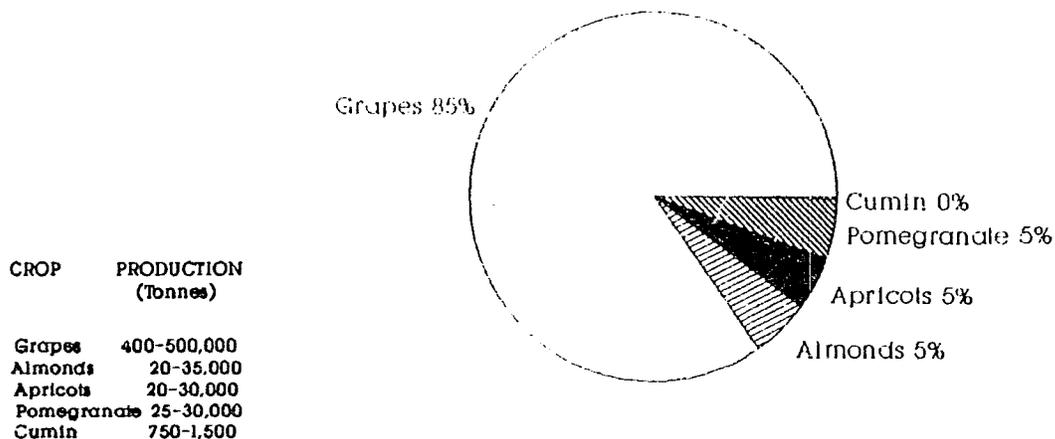
Source: Official Trade Statistics

# Approx. Horticultural Crop Area in Afghanistan ('000 hectares)



Source: Agricultural Census 1974

## APPROX PRODUCTION OF FRUIT AND NUTS IN AFGHANISTAN



SOURCE : AGRICULTURAL CENSUS 1974

TABLE 4

## REPORTED EXPORT PRICES FOR SELECTED AFGHAN EXPORTS

<u>Product</u>	<u>Location of Report</u>	<u>Price per Ton</u>
Pistachio	New Delhi	Rs 320,000
P/kernels (Iran)	New Delhi	Rs 170,000
P,'kernels (Iran)	London	\$ 19,260
Pomegranate	Quetta	Rs 12,000/15,000
Pomegranate	Quetta	Rs 10,700/17,800
Grape (Green)	Quetta	Rs 12,500/16,500
Grape (Shindukani)	Quetta	Rs 16,500
Grape (green)	Karachi	Rs 12,500
Grape (Shindukhani)	Karachi	Rs 20,750-24,900
Grape (Red)	Karachi	Rs 8,300-12,500
Raisin (Black)	London	\$ 900-1,080
Currants (Greece)	London	\$ 2,340
Raisin (Red)	London	\$ 1,368
Raisin (Green, USA)	London	\$ 1,536
Apricot (Turkey)	London	\$ 1,700-2,000
Almond Kernels(US)	London 1989	\$ 3,000
Almond Kernels(US)	London	\$ 1,620
Almond Kernel(US)	New Delhi	I Rs 150,000*
Pinenuts (China)	London	\$ 7,200-8,000
Morel Mushroom	London	\$ 80,000
Cumin White	Karachi	Rs 12,250/ 14,000
Cumin Black	Karachi	Rs 35,000/105,000
Cumin (Turkish)	New York	\$ 800/1,200
Liquorice	Karachi	Rs 45,000/65,000
Liquorice	New York	\$ 450/680
Liquorice Extract	New York	\$ 2,500-5,000
Asa foetida	New Delhi	I Rs 275,000

\* Including 83,000 Rupees tax and duty per ton

\$ = US dollars

Rs = Pakistan Rupees

I Rs = Indian rupees

Unless specified all prices are for Afghan produce

## THE PRODUCTION OF CASH CROPS IN AFGHANISTAN

The main production areas for horticultural crops are shown on the enclosed map. Profiles of the agronomic characteristics of these cash crops are enclosed in Appendix 5.

The table on the next page gives some idea of the order of importance of both cultivated and collected products on a province wide basis. Please note the importance of the Kandahar and Kabul/Wardak/Logar regions for horticultural production.

TABLE 5

PROVINCE-WIDE INFORMATION ON SELECTED CASH CROPS

CROP	RAISIN	APRICOT	ALMOND	POMGRAN	CUMIN	MELON	APPLE
<u>Kandahar</u>	XXX	XX		XXX			
<u>Zabul</u>		X	XXX	XX			
<u>Helmand</u>					X	XX	
<u>Oruzgan</u>		X	X				
<u>Ghazni</u>	X						X
<u>Kabul )</u>							
<u>Wardak)</u>	XXX	XX	XX	X			XXX
<u>Logar )</u>							
<u>Parwan)</u>							
<u>Kapisa)</u>	XX	X	XX	XX			
<u>Kunduz</u>						XXX	
<u>Samangan</u>			XX	XX		XX	
<u>Jawzjan)</u>	XXX						
<u>Faryab)</u>							
<u>Bamyan</u>		X			X		
<u>Herat</u>	XX						

WILD PRODUCTS

PRODUCT	LIQUORICE	PISTACHIO	ASA FOETIDA	OTHER
<u>Badakshan</u>		XX		XX
<u>Paktya</u>				X
<u>Kunduz</u>	X		XX	
<u>Samangan</u>	XX	X	XX	
<u>Balkh</u>	XX		XX	
<u>Jawzjan)</u>				
<u>Faryab)</u>	XX			
<u>Jawzjan</u>	XX		XX	
<u>Badghis</u>	XX	XX	XX	X

N.B. Other includes pinenuts, morel mushrooms, black cumin  
The number of Xs denotes the relative importance  
of the product.

## Production Estimates

According to the 1977/78 official census, the total area under fruit was 140 300 hectares (4 percent of total cultivated area) and that of vegetables, 95,000 hectares (2 percent of total cultivated area). Kabul/Parwan and Kandahar are the main fruit-growing provinces in Afghanistan.

Figures on the area and production of horticultural crops in Afghanistan both in the past and the present are extremely inaccurate; the table below provides only a rough approximation. Better information can only be found by more detailed satellite analysis and in-country survey work.

TABLE 6

### AREA AND PRODUCTION OF HORTICULTURAL CROPS IN AFGHANISTAN

<u>CROP</u>	<u>AREA (HECTARES)</u>	<u>PRODUCTION (Tons)</u>
Grapes	70 - 80,000	400,000 - 500,000
Almonds	15 - 20,000	20,000 - 35,000
Apricots	10 - 12,000	20,000 - 30,000
Pomegranate	5,000	25,000 - 30,000
Cumin	1 - 2,000	750 - 1,500
<u>Unmanaged</u>		
Liquorice	n.a	5,000 - 10,000
Asa foetida	n.a	350 - 750
Pistachio	n.a	1,000 - 3,000

A monthly crop calendar for grape, apricot, almond, and pomegranate is outlined below. Please note that JANUARY/FEBRUARY are the critical months in the fruit crop calendar in Afghanistan.

FIGURE 1  
ANNUAL ACTIVITIES FOR CASH CROP  
PRODUCTION AND HARVESTING

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>GRAPE</u>		-----  pruning	-----  planting	-----  fertilizer	-----  plant protection	-----  harvest	-----  drying					
<u>APRICOTS</u>		-----  cutting back nursery trees	-----  lifting and planting 1 year old trees	-----  fertilizer	-----  plant protection	-----  budding	-----  harvest	-----  drying				
<u>ALMONDS</u>		-----  cutting back	-----  lifting and planting 1 year old trees	-----  fertilizer	-----  plant protection	-----  budding	-----  harvest					
<u>POMEGRANATE</u>		-----  cuttings planted	-----  1 year rooted cuttings planted	-----  fertilizer	-----  plant protection	-----  harvest						

## **Grapes**

Total area under grapes is between 70,000 and 80,000 hectares, making this by far the most important cash crop in Afghanistan.

The three major areas for grape production are:

- a) Kabul - Parawan - 22,500 hectares (32 percent) in 1974.
- b) Kandahar - Zabul - 22,000 hectares (32 percent) in 1974.
- c) Faryab-Jawzjan -Balkh - 18,800 hectares (27 percent) in 1974.

(See damage assessment table for details.)

The high-value, Shindukhani variety of grape is found primarily in the Kandahar area.

Seventy percent of the total grape crop in Afghanistan is used for drying - either sun dried to produce red naturals or shade dried to produce green naturals. Shade drying is done in specially constructed rooms known as "kishmish khanas."

## **Processing and Packing**

The only modern packing and carton plant is located in Kabul so that exporters of raisins or fresh grapes are largely dependant on Kabul for boxes unless they can be procured from Pakistan. There were twelve modern processing plants for raisins four in Kabul, three in Parwan, three in Kandahar and two in Balkh. Of these, one is known to be working in Kabul, one is under rehabilitation in Parwan, and one or two may be working in Balkh. The others are not functioning due to lack of power, water, spare parts, or because of destruction.

Industrial raisin processing capacity in the South and West has always been much more limited than in the Northern and Eastern provinces.

## **Apricots**

Total area under apricots is small relative to grape, estimated at 10,000 - 12,000 hectares. Main production areas are Kandahar, Zabul, Kabul, Bamyan, and Parwan. Orchards are generally small and consist of local selections and mixed seedlings. The Charmaz variety, used mainly for fresh production, is grown predominantly in the Kandahar region. The Shakapara variety is used to produce an unpitted, whole, dried apricot and is grown mainly in Zabul and Oruzgan. Other local selections of seedlings are used to produce "kishta" or dried, pitted halves. The sweet kernels are a local substitute for almond.

Apparently, no modern technology has been applied to apricot drying in Afghanistan, and no sulfuring of apricots is undertaken. Exports of unsulfured apricots have been made to Europe during the last five years. Very little commercial-scale grading, washing, or drying is undertaken, and the general quality of "kishta" apricot is not up to international standards.

### **Almonds**

Total area under almonds is estimated to be between 15,000 and 20,000 hectares, significantly more than for pomegranates and apricots. Unlike apricots, almonds have been grown on a commercial scale with relatively large plots.

All the varieties grown are of local origin. There are only small quantities of top quality almonds such as "monpali" which fetch a premium price. None of the well-known international varieties have been cropped in Afghanistan. In 1989/90, 10,000 or more budded trees (of types similar to those grown in California) have been introduced. They will come into bearing in 1997.

The main commercial center for almond production is northeastern Zabul, although Oruzgan and Parwan/Kapisa Provinces are also very important. Only the two nut processing plants in Kabul make an attempt to properly shell, grade, and pack almonds. The remainder entering world trade are poorly graded and poorly packed.

### **Pomegranates**

Total area under pomegranates is smaller than that of apricots, with an estimated total area of 5,000 hectares. The main production areas are Kandahar, Kapisa, and Samangan. Pomegranates from Kandahar are the large, red-seeded variety exported mainly to Pakistan and India. Those crops grown in Kapisa and Samangan are the white, seedless varieties which are regarded as a better source of juice.

No commercial juicing facilities exist outside Kabul although a juice factory was established in Kandahar. The factory closed in 1976. Cold storage, presently only available in Kabul, greatly lengthens the shelf life of an already very robust and easily-transported fruit. Even without it, pomegranates can be exported by road for hundreds of miles with minimum damage.

## **Pistachios**

There are no apparent cultivated pistachios in Afghanistan. All the pistachios available for commerce are harvested from wild or semi-wild woods and forests. Most of these pistachios are small in size and irregular in shape, but have an especially good color and flavor. Local traders distinguish two main varieties, "Hinjuk" and "Vera" - the latter being significantly larger than the former. Most pistachios are found in Badakshan, Samangan, and Badghis Provinces. Herat is a major collection point for pistachios. Harvesting rights were formerly in the hands of the Forest Department who also irrigated certain portions of the forest and raised seedling trees for reforestation purposes.

## **Asa Foetida (Hing)**

Asa foetida is a wild umbelliferous plant. From its fleshy roots, a gum resin is extracted for use in Indian cooking and also as a fixative in perfumery. There are no reported attempts to cultivate asa foetida or to scientifically manage production. Hing when used in cooking is processed and diluted to a level where the extremely powerful odor becomes palatable. The product is unique to Iran and Afghanistan and fetches very high prices, particularly in India. Asa foetida is found mainly in Jawzjan, Baghdhis, and Samanghan Provinces. Collection, storage, and packing of the gum is extremely primitive, and, because of its value, adulteration is widespread. All the Hing entering the Indian market must be purified and reprocessed prior to use. There are no reported attempts to undertake the processing and blending of Asa foetida in Afghanistan. The amount of Hing collected appears to be between 350 - 750 tons annually.

## **Cumin**

White cumin is an annual crop and the major spice crop grown in Afghanistan. Estimated cultivated area is approximately 1,000 hectares. The main growing areas are upland locations in Helmand, Baghdhis and Bamyan. The better stands are irrigated, but the majority are grown as rain-fed crops. No special varieties are known in the market, but Afghan cumin is generally inferior to that of both Iran and Pakistan. Cumin production is reportedly a profitable alternative to poppy seed.

Black cumin is cultivated in northern India, but in Afghanistan or Pakistan it is collected from the wild. The main growing area is Badakshan.

## **Liquorice**

Liquorice is not grown as a cultivated crop in Afghanistan, but is collected from wild stands that grow particularly along sandy river banks and canals. The main growing areas are in Jawzjan, Balkh, Samangan, and Kunduz - particularly on both sides of the Oxus River and its tributaries.

Harvesting is cyclical, depending on market conditions and the need for regeneration. It is only the roots that have any commercial interest. A considerable amount of the crop is sorted and bailed in Northern market towns and trucked to Kabul or Kandahar for onward shipment to India or Pakistan. No hydraulic presses are available in Afghanistan, and cleaning and grading is inadequate. This means that transport costs are unnecessarily high as both the weight and volume of product transported is far in excess of the commercially useable roots. Between 5,000 - 10,000 tons are dug annually depending on conditions.

In the mid 1970s, plans for a U.S. joint venture to cultivate liquorice on a large scale were submitted to the International Finance Corporation in Washington, but the project was shelved.

There are no liquorice processing plants in Afghanistan although prewar plans existed to establish a soft liquorice extract plant at the Bagrami Sugar factory and a processing plant for more refined products at the government-owned Afghan Plants Company in Kabul.

## **Other Exportable Produce**

Two major types of melon are produced - watermelons (tarbooz) and the white-fleshed, sweet melon known as "kharbooza." Both can be easily transported over relatively long distances without significant damage or need for cold storage. Estimates of the area under melon have been impossible to ascertain, although the figure is known to be very large. Exports which are unlikely to make up more than 50 percent of total production were over 30,000 tons per annum prior to the war.

"Kharbooza" melons have, in the past, been a significant cash crop grown in sizable quantities throughout the plains north of the Hindu Kush (especially in Jawzjan, Baghlan, Balkh, Samangan, and Kunduz Provinces). Some "kharbooza" and "tarbooz" melons are also grown and exported from the Helmand Valley. Exportable melons have largely been trucked down from the Northern Provinces via Kabul to Peshawar.

The quality of seed is reported to be deteriorating, which is likely to have affected yields and overall quality. Improvement of the seed base by local selection should be encouraged instead.

Apple production is limited to low value, yellow/green, early "Meshadi" and "Kandahar" varieties from the Kandahar region and the better quality "Kulu" (Golden Delicious) and "Tor Kulu" (Red Delicious) varieties grown in Kabul, Logar, and Wardak regions. Cold storage facilities for apples outside of Kabul are limited (or non-existent), and the only cold store in Kandahar seldom functions for lack of power. Lack of cold storage limits the apple marketing season. The nearest cold storage is in Qetta.

A local variety of blue-skinned plum known as "Alu Bokhara" is grown in Ghazni. Small quantities are exported in dried form to Pakistan and India and fetch high prices. Difficulties in removing the skin limit the amount available for export.

The Soviet-supported state farm at Ghaziabad, Nangarhar planted over 3,500 hectares of citrus, olives, and other vegetables destined for export. This farm is now in the hands of the Mujahideen with an NGO operating some sort of maintenance program.

Pinenuts (Chilgoza), black morel mushrooms, and black cumin (kala zeera) are not cultivated products but valuable export items collected from the forests in eastern and northern Afghanistan. The main center for pinenuts is Paktya Province where forests of Pinus geradiana exist. Quantities collected are small and deforestation is severely eroding the availability of this product.

World market demand is good. Morel mushrooms are mainly found in Badakshan and the Himalayan foothills. There is no known way of cultivating morel mushrooms although this high value product is used as a truffle substitute in European cuisine. Deforestation threatens the survival of most of these wild products.

### **Processing Infrastructures**

The development of any form of agribusiness enterprise in Afghanistan began in the early 1970s. Prior to this period only village-level, carpet weaving, drying of fruits, and processing of hides, skin, and casings could be considered agri-industries.

Investment concentrated initially on input industries such as fertilizers, seeds, farm machinery, and tractor assembly. Sugar mills and cotton ginning were the next major investments, followed by fruit and nut-processing facilities. More recently, a number of commercial-scale, carpet weaving and cotton textiles have been constructed. Leather tanneries, a shoe factory, and fur cleaning and processing factories have also been established in Kabul.

Almost all these facilities are located in Kabul or the towns along the main road to the Soviet border namely: Charikar, Mazar-i-Sharif, Baghlan, and Kunduz. Kandahar is the only Southern town which has any large-scale industry.

## DAMAGE ASSESSMENT

Systematic surveys of the damage to horticultural crops have not been undertaken; therefore, any estimates of crop damage must be treated with caution. Various surveys by the Swedish Committee team and UNHCR give some indication of overall crop damage in southern and eastern Afghanistan, but further surveys on the effect of the war, specifically on horticultural production, are required.

The pattern of production is not thought to have changed dramatically because of the war. Those provinces, mostly in the North, which have suffered least from emigration and war damage, are likely to have grown in importance relative to those which suffered greater losses of population or more wartime damage.

The schematic table below provides a qualitative assessment of damage on a province-wide basis.

TABLE 7

### PROVINCE-WIDE ASSESSMENT OF DAMAGE TO HORTICULTURAL CROPS

Province	90%-60%	60%-40%	40%-0%
<u>Kabul</u>	X		
<u>Herat</u>	X		
<u>Parwan</u>	X		
<u>Kapisa</u>	X		
<u>Badghis</u>	X*		
<u>Faryab</u>	X*		
<u>Helmand</u>	X		
<u>Kandahar</u>	X		
<u>Kunduz</u>	X		
<u>Baghlan</u>	X		
<u>Logar</u>		X	
<u>Balkh</u>		X	
<u>Samangan</u>		X	
<u>Oruzgan</u>			X
<u>Zabul</u>			X
<u>Paktya</u>			X
<u>Jawzjan</u>			X
<u>Wardak</u>			X
<u>Bamyan</u>			X
<u>Ghazni</u>			X

\* Damage due to drought and insects

## Damage to Grapes

The table below provides a very rough estimate of province-wide production of grapes and percent of damage during the war. The figures confirm other reports that the Northern provinces now provide the bulk of the raisins destined for export. The greatest damage occurred where the fighting was most severe. In those areas showing the least damage, neglect, lack of water, and disease are more often the cause than actual wartime destruction.

TABLE 8

### COMPARISON OF GRAPE PRODUCTION, 1974 AND 1990

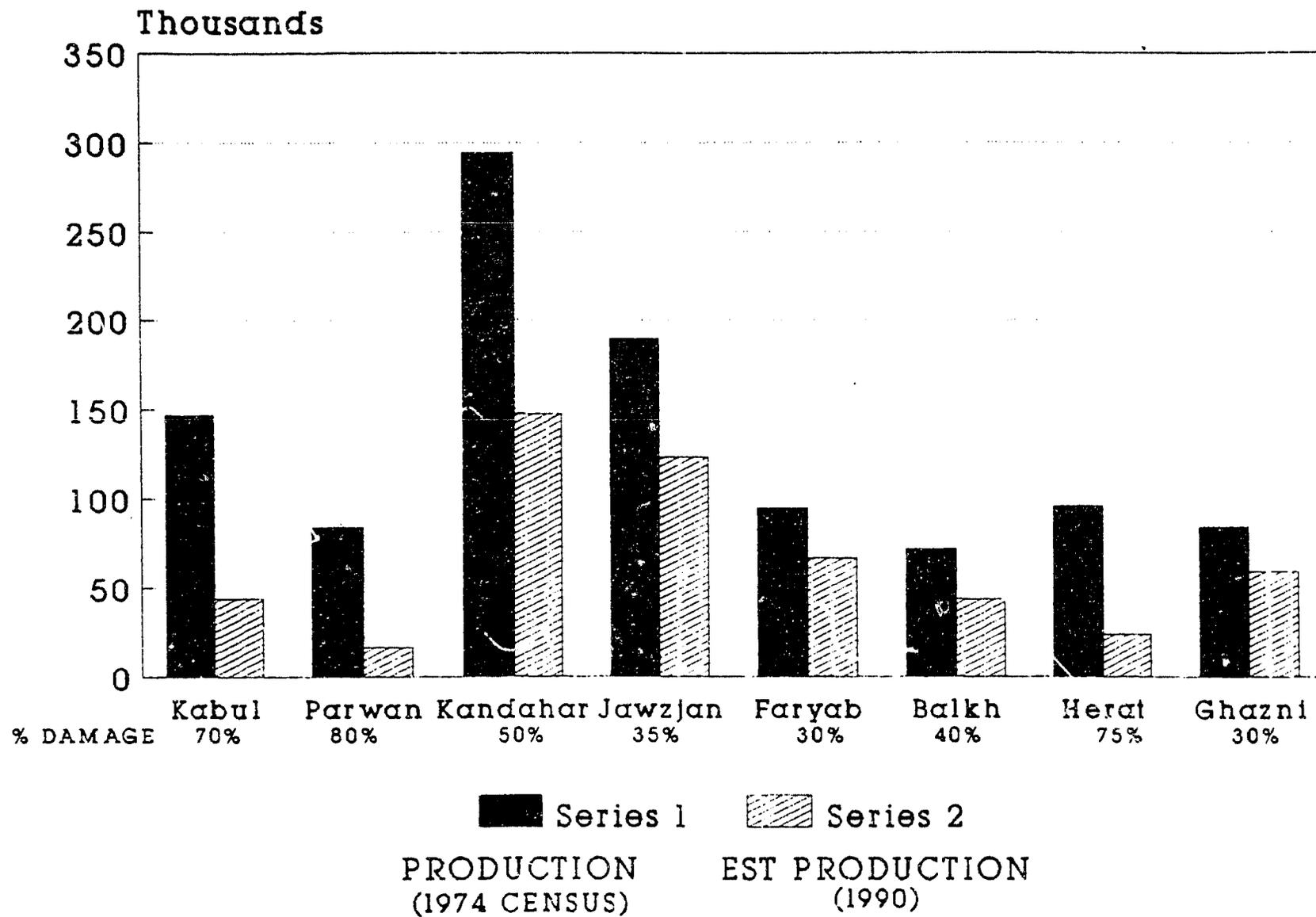
<u>Province</u>	<u>Production</u> (1974 Census)	<u>% Damage</u>	<u>Est Production</u> ( 1990 )
Kabul	147,000	70%	44,100
Parwan	84,000	80%	16,800
Kandahar	294,000	50%	147,500
Jawzjan	190,000	35%	123,500
Faryab	95,000	30%	66,500
Balkh	72,000	40%	43,200
Herat	96,000	75%	24,000
Ghazni	84,000	30%	58,800

Destruction to kismish khanas, which were ideal fortifications, has been widespread. This has meant that production of the higher value "green kishmish" has dropped sharply. It is largely the sun-dried, lower-value, "red kishmish" which is now found in the export trade. Rehabilitation of these shade houses is considered to be first priority.

## Damage to Apricots

No accurate assessment of war damage to apricots, either through destruction or neglect, has been made. Apricots grown around Kabul and Parwan and along the Kandahar-Kabul highway were severely damaged (possibly 60 percent), and mines have been laid in many orchards. Damage in Oruzgan and Bamyan, important provinces for apricots, was far less severe. (Overall crop damage is around 35 percent and 20 percent, respectively). Since this crop is seldom grown on large, concentrated holdings, damage is unlikely to be as severe as that for grape or almond. About 25,000 apricot seedlings have recently been established in nurseries in the ASSP area to help increase the supply of planting material.

# ESTIMATED PRE AND POST WAR PRODUCTION OF GRAPES



### **Damage to Almonds**

No formal damage assessment survey has been undertaken for almonds. As a large scale commercial crop, wartime destruction is likely to have been severe in those production areas where fighting was intense. Mining of orchards has been widespread. Damage to almond orchards in the Parwan/Kapisa area may have been more than 70 percent. Damage in Zabul Province is reportedly severe in orchards close to the main Kabul-Kandahar Highway. Damage to all crops in Zabul is estimated at less than 40 percent. In Oruzgan, another major almond producing area, overall crop damage is estimated at less than 35 percent.

### **Damage to Pomegranates**

In Kandahar, fruit damage caused by an insect/fungus infestation has been widely reported in neglected orchards. It can be controlled if suitable plant protection measures are taken, but these precautions have been largely impossible during the war.

War damage to pomegranate orchards in Kandahar, Zabul (especially along the highway) and in Kapisa could be as high as 70 percent. Destruction of orchards in Samangan is thought to be less severe (around 50 percent). As pomegranates are fairly drought resistant, crop damage due to lack of regular irrigation may not be as severe as for crops such as apricot or apple.

### **Damage to Pistachios**

Deforestation due to severe shortage of firewood is the main cause of damage to pistachios, although Russian helicopters are said to have devastated some pistachio forests, particularly in Samangan. Today Mujahideen commanders are in control of collecting and marketing of pistachios, as well as exploitation of the trees for firewood. Output from Samangan alone was reported to be more than 2,000 tons prior to the war. Total Afghan trade is now little more than 1,200 tons.

## Damage to Processing Facilities

The table below summarizes our knowledge to date.

TABLE 9

### ACTIVITY AND STATUS OF PROCESSING FACILITIES

<u>Name of plant</u>	<u>Activity</u>	<u>Location</u>	<u>Status</u>
Afghan Mewa Samoon	Raisins	Kabul	Working
Everest Packing Co.	Cartons	Kabul	Working
Pashtoon Nut Co.	Nut process	Kabul	Not working
Spiaf Nut Co.	Nut process	Kabul	Not known
Pashtoon Food Co.	Dried fruit	Kabul	Not known
Wais Fruit Products	Dried fruits	Kabul	Not known
Ahoo Shoe Co.	Boots/shoes	Kabul	Working
Kabul Weaving Mill	Carpets	Kabul	Working
Mazar Cotton Gins	Ginned cotton	Mazar	No raw material
Da Pashtani Yawali	Raisins	Mazar	Believed working
SSS Kismishi Paki	Raisins	Mazar	Believed working
Mazar Fertilizer	Fertilizer	Mazar	Working
Spinzer Mills	Cotton gin	Kunduz	No material
Baghlan Mill	Sugar	Baghlan	No material
Bagram Fruit Co.	Raisins	Charikar	Restart 1990/91
Wazir Fruit Co.	Raisins	Charikar	Damaged
Kandahar Raisins	Raisins	Kandahar	Not working
Arghandab Fruit Co.	Raisins	Kandahar	No materials
Shakat Niwa Fruit Co.	Canning/Juice	Kandahar	Closed 1975
SS. Pashtun Store	Cold Store	Kandahar	Working
Kandahar Textiles	Textiles	Kandahar	No material

## MAJOR AFGHAN TRADE ROUTES

The major trade routes for Afghan agricultural exports are as follows (see map):

### By Air

- To Amritsar and New Delhi
- To Dubai
- To Tashkent
- To Moscow and Prague

The most important routes for agricultural exports are those to India where there have been up to seven weekly, cargo-carrying flights to New Delhi and three to Amritsar. The main produce exported by air are grapes, apples, pomegranates, and occasional loads of nuts and medicinal plants. (Imports of textiles, meat, and other processed foods are brought in from India by this route.) Air freight rates are 6.5 Indian rupees/kilo.

Air freight exports to the Soviet Union consist largely of fresh fruit, although some dried fruits and nuts and some textile items are believed to be air-freighted out of Afghanistan, also. They are either flown to Tashkent, and then sent by road or rail westward, or sent direct by air to Moscow or Prague (Czechoslovakia).

Air freight to Dubai is limited to occasional small quantities of dried fruits and nuts.

### By Road/Rail to the Soviet Union/Europe

Bulky products such as ginned cotton, textiles, liquorice, fresh fruits, dried fruits and nuts destined for the Soviet Union, Eastern Europe (and on to Western Europe), are still regularly being sent: 1) by road to the rail head north of Mazar-i-Sharif; or 2) by road to Tashkent (and then by rail either to the ports of Riga and Leningrad, for onward shipment to Hamburg/New York or other Western ports); or 3) by road/rail to Prague, Budapest, Berlin, or towns in the Soviet Union. Importers in Europe report that it takes two to three months for goods shipped by these routes to reach their destination.

### By Road/Rail from Torkham-Peshawar-North Pakistan and India

Until 1987, there was a formal transit agreement between the governments of Pakistan and Afghanistan, allowing trade through the Khyber Pass and Peshawar. The main trade route was thus: Kabul-Torkham-Peshawar-Rawalpindi-Lahore-Wagah-to New Delhi (or Amritsar) with goods going either by road all the way, or by rail from Peshawar. Goods destined for New Delhi were sometimes re-exported to Nepal or Bangladesh. The transit agreement between

GOP and GOA is no longer in force and the Mujahideen have Jalalabad surrounded.

Trade has thus been re-routed via 1) Chaman-Quetta-Sukkur-Lahore; 2) Chaman-D.G.Khan-Multan and on to Lahore; or 3) Hangorada-Wana-to D.G.Khan or Quetta.

The closure of the Khyber Pass and the political problems in Indian Punjab have dramatically affected both the cost and the volume of trade going by this route. Many traders consider the reopening of this road to be the single most important step required to revive the Afghan export trade with both India and Pakistan.

#### **By Road to Quetta-Karachi and Onward to Bombay and the Gulf**

The main trade outlet for Afghan commodities (not exported northward from Kabul) is through the border crossings at Chaman, Badni, Gardi Jangal, and on to Quetta. Here much of it is sold to Quetta-based traders where it is sometimes graded, packed, and sent by road or rail to major Punjab cities. The remainder is transported onward to Karachi. Goods are normally off-loaded in Karachi for sale to Afghan or Pakistani wholesalers or processors. They are either sold on the local market or reexported by companies (usually Pakistani owned) who have the required export licenses. Exports by sea are to India (Bombay), the Gulf States, Bangladesh, Sri Lanka, or European and U.S. ports.

#### **By Road to Herat-Mashad-Tabriz-Turkey and Syria**

Prior to the Iran-Iraq war, entry into Afghanistan from Europe was largely through Herat. This route is, at present, only a minor channel for Afghan exports. Significant quantities of Afghan, dried fruits and nuts (that appear to be sold in the Damascus, Syria market) are, however, brought overland via Iran. This exit point is said to be expanding in importance since the Iran-Iraq war ended. Many of the spices, dried fruits and nuts grown in the Western border areas of Afghanistan are shipped (often smuggled) to Iran for resale. And Afghan pistachios are reportedly being exported as "Iranian" produce in certain Western markets.

USSR

IRAN  
SYRIA

DELHI  
40

### AFGHANISTAN AMONG NEIGHBOURING COUNTRIES

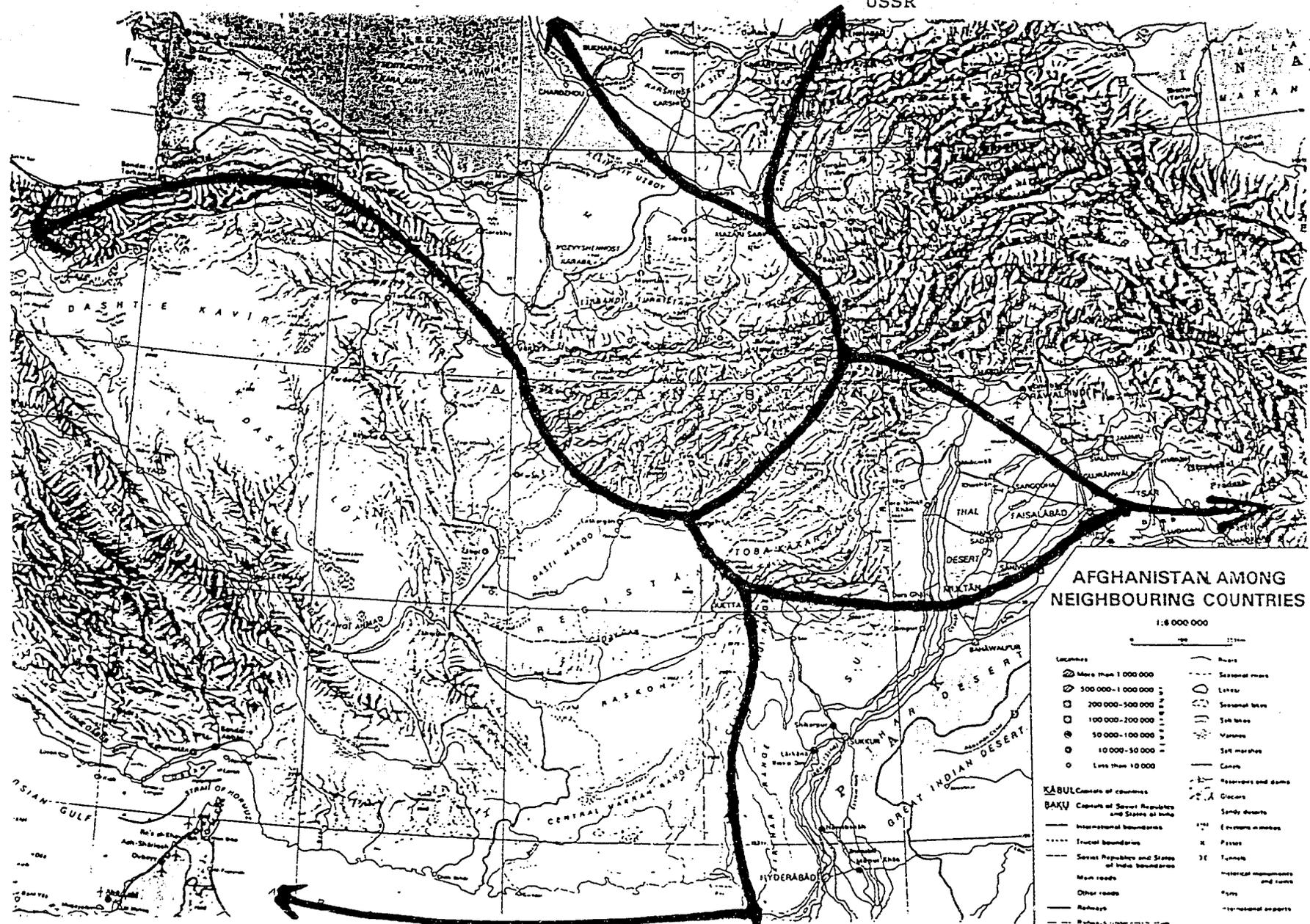
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|---|---|
| <ul style="list-style-type: none"> <li>⊞ More than 1 000 000</li> <li>⊞ 500 000-1 000 000</li> <li>⊞ 200 000-500 000</li> <li>⊞ 100 000-200 000</li> <li>⊞ 50 000-100 000</li> <li>⊞ 10 000-50 000</li> <li>○ Less than 10 000</li> </ul> | <ul style="list-style-type: none"> <li>— Rivers</li> <li>--- Seasonal rivers</li> <li>○ Lakes</li> <li>○ Seasonal lakes</li> <li>○ Salt lakes</li> <li>○ Marshes</li> <li>○ Salt marshes</li> <li>— Canals</li> <li>— Reservoirs and dams</li> <li>○ Oases</li> <li>○ Sandy deserts</li> <li>○ Exposed marshes</li> <li>○ Fosses</li> <li>○ Tombs</li> <li>○ Historical monuments and tombs</li> <li>○ Sites</li> <li>○ International airports</li> </ul> |
|---|---|
- KABUL** Capital of Afghanistan  
**BAKU** Capital of Soviet Republics and States of Iran  
 — International boundaries  
 - - - - - Tribal boundaries  
 - - - - - Soviet Republics and States of India boundaries  
 — Main roads  
 — Other roads  
 — Railways

GULF STATES

AFGHAN TRADE ROUTES

BOMBAY  
SRI LANKA



## CHANGES IN THE REGIONAL AND INTERNATIONAL MARKET SINCE 1980

Any attempts to rehabilitate Afghan cash crop export trade must take into consideration changes in the international supply and demand for the Afghan products destined for export.

Quality standards in terms of packaging, presentation, and hygiene (both regionally and internationally) have risen significantly during the last ten years, and Afghan exporters cannot expect to market goods in the same manner as those sold prior to the war. Moreover, their competitors have had ten years to develop production and post harvest infrastructures, as well as time to promote their name in the world market. Our assessment of market changes that Afghan exporters will have to contend with are as follows:

### Fresh Fruit

Exports of certain fruits, particularly melon and apple to Pakistan, will be much more difficult than in prewar years. Sophisticated apple production, grading, packaging, and storage have developed in the last ten years in both Baluchistan and Swat, and have largely taken over Afghan supplies. The only possible market niche is to supply early apples from Kandahar to Karachi (although present quality and infrastructure are poor) or to try to replace some of the market, presently supplied by Swat, with the better quality red apples from Wardak and Logar. Melons are still an important export from Afghanistan, but even here, local production in Baluchistan has captured some of Afghanistan's traditional market share.

Fresh fruit exports to India will also become more difficult since Indian production (particularly grapes and apricots) has expanded rapidly. Indeed, Delhi traders maintain that it is only due to the "most-favored-nation" status given to Afghanistan, that any fresh fruit imports still continue. (Fresh fruit imports from most other countries are banned). Only pomegranates and top quality table grapes (now grown around Kabul) will find a ready market.

The Soviet Union will continue to be a vast potential market for both fresh fruits and vegetables. Whether economic reforms and decentralization will enable hard currency purchases of such items, is not known.

## **Vegetables**

Vegetable exports to Pakistan, once a major item of cross-border trade, will be increasingly difficult to sell. Due not only to the deterioration of transport links but also to the greatly increased production in both Baluchistan and NWFP, Afghanistan has now become a net importer of some vegetables, supplied primarily from the Quetta region. Dry beans and other pulses are, however, in constant short supply in Pakistan and could still find a ready market, although domestic Afghan demand should increase if refugees return (thereby reducing supply).

## **Nuts**

During the last ten years there have been major changes in the world almond industry. The United States has emerged as the most important supplier of soft-shelled almonds with more than 60-65 percent of the world market. Spain and Italy have also become major suppliers to Western Europe protected by EEC trade barriers. Even Syria, Iran, and Turkey have substantially increased plantings of almonds. It is, hence, unlikely that Afghanistan will ever regain its position in the world almond industry as the quality, uniformity, and varieties available do not match up to international standards. To radically alter this picture could take 15-20 years.

The best hope for Afghan almond exports is to concentrate on supplying better-graded, properly-selected, indigenous almonds to the regional and Far East markets. They should also try to promote the better flavor qualities that some Asian buyers find in Afghan almonds.

The situation with pistachios is similar, with the United States having become a major producer during the Iran-Iraq war. Peace in Iran has meant that exports of Iranian pistachios to Europe are rapidly increasing. (Imports from Iran to the U.S. are still banned). Iran now dominates the market. Turkey and Italy have also increased pistachio production in recent years. Afghan pistachios have a unique flavor characteristic, but the size and quality of their unshelled nuts are not largely acceptable on world markets. Shelled nuts for use in industrial processing have a good potential if more supplies could be offered to Europe, India, and Far East markets.

## **Dried Fruits**

Here again there have been major changes in the world market for raisins and apricots, the two major dried fruit exports of Afghanistan. The United States and Turkey together now dominate the world market for dried fruits. USA holds around 60 percent of the world market for raisins and sultanas, while a similar market share exists for Turkish dried apricots.

There are a significant number of new entrants in the raisin market including Chile, Mexico, and Argentina. Australia, South Africa, and California produce regular quantities, of high-quality apricots.

Afghan raisins have generally deteriorated in quality according to the trade. Many raisins presently exported have not been processed because industrial units mainly lie idle or damaged. All Afghan raisins imported into the UK are reported to require rewashing and regrading. Dried apricot exports suffer from lack of raw material and an almost total absence of any modern post harvest treatment.

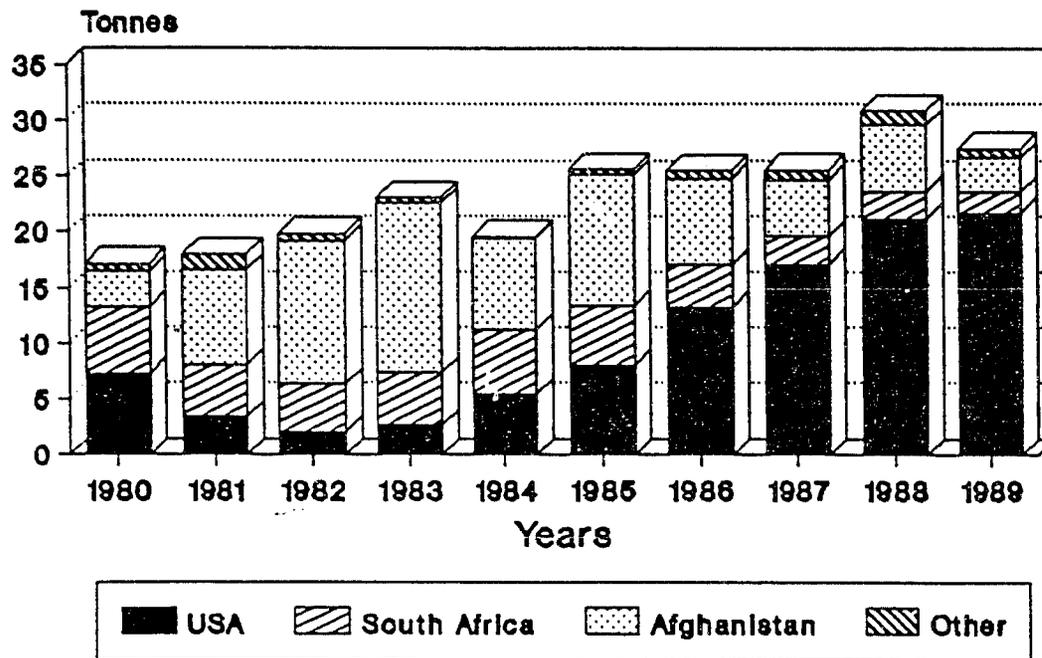
A good market potential exists for low-priced Afghan black midget raisins used as a substitute for currants in the western European baking industry. Specialty products like Afghanistan's Unique Green Naturals and Shindukhani raisins may also find a market niche.

If Afghanistan hopes to regain a significantly larger share of the world market for raisins, it will have to develop new markets in the Middle East, Far East, and Eastern Europe. Competition from American and Turkish dried fruits would not be so intense in these areas.

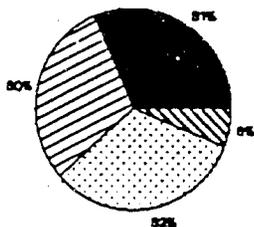
The market for dried apricots which have different flavor characteristics from those of the Turkish varieties, appears to be growing. The health food market in Europe has been taking increasing quantities of Afghan/Pakistan products; even during the war-time period. Competition from Turkey for the bulk market will, however, be fierce. Pakistan and India will still offer good market prospects to Afghan dried apricot exporters, although supplies of improved-quality, Hunza, apricots from Gilgit have increased in recent years.

# World Trade: Market Shares and Tonnages

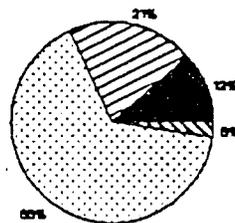
## Raisins



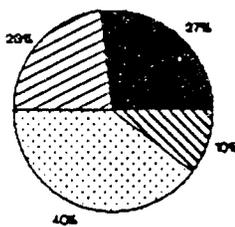
1980 to 1981



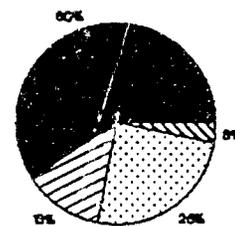
1982 to 1983



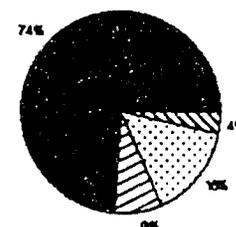
1984 to 1985



1986 to 1987



1988 to 1989



## **Liquorice**

The main market for high-quality liquorice extract has been in the US cigarette industry; two US firms have dominated this market for more than 20 years. The demand for liquorice by the cigarette and pharmaceutical industries has, however, been declining. This has only been partially offset by increased demand for liquorice-based flavor enhancers and sweeteners in the food industry. Improved technology in liquorice cultivation in both Turkey and the Soviet Union has also somewhat reduced demand for the lower-quality, wild liquorice mainly found in Afghanistan. Efforts to upgrade the Afghan product will be required in the future. China has also become an increasingly important supplier of liquorice in recent years.

Although the United States still dominates the liquorice processing industry, Japan and, to a lesser extent, the EEC have recently become important manufacturers of high-quality liquorice products. Afghanistan should seek to diversify her markets.

Increasingly, exporters from Turkey, China, and other competitors of Afghanistan are interested in supplying soft liquorice extract rather than liquorice roots, as this is a higher-value, lower-volume product. There is now, however, overcapacity in the soft liquorice sector which will make any attempt to revive plans for a soft liquorice extraction plant in Afghanistan less attractive. On a short term basis, attempts should be made to diversity Afghan exports of liquorice. Long-term efforts should be directed toward producing a soft liquorice extract with lower volume and higher value.

## **Spices**

Both Pakistan and Iran (after the end of Iran-Iraq war) have expanded their production of cumin considerably. In the case of Pakistan, Pishin and Mastung are generally considered to produce a better product than that sold from Afghanistan. Iranian cumin has been graded and cleaned under government supervision for some time. Cumin production has expanded dramatically in Turkey, from a few thousand tons to over 20,000 tons. Although this product is not of high quality, it is very inexpensive. Afghanistan must, hence, expand sales of upgraded, cleaned material to successfully reenter this market.

APPENDIX 1

INTERIM REPORT ON HORTICULTURAL PRODUCTION  
AND  
EXPORT POTENTIAL IN AFGHANISTAN

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DEVELOPMENT ALTERNATIVES, INC.  
AND THE

OFFICE OF THE US AID REPRESENTATIVE TO AFGHANISTAN

MAY 1990

APPENDIX 1: INTERIM REPORT ON HORTICULTURAL PRODUCTION  
AND EXPORT POTENTIAL IN AFGHANISTAN

C O N T E N T S

	<u>PAGE</u>
SUMMARY AND RECOMMENDATIONS	2
1 INTRODUCTION	2
2 MAIN FINDINGS AND CONCLUSIONS	4
2.1 GRAPES/RAISINS	
2.1.1 GRAPES	
2.1.2 RAISINS	
2.1.3 SULTANAS	6
2.1.4 APRICOTS	7
2.1.5 ALMONDS	8
2.1.6 APPLES	9
2.1.7 POMEGRANATES	
2.1.8 FIGS	
2.1.9 OTHER FRUITS AND NUTS	10
3 MEDICINAL PLANTS	11
3.1 LIQUORICE	
3.2 ASA FOETIDA	
3.3 OTHER MEDICINAL PLANTS	12
4 VEGETABLES	12
5 MUSHROOMS	
6 DAMAGE ASSESSMENT SURVEYS	13
7 EXTENSION	13
8 RECOMMENDATIONS	14
ANNEX I PERSONS MET/PLACES VISITED	15

## SUMMARY AND RECOMMENDATIONS

After ten years of war, the production base of a number of horticultural crops has been reduced by approximately 50 percent. Depending on the severity of the fighting, the loss ranges from 20-100 percent. Export markets have declined, and while the production base in Afghanistan was declining, that of neighbors (for example, Pakistan) was increasing. Much of the dried fruit and nuts produced in Afghanistan's Eastern provinces is of an unacceptable standard for export and attracts low prices on the international market. A number of interventions are proposed to improve either the production and/or the processing of grapes/raisins, dried apricots, early fresh peaches and nectarines, medicinal plants, vegetables, and vegetable seeds. In addition, a recommendation is made to improve the effectiveness of the field assistants as extension officers.

All of these activities are to take place, or be effected through, the bazaar system of ASSP/PSA.

### 1. INTRODUCTION

This report is concerned with a study of the major agronomic and post harvest constraints on cash crop production and export from the Eastern provinces of Afghanistan.

Some of these crops enjoyed a considerable reputation before the war, in particular raisins which were exported to Pakistan, India, UK, West Germany, and Eastern Bloc countries. Other crops included: apricots, almonds, pomegranates and medicinal plants such as liquorice.

There is no doubt that, after ten years of war, the production base in the Eastern provinces, which corresponds approximately to the Afghanistan Agricultural Sector Support Project (ASSP/PSA) of DAI, has been severely affected.

Various organizations have attempted to quantify the damage but have experienced considerable difficulty because of the irregular way in which the war was fought. Associated with this were a number of ways in which crops such as tree fruits, nuts, and vines were damaged:

- Direct bombardment;
- Demolition to avoid ambush by both sides and/or burnt earth policy;
- Sowing mines in vine trenches, both sides;
- Destruction of irrigation karezes and canals; and
- Abandonment by population fleeing from fighting and consequent decline and death of vines and trees from neglect.

According to general consensus, approximately 50 percent of the production base for all crops has been lost in the Eastern provinces. This can range from 20 percent to 100 percent, depending on the severity of the fighting. In areas with fortified strong points, the destruction could be total; whereas, in less strategic areas the damage would be less.

The presence of mines, both anti-tank and anti-personnel, restricts the free use of land and, in some cases, roads. Demining is a major need in the Eastern provinces.

After the withdrawal of Soviet forces, the level of actual conflict between the Mujahideen and government forces has gradually declined. Government forces still maintain a presence in some major towns in the Eastern provinces such as Kandahar, Khost and Jalalabad, while the Mujahideen control the rural areas. The majority of the refugees remain in Pakistan.

The residual population plus refugees, on a visiting basis, are beginning to revitalize the rural economy. This rehabilitation process is extremely complex, not the least of the problems being the sensitive political atmosphere with various commanders (local leaders) vying for power. Many of these have fairly extreme religious views, with a relatively low level of tolerance to those who do not conform to their views. At the time of writing, May 31, 1990, two international missions were harassed in Afghanistan. One was abandoned and the other told to send back two female members. Afghan mission members were challenged as not being true believers because they did not have beards.

In spite of these constraints, there is an increase in activity by people, which did not exist a year ago. Wheat production is now widespread, transport is available, some fuel (diesel) is available, and bazaars are reestablishing. Food and fertilizer are available. There is little or no electric power.

It is with this background in mind that the major agronomic and post harvest constraints on cash crop export production are considered.

## 2. MAIN FINDINGS AND CONCLUSIONS

### 2.1. GRAPES/RAISINS

#### 2.1.1 GRAPES

There are three main centers of grape production:

- Mazar-i-Sharif - North Central, government-held
- Parwan/Logar - Central, nongovernment
- Kandahar - Southeast, nongovernment

The export of almost all fresh grapes from ASSP/PSA zones to Pakistan is through Chaman in the Southeast and Peshawar in the East.

There is reputedly some air freight connection between Kabul and India.

Increase in volume will be dependent on improved infrastructure, plus return of the rural population. Improvement of quality could be achieved by inputs of fertilizer and pesticides, plus training of young men in the age group of 15-25 who have little or no experience in grape growing. The varieties include Haita, Kishmish, and Shindukhani.

#### 2.1.2 RAISINS

This is the largest horticultural export cash crop in Afghanistan. Not only did Afghanistan export to Pakistan and USSR before the war but also to India and Europe. The categories of raisins produced are:

- Kishmishi kishmish syn. Thompson Seedless (Kishmish is a generic name for small grapes).
- Kishmishi Shindukhani, an elliptical, small grape
- Tor Kishmish syn. Atavd, a small, black, 2 seeded grape.

The grapes may be dried in the shade in Kishmish Khanas which produces green Kishmish or Shindukhani. They may be dried in the sun which produces Red Kishmish or, in the case of Tor Kishmish, black raisins. Good quality, green Shindukhani attract the best prices, followed by green Kishmish, then red Kishmish and black Kishmish.

The red Kishmish was exported to UK and West Germany for use in confectionery and baking.

Raisins from the Northern areas are reputedly less sweet than those from the South because of the shorter ripening season. The export routes tend to divide with those produced in the North

Central Area going to Pakistan, the USSR, and Eastern Bloc countries; and those from the South to Pakistan, India and Europe. This is not a hard and fast rule, and some of the routes could be interchangeable. The Kabul-Peshawar route is not open as of May 31, 1990. Raisins from Parwan could go west via Kabul (although coming from a nongovernment-held area) or south through Kandahar. The Mujahideen control the Kandahar-Kabul Highway.

It is reputed that the raisins going out through Kabul are the product of a processing plant in Kabul where they are cleaned, graded, and polished (using kerosene which is apparently an acceptable practice). Packaging is said to be by polytene bags and cardboard boxes.

The products from Kandahar, and to some extent Parwan and Logar, do not have access to even semisophisticated cleaning and grading equipment. They are hand-graded and cleaned, producing indeterminate grades of 1, 2 and 3. The raisins are bagged in hessian sacks. They are not cleaned because no water is available. It is reputed that dust is scattered on the raisins to assist in the final drying process. Sun-dried grapes are dried on mats on the ground and are subject to wind-blown dust.

The dust around Afghan farms and vine trenches could be classed as doubtfully hygienic.

The end result is a product of relatively-poor quality particularly for the international market, and this is reflected in the low prices obtained in the UK.

Raisins very quickly pass out of the hands of Afghan traders who may, or may not, have the pride or incentive to improve the salable product. Afghans cannot obtain export permits in Pakistan; consequently, international exporting is done by Pakistani traders. It would appear that upgrading should take place at the farm, or at the first trading level, if increased prices are to be obtained.

### 2.1.3 SULTANAS

The sultanas of Afghanistan are the product of drying the variety Haita syn, Haitha, or Objosh. If well done, this produces a large, excellent, two-seeded sultana. This was the subject of some research at the Shakat Niwa Fruit Company at Manzal Bagh, Kandahar where they were treated with NaOH to remove the wax layer, neutralized in citric acid, and then dipped in a solution of 1ppm SO<sub>2</sub> to produce a golden color (as well as to act as a preservative). The intention was to export these to Kuwait, but nothing came of it. Most of the produce of this company, which was government owned, was sold to the government forces. It closed in 1975, through lack of skilled staff and probably mismanagement by the government. There are conflicting reports about whether or not it has been damaged. It was well equipped initially with Czechoslovakian equipment, but after 15 years of neglect, it is probably of no value. Even if still operable, there is no electricity. In its short history it produced sultanas in 1 Kg packs, pomegranate juice in 1/2 and 1 Kg cans, and jams and jellies.

For raisins and sultanas, interventions will be necessary to upgrade the quality, to attract better prices in the market, and to compete with new competitors (for example, Pakistan and Turkey). Two phases require attention:

- Upgrade the quality of fruit produced by improved agronomic techniques (for example fertilizer and pesticides), backed up by field assistants trained to form the core of an extension service.
- Upgrade the quality standards by improved handling, grading, cleaning and packaging, possibly using mobile equipment (back of pick-up truck). The operation would involve individual farmers and groups of farmers, or be centered in the ASSP/PSA Bazaar. Reappraise the international market requirements and procedures (particularly export through Pakistan).

The interventions for improved production and processing should be set up as a package and introduced as part of the ASSP/PSA Bazaar strategy.

Most of the grapes in Afghanistan are grown in trenches, and it is unlikely there will be a conversion to trellises in the near future. A consultant, competent in grape production agronomy (for example nutrition and pesticides) and strong on harvesting, drying, and preparation for the market would be valuable.

Any recommendations to be made should be effective before the grape harvest of July/August, 1991.

#### 2.1.4. APRICOTS

The production of apricots is widespread in Afghanistan but with major concentrations in Kandahar, Zabul and Oruzgan. The most limiting factor is frost damage to the blossoms in February/March.

The main varieties grown are Shakarpura, Charmaz, Sardai and Nari. These varieties are budded on seedling apricot rootstocks. All of these varieties are pale-lemon colored and delicately flavored. Occasional trees are found with a distinctive apricot red color and are usually referred to as Large Red or Large French Red. They are regarded as being too acid for local taste.

There is a market for fresh fruit from Charmaz during May/June, but much of the fruit seen in the bazaar is bruised with very poor appearance. The later varieties, Sardai and Nari, do not normally demand a good price.

Dried apricots appear in two forms:

- The variety, Shakarpura, is dried whole with the stone retained. This is reconstituted by soaking in water and then cooking. The name Shakarpura means "very sweet." These dried apricots are very unattractive looking, but could have a place in the health food market if handled better.
- The second form is as a dried whole, or half with the stone removed. They are sun dried without sulphating and are heavily oxidized to a dark brown color. They are generally very unattractive looking, dusty, and unlikely to have a major place in the international market.

The kernels of the stones are salable and are eaten like almonds. For this reason, apricot varieties with bitter kernels are not liked. Most apricots in the developed world have bitter kernels.

There is one variety in Turkey, name unknown, which is reputedly a good apricot; it is a red color, dries well when sulphated, and has a sweet kernel. It will be investigated in July by Dr. Wakil, ASSP/PSA, and DAI in Turkey.

From a production point of view (under normal circumstances), it takes about five years to get apricot trees into reasonable-bearing and about nine years to get them into full-bearing. If there is to be a production intervention, trees of the desired varieties would have to be imported and followed up by local propagation. It was found from trial plots that the selected varieties were suitable. This has a time scale of at least twelve years and would depend upon research from trial plots, showing that the selected varieties were suitable.

The major constraint at present is the poor post-harvest treatment of the fruit, resulting in low-quality, dried fruit available for sale.

The introduction of sulphating to preserve both the color and quality of the fruit should be the first step to counter this problem. On-farm sulphating is possible and has been introduced in Gilgit where there are similar problems of heavy oxidation in sun-dried fruit.

Because it will not be possible to train Afghan growers directly, it will be necessary to train Afghan field assistants or potential extension officers.

Such training may be possible at the Tarnab Agricultural Institute Food Technology Department, NWFP, or at the Agricultural Research Institute Food Technology Department, Quetta, Baluchistan; training should also include techniques for grading and packaging for local and export markets.

While interventions in post harvest handling are relatively straight forward, problems with production interventions could arise. Dr Wakil, ASSP/PSA, is actively involved in looking for new varieties to replace existing ones. He has two large nurseries under his control in Pakistan and oversees a number of nurseries in Afghanistan. Any proposal from HVH on production interventions should be of a complementary nature to his work.

A possible consultant should have a good working knowledge of modern apricot processing and be capable of initiating a training program.

#### 2.1.5. ALMONDS

For the past 10-15 years, the demand for almonds produced in Afghanistan and Pakistan has not been great. In parts of Pakistan (for example Loralai), almond orchards are sometimes neglected because of low returns. In Afghanistan, the production areas are mainly north of Kandahar and, in particular, the Zabul area.

The varieties grown are mainly the thin or paper-shelled varieties; the most common are Kaghazi and, to a lesser extent, a more superior type, Mon pali. Kaghazi covers a range of thin-shelled types which do not appear to be dependent on cross-pollinating varieties.

In the two recent Agriculture Rehabilitation programs, FAO and VITA (DAI), a limited number of almond trees were introduced with varieties: Ne plus ultra, Non pareil, and Jordanella with Texas as a pollinator. No major intervention is foreseen with this crop.

#### 2.1.6. APPLES

Apples are only suitable at higher altitudes above 1,500 m, and the production area is relatively small (in and around Paktya, Logar, Wardak, and Upper Kunar).

Pakistan has developed a very strong apple industry in the last ten years, and it would be extremely difficult for Afghanistan to have any major impact on the Pakistani apple industry.

#### 2.1.7. POMEGRANATES

This is a popular fruit in Afghanistan and Pakistan. The juice is very popular as a squash or cordial and was canned by the Shakat Niwa Fruit Company in Kandahar, until it ceased operations in 1975. All of the juice extraction takes place in Pakistan, probably at Quetta.

The main concentration of pomegranate production is east and north of Kandahar, and Sarobi (north of Kabul). The most widely-grown variety is Red Kandahari, for both fresh fruit and juice abstraction.

Fruit splitting and internal rots are major problems. The first is thought to be caused by water/nutrient imbalance, but so far no cure has been found. The internal rots may be initiated by insect damage.

Propagation is relatively easy by cuttings.

This crop has good potential, and it seems to be within the scope of local farmers to carry out increased production.

#### 2.1.8. FIGS

The production of figs in Afghanistan is limited and is centered around Argandob (west and north of Kandahar). They are sold primarily as dried whole figs. Pakistan imports considerable quantities of dried figs from Turkey, seen on every barrow in fruit bazaars.

There is good potential for dried figs. This crop would probably justify a closer study by a consultant, leading to pilot trials.

## 2.1.9. OTHER FRUITS AND NUTS

### Olives (Nangarhar State Farm)

Although the two attached reports (Annexes IV and V) show enormous potential for the olive crop from these farms, the constraints are equally enormous:

- The ownership of the land is in dispute;
- The ownership of the irrigation water is in dispute;
- No one knows who should receive the proceeds from the sale of the olives; and
- Thinning of the windbreak of eucalyptus as recommended by a consultant was interpreted as, "the Americans cutting down the trees."

At present, neither ASSP/PSA nor USAID have any great interest in doing anything associated with these farms.

### Peaches

Peaches occur sporadically along with apricots - the earliest varieties appear on the market along with the apricot, Charmaz. Some of the local varieties are white fleshed and could have a niche market.

Early American varieties of peach and nectarine are becoming popular in Pakistan, and there may be room for some development in Afghanistan.

Pilot trials would be essential.

### Pine Nuts

These are harvested from the Chilgoza pine which is indigenous in Paktya. It is unlikely that this would be a growth industry in the near future.

### Pistachio

The main areas of pistachio production appear to be in the Northwest around Herat and, to a lesser extent, in the Southwest in the Helmand area.

None of the Bazaar areas of the ASSP/PSA are in recognized pistachio-growing areas, and development of this crop would, therefore, be most unlikely.

### 3. MEDICINAL PLANTS

Afghanistan has, in the past and even at present, exported a number of medicinal plants.

#### 3.1. LIQUORICE

This appears to be the most important of the medicinal plants and is exported largely in the root form. It is dug out of the ground mainly in the North Central area of Afghanistan and shipped out through Peshawar. While there is a comprehensive report on the techniques for obtaining an extract from the liquorice root (to be carried out at the Sugar Factory near Jalalabad), nothing seems to have been done, nor is it likely to be done under the present war-like conditions.

International Multi-Foods in Karachi has an experimental program to increase the quality of liquorice extract produced by them. Thus far, they have not overcome technical difficulties.

At present the major constraints, apart from the war, are:

- Uncertainty about availability in ASSP/PSA Zones 1 and 2;
- Non-existent quality control; and
- Transport difficulties.

Liquorice plants grow in the wild, and it is not known to what extent the continual digging up of plants for the roots will affect subsequent regeneration. This applies to any of the medicinal plants growing in the wild.

The possibility of cultivating such plants as liquorice is not known to the author, but may well be an area worth looking at.

#### 3.2. ASA FOETIDA

This is probably the second most important medicinal crop and is exported to India. The raw material is in the form of a resin which exudes from the cut stem of the plant. The plant's regenerative powers are not known.

It may, or may not, be possible to cultivate the plants.

In Afghanistan, it is produced mainly in the North Central area and, like liquorice, outside the ASSP/PSA area.

### 3.3. OTHER MEDICINAL PLANTS

Many of the other medicinal plants are in the form of seeds, and almost all are produced in the North, Central, and Western regions of the country. Whether they can be developed as cultivated crops in the ASSP/PSA zones of eastern Afghanistan is not known, and could warrant further investigation.

### 4. VEGETABLES

In the past ten years the decline in vegetable growing in the Eastern Province has resulted in a net import of vegetables into the Kandahar region from the Quetta area for four months of the year. As a consequence of the war, and particularly in the bitterly fought-over areas in the Eastern provinces, development of improved vegetable varieties has ceased. This compares unfavorably with the very active development taking place in variety testing and seed production at the Department of Agriculture and the Agricultural Research Institute in Quetta; at the Vegetable Botany Department and Vegetable Seed Production Project, Sariab; and the Malakand Fruit and Vegetable Development Project in N.W.F.P.

The Eastern provinces of Afghanistan and the Western areas of Pakistan are similar geographically, and they grow similar vegetables. These include melons (kharboosa and watermelon), cauliflower, tomatoes, peas, carrots, turnips, and onions.

There is an urgent need to appraise the present position of vegetable production (crop and seed). ASSP/PSA, using the full geographical distribution of the ASSP/PSA bazaar system, should set up pilot trials of vegetables shown to be successful (in similar geographical areas, of Pakistan or elsewhere). Pilot trials should be quickly followed by vegetable seed nurseries. A consultant with knowledge of irrigated vegetables and vegetable seed production in arid regions would be required (for example, R.A.T. George, Bath University).

It could be possible to develop dried vegetables; training is available at the Food Technology Department, Agricultural Institute, Tarnab, NWFP.

### 5. MUSHROOMS

Found growing in the wild, mushrooms attract a good price when offered dried in the bazaar. Supplies are seasonal and erratic. Possible cultivation would be difficult, particularly if an organic substrate is required (as this is almost nonexistent in Afghanistan).

6. DAMAGE ASSESSMENT SURVEYS

The extent to which a damage assessment survey could be carried out by the surveyors and what its relevance would be to the proposed interventions, were discussed at length with D. Garner, Advisor to the Planning, Programming and Policy Unit, ASSP/PSA; and Dr. A. Wakil, Senior Agronomy Advisor.

It was agreed that the figure of a 50 percent loss was a fair representation of the average reduction of the production base, and that this could vary from 20-100 percent depending on the intensity of the fighting in given areas.

It was also agreed that the purpose of the program was not simply to reestablish the prewar acreage but rather to improve what actually exists now. The acreage is unlikely to increase until the refugees return, the mines are cleared, and the water supply canals are repaired.

It was agreed not to proceed with a cross-border survey of damage assessment for horticultural crops, but to use the existing bazaar structure from which to make interventions. There are nine bazaars being activated at present: Senziri, Panjwai, Khowaja Hulk, Chagai Sarai, Baraki Rajan, Charkh, Yahya Khel, Check-E-Wardak and Shah Joy. These cover the geographical range of the crops for which interventions are proposed. It would not be feasible or desirable to work outside these areas.

7. EXTENSION

A major constraint to any crop improvement program in Afghanistan will be the problem of improving communication technology to growers, many of whom could be illiterate or semiliterate. The existing force of Afghan field assistants are, in many cases, graduates of the Faculty of Agriculture, Kabul University, but have no formal training in extension techniques. All of the proposed improvements in horticultural crops will require the extension of knowledge from one group to another. A formal training program in extension methods should be combined with intensive technical training.

8. RECOMMENDATIONS

- Grape quality should be improved by introducing better cultural practices (for example, fertilizer, pesticides).
- Raisin quality should be improved by introducing better drying, grading, cleaning and packing. Consultant required.
- Apricot quality should be improved by introducing better cultural practices (for example, fertilizer, pesticides).
- Dried apricot quality should be improved by the use of sulphating techniques and better grading and packaging. A consultant required.
- Pilot trials of early peaches and nectarines should be established.
- No action should be taken at present regarding the olives at the former State Farms in Nangarhar.
- Medicinal plants. These require investigation by a consultant who specializes in these plants and their associated extraction techniques.
- Vegetables require a review of the present situation, followed by recommendations of varieties for pilot trials and the setting up of nurseries for seed production. Consultant required.
- All of the above proposed activities to be carried out through the ASSP/PSA bazaar system.
- A formal extension/technical training course should be initiated.

A N N E X I:PERSONS MET/ PLACES VISITED

R. Smith	DAI Chief of Party
D. Garner	DAI
B. Haskell	DAI
J. Soden	DAI
Dr. A. Wakil	DAI
M. Kohistani	DAI
M. Noori	DAI
D. Haws	DAI Consultant
Dr. Azam Gul	Swedish Agricultural Survey of Afghanistan
A. Naik	Horticulturist SASA
Abid Latif	Area Manager, International Multi-foods, Peshawar
R. Eaton	UNDP/OPS, Peshawar
M. Keating	UNOCA, Operation Salaam, Peshawar
A. Fitzherbert	Co-ordinator Afghan Agric Rehabilitation, FAO, Islamabad
M. Williams	Save the Children Fund (USA), Peshawar
Shams Udin Ismati	-do-
Reference Centre	International Rescue Corps (IRC), Peshawar
M. Jespersen	Mercy Corps International (MCI), Quetta
D. Fast	-do-
Ex-Manager	Shakat Niwa Fruit Co, Kandahar (MCI Quetta)
S. Achekzai Duranni	Potato Botanist, Agric Research Inst. Quetta
N. M. Tareen	Director, FAO Horticultural Project, Agric Research Inst Quetta
Afghan ?	Dried Fruit and Nut Traders, Quetta
Wholesale Fruit Market	Quetta
Wholesale Fruit Market	Peshawar
M. Sharif	Program Officer, Save the Children Fund (USA), Quetta
A. Hurd	Director, The Mercy Fund (Olives), Peshawar
S. Masty	Dep Dir, The Mercy Fund, Peshawar
M. Kattak	Director, Tarnab Inst. Peshawar (Acting Director General, Dept of Agric. NWFP)
Col. M. Assadullah	DAI, Quetta
M. Weiss	Fertilizer Officer, DAI, Quetta
G. A. Lewis	Chief Agric Development Officer, USAID, Islamabad
P. E. Church	Agric Development Officer USAID, Islamabad
A. Rude	USAID, Islamabad

APPENDIX 2

PROSPECTS FOR AFGHAN CROP EXPORTS TO INDIA AND PAKISTAN

PREPARED BY  
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OF  
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FOR  
DEVELOPMENT ALTERNATIVES, INC.  
AND THE  
OFFICE OF THE US AID REPRESENTATIVE TO AFGHANISTAN

JUNE 1990

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## TABLE OF CONTENTS

### APPENDIX 2: PROSPECTS FOR AFGHAN CROP EXPORTS TO INDIA AND PAKISTAN

	PAGE
SURVEY OF AFGHAN TRADE IN PAKISTAN AND INDIA	1
FINDINGS REGARDING PRODUCTS MOVING INTO AND OUT OF PAKISTAN	4
Dried Fruits and Nuts	4
Fresh Fruit	9
Spices and Medicinal Plants	10
Other Products	14
SUMMARY OF COMPANY INTERVIEWS IN PAKISTAN	15
SURVEY OF THE INDIAN MARKET	25
SPECIFIC PRODUCTS IMPORTED INTO INDIA FROM AFGHANISTAN	30
SPICES AND DRUGS	37
COMPANIES CONTACTED AND THEIR PRODUCTS	40

## SURVEY OF AFGHAN TRADE IN PAKISTAN AND INDIA

### Introduction

This survey which was undertaken in June/July 1990, was part of a cash crop feasibility study undertaken by High Value Horticulture and Development Alternatives, Inc. for USAID under Contract No 306-0204-C-00-9829-00.

The aim of the survey was to obtain details of the structure and pattern of Afghan export trade in India and Pakistan and to obtain the views of traders and officials as to how rehabilitation efforts could best be launched.

### Background/General Notes

Production and exports of horticultural products to Pakistan have been severely reduced by the Afghan war. Major factors include: bombing; deliberate damage to orchards by both sides; conversion of orchards into mine fields; destruction of irrigation systems; lack of electricity, fuel and spare parts to operate irrigation pumps; destruction of processing facilities (for example, Kishmish khanas, special houses for drying raisins); movement of farmers and farm labor to top cities and neighboring counties; high "protection fees" charged by Mujahideen commanders; and high "toll charges" collected by various parties along transport routes, and so forth.

The effect of war on trade volume cannot be reliably quantified. Statistical tables provided elsewhere in this report provide details of how trade to India and Pakistan has declined. Some examples are:

- o In 1979/80, Afghanistan exported 35,253 tons of fresh grapes; of this, 27,389 tons (78 percent) went to Pakistan and 7,844 tons (22 percent) to India. In 1988/89, exports to Pakistan were down 68 percent while in 1987/88, exports to India were down 60 percent.
- o However, not all products have been affected in the same way. For example, exports of almonds (in shell) to India were 5 percent higher in 87/88 than in 79/80, while exports to Pakistan in 88/89 were down 98 percent over 79/80!

Many reasons may exist for these apparent inconsistencies. They might include:

- o Effect of war on specific areas of crop production. For example, the grape vineyards in Kandahar Province are reported to have suffered 50 percent-100 percent damage.
- o Development of alternative sources of supply (for example, the expansion of products from California, Turkey, Iran, and so forth, in the international market).
- o Changes in import policies/trade barriers in importing countries (for example, it is reported that India now has fewer import restrictions than before the war).
- o Changes in trade links (for example, many Afghan traders can no longer visit overseas markets due to passport restrictions, and many Pakistani traders cannot enter Afghanistan for diplomatic and security reasons).
- o Crop fluctuations due to natural causes (for example, frost damage and biannual bearing).
- o Opening and closing of cross border points (for example, the road between Kabul and Peshawar is now closed, thereby increasing the difficulty of moving Afghan melons into Pakistan).
- o Possible redirection of trade toward the USSR and elsewhere (unfortunately I do not have USSR import statistics or Afghan export statistics to check this possibility).

TABLE 1

PAKISTAN IMPORTS OF HORTICULTURAL PRODUCTS

(July 1988 - June 1989)

<u>No.</u>	<u>Product</u>	<u>Quantity</u> <u>(MT)</u>	<u>Value</u> <u>(000 P.Rs)</u>	<u>% from</u> <u>Afghan</u>	<u>%</u> <u>of Total</u>
1.	Grapes (fresh)	8,800	56,034	100	45
2.	Melon (kharbooza)	7,207	21,652	100	17
3.	Apples (fresh)	2,020	13,168	100	11
4.	Fodder Seed (Inc. Clover, Alfalfa)	1,069	6,046	n,a	5
5.	Apricots (fresh)	1,089	5,738	88	5
6.	Coriander Seed	1,207	4,449	n,a	4
7.	Pomegranate (fresh)	1,200	4,232	89	3
8.	Pomegranate Juice	797	2,855	n,a	2
9.	Liquorice Roots	535	2,718	n,a	2
10.	Raisins	516	2,110	100	2
11.	Cumin Seed (white)	152	1,907	n,a	2
12.	Almonds (in shell)	107	861	100	< 1
13.	Plant Parts for Perfumes, etc. N.E.S	262	860	n,a	< 1
	<b>TOTAL</b>	<b>25,296</b>	<b>124,876</b>		<b>100%</b>

N.E.S. = Not Elsewhere Specified

## FINDINGS REGARDING PRODUCTS MOVING INTO AND OUT OF PAKISTAN

### DRIED FRUITS AND NUTS

#### General

The major products are dried grapes (mainly raisins, but some sultanas as well), followed by almonds and dried apricots. (See import statistics for Pakistan.)

At present, the majority of dried fruit is reported to be entering Pakistan at Chaman in Baluchistan. The other main cross-border point is Wana in South Waziristan. Produce can go overland via Quetta, Sukkur, and Lahore and cross into India at Wagah and on to New Delhi. The majority for the Pakistan market is, however, reported to go through Quetta, but this was not verified.

There, produce is sold mainly by Pakistani commission agents, though some agents are Afghan. The commission is three and one-half percent. Buyers then pay Afghan refugee laborers to sort/clean/grade and repack the produce for export. From Karachi, the produce can go by sea to Bombay and other destinations. Afghan merchants in Quetta say they were dependent on Pakistani businessmen for exporting. As refugees they could not become members of the Chamber of Commerce and, therefore, could not obtain an export license from the Export Promotion Bureau. They were also not able to visit foreign buyers as they had no passports. We did, however, "meet" one Afghan who had obtained an export license through unofficial means. Throughout the war, Indian importers bought offices in Kabul, but, during recent years, they have been closing their offices, preferring to deal with exporters in Karachi. (See India notes later.)

There is one airline operating between Kabul and New Delhi, namely, Ariana Afghan Airlines.

A 15-ton truck from Kandahar to the Indian border costs about Rs 20,000. (Toll charges, customs, and so forth are extra.) The journey takes about three days. A 15-ton truck from Kandahar to Karachi is about Rs 18,000. Afghan traders in Quetta also complained about Pak government custom duties (for example, raisins, Rs 40/maund (Rs1/kg); dried apricot, same; almonds Rs3/kg).

## General Comments on Dried Fruits

Comments on specific products are included below. In general it is said that the quality of Afghan dried fruits has declined during the war and now offers considerable potential for improvement. Traders complained about inappropriate (oversized) packaging, lack of sorting/grading, lack of cleaning, short weights, mixing of foreign matter/dust/dirt, small size of dried fruits and nuts, wrong color, insects, blemishes and so forth.

According to one trader, an Afghan product of good quality generally sells for a higher price in India than the Californian equivalent. He said that Californian, dried fruits and nuts had a good appearance, were clean, and of good size, but had no taste! (I will try to check out this opinion in India where Californian almonds are important.)

## Dried Grapes

Pakistani traders/exporters said the market for dried grapes is good, but quality needs to be improved if Afghan raisins are to remain competitive in the world market. The two main types of raisin are Green Kishmish (made primarily from "Thompson's Seedless") and Red Kishmish.

Green Kishmish has a higher value than red. It is preferred in Pakistan, India, and Bangladesh where it is eaten without further preparation. It is sometimes mixed with other dried fruits and nuts. The Red Kishmish is preferred, especially in the West where it is used in cooking (fruit cakes, buns, and so forth).

The Green Kishmish comes in different types, and definitions seem to differ. They vary in size/shape and sweetness. The round ones come in different qualities ranging from "chalu," wholesaling for around Rs 500/37 kg; to No I Green, for up to Rs 1400 per 37 kg. "Chalu" is suitable for export to Bangladesh; the better quality Green Kishmish is in good demand in India. A "long" type of Green Kishmish is known as "Shindukhani." It fetches the highest prices (more than double the "round" type) at around Rs 1700-2800/37 kg bag. It appears that Afghan Green Kishmish is a unique product with its own market niche. We were told that the grape bunches are hung in special Kishmish Khana (Kishmish house) and left to dry. It is, therefore, more capital and labor intensive than the Californian method of sun drying the grapes on the floor between the rows of vines.

Red Kishmish was quoted by one trader as normally selling for around Rs 300/37 kg bag. "Manaka" is a large sultana (seeded), though not as important as the Kishmish raisin. A wholesale price of around Rs 1500-1850 was quoted.

Another dried grape (again not so important as Kishmish) is a black, seeded raisin (Rs 750-1000/37 Kg bag). (These could be "black raisin midgets" being substituted for Greek currants in Europe.)

A quality problem relating specifically to Kishmish is a smaller size than before the war. Presumably, size could be improved through better cultural practices and color. The green Kishmish should be green, and not yellow or golden. There has been an increase in yellow Kishmish which merchants have to separate, in some cases by hand picking. The more yellow Kishmish are sold to Pakistan or to Bangladesh; the better quality, green lots are exported to India. Producers should, therefore, aim to produce greener Kishmish, which might be achieved through better/more careful drying. The yellow ones may be a result of more light reaching the drying grapes, as a result of damage to the "kishmish khana" (drying houses).

According to one trader (others weren't asked) packaging could be improved by using wooden boxes holding 20kg (costing about Rs 12 less than fiberboard boxes) instead of jute bags.

### In Summary

- Generally good market for raisins
- Prices are higher for Green Kishmish, particularly "Shindukhani," though cost of production of green Kishmish is presumably higher than for red kishmish. (We, therefore, don't know which one is the more profitable crop for the grower.)
- Improve quality
- Improve size (large)
- Improve color (for example, produce a "greener," Green Kishmish)
- Eliminate short weight
- Clean, sort, grade, etc. before export from Afghanistan. (This would add value, save transport costs, and improve image.)
- Develop standard grades (USDA ?)
- Develop branding (associated with the higher quality lines and aimed at specific markets)
- Develop consumer packaging. One trader said that repacking the products in Karachi (to meet the requirements of different buyers) was preferred. In the future this job could probably be done in Afghanistan. Main markets for Pakistani exporters are India, then Bangladesh, and then Europe. (Sri Lanka is also mentioned sometimes.) Ikram Ullah of Liptons said he is not interested in the Indian market due to "dirty dealings" but is interested in products for Western markets (red kishmish, sultanas etc.). These should be of USDA standards.
- Supply should be assured - quantity and quality
- Learn from USA (and Australia) via tours, consultants, videos
- Look for new varieties
- Develop new products (for example, grape seed oil)

## Apricot (Dried)

The main type of apricot is a whole fruit including the seed, known as Shakarpara. (Shakarpara means "full of sugar.") Some types without a stone were seen, but do not appear to be so common. The main market for "Shakarpara" is India, where demand is said to be good. Europe is a secondary market.

Again quality control is a problem. Larger size apricots are preferred, though one trader said size is not so important if the following points are observed:

- o Should be white in color, not brown. Red dots on the surface (caused by disease) are not wanted.
- o Should be clean.
- o Should be free from insects which may damage the fruits during storage in godowns. Some stores are fumigated others are not. (It is uncertain whether fruits are infected before or after harvest.)

One trader said a 50 kg jute bag was suitable packaging provided the net weight was 50 kg, and not less. He also said that if the bag was lined with a local, natural product (made from palm leaves) it could double the life of the product. He said a plastic liner was not effective and could change the color of the apricots. (I think further research is required here.) Liptons (and no doubt others) is interested in the Turkish type of apricot for export to Western countries.

## Almonds

Almonds come in different types/qualities: They can be divided into hard-shell types, soft-shell types (paper or kaghazi), and shelled almonds (kernels). The hard-shell types are the cheapest (Rs 20-25/kg) and, hence, find a big market in Pakistan and India. These are followed by the soft-shell types which can sell for double the price of the hard-shell types (Rs 35-70/kg), then almond kernels at up to Rs 80/kg.

Afghan almonds, according to some opinions, taste better than the Californian type which are acknowledged to be more attractive visually. (I hope to check this out in India where Californian almonds have a much larger share of the market than Afghan almonds. See India notes.)

Meanwhile cleaning and size grading would seem to be relatively simple ways to improve the Afghan product, as would the development of standard grades and branding.

The question of taste is a difficult matter to resolve, but it should be considered before anyone starts recommending the conversion of Afghan almond orchards to modern Californian varieties. In the developed countries, researchers now have consumer taste panels to help select varieties for development and promotion. After various varieties have been established in trial plots in Afghanistan, such consumer panels could be utilized in Pakistan, India, and other potential areas. However, I will try to consult the "nut" dealers in India regarding consumer preferences. (See India notes for answer.)

### Pistachios

Afghan pistachio is not important in the trade - the main problem being its small size. Only the Indians like Afghan pistachios according to one trader. (This was confirmed - see India notes.)

### Pinenuts

Several people reported a good demand. The majority of pinenuts exported by Pakistani traders are said to be of Pakistani origin. Main sources in Pakistan are D.I. Khan and Bannu. Pine cones are collected from the trees and buried in the early spring for one month until the cone opens; the seeds are then extracted. Other treatments may be involved, but were not described.

According to Liptons, pinenuts are usually roasted and left with the shell. Western markets, however, want pinenuts unroasted and without shell. One problem is reported to be biannual bearing, with good years and bad years. Pakistan and the Middle East are reported to be the main markets.

### Figs (Dried)

Pakistani traders, did not express much interest, but Indian import statistics show that the demand for dried figs is not far behind that for dried apricots. (Perhaps more interest should be directed toward India?) No doubt quality can be improved as with other dried fruits and nuts. (See India notes.) Liptons has an interest in dried figs of international standards.

### Walnuts

Again, there was little interest among the Pakistani traders interviewed. Liptons said local walnuts cannot match international (US) standards. **Improve quality!**

## FRESH FRUIT

### Introduction

Fresh fruits for Karachi arrive via Chaman in Baluchistan, mainly from the Kandahar area. Unlike dried fruits, which are handled by commission agents in Quetta, most fresh fruits bypass Quetta and go straight to Karachi (and no doubt to other major markets in Pakistan).

Melons, apples, and apricots are also important, according to 1988/89, Pakistani import statistics, but do not appear to offer as much potential as Afghan grapes and pomegranates. At the time the Karachi wholesale market was visited, there was a glut of Kandari apricots. Personal observations revealed that the fruits were of a small size, uneven maturity (ripe and unripe fruits were mixed together), bruised, and overpacked in wooden crates lined with hay and Singapore newspapers. A retailer who was selling these apricots outside the market complained that too much hay had been used to reduce the quantity of apricots in the box. (Hay was presumably cheaper than apricots.) This example probably illustrates the potential for improving production and post harvest practices for all fresh produce. Developing exports of Afghan fresh fruits has potential, but logistics is a problem for the more perishable fruits.

### Pomegranates and Grapes

Pomegranates could be a good crop to start with as market studies show some interest in the Far East. If the supply/quality were upgraded and a buyer found, I believe United Distributors, Ltd could be persuaded to handle the crop. (Pomegranates could be resorted/repacked in Karachi and sent by sea to the Far East.) Quality problems (of splitting and also of a black fungus inside the fruit) are reported, but it is believed that bad fruits could be eliminated by careful inspection. Peaches/nectarines also have good potential. UDL would be particularly interested in working with "new" products (for example, nectarines?) which it could distribute and supply to the quality end of the market in Pakistan and any other potential markets. (They could be supplied on an exclusive basis - possibly along with branding.) Such projects might depend upon reefer transport. (Could reefer vehicles be supplied for pilot projects?) Return journeys to Kandahar/Kabul could possibly be used to export Pakistani seafood/dairy products/ice cream or out-of-season vegetables.

A large trader in Quetta's wholesale fruit and vegetable market informed us that for four months (April, May, June, July) about one or two trucks per day take vegetables from the Quetta market to Afghanistan. These vegetables include potatoes, onions, tomatoes, okra, and aubergine (eggplant). The potential for import substitution should be examined before, or in addition to, a consideration of exports. (My guess is that these vegetables are supplying Kandahar, and possibly the Kabul city market, which may be short of supplies due to local war damage and lack of labor/inputs.)

### Prices

Pomegranate (typical price ranges):

Quetta: Rs 120 - 200/15-16 kg crate

Karachi: Rs 150-250/13-14-15 kg crate, no standard weight

Grapes (typical price ranges):

Quetta: "Thompson's Seedless" (Kishmish),  
Rs 150/12-13 kg  
Shindukhani, Rs 200/12-13 kg

Karachi: Kishmish, Rs 150-210/12 kg crate  
Shindukhani, Rs 250-300-400/crate 12 kg  
Haita, Rs 100-150/crate

Imports of melons were disrupted last year due to closure of the main road from Kabul to Peshawar. Northeastern Afghanistan (not Kandahar) is reported to be the main source of melons (kharbooza) imported into Pakistan.

### SPICES AND MEDICINAL PLANTS

#### Liquorice Roots

There is considerable interest in liquorice roots, and almost everybody seems to be exporting this product from Pakistan. International Multi-Foods claims that MacAndrews and Forbes, Ltd of Philadelphia, USA is the largest processor of liquorice root in the world and buys a significant share of its supplies from Afghanistan/Pakistan. MacAndrews and Forbes, Ltd has offered to buy everything that IMF can supply them and to train Afghan growers as they have done in China and Iraq. The quality of the extract from Afghan liquorice roots is claimed to be very good.

The quality of the liquorice root itself, however, is not as good. Complaints of dirty roots of different sizes and thicknesses were heard. Also, it is said that roots of other

plants are mixed in to increase the weight/bulk. Supplies are irregular and heterogenous. It is reported that the liquorice is not cultivated, but collected from natural sources.

There is a demand for liquorice in many countries including Japan, Singapore, Malaysia, Sri Lanka, and India, as well as the more obvious USA and European markets. The demand is good, but supply is short. Price is around Rs 450-600/40 kg (Rs 11-15/kg). (A USA price of Rs 18-28/kg was quoted in the Chemical Marketing Reporter, Feb 90.) Good quality should be clean, light yellow inside the root (not red), and the roots should not be too thin. Again, the Afghans are paying good money to transport rubbish to Pakistan. One trader estimated that an 11-ton Bedford truck of liquorice root might include three to three and one-half tons of waste. The liquorice root is brought into Quetta and sold by commission agents.

Washing and grading (or sorting) are obvious processes which could be done to add value to the raw material.

In the mid-1970s, UNIDO designed a project to modify a sugar beet factory and to build of a special plant for processing liquorice and other plants. The local company which assisted the consultant was Afghanistan Plants Company, Kabul; Post Box 122; Kabul. One trader in India claimed that this company had a monopoly on liquorice exports from Kabul, though others denied this. (Was the project over implemented? Is it processing and exporting liquorice extracts and other extracts/oils?)

As with other crops, Afghanistan needs to upgrade the quality of its liquorice root. It should try to add maximum value to its raw materials by exporting the extract or various derivatives rather than the roots. Obviously the potential for improved production needs to be looked at as well.

#### Asa Foetida

This gum is reportedly collected from natural plants, not cultivated plants. According to India's 1987/88, import statistics, asa foetida is the second major Afghan export to India after raisins. Afghanistan supplied 94 percent of India's total imports of 715 tons, followed by Iran and Pakistan. The import value of approximately Rs 63 kg (which may not be a reliable indicator of the true price due to irregular trade practices) suggests that it is a relatively high value product. (Can it be more profitably cultivated on farms?)

India and, to a lesser extent, Pakistan were said to be the only markets for this product. However, none of the traders consulted in Pakistan mentioned this product.

## Cumin - Zeera

Afghanistan produces both white and black cumin, and exports both to India and Pakistan. (India is the larger market of the two.) It is reported that black cumin is collected from the wild and not cultivated, but some AID projects have encouraged the cultivation of black cumin as a substitute for poppy with success.

Black cumin is reported to be the higher value product of the two and is used for "gourmet" cooking. White cumin, the cheaper product, is used by most people for everyday cooking. Black cumin (kala zeera) comes in different qualities. The cheaper quality (known as "khara zeera") sells for around Rs 2000/40 kg; very good quality black cumin sells for Rs 6000-8000/kg. One trader believed the market to be very limited in size due to the high price and that, even if the price were halved, it would still be more expensive than the white cumin (safed zeera). White cumin is used by the mass market and sells for around Rs 700-800/40 kg. (Has anyone looked at the economics of growing the two different types? Perhaps the price of black cumin could come down considerably and still be more profitable than white cumin?) Presumably the price is a reflection of supply and demand, and not just the cost of production?

Pakistan itself is a major producer of both types of cumin, hence traders are more familiar with the Pakistani product. It was reported that Pakistani cumin is too expensive to compete on a world market. Also its quality is not as good as that from Turkey, China and Iran. The world price is said to be around \$800/ton while Pakistan white cumin is around \$1200-1300/ton (for good quality cumin from Nushki area in Baluchistan).

Afghan cumin is said to be of poor quality, dirty, and not packed in regular weights (for example, it is often short-weighted). However, one trader believed that if Afghanistan could upgrade quality to international standards and bring the price down to the world market price, white cumin would be a good crop to develop in Afghanistan. (Note: Above prices should be checked elsewhere.)

Good quality white cumin should have a green, not yellow color. It should be unbroken and without dust and other unwanted matter. The same trader advised the use of a different variety of cumin to that normally grown in Kandahar. He suggested growing the Iranian variety which has bigger seeds. If this is not available, the variety grown in Pishin could be used, because it has a better taste and aroma than the Kandahari variety.

Iran is said to produce the best white cumin which is exported to Europe via Dubai. Turkish cumin is cheap, because it is yellow and has dust.

The product should be packed in jute bags with a net weight of at least 50 kg. The bags should be machine stitched and properly sealed. This method of packing is suitable for export without any repacking, provided the seal remains unbroken. Afghans should see Iranian product/packaging for an example to copy.

### Coriander (Dhaniya)

Afghan coriander is also of poor quality, with up to 50 percent "rubbish" mixed with the seed. Good quality coriander was said to sell at Rs 7-15 /kg but Afghan coriander was selling at Rs 4-5/kg. Good quality coriander should have a very green color. Packaging should also be in 50 kg (net) jute bags. As one trader pointed out, exporting (from Afghanistan to Pakistan) a product with 50 percent rubbish means the transport costs per kilogram of good seed are doubled. One thousand, two hundred tons of coriander were exported to Pakistan in 1988/89.

### Poppy Seed (Khus Khus)

White poppy seed is in good demand in international markets according to several traders. It is reported to be a "side-line" of the opium industry, coming mainly from northeastern Afghanistan, but also from Pakistan. Supplies are being reduced due to the success of poppy substitution projects, hence the strong demand. India and Europe (French use it in some type of tea) are reported to be the main markets. India's import statistics for 1987/88, show that it imported 1,400 tons of poppy seed with 99 percent from Pakistan and 1 percent from Afghanistan. One Indian trader told me that poppy seed was smuggled across the border into Pakistan and reexported as Pakistani produce.

The quality of the Afghan product is not as good as that from Pakistan. One problem is the high percentage of sand and black poppy seeds. Waste, after cleaning, may be 10-15 percent. Maximum percentage of black seeds should be 3-4 percent. Black seeds can be prevented by roguing the poppy crop at the time of flowering (that is, removing those plants which have flowers of a different color from the rest of the crop). This is a practice which the Pakistani growers apparently observe, but which the Afghans ignore. A wholesale price of Rs 20-25/kg was quoted. (Chemical Marketing Reporter, Feb '90, quoted prices for Dutch poppy seed at Rs 27-34/kg and Turkish poppy seed at Rs 21/kg.)

## OTHER PRODUCTS

### Olives

An Afghan aid organization, "Mercy Fund" in Peshawar, has "adopted" a Russian-developed, olive farm with around one million trees. It is estimated to be capable of bearing a crop in 1990, worth US \$2-4 million, if the crop could be crushed for its oil. IMF in Karachi has already looked at the prospects for processing the crop and exporting the oil, and for preserving olives. The main problem is political: Who owns the farm and who would, consequently, keep the future profits? The farm is currently in the hands of the Mujahideen.

The farm would require an injection of capital for maintenance and harvesting. Equipment is also needed for extracting the oil. Options are to use mobile extractors or to move the crop into Pakistan for "crushing" there. A processing plant was built by the Russians in Kabul, however, its current condition is not known.

Some may say that if the oil or olives are exported by Kabul, the regime will benefit from the resultant income. True, but the "owners"/operators of the olive farm will get a share of that income which they might otherwise not get. If the raw olives are exported out of Afghanistan for processing in Pakistan, Mercy Fund says the crop has to be processed immediately. IMF says it could be safely transported to Lahore for processing. Who is right? At any rate, no one in Afghanistan will benefit from the income resulting from adding value to the crop.

If no one can come up with an immediate use for the crop, would it be possible to persuade someone to finance a maintenance program (to at least keep the orchard in good condition until a solution is found)?

### Fodder Seed

One of the major exports to Pakistan is fodder seed (for example, alfalfa and clover seed), though it comes under the heading of "grass seed" in Pakistani statistics. Apparently these seeds have a good market in the Quetta area, but I did not find out if they are utilized elsewhere. I believe a million kilograms would supply an area larger than Quetta.

Perhaps Cargills or Pioneer (both US companies with seed interests in Pakistan) could provide some sort of technical (marketing) assistance with some incentives from USAID? For example, they could provide mother seed and technical guidelines on how to grow the crop, rogue the crop, and harvest the seed; they could also buy the multiplied seed from Afghanistan without actually setting foot inside Afghanistan?

Isabghol (Plantago ovata)

Pakistan imported 20 tons of isabghol from Afghanistan in 1988/89. Unfortunately I was not able to meet with Hamdards who are reported by Haider to be importing isabghol from India. Haider says they are also planning to start production in Sind, and they also hope to help them grow it. Haider's horticulturist believes isabghol will only grow for two to three months during the cool season in Karachi. Hamdards wants to grow for its own requirements and for export.

There is said to be a good market in the USA. Is it possible to locate a buyer/buyers in the US and to determine requirements?

SUMMARY OF COMPANY INTERVIEWS IN PAKISTAN

1) Lever Brothers Pakistan, Ltd; Karachi

Interested in dried fruits and nuts - almonds, walnuts, figs, raisins/sultanas, apricots (Turkish type) pistachios, hazelnuts, pinenuts, and so forth, for Western markets.

Desired quality of international standards (for example, USDA). Assured supply of quality and quantity is necessary.

Other comments:

Not interested in dealing with Indian market because of their irregular trade practices.

Western markets wants unroasted and shelled pinenuts supplied primarily by Portugal and China. Western markets are also interested in sesame seeds - 100 percent white, and washed. They may be interested in liquorice as well.

They would like to have dried fruits and nuts already prepared for export (for example, cleaned, graded, and so forth); they could do this themselves in Pakistan, if necessary.

Comments were made about foreign consultants who come, ask questions, and then write up projects which sound very nice on paper, but in practice don't work out!

2) United Distributors, Ltd; Karachi

UDL are said to be the biggest distributors in Pakistan handling a range of internationally-branded, consumer goods and after-products for rural markets such as pesticides, solar panels, and so forth. They are very professional and dynamic.

They have also begun exporting dates to the USA, Canada, and elsewhere, and are now developing mango exports.

They are willing to consider exporting Afghan nuts and fruits (either fresh or dried) providing the supply is reliable and of the right quality. They would also like assistance in identifying overseas buyers. If they have a buyer and a quality product, they will do the rest.

They are particularly interested in "new" products. They are currently experimenting with branded fresh fruits in Pakistan for the top end of the market. New products would help them to differentiate their products from the rest of the market. They didn't give any examples, but I would suggest nectarines or pecan nuts as possibilities, or perhaps new varieties of almond, fresh grapes, or dried apricots (for example, Turkish style).

They pointed out that the problem with fresh produce would be its transport to Pakistan/Karachi. I suggested that reefer transport might help in the future. They asked if USAID would be willing to provide such equipment/vehicles for trial export projects. They also mentioned the problem of return loads. Seafood, dairy products or even Pakistani fresh produce (mangoes are in season at the same time as Afghan apricots) might be possibilities. Mangoes might be exported to Afghanistan and, if necessary, reexported by air/surface to Iran or the USSR.

### 3) Fresh Fruit Commission Agents Group; Karachi

Syed Gulami is Chairman of the Fresh Fruit Commission Agents Group. (He/they represent the interests of the fresh fruit commission agents in the Karachi wholesale market.) He is a commission agent himself; his company is SAA.

He mentioned problems such as the reduction of growing areas due to war damage and of the problems facing truck drivers (told by the government to use the proper roads, but also told by the Mujahideen to use alternative makeshift roads under their control). The drivers tend to listen to whichever party is strongest in a particular area.

There are often hold-ups along the way and, as a result, the quality of the fresh produce suffers. He also confirmed that the transporters have to "donate" money or goods to various parties along the way, adding to the cost of transport. He said there was a good market for Afghan grapes and pomegranates. Better quality produce or new varieties/products for trial marketing would be happily received by his company.

He said Afghan melons were of good quality, but it was difficult to get them to Karachi. The same was true for fresh vegetables.

4) International Multi-Foods; Karachi and Peshawar

- Mr. Amjad Rashid, M.D & C.E.
- Dr. Anwar Chaudry, Director
- Abid Latif, Area Manager, Peshawar

ASSP/PSA (Peshawar) has already established contact with this company. IMF's main business has been to supply food stuffs to aid agencies for the Afghan refugees. They have also exported various products, including dates.

They are interested in supplies of liquorice from Afghanistan and have already developed a relationship with MacAndrews & Forbes, a big US buyer. IMF would like to produce liquorice extract in the future, but would mainly be cleaning and grading the roots for export.

Regarding liquorice: They are not interested in investing in Afghanistan, but can arrange training for growers through MacAndrews & Forbes, provide laboratory services for testing samples, and buy the product from the producers.

IMF also has storage/repacking facilities in Dubai to assist in supplying international markets and to enable them to keep in close contact with international trade.

They are also interested in the olive farm (one hundred percent Mercy Fund) and have contacted overseas buyers and carried out some processing trials in Pakistan, using samples from the 1989 crop. Due to political problems (for example, the question of who owns the olives), this project has not progressed.

Other products of interest include morel mushrooms, sesame seeds, saffron, raisins, pinenuts and dried apricots. They also said that there is a good demand for medicinal herbs in West Germany.

5) Peer Bukhsh Food ( Pvt) Ltd; Karachi

- Haji Peer Bukhsh Fazal Rahim

A big trader, mainly supplying the Middle East, Bangladesh, and other countries with dried fruits and spices (interested in raisins, almonds, apricots, cumin, liquorice, poppy seed, and so forth). He is a major trade commission agent for pinenuts which come mainly from Pakistan.

His company doesn't supply India because of problems with L/Cs. Bangladesh is easier to deal with - interested in better quality and greater quantities of all products.

6) Peeyays Enterprises

- Abdul Rauf Tar Mohda
- Mohd Jawed Abdul Rauf

Peeyays Enterprises is a big trader in dried fruits and spices, and has an interest in most products. A major dealer in cumin, he started trading during Afghan war so he has not experienced a down-turn in trade, but has noticed a decline in quality standards. Supplies India and other countries. Happy to receive better-quality products from Afghanistan.

7) Merin ( Pvt) Ltd

- M. Futehally, M.D.

Merin has two "divisions" - one is concerned with the export of dry products including chilies, liquorice, and so forth. The other is concerned with agricultural inputs, particularly appropriate technology (for example, bio-gas, windmills, truck irrigation). Unfortunately, the director responsible for the export side was away in Japan, but Mr. Futehally said they were interested in Afghan products. At the moment they are exporting in a small way to about six countries including Korea, West Germany and Turkey.

8) Trading Corporation of Pakistan Ltd; Karachi

- Ali Anwar Soomro, Manager

Not very interested or active in marketing. Dealt only with dried fruits when an enquiry/request was received from overseas.

9) Haji Ghulum Farooq Bros/Sadat Bros.; Quetta

Both these companies are Afghan commission agents and merchants based in Quetta and dealing in dried fruits. They said trade had been reduced greatly as a result of the war. Their main problems were not having a passport to enable them to visit foreign markets and not having export licenses to export from Pakistan without the collaboration of a Pakistani partner.

10) Qamar Trading; Peshawar

Deals in dried fruits, spices, medicinal plants (crude drugs), and so forth. Said trade is now 20 percent of what it was before the war. Prior to the war they went to Afghanistan to buy products; now they rely on Afghan traders to bring the products to them. Imports are coming to Peshawar via Chaman (Baluchistan) and Wana in South Waziristan. Bearing in mind what I learned

later, I think it was the closure of the border near Peshawar (two years ago) rather than the war, that caused their decline in trade.

USEFUL ADDRESSES IN PAKISTAN

**Peer Bukhsh Foods (Private) Limited (F,N)**  
Peer Bukhsh Building-Veerje Street  
Jokia Bazar  
Karachi  
Pakistan

Tel: Karachi 237743 / 237376 / 2416971  
Telex: 23524 PBFDS PK

**Merin (Pvt.) Limited (F,N)**  
Dada Chambers  
M.A. Jinnah Road  
Karachi  
Pakistan

Tel: Karachi 223530

**United Distributors Pakistan Ltd (F)**  
1st Floor  
Hotel Metropole  
Abdullah Haroon Road  
Karachi  
Pakistan

Tel: Karachi 51377 / 524244-5 / 528585 / 529866  
Telex: 23356 UDL PK

**Lever Brothers Pakistan Ltd (F,N,S)**  
Karachi  
Pakistan

Tel: Karachi 510761 / 520240  
Fax: Karachi 510918  
Telex: 2729 LTEA PK / 2680 LEVER PK.

**Fruit Commission Agents (F)**  
House No. 1006  
P.I.B. Colony  
Karachi-5  
Pakistan

Tel: Karachi 411705 / 412306 / 411998

**Sadat Commission Shop (F,S)**  
Kiryana Dry Fruit Merchant  
Chuharmal Road  
Quetta  
Pakistan

Tel: Quetta 72976

**International Multi-Foods Ltd (F,S)**  
1163 Qudrat Manzil,  
Qazi Street  
Near Paradise Hotel,  
Peshawar Cantt.  
Pakistan

Tel: Peshawar 76222 / 73488

**Dry Fruit Merchants and Commission Agents (F)**  
2-17/15, Chuhar Mal Road,  
Quetta  
Pakistan

Tel: Quetta 70742

**Shazco Traders (F)**  
152 New Fruit Market  
University Road  
Karachi  
Pakistan

Tel: Karachi 414190  
Fax: Karachi 472183  
Telex: 23560 SHZCO PK.

**Abdul Rauf Tar Mohd (F)**  
Virjee Street  
Jodia Bazaar,  
Karachi  
Pakistan

Tel: Karachi 227252 / 220759  
Fax: 9221 736906  
Telex: 23449 ZAFAR PK.

**Trading Corporation of Pakistan Limited**  
Press Trust House 1.  
1 Chundrigar Road  
PO Box No. 1244  
Karachi-74200  
Pakistan

Tel: Karachi 211296 / 210515-19 / 32  
Telex: 2784 TCP PK.

**Sahara Food Industries (Pvt.), Ltd (F)**  
Head Office  
507 Uni Tower  
1.1. Chundrigar Rd  
Karachi  
Pakistan

Tel: Karachi 468322  
Telex: 23424 HNS PK.

**Brooke Bond Pakistan, Ltd (S)**  
Spices Division  
F/45 S.I.T.E  
PO Box 2705  
Karachi-28  
Pakistan

Tel: Karachi 294010 / 293338

**Fuqra Enterprises (M,S)**  
149-150  
Hotel Metropole  
Karachi  
Pakistan

Tel: Karachi 510832 / 513981 / 512051/149  
Telex: 24421 FUQRA PK.

**Universal Impex (F,M,S)**  
Alibhai Bldg. No 1  
Muljee Street  
Off Chagla Street  
Karachi-2  
Pakistan

Tel: Karachi 22 81 89 / 225801  
Telex: 24409 UNION PK.

**Merin (Pvt) Limited (F,N,)**  
2nd Floor  
Dada Chambers  
M.A. Jinnah Road  
Po Box 4145  
Karachi  
Pakistan

Tel: Karachi 221783 / 233595 / 231332  
Telex: 24675

**MB Sons & Sons (F,N)**  
Suite 810, 8th Floor  
Uni Plaza, 11 Chundrigar Road  
Po Box 902  
Karachi  
Pakistan

Tel: Karachi 223533  
Telex: 23187 MBSON PK

**Hamdard Dawakhana (WAQF) Pakistan (M)**  
Al-Majeed Hamdard Centre  
Nazimabad  
Karachi  
Pakistan

Tel: Karachi 616002 / 616001  
Telex: 24529 HAMD PK

**Peshawar Fruit Company (F)**  
125 New Fruit Market  
University Road  
Karachi  
Pakistan

Tel: Karachi 410350

**Quetta Trading Company (F,N)**  
Yar Mohammad Paracha Bldg.,  
Mohd. Feroz Street  
Jodia Bazaar  
Karachi  
Pakistan

Tel: Karachi 223473

TABLE 2

INDIA'S IMPORTS OF HORTICULTURAL PRODUCTS FROM AFGHANISTANAPRIL 1987 - MARCH 1988

No	Product	Quantity (MT)	Value (000 IRS)	% of Total	% from Afghan
1	Raisins	3,487	43,684	21%	85%
2	Asa foetida(Gum)	681	43,135	20%	94%
3	Sultanas & Other Dried Grapes	2,399	25,809	12%	45%
4	Almonds (in shell)	1,860	24,000	11%	24%
5	Grapes (Fresh)	3,179	19,965	9%	100%
6	Pomegranate (Fresh)	1,478	9,692	5%	100%
7	Almonds (Shelled)	558	7,570	4%	80%
8	Other Fresh Fruits N.E.S	777	5,774	3%	93%
9	Apricots (Dried)	365	5,665	3%	93%
10	Figs (Dried)	326	4,628	2%	100%
11	Cumin (Black)	243	4,115	2%	99%
12	Cumin (other than Black)	151	3,582	2%	96%
13	Liquorice Rocts	631	3,286	2%	70%
14	Other Dried Fruit NES	232	2,514	1%	95%
15	Hazlenuts	156	1,675	<1%	100%
16	Mixtures of Dried	59	1,156	<1%	100%
17	Other Balsam/Oleo Resins, NES	24	1,069	<1%	<1%
<u>TOTAL</u>		17,072	211,599	100%	

Source: Official Trade Statistics: Government of India

## SURVEY OF THE INDIAN MARKET

### Background

According to trade statistics for the year 87/88, main imports from Afghanistan were raisins/sultanas, asa foetida, almonds, fresh grapes, and pomegranates. However, since November 1988, imports of fresh produce are reported to have declined drastically. This corresponds to the reported drop in imports of melons (from the Kabul area) into Pakistan. Basically the main route for fresh and dried produce was Kabul - Peshawar - Lahore - Amritsar - Delhi. This route has been closed at the Afghan/Pak border near Peshawar. Alternative routes via Chaman and Wana are generally too long for perishable products.

It was reported that India allows imports of fresh fruits from Afghanistan only as a special concession. Normally, imports of fresh fruits are not allowed (though the 87/88 trade statistics do show small quantities from Pakistan and Nepal).

Grapes and pomegranates were the two main fresh products imported prior to the war, but during the past five years (possibly spurred on by the shortages caused by the Afghan war), India is reported to have developed her own production of grapes and pomegranates. India is now exporting grapes to the Middle East.

The general picture regarding fresh fruits: Although India is currently prepared to accept Afghan produce, it actually no longer NEEDS them, and, anyway, Afghanistan is not able to deliver them! Fresh fruit exports to India, while possibly offering some scope for development, do not appear to warrant too much attention UNTIL the transport situation is improved.

### Transport Links

Between Kabul and New Delhi there are 7 cargo flights and another three cargo flights between Kabul and Amritsar. Some of these flights are aircraft belonging to Indian Airlines, but they are operated by Ariana Afghan Airlines. Air freight rate is around Rs 6.50/kg; by road the rate is around Rs 2/kg. The Indian government had looked at the possibility of exporting meat to Kabul in refrigerated trucks, but it was not possible due to Mujahideen intervention.

It is estimated by one informed trader that about 70 percent of dried fruit imports comes to New Delhi, 20 percent to Amritsar, and 10 percent to Bombay.

Smaller consignments of dry fruits are sent by air, but the bulk comes by road. Often trucks travel in convoys of 10-20. The goods are transferred to either Indian trucks or trains at the Pak/Indian border between Lahore and Amritsar.

Previously (that is, before the closure of the Pak/Afghan border near Peshawar) the majority of dried fruits came to India via Kabul, Peshawar, Lahore and Amritsar. Now they come via Kandahar, Chaman, Quetta, Karachi and Bombay. The split is not known, but it is believed that the overland route is still more important than the sea route.

The majority of dried fruits imported from Afghanistan into India are said to originate from the Kandahar region or, perhaps more accurately, south of the Hindu Kush rather than from the North. The split varies depending upon the commodity. In the case of raisins (the main item), about 75 percent is from the South and 25 percent from the North.

Before the closure of the Peshawar cross border point, about 80-95 percent of the dried fruit from the Kandahar region went to Kabul for export to India and elsewhere. (Note: European consignments are reported to go via Tashkent and Moscow or Riga.) Most dried fruits were formerly cleaned/sorted/graded/packed in Kabul.

Since the closure of the Peshawar border point, only about 5 percent goes from Kandahar to Kabul; the other 95 percent goes south to Chaman. Of the 5 percent which goes to Kabul, some is cleaned and packed in Kabul and returned to Kandahar for export; some is sent by air to India; some is consumed in Kabul.

Items referred to by Indians as "crude drugs" (including asa foetida, liquorice, and cumin), are primarily exported via Chaman, Karachi, and Bombay. One trader estimated that 95 percent of "crude drug" imports from Afghanistan came via Bombay.

It was confirmed in India (as reported in Pakistan), that most of the exports from Afghanistan to India were traditionally handled by Indian companies having offices in Kabul and India. According to one trader, the only Indian companies allowed to export from Afghanistan were those which were registered with the Afghan government in 1940. At that time about 50 Indian companies were involved, but now only 10-12 Indian companies are actively exporting from Kabul. These companies also deal in imports into Afghanistan from India and other countries.

One trader complained that these 10-12 companies had a very strong position regarding exports of dried fruits from Afghanistan to India and were monopolizing the trade. He said that exports could be doubled if the Afghan government were to allow other Indian companies to open offices in Kabul (that is, new competition would result in lower prices in India). Talks with some of the concerned companies suggested there was some truth in this complaint - though the high prices are also due to the shortage of supplies, regardless of any unfair play by the Indian exporters.

Most of the traders contacted said they were buying most of their supplies of Afghan produce from the exporters in Kabul, but some said they were also buying, to a lesser extent, from "agents" in Pakistan. (Note: An exporter in Karachi said that India was tending to buy more from Pakistan than in the past due to the difficulties in trading with Kabul.) With regard to dried fruit products originating from Kandahar, please note that the term "Kandahar" may include neighboring provinces (for example, Zabul which is the main source of Kishmish for India). These products are still largely in the hands of the Kabul-based Indian exporters even though they are physically moving south to Chaman.

#### Import Procedures

Imports of fresh fruits are still controlled by the Indian government through NAFED (National Agricultural Cooperative Marketing Federation of India (Ltd)). Private traders have to be registered with NAFED, and they have to provide copies of all documents showing details of the consignment (that is, supplier, quantity, quality, price, packing, period of shipment) to NAFED before permission to import is granted. L/Cs have to be opened with the State Bank of India in London.

Importation of dried fruits is not as heavily controlled. Importers require an import license issued by the Chief Controller of Imports and Exports. The license specifies a certain value up to which the importer can import certain goods. This value depends upon the company's past export performance. Unlike fresh fruits, the company can import from anywhere it chooses. For this reason many companies have been importing Californian almonds during the past few years, rather than Afghan almonds which are preferred by Indian people, but are in short supply.

One trader interviewed had just received his latest import license on the day of my visit, and he said he would probably use it to import Californian almonds rather than Afghan, because it was easier and less risky.

One trader explained that there was no banking system in Kandahar. He said traders would buy the product from the farmer for cash. The cash is bought from money dealers by giving them a "demand note" which I understand is basically a "home-made" check which says, "Please pay 'X' amount of Afghanis to Mr 'Z' within 'Y' days." The money dealers charge 7 percent commission for this service. The "demand note" eventually ends up in Kabul which is where the banks are receiving payments for exports made through L/Cs opened by Indian importers. The Indian importers pay open the L/Cs in US\$.s.

From what I gathered in Pakistan, those products which are taken to Pakistan and sold by commission agents in Quetta are presumably sold in exchange for Pakistan rupees. Therefore, it is assumed that the party which exports the Afghan produce from Pakistan (whether they be Afghan or Pakistani) is the party which receives the hard currency. Thus Pakistan earns the hard currency, not Afghanistan. If so, it means (I believe) that one cannot develop a horticultural export project in Afghanistan without involving Kabul-based companies and Kabul-controlled banks, if it is to earn "hard" (that is, US \$) currency.

#### Comments by Indian Importers on Afghan-Indian Trade

Regarding Afghan products passing through traders in Quetta: Several Indian importers said the quality was not as good as that being exported by Kabul-based exporters. This corresponds with the comments from Pakistani exporters about the poor quality of Afghan produce. Most Indian traders blame the Mujahideen, not the Afghan government, for the collapse of Indo-Afghan trade in the last 18 months.

I also understand that the closure of the cross-border point close to Peshawar is a result of the Mujahideen action. The border closure has also had a negative impact on dry fruit exports because the majority are no longer cleaned/graded/packed in Kabul. The quality is down and the cost of transport to India has been increased, thereby making the product more expensive. Both of these factors must have made Afghan dried fruits less competitive in the Indian market. Please note that although the majority of dried fruits exported to Pakistan and India are no longer cleaned/graded/packed in Kabul, these operations are still being done in Quetta and possibly Kandahar, Chaman and Karachi (but not to the same standards as before).

One Kabul-based, Indian exporter also claimed that Afghan traders who are sending goods to Pakistan for reexport (without any involvement in Kabul) are not paying the taxes to the Kabul government which Kabul-based exporters are paying. For this reason, he said the Pakistani reexports had an unfair competitive advantage.

Before the Afghan war, Indian exporters and importers were able to go to Afghanistan and visit the farms themselves with their local supplier. They were able to see the product before they purchased it and were able therefore to select or reject the various qualities available. They also observed and checked the various post-harvest operations, including packing. The result was they were able to buy the quality they required at a competitive price. Now they cannot freely and safely visit the farms in Afghanistan. Instead they are largely in the hands of the few exporters in Kabul, and more or less have to accept what is offered.

One Indian government official told me that the Kabul government also recognizes the importance of horticultural products to the national economy and was keen to develop exports.

#### Other General Notes:

- 1) The secretary of the Indo-Afghan Chamber of Commerce listed the following points as constraints on the development of imports from Afghanistan:
  - Oligopoly of Indian traders in Kabul
  - High import duties
  - Poor quality
  - Trade routes are too long. Delivery is slow and unreliable due to closure of border at Peshawar and interference by Mujahideen.
  - Unable to visit/deal with producers
  - Unstable Afghan currency
- 2) SGS, (an Australian company, I believe), is involved in checking the quality of agricultural products before export from Bombay. I believe they are operating throughout the world - may be worth contacting regarding products going into India, or perhaps in setting up quality control of exports from Afghanistan in future.
- 3) Ariana Afghan Airways - believed to have flights from Kabul to: Amritsar, New Delhi, Tashkent, Moscow, Prague and Dubai.
- 4) EIU (Economist Intelligence Unit) Country Report, No 2, 1988, Pakistan/Afghanistan
  - Reported that 60,000 tons of raisins and other dried fruits were exported in 1987/88, valued at Af 106 million.
  - Exports of karakul pelts amounted to \$7.3 million. Of the 411,000 pelts exported, 363,000 were said to have been sold through the LONDON market. Major markets for Afghan pelts are the USA, UK, West Germany, France and Italy.

- 5) Afghanistan has domestic airports (though many are damaged) at:

Kabul	Farah	Kuduz	Mazar-e-Sharif
Fayzabad	Nimroz	Kandahar	Qualai Nan
Maymana	Jalalabad	Khost	Cheghoهران
Herat	Gardez	Helmand	

In 1988, it was reported that repairs were taking place at the airport in Kandahar.

- 6) State Bank of India in London maintains an ESCROW account for Afghan exports of fresh fruits - the proceeds of which are meant for imports of Indian non-traditional items, as agreed under an M.O.U. (Memorandum of Understanding) between the governments of Afghanistan and India.
- 7) Contacted the Embassy of Afghanistan in New Delhi - but not able to help very much as their commercial section has been closed for some years. They are considering opening it again soon.
- 8) Understand that UNDP has agricultural development projects based in Kabul?
- Perhaps UNDP Headquarters can provide information, etc?
- 9) Most imports in India are paid for on L/C basis, but some on "collection" basis (? perhaps "bills of exchange" method of payment). Interesting to note that importers have to insure goods from Afghanistan in order to open L/C.

## SPECIFIC PRODUCTS IMPORTED INTO INDIA FROM AFGHANISTAN

### Introduction

Raisins are reported to be the main dried fruit coming from Afghanistan to India, followed by almonds. This corresponds with the import statistics for 1987/88. In general terms, all the dried fruits from Afghanistan are considered to be superior to products from other countries, including India. Prices are generally higher than for other products. Demand is good, but supply is short. At the moment, however, New Delhi has too much Afghan dried fruits in storage. After the Russian troops left Afghanistan, the New Delhi importers anticipated a big battle between Kabul and the Mujahideen, and a consequent drop in availability of produce. They stockpiled products in anticipation; however, the battle never materialized and the supplies continued to come, resulting in a short-term glut. It is expected that the stores will empty from September onward, since that is when the major Hindu celebrations begin and when

most dried fruits are eaten. According to one trader, another variable in the complex picture was the closure of the Peshawar border which prevented the export of fresh grapes in 1989. These grapes were consequently dried, resulting in a higher production of raisins than in previous years.

### Raisins

The green Afghan Kishmish is generally preferred by the Indian market. It is considered to be a natural product (that is, naturally dried and without any chemical treatments such as sulphur). However, India has now started to produce raisins, though these are artificially dried and do not have the same desirable color, taste and texture. Hence the Indian product sells for a low price and is used for industrial and cooking purposes. Due to its low price it has become an important item for the dry fruit trade, and has captured the market from the lower qualities of Afghan raisin; thus, Afghanistan needs to concentrate on higher quality products. Some optimists believe that India, over the next few years, will be able to develop raisins which can compare with the higher quality raisins from Afghanistan. One trader thought Afghan raisins had another ten years at least.

### Duties on Raisins

Imported raisins attract very high import duties. These duties are not based upon the invoice value, but on the grade of the consignment; customs assessable rates are assigned to each grade. In June 1990, the rates for the main types of Kishmish (seedless raisins) were:

Chalu (the lowest quality)	\$1.10
1 X 2	\$1.30
1 X 1.5	\$1.40
1 X 1	\$1.55
Shindukhani	\$2.75

A customs duty of Rs 35/kg + 5 percent surcharge is then charged regardless of the grade. This means the lower grade "Chalu" attracts a duty equivalent to approximately 186 percent, while the top quality Shindukhani attracts a rate of approximately 78 percent. One trader suggested that the import rates should be lowered for the traders. He said raisins were also being imported from other countries such as Iran (via Dubai), China, and Australia, but their quality (in terms of color, taste, texture and shape) is not as desirable as that of the Afghan product. The main competition for the Afghan raisin is the Indian raisin because of its price. The Indian raisin sells for around 25-60 percent of the price of Afghan raisins.

The majority of Afghan raisins are packed in 1 kg plastic bags. Between 10-20 of these bags are then packed in a wooden case which is then wrapped in a jute cover and stitched up (presumably to prevent pilfering). Twenty kg + used to be the standard weight, but apparently one importer tried a smaller pack and found it to be very successful. (Presumably the larger pack of high-grade, Afghan raisins was too expensive or too slow moving for some retailers.) When asked why fiberboard cartons were not used, traders replied that the boxes have to withstand a lot of physical handling between Afghanistan and the Indian retailer.

The Indian and Australian raisins/sultanas which were seen in the market were packed in fiberboard cartons. Some Afghan raisins packed in 1 kg plastic bags were seen. They were from a Kabul exporter, and the plastic bag had been printed with some writing, decorative panels, and a brand name - but the visual appearance of the pack was poor by Western standards. As the rates stand, it suggests that the lower qualities must have a hard time competing with the Indian product, and no doubt the Indian Government has set the rates in this way to protect Indian producers. One can also appreciate now why one exporter in Pakistan said India was a difficult market and required "A1" quality.

#### Sundakhani or Shindukhani Raisins

The "Shindukhani" raisin is the best raisin in the world as far as India and Pakistan are concerned. However, it was said by one trader to represent only a small proportion of Afghan raisins (one estimate was 2 percent). When asked why it is so expensive, the usual reply is that it can only be grown in special soils/climates and that it is very sensitive. It is said to come from the Khandahar area. Obviously some efforts should be made to find out if it can be grown as easily as, and more profitably than, other grape varieties. Failing that, production should be aimed at the other high quality grades. The terms "1 X 1" (spoken "1 by 1", "1 X 1.5", and "1 X 2") refer to the relative amounts of dark-colored raisins among the more desirable, green-colored raisins. "1 X 1" has the minimum ratio of dark colored raisins, and "1 X 2" the highest. One trader said that if the trucks bringing raisins from Afghanistan to India were held up in a hot place, the number of dark-colored raisins would increase. Another trader spoke of another grade which he termed "selected" and placed between "Shindukhani" and "1 X 1" in terms of quality.

It was not established whether the 1 kg pack is a consumer pack or perhaps a retailer pack. Whomever the pack is intended to benefit, it would seem there is scope for developing a good quality consumer pack, perhaps of a smaller quantity (for example, 250 grams or 500 grams). The pack would offer

convenience and hygiene, and it could be used as a means to communicate information about the product, including its benefits.

Other types of raisins and dried grapes are imported from Afghanistan including the Sultana known as "Manaka" in Pakistan or "Abjosh" in India, but the Green Kishmish is the Afghan raisin which traders are most interested in.

Afghanistan should try to improve the quality, and concentrate on increasing production of the higher qualities of Green Kishmish (since the lower qualities face strong competition from the Indian raisins). The development of a modern consumer pack for the modern, wealthy, Indian consumer should be investigated.

### Almonds

The major share of the Indian almond market is taken by the U.S.A with about 70-80 percent of the market. US almonds are reported to have been in India for around 15 years, but as a result of the mortgage of Afghan almonds and the liberalization of imports, they have increased their share dramatically during the Afghan war. Consumers were at first reluctant to purchase the US almonds as they are considered inferior to Afghan almonds. However, due to their lower price they have been very successful in penetrating the Indian market.

Compared with US almonds, Afghan almonds are said to have sweeter kernels, more protein, more oil, and better taste. Apart from their higher price, the other major drawback is that they usually contain a few bitter almonds. This point was mentioned by nearly every trader who spoke about Afghan almonds.

Almonds from other countries, particularly Iran and Australia, are also in the market, but Afghanistan's main competition is California.

To increase exports, the problem of bitter almonds should be eliminated and other quality aspects should be improved. For example, large size is desirable and uniformity in terms of size and color is also desirable. Simply grading the almonds into different sizes would probably do much to improve their appearance. Presumably, if production is increased, the prices of Afghan almonds will fall; this should result in capturing some of the market currently supplied with US almonds. (Whether increased sales and lower prices is a good thing or not, is another matter.) New production should concentrate on the higher quality types and varieties.

Either some review of literature or laboratory work should be done to scientifically compare the Afghan almonds to US almonds with respect to nutritional value and eating quality (that is, protein value and sweetness).

If positive differences can be proven, this information would be valuable for promotional purposes. The protein value in particular would be interesting since many people in India are vegetarians. Perhaps also, Afghan almonds could find their own niche in Western markets because of their taste and nutritional value. Kernels of these varieties sell for around Rs 170/kg compared with the kernels of the US varieties at Rs 150/kg. During shelling, the brown skin of the kernel can be damaged exposing the white kernel. This damage is called "touch" in India and is most undesirable.

A popular Californian brand of almonds in the New Delhi market is the "Blue Diamond." Woven polypropylene sacks were seen holding 50lbs (22.68 kg) of "non pareil" soft-shell almonds. Similar type sacks were seen, but with the name "Chada" Bombay. This company, based in Bombay, is reported to be a big commission agent for almonds.

Afghan almonds were seen packed in jute sacks with a polyethylene liner to prevent water/weight loss. One trader reported that soft shell varieties were packed in 28 kg sacks, while hard shell types come in 40 kg sacks. The more expensive qualities were also packed in wooden cases, particularly around the festival period when demand was strongest.

The trader explained that the Indian market is already over-supplied with almonds. This was due to the liberalization of imports which encouraged many companies, who were not previously involved in dried fruits, to import almonds from the U.S. Subsequently the price of almonds in India has dropped over the past two years. (One trader believed imports had doubled and said prices had dropped by approximately 25 percent.) Another trader said that Americans were pressing the Indian government to increase imports (perhaps doubling imports). He talked about Americans "dumping" their almonds in India.

## Duties on Almonds

Custom's assessable rates for almonds in June 1990, were as follows:

o Almond kernels	\$3.50 shelled
o "Sittarbai"	\$3.25 in shell
o "Kherodini"	\$2.00 in shell
o Soft-shell (including Abdul Wadi)	\$1.75
o "Gurbundi"	\$1.75 hard shell
o Hard-shell	\$0.80

The import duty for all these types (except for kernels) was Rs 28/kg. "Sittarbai," "Kherodini," and "Abdul wadi," three Afghan varieties, are very much in demand and short in supply - hence their higher value. They are said to come from northern Afghanistan, not from Khandahar. They all have large kernels and are soft-shelled. "Abdul wadi" is the biggest; it is not as soft as the other two and requires one's teeth to break the shell. "Sittarbai" wholesales for around Rs 170/kg and "Kherodini" for Rs 120/kg, compared with the Californian soft-shelled variety, "Non Pareil," at around Rs 100-110/kg. One trader said that these three Afghan varieties are not seen very often in the market due to short supply.

## Comments

Question: Can "Sittarbai" and the others be grown in almond-growing areas in southern Afghanistan? Do these varieties give economic yields and would they still be profitable at lower prices?

Afghan hard-shell varieties include "Gorbundi," "Girdi," and "Kalati." These sell for lower prices than the soft-shell varieties. But it is interesting to note that a small industry has developed in New Delhi and Bombay, whereby companies are buying bags of Californian almonds (soft-shelled) and employing cheap labor to shell the almonds and sell the kernels. The Californian almonds can be bought for around Rs 100-110 /kg, while the kernels sell for around Rs 150/kg. It was reported that 1 kg of almonds will give around 700 gm of kernels.

## Other Dried Fruits

Raisins and almonds are the two main dried fruits in the Indian market. Although demand is strongest during the winter season (from September on), they are reported to have a demand all year round. Other dried fruits, apart from pistachios, are reported to be more seasonal with the main period of consumption beginning with the major festivities in September.

## Pistachios

According to reports in Pakistan, Afghan pistachios are only popular with the Indians. This was confirmed in India; they said they prefer Afghan pistachios rather than the better-known Iranian products, though some of the small Afghan-type pistachios are also grown and exported from Iran. (The Afghan pistachio is said to come from wild trees in Herat, grown in an area which straddles the Iranian border.) Afghan pistachios, although small in size, are favored by Indians because of their strong taste and because they are green throughout the kernel - this results in an attractive color when the kernels are chopped or sliced and sprinkled on various sweet dishes. Supply is reported to be short and prices high at around Rs 320/kg wholesale; the Iranian Pista (of larger size) sells for around Rs 170/kg. One trader said that many of the Afghan pistachios in the Indian market are smuggled into India in personal baggage. (Almond kernels are also brought in personal baggage.)

It would seem that rather than convert the wild trees into cultivated varieties, one should consider the possibility of commercially cultivating the wild varieties on a more intensive basis. The higher price, paid for wild Afghan pistachios, is unlikely to compensate for the lower yields. If the wild type can be cultivated more profitably than cultivated varieties, could a niche for Afghan pistachios be carved in the developed countries bearing in mind their flavor and attractive natural color? Both attributes are becoming increasingly desirable in sophisticated food markets.

## Apricots

The dried apricot "Shakapara" is well known in India, but the Turkish type is not. Not too much was said about this product except that demand is seasonal. Quality-wise, the size has decreased during the war (perhaps due to poorer irrigation/absent labor). Refer to the comments on "Shakarpara" in Pakistan.

## Figs

Dried figs (anjeer) are of similar importance to dried apricots. Again quality has suffered during the war. The size is much smaller than before and the color less white. Presumably if quality is improved, demand will increase. It was also noted that the traditional form of presentation is to thread the figs onto a rope of straw. Perhaps alternative methods and materials for presentation and packing could be developed - likewise for dried apricots which could be sold like sweets in attractive plastic pouches.

## Hazelnuts and Plums

Hazelnuts appear in the import statistics but no comments were heard or samples seen. This may have been because they are not as important as raisins and almonds and/or because I rarely enquired about them and did not know their Hindi name.

Dried plums from Afghanistan were seen and tasted. They were rather sticky and packed in a jute sack, hence pieces of jute were stuck to the fruits. They were small in size (similar to the size of a cherry) and had a tart but pleasant taste. Judging by the small size of the fruits and their tart taste, it seems likely that they are from some type of local, wild-seedling variety. Perhaps with better post harvest handling and improved packaging they could be made into a more desirable product, both for the Indian market and again for a niche in the Western and Far Eastern market.

## SPICES AND DRUGS

Asa foetida and liquorice are by far the two most important non-fruit exports from Afghanistan into India, representing 23 percent of all horticultural imports into India from Afghanistan.

### Liquorice Roots

As in Pakistan, this product is in high demand and supply is short. (One use for liquorice in India was reported to be as an ingredient in Vick's cough drops.) One trader claimed that the Afghanistan Plants Company in Kabul had a monopoly on supply, but other traders did not believe this was true. The same trader said the company was exporting liquorice root to India and liquorice extract to Japan. It is reported that Afghans are taking liquorice root to Pakistan rather than Kabul, and the Pakistanis are exporting to India.

### Asa foetida (Hing or Heng)

According to the Indian import statistics for 1987/88, this is the second most valuable product after raisins. It is also in very short supply and reported to be very expensive (Rs 275/kg wholesale or Rs 350/kg). Traditionally this product has arrived via Bombay. All shipments are sampled there by the government to test the quality. The raw product is processed in many different ways and is sampled at various levels in the trade to ensure that the product is not adulterated illegally. Supplies are now said to be coming overland via Amritsar and are not being checked for quality in Bombay, thus making importing them less difficult.

One trader reported that supply goes up and down every other year. He also said that it is not produced anywhere else, other than in Iran near the Afghan border, but the Iranian product is more expensive.

One trader believed imports could be easily doubled if supplies were available. One Kabul-based trader, contacted in New Delhi (BRB, PO Box 300, Latif Market, Kabul), claimed to be the biggest exporter of asa foetida in Kabul. He said asa foetida was collected from the wild by children. Supply had been short for the last two or three years due to the Mujahideen control of the growing areas. He also said Afghan people do not like Asa foetida (because of its unpleasant smell) and hence don't protect and care for the plants adequately.

There are several different forms of Asa foetida coming from Afghanistan, including "White Hing," "Hadda," and "Milky Hing." Unfortunately, I was not able to obtain further information about the different types.

#### Cumin/Caraway

Several types of cumin are imported from Afghanistan, but conflicting information was given regarding their names, descriptions, and prices. However, the information suggests that "Bajak" is the cheapest. A more valuable type is "Badakshani" (from Badakshan in Afghanistan), and a third mentioned by one trader was a green type with an even higher price. (One trader said Badakshani was a green type; another said it was black; and a third said brown!)

Another trader gave details of the cumin he was interested in as "Carum Carri" with the English name, Black Cumin or Black Caraway, and the Indian name, Zeera Siyah. This is imported from Holland, but the Afghan quality is preferred in India. Import duty on spices and medicinal plants is reported to be more than 100 percent.

Prices are considered to be high, and supply is insufficient. The more expensive type of cumin sells for around Rs 400/kg in India and is commonly smuggled into India in personal baggage. The Kajak Zeera is priced around Rs 100-Rs 120, per kg.

#### White Poppy Seed (Khus Khus)

As in Pakistan, demand for white poppy seed is strong. Poppy seed was placed fourth in order of priority for development by one specialist trader dealing in crude drugs and poppy seed. Asa foetida was in first position, followed by liquorice roots, then three types of cumin (Kalasiyah, black; Sabaz, green; and

Badakshani, brown). Holland and Turkey offer types of poppy seeds.

Unab or Jujube (Zizyphus Satira)

This fruit is imported in dried form and is permitted to be imported as "crude drugs." It was placed fifth in order of priority for development after poppy seeds by one specialist trader.

Other Items Listed Under "Crude Drugs"

- "Ratanjot" rhizome of Onosma echiodes has a red color. It is used in products such as lipstick and for dying leather, and so forth;
- "Zoofa" plant of Hyssopus officinalis;
- "Shagaqul misri" root of wild parsnip Pastinaca secacul;
- "Bahman Sufaid Surkh" (root or red and white varieties of Contaurea bhoen); and
- "Darronaj Aqurabi (root of Doronicum paradallanches).

## Companies Contacted and Their Products

- Shyam S Bansal (see card) is the Hon General Secretary of the Indo-Afghan Chamber of Commerce. This chamber was set up in 1940 in Kabul, but moved to New Delhi in 1947, as a result of partition. Membership is around 400, and many of the members are involved in the dry fruits/medicinal plants trade. The president, whom I did not meet as he was in the USA, is Mr. Sunderlal. Both he and Mr. Bansal are trading in dried fruits, and both have their offices in Katra Ishwar Bhawan, Khari Baoli, New Delhi which is where the majority of dried fruit importers are located.

Some addresses of people/contacts without cards:

- 1) Rajesh Kapoor  
Shezada Market  
Kabul Tel 24514 (office)  
30480 (res)

(Kabul supplier of BS & Company tel cards)

- 2) Super Exporters  
PO Box 134 & 240  
Kabul Tel 21877 (office)  
30129 (res)

(Exporters of raisins)

- 3) BRB (Mr Praveen Ghandi)  
PO Box 300  
Latif Market  
Kabul

(Big exporter of dried fruits and medicinal plants especially, asa foetida.)

- 4) Harinder Singh  
C 17 DDA Industrial area  
Okhla Phase 1  
N Delhi 20  
Tel 6842276

(New Delhi address of Kabul-based exporter)

- 5) Afghan Chamber of Commerce and Industry  
Pulbagh Omomi  
Opposite Spinzal Hotel  
Kabul  
Telex 245 AFGHAMB AF

- 6) Afghan National Bank  
22 Finsbury Square  
London EC2

(Should have clients who are importers/exporters of Afghan products)

- 7) National Westminster Bank Overseas Branch London  
National Westminster Tower  
25 Old Broad Street  
London

- 8) Bank of New York (Irving Trust Company)  
One Wall Street  
New York, New York  
USA

(Above two banks maintain the hard currency accounts of DAI Afghanistan Bank.)

- 9) Afghan Container Transport Co  
PO Box 3234  
Kabul

- 10) Bost Transit Company  
PO Box 3240  
Kabul

- 11) AFSORT (Afghan Soviet Joint Stock Transportation and Forwarding Company)  
PO Box 721  
Kabul

(The above three companies are major suppliers of container services. The first two are private and the third is government-owned.)

- 12) Shafiq Sons and Pak Kabul Enterprises and Clearing Agency  
Importers and Exporters, Forwarding  
1st Floor Bank Square  
Chowk Yadger  
Peshawar  
Tel: 211126

(This is a Pakistan "agent" for Chand Parkash and Co. See cards.)

**National Agricultural Cooperative (F)  
Marketing Federation of India Ltd  
Nafed House  
1 Sidharth Enclave  
New Delhi - 110014  
India**

**Tel: New Delhi 6830612  
Telex: 31-75347-NFD-IN  
31-75353-NFD-IN**

**Krishan Lal Mahajan & Sons (N,F)  
126 Tilak Bazaar  
Khari Baoli  
Delhi - 110006  
India**

**Tel: Delhi 2514698 / 2514229**

**Indo Afghan Chamber of Commerce  
Katra Ishwar Bhawan  
Khari Baoli  
Delhi-110006  
India**

**Tel: Delhi 2526925 / 2528402**

**B. S. & Company (F)  
541 Katra Ishwar Bhawan  
Delhi-110006  
India**

**Tel: Delhi 2528924**

**Madho Ram Mohan Lal (N,M,S)  
528 Katra Ishwar Bhawan  
Khari Baoli  
Delhi-110006  
India**

**Tel: Delhi 2924376 / 2924371  
Telex: 31-78020 MSEXIN**

**Kabul Store (F)**  
Dry Fruit Merchant  
Kundan Lal Gurbax Singh  
6514, Fatehpuri  
Delhi-110006  
India

**Arora Traders (N,F)**  
617-618 Katra Ishwar Bhawan  
Khari Baoli  
Delhi - 110006  
India

Tel: Delhi 2527732 / 2917346

**Grovarsons International (N,F,)**  
599-C Katra Ishwar Bhawan  
Khari Baoli  
Delhi - 110006  
India

Tel: Delhi 2511254 / 230082  
Telex: 031-62141 PMW In

**Karan Impex Private Limited (N,F,M,)**  
587-88 Gandhi Cloth Market  
Chandni Chowk  
Delhi-110006  
India

Tel: Delhi 235359 / 2522923  
Telex: 31-77325 BHAG

**Frontier Trading Company (F,M)**  
566 Katra Ishwar Bhawan  
Delhi - 6  
India

Tel: Delhi 2525993 / 2913193

**Shri Ram Traders (F)**  
Kirana & Dry Fruits Merchants & Commission Agents  
580-B, Katra Ishwar Bhawan  
Delhi- 110006  
India

Tel: 2915929

**V N Thakker Hingwala and Co (M)**  
69 Yusuf Meheralli Road  
Bombay 400 003  
India

**Eastern Overseas Corporation (M)**  
16 Onlooker Building  
Sir P M Road  
Bombay 400 001  
India

Fax: 91 22 855 8739

APPENDIX 3

INTERNATIONAL MARKET PROFILES

PREPARED BY  
HIGH VALUE HORTICULTURE PLC  
FOR  
DEVELOPMENT ALTERNATIVES, INC.  
AND THE  
OFFICE OF THE US AID REPRESENTATIVE TO AFGHANISTAN

128

## APPENDIX 3

### INTERNATIONAL MARKET PROFILES

#### INTRODUCTION

The information below provides a summary of the international market situation for a selection of cash crops regularly exported from Afghanistan. The aim of these profiles is to describe the international context within which Afghan export trade is undertaken. The products discussed are apricots, almonds, pistachios, figs, grapes, cumin, and pomegranate. Various statistical tables on the market for these products are also attached.

#### Dried Grapes

The international market distinguishes between raisins (shade- or sun-dried grapes), sultanas (soda-dipped, seedless grapes), and currants (Corinthian grapes from Greece).

Afghanistan produces both raisins and sultanas, although the vast majority of their production is of raisins. The major raisin produced is the red natural - a sun-dried, Thompson seedless grape. There is also significant production of the higher-value, green, natural which is a shade-dried, seedless grape, largely unique to Afghanistan. The long, thin, shade-dried raisin is known as the Shindukhani. This is the most valuable Afghan raisin particularly in Asian markets. Because it is sold with the capstem, it is not yet popular in the West. Black-seeded and seedless raisins are also produced - the smaller one being known as the black midget (a substitute for currants in the European bakery industry).

After the construction of modern, raisin-processing plants in the late 1970s, Afghanistan's raisin exports rose dramatically. In 1982, Afghanistan captured over 60 percent of the world market for raisins at a time when the USA had only 5 percent. Afghan exports have steadily declined, and today it has less than 16 percent of the market, with the US capturing more than 74 percent. Turkish production has also dramatically increased, as have newcomers to the market such as Chile.

The major importer of raisins and sultanas is the United Kingdom (around 70,000 tons), followed by West Germany, Japan, Canada, the Netherlands, and France. Overall world trade in raisins and sultanas has increased from around 200,000 tons in 1980, to around 300,000 tons in 1990, largely due to massive US promotional efforts. Imports into Europe are restricted due to the existence of a minimum import price system. At present the MIP is around \$1,350 a ton.

It is felt unlikely that Afghanistan will ever regain its world dominance, but market opportunities in Eastern Europe, the Middle East, and the Far East are good for Afghan grapes. Large volume imports of low-value, black midgets into Western Europe are still possible. Expenditure on market promotion will, however, be required to reestablish the tarnished image of the Afghan raisin industry.

TABLE 1  
IMPORTS OF RAISINS FROM AFGHANISTAN PRIOR TO THE SOVIET INVASION  
SELECTED MAJOR MARKETS 1976 - 1979

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
<b>CANADIAN TOTAL</b>	<u>23999</u>	<u>22677</u>	<u>21684</u>	<u>24324</u>
ex Afghanistan	88	317	422	503
<b>IRELAND TOTAL</b>	<u>7394</u>	<u>7956</u>	<u>8708</u>	<u>7213</u>
ex Afghanistan	17	-	1438	1275
<b>U.K. TOTAL</b>	<u>105079</u>	<u>101766</u>	<u>98762</u>	<u>104388</u>
ex Afghanistan	5722	9699	8935	7496
<b>JAPAN TOTAL</b>	<u>26912</u>	<u>19042</u>	<u>23209</u>	<u>18059</u>
ex Afghanistan	-	34	102	1326
<b>NETHERLANDS TOTAL</b>	<u>19149</u>	<u>15825</u>	<u>19530</u>	<u>16384</u>
ex Afghanistan	75	830	330	905
<b>WEST GERMAN TOTAL</b>	<u>45188</u>	<u>46024</u>	<u>44226</u>	<u>43471</u>
ex Afghanistan	291	1647	1445	633
<b>U.S.A TOTAL</b>	<u>762</u>	<u>7765</u>	<u>2611</u>	<u>2946</u>
ex Afghanistan	-	6957	933	2288
<b>INDIAN TOTAL</b>	<u>11338</u>	<u>6005</u>	<u>8167</u>	<u>7315</u>
ex Afghanistan	11317	5984	8104	7297

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Source: U.S.D.A

## Apricots

The world market for dried apricots is dominated by Turkey which supplies 60 percent of Europe's needs and a sizable quantity of the rest of the world's demand. Turkish production usually exceeds 20,000 tons. (The 1990, crop is exceptionally low - around 10,000 tons.) Turkey's international dominance has steadily grown during the last five years. Afghanistan supplies, at maximum, around 2 percent to 3 percent of EEC supplies. It has never been a major supplier of dried apricots anywhere but to India and Pakistan.

Australia, the USA, and South Africa are the other major producers with major importers being USA (around 4,000 tons), West Germany and France (around 3,000 tons each), and the UK (around 2,000 tons). The bulk demand is for the large, bright-orange, pitted apricot. Turkish, American, or Australian varieties predominate due to ease of pitting. These varieties are not found in Afghanistan. Most of these apricots are sulfurized to preserve the color and prevent deterioration in storage. Afghanistan does not export sulfur-dried apricots.

Average prices of Turkish pitted apricots range from \$1,700 - \$2,000. Due to shortages, prices have risen in 1990, to over \$2,200 per ton.

There is a small but growing demand for nonsulfurized "natural" or "organically" produced apricots in both Europe and North America. Some Afghan produce is sold under this banner, particularly in the United Kingdom. Imports of Afghan dried apricots have, however, fallen from over 200 tons annually to 29 tons in 1989.

The Soviet Union used to import more than 400 tons of dried apricots from Afghanistan, but now obtains most of its imported supplies from Iran (whose imports have risen from around 1,000 tons in 1986 to over 2,000 tons in 1988). Only India is still a regular buyer of Afghan dried apricots importing around 300 - 500 tons annually.

There is certainly scope for increased exports of properly cleaned, graded, and packed high-quality, indigenous, Afghan apricots for the Middle East, Indian, and EEC market as the taste and "natural" quality is often appreciated. In addition, Afghanistan could expand the export of:

a) Apricot leathers which are "slabs" or "blocks" of dried apricot pulp produced from low-grade apricots and used for industrial processing. We are not aware that this product is presently being produced in Afghanistan.

b) Apricot kernels. Apricot bitter kernels are used to a small extent to make apricot kernel oil for the cosmetic industry and, more importantly, as a source of the flavoring agent amygdalin (extracted from dried apricot kernels, mixed with almond kernels, and used in the candy and confectionery industry).

**TABLE 2**  
**UNITED KINGDOM IMPORTS OF DRIED FRUITS**

<u>PRODUCT</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<b><u>Apricots</u></b>	<b><u>2478</u></b>	<b><u>3191</u></b>	<b><u>2858</u></b>
of which			
Afghanistan	205	174	29
Turkey	1763	2542	2556
<b><u>Raisin/Sultana</u></b>	<b><u>79821</u></b>	<b><u>83187</u></b>	<b><u>82676</u></b>
of which			
Afghanistan	7838	5051	5935
Turkey	14001	19551	21031
Iran	346	1869	1295
<b><u>Currants</u></b>	<b><u>37810</u></b>	<b><u>36139</u></b>	<b><u>8590</u></b>
of which			
Greece	37588	35653	8149
<b><u>Figs</u></b>	<b><u>5995</u></b>	<b><u>5920</u></b>	<b><u>6300</u></b>
of which			
Turkey	5781	5730	6156

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Source: Commonwealth Secretariat

## Almonds

Both bitter and sweet almonds are cultivated worldwide. In Afghanistan both are often cultivated in the same field, and sweet almonds are often grafted onto bitter almond rootstock in Afghanistan and Iran. Sweet almonds are by far the largest of the two products traded.

The world market for almonds is dominated by the USA with over 70 percent of the world's production. U.S production is around 280,000 tons per annum. The only other significant producers are Spain (around 70,000 tons), and Greece and Italy (around 10,000 - 15,000 tons each). Over production has been chronic in the last 18 months and stocks are very high; prices have been falling sharply. International prices of Californian almonds are less than \$3,000 per ton.

The major importers of almonds are West Germany (around 48,000 tons), Japan (around 20,000 tons), and France (around 19,000 tons). International demand has expanded particularly in Japan, the US, and France - aided by heavy promotional campaigns by Californian producers. By contrast, Afghan production has never been more than 3,500 tons of poorly-graded and poorly-packed material, and exports have been almost entirely to India, the Soviet Union, and the Middle East.

Only if prices for clean, graded kernels were substantially lower than Californian material, the high content of fragments typically found in Afghan consignments were removed, and the practice of mixing bitter with sweet almonds halted, would any success in exporting Afghanistan sweet almonds to Western Europe be achieved. Afghan almonds, moreover have an inherent problem of usually having twin kernels (for example, two in one shell) which is considered less attractive to Western consumers than the single-kernel almond. Only breeding work can remove this genetic characteristic.

The Indian, and to a lesser extent, the Middle East markets appear a better target for Afghan exporters of sweet almonds, since, in these markets, consumers are often prepared to pay a premium for the stronger-tasting Afghan (and Iranian) almonds. Even in these markets, penetration by US supplies has been dramatic in recent years.

The European market for bitter almonds (for industrial use as a source of bitter almond oil and a source of amygdalin) could be developed if stringent efforts were made to separate bitter from sweet almonds exported from Afghanistan. The present major source of bitter almond kernels is Morocco.

**TABLE 3**  
**IMPORTS OF SHELLED ALMONDS INTO MAJOR MARKETS**

(In Metric Tons)

<u>Country</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
FRANCE			
of which			
USA	10850	14618	11803
Spain	4310	3140	5624
Italy	477	560	569
Tunisia	1100	---	18
Other Countries	793	400	1060
<b>TOTAL</b>	<b><u>17530</u></b>	<b><u>18718</u></b>	<b><u>19074</u></b>
UK			
of which			
USA	6788	9804	9685
Spain	1338	302	756
Other Countries	268	388	653
<b>TOTAL</b>	<b><u>8394</u></b>	<b><u>10494</u></b>	<b><u>11094</u></b>
WEST GERMANY*			
of which			
USA	29948	40912	34001
Spain	9742	2845	9132
Other Countries	2508	2329	2952
<b>TOTAL</b>	<b><u>42198</u></b>	<b><u>46086</u></b>	<b><u>46085</u></b>

\* Re-Exports 2795 tons in 1989

Source: Eurofruit 1990

## Pistachios

The overall market for pistachios has long been dominated by Iran which produces the largest range and generally the best quality of pistachios in the world. Because of the Iran-Iraq war, pistachio trade with Iran was interrupted and the US banned imports from this source. The production of pistachios has increased significantly in recent years in both the US & Turkey, and these two countries have made serious inroads into Iran's earlier dominant position. Iran's trade with Europe and the Middle East, however, is making somewhat of a comeback since the ending of the war with Iraq.

The production of pistachios is cyclical in nature due to the fruiting behavior of the trees. Iran's production has ranged between 43,000 tons and 100,000 tons in the last three years. That of the USA is between 15,000 and 40,000 tons; that of Turkey is between 15,000 and 30,000 tons over a similar period. Greece, Italy, Syria, and Afghanistan are minor producers with exports of little more than around 1,000 - 1,500 tons each. Present prices of Iranian pistachios are around \$19,000 per ton.

Unlike almonds, the market for pistachios is widely considered to have great growth potential, and new sources of good quality pistachios are always of interest to importers. Because Afghan pistachios are generally small in size with little uniformity of shape, traders believe there is little scope for selling Afghan pistachios in shell in the West. Afghanistan, moreover, does not produce the bold nut that is wanted in Northern Europe, but rather a long, thin product.

The excellent flavor and color of Afghan pistachios is, however highly suited for the processing industry, particularly in Spain and Italy where it is used in ice creams, and among Asian and Middle East consumers worldwide who use it in sweetmeats and other pistachio-based confectionery. Indian importers are particularly interested in the so-called "wild pistachio" which needs further investigation to see if production can be systematically expanded as an agro-forestry product. The price of good, Afghan, green kernel pistachios is more than double that of other pistachio kernels, and, hence, this product should receive greatest attention in export development and market promotion work.

**TABLE 4**  
**WEST GERMAN IMPORTS OF EDIBLE NUTS AND DRIED FRUITS**

	<u>1987</u>	<u>1988</u>	<u>1989</u>
<b>ALMOND KERNELS</b>			
USA	29948	40912	34180
Spain	9742	2845	7702
Italy	1225	1924	3086
Other Countries	1283	309	1117
<b>TOTAL</b>	<b><u>42198*</u></b>	<b><u>45990</u></b>	<b><u>46085</u></b>
<b>PISTACHIOS</b>			
Iran	18419	22487	23296
Other Countries	618	1135	844
<b>TOTAL</b>	<b><u>19037</u></b>	<b><u>23622</u></b>	<b><u>24140</u></b>
<b>RAISINS/SULTANAS</b>			
Australia	16115	16805	14159
Turkey	4961	7698	12748
USA	9923	8954	9798
Greece	7015	6771	7699
Iran	8365	3817	5174
South Africa	5891	6326	4344
Other Countries	3445	2967	3287
<b>TOTAL</b>	<b><u>55715</u></b>	<b><u>53338</u></b>	<b><u>57209</u></b>
<b>DRIED APRICOTS</b>			
Turkey	2769	2313	3305
Other Countries	1032	1105	1270
<b>TOTAL</b>	<b><u>3801</u></b>	<b><u>3418</u></b>	<b><u>4575</u></b>

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Includes small quantity of in-shell almonds

Source: Statistisches Bundesamt, Weisbaden. Pistachio

## Cumin

There are two types of cumin traded internationally: "white" cumin (Cuminum cyminum) which is largely a cultivated crop and the smaller-volume, higher-value product known as "black" cumin (Carum bulbocastanum) which is mainly found growing wild. Cumin is used as an oriental spice and in bakery products. It is also used to produce an essential oil.

India is the dominant producer of cumin with over 35,000 tons produced annually - the vast majority of which is used domestically. Exports, however, sometimes reach as high as 4,000 tons if the harvest is good.

Iran has always been a major exporter of cumin. Although Iran's cumin was generally considered some of the best cumin in the world, exports drastically declined during the Iran-Iraq war from over 6,000 tons per annum to "officially" only a few hundred tons. Sizable quantities were, however, smuggled out through Pakistan. Afghanistan has always been considered only a minor exporter of low-quality cumin with exports of around 500 tons of white and black cumin. Much of Afghanistan's limited exports (of a few hundred tons) have in fact been reexported via Pakistan or used by spice grinders in Karachi in curry powder mixes. The Soviet Union also imported some Afghan cumin.

Turkey has been the main beneficiary of the decline in Afghan and Iranian production. Exports from Turkey have risen dramatically from only a few hundred tons in the 1970s, to over 23,000 tons in the late 1980s. Pakistan, Syria, Egypt, Morocco are other minor exporters.

Major importers of cumin seed are the USA which imports 3,500 - 4,000 tons annually; Singapore which imports around 5,000 tons (and reexports this to other Far Eastern countries); and Saudi Arabia which imports around 2,000 tons annually. EEC imports are no more than about 2,000 tons in total.

Afghan's best export prospects are either to expand supply to spice grinders in Pakistan, or to try to expand exports to Saudi Arabia and other Gulf countries. Export prices will have to be more competitive than India's which are around \$1,600 - \$2,000 dollars per ton and superior in quality to the low-cost, Turkish material which sells at around \$800 to \$1,000 per ton. Competition from the reviving Iranian industry will, however, be strong.

## Figs

Turkey again dominates the production and export of dried figs with over 75 percent of EEC imports. Figs are either sold as whole dried figs or in paste form. France imports around 9,000 tons and West Germany, UK, and Italy around 6,000 tons each. Overall EEC imports have remained at around 35,000 tons for the last three years. The USA imports around 2,000 tons of figs and fig paste, and Sweden and Switzerland about 1,600 tons each. Greece is the only other major fig producer. Afghan figs are not known in the European and US markets, being exclusively exported to Pakistan and India. Expanding the Afghan production base is required before any significant increase in exports can be foreseen. A small market for "organically-produced" figs exists in Europe.

**TABLE 5**  
**EUROPEAN IMPORTS OF FIGS**

(In Metric Tons)

	<u>1986</u>	<u>1987</u>	<u>1988</u>
France	9353	8510	8958
West Germany	10137	5315	6845
UK	5995	5920	6300
Italy	4806	6149	6261
Spain	2152	1832	2380
Denmark	1544	1687	1483
Belgium/Luxembourg	1157	933	999
Other EEC	1646	1877	1985
TOTAL EEC	<u>36790</u>	<u>32223</u>	<u>35211</u>

Source: Eurostat

## Pomegranate

This is widely-grown fruit in Afghanistan and fetches a ready market in India, Pakistan, and the Soviet Union. Prospects in the Far East are also good. India has been a major importer, importing more than 2,000 tons annually, with similar quantities being supplied to Pakistan.

The Soviets have consistently imported around 6,000 tons of Afghan pomegranates, valued at around \$6 million according to official Soviet figures.

There are few major producers of pomegranates. Some are grown in the USSR, in Iran and Turkey, and limited quantities in India. Both the fresh fruit and pomegranate juices and cordials are very popular in the Middle East and in Asia. As Afghanistan has what appears to be a high-quality product with few competitors, expanded exports of this sturdy fruit are considered desirable.

## Liquorice

Liquorice root is both cultivated and collected in the wild in the following major producing countries: China, Turkey, Syria, Iraq, Iran, Russia (Turkmenistan), and Afghanistan. In Turkey and Russia, liquorice is systematically cultivated, but, in Afghanistan, it grows wild along the sandy river banks of the Kabul River and its tributaries. The roots are cut into sticks, graded according to size, and packed in jute bags. Liquorice can be processed to produce a wide variety of products used in flavoring cigarettes and confectionery products, and for pharmaceutical use. Instead of exporting the root, some countries make crude solid liquorice extracts which are then reprocessed and blended with extracts from other sources.

Afghanistan used to be one of the major suppliers of liquorice in the world, exporting around 5,000 tons of roots annually to the USA. Exports have dropped to less than 1,000 tons in recent years, although they appear to be building up again.

Major import markets are the USA, importing around 20,000 tons of liquorice root and 2,000 tons of crude extract; Japan, importing around 10,000 tons of root; and the EEC countries, importing around 5,000 tons of roots and a similar quantity of extract. MacAndrews and Forbes in the USA dominates the world market for liquorice with subsidiaries worldwide. They buy the bulk of Afghanistan's liquorice through agents in Karachi. India provides an alternative market to the USA for Afghan liquorice; imports of roots used to average more than 1,000 tons annually. One or two companies in Japan, Italy, and France are also significant buyers of Afghan roots.

Prospects of rebuilding Afghan's liquorice trade are reasonably good if transport costs can be reduced, and cleaner, better-graded material can be supplied. Material exported via Kabul is reportedly of better quality than that supplied to exporters in Karachi. Prices have risen to over \$680 per ton (f.o.b Karachi) which makes Afghan liquorice (already only medium quality) largely uncompetitive. Afghanistan does not produce liquorice extract, although a plant was to have been built to produce this product. Liquorice extracts sells at around \$2,500 per ton.

**LIST OF ADDRESSES OF MAJOR IMPORTERS, WHOLESALERS, OR USERS OF  
DRIED FRUITS, NUTS AND SPICES IN SELECTED WORLD MARKETS**

**N = Nuts  
F = Dried Fruits  
S = Spices  
M = Medicinals**

**AUSTRIA**

**Gunther Seifert GmbH ( N,F)  
A-1190 Wien  
Doblinger  
Hauptstrasse 42/10  
Austria**

**Tel: 31 01 097 / 31 01 098  
Fax: 31 01 725  
Telex: 116253 GSA**

**FRANCE**

**Saman SA ( F,N)  
ZI Zeme Avenue No 36  
Box 97  
13127 Vitrolles Cedex  
France**

**Tel: 42 89 66 55  
Fax: 42 79 33 00**

**G.I.C.A. ( N)  
Chemin du Littoral  
Box 48  
13321 Marseille Cedex 16  
France**

**Tel: 91 46 70 46  
Fax: 91 46 12 30**

**Pisani France SA ( N,F,)  
186 Boulevard de Paris  
Box 43  
13003 Marseille  
France**

**Tel: 91 28 12 12  
Fax: 91 89 36 00**

**Sofalip - Perlamande (N)**  
route de Barreme  
04700 Oraison  
France

Tel: 92 78 63 86

**Lenoble-La Pulpe (N)**  
ZI La Marinier  
Rue Gustave Eiffel  
Bondoufle  
91032 Evry Cedex  
France

Tel: 1 64 97 10 10

**Paul Bedouin (N)**  
Quartier Dieulefit  
84820 VISAN  
France

Tel: 90 41 90 01

**Antesite N Perrot (M)**  
le Berard  
38500 Coublevie  
France

Tel: 76 05 31 09  
Fax: 76 65 81 68

**STE Eurobroker SA. (F,N,S)**  
Paris  
France

Tel: 01 43684596  
Fax: 43763259

**ITALY**

**V.Besana s.p.a. (N)**  
Po Box 331  
80100 Naples  
Italy

Tel: 39 81 5286033  
Fax: 39 81 8657198  
Telex: 710076 Eesana 1

**NETHERLANDS**

**Cats International B.V. (F)**

Po Box 180  
3000 AD Rotterdam  
The Netherlands

Tel: (0)10 - 4113440

**Polak & Co. (F)**

Import-Export B.V.  
Po Box 29101  
3001 GC Rotterdam  
The Netherlands

Tel: (0)10 - 4110190  
Telex: 21362

**Handelmij Willem van der Schalk B.V. (F)**

Po Box 21101  
3001 AC Rotterdam  
The Netherlands

Tel: (0)10 4116140  
Telex: 21280

**Stolp International B.V. (F,N)**

Po Box 28  
3750 GA Bunschoten  
The Netherlands

Tel: (0)3499 - 82414  
Telex: 79325

**SWITZERLAND**

**Paul Husi AG (F,N)**

Zurich  
Switzerland

Tel: 01 311 2055

**Sieber Hegner AG (F,N)**

Zurich  
Switzerland

Tel: 01 386 7272

**Widner & Pagani AG (N)**  
St. Gallan  
Switzerland

Tel: 071 2820101  
Fax: 282013

**UK**

**G.C. Williams & Co., Ltd (F,N)**  
JLI House  
Guildford Street  
Chertsey  
KT16 9ND

Tel: 0932 569600  
Fax: 569582/3/4  
Telex: 262966

**H&T Walker, Ltd (F)**  
Walker House  
London Road  
Riverhead  
Sevenoaks  
TN13 2DN

Tel: 0732 450771  
Fax: 459288  
Telex: 95679

**Nolton Trading Corporation, Ltd( F,N)**  
27, Hill Street  
London W1X 7FB

Tel:071 493 5612  
Fax:071 493 1819  
Tlx: 263148 NTLC G

**Peabody Fine Foods (F,N)**  
Peabody House  
Trading Estate  
Addlestone  
Weybridge  
KT15 2RP

Tel: 0932 853322  
Fax: 847533  
Telex: 934438

**Haven Foods (S&W) Beresford, Ltd) (F,N)**  
Chesford Grange  
Woolston  
Warrington  
WA1 R49.

Tel: 0925 818101

**T.G. Smith, Ltd. (F,N)**  
Orrel Mount Industrial Estate  
Hawthorn  
Bootle  
L20 6NS

Tel: 051 933 3616  
Fax: 933 1023

**Community Foods, Ltd (F,N)**  
Micross  
Brent Terrace  
London  
NW2 1LT

Tel: 081 450 9411  
Fax: 208 1803  
Telex: 8955257

**Traidcraft plc (F)**  
Kingsway  
Gateshead  
Tyne & Wear  
NE11 0NE

Tel: 091 491 0591

**Gill & Duffus Landauer, Ltd (N)**  
St. Dunstan's House  
201, Borough High Street  
London  
SE1

Telex: 883858 giland g

**USA**

**Kalustyan Orient Export Trading Corporation (F,N)**  
Saw Mill River Road  
Yonkers 10701  
USA

Tel: 914 969 5778

**Ayengar Associates, Inc. (F,N,)**  
2516 North East 95th St  
Seattle, Washington 98115  
USA

**Red River Foods (F,N,M)**  
17-G Battery Place  
New York 10004-1102  
USA

Tel: 212 837 9430

**Fiesta Nut Corporation (N)**  
75-G Harbor Road  
Port Washington 11050  
USA

Tel: 516 883 1400

**Xenia Food Communications, Inc. (F,N)**  
P. O. Box 2519  
West Los Angeles 90025  
USA

Tel: 213 479 1221

**Ann's House of Nuts (N)**  
601-1-G Dover Road  
Rockville 20850  
USA

Tel: 301 424 0900  
Fax: 301 294 7948

**Firegreen USA, Ltd**  
New York, New York

Tel: 212 563 6810  
Fax: 212 563 9044

**Kane International Corporation (F,N)**  
150 White Plains Road  
Tarrytown 10591  
USA

Tel: 914 332 5100

**American Pistachio Corporation (N)**  
202 Port Jersey Blvd  
Jersey City  
New Jersey  
USA

Tel: 201 432 6700  
Fax 201 432 5673

**Sahadi Importing Co., Inc (F,N)**  
187-G Atlantic Ave  
Brooklyn 11201  
USA

Tel: 718 6244550

**McAndrews & Forbes Company (M)**  
Third Street & Jefferson Avenue  
Camden  
New Jersey 08104  
USA

Tel: 609 964 8840  
Telex: 84-5337

APPENDIX 4

CHARACTERISTICS OF AFGHAN DRIED FRUITS AND NUTS  
SPECIAL REPORT ON ALMONDS, PISTACHIOS, RAISINS AND APRICOTS

PREPARED BY

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HIGH VALUE HORTICULTURE PLC

FOR

DEVELOPMENT ALTERNATIVES, INC.

AND THE

OFFICE OF THE US AID REPRESENTATIVE TO AFGHANISTAN

JULY 1990

## CHARACTERISTICS OF AFGHAN DRIED FRUITS AND NUTS

### Almonds

Bitter almond trees are different from sweet ones, and it is believed that they are primitive varieties of almond trees. In Iran and Afghanistan, they graft the sweet variety on the bitter root with the belief that the bitter almond's base is more resistant towards disease, worms (larva), and insects. The bitter almond can also cope better with harsh climatic conditions and various environments, especially poor, mountainous soil that might be too wet or salty, and so forth. The grafting sometimes results in new branches developing beyond the area on which the initial graft was placed, and then one tree might give both sweet and bitter almonds.

The grafting technique is one reason why bitter almonds are sometimes mixed with sweet; the other is the deliberate mixing of sweet and bitter almonds to make more money.

In the past, there was a great demand for bitter almonds and they were considered to be more expensive than some grades of sweet almonds. Bitter almonds are used in the pharmaceutical industry. They are also used in the confectionery and candy industries for their strong amygdalin flavor. (The process is one of bleaching, mixing with bitter apricot stone kernels, rinsing with water, and extracting the bitterness.) Synthetic products have reduced the demand for bitter almond kernels in much of the flavor industry.

Other than the bitter flavor, Afghan almonds have a twin kernel. This means that there are two kernels in one shell; therefore, the appearance of these twin almonds is inferior to those with only one nut in one shell. This characteristic is inherited genetically, but by selection and agricultural genetic engineering, it is possible to create an indigenous variety suitable for Afghanistan's climate.

In the central part of Iran (around Esfahane), there is a variety known as Namaj which has only one kernel per shell. Because of its high flavor, sweet taste, and richness, it has better demands (especially in the Indian market), and the price is naturally higher.

Because Western countries use strong publicity and market psychology to promote organic foods, it is possible to create demands for Afghan nuts under the organic name. We have to assume that the production of Afghan almonds is limited. The production is believed to be less than 2,000 metric tons, with a high demand from India where the price is twice that of California almonds. It does not appear to be worth spending

money to promote Afghan almonds in Western Europe when Spain produces more than 70,000 metric tons, California produces 280,000 metric tons, and Italy produces up to 12,000-15,000 metric tons in a good year. Afghan almonds contain 7 percent twins, more than 3 percent bitter almonds, and 3 percent wooden shell and foreign matter--an important marketing consideration.

## **Raisins**

Afghanistan and Iran have many varieties of grapes. There are supposed to be 70 varieties around Herat and 120 varieties in Azerbaijan, Iran (mainly around Tabriz in the Northwest). Some are seedless; some have visible seeds; some varieties have seeds which are almost invisible after drying and making raisins. In Iran, there is a supply of fresh grapes from the end of March until December, using varieties with different harvest times. One variety can even be harvested under the snow. A similar number of varieties are supposed to exist in Afghanistan.

Shindukhani raisins are similar to Iran's Sabze Kashmari. (Kashmar is a city in the Khorasan province, neighboring Afghanistan.) It is a fancy grape which has to be dried with capstems, making it undesirable in Europe. Neither Sabze Kashmari nor Shindukhani can be supplied without capstems because a sugary liquid oozes out when the capstem is removed. The product loses its good appearance, becomes sticky, and the pieces stick to each other causing a drop in quality. Shindukhani grapes are desired, not for industrial use but for eating by hand, where each stem is removed one by one. Because of their high value as a fresh grape, Shindukhani raisins are in limited supply and nearly twice the price of normal green naturals. This style of raisin could possibly be sold in Europe if a special promotional program were undertaken to persuade people to eat raisins with capstems.

### **Grades of Dried Grapes (technical terms in trade):**

- Raisin or Bidane is a natural, sun-dried raisin. No liquids are used in processing the grapes after harvesting seedless grapes from vineyards. The grapes are then dried under sunshine.
- Sultana is a seedless grape (Seedless Thompson), which is soda-dipped (cold or hot) after picking from vines. They are then dried under the sun or by other means of heating.
- Green Raisins are sometimes seedless, sometimes seeded. Bunches of grapes, suspended from the ceiling of rooms, are dried over a long period of time.

Some grapes are fumigated with sulfur dioxide and then dried in the open air or in the shade. The sulphuration gives the grapes an attractive greenish color.

Midget refers to a smaller size of seedless raisin which is separated from the whole lot at the time of sieving. Some native, seedless varieties similar to Seedless Thompson exist which produce smaller berries than Seedless Thompson. When the Greek currant became expensive, the baking industry replaced it with the Afghan Midget. The possibility of promotion in the U.K. should be studied.

#### **Iranian Trading Terminology for dried grapes (raisins):**

- Kishmish: natural, sun-dried, seedless (Seedless Thompson);
- Sabzeh: soda-dipped, dried, seedless or Sultana; and
- Maviz: black or dark reddish-brown with stones. It is supposed to be rich in vitamins and minerals.

Afghanistan primarily exports raisins (natural, sun-dried), but a limited amount of Sultanas, also. All the above varieties have their own grades based on size, cleanliness, foreign matter and other factors. We have to remember that raisin is a common terminology for lay people to use when referring to dried grapes, whether they are seedless, with seeds, Shindukhani, Muscatels, currants, or Sabze Kashmiri. But within the trade, each of these names has a special meaning; each will demand a different price and will be directed to a specific market segment.

#### **Drawing Up Standards**

Can U.S. or other foreign standards be applied to Afghan raisins?

Each product from an individual area, even in one country, should be diagnosed and analyzed to find the typical representative specification. Then it should be compared with specifications from other countries before setting up national standards for grading the product. Market orientation for a targeted market is vital. Blindly adopting the standards of other nations or international standards of production, is a waste of time and a loss of market. Cost of production is another element which should be measured before setting up standard specifications.

Afghanistan needs to have its own standards and official specifications based on variety, size, color, cleanliness, and so forth. Even though one official standard specification is set up

for Iranian dried grapes, each area of production has its own international reputation. Grapes of the same size and grade may have different demands, value and price. Ghoutchan, Uramie, Ghazvin, and Malayer Sultana, for example, may be the same size berry, but customers insist on supplying from specific areas of production in Iran.

It would be wise to first become well oriented regarding all the stages of production, harvesting, processing, grading, packaging, warehouse distribution, and so forth, prior to standardizing Afghan dried grapes intended for export. Specifications could then be established.

## **Post Harvest Issues**

### **Oiling**

In recent years, mineral oil (paraffin or kerosene) has been banned in Europe due to the belief that it may be carcinogenic. There are other substances such as Durkecks or Australian Oil which have been used as a wax and also prevent individual berries from sticking to each other. These substances should be imported to Afghanistan and Iran.

### **Size and Weight of Boxes**

In Iran and Afghanistan, the weight is 12.5 kg per box whether it is a cardboard carton box or a wooden box. Wooden boxes are no longer in demand due to the metal nails they contain. Factories for rewashing sultanas are equipped with metal detectors in the U.K.; wooden boxes with nails hamper the process of detecting suspicious metal in shipments. There are some complaints about smashed carton boxes which bring sultanas from Iran and Afghanistan to Europe.

Making recommendations on Afghan packaging (that is, size, shape, weight, material) will depend upon what segment of the market is under consideration and, therefore, needs more study and evaluation.

Color of fruit, methods of drying, degree of ripeness, variety of grapes, and sulphuration, all have an effect on the color of the final product, but it is possible to produce the distinguished color which is required.

Processing plants with all the necessary machinery have been built in Iran, and it is possible to do the same in Afghanistan. This, however, would require more information from Afghanistan regarding special brands, etc.

## **Marketing Issues**

There are seven countries which are the primary suppliers of Sultana and seedless raisins: Afghanistan, Australia, Chile, Greece, Iran, Turkey, and the USA (California). The annual world supply is presently between 700-800,000 metric tons. Each of the above countries has its own standards, grades, and specifications.

In the UK market, Afghan fruits were not considered clean enough by any of the major British manufacturers and packers. Therefore, most of the fruit had to be sold to companies such as Whitworth's Holdings or similar ones where the fruits were rewashed, packed and supplied to related industries.

There is a limited market among health food shops which serve their customers directly from cartons.

### **Apricots**

**There are four well-known apricot varieties in Afghanistan which are:**

- Shekar Pare;
- Ashtaghi;
- Ghaissi; and
- Amiri (the largest).

(Iran produces all the above varieties, in addition to others.)

**Dried apricots are poor in appearance due to:**

- Methods used to dry fruit; and
- Good quality fruit is generally sold as fresh fruit, leaving only the inferior quality for drying.

Dried apricots in halves or whole (with or without stone) can attract European customers with a little more effort and promotion in health shops. The market is not saturated yet, compared to world supply. Turkish apricots are well-known, because they have a sizeable production and a regular supply which is cleaner than Iranian or Afghan apricots.

**Dried apricot export has declined from Iran because of:**

- Reluctance of farmers to dry their good-quality apricots when the fresh market is firm and the price is attractive; and

- Crop losses due to sudden frost and cold. The apricot tree, like the almond, blossoms in the early spring. Late winter production will only be in full-bearing once every 3 to 4 years.

Afghanistan will face similar problems to those of Iran. In contrast, most orchards in Turkey are located in areas with a Mediterranean-type climate, posing less risk from sudden weather changes.

In Afghanistan, there is a need for research into all aspects of cultivation, soil surveys, irrigation, and comparative testing on different varieties. Then plant breeding techniques can be applied to indigenous varieties to identify locations for growing and processing dried apricots.

#### **Post Harvest Issues**

- For an attractive color (golden yellow), one needs to burn pure sulfur dioxide. The more one uses, the more attractive the color, HOWEVER...
- The limit of sulfur dioxide content of dried apricots entering EEC countries is a maximum of two parts per thousand, though some countries like Germany insist on one part per thousand. The sulfur dioxide content has to be carefully controlled and tested if Afghanistan wishes to export to these markets.
- The higher the temperature, the faster sulfur dioxide evaporates. The farmer or packing industry in Iran uses more than two parts per thousand of sulfur with the hope that by the time the consignment reaches Europe, it will have achieved the correct balance. Sometimes they misjudge the evaporative process and the consignment is rejected because the sulfur dioxide content is beyond acceptable limits.
- Farmers cannot always find pure sulfur dioxide powder at their local markets. They buy whatever is available, which is sometimes mixed with dangerous substances. This was another reason for the rejection of dried apricots supplied to Western Europe some years ago.

In Iran, most of these problems have been sorted out with a careful promotional program. Afghanistan needs a similar program.

## **Pistachios**

Afghan pistachios are harvested from pistachio trees grown in the open with little or no management.

In Iran, truly wild pistachio trees cannot be used for the export of nuts. A limited amount of their fruit is used for pickles by farmers and local tribes, before it has a chance to reach the proper stage of ripeness.

In southern Iran (50 or 60 years ago), these wild trees were grafted with genuine pistachios and were fruit-bearing, but were destroyed in the Second World War.

It is possible to increase the productivity of unmanaged pistachio trees by grafting and using new technology. The pistachio tree has two base trees, male and female, and proper pollination is necessary for good production. The natural population of pistachios in Afghanistan is very good. Using careful selection and modern agricultural technology, yields and growth can be increased significantly.

### **Marketing Issues**

The Afghan pistachio is small and, therefore, does not have a place in the world market as a nut in shell. Because of its excellent flavor and green color, the kernel has great value for ice cream, for the chocolate industry in Europe, and a potential demand in the Indian sweetmeat industry.

There is a similar green pistachio in Iran (mainly in Ghazvin) from which Iran makes a very delicious sweet, "baklava."

The price of good Afghan pistachio green kernel is 2 to 2.5 times higher than any other pistachio kernel. The production of the pistachio kernel (previously 1,500 metric tons per year) has dropped due to the Russian invasion, and there is no hope for a good crop this year.

APPENDIX 5

CROP PROFILES

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136

GRAPE (ANGOR)

- Soil type:** Loam/Clay/Sand. pH range 7-8.5
- Temperature Range:** 10-30° C. While the vines can withstand a few degrees of frost, they cannot survive excessive frost and may have to be buried in the winter as in Jawzjan. Vines are fairly resistant to drought but require regular irrigation in semi arid areas to maintain yields. In some Northern areas, two irrigations may be all that are required compared with six in the South.
- Propagation:** In Afghanistan the usual method is by inserting cuttings directly in the growing site. Bundles of cuttings are sometimes immersed in water for two weeks before planting. Disease resistant stocks are not used.
- Cropping:** First crop after 3 years - 1kg.  
Crop after 7-30 years - 10-15 kg.  
Numbers of vines per hectare 1000 - 1100.  
Kabul/Parwan - Water plentiful, 1500 vines per hectare.  
Kabul/Parwan - Water restricted, 1200 vines per hectare. A yield figure of 14 tons per hectare for all varieties has been quoted but this could vary up and down from 10 - 19 tons per hectare. Kandahar, with a low altitude and warmer climate produces grapes which are regarded as superior to those produced in the colder, higher areas of Kabul, Parwan and Jawzjan. The yield of grapes is reduced after the vines are 30 years old.
- Vine Training:** The self-supporting goblet system is only of limited use. Trench and adjacent bank is the most widely used system. In Kandahar, the banks are usually up to two meters high, whereas, in Herat they are up to five meters high. The vines are planted on the cooler North slope. Pruning is by rod or spur method.
- Pests and Diseases:** The major problem is powdery mildew which can be widespread and ruinous. It is easily controlled by dusting with sulphur, although sulphur is not always readily available and sometimes is adulterated to the point of losing its effectiveness. Anthracnose (black spot) occurs but to a much lesser extent compared with powdery mildew. Rodents and birds are a perennial

problem.

**Varieties:**

The most widely grown variety is Thompson's Seedling known locally as Kishmish. It is grown for fresh fruit and drying as raisins. There is a wide variation in size of grapes within this variety, giving rise to an equally wide variation in the size of raisin produced. The stem detaches easily. The variety Shindokhani is a small, grey/green, ellipsoidal grape grown both for fresh fruit and drying for raisins. The stalk is not easily detached, and, if pulled the flesh of the raisin sticks to it. Shindokhani has a higher value than Kishmish.

The variety Haita is a large, two-seeded table grape which travels well. High quality sultanas were produced when Haita was dipped in lye and sulfur dioxide, and dried in a hydrator. This work was done at the Shakat Nuwa Fruit company in Kandahar, but never became commercial.

Many other varieties of grapes are to be found in Afghanistan, but none with the same commercial value as Kishmish, Shindokhani, and Haita. No Muscatel grapes are recorded.

**Production  
Locations:**

The largest production area was Kabul/Parwan. Before the war the production of grapes from these two areas was four times that of the other areas. The second largest production area was Kandahar, followed by Jawzjan and Faryab. Because of their altitude and more Northern latitude, raisins produced in these two areas are reputedly less sweet than those of Kandahar. The limiting altitude for grapes is about 1,500 m.

## APRICOT

- Soil Type:** Loam/Sand pH range 5.5 - 8.5
- Temperature Ranges:** 10 - 35° C. Apricots flower very early and are susceptible to frost damage. They tolerate semi-arid conditions provided they are irrigated.
- Propagation:** By breeding selected varieties on apricot seedling rootstocks. Planting distances for modern orchards are approximately 6x4 m with 400 trees per hectare.
- Cropping:** Trees came into bearing four-five years after planting. Full cropping should be attained about 12 years after planting with yields of six-ten tons/hect. Trees are not normally pruned nor fruit thinned in Afghanistan; both factors lead to a reduced yield of small fruit. Trees left to grow can reach 10 m high. The fruit is often shaken from the tree at harvest time. Apricots are either dried whole with the stone retained, or halved and the stone removed. The sweet kernel has a good sale value as an alternative to almond.
- Major Pests:** Aphid - very heavy infestations are often found in orchards. This gives rise to a massive production of a sugary secretion which stains the fruit, making it unsightly and unpleasant to handle. Even the ground under the tree can be covered with the secretion. Infestation can be controlled by timely application of insecticide.
- Major Disease:** The major disease of apricots is Aphids from tree decline, possibly related to nematode infestation. The other major disease is gummosis (caused by a bacterium) for which there is no cure.
- Varieties:** The overall picture of varieties is one of a few locally selected varieties and many seedling types going back thousands of years. Some of the better known selections are Charmaz, Sardi and Nari grown mainly in Kandahar and Zabul. The variety Shakarpara is widely grown in Western Zabul and Eastern Oruzgon. Locally named varieties can be found in the Central areas: Kabul, Logar, Parwan and Bamyan. Samples of dried apricots reflect the variability of the trees with variations in color, texture and flavor. Apricots grow well between 1,000-2,000 m. Cropping may be influenced by the chilling requirement of the selections with reduced yields when high-chilling requirement varieties are planted in low-chilling areas.

## POMEGRANATE

- Soil Type:** Heavy Loam/Sand pH range 5.5-7.5
- Temperature Range:** 10-35° C will tolerate winter temperatures as low as -6°. Fairly resistant to drought, prefers hot dry summers. Fruit production can decline in humid areas.
- Propagation:** By hardwood cuttings and, to a lesser extent, by layering. One-year-old hardwood cuttings are used for orchard planting usually 5-7 m apart, or approximately 300 trees per area.
- Cropping:** The trees are best pruned with an open center or modified leader, and the suckers removed. Usually little pruning is carried out in Afghanistan. Trees come into bearing 3-4 years after planting and will produce about 2 kg per tree. Fully developed trees (10-20 years) will produce up to 17 tons per hectare in parts of Afghanistan. Optimum production is at locations under 1500 meters.
- Major pests and Diseases:** Fruit rot is believed to be caused by secondary infection following insect damage. Infected fruit often has a small hole associated with deposit of insect eggs. Fungus, rather than insect damage, appears to cause most of the rot. A major problem is fruit splitting, not caused by either insect or disease. Various theories have been proposed including water stress and potash deficiency; the problem remains. A recent proposal is to harvest the fruit before fully ripe.
- Varieties:** Pomegranates are produced in 3 areas in Afghanistan- Kandahar, Kapisa and Samangan.
- Kandahar:**  
The large red-seeded variety grown in this area is known as Kandari. It is exported as fresh fruit to Pakistan and India. The fruit has a slight sharpness.
- Kapisa:**  
Pomegranates grown here are known as Tagab Pomegranate named after the area where it is grown. It is sweet, seedless with a yellow/white dry skin. It is exported as fresh fruit to India

and Pakistan and also used for juice production. Reputedly non-cracking.

**Samangan:**

The pomegranates from this area are known as Taj Pomegranates (Kholm). They are seedless, sweet and have a yellow/white dry skin. They are exported as fresh fruit to India and Pakistan and are also used for juice production. Non-cultivated or wild pomegranates are found in Kapisa and Samangan, and the seeds tend to be sour.

## ALMOND

- Soil Type:** Loam/Sand pH Range 5.5 - 8.5
- Temperature Range:** 10 - 35° C. Almonds are relatively-early, flowering trees and susceptible to frost damage with considerable crop loss in some years. Fairly resistant to drought but intolerant of excess flooding and damp conditions. They have a high nitrogen requirement.
- Propagation:** By budding selected varieties on bitter almond rootstocks. Planting distances: 6x4 meters width approx. 400 per hectare.
- Cropping:** Trees come into bearing 4-5 years after planting, and when in full production (10-20 years) produce 4-5 tons per hectare. Very little pruning is carried out in Afghanistan. A modified leader appears best for almond with light annual pruning. In some areas unripe, green almonds are considered a delicacy.
- Major Pests:** Red spider mite appears to be the main pest of economic importance and, unless controlled, will cause considerable decrease in yield.
- Major Disease:** In the almond growing area of Loralai in Baluchistan, which is geographically adjacent to the Afghan almond growing area of Zabul, there is in some years a major problem of premature defoliation causing a considerable yield reduction. It appears to be associated with occasional August rainfall and a possible fungal infection of the leaves. Almond trees can show remarkable recovery after neglect (in years where the market value of almonds was low and growers reduced irrigation in the orchards).
- Varieties:** There are a number of locally-named varieties (mostly thin shelled) and claimed to be sweeter and with a higher protein content than USA grown nuts. Among the named varieties are Kaghazi, Sittabai, Kherodini and Abdul Wadi. The variety Kherodini is considered to be similar to Non Pariel. Little emphasis appears to be laid on cross pollination in almonds in Afghanistan. Other varieties include Bundi which is hard shelled and Mon Pali a superior, almost-white, thin shelled variety. In 1989, there were some

new varieties introduced: Non Pariel, Jordanella, Neplus ultra, and Texas (or Mission), the latter being a hard-shelled, pollinating variety.

### OLIVE

- Soil Type:** Loam/Clay pH 5.5-7.0
- Temperature Range:** Base temperature 10° C  
Favorable range 15-35° C  
Low frost tolerance.
- Tolerance:** Fairly tolerant to drought.  
Low tolerance to flood, shade and wind.
- Propagation:** Hardwood cuttings up to 2" diameter, seedling rootstocks/grafting.
- Production Location:** Up to 1.500 m in Afghanistan, entirely in Jalalabad area.
- Cropping:** First crops in 9 years. When in full crop at 12-15 years, produce 5-8 tons/hectare.
- Varieties:** Gimlih, Azerbaijani and Hamidi suitable for eating or oil production. Chimlik and Jangali suitable only for oil production. These varieties constitute the main plantings in the orchards at Jalalabad.

## LIQUORICE

A perennial plant growing to a height of one to one and a half meters, depending on whether it is growing in dry or humid conditions. The leaves dry on the stem before the summer starts; the bare stems break and are lost during the summer. The remaining root (up to one meter under the ground) is the liquorice root of commerce. If it is found to interfere with cultivation, farmers will pull it out and burn it.

The principal or tap root is big and goes down to almost six meters depending on its age. The lateral roots found up to one meter below the surface of the soil, vary in thickness. It is the lateral roots which are harvested for their commercial value. Once harvested it will take four years to regrow from fine thread-like roots to roots of saleable thickness (1-2 cm), good enough to be out for commercial purpose.

Harvesting usually takes place in late April/May and continues through early summer; although, in Afghanistan, digging can go on all the year round.

## ASA FOETIDA

### Soil Type and Site:

Deep Loam/Sand pH 7-8.5. Best between 600-1200 meters. Grown mainly in the Northern provinces of Herat, Badghis, Balkh, Samangan and Kunduz, and also northern Bamyan. Herat was traditionally a major trading center, although exports via Kabul and Kandahar are considerable.

### The Crop:

Asa foetida is the olegum resin obtained from Ferula plants such as Ferula Alliacea Boiss, Ferula Foetida Regal, and Ferula Galbaniflua Boiss. The plants grow wild on mountain slopes. They reach a height of 1-1.15 meters and have massive carrot-shaped roots which are about 15 cms in diameter at the crown (when the plant is 4-5 years old). The collectors climb the mountain slopes and gather the latex from the root stocks (Rhizomes). In March-April, just before the plant flowers, the upper part of the root is laid bare and the stem is cut off close to the crown. The exposed surface is covered by a dome-shaped structure of twigs and earth. After a few days, the exudate is collected by scrapping and a fresh slice of the root is cut when more latex flows. The collection of the resin and slicing of the roots are repeated until the exudation ceases, which is about 3 months after the first cut. In this way about a kilogram or more of the gum resin is collected per plant.

The milky juice from the root darkens during drying in the air and sets to a solid resinous mass, reddish-brown in color. It is acrid and bitter in taste and emits a strong alliaceous odor. Some 500-600 tons of ferula gum resins are produced annually chiefly in Afghanistan and Iran.

## WHITE CUMIN (Cuminum Cyminum)

**Soil and Site:** Light Loam/Sand. pH 7.5 - 8.5  
Fertilizer recommendation: 1.5 bag UREA or 1 bag Ammonium Sulphate and 0.5 bag TSP or 0.5 bag DAP/acre.

Water logging retards growth.  
The altitude range is from 700 - 2000 meters.

**Cultivation:** By seed broadcast at the rate of 10 - 15 kg/hect over levelled soil, with a fine tilth at optimum soil moisture. The fertilizer is incorporated in the soil prior to sowing.  
1st irrigation: Plants 4 - 5 inches high.  
Subsequent irrigation only if necessary.

**Pests and Diseases:**

Mildew controlled by sulphur dust. Alternaria blight controlled by fungicides. Cut worms, Semi-loopers and aphids can be controlled by insecticides. Where the soil-born fungus fusarium is a problem, pre-treat the seed with appropriate fungicide.

**Crop:** The crop matures in five months, and when harvested, it is done in the early morning to avoid seed shedding. The seed should be completely dry for harvesting.

**Yield:** Irrigation 320 - 480 kg/acre.  
Unirrigated 120 - 160 kg/acre.

## PROCESSING

### PRODUCTION OF THE ESSENTIAL OIL

Cumin seeds are crushed and distilled immediately with steam, for about 11 hours. Since the essential oil is partially soluble in water, the distillation water is recycled. The problems encountered when distilling cumin seeds are those which are common to fruits of the umbellifer species: there is a possibility of the fatty oil partially distilling and forming an emulsion; the proteins present may decompose and give rise to putrid odors.

The essential oil content of the plant is said to increase from about 0.36% to 3.60% at time of maturation.

On distillation, the yield of oil varies from about 2.3 to 5%; the average being about 3%.

APPENDIX 6

SUN DRYING OF FRUIT

PREPARED BY  
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149

## SUN DRYING FRUITS

### INTRODUCTION

Sun drying of fruits is one of the oldest forms of food preservation known to man. The term shade-drying is also applied, when the fruit is dried out of direct sunlight (for example, in the shade). In Afghanistan, the majority of raisins are red raisins dried in the sun. The high quality green raisins are dried in the shade.

This appendix shows the basic steps followed in the drying of grapes (for raisins) and apricots.

Sulphuring is not usually practiced in the drying of grapes in Afghanistan. Attached are the illustrations of "On Farm Equipment" suitable for the drying and fumigating of apricots.

### GRAPES

The process is carried out according to the flow chart below:-

HARVEST -> TREATMENT -> DRYING -> SWEATING -> SCREENING -> STEMMING/STRIGGING -> SCREENING -> STEM-CAPPING -> ASPIRATION -> WASHING -> INSPECTION -> GRADING -> PACKING -> METAL DETECTION -> FUMIGATION

### Harvesting

The maturity of the grape will affect the quality and yield of the final raisin. Research has shown that the best results are obtained when the juice of the grape has a brix of between 24° and 28°. (Brix is a measure of the sugar content).

Prior to harvesting, it is necessary to smooth the ground between the vines in preparation for the drying trays. Trays are placed between the vines and tilted towards the south since the rows run east-west; then the grapes will not be shaded in the morning and afternoon. The grapes, in their bunches, are distributed directly onto the trays, approximately 10 kg per tray at a rate of 17 kg per square meter.

### Treatment

It may be desirable to treat the grapes prior to drying in one or the other of the following ways:

- (a) Dipping in 0.6 percent sodium hydroxide or sodium carbonate solution at 95°C for about five seconds. They are then rinsed in cold water and put onto the trays.
- (b) Oil dipping - a solution of 3 percent sodium bicarbonate is prepared and a film of edible oil floated on it. The grapes

prepared and a film of edible oil floated on it. The grapes are dunked in the solution for between 30 and 180 seconds. The solution may be hot or cold, and drying takes place as described below.

- (c) Sulphur bleached raisins: The grapes are dipped as for soda-dipped fruit and then spread on the trays and sulphured for 2 - 4 hours (1.5 kg - 2.0 kg of sulphur being used per ton of fruit).

### Drying

The trays remain in the original position until the fruit is partially dried, taking about 4 days. They are then turned so that the top of the tray becomes the bottom. After about 10 days the top layer of grapes will become shrivelled and the grapes are again turned. Once the grapes are about 66 percent dry the trays are collected and stacked in the shade. They remain here for about 7-10 days for curing.

In the case of sulphur bleached fruit, the fruit is allowed to stand in the sun for 1 day, and then the grapes are turned. At the end of the second day, the trays are stacked. Drying is completed in the stack to avoid over-exposure to the sun. After 10 days the product is again turned. Drying in this manner will take several weeks.

### Sweating

When juice cannot be expressed if the fruit is squeezed between the fingers, the fruit is considered cured and will be at between 15 percent and 17 percent moisture. The clusters are placed in sweat boxes where the moisture equalizes over a period of about 3 weeks. Sweat boxes are constructed of pine, and accommodate between 70 to 100 kg of product.

### Drying Ratio

75 percent fresh fruit 25 percent dried fruit. 4:1

### Screening

The raisins are taken from the sweat boxes and fed into a rotary/aspirated screen to remove extraneous matter.

### Stemming or Strigging

The fruit is removed mechanically from the panicles by a "strigging" action. Should the moisture content of the fruit exceed 12 percent, the stems will be too soggy and may clog the machine.

### Screening/Aspiration

A further screening/aspiration process takes place to remove any vestiges of stems remaining.

### Stem Capping and Aspiration

The stem cap is the small stem which is left adhering to the fruit after strigging; these are removed by aspiration. If the moisture content is too high this may prove difficult. Further drying can be achieved by using a stove or cabinet at 50-55°C for 3-4 hours.

### Washing

A rapid rinse finally cleans the fruit, during which time the moisture will increase to up to 17 percent.

### Inspection

The dewatered fruit is manually inspected to remove any residual extraneous matter, stem caps and defective fruit.

### Grading

Screening may be carried out if customer specifications demand restricted size ranges.

### Packaging

For catering and industrial uses, fruit is normally packed in corrugated cardboard cartons which have been lined with tissue paper. Pack weights of 12.5 - 15.0 kg are usual, and the cartons are glued or tape sealed. Staples must not be used.

For retail purposes a 500 gm pillow pack is required. For small quantities it is possible to obtain performed and printed sachets which may be hand-filled and heat sealed. Larger runs will be packed using form and fill packaging machines. The sachets will be packed in corrugated cardboard cartons with probably 20 per carton. Some customers may also demand a cardboard display carton as well.

### Metal Detection

It is a good practice to place permanent magnets at strategic points on the post drying process line; the packed product should be subjected to examination by an electronic metal detector.

## Fumigation

Fumigation is carried out to prevent insect damage and contamination. This must be carried out at regular intervals by use of Methyl Bromide in a fumigation chamber, at a rate of 2.1 kg Methyl Bromide per 100 cubic meters of chamber volume.

The product in sweat boxes and final packs will be subjected to this treatment.

## DATA ON CONSTRUCTION OF FUMIGATING CHAMBER

### 1. Construction

The chamber may be either portable or fixed. If portable it can be constructed of light timber to minimize weight, and should not exceed 300 cu. ft. All joints must be tightly sealed with the structure anchored firmly to a flat ground surface.

Permanent structures can be constructed of masonry materials with gabled roof and concrete floor. This type should be sized at maximum of 1,000 cubic feet, the dimensions being variable as to length, width and height, to best accommodate the size of pack in which they are to be loaded. The total cubic capacity of the boxes (for example "sweat boxes" where applicable, packed cartons, or trucks of trays) must comply with the 1,000 cu ft limit.

It is necessary to vent the chambers rapidly at the end of the fumigation period; therefore, doors are installed at both ends. Some chambers are fitted with an extractor fan at the end opposite the loading door. The structure must be absolutely airtight.

It may be possible to have dual use of such a chamber, or chambers, for the purpose of sulphuring trays of the product which call for sulphiting. The dimensions, however, must be arranged to accommodate the dryer trucks loaded with drying trays of the product.

### 2. Fumigants

The most common type used is methyl bromide. A 1,000 cu. ft. chamber will require a charge of 1 pound, fed into the chamber by an applicator, normally supplied by the dealer. As the fumigant is heavier than air, it must be introduced at the top of the chamber.

### 3. Exposure Time

Dependent upon temperature, fumigation must be from 15 to 24 hours to be effective. The frequency of fumigating will vary from location to location, according to the level of possible infestation and type of insect.

### 4. Capacity

Subject to the pack size and method of stacking, a 1,000 cu. ft. chamber should hold 3 to 4 tons of produce per charge.

### 5. Residual Levels

The residual level of bromide in the product itself should not exceed 20 ppm, with 10 ppm being the safer level.

## APRICOTS

Fumigating apricots with Sulphur dioxide (SO<sub>2</sub>):

- a) Controls fungi and detrimental micro organisms which attack the fruit during the first phase of drying;
- b) Speeds up the drying process;
- c) Prevents enzymatic browning;
- d) Lengthens storage life; and
- e) Helps prevent loss of nutritional value;

The process is carried out according to the flow chart below:

HARVEST -> CUTTING & PITTING-> BLANCHING -> SULPHURING -> DRYING -> CURING ->INSPECTION -> GRADING ->  
CLEANING -> 2ND SULPHURING -> INSPECTION -> PACKING -> METAL DETECTION -> FUMIGATION

## Harvesting

Fruits will be harvested when slightly riper than desirable for canning or freezing operations.

## Cutting and Pitting

It is not usual to wash or peel apricots for drying so the fruit is taken directly to the cutting sheds. Cutting sheds are basically canopies which afford protection from the sun for the workers and give adequate ventilation; metal roofs should be avoided. The cutting tables are in sections: 750 mm high, 2,500mm long and 900mm wide (each section giving space for 8

workers). The fruit is cut completely around the suture by means of a sharp knife, separated and the pit removed. A clean cut is essential if the best quality and; the best price are to be obtained. From 6 percent to 10 percent is lost in pitting.

Whole apricots may be dried; these are usually subjected to lye dipping and prolonged sulphuring is needed.

### Blanching

Steam blanching will improve fruit cleanliness, reduce drying times, aid sulphur dioxide retention, and speed rehydration. However, it is not usual for the fruit to be blanched as the equipment required is relatively sophisticated.

### Sulphuring

Trays of approximately 900 mm x 1,800 mm are made from pine or redwood. The bottom is made of boards 150mm wide and 6 mm thick. The cut fruit is placed cut side up at a rate of approximately 1 kg per 0.1 sq. meter, (for example approximately 16 kg per tray). The trays are stacked on trolleys, and alternate trays overhang by about 150 mm to aid the circulation of sulphur dioxide. The trolleys are placed in the sulphur house and remain for 2-3 hours to give around 2,000 ppm of sulphur dioxide to the product. To achieve this, 1.5 to 2.0 kg of sulphur per ton of fruit is required. The apricots should be sulphured as soon as possible after cutting to prevent darkening and the retention of Vitamin C.

### Drying

Immediately after sulphuring, the trays are taken to the drying yard. The site is selected so that the trays will be exposed to the prevailing winds; a gentle slope is advantageous. Approximately 1 hectare is required for every 20 hectares of orchard. The trays are placed on racks raised about 300 mm from the ground and exposed to the sun for 1 to 7 days, until the fruit contains about 18 percent moisture and is soft and pliable, but not sticky.

### Drying Ratio

82 percent fresh fruit 18 percent dried fruit. 5.5:1

## Curing

The fruit is removed from the trays, and discolored and insect infested pieces are discarded and placed in sweat boxes. Very wet fruit is returned to the drying yard for further drying. The moisture equalizes in the sweat boxes: this process takes from one to three weeks.

## Inspection

The fruit is manually inspected to remove soil, mouldy halves, and insect infestation.

## Grading

The apricots are size graded, there being six grades:

No. 1	Jumbo	> 35mm diameter
No. 2	Extra Fancy	32 - 35mm diameter
No. 3	Fancy	28.5 - 32mm diameter
No. 4	Extra Choice	25mm - 28.5mm diameter
No. 5	Choice	21mm - 25mm diameter
No. 6	Standard	< 21mm diameter

## Cleaning

The graded fruit is passed through a rotary washer during which the moisture content increases approximately 10 percent.

## 2nd Sulphuring

This is a repeat of the earlier operation, tray loading being about 50 - 75mm of fruit in depth. Exposure time is around 4 hours.

## Inspection, Packing, Metal Detection, and Fumigation

These processes are the same as previously described in relation to grapes. The retail pack preferred is 250 gm as opposed to 500 gm for vine fruits.

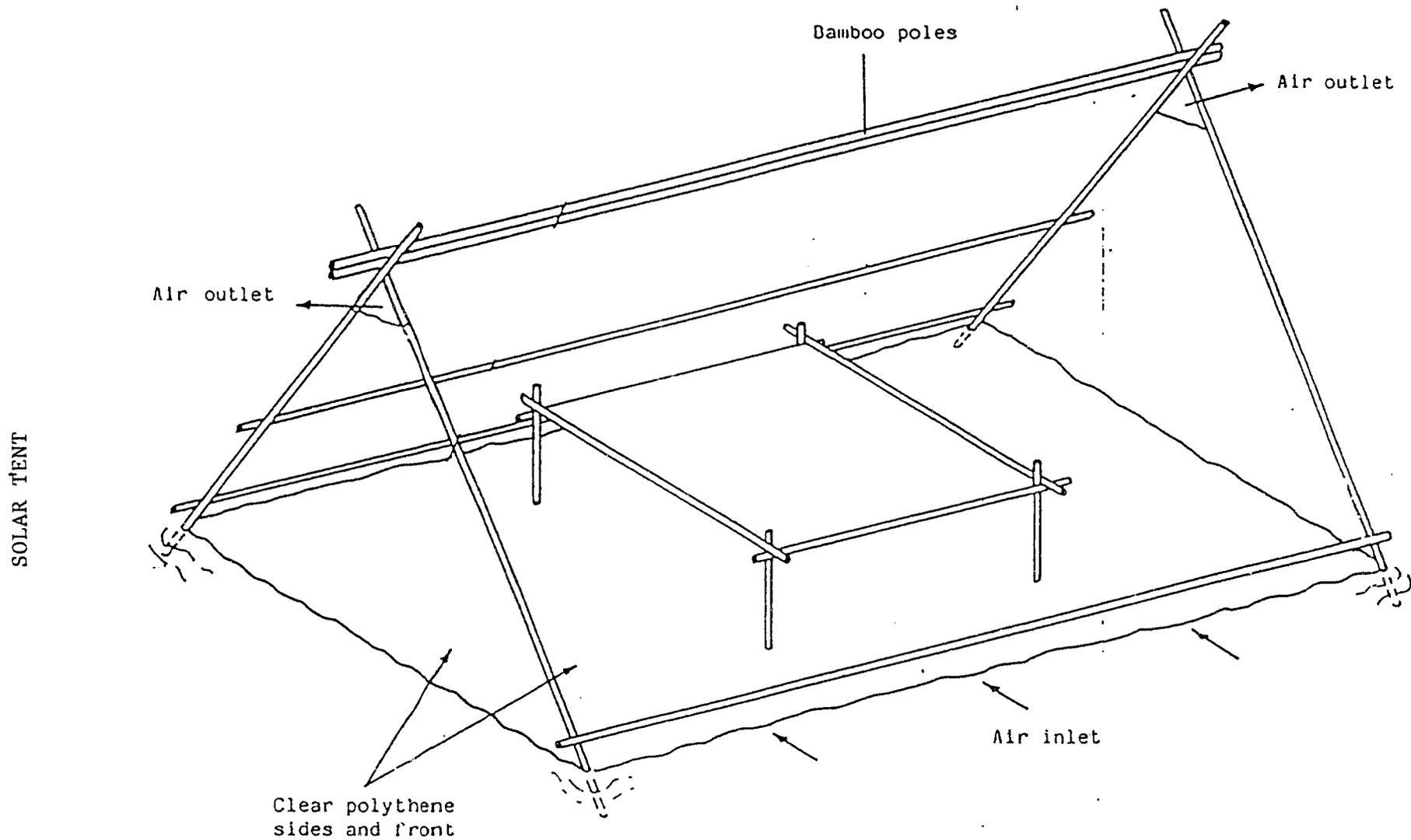
Process Equipment

As can be gathered from the description of the process, most of the equipment required is simple and best manufactured locally.

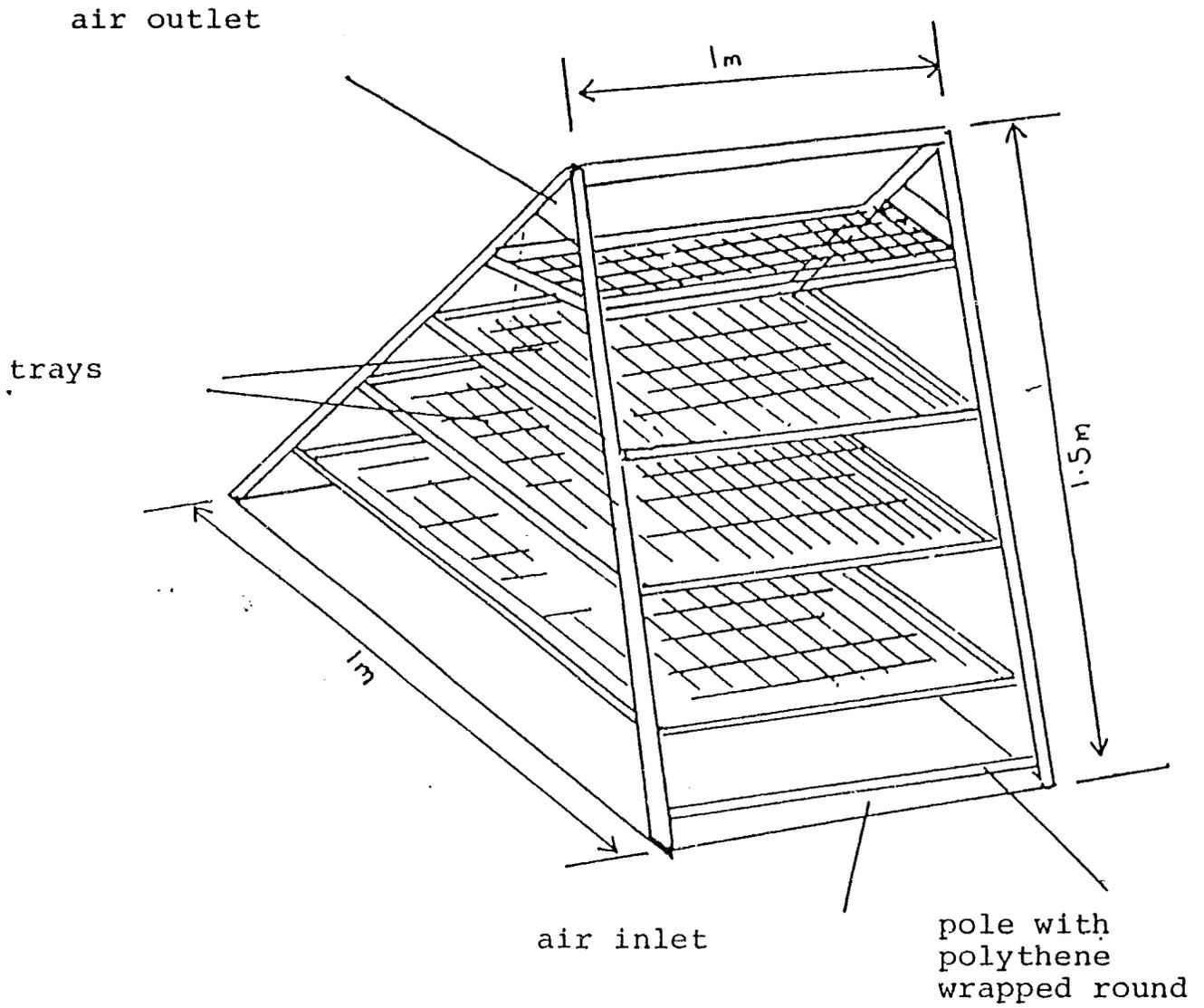
However, washing, stemming, and pitting machines are available from:

- a) IMC,  
Breedstraat 3,  
Sint Niklaas-Waas  
Belgium.
- b) Herbort GmbH.,  
Hamburger strasse 268,  
3300 Braunschweig  
W. Germany (UK agents Process Applications 0284 767601)
- c) Bead Engineering Ltd.,  
Kings Lynn  
Norfolk 0553 763177
- d) Peter Holland Limited  
St. Peter's Hill  
Stamford  
Lincolnshire 0780 52086
- e) Goring Kerr, (Metal Detectors)  
Vale Road  
Windsor  
Berks 0753 869351
- f) Gunson's Sortex Limited (Aspiration)  
Fairfield Road  
London 081 980 4888

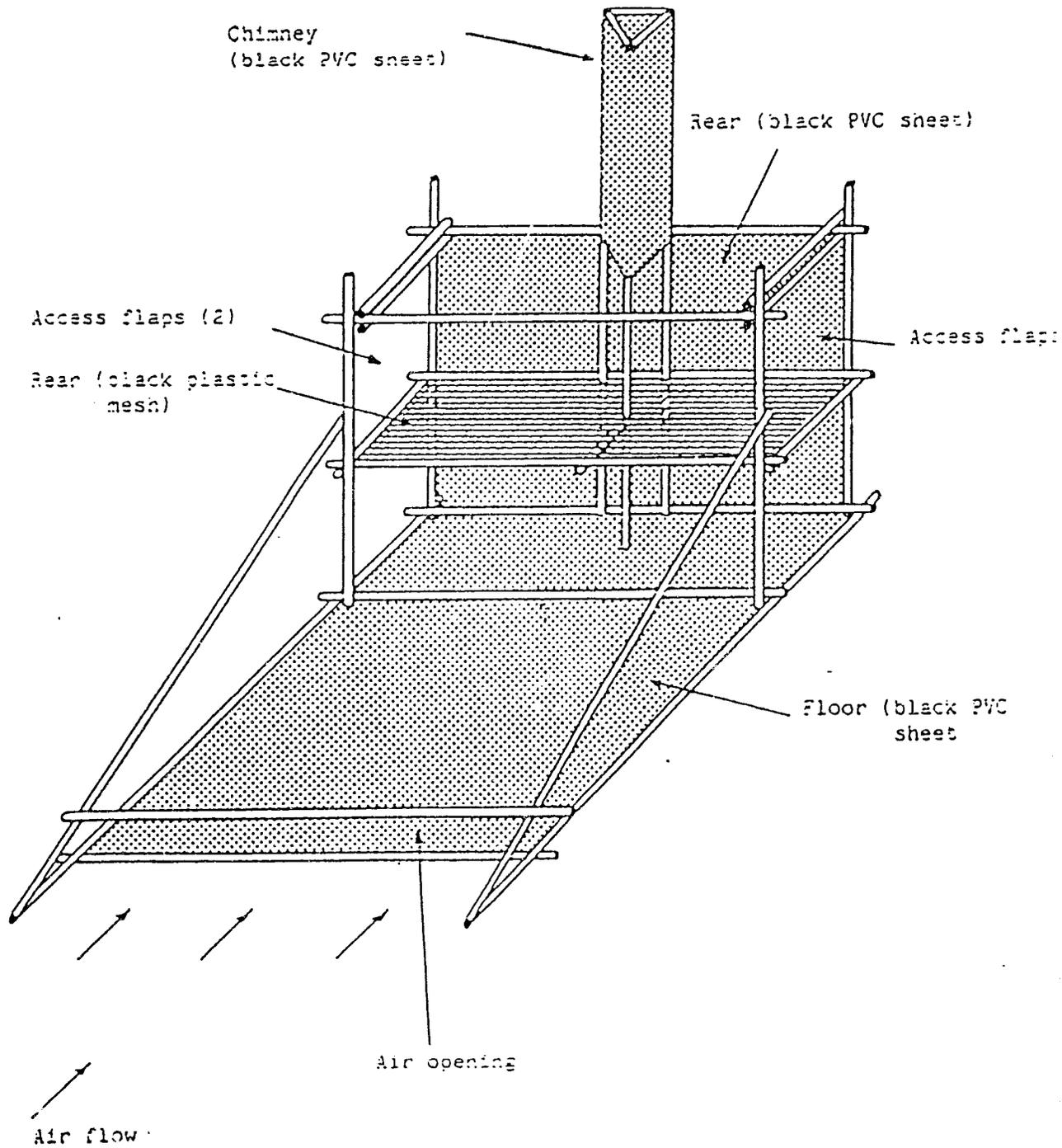
solar tent



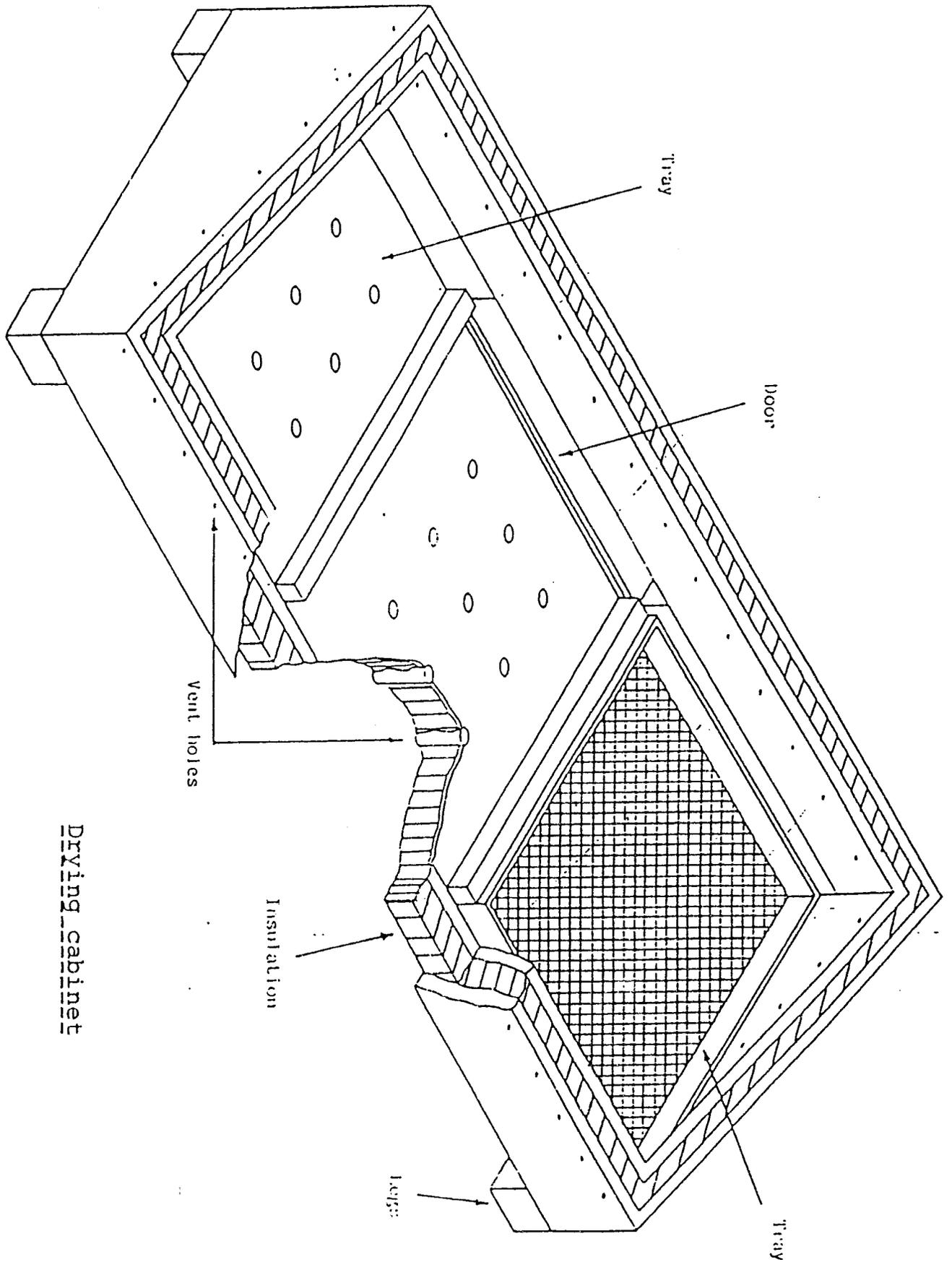
modified solar tent



excellent solar dryer

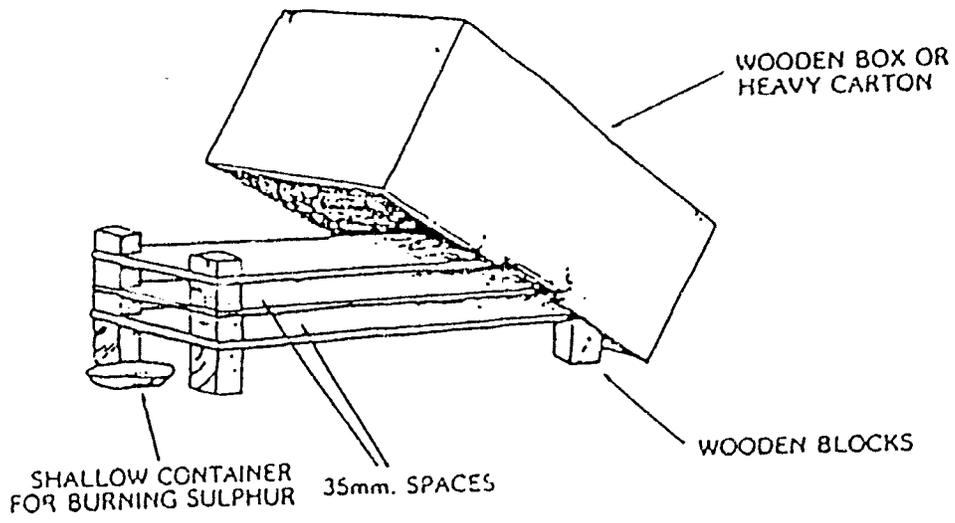


DRYING CABINET

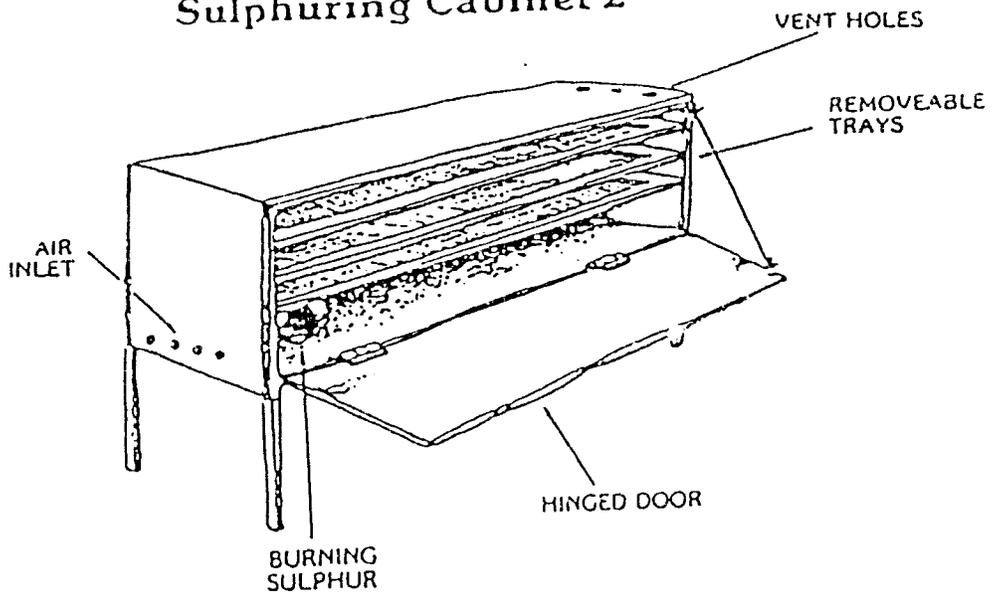


Drying cabinet

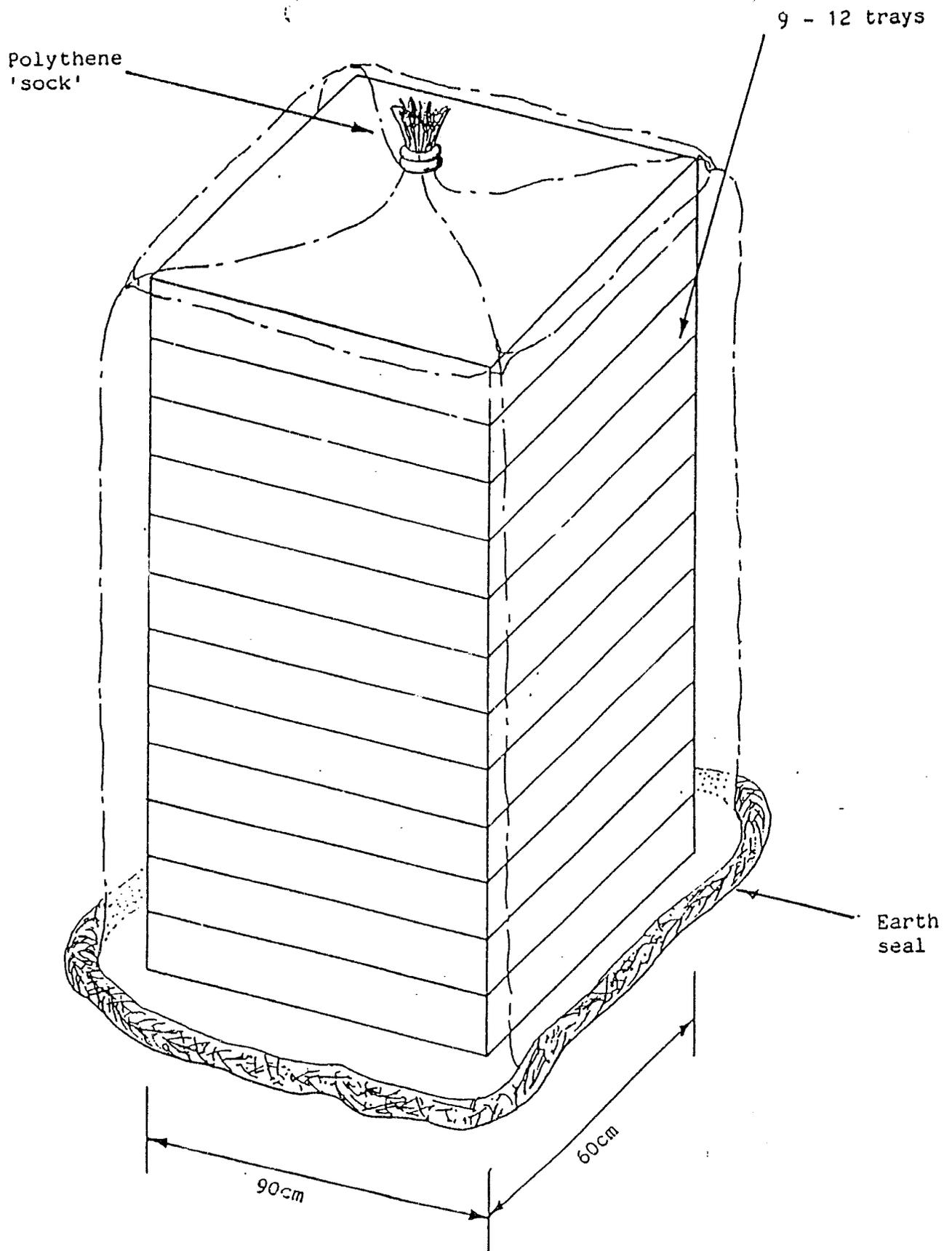
# Sulphuring Cabinet 1



# Sulphuring Cabinet 2



simple sulfuring tent



APPENDIX 7

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AFGHAN CASH CROP PRODUCTION, POST HARVEST HANDLING AND MARKETING

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