ANNEX - B
SOCIO-ECONOMY

ANNEX-B   SOCIO ECONOMY

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1. NATIONAL SOCIO-ECONOMY

1.1 Geography and Population

1.1.1 Geography

The Hashemite Kingdom of Jordan, comprising the East and West Banks of Jordan Valley, has a land area of 97,740 km^2. The East Bank extends over an area of 89,200 km^2, of which about 90% is desert or semidesert. The East Bank area is divided into three distinct physiographic regions by their topography and climate; i.e. (i) Jordan Rift Valley Region, (ii) Highlands Region and (iii) Desert Region.

The Highlands Region extends from the Irbid plateau in the north to the Shaubak ridge in the south. The approximate area of the region is 7,900 km^2. The northern highland enjoys a mediterranean semi-arid climate and is the major cereal and fruit producing region. The southern highland receives less annual rainfall than the northern highland indicating a lower agricultural potential.

1.1.2 Population and Labour Force

In 1988, the total population in the East Bank was estimated at about 3 million with an annual growth rate of 4 % during the period from 1982 to 1988. About 60% inhabit the Great Amman area. Rural population percentage as a total has been declining from 41% in 1979 to 30% in 1988.

The Jordanian active labour force was estimated at 522,000 in 1988. The structure by major economic activity comprises 48.1% for social and public administrative services, 10.3% for mining and manufacturing, 10.0% for construction, 7.6% for agriculture, etc.

1.2 National Economy

The Jordanian economy has two features: one is heavily service-oriented with only modest productive sectors such as mining and agriculture; the other substantially depends on its trade earnings on the remittances of skilled workers employed abroad.

In 1987, the gross domestic product (GDP) in Jordan was JD 1.69 billion at current market prices or the equivalent to US$ 5.0 billion, as shown in Table B.1.1. In the same year, per-capita GDP was about JD 577 or US$ 1,700. During the previous six (6) years from 1982 to 1987, GDP in real terms increased at a rate of 2.6 % per annum. Of the GDP in 1987, 18.4 % was derived from government services, followed by 16.7 % from the wholesale and retail trade, restaurant and hotel. The agri-cultural sector only accounts for 7.3 %.

With real GDP peaking in 1985, growth rate seems to be on

the decrease: there is increasing unemployment; the balance of trade also become worsen. The decline in economic growth is due mainly to the external events. Jordan depend on the oil-producing Gulf States as an export market for both commodities and skilled labor. The decline in oil prices reduced the economic activity of these states which subsequently reduced the size of the export market as well as the resource transfer to Jordan.

1.3 Agriculture

1.3.1 Land Use and Agricultural Production

The total area of the East Bank is 89.2 million dunum from which 4.1 million dunum (4.6%) are agricultural land. The cultivated area fluctuates widely from one year to another due mainly to variations in climatic conditions, as shown below. Of total cultivated area, only 16% is completely or partially irrigated.

(Unit: Million Dunum)

	Cultivated Area	Rainfed	Irrigated	(%)
1981	2,603	2,143	460	(17.7)
1982	2,198	1,666	532	(24.2)
1983	2,854	2,265	589	(20.6)
1984	1,742	1,191	551	(31.6)
1985	2,550	1,979	571	(22.4)
1986	1,762	1,286	476	(27.0)
1987	3,030	2,561	469	(15.5)
1988	3,081	2,574	507	(16.5)
Average	2,477	1,958	519	(21.0)

Source: Agricultural Statistics Indicators 1981-1988, Ministry of Agriculture.

Major crop products in the country are wheat, barley, olive, citrus and tomatoes (see Tables B.1.2 and B.1.3). In 1988, their annual productions were estimated at about 79,000, 45,000, 71,000, 101,000 and 219,000 tons respectively. During the past 15 years from 1974 to 1988, the production of olive, citrus and tomatoes trend upward, whereas wheat and barley were stagnant. The production of crops is concentrated in the governorates of Amman, Mafraq, Irbit and Al Ghouar in the northern part of Jordan. In 1988, more than 60 % of the total cultivated area and production was located in these governorates (see Table B.1.4).

Table B.1.5 shows the number of livestock and animal products in the Kingdom. The annual raising head of cattle and goats had decreased gradually, while poultry increased rapidly from 1981 to 1987. The production of broiler have increased constantly along with increase in its raising heads, which was

estimated at about 63,000 tons in 1987, up from 28,000 tons in 1981.

1.3.2 Trade of Agricultural Products

During the period from 1983 to 1988, imports of agricultural commodity including food, live animals and vegetable oil were counted at about JD 181 million or 18% of the total import value. As shown in Tables B.1.6 and B.1.7, wheat and flour were counted at about JD 28 million or 16% of the total imports of agricultural commodities, followed by meat of 15%, fruits, vegetables and nuts of 13%.

Agricultural exports, comprised primarily of horticultural crops, contribute a modest 9-10% of the merchandise export trade. Tomatoes, eggplant, cucumber and citrus are major export crops of the Kingdom.

1.3.3 Food Balance

Jordan is far from being agriculturally self-sufficient; the value of agricultural imports is more than 400 % of agricultural exports and is about 160 % of agricultural GDP. The self-support ratio and per-capita consumption for main agricultural products in Jordan are summarized as follows:

| | Self-Support Ratio (%) | | | | | Per-capita Consumption (kg/year)*1 |
	1984	1985	1986	1987	1988	
1 Wheat	6	17	14	19	*	156
2 Barley	3	22	11	28	35	50
3 Chick-peas	7	14	8	5	22	4.9
Rice	0	0	0	0	0	23
4 Olives	99	66	69	98	*	20
5 Grapes	100	100	100	100	100	21
6 Almonds	85	90	91	81	*	0.9
7 Peaches	100	100	100	100	100	1
8 Apples	13	5	7	10	36	13
10 Citrus	100	100	100	100	100	40
11 Tomatoes/Eggplants	100	100	100	100	100	86 / 16
12 Cucumber/Water Melon	100	100	100	100	100	22 / 34
13 Potatoes	63	74	78	100	100	17
14 Cabbages/Cauliflowers	100	100	100	100	100	7 / 9
15 Onions	51	80	69	89	93	11
16 Carrot	12	27	16	17	51	1.6
17 Garlic	39	28	39	59	96	0.8
18 Red Meat	29	16	14	17	*	19

Remarks: * No data is available. *1 Average from 1985 to 1987.
Source: Annual Agricultural Statistics, Department of Statistics.

Jordan has imported the staple foods, wheat, which

accounted for 80-90 % of total domestic demand, and there have been no significant change in their situations during the past 5 years from 1984 to 1988. Main consuming crops are wheat, tomatoes, eggplants, cucumber, citrus and apples. With regard to rice, all of its domestic demand has been imported. Other crops are self-supporting except for apples.

Of the agricultural products mentioned above table, the per capita consumptions of barley, chick-peas, rice, cucumber, onion and red meat have upward trends, while citrus have decreased gradually. The remainder is more or less stable. Further details are given in Table B.1.8.

1.3.4   Demand and Supply of Food Crops

In order to clarify the marketability of principal food crops and animal products in the Kingdom, demand and supply analyses are made on the basis of the following basic assumptions:

1) The trends of crop and livestock productions are affected from various factors such as demand, rainfall, farming technique, etc, and have been fluctuated year by year. Assuming that these past trends would continue in the feature, productions of crops and livestock are forecasted until 2005.

2) The data on production, export and import, which are currently available in the period between 1974 and 1988, are used in the analyses.

3) Population until 2005 is projected as follows:

Year	*1 Actual (1,000)	Annual Growth (%)	Projected (1,000)	Year	*1 Actual (1,000)	Annual Growth (%)	Projected (1,000)
1961	901	–	901	1982		3.97	2,400
1962		4.90	950	1983		3.97	2,490
.		.	.	1984		3.97	2,590
.		.	.	1985		3.97	2,690 *2
1974		4.90	1,680	1986		3.58	2,790
1975		4.90	1,760	1987		3.58	2,890
1976		4.90	1,850	1988		3.58	2,990
1977		4.90	1,940	.		.	.
1978		4.90	2,030	.		.	.
1979	2,148	4.90	2,130	1995		3.58	3,800
1980		3.97	2,220	2000		3.58	4,600
1981		3.97	2,310	2005		3.58	5,400 *2

Source: *1 Statistical Yearbook, 1988, Department of Statistics.
       *2 Jordan Water Resources Sector Study, 1988, The World Bank.

The detailed analyses are shown in Table B.1.9 and B.1.10, and these results are summarized in the following table. Overall, it was forecasted that many crops will have deficit condition in 2005, because of high population growth.

As a result of the above forecast, it can be said that the increase in production through development programs for agriculture including strengthen of extension, introduction of advanced farming technique with improved varieties, expansion of irrigation area, etc. will be necessary to meet these domestic demands increasing along with population growth.

(Unit:1,000t)

	Demand			Supply			Balance			Marketa-bility
	1995	2000	2005	1995	2000	2005	1995	2000	2005	
1 Wheat *1	456	552	648	81	81	81	-375	-471	-567	A
2 Chick-peas	17	22	27	1	1	1	-16	-21	-26	A
3 Olive	76	92	108	74	88	100	-2	-4	-8	A
4 Grapes	80	97	113	72	81	87	-8	-16	-26	A
5 Almonds	4.9	6.0	7.0	1.0	1.0	0.9	-3.9	-5.0	-6.1	B
6 Peaches	3.0	4.7	4.3	4.9	6.3	7.6	1.9	1.6	3.3	C
7 Apricots	2.7	3.2	3.8	0.6	0.5	0.5	-2.1	-2.7	-3.3	A
8 Apples	42	51	59	5	5	6	-37	-46	-53	A
9 Pears	2.9	3.5	4.1	0.3	0.3	0.3	-2.6	-3.2	-3.8	A
10 Citrus	103	92	70	285	315	346	182	223	276	C
11 Tomatoes	277	336	394	459	520	586	182	184	192	C
12 Eggplants	80	97	113	127	144	160	47	47	47	C
13 Cucumber	87	110	135	176	212	260	89	102	125	C
14 Potatoes	61	74	86	74	97	120	13	23	34	C
15 Onion	65	92	124	52	69	88	-13	-23	-36	A
16 Carrot	4.2	5.1	5.9	0.7	0.7	0.7	-3.5	-4.4	-5.2	A
17 Garlic	3.0	4.0	4.0	1.3	1.5	1.7	-1.7	-2.5	-2.3	A
18 Red Meat	74	95	117	8	8	8	-66	-87	-109	A

*1 Grain   Note: A: High, B: Moderate, C: Low

1.4   Agricultural Supporting System

1.4.1   Research and Extension

There are now two formal institutions mainly involved in the implementation of research and extension in Jordan; the National Center for Agricultural Research and Technology Transfer of the Ministry of Agriculture (MOA) and the Faculty of Agriculture of the University of Jordan. Although some organization and educational institutions, such as Yarmouk University, Mu'tah University, Jordan Cooperative Organization (JCO), are also engaged in agricultural research and extension, their achievements are still limited.

(1) National Center for Agricultural Research and
      Technology Transfer (NCARTT)

     MOA is responsible for agricultural research and extension
activities. Since commencing its activity, MOA's research and
extension activities have undergone several reorganizations.
The most recent reorganization was done in 1986, consequently
the National Center for Agricultural Research and Technology
Transfer (NCARTT) within the Department of Project of MOA has
now been in charge of the official research and extension. The
organizational structure of MOA and NCARTT is shown in Fig.
B.1.1 and B.1.2, respectively.

     NCARTT has 56 staff, of which PhD and BSc are 12 and 16,
respectively. The research facilities of NCARTT are head-
quartered at Al Baqa'a and eight research stations. However,
the eight outlying stations are now proposed to be reduced to
five regional agricultural service centers (RASC) to conduct
and coordinate applied research applicable to the regional
environments.

     There are two major categories of research activity:
First, major research programmes are commodity - oriented.
These programmes are funded jointly by Jordan government and
foreign assistance. Second, there are individual research
projects which are most un - discipliner. Past research has
concentrated heavily on celiac-biased, especially wheat.

     Extension services are provided through the Technology
Transfer Department, in which contains only three of the 56
NCARTT stuff. However, many of the research staff spend time
in extension activities. Farmers always contact with the
extension agents located in the six RASCs. In 1989, 84
extension agents are positioned in RASCs. Most of these are
young graduates holding a BSc degree, and have little or no
experience or special training in extension. The organization
of extension is presented in Fig. B.1.3 and B.1.4.

(2) Faculty of Agriculture

     The overall objective of FOA is to raise the level of
agricultural productivity and production. Toward that end, FOA
directs an integrated program of teaching, training, research,
and extension.

     FOA has 63 PhD researchers. However, FOA's primary
function is teaching and the proportion of staff time allocated
to research is relatively small. Much of FOA's research is
undertaken in collaboration with MOA/NCARTT stuff.

     The FOA's main facilities are a headquarter building,
research laboratories, grass houses for teaching and research,
and University Farm located in the Jordan Valley. In 1985, FOA
has been established the experimental farm located 30 Km South-
east of Amman with 200 ha on a government owned land in order
to carry out the agricultural experiment project in semi-arid

area under the title of "Agricultural Production In Semi-Arid and Land and Areas Suffering From Decertification."

In the field of extension, FOA has been tried to avoid duplication with the MOA/NCARTT. Its extension activities augment and strengthen the extension efforts of MOA, in the areas of (i) preparation of information materials in the form of extension bulletins and (ii) participation with the field days hold by MOA.

As for the extension, Agricultural Credit Corporation (ACC) and JCO have implemented important role in the extension activities. Both institutions have a number of qualified agricultural engineers. In the process of borrowing/lending for an agricultural investment, the staff of these institutions evaluates, supervises and discusses the investment technology production processes, providing a forum for information transfer.

1.4.2 Agricultural Credit

The institutional agricultural credits in Jordan consists of commercial banks and two institutions; the Agricultural Credit Corporation (ACC) and the Jordan Cooperative Organization (JCO). The commercial bank lending to agricultural sector is considerable. However, agriculture is not very important to the commercial banks due to minor share of the banks' outstanding credit.

(1) Agricultural Credit Corporation (ACC)

ACC was established by law in 1959 as a wholly government owned institution, and provide loans to farmers at a reasonable cost to finance agricultural projects which contribute to agricultural development in accordance with national development plans. ACC operates through its head office in Amman and its 14 branch offices distributed over Jordan.

ACC offers the following three types of loans. However, it is the major source of medium to long-term loans, which comprise 75% of its loan portfolio.

1) Short/seasonal loans repaid of less than one year and limited to the purchase of farm inputs such as fertilizers, seeds and feed for livestock, and payment of labor costs. Interest rate is 8%, plus 1% as penalty for default. Early payment are encouraged by a refund of 1%.

2) Medium-term loans repaid within 1 to 10 years. These loans are issued for purchase of farm machinery; establishment of orchards, fruit-tree farms, livestock farms, and poultry industry; construction of minor irrigation projects; reclamation and physical

improvement of agricultural land; and the construction
of farm stores. Interest rates on long- and medium-
term loans is 7%, unless the loan is for dryland
farming with an amount of less than JD5,000, when the
rate drops to 6%.

3) Long-term loans repaid in 10-15 years. Such loans are
offered to support major irrigation schemes shared by
five or more farmers, agricultural industrial projects,
land reclamation for orchard establishment in rainfed
areas and the purchase of land to consolidate holdings
and prevent fragmentation.

The financial problem for ACC is to decrease repayment
rate in recent years due mainly to the collapse in vegetable
price.

(2) Jordan Cooperative Organization (JCO)

JCO is responsible for cooperative development and
provides loans for farmers through agricultural cooperatives.
In contrast to ACC, the JCO's clientele are primarily small to
intermediate scale farmers and the cooperative societies to
which they belong. And JCO is concentrating its lending more
on short-term or seasonal loan. Current rates charged by JCO
range between 5% and 7%.

JCO has recently concentrated its financing more on short-
term or seasonal loans. and has faced a longstanding problem of
declining repayment. The decline in farm production and prices
is cited as the cause of the decline in the JCO's performance,
but its financial condition was deteriorating prior to the
onset of production and pricing problems. The recovery rate
for all loans was 29% in 1984 but declined even further to 14%
in 1986.

1.4.3 Cooperatives

JCO is a semi-government organization, in which the
Government currently holds the majority of the share capital.
The Director General is appointed by the Cabinet. The JCO's
services are not confined to agriculture, however, provision of
a services to rural and agricultural communities represents a
major target of JCO.

JCO's functions include the supply of inputs, the
marketing of crops and implementation of specialized government
programmes, such as the crop seed multiplication scheme and the
agricultural machinery scheme. It also operates the
agricultural credit scheme. Out of a total number of 453
cooperatives in 1986, agricultural cooperatives accounted for
198 with a membership of 17,839.

1.4.4 Subsidies

Wheat and barley are subsidized both for seed and food/ feed uses. The Government contracts for seed wheat and barley through JCO. The certified seed is sold to the Government at a premium and resold to farmers at a modest subsidized prices.

In order to achieve more cereal self sufficient, domestic wheat and barley procurement prices are determined substantially above the import parity price as shown in the following table.

(In 1987)

Imported Quantity (1,000 mt)	Price (JD/ton)	Domestic Quantity (1,000 mt)	Price (JD/ton)	Sales Price (JD/ton)
542	48.22	61.6	115.00	37.40

Source: DOS and MOS statistics.

In addition, the Government of Jordan takes following measures:

1) In order to support the promotion of agricultural production, all agricultural inputs (except spare parts and a few other minor items) used in agricultural production are exempt from customs duties.

2) MOA provides seedlings of olives, grapes, citrus and some fruits at prices lower than those in the private sector.

3) All income generated by individuals through agricultural production activities is exempt from income tax.

1.5 Prices and Marketing System of Agricultural Products and Inputs

1.5.1 Marketing

(1) Domestic Market and Export System

The ministry of Agriculture controls the amount of import and export of agricultural products through licensing, and the Ministry of Supply (MOS) provides leadership in the regulation of prices.

The Agricultural Marketing Organization (AMO) was established as an independent government organization being responsible for organizing external and internal trade in agricultural products, commercial operations, support functions such market research and regulatory activities.

The Agricultural Marketing and Processing Company (AMPCO)

was established with the major objectives and fields of activity. AMPCO trades or provides all consumption requirements for local markets of potatoes, onions and garlic either from local and/or outside sources. It is an important function among the AMPCO's objectives to directly purchase some of the surplus products like tomatoes from producers on the request of the Government at subsidized prices to reduce heavy losses incurred on such farmers.

The farmers are possible to prepare farm inputs such as fertilizers, agro-chemicals, on farm facilities for irrigation and mulching through the Farmers' Association, cooperatives and/or private dealers.

(2) Import System

Jordan is the country where domestic food production is much lower than demand. Food imports have to fill these gaps in type and quantity. All domestic production of food is in the hands of the private sector, while imports are shared between the private sector and MOS.

The objective of MOS is to provide consumers with food at the lowest possible profit margin, Virtually all basic food-stuffs such as sugar, rice, wheat, wheat bran, barely, maize, lentils, olive oil and red meat are imported by MOS under quantitative restriction. Furthermore, in order to protect the domestic producers and encourage self-sufficiency, the import of fruits and vegetables is controlled through prohibition and licensing.

1.5.2 Prices

(1) Producer Price

MOS supports the producer prices of some commodities such as wheat, barley, check peas and lentils, potatoes, onions, and processing tomatoes. The support price objective varies with the crop. However, these are broadly divided into two cate-gories: (i) floor prices for wheat, onion and potatoes are provided as a means to stimulate production, and (ii) minimum price for processing tomatoes is to support a minimum return to growers. The most important price support is for wheat; the market farm gate price generally fluctuates around the support price, but on average, tend to be equal to or greater than the support price.

(2) Agriculture Input Prices

The prices for most agricultural inputs are determined through market mechanism except a few cases: Rates for machinery hire from cooperatives are at cost recovery levels, and the prices of fruit tree seedlings distributed by MOA are nominally prices resulting in a 50 per cent subsidy.

1.5.3 Production Control

The Government has launched a production control program with the major objectives to avoid problems in marketing of some vegetables such as tomatoes, cucumbers, eggplants and squash and to promote production of some deficit crops such as onions, potatoes, garlic and grains etc.

MOA regulates the area to be planted of each selected crop under irrigation through issuing permission to farmers both in the Jordan Valley and Highlands with advised dates of cropping. This is also to promote other crop production by utilizing the saved field and irrigation water.

1.6 Five Year Development Plan

The Government of Jordan decided the third Five-Year Development Plan for economic and social development, which covers the fiscal year from 1986 to 1990. The Plan seeks to achieve the aims through the following policies:

1) Create new employment possibilities for increasing numbers of graduates and job-seekers,

2) Improve the balance of payments and reduce the deficit in the trade balance,

3) Stimulate economic and social activity through regional development programs aimed at achieving a geographic balance in the distribution of economic gains,

4) Promote the welfare state, and

5) Expand linkage with Arab economies and promote the cooperation with all friendly countries.

To implementing these policies, a total of JD 3,116 million will be spent during the period 1986-1990, of which 60.2% will be devoted to the infrastructure sectors and productive sectors

The Third Development Plan envisages to attain the following three goals in the agriculture sector:

1) To increase the average net income from agriculture in constant 1985 prices from JD 97 million during the period 1981-1985 to JD 138.1 million during 1986-90, a total increase of 45.6% at an annual growth rate of approximately 7.8%, through increasing agricultural production as follows:

(Unit: 1,000t)

	Average Production Production for the period		Relative Change	Ratio of Self-Sufficiency for the period (%)	
	1981-1985	1986-1990	(%)	1981-1985	1986-1990
Wheat	61	143	134	14	26
Legumes	9	12	33	57	61
Barley	20	26	30	18	20
Other Field Crops*	6	18	200	6	15
Dried Green Fodder	3	120	3900	–	–
Vegetables	628	970	54	182	227
Olives	40	57	43	89	102
Fruits and Grapes	41	50	23	55	55
Citrus	60	120	100	101	158
Dairy Products	49	67	37	69	77
Red Meat	9.5	16	68	29.5	40
Poultry Meat	37	50	36	83	91
Fish	0.02	1	4900	0.5	21.7
Eggs (Million)	402	445	11	111	100

* Including corn and soybeans.

2) To conserve basic agricultural resources and protect the natural environment by halting their deterioration and utilizing them to best economic advantage, and

3) To increase the return on agricultural investment and improve the incomes of farmers and labors in order to promote investment in agriculture and encourage farmers to remain on their farms and in their village.

These goals would be attained by increasing the area of irrigated land in the Jordan Valley region, embarking on highlands development projects, developing agricultural systems and enhancing the productivity of irrigated and rained areas by introducing advanced agricultural and irrigation techniques.

To implementing these policies, JD 574.2 million will be devoted to the agriculture sector including water and irrigation during the period 1986-1990. Although the current Plan's investment allocation to water and irrigation (9%) is lower than under the 1981-85 Plan (16%), the share allocated to agriculture (9.5%) is higher than that of 1981-85 Plan (7%). Almost four fifths of agricultural investment, other than in irrigation, is projected to be carried by the private sector.

2. PRESENT CONDITION IN THE STUDY AREA

2.1 Location and Population

The study area covers about 4,000 km^2 extending in west side of the Desert Highway and includes the High-lands of the Karak Governorate excluding Safi sub-region, Tafila Governorate, and a southern part of Amman Governorate. There are 17 development units in the study area.

According to the 1984 National Village Survey, population in the study area is estimated at about 166,800 in 1990, comprising 109,300 in Karak Governorate (except for Safi Sub-region), 42,500 of Tafila Governorate and 15,000 in the area belong to Madaba Sub-region of Amman Governorate. The average annual growth rate of Karak and Tafila Governorates was 2.6%. There are 194 villages in the study area. Number of households is estimated at about 20,600 which corresponds to 8.1 family members/household.

In 1985, employment in the study area was estimated at 28,800 which was 5.7% of national employment. Of this total, public and other service sectors accounted for 61%, followed by 17% in the agricultural sector, and 12% in the mining and manufacturing sector.

In 1980, the total population in the priority areas was only 30,000, concentrated in the Tafila area as shown below.

Poriority Areas	Actual 1980	Projected 1985	1990
Dhiban	5,670	6,560	7,340
Abyad	1,150	1,290	1,450
Tafila	23,520	26,940	30,790
Total	30,340	34,790	39,580

Source: National Village Survey 1984.

2.2 Economy in the Study Area

The Gross Regional Domestic Product (GRDP) of the study area was estimated at JD 98 million in 1985, which accounted for 7.2% of the whole Kingdom (see Table B.2.1). The per capita GRDP of the Study area, which excluded a mining sector's contribution, was only JD 381. Among the productive sectors, mining sector accounted for 47% of total GRDP, followed by 10% of the agriculture sector. The manufacturing sector accounted for only 0.7%. The total share of the productive sectors including the mining sector was 63%, which was much higher than the nationwide value of 36.5%. Service sectors other than government services accounted for 15%.

Per capita household income was estimated at JD 495 in the old Karak governorate, which was 77% of the national average (JD 641) and only 69% of that of Amman Governorate (JD 719) in

1980. This lower household income in the study area forms a remarkable contrast to the per capita GRDP in the study area which is higher than the national average.

2.3 Social Infrastructure

(1) Electricity

Electricity in the study area is supplied by 132 kV and 33 kV transmission lines which are connected to the Interconnected System at the Qatrana Substation. In addition, there are one gas turbine (18 MW) and three diesel generators (3 x 1.5 MW) in Karak City. The number of consumers in the study area was 23,000 in 1985, which grew at 22.6% per annum from 1980 (8,300).

(2) Transportation

In the study area, the Desert Highway and the King's Highway run in parallel from north to south, which connect the capital city Amman and the Aqaba seaport. The former has four lanes in the section between Qatrana and Ma'an, and the later has two lanes. These two trunk roads are connected to each other by several lateral roads in the area. In addition to the road transportation, the railway runs along with the Desert Highway.

(3) Water Supply

Most of the water supplied for regional consumption is groundwater and spring water. Due to the high altitude of about 800 m AMSL or more in most part of the study area, utilization of base flow and flood flow in deep wadis is limited to areas along wadi beds with a low elevation of some 400 m AMSL or less.

There are four types for water consumption in the area, i.e. i) municipal water, ii) irrigation water, iii) mining and large scale industrial water and iv) water transfer.

1) Municipal Water

For the municipal water supply, there are two networks in the Study area; the Karak water network and the Tafila water network. The annual water supplied by the two networks was estimated at 3.5 MCM in 1985.

2) Irrigation Water

Sources of irrigation water in the area are spring, deep wells and surface flow of wadis. There are 169 major springs and 118 deep wells in the area. Most of springs are concentrated on the western slopes of the Highlands

facing the Dead Sea between Wadi Karak and Wadi Feifa. The spring-irrigation water is estimated at around 7.5 MCM/year irrigating farmlands in wadi slops of more than 2,000 ha.

Out of deep wells, 25 in the Mujib basin and several in the Hasa basin are used for irrigation, and their annual supply is estimated at around 3 MCM for farm-lands of 500 ha.

As for the surface flow, there are two dams for storing flood water. The flood water of Wadi Qatrana is stored by the Qatrana Dam which has a storage capacity of 1.85 MCM, and is used for livestock watering. The Sultani Dam, which had an initial storage capacity of 1.2 MCM, has been almost filled with sediments and slimes, and the present capacity was estimated at 0.33 MCM.

3) Mining and Large Scale Industrial Water

At present, about 10 MCM/year of groundwater are extracted for the two phosphate mines in the study area. Of this, 6.1 MCM/year is discharged with about 1.5 million tons/year of suspended soils as slimes.

4) Water Transfer

Groundwater from the Mujib basin is transmitted to Greater Amman at about 15 MCM/year. The base flow of Wadi Hasa and adjacent small wadis is supplied to the Souther Ghor Irrigation Project, and its supplying volume was about 39 MCM/year.

2.4 Land Tenure and Land Holding Size

2.4.1 Current Situation of Land Registration

For adjudication and registration of land ownership, the Land and Survey Department (LSD) was organized in 1927. Laws and gazettes governing land tenure system in Jordan have been issued since 1953 and updated every year.

Land adjudication and registration are still in progress. The large portions of the Karak-Tafila Development Region are not settled yet in terms of land ownership. The followings are the progress of land registration in the Region (see Fig. B.2.1).

Governorate	Total Land (dunum)	Registered Land	
		Area (dunum)	Proportion (%)
Karak	4,009,852	1,700,889	42.4
Tafila	2,201,689	857,051	38.9

It is estimated at LSD that about 60 to 70% of the land in the Karak Region is owned by the Government. However, the large portions of the government land are used for grazing purposes by nomads.

2.4.2 Specific Features of Land Tenure System in Jordan

At LSD, land is classified firstly into "Mulk" and "Miri" in Arabic terminology according to their geographical extent. Mulk is the area within boundaries of either city or village, while Miri is defined as the area for agricultural purposes extending outside city or village boundaries. Both land categories are divided into several blocks. In Mulk, blocks are further divided into sub-units called Hi in Arabic. Block and Hi consist of parcels, i.e. minimum unit of land category. The compositions of blocks and parcels local administration concerned are as follows:

(Unit: No.)

Governorate	Village	Block	Hi
Karak	84	1,056	73
Tafila	15	264	24

For each parcel within block or Hi, land ownership are defined according to the following categories:

a) Jordanian ownership
b) Foreigner ownership
c) Private companies
d) Parastatals (Authorities), not pure-governmental organization
e) Land occupied by religious and charity organizations, e.g. mosques and churches
f) Governmental, and
g) Foreign companies

The average parcel size in Jordan acts to become smaller and smaller. There is another constraint due to shared ownership. Land is generally inherited from a holder to his or her bereaved family as shared heritage. Such a land owned by plural persons is called "Mussha". About 10 to 20% of the private land of GAM is categorized into Mussha. For utilization of the Mussha land, the way of decision making apts to be complicated and time consuming.

2.4.3 Land Holding Size in the Study Area

At LSD, the data input and arrangement have not been completed for the Karak-Tafila Development Region. The

National Village Survey 1983 investigated (i) land holding size of average farmer and (ii) proportion of freeholders and leaseholders in Karak Governorate.

There were 7,519 land holders in Karak old Governorate who had 536,090 dunum in total giving 71.3 dunum of an overall average land holding size as presented in Table B.2.2. Some 60% of holders are classified into land size groups of less than 50 dunum although their land occupy only 15% of the total area. As LSD mentioned, subdivision of parcels will be a constraint even in Karak. About 20% of the farmers are sustained by farmland of less than 10 dunum, which is evaluated to be the minimum farmland area sustainable an average farm family in Jordan according to MOA. Table 3.4 shows the proportion of freeholders and leaseholders. In Karak, there were very few leaseholders, i.e. less than 1% in number.

2.5 Agriculture

2.5.1 Agricultural Supporting Services

Agricultural governorate of the Ministry of Agriculture is the formal organization for the agricultural extension in the study area. There are 3 agricultural governorate in the study area. Their major activities are:

a) Agricultural extension services to farmers,

b) Veterinary services including treatments to farmers,

c) Production of fruit tree seedlings,

d) Participation in various seminars, training courses for upgrading capability of related officials,

e) Lease of agricultural machinery such as pumps, pruning scissors, knives to farmers,

f) Administrative procedural activities for the Highland Development Project, animal feed distribution, etc,

g) Statistical reporting of crop production, crop damages, weather etc,

h) Development operation and maintenance of public rangelands, road-side green belts, etc,

i) Agricultural experiments mainly of variety tests, and

j) Plant protection services to farmers

Their organizational structures, staffing and equipment are shown in Tables B.2.4 and B.2.5.

Agricultural extension services farmers are insufficient in terms of manpower, facilities (vehicles) and messages (technical, marketing, management). There are only 17 extension workers in Karak/Tafila governorate. Extension workers don't have specified vehicles for the extension services. Twenty seven cars (sedan, pick-up) are jointly used by 291 personnel of the agricultural offices in both governorate. There are no leaflets on crop or animal husbandry for the distribution to farmers in the agricultural offices.

The Jordan Cooperative Organization (JCO) also extends agricultural extension services on production inputs, marketing and credit to member of the cooperatives. There were 21 agricultural cooperatives in Karak Governorate (see Fig. B.2.2) and 9 in Tafila Governorate consisting of 1,924, and 291 members, respectively in 1986. JCO has a branch office in Karak and Tafila, respectively, and they have managed several agricultural projects such as sheep fattening and cattle grazing.

2.5.2 Marketing and Prices

(1) Marketing of Agricultural Products

Most of crops in the study area are consumed by farmers and the surplus products are sold in local market in order to get cash income. Some crops are sold to middlemen in Amman Central Market. In this case, the products are transported by the farmers themselves. The products which are sold to Amman are mainly vegetables and livestock products. As for wheat and barley, the study area has no supply capacity to Amman market. Barley in the study area has been mainly consuming as animal feeds.

(2) Prices

The farmgate prices of farm inputs and outputs in the study area were estimated as shown in Table B.2.6. The farmgate prices of fruits and vegetable fluctuate largely along the marketing quantities. These prices presented in Table B.2.6 indicate the average figures in 1989.

2.5.3 Farmers' Economy

In order to grasp the economic activities and living standards of farmers in the priority areas, a farm budget analysis was made on the basis of the crop budget analysis and the farm interview survey. The results of the analysis are presented in Table 3.15, and are summarized below:

Item	Dhiban	Abyad	Tafila	Average
Family Size (persons) /1	8.7	10.1	9.3	9.4
Farm Size (dunum/family) /1	82	250	156	163
Livestock (head/family) /2	79	74	80	78
I. Gross Income	5,420	5,760	5,030	5,400
- Farm Income	4,480	4,640	4,400	4,510
(Crops)	(2,100)	(2,380)	(1,980)	(2,150)
(Livestock)	(2,380)	(2,260)	(2,430)	(2,360)
- Non-farm Income	940	1,120	630	900
II. Gross Outgoings	5,370	5,710	5,040	5,370
- Production Cost	2,460	2,570	2,470	2,500
- Living Expenses /3	2,910	3,140	2,570	2,870
(Foods)	(1,370)	(1,670)	(1,120)	(1,390)
(Others)	(1,540)	(1,470)	(1,450)	(1,480)
III. Net Reserve	50	50	-10	30

/1 Excluding fallow land.
/2 Including lambs and kids. For the raising head per one farmer in the areas, there is no numerical data as well as crop production. It was estimated on the basis of the results of farm interview survey (see Table 3.19).
/3 See Table 3.20.
Note: The figures indicate an average of samples collected through the farm interview survey.

The general characteristics of the farmers' economy may be summarized as follows:

a) Half of the farm income is derived from livestock raising.

b) A considerable amount of the gross income is derived from non-farm income consisting of wages earned from other farms or non-farm works.

c) Food expenses amount to 48% represent the largest portion of total living expenses.

e) The net reserve is negligibly small. It is indicated that the farmers in the priority area have no reinvestment funds for improvement of their farming activities.

Table B.1.1 NATIONAL SOCIO-ECONOMY

		1982	1983	1984	1985	1986	1987	1988
1. Area *1	(1,000 km2)	89.2	89.2	89.2	89.2	89.2	89.2	89.2
2. Poulation								
1) Population *1	(Million)	2.4	2.5	2.6	2.7	2.8	2.9	3.0
2) Growth rate	(%)	4	4	4	4	4	4	4
3) Population density	(Persons/km2)	27	28	29	30	31	33	34
3. Labour Force								
1) Jordanian active labour force	(1,000)	*	445	459	472	493	509	522
2) Distribution by major economic activity	(%)	*	100.0	100.0	100.0	100.0	100.0	100.0
- Agriculture	(%)	*	7.4	7.6	7.8	7.6	7.4	7.6
- Mining & manufacturing	(%)	*	10.0	10.3	10.6	10.7	10.5	10.3
- Electricity & water	(%)	*	0.9	1.0	1.1	1.1	1.7	1.6
- Construction	(%)	*	11.9	11.5	11.0	11.0	10.5	10.0
- Trade	(%)	*	10.2	10.1	10.0	10.0	9.8	10.0
- Transport & communication	(%)	*	8.6	9.0	9.4	9.4	9.2	9.0
- Finance and insurance services	(%)	*	2.9	3.2	3.4	3.4	3.3	3.4
- Social and public administrative services	(%)	*	48.1	47.3	46.7	46.8	47.6	48.1
4. Gross Domestic Product (GDP)								
1) GDP at market prices	(Million JD)	1,320	1,420	1,500	1,610	1,640	1,690	*
	(Million $)	3,740	3,910	3,900	4,080	4,680	4,990	*
2) GDP at 1985 constant prices	(Million JD)	1,490	1,520	1,540	1,610	1,640	1,690	*
3) Annual change	(%)	-	2.0	1.3	4.5	1.9	3.0	*
4) Per capita GDP - Market prices	(JD)	550	568	577	596	586	583	*
	($)	1,560	1,560	1,500	1,510	1,670	1,720	*
- 1985 constant prices	(JD)	621	608	592	596	586	583	*
5) GDP by industry (1985 constant)								
- Agriculture, forestry & fishery	(%)	*	7.7	6.3	7.1	6.7	7.3	*
- Mining and quarrying	(%)	*	2.7	3.4	3.9	3.9	3.8	*
- Manufacturing	(%)	*	14.1	14.6	14.2	14.3	14.6	*
- Electricity & water supply	(%)	*	1.7	1.9	2.3	2.7	2.9	*
- Construction	(%)	*	8.9	8.5	7.1	6.9	6.0	*
- Wholesale & retail trade, restaurant & hotels	(%)	*	16.9	17.3	17.9	16.0	16.0	*
- Transportation-Communication	(%)	*	11.0	11.0	10.5	11.2	11.2	*
- Financing realestate and business services	(%)	*	9.5	9.6	9.6	10.3	10.3	*
- Community, social and personal services	(%)	*	1.9	2.4	2.9	3.0	3.1	*
- Less imputed bank service	(%)	*	-1.6	-1.7	-2.1	-2.4	-2.4	*
- Government services	(%)	*	16.3	15.9	16.5	18.0	18.4	*
- Private non-profit services	(%)	*	1.4	1.5	1.5	1.5	1.5	*
- Domestic services of household	(%)	*	0.2	0.3	0.3	0.4	0.3	*
- Indirect tax	(%)	*	9.3	9.0	8.3	7.5	7.0	*
5. Consumer Price Index	(1985 = 100)	89.0	93.5	97.1	100.0	100.0	99.7	102.9
6. Exchange Rate ($1.00=) - Selling	(JD)	0.354	0.364	0.386	0.396	0.352	0.340	0.377
- Buying	(JD)	0.352	0.362	0.384	0.393	0.349	0.338	0.374
7. Balance of Payments								
1) Current account								
- Merchandise : Exports	(Million JD)	*	211	291	311	256	316	*
: Imports	(Million JD)	*	1,102	1,069	1,073	848	913	*
(Trade balance)	(Million JD)	*	-891	-778	-762	-592	-597	*
- Services : Exports	(Million JD)	*	893	967	911	825	775	*
: Imports	(Million JD)	*	438	572	564	487	496	*
- Unrequited transfers : Credit	(Million JD)	*	297	283	318	241	206	*
: Debit	(Million JD)	*	2	4	3	3	7	*
(Current account balance)	(Million JD)	*	-141	-104	-100	-16	-119	*
2) Allocation of SDRs	(Million JD)	*	-	-	-	-	-	*
3) Capital account								
- Government investment: Credit	(Million JD)	*	316	286	341	269	270	*
: Debit	(Million JD)	*	170	251	213	225	208	*
- Private investment : Credit	(Million JD)	*	14	30	10	10	14	*
: Debit	(Million JD)	*	3	-	-	3	-	*
(Capital account balance)	(Million JD)	*	157	65	138	51	76	*
4) Overall balance	(Million JD)	*	16	-39	38	35	-43	*
5) Change in reserves	(Million JD)	*	50	-69	18	18	-37	*
6) Net errors and omissions	(Million JD)	*	34	-30	-20	-17	6	*

Sources: (1) International Financial Statistics, 1989, IMF.
(2) Statistical Yearbook, 1987, Department of Statistics.
(3) Statistical Yearbook, 1988, Department of Statistics.
Remarks: *1 East bank area.

(Unit: 1,000 dunum)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
FIELD CROPS	2,970.68	2,172.48	2,451.26	2,046.91	2,278.11	1,477.00	2,567.91	1,820.30	1,310.10	1,860.50	805.80	1,574.30	840.00	2,106.37	2,116.14
1 Wheat	1,975.50	1,401.20	1,474.20	1,312.00	1,371.90	833.90	1,590.40	1,088.70	775.10	1,119.10	449.90	962.50	515.90	1,271.30	1,239.90
2 Barley	585.30	396.30	518.10	440.70	557.10	401.10	675.60	462.60	329.80	458.40	197.90	411.20	195.80	612.80	650.60
3 Lentils	218.10	222.30	250.20	161.90	200.40	112.60	147.20	104.30	54.70	92.90	31.50	57.80	43.00	112.10	103.80
4 Vetch	69.40	55.40	137.60	57.80	62.40	49.80	46.90	45.60	34.80	58.80	28.40	40.70	31.20	57.10	45.80
5 Chick-peas	56.60	36.00	18.90	22.20	23.40	17.80	23.20	20.60	23.10	31.60	15.60	28.90	18.10	17.10	33.60
6 Maize	6.08	7.40	7.48	9.66	4.44	4.63	11.54	9.50	6.10	7.50	4.30	8.80	5.10	1.40	4.80
7 Tobacco	42.70	41.80	33.20	32.70	44.30	49.24	62.80	67.60	81.50	84.00	69.50	55.50	25.00	32.10	35.90
8 Dry Beans	11.30	8.10	7.90	5.90	10.10	6.50	8.60	19.70	4.30	7.30	7.20	7.20	5.20	0.31	0.11
9 Sesame	5.70	3.98	3.68	4.05	4.07	1.43	1.67	1.70	0.70	0.90	1.50	1.70	0.70	0.50	1.00
10 Others														1.66	0.63
TREE CROPS	290.31	315.48	336.24	349.24	372.37	397.19	426.87	406.00	431.94	442.63	453.06	504.40	583.50	618.10	660.87
11 Olive	150.40	163.90	174.90	183.60	197.60	211.30	233.80	238.10	244.50	249.80	255.10	285.10	351.10	371.80	406.00
12 Grape	79.40	86.60	93.50	96.00	103.30	108.20	113.40	98.30	106.20	108.90	111.60	115.50	125.20	131.00	133.90
13 Fig	6.68	6.94	7.31	7.46	7.66	7.92	8.27	5.40	5.90	6.10	6.20	6.40	7.50	8.40	9.00
14 Almond	5.50	6.50	6.60	6.80	6.90	7.00	7.10	5.00	5.10	5.50	5.60	6.00	6.60	6.40	6.90
15 Peache	1.93	2.06	2.27	2.43	2.30	2.56	2.76	5.80	6.30	6.60	6.80	7.10	7.50	8.30	10.30
16 Plum and Prune	6.06	6.25	6.57	6.75	6.75	7.17	7.47	5.10	5.70	5.90	6.20	6.20	6.70	7.90	8.10
17 Apricot	2.10	2.30	2.50	2.60	2.70	2.90	3.30	1.80	2.10	2.20	2.50	2.80	3.20	2.90	2.17
18 Pomegranate	6.00	6.20	6.50	6.80	6.90	7.40	7.70	3.30	3.40	3.50	3.60	3.80	4.10	4.90	5.40
19 Apple	6.80	7.00	7.30	7.70	7.90	7.70	8.00	7.20	8.50	8.70	9.10	9.30	10.60	11.50	12.40
20 Pear	1.56	1.65	1.69	1.79	1.84	1.91	2.00	0.70	0.70	0.80	0.90	1.00	1.20	1.30	1.70
21 Banana	5.00	5.10	5.90	5.90	6.80	7.20	7.00	3.10	4.60	5.30	5.60	10.30	8.40	10.30	8.60
22 Citrus	18.70	20.80	21.00	21.20	21.50	25.70	25.80	31.80	38.50	38.80	39.30	49.20	50.40	52.00	53.00
23 Guava	*	*	*	*	*	*	*	0.30	0.30	0.40	0.40	0.50	0.50	0.60	0.90
24 Quince	0.18	0.18	0.20	0.21	0.22	0.23	0.27	0.07	0.10	0.08	0.10	0.10	0.10	0.20	0.30
25 Cherries	*	*	*	*	*	*	*	0.03	0.04	0.05	0.06	0.10	0.10	0.20	0.30
26 Others	*	*	*	*	*	*	*	-	-	-	-	1.00	0.30	0.40	1.90

Remark: * Negligible small.   Source: Annual Agricultural Statistics, Department of Statistics.

Table B.1.2 (2/2) AGRICULTURAL PRODUCTION IN JORDAN - HARVESTED AREA

(Unit: 1,000 dunum)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1,987.00	1,988.00
VEGETABLES	344.8	370.5	345.4	330.1	381.9	330.3	401.8	429.1	481.3	571.5	511.6	493.0	362.0	338.30	373.70
1 Tomatoes	120.50	133.70	110.20	110.90	137.30	132.10	136.60	142.60	156.50	172.10	155.70	137.10	96.40	78.20	74.10
2 Squash	8.70	12.10	17.80	17.80	15.50	14.30	19.50	25.20	46.20	53.00	59.20	37.10	33.80	23.10	22.20
3 Eggplant	38.40	35.10	28.30	29.10	26.70	33.80	34.20	38.60	64.20	56.10	28.10	27.20	23.80	16.10	10.70
4 Cucumber	12.70	12.00	17.10	15.30	17.00	25.30	30.30	42.80	32.00	40.90	34.40	64.80	21.60	24.40	11.00
5 Potatoes	2.70	3.60	5.90	5.90	6.90	3.60	5.90	4.20	7.50	7.80	12.60	3.00	15.60	21.40	25.10
6 Cabbage	4.40	6.90	6.30	5.70	4.70	6.90	7.00	8.00	8.40	13.00	20.80	11.50	10.40	7.00	6.60
7 Cauliflower	6.80	14.80	8.80	8.10	5.60	6.40	5.60	18.70	21.10	26.10	19.70	16.70	13.80	13.90	14.50
8 Pepper	5.60	10.00	8.80	8.50	7.20	14.60	15.10	15.7	18.7	25.6	24.6	16.1	18.1	17.3	13
9 Broad Bean	8.50	13.40	9.90	9.90	22.40	18.50	13.30	15.5	10.8	12.7	10.5	5.3	8.3	7.30	3.60
10 String Beans	3.90	5.90	9.50	4.00	5.50	7.40	11.50	7.7	12.8	14.8	10.1	19	20.1	9.50	11.80
11 Peas	0.20	0.75	0.38	0.06	0.23	0.31	0.25	0.50	1.00	1.00	1.00	0.90	0.80	1.80	0.40
12 Okra	6.90	7.90	7.50	9.60	8.30	9.40	11.00	11.00	9.70	12.10	10.90	13.70	9.80	9.40	13.00
13 Lettuce	*	*	*	*	*	*	*	5.10	5.30	7.70	10.10	10.00	11.50	6.90	5.50
14 Sweet Melon	15.10	12.20	11.80	11.60	12.70	10.10	9.10	18.2	15.2	23.7	26.3	35.2	15.6	28.10	53.30
15 Water Melon	71.40	64.10	67.40	54.80	53.10	12.30	45.60	34.20	24.60	49.40	36.90	38.00	20.30	31.80	37.20
16 Spinach	*	*	*	*	*	*	*	1	0.3	1.3	2.2	2.2	2.1	0.50	0.40
17 Onions	11.20	10.90	9.60	10.30	13.00	7.10	7.10	11.10	15.10	17.50	11.30	12.90	17.70	12.50	32.80
18 Snake Cucumber	10.80	12.60	11.20	11.50	10.60	7.80	11.10	12.70	11.90	13.50	11.70	12.80	6.50	6.90	10.30
19 Radish	*	*	*	*	*	*	*	*	*	*	0.4	1.8	*	*	*
20 Carrots	0.58	0.50	0.30	0.31	0.15	0.36	0.41	0.40	0.50	0.10	0.50	0.60	0.30	0.40	0.30
21 Beans	*	*	*	*	*	*	*	0.80	1.00	1.20	1.70	2.60	1.10	1.10	2.10
22 Garlic	0.76	0.73	0.61	0.26	0.48	0.26	0.17	0.20	0.40	1.00	1.60	1.10	1.90	2.20	3.90
23 Mulukhiyeh	-	2.98	4.23	-	2.56	4.48	5.94	7.90	11.00	8.80	8.00	7.20	3.80	11.00	10.90
24 Others	15.70	10.30	9.80	16.50	32.00	15.30	32.10	7.00	7.10	12.10	13.30	16.20	8.70	7.50	11.00
TOTAL	3,605.83	2,858.42	3,132.92	2,726.28	3,032.40	2,204.50	3,396.55	2,655.40	2,223.34	2,874.63	1,770.46	2,571.70	1,785.50	3,062.77	3,150.71

Remark: * Negligible small.   Source: Annual Agricultural Statistics, Department of Statistics.

Table B.1.3 (1/2)   AGRICULTURAL PRODUCTION IN JORDAN - PRODUCTION

(Unit: 1,000t)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
FIELD CROPS															
1 Wheat	181.75	61.92	58.44	54.03	53.74	16.40	139.01	62.80	30.60	116.80	28.00	65.00	41.60	116.40	162.70
2 Barley	50.68	13.78	13.12	13.64	16.05	6.70	58.03	20.10	8.40	35.00	5.50	20.70	17.60	44.40	53.20
3 Lentils	21.60	10.48	10.87	7.38	8.39	1.97	10.83	6.50	2.60	8.10	1.70	4.10	2.60	7.60	9.80
4 Vetch	5.96	2.37	3.31	3.11	3.93	1.32	3.59	3.30	2.30	4.90	1.40	2.50	1.60	3.80	6.70
5 Chick-peas	3.79	1.50	0.78	1.55	1.32	0.73	1.29	1.30	0.90	1.50	0.60	1.60	0.90	1.00	2.10
6 Maize	0.73	0.55	0.62	0.69	0.19	0.10	0.52	0.40	0.10	0.40	0.20	0.40	0.10	0.40	0.20
7 Tobacco	1.87	1.07	0.80	0.86	1.36	1.30	3.34	2.91	4.02	4.73	1.32	3.46	1.07	4.60	3.14
8 Dry Beans	1.29	0.24	0.48	0.29	0.65	0.11	0.82	0.80	0.40	1.40	0.20	0.50	0.20	4.20	1.20
9 Sesame	0.18	0.07	0.13	0.13	0.13	0.03	0.10	0.06	0.03	0.05	0.05	0.10	0.02	0.02	0.04
10 Others	*	*	*	*	*	*	*	*	*	*	*	*	*	1.40	0.17
TREE CROPS															
11 Olive	31.91	9.54	25.91	6.25	31.41	5.13	42.00	18.90	43.10	25.20	38.50	22.70	45.70	24.10	78.80
12 Grape	34.27	39.14	36.32	33.75	43.25	36.79	43.49	45.90	46.50	51.90	41.50	50.30	57.90	55.60	69.40
13 Fig	3.24	3.15	3.23	2.94	2.83	2.24	2.24	2.20	2.40	2.20	2.40	2.60	2.80	3.00	3.30
14 Almond	2.38	2.36	2.40	2.20	1.89	1.77	1.75	1.10	1.30	1.50	1.60	1.80	1.00	2.00	1.30
15 Peache	0.46	0.48	0.48	0.40	0.45	0.42	0.44	1.80	4.20	4.40	2.90	3.10	4.30	0.80	4.10
16 Plum and Prune	2.80	3.09	3.20	2.96	2.44	1.88	1.74	1.60	2.30	2.20	2.20	2.30	2.80	1.10	3.00
17 Apricot	1.02	1.04	1.18	1.03	0.86	0.67	0.62	0.70	0.80	0.60	0.60	0.70	0.60	0.60	0.90
18 Pomegranate	4.25	4.07	4.22	3.35	3.30	2.45	2.41	1.90	2.00	2.00	1.70	1.80	1.80	1.50	4.20
19 Apple	2.37	2.67	2.53	2.19	2.35	2.30	2.28	3.20	4.40	4.70	4.40	2.90	2.50	2.00	4.80
20 Pear	0.61	0.63	0.70	0.48	0.54	0.49	0.48	0.20	0.20	0.20	0.20	0.20	0.30	0.20	0.60
21 Banana	12.14	11.56	14.60	15.92	15.87	14.50	15.94	12.00	13.00	18.90	17.10	30.70	27.80	44.50	30.90
22 Citrus	52.27	57.20	69.71	70.34	67.79	50.37	59.53	83.00	86.50	117.60	95.10	116.00	115.70	125.80	141.90
23 Guava	*	*	*	*	*	*	*	0.30	0.30	0.40	0.40	0.30	0.30	0.40	2.70
24 Quince	0.06	0.06	0.07	0.06	0.07	0.06	0.04	0.03	0.04	0.04	0.08	0.04	0.02	0.10	0.10
25 Cherries	*	*	*	*	*	*	*	na	na	0.02	0.02	0.02	0.03	0.05	0.10
26 Others	1.05	0.74	0.81	0.66	0.67	0.71	0.24	-	-	-	-	0.10	0.10	0.20	0.50

Remark: * Negligible small.   Source: Annual Agricultural Statistics, Department of Statistics.

Table B.1.3 (2/2) AGRICULTURAL PRODUCTION IN JORDAN - PRODUCTION

(Unit: 1,000t)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
VEGETABLES															
27 Tomatoes	184.90	151.80	145.30	155.70	201.50	195.40	206.20	341.40	375.40	408.20	354.60	392.30	305.90	268.40	290.80
28 Squash	7.63	17.16	18.61	18.07	21.37	27.53	24.96	34.00	73.80	83.10	78.70	69.50	51.90	47.50	33.30
29 Eggplant	62.69	85.82	44.01	49.15	48.57	69.41	81.45	99.30	110.00	93.90	73.70	76.30	80.00	48.90	34.90
30 Cucumber	10.98	17.10	18.38	21.66	22.58	44.54	64.19	106.20	87.50	108.20	99.10	124.70	92.70	110.70	80.00
31 Potatoes	2.10	9.10	8.30	7.50	10.10	4.50	8.40	9.10	11.50	25.70	26.60	26.30	38.50	48.20	51.70
32 Cabbage	8.30	15.10	16.00	13.40	8.90	18.30	16.70	15.40	20.60	31.60	57.50	28.90	27.90	20.10	16.20
33 Cauliflower	13.10	35.90	19.00	15.60	15.40	15.30	15.60	34.30	44.60	57.30	41.30	35.40	36.50	31.70	36.20
34 Pepper	4.56	6.28	6.78	6.98	6.68	10.82	12.32	13.20	15.50	32.50	27.80	27.50	26.80	30.80	29.30
35 Broad Bean	7.52	16.57	7.15	8.23	12.83	13.93	7.31	9.00	6.80	11.30	7.70	5.40	9.30	11.50	3.40
36 String Beans	3.11	6.62	6.64	4.84	6.78	4.22	9.94	9.20	11.70	12.10	15.90	17.50	19.90	10.50	13.20
37 Peas	0.17	0.52	0.18	0.03	0.04	0.37	0.09	0.20	0.60	0.40	0.40	0.50	0.40	0.90	0.20
38 Okra	2.39	2.49	2.06	3.00	2.06	1.06	3.81	3.50	2.00	4.00	2.20	3.00	4.00	4.10	4.60
39 Lettuce	*	*	*	*	*	*	*	9.70	9.30	20.10	26.20	18.60	26.40	19.70	12.70
40 Sweet Melon	14.71	6.50	5.08	5.48	5.15	12.98	10.22	9.30	13.10	34.10	34.70	51.60	27.10	47.70	57.40
41 Water Melon	59.11	50.24	62.77	36.29	25.65	3.48	27.09	19.40	25.20	73.70	46.50	65.00	60.70	91.70	100.70
42 Spinach	*	*	*	*	*	*	*	1.00	0.50	2.10	5.20	3.90	4.30	1.00	1.10
43 Onions	8.38	7.25	5.29	7.70	8.01	4.30	7.75	11.70	30.20	24.60	8.90	13.70	21.40	18.10	44.50
44 Snake Cucumber	5.95	5.61	4.40	4.52	3.27	1.03	7.83	6.60	5.40	6.20	6.00	3.70	2.80	4.20	7.60
45 Radish	*	*	*	*	*	*	*	0.30	-	-	1.00	2.20	-	-	-
46 Carrots	1.67	1.02	0.57	0.36	0.26	0.57	0.43	0.40	0.90	0.20	0.50	1.30	1.00	0.40	0.60
47 Beans	*	*	*	*	*	*	*	0.10	0.30	0.30	0.90	0.40	0.20	0.30	0.40
48 Garlic	1.28	1.17	0.87	0.21	0.38	0.19	0.12	0.20	0.20	0.30	1.20	0.70	1.00	1.00	2.20
49 Mulukhiyeh	-	5.98	9.19	-	5.28	13.44	9.94	23.60	28.70	23.40	20.00	18.00	15.20	28.90	27.00
50 Others	20.66	18.46	18.67	18.56	26.19	33.13	48.42	5.60	6.10	14.90	12.90	16.60	12.20	8.70	14.60

Remark: * Negligible small.   Source: Annual Agricultural Statistics, Department of Statistics.

Table B.1.4 (1/2) AGRICULTURAL PRODUCTION BY GOVERNORATE (1988)

	Harvested Area (1,000 dunum)										Distribution (%)									
	Amman	Zarqa	Irbit	Mafraq	Balqa	Karak	Tafila	Ma'an	Al-Ghouar	Total	Amman	Zarqa	Irbit	Mafraq	Balqa	Karak	Tafila	Ma'an	Al-Ghouar	Total
FIELD CROPS *	437.54	34.76	202.77	306.91	24.35	161.86	55.16	97.01	50.66	1,371.02	31.9	2.5	14.8	22.4	1.8	11.8	4.0	7.1	3.7	100.0
1 Wheat	169.49	8.08	134.08	163.55	14.39	94.75	30.77	57.24	29.42	701.77	24.2	1.2	19.1	23.3	2.1	13.5	4.4	8.2	4.2	100.0
2 Barley	239.41	25.10	20.78	140.65	5.72	55.75	23.34	36.26	12.55	559.56	42.8	4.5	3.7	25.1	1.0	10.0	4.2	6.5	2.2	100.0
3 Lentils	13.78	0.07	34.83	1.24	0.27	2.27	0.38	0.28	0.02	53.14	25.9	0.1	65.5	2.3	0.5	4.3	0.7	0.5	-	100.0
4 Vetch	1.58	0.05	4.35	0.08	3.37	3.47	-	0.09	0.02	13.01	12.1	0.4	33.4	0.6	25.9	26.7	-	0.7	0.2	100.0
5 Chick-peas	6.50	1.13	4.50	0.73	0.24	2.92	0.67	0.08	0.02	16.79	38.7	6.7	26.8	4.3	1.4	17.4	4.0	0.5	0.1	100.0
6 Maize	4.41	0.05	0.92	0.56	0.27	1.96	-	-	4.33	12.50	35.3	0.4	7.4	4.5	2.2	15.7	-	-	34.6	100.0
7 Clover, Alfalfa	-	0.21	-	0.05	-	0.68	-	3.01	1.19	5.14	-	4.1	-	1.0	-	13.2	-	58.6	23.2	100.0
8 Others	2.37	0.07	3.31	0.05	0.09	0.06	-	0.05	3.11	9.11	26.0	0.8	36.3	0.5	1.0	0.7	-	0.5	34.1	100.0
TREE CROPS	65.78	40.69	234.14	44.00	41.33	18.88	8.27	15.98	71.83	540.90	12.2	7.5	43.3	8.1	7.6	3.5	1.5	3.0	13.3	100.0
9 Olives	40.76	29.83	204.74	40.24	30.24	7.08	4.07	3.99	1.80	362.75	11.2	8.2	56.4	11.1	8.3	2.0	1.1	1.1	0.5	100.0
10 Grapes	11.68	3.82	14.60	1.54	7.43	10.34	2.93	2.44	2.57	57.35	20.4	6.7	25.5	2.7	13.0	18.0	5.1	4.3	4.5	100.0
11 Figs	2.00	0.43	2.05	0.80	0.55	0.39	0.29	0.31	0.20	7.02	28.5	6.1	29.2	11.4	7.8	5.6	4.1	4.4	2.8	100.0
12 Apples	0.67	0.22	3.97	0.18	0.18	0.10	0.08	7.55	0.06	13.01	5.1	1.7	30.5	1.4	1.4	0.8	0.6	58.0	0.5	100.0
13 Almonds	1.05	0.33	2.55	0.15	0.47	0.31	0.13	0.16	-	5.15	20.4	6.4	49.5	2.9	9.1	6.0	2.5	3.1	-	100.0
14 Peaches	5.72	0.16	0.84	0.24	1.11	0.09	0.28	0.31	0.52	9.27	61.7	1.7	9.1	2.6	12.0	1.0	3.0	3.3	5.6	100.0
15 Apricots	0.69	0.06	0.51	0.19	0.13	0.09	0.28	0.22	-	2.17	31.8	2.8	23.5	8.8	6.0	4.1	12.9	10.1	-	100.0
16 Citrus	0.31	0.11	0.42	0.01	0.48	0.16	0.02	0.28	54.56	56.35	0.6	0.2	0.7	-	0.9	0.3	-	0.5	96.8	100.0
17 Pomegranates	0.34	2.68	1.78	0.31	0.11	0.06	0.06	0.13	0.45	5.92	5.7	45.3	30.1	5.2	1.9	1.0	1.0	2.2	7.6	100.0
18 Others	2.56	3.05	2.68	0.34	0.63	0.26	0.13	0.59	11.67	21.91	11.7	13.9	12.2	1.6	2.9	1.2	0.6	2.7	53.3	100.0
VEGETABLES	23.28	7.12	23.58	19.15	6.66	1.94	0.47	5.31	192.05	279.56	8.3	2.5	8.4	6.9	2.4	0.7	0.2	1.9	68.7	100.0
19 Tomatoes	1.29	0.83	0.96	5.18	0.59	0.87	0.21	1.22	45.89	57.04	2.3	1.5	1.7	9.1	1.0	1.5	0.4	2.1	80.5	100.0
20 Squash	3.97	0.41	0.27	0.59	0.52	0.49	-	0.08	17.00	23.33	17.0	1.8	1.2	2.5	2.2	2.1	-	0.3	72.9	100.0
21 Eggplants	0.66	0.18	0.33	0.27	0.24	0.03	-	0.02	19.98	21.71	3.0	0.8	1.5	1.2	1.1	0.1	-	0.1	92.0	100.0
22 Cucumber	0.74	0.19	0.19	0.09	2.08	0.09	-	0.17	6.94	10.49	7.1	1.8	1.8	0.9	19.8	0.9	-	1.6	66.2	100.0
23 Potatoes	1.23	0.35	0.38	0.70	0.07	-	-	1.23	20.19	24.15	5.1	1.4	1.6	2.9	0.3	-	-	5.1	83.6	100.0
24 Cabbages	1.89	0.33	0.51	0.17	-	0.02	-	-	1.73	4.65	40.6	7.1	11.0	3.7	-	0.4	-	-	37.2	100.0
25 Cauliflowers	3.30	1.45	0.97	2.39	0.42	0.01	-	0.02	1.36	9.92	33.3	14.6	9.8	24.1	4.2	0.1	-	0.2	13.7	100.0
26 Hot Pepper	0.23	0.19	0.03	0.24	0.23	-	-	-	6.12	7.04	3.3	2.7	0.4	3.4	3.3	-	-	-	86.9	100.0
27 Sweet Pepper	0.06	0.03	0.04	0.29	0.06	-	-	-	4.21	4.69	1.3	0.6	0.9	6.2	1.3	-	-	-	89.8	100.0
28 String Beans	0.69	0.01	0.07	0.08	0.96	-	-	-	10.68	12.49	5.5	0.1	0.6	0.6	7.7	-	-	-	85.5	100.0
29 Okra	1.03	-	2.05	0.11	0.82	0.05	-	0.04	1.04	5.14	20.0	-	39.9	2.1	16.0	1.0	-	0.8	20.2	100.0
30 Lettuce	0.49	0.03	0.54	0.44	0.22	-	-	-	4.09	5.81	8.4	0.5	9.3	7.6	3.8	-	-	-	70.4	100.0
31 Sweet Melons	0.26	0.82	4.35	0.69	-	0.23	0.22	0.30	22.30	29.17	0.9	2.8	14.9	2.4	-	0.8	0.8	1.0	76.4	100.0
32 Onions	0.59	0.07	5.50	0.09	0.35	0.01	-	0.80	7.82	15.23	3.9	0.5	36.1	0.6	2.3	0.1	-	5.3	51.3	100.0
33 Water Melons	4.15	1.37	6.17	7.54	-	0.11	0.04	1.39	9.91	30.68	13.5	4.5	20.1	24.6	-	0.4	0.1	4.5	32.3	100.0
34 Others	2.70	0.86	1.22	0.28	0.10	0.03	-	0.04	12.79	18.02	15.0	4.8	6.8	1.6	0.6	0.2	-	0.2	71.0	100.0
TOTAL	526.60	82.57	460.49	370.06	72.34	182.68	63.90	118.30	314.54	2,191.48	24.0	3.8	21.0	16.9	3.3	8.3	2.9	5.4	14.4	100.0

Remark: * Excluding tobacco.

Source: Statistical Yearbook 1988, Department of Statistics.

-B.25-

Table B.1.4 (2/2)   AGRICULTURAL PRODUCTION BY GOVERNORATE (1988)

	Crop Production (1,000 t)										Distribution (%)									
	Amman	Zarqa	Irbit	Mafraq	Balqa	Karak	Tafila	Ma'an	Al-Ghouar	Total	Amman	Zarqa	Irbit	Mafraq	Balqa	Karak	Tafila	Ma'an	Al-Ghouar	Total
FIELD CROPS	38.88	2.31	26.08	22.23	2.86	19.76	3.95	22.59	13.99	152.65	25.4	1.5	17.1	14.6	1.9	12.9	2.6	14.8	9.2	100.0
1 Wheat	17.46	0.45	16.44	12.00	2.03	10.06	1.66	12.82	5.85	78.77	22.2	0.6	20.8	15.2	2.6	12.8	2.1	16.3	7.4	100.0
2 Barley	16.78	1.49	2.33	9.99	0.54	6.85	2.24	2.68	1.95	44.85	37.4	3.3	5.2	22.3	1.2	15.3	5.0	6.0	4.3	100.0
3 Lentils	1.67	-	4.53	0.10	0.04	0.17	0.02	0.01	-	6.54	25.5	-	69.3	1.5	0.6	2.6	0.3	0.2	-	100.0
4 Vetch	0.16	0.05	1.30	0.01	0.21	0.26	-	0.01	-	1.99	8.0	2.5	65.3	0.5	10.6	13.1	-	0.6	-	100.0
5 Chick-peas	0.66	0.12	0.53	0.06	0.03	0.36	0.03	-	-	1.80	36.7	6.7	29.3	3.3	1.7	20.0	1.7	-	-	100.0
6 Maize	0.28	0.01	0.29	0.03	-	0.38	-	-	3.48	4.47	6.3	0.2	6.5	0.7	-	8.5	-	-	77.8	100.0
7 Clover, Alfalfa	-	0.18	-	0.02	-	1.67	-	7.06	1.30	10.23	-	1.8	-	0.2	-	16.3	-	69.0	12.7	100.0
8 Others	1.87	0.01	0.66	0.02	0.01	0.01	-	0.01	1.41	4.00	46.7	0.3	16.4	0.5	0.3	0.3	-	0.3	35.2	100.0
TREE CROPS	14.30	5.56	63.63	6.31	7.56	3.06	1.45	4.55	138.31	244.73	5.8	2.3	26.0	2.6	3.1	1.3	0.6	1.9	56.4	100.0
9 Olives	4.70	3.35	50.90	4.88	4.17	1.20	0.52	0.59	0.48	70.79	6.6	4.7	72.0	6.9	5.9	1.7	0.7	0.8	0.7	100.0
10 Grapes	5.21	0.96	7.44	0.57	1.38	1.15	0.69	0.86	3.27	21.53	24.2	4.5	34.6	2.6	6.4	5.3	3.2	4.0	15.2	100.0
11 Figs	0.48	0.13	1.02	0.14	0.14	0.09	0.05	0.03	0.10	2.18	22.0	6.0	46.8	6.4	6.4	4.1	2.3	1.4	4.6	100.0
12 Apples	0.12	0.03	1.50	0.12	0.03	0.02	-	2.65	0.06	4.53	2.6	0.7	33.1	2.6	0.7	4.4	-	58.6	1.3	100.0
13 Almonds	0.33	0.03	0.47	0.02	0.14	0.05	0.08	0.01	-	1.13	29.2	2.7	41.5	1.8	12.4	4.4	7.1	0.9	-	100.0
14 Peaches	2.56	0.03	0.19	0.24	0.45	0.19	-	0.02	0.70	4.38	58.4	0.7	4.3	5.5	10.3	4.3	-	0.5	16.0	100.0
15 Apricots	0.03	0.01	0.04	0.10	0.02	0.08	0.06	0.03	-	0.37	8.1	2.7	10.8	27.1	5.4	21.6	16.2	8.1	-	100.0
16 Citrus	0.09	0.04	0.78	-	1.07	0.07	0.01	0.16	99.06	101.28	0.1	-	0.8	-	1.1	0.1	-	0.2	97.7	100.0
17 Pomegranates	0.09	0.30	0.64	0.07	0.02	0.03	0.01	0.02	0.64	1.82	4.9	16.6	35.2	3.8	1.1	1.6	0.5	1.1	35.2	100.0
18 Others	0.69	0.68	0.65	0.17	0.14	0.18	0.03	0.18	34.00	36.72	1.9	1.9	1.8	0.5	0.4	0.5	0.1	0.5	92.4	100.0
VEGETABLES	49.38	13.02	30.63	53.50	25.08	4.11	1.06	12.02	475.58	664.38	7.4	2.0	4.6	8.1	3.8	0.6	0.2	1.8	71.5	100.0
19 Tomatoes	2.65	0.93	1.84	23.28	1.39	1.96	0.69	3.85	182.12	218.71	1.2	0.4	0.8	10.6	0.6	0.9	0.3	1.8	83.4	100.0
20 Squash	5.98	0.42	0.31	0.90	0.43	1.19	-	0.08	22.04	31.35	19.1	1.3	1.0	2.9	1.4	3.8	-	0.3	70.2	100.0
21 Eggplants	0.63	0.22	0.74	0.11	0.22	0.04	-	0.03	70.88	72.87	0.9	0.3	1.0	0.2	0.3	0.1	-	0.0	97.2	100.0
22 Cucumber	5.63	0.15	0.77	0.03	20.25	0.17	-	0.02	40.25	67.27	8.4	0.2	1.1	0.0	30.1	0.3	-	0.0	59.9	100.0
23 Potatoes	3.45	0.45	0.52	0.68	0.09	-	-	3.69	39.04	47.92	7.2	0.9	1.1	1.4	0.2	-	-	7.7	81.5	100.0
24 Cabbages	5.68	1.02	1.60	0.70	-	0.02	-	-	5.36	14.38	39.5	7.1	11.1	4.9	-	0.1	-	-	37.3	100.0
25 Cauliflowers	9.14	2.62	1.69	2.82	0.82	0.02	-	0.04	2.05	19.20	47.6	13.6	8.8	14.7	4.3	0.1	-	0.2	10.7	100.0
26 Hot Pepper	0.20	0.15	0.03	0.23	0.36	-	-	-	12.61	13.58	1.5	1.1	0.2	1.7	2.7	-	-	-	92.8	100.0
27 Sweet Pepper	0.09	0.02	0.04	0.31	0.19	-	-	-	10.88	11.53	0.8	0.2	0.3	2.7	1.6	-	-	-	94.4	100.0
28 String Beans	0.21	0.01	0.04	0.02	0.40	-	-	-	13.22	13.90	1.5	0.1	0.3	0.1	2.9	-	-	-	95.1	100.0
29 Okra	0.20	-	0.40	0.02	0.16	0.01	-	0.02	0.33	1.14	17.5	-	35.1	1.8	14.0	0.9	-	1.8	28.9	100.0
30 Lettuce	0.37	0.05	0.83	1.36	0.27	-	-	-	11.29	14.17	2.6	0.4	5.9	9.6	1.9	-	-	-	79.6	100.0
31 Sweet Melons	0.43	1.40	4.76	1.19	-	0.47	0.32	0.35	11.28	20.20	2.1	6.9	23.6	5.9	-	2.3	1.6	1.7	55.9	100.0
32 Onions	0.75	0.07	3.54	0.09	0.45	0.01	-	0.83	24.04	29.78	2.5	0.2	11.9	0.3	1.5	0.0	-	2.8	80.8	100.0
33 Water Melons	12.78	4.35	13.20	21.53	-	0.20	0.05	3.11	11.55	66.77	19.1	6.5	19.8	32.2	-	0.3	0.1	4.7	17.3	100.0
34 Others	1.19	1.16	0.32	0.23	0.05	0.02	-	-	18.64	21.61	5.5	5.4	1.5	1.1	0.2	0.1	-	-	86.2	100.0
	102.56	20.89	120.34	82.04	35.50	26.93	6.46	39.16	627.88	1,061.76	9.7	2.0	11.3	7.7	3.3	2.5	0.6	3.7	59.2	100.0

Remark: * Excluding tobacco.

Source: Statistical Yearbook 1988, Department of Statistics.

Table B.1.5 LIVESTOCK PRODUCTION IN JORDAN (1977-1988)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
(1) Number of Livestock (1,000 heads)												
- Poultry	*	*	*	*	*	*	*	*	*	*	*	*
- Camels	*	*	*	*	*	*	*	*	*	*	*	*
- Cows	25.5	29.0	32.0	28.0	28.0	27.5	30.0	34.0	34.5	31.1	29.0	29.5
(Local)	(19.0)	(21.0)	(22.0)	(21.0)	(20.0)	(18.0)	(19.0)	(20.0)	(19.5)	(15.5)	(11.5)	(11.6)
(Duch)	(6.5)	(8.0)	(10.0)	(7.0)	(8.0)	(9.5)	(11.0)	(14.0)	(15.0)	(15.6)	(17.5)	(17.9)
- Goats	358.0	392.0	573.0	453.0	529.3	590.0	442.0	419.0	515.0	439.2	460.1	509.9
(Local)	(347.0)	(382.0)	(564.0)	(445.0)	(515.0)	(567.0)	(420.0)	(400.0)	(490.0)	(420.0)	(441.0)	(490.0)
(Syrian)	(11.0)	(10.0)	(9.0)	(8.0)	(14.3)	(23.0)	(22.0)	(19.0)	(25.0)	(19.2)	(19.1)	(19.9)
- Sheep	804.0	856.0	924.0	852.0	1,073.0	990.0	980.0	960.0	1,121.0	930.0	1,219.0	1,279.0
(2) Slaughtered Livestock (1,000 heads)												
- Poultry	-	1.50	465.2	365.3	1,721.0	2,322.0	3,056.0	3,000.0	3,856.0	4,528.0	3,636.0	5,050.8
- Camels	1.20	1.50	1.90	2.10	2.00	1.00	1.00	1.30	1.00	1.50	1.56	1.64
- Cows	21.5	16.3	15.2	9.2	11.6	9.5	6.4	12.3	23.3	17.7	12.5	15.9
- Goats	220.2	179.5	195.3	84.0	173.5	190.7	51.0	114.0	85.0	79.0	68.5	56.7
- Sheep	188.4	210.0	253.0	270.0	295.7	314.0	444.2	295.4	251.5	269.5	281.1	282.6
(3) Livestock Production												
1) Red Meat Production (tons)	*	7,578	7,106	8,114	8,545	8,711	10,190	9,920	10,907	6,559	7,964	8,339
- Camels	*	525	575	755	945	405	255	225	495	204	218	231
- Cows	*	1,554	1,550	1,554	1,525	1,470	2,078	2,125	1,278	1,008	1,065	1,001
- Goats	*	1,604	1,600	1,980	2,025	2,381	2,300	2,125	2,778	1,571	1,653	1,914
- Sheep	*	3,895	3,381	3,825	4,050	4,455	5,557	5,445	6,356	3,776	5,028	5,193
2) Milk Production (tons)	*	44,059	38,708	45,968	41,970	47,178	45,550	49,956	56,465	51,720	61,535	66,423
- Cows	*	21,179	17,407	21,256	16,112	18,090	18,785	26,526	25,630	25,880	30,703	33,026
- Goats	*	9,176	9,142	11,112	11,458	13,608	11,085	9,870	12,915	10,960	11,024	12,678
- Sheep	*	13,704	12,159	13,600	14,400	15,480	15,680	13,560	17,920	14,880	19,808	20,719
3) Broiler (1,000 tons)	*	23.7	32.0	33.0	32.0	40.0	49.0	63.0	69.0	78.0	84.3	75.3
4) Eggs (million eggs)	*	260	280	330	340	365	415	390	520	500	425	380

Source: Statistical Yearbook 1988, Department of Statistics.

Table B.1.6 AGRICULTURAL TRADE (1983-1988)

(Unit: JD 1,000)

	1983	1984	1985	1986	1987	1988	Aveage
EXPORTS							
Agricultural Commodity *1	37,459	15,960	19,678	21,594	14,263	14,355	20,552
1) Live Animals	6,855	3,727	3,663	3,493	2,750	560	3,508
2) Daily Products & Eggs	2,580	1,455	3,314	1,841	4,475	5,862	3,255
3) Wheat and Flour of Wheat	79	1,622	5,100	1,564	3,213	832	2,068
4) Vegetables	17,614	18,565	16,628	13,377	14,765	15,168	16,020
- Tomatoes	(6,002)	(6,214)	(5,332)	(4,422)	(4,767)	(5,614)	(5,392)
- Eggplant	(1,229)	(1,672)	(1,509)	(1,220)	(1,089)	(1,119)	(1,306)
- Squash	(1,557)	(1,254)	(1,227)	(930)	(738)	(624)	(1,055)
- Cucumber	(2,961)	(3,081)	(3,017)	(2,062)	(2,600)	(2,051)	(2,629)
- Cauliflower	(827)	(798)	(648)	(501)	(500)	(468)	(624)
- Others	(5,038)	(5,546)	(4,895)	(4,242)	(5,071)	(5,292)	(5,014)
5) Fruits and Nuts	7,604	8,359	7,458	8,475	5,246	4,400	6,924
- Orange	(3,749)	(4,099)	(3,405)	(5,290)	(2,539)	*	
- Mandarin	(286)	(957)	(1,213)	(1,157)	(777)	*	
- Lemons	(845)	(917)	(1,204)	(873)	(764)	*	
- Water Melon	(139)	(306)	(337)	(336)	(400)	(586)	
- Sweet Melon	(750)	(798)	(708)	(441)	(624)	(533)	
- Others	(1,835)	(1,282)	(591)	(378)	(142)	*	
6) Fodder	101	6,962	6,587	12,407	1,721	1,408	4,864
7) Others	1,444	1,071	838	775	1,667	1,780	1,263
8) Animal & Vegetable Oil	1,182	1,123	176	1,514	437	632	844
- Olive Oil	(1,002)	(913)	(94)	(1,373)	(196)	(365)	(657)
- Others	(180)	(210)	(82)	(141)	(241)	(267)	(187)
Total Export of Jordan	160,085	261,055	255,346	225,615	248,773	324,788	245,944
% of Agricultural Commodity	23.4	6.1	7.7	9.6	5.7	4.4	8.4
IMPORTS							
Agricultural Commodity *1	184,471	194,796	185,936	174,985	163,737	183,772	181,283
1) Live Animals	21,557	5,892	8,599	2,923	3,627	4,334	7,822
2) Meat	24,576	23,032	33,225	24,324	27,020	28,654	26,805
3) Daily Products & Eggs	15,458	16,756	17,866	17,012	15,798	16,728	16,603
4) Wheat and Flour of Wheat	32,840	39,165	28,185	15,822	28,710	25,417	28,357
5) Rice	4,419	8,247	7,301	9,772	7,256	10,570	7,928
6) Sugar	6,509	5,151	3,640	8,696	9,307	8,251	6,926
7) Fruits, Vegetables and Nuts	32,274	27,786	25,361	25,367	16,506	17,410	24,117
- Apples	(8,452)	(5,284)	(7,177)	(4,940)	*	*	
- Potatoes	(2,020)	(2,048)	(1,543)	(1,646)	(606)	(1,461)	
- Onion	(1,600)	(1,450)	(892)	(1,592)	(445)	(546)	
- Apricot	(436)	(161)	(456)	(328)	*	*	
- Almonds	(399)	(618)	(301)	(283)	(711)	*	
- Chick-pea	(1,762)	(1,597)	(2,123)	(1,696)	(2,444)	(987)	
- Others	(17,605)	(16,628)	(12,869)	(14,882)	*	*	
8) Coffee, Tea, Cocoa & Spices	5639	6785	6033	6240	6100	7700	6,416
9) Animal & Vegetable Oil	4,105	10,479	10,152	9,417	8,018	10,863	8,839
10) Others	37,094	51,503	45,574	55,412	41,395	53,845	47,471
Total Import of Jordan	1,103,310	1,071,340	1,074,445	850,199	915,545	1,022,469	1,006,218
% of Agricultural Commodity	16.7	18.2	17.3	20.6	17.9	18.0	18.0

Remarks: *1 Excluding tobacco.
Source: Statistical Yearbook 1987 & 1988, Department of Statistics.

Table B.1.7 EXPORTS AND IMPORTS BY AGRICULTURAL COMMODITY (1982-1988)

(Unit: 1,000 tons)

	1982	1983	1984	1985	1986	1987	1988
EXPORTS							
1 Wheat	-	-	-	-	-	58.46	5.00
2 Wheat Flour	1.10	0.70	30.50	51.30	17.70	8.40	*
3 Lentils	0.90	0.60	-	-	-	-	*
4 Chick-peas	0.10	-	-	0.50	-	-	*
5 Sesame	-	0.10	0.03	-	-	-	*
6 Tomato	152.31	125.52	128.00	108.20	94.90	94.45	116.90
7 Eggplant	37.60	27.44	35.20	31.70	27.00	22.71	26.00
8 Pepper	12.43	17.15	19.60	18.90	18.90	20.49	23.60
9 Potato	1.19	2.04	5.20	5.50	1.70	11.28	8.60
10 Cauliflower	13.60	16.71	15.00	12.30	9.60	9.80	11.10
11 String Beans	5.94	7.53	7.10	6.60	5.90	6.21	9.10
12 Carrot	0.70	0.70	0.50	0.40	0.20	0.10	0.02
13 Squash	40.17	32.65	23.50	23.90	18.00	14.39	14.90
14 Cucumber	54.74	59.11	58.00	58.50	39.60	43.27	44.30
15 Watermelon	0.15	2.44	5.20	5.70	6.30	7.26	11.20
16 Sweet Melon	5.13	14.85	14.40	13.40	8.40	11.61	12.60
17 Onions	4.30	4.15	3.96	4.07	2.05	1.53	1.00
18 Okra	0.90	1.80	0.80	1.30	0.50	0.80	1.60
19 Cabbages	8.08	9.09	12.34	8.40	6.80	6.43	9.70
20 Oranges	105.46	74.13	82.06	71.58	78.55	48.00	26.60
21 Lemons	15.81	16.79	18.51	23.88	17.43	16.00	12.60
22 Clementine	4.20	4.40	15.00	17.20	16.50	11.50	11.10
23 Mandarins	1.50	1.00	3.00	4.90	4.50	3.00	2.40
24 Other Citrus	15.40	13.60	4.30	1.10	1.70	0.60	1.30
25 Apples	0.30	0.20	0.30	0.20	-	-	-
26 Grapes	5.78	5.79	4.40	2.10	1.10	0.91	1.20
27 Figs	0.30	0.40	0.30	0.10	-	0.10	0.10
28 Pomegrenate	0.90	0.90	0.90	0.60	0.50	0.40	0.40
29 Peaches	0.30	0.20	0.30	0.10	0.10	0.01	0.03
30 Apricots	0.30	0.20	0.10	0.30	1.50	0.01	0.02
31 Plums	3.90	2.70	2.60	2.20	1.30	0.10	1.10
32 Pears	0.10	0.05	0.20	0.10	0.10	-	-
33 Green Olives	0.89	1.43	1.40	0.54	1.19	0.50	0.08
34 Olive oil	0.95	1.32	1.26	0.30	1.87	0.26	0.53
IMPORTS							
1 Wheat	209.2	318.7	450.5	376.9	270.9	542.4	400.0
2 Wheat Flour	138.5	19.8	12.2	8.8	9.5	27.5	*
3 Barley	69.3	17.4	179.8	74.9	143.5	114.8	98.0
4 Maize	151.5	170.1	132.1	205.4	233.5	182.8	*
5 Lentils	1.4	2.7	0.1	0.6	1.1	1.6	0.5
6 Chick-peas	7.1	9.8	8.4	10.4	10.1	18.1	7.5
7 Broadbeans	3.1	2.5	2.7	3.2	3.4	3.2	*
8 Stringbeans	1.3	1.4	1.5	1.1	1.5	1.6	*
9 Peas	0.1	0.2	0.3	0.1	0.2	0.2	*
10 Sesame	6.9	5.3	6.1	5.4	8.5	9.6	*
11 Rice (husked)	45.9	36.1	55.3	51.1	71.6	71.8	*
12 Potatos	24.4	26.5	23.8	16.2	13.4	3.9	2.4
13 Onion	19.6	19.1	16.2	8.6	14.4	4.5	4.7
14 Carrots	3.8	3.7	4.2	3.9	5.5	2.0	0.6
15 Garlic	1.4	2.7	1.9	1.8	1.6	0.7	0.1
16 Water Melon	5.7	3.1	1.0	0.5	0.9	-	0.1
17 Sweet Melon	0.5	0.4	0.4	0.4	0.4	1.8	1.1
18 Lemons	0.9	1.1	0.3	0.9	1.0	-	-
19 Apples	40.4	46.0	29.7	53.1	31.8	17.6	8.6
20 Apricots	1.8	1.9	0.6	2.0	1.8	*	0.4
21 Pears	2.6	3.0	2.5	3.9	2.3	-	0.6
22 Cherries	0.6	0.5	0.3	0.8	0.6	-	0.1
23 Almonds	0.28	0.35	0.48	0.25	0.21	0.50	*
24 Peanuts	0.25	0.24	0.50	0.35	*	*	*
25 Sugar	90	61	45	40	122	128	*

Source: (1) Annual Agricultural Statistics 1988, Department of Statistics.
(2) Agricultural Statistics Indicators 1981-1988, Ministry of Agriculture.

Table B.1.8 PER CAPITA COMSUMPTION OF AGRICULTURAL PRODUCTS

(Unit: kg/year)

		1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	Average*1	Trend
1	Wheat (grain)	164	153	202	212	171	184	176	145	108	216	190	156	+
2	Barley (grain)	20	24	35	13	32	21	72	36	58	55	51	50	+
3	Lentils	4.3	1.0	5.3	1.8	1.3	4.1	0.7	1.7	1.3	3.2	3.4	2.1	-
4	Vetch	1.9	0.6	1.6	1.4	1.0	2.0	0.5	0.9	0.6	1.3	2.2	0.9	-
5	Chick-pea	1.8	4.0	3.4	3.4	3.3	4.5	3.5	4.3	3.9	6.6	3.2	4.9	+
6	Maize	47	59	50	59	63	68	51	77	84	63	*	75	+
7	Rice (husked)	12	16	21	16	19	14	21	19	26	25	*	23	+
8	Grape	22.4	17.2	19.6	19.7	19.3	20.9	16.7	20.9	22.2	21.1	25.7	21.4	±
9	Fig	1.4	1.0	0.9	0.9	0.9	0.8	0.8	0.9	1.0	1.0	1.1	1.0	-
10	Almonds	1.4	1.5	1.3	1.2	1.1	1.1	1.2	0.9	0.8	0.9	*	0.9	±
11	Peache	0.2	0.6	0.5	0.7	2.3	1.7	1.1	1.1	1.5	0.3	1.4	1.0	±
12	Plum and Prune	1.7	0.9	1.3	2.0	2.6	1.1	1.4	1.5	1.6	0.5	1.4	1.2	-
13	Apricot	0.7	0.7	0.6	0.7	1.0	1.0	0.4	0.9	0.3	0.2	0.4	0.5	±
14	Pomegranate	1.5	0.9	0.9	0.4	0.5	0.5	0.3	0.5	0.5	0.4	1.4	0.4	-
15	Apple	7.6	11.5	10.1	13.1	18.5	20.3	13.1	20.7	12.3	6.8	4.5	13.3	±
16	Pear	0.4	0.9	0.7	0.4	1.1	1.3	1.0	1.5	0.9	0.1	0.4	0.8	±
17	Banana	8.7	7.6	8.0	6.7	7.2	9.1	9.8	14.2	12.7	17.0	12.3	14.6	+
18	Citrus	38.5	59.1	34.7	39.5	35.6	46.5	37.0	40.7	36.0	43.7	45.4	40.1	-
19	Quince	0.03	0.03	0.02	0.01	0.02	0.02	0.03	0.02	0.01	0.04	0.03	0.02	±
20	Tomatoes	61.0	51.1	47.0	95.5	99.3	117.8	95.3	113.7	81.4	61.8	58.5	85.6	±
21	Squash	3.3	4.4	2.0	2.3	14.0	20.3	21.3	17.0	12.2	11.5	6.2	13.6	+
22	Eggplant	16.2	20.6	25.6	30.5	33.1	27.6	15.5	17.8	19.7	9.1	3.0	15.5	±
23	Cucumber	6.2	17.1	18.9	28.5	14.6	19.9	16.0	24.7	19.0	23.3	11.9	22.3	+
24	Potatoes	11.8	8.5	12.3	21.2	15.5	21.7	19.4	15.4	19.4	16.3	16.3	17.0	±
25	Cabbage	2.5	6.9	5.2	3.4	5.2	9.0	17.4	7.6	7.6	4.7	2.2	6.6	±
26	Cauliflower	3.8	4.9	2.3	10.1	12.9	16.3	10.2	8.6	9.6	7.6	8.4	8.6	±
27	Sweet Pepper	0.9	1.3	2.6	1.2	1.3	6.2	3.2	3.2	2.8	3.6	1.9	3.2	±
28	Okra	0.8	0.4	1.2	1.0	0.5	0.9	0.5	0.6	1.3	1.1	1.0	1.0	±
29	Lettuce	4.6	3.0	1.7	4.2	3.9	8.1	10.1	6.9	9.5	6.8	4.2	7.7	±
30	Water Melon	15.0	4.6	15.7	17.2	19.7	42.1	31.5	37.3	28.1	35.4	32.3	33.6	±
31	Onion	7.1	7.0	5.6	10.4	15.9	16.5	9.7	8.5	14.0	9.0	16.8	10.5	+
32	Snake Cucumber	1.6	0.5	3.5	2.9	2.3	2.5	2.3	1.4	1.0	1.5	2.5	1.3	±
33	Carrot	0.2	1.0	1.1	0.9	1.7	1.3	1.6	1.8	2.3	0.8	0.4	1.6	±
34	Sweet Melon	2.0	6.3	3.6	5.7	4.8	10.8	10.9	17.0	6.8	13.1	15.4	12.3	±
35	Green Pea	0.3	0.2	0.7	2.0	1.6	3.2	3.2	2.9	1.9	1.1	0.4	2.0	+
36	Mulukhiyeh	2.6	6.3	4.5	10.2	12.0	9.4	7.7	6.7	5.4	10.0	9.0	7.4	+
37	Garlic	0.6	0.5	0.7	0.6	0.7	1.2	1.2	0.9	0.9	0.6	0.8	0.8	±
38	Olive	*	*	*	11.0	35.0	11.5	22.4	13.4	32.9	12.4	*	19.6	±
39	Red Meat	10.8	10.6	9.6	16.7	16.1	13.4	13.0	25.1	16.5	16.7	*	19.4	+
40	Broiler	13.3	15.8	17.1	14.3	15.7	19.6	22.1	21.4	23.9	22.5	*	22.6	+
41	Eggs (No.)	130	177	141	122	130	133	137	144	153	114	*	137	+

Remark: *1 Average between 1985 and 1987

Table B.1.9 (1/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply (Grain)*1								Demand (Grain)*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	Import*2 of Flour of Grain (1,000t)	Import of Grain of Flour (1,000t)	Export of Flour of Grain (1,000t)	Export of Grain of Flour (1,000t)	Total Supply*3 (1,000t)	Popula-tion*4 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)
Wheat (grain)													
Actual													
1974	1	197.6	0.92	181.8	73.1	30.5	0.08	0.03	303.6	1,680	181	303.6	-
1975	2	140.1	0.44	61.9	59.7	44.8	-	0.60	180.7	1,760	103	180.7	-
1976	3	147.4	0.40	58.4	86.3	132.5	2.26	0.02	295.9	1,850	160	295.9	-
1977	4	131.2	0.41	54.0	107.7	139.0	-	0.03	327.6	1,940	169	327.6	-
1978	5	137.2	0.39	53.7	85.1	173.3	-	-	333.4	2,030	164	333.4	-
1979	6	83.4	0.20	16.4	78.5	211.2	-	-	325.4	2,130	153	325.4	-
1980	7	159.0	0.87	139.0	118.1	162.9	0.13	0.29	447.8	2,220	202	447.8	-
1981	8	108.9	0.56	62.8	64.5	348.1	1.90	1.59	489.2	2,310	212	489.2	-
1982	9	77.5	0.38	30.6	138.5	209.2	1.10	-	411.6	2,400	171	411.6	-
1983	10	111.9	1.00	116.8	19.8	318.7	0.70	-	459.4	2,490	184	459.4	-
1984	11	45.0	0.58	28.0	12.2	450.5	30.50	-	455.6	2,590	176	455.6	-
1985	12	96.3	0.67	65.0	8.8	376.9	51.30	-	388.8	2,690	145	388.8	-
1986	13	51.6	0.79	41.6	9.5	270.9	17.70	-	302.3	2,790	108	302.3	-
1987	14	127.1	1.00	116.4	27.5	542.4	8.40	58.46	624.2	2,890	216	624.2	-
1988	15	124.0	1.13	162.7	*	400.0	*	5.00	*	2,990	*	*	-
Projected		*5	*6								*7		
1995	22	74.0	1.10	81.0	-	-	-	-	81.0	3,800	120	456.0	-375.0
2000	27	69.0	1.30	81.0	-	-	-	-	81.0	4,600	120	552.0	-471.0
2005	32	65.0	1.50	81.0	-	-	-	-	81.0	5,400	120	648.0	-567.0

*1 Including seeds, waste and marketing losses.
*2 Conversion factor from flour to grain: 1.25
*3 (6) = (1) - (2) + (3) x 1.67 + (4) - (5)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 $y = a * x^b$ $a = 193.568$ $b = -0.31294$
       $r = 0.60$(df.=13, significance level = 5%: $r > 0.5139$)
*6 $y = a + bx$ $a = 0.378$ $b = 0.03393$
       $r = 0.53$(df.=13, significance level = 5%: $r < 0.5139$)
*7 $y = a + b * L0$ $a = 152.53$ $b = 19.07108$
       $r = 0.19$(df.=12, significance level = 5%: $r < 0.5324$,   no correlation
       average figure between 1974 and 1987 was applied to the feature consumption)

Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (2/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1						Demand*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*2 (1,000t)	Population*3 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(1,000t)
Barley (grain)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Actual											
1974	1	58.5	0.87	50.7	-	-	50.7	1,680	30.2	50.7	-
1975	2	39.6	0.35	13.8	2.6	-	16.4	1,760	9.3	16.4	-
1976	3	51.8	0.25	13.1	14.7	-	27.8	1,850	15.0	27.8	-
1977	4	44.1	0.31	13.6	68.0	-	81.6	1,940	42.1	81.6	-
1978	5	55.7	0.29	16.1	23.5	-	39.6	2,030	19.5	39.6	-
1979	6	40.1	0.17	6.7	44.4	-	51.1	2,130	24.0	51.1	-
1980	7	67.6	0.86	58.0	20.5	-	78.5	2,220	35.4	78.5	-
1981	8	46.3	0.43	20.1	9.8	-	29.9	2,310	12.9	29.9	-
1982	9	33.0	0.25	8.4	69.3	-	77.7	2,400	32.4	77.7	-
1983	10	45.8	0.76	35.0	17.4	-	52.4	2,490	21.0	52.4	-
1984	11	19.8	0.28	5.5	179.8	-	185.3	2,590	71.5	185.3	-
1985	12	41.1	0.50	20.7	74.9	-	95.6	2,690	35.5	95.6	-
1986	13	19.6	0.90	17.6	143.5	-	161.1	2,790	57.7	161.1	-
1987	14	61.3	0.72	44.4	114.8	-	159.2	2,890	55.1	159.2	-
1988	15	65.1	0.82	53.2	98.0	-	151.2	2,990	50.6	151.2	-
Projected		*4	*5						*6		
1995	22	46.0	0.50	23.0	-	-	23.0	3,800	50.0	190.0	-167
2000	27	46.0	0.50	23.0	-	-	23.0	4,600	52.0	239.0	-216
2005	32	46.0	0.50	23.0	-	-	23.0	5,400	54.0	292.0	-269
Lentils											
Actual											
1974	1	21.8	0.99	21.6	4.7	10.9	15.4	1,680	9.2	15.4	-
1975	2	22.2	0.47	10.5	0.6	3.9	7.2	1,760	4.1	7.2	-
1976	3	25.0	0.44	10.9	1.1	1.9	10.1	1,850	5.5	10.1	-
1977	4	16.2	0.46	7.4	1.5	1.2	7.7	1,940	4.0	7.7	-
1978	5	20.0	0.42	8.4	0.6	0.3	8.7	2,030	4.3	8.7	-
1979	6	11.3	0.18	2.0	0.6	0.4	2.2	2,130	1.0	2.2	-
1980	7	14.7	0.73	10.8	1.0	-	11.8	2,220	5.3	11.8	-
1981	8	10.4	0.63	6.5	1.2	3.6	4.1	2,310	1.8	4.1	-
1982	9	5.5	0.47	2.6	1.4	0.9	3.1	2,400	1.3	3.1	-
1983	10	9.3	0.87	8.1	2.7	0.6	10.2	2,490	4.1	10.2	-
1984	11	3.2	0.53	1.7	0.1	-	1.8	2,590	0.7	1.8	-
1985	12	5.8	0.71	4.1	0.6	-	4.7	2,690	1.7	4.7	-
1986	13	4.3	0.60	2.6	1.1	-	3.7	2,790	1.3	3.7	-
1987	14	11.2	0.68	7.6	1.6	-	9.2	2,890	3.2	9.2	-
1988	15	10.4	0.94	9.8	0.5	*	10.3	2,990	3.4	10.3	-
Projected		*7	*8						*9		
1995	22	5.2	0.60	3.1	-	-	3.1	3,800	1.3	4.9	-1.8
2000	27	4.6	0.60	3.1	-	-	3.1	4,600	1.2	5.5	-2.4
2005	32	4.1	0.60	3.1	-	-	3.1	5,400	1.1	5.9	-2.8

*1 Including seeds, waste and marketing losses.   *2 (6) = (3) + (4) - (5)
*3 Source: Department of Statistics and Projection of JICA Study Team.
*4 $y = a * x^b$ $a = 54.640$ $b = -0.12473$
        $r = 0.26$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
              average figure between 1974 and 1988 was applied to the feature area)
*5 $y = a + bx$ $a = 0.334$ $b = 0.02293$
        $r = 0.38$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
              average figure between 1974 and 1988 was applied to the feature yield)
*6 $y = a + b * LOGx$ $a = 10.603$ $b = 29.14633$
        $r = 0.54$ (df.=13, significance level = 5%: $r > 0.5139$)
*7 $y = a * x^b$ $a = 32.790$ $b = -0.59656$
        $r = 0.74$ (df.=13, significance level = 5%: $r > 0.5139$)
*8 $y = a + bx$ $a = 0.489$ $b = 0.01486$
        $r = 0.30$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
              average figure between 1974 and 1988 was applied to the feature yield)
*9 $y = a * x^b$ $a = 7.744$ $b = -0.56533$
        $r = 0.60$ (df.=13, significance level = 5%: $r > 0.5139$)
Note: x = Year in order   y = Production or per capita consumption

Table 8.1.9 (3/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1						Demand*1			Balance*1 (1,000t)
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*2 (1,000t)	Population*3 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Vetch											
Actual											
1974	1	6.94	0.86	5.96	-	-	5.96	1,680	3.55	5.96	-
1975	2	5.54	0.43	2.37	-	-	2.37	1,760	1.35	2.37	-
1976	3	13.76	0.24	3.31	-	-	3.31	1,850	1.79	3.31	-
1977	4	5.78	0.54	3.11	-	-	3.11	1,940	1.60	3.11	-
1978	5	6.24	0.63	3.93	-	-	3.93	2,030	1.94	3.93	-
1979	6	4.98	0.27	1.32	-	-	1.32	2,130	0.62	1.32	-
1980	7	4.69	0.77	3.59	-	-	3.59	2,220	1.62	3.59	-
1981	8	4.56	0.72	3.30	-	-	3.30	2,310	1.43	3.30	-
1982	9	3.48	0.66	2.30	-	-	2.30	2,400	0.96	2.30	-
1983	10	5.88	0.83	4.90	-	-	4.90	2,490	1.97	4.90	-
1984	11	2.84	0.49	1.40	-	-	1.40	2,590	0.54	1.40	-
1985	12	4.07	0.61	2.50	-	-	2.50	2,690	0.93	2.50	-
1986	13	3.12	0.51	1.60	-	-	1.60	2,790	0.57	1.60	-
1987	14	5.71	0.67	3.80	-	-	3.80	2,890	1.31	3.80	-
1988	15	4.58	1.46	6.70	-	-	6.70	2,990	2.24	6.70	-
Projected		*4	*5						*6		
1995	22	2.20	0.60	1.30	-	-	1.30	3,800	0.78	3.00	-1.70
2000	27	2.00	0.60	1.20	-	-	1.20	4,600	0.66	3.00	-1.80
2005	32	1.80	0.60	1.10	-	-	1.10	5,400	0.56	3.00	-1.90
Chick-pea											
Actual											
1974	1	5.66	0.67	3.79	2.40	-	6.19	1,680	3.68	6.19	-
1975	2	3.60	0.42	1.50	1.60	-	3.10	1,760	1.76	3.10	-
1976	3	1.89	0.41	0.78	0.90	-	1.68	1,850	0.91	1.68	-
1977	4	2.22	0.70	1.55	1.20	-	2.75	1,940	1.42	2.75	-
1978	5	2.34	0.56	1.32	2.30	-	3.62	2,030	1.78	3.62	-
1979	6	1.78	0.41	0.73	7.80	-	8.53	2,130	4.00	8.53	-
1980	7	2.32	0.56	1.29	6.20	0.01	7.48	2,220	3.37	7.48	-
1981	8	2.06	0.63	1.30	6.60	0.10	7.80	2,310	3.38	7.80	-
1982	9	2.31	0.39	0.90	7.10	0.10	7.90	2,400	3.29	7.90	-
1983	10	3.16	0.47	1.50	9.80	-	11.30	2,490	4.54	11.30	-
1984	11	1.56	0.38	0.60	8.40	-	9.00	2,590	3.47	9.00	-
1985	12	2.89	0.55	1.60	10.40	0.50	11.50	2,690	4.28	11.50	-
1986	13	1.81	0.50	0.90	10.10	-	11.00	2,790	3.94	11.00	-
1987	14	1.71	0.58	1.00	18.10	-	19.10	2,890	6.61	19.10	-
1988	15	3.36	0.63	2.10	7.50	*	9.60	2,990	3.21	9.60	-
Projected		*7	*8						*9		
1995	22	1.80	0.50	0.90	-	-	0.90	3,800	4.50	17.10	-16.20
2000	27	1.70	0.50	0.90	-	-	0.90	4,600	4.70	21.60	-20.70
2005	32	1.70	0.50	0.90	-	-	0.90	5,400	4.90	26.50	-25.60

*1 Including seeds, waste and marketing losses.   *2 (6) = (3) + (4) - (5)
*3 Source: Department of Statistics and Projection of JICA Study Team.
*4 y = a * x^b   a = 8.633   b = -0.28463
        r = 0.59 (df.=13, significance level = 5%: r > 0.5139)
*5 y = a + bx   a = 0.421   b = 0.02807
        r = 0.43 (df.=13, significance level = 5%: r < 0.5139, no correlation,
                average figure between 1974 and 1988 was applied to the feature yield)
*6 y = a + b * LOGx   a = 2.578   b = -1.34058
        r = 0.58 (df.=13, significance level = 5%: r > 0.5139)
*7 y = a * x^b   a = 3.778   b = -0.23878
        r = 0.54 (df.=13, significance level = 5%: r > 0.5139)
*8 y = a + b * LOGx   a = 0.553   b = -0.03641
        r = 0.12 (df.=13, significance level = 5%: r < 0.5139, no correlation
                average figure between 1974 and 1988 was applied to the feature yield)
*9 y = a + b * LOGx   a = 1.493   b = 2.24857
        r = 0.54 (df.=13, significance level = 5%: r > 0.5139)
Note: x = Year in order   y = Production or per capita consumption

Year	Year in Order	Supply*1						Demand*1			Balance *1
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*2 (1,000t)	Population*3 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Maize											
Actual											
1974	1	0.61	1.20	0.73	15.60	-	16.33	1,680	10	16.33	-
1975	2	0.74	0.74	0.55	34.30	-	34.85	1,760	20	34.85	-
1976	3	0.75	0.83	0.62	69.80	-	70.42	1,850	38	70.42	-
1977	4	0.97	0.71	0.69	68.40	-	69.09	1,940	36	69.09	-
1978	5	0.44	0.43	0.19	95.80	-	95.99	2,030	47	95.99	-
1979	6	0.46	0.22	0.10	125.70	-	125.80	2,130	59	125.80	-
1980	7	1.15	0.45	0.52	109.40	-	109.92	2,220	50	109.92	-
1981	8	0.95	0.42	0.40	135.10	-	135.50	2,310	59	135.50	-
1982	9	0.61	0.16	0.10	151.50	-	151.60	2,400	63	151.60	-
1983	10	0.75	0.53	0.40	170.10	-	170.50	2,490	68	170.50	-
1984	11	0.43	0.47	0.20	132.10	-	132.30	2,590	51	132.30	-
1985	12	0.88	0.45	0.40	205.40	-	205.80	2,690	77	205.80	-
1986	13	0.51	0.20	0.10	233.50	-	233.60	2,790	84	233.60	-
1987	14	0.94	0.43	0.40	182.80	-	183.20	2,890	63	183.20	-
1988		0.48	0.42	0.20	*	-	*	2,990	*	*	-
Projected		*4	*5						*6		
1995	22	0.70	0.24	0.20	-	-	0.20	3,800	84	320.00	-320
2000	27	0.70	0.21	0.10	-	-	0.10	4,600	89	410.00	-410
2005	32	0.70	0.20	0.10	-	-	0.10	5,400	93	500.00	-500
Rice (husked)											
Actual											
1974	1	-	-	-	23.30	-	23.30	1,680	14	23.30	-
1975	2	-	-	-	11.40	-	11.40	1,760	6	11.40	-
1976	3	-	-	-	32.80	-	32.80	1,850	18	32.80	-
1977	4	-	-	-	23.80	-	23.80	1,940	12	23.80	-
1978	5	-	-	-	23.70	-	23.70	2,030	12	23.70	-
1979	6	-	-	-	34.70	-	34.70	2,130	16	34.70	-
1980	7	-	-	-	47.30	-	47.30	2,220	21	47.30	-
1981	8	-	-	-	36.90	-	36.90	2,310	16	36.90	-
1982	9	-	-	-	45.90	-	45.90	2,400	19	45.90	-
1983	10	-	-	-	36.10	-	36.10	2,490	14	36.10	-
1984	11	-	-	-	55.30	-	55.30	2,590	21	55.30	-
1985	12	-	-	-	51.10	-	51.10	2,690	19	51.10	-
1986	13	-	-	-	71.60	-	71.60	2,790	26	71.60	-
1987	14	-	-	-	71.80	-	71.80	2,890	25	71.80	-
1988					*		*	2,990	*	*	-
Projected									*7		
1995	22	-	-	-	-	-	-	3,800	23	90.00	-90
2000	27	-	-	-	-	-	-	4,600	24	110.00	-110
2005	32	-	-	-	-	-	-	5,400	25	140.00	-140

*1 Including seeds, waste and marketing losses.   *2 (6) = (3) + (4) - (5)
*3 Source: Department of Statistics and Projection of JICA Study Team.
*4 y = a + b * LOGx   a = 0.690   b = 0.04892
        r = 0.07 (df.=13, significance level = 5%: r < 5324, no correlation
                  average figure between 1974 and 1987 was applied to the feature area)
*5 y = a * x^b   a = 1.110   b = -0.50061
        r = 0.69 (df.=13, significance level = 5%: r > 0.5324)
*6 y = a + b * LOGx   a = 7.285   b = 56.94592
        r = 0.93 (df.=13, significance level = 5%: r > 0.5324)
*7 y = a + b * LOGx   a = 8.559   b = 10.89310
        r = 0.68 (df.=13, significance level = 5%: r > 0.5324)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (5/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1							Demand*1			Balance *1
		Area (1,000ha)	Yield (t/ha)	Produc-tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Popula-tion*4 (1,000)	Per Capita Consump-tion (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Grape												
Actual												
1974	1	7.94	4.32	34.27	3.52	1.50	3.49	35.80	1,680	21.3	35.80	-
1975	2	8.66	4.52	39.14	6.28	3.90	8.14	41.18	1,760	23.4	41.18	-
1976	3	9.35	3.88	36.32	5.25	2.50	5.37	38.70	1,850	20.9	38.70	-
1977	4	9.60	3.52	33.75	3.70	1.20	1.54	37.11	1,940	19.1	37.11	-
1978	5	10.33	4.19	43.25	5.21	1.20	4.28	45.38	2,030	22.4	45.38	-
1979	6	10.82	3.40	36.79	4.87	0.80	5.82	36.64	2,130	17.2	36.64	-
1980	7	11.34	3.84	43.49	4.84	0.70	5.46	43.57	2,220	19.6	43.57	-
1981	8	9.83	4.67	45.90	6.12	0.30	6.72	45.60	2,310	19.7	45.60	-
1982	9	10.62	4.38	46.50	5.56	0.10	5.78	46.38	2,400	19.3	46.38	-
1983	10	10.89	4.77	51.90	5.79	0.10	5.79	52.00	2,490	20.9	52.00	-
1984	11	11.16	3.72	41.50	6.03	-	4.40	43.13	2,590	16.7	43.13	-
1985	12	11.55	4.35	50.30	7.93	-	2.10	56.13	2,690	20.9	56.13	-
1986	13	12.52	4.62	57.90	5.21	-	1.10	62.01	2,790	22.2	62.01	-
1987	14	13.10	4.24	55.60	6.24	-	0.91	60.93	2,890	21.1	60.93	-
1988	15	13.39	5.18	69.40	8.64	-	1.20	76.84	2,990	25.7	76.84	-
Projected		*5	*6		*7					*8		
1995	22	15.00	4.2	63.00	9.00	-	-	72.00	3,800	21.0	80.00	-8.00
2000	27	17.00	4.2	71.00	10.00	-	-	81.00	4,600	21.0	97.00	-16.00
2005	32	18.00	4.2	76.00	11.00	-	-	87.00	5,400	21.0	113.00	-26.00
Fig												
Actual												
1974	1	0.67	4.84	3.24	0.01	-	0.32	2.93	1,680	1.74	2.93	-
1975	2	0.69	4.57	3.15	0.03	-	0.32	2.86	1,760	1.63	2.86	-
1976	3	0.73	4.42	3.23	0.01	-	0.24	3.00	1,850	1.62	3.00	-
1977	4	0.75	3.92	2.94	0.02	-	-	2.96	1,940	1.53	2.96	-
1978	5	0.77	3.68	2.83	0.02	-	0.07	2.78	2,030	1.37	2.78	-
1979	6	0.79	2.84	2.24	0.01	-	0.13	2.12	2,130	1.00	2.12	-
1980	7	0.83	2.70	2.24	-	-	0.35	1.89	2,220	0.85	1.89	-
1981	8	0.54	4.07	2.20	0.01	-	0.20	2.01	2,310	0.87	2.01	-
1982	9	0.59	4.07	2.40	-	-	0.30	2.10	2,400	0.88	2.10	-
1983	10	0.61	3.61	2.20	0.03	0.10	0.40	1.93	2,490	0.78	1.93	-
1984	11	0.62	3.87	2.40	0.02	-	0.30	2.12	2,590	0.82	2.12	-
1985	12	0.64	4.06	2.60	0.04	-	0.10	2.54	2,690	0.94	2.54	-
1986	13	0.75	3.73	2.80	0.01	-	-	2.81	2,790	1.01	2.81	-
1987	14	0.84	3.57	3.00	0.04	-	0.10	2.94	2,890	1.02	2.94	-
1988	15	0.90	3.67	3.30	-	-	0.10	3.20	2,990	1.07	3.20	-
Projected		*9	*10		*11					*12		
1995	22	0.70	3.30	2.30	0.02	-	-	2.32	3,800	0.69	2.60	-0.28
2000	27	0.70	3.30	2.30	0.02	-	-	2.32	4,600	0.61	2.80	-0.48
2005	32	0.70	3.20	2.20	0.02	-	-	2.22	5,400	0.55	3.00	-0.78

*1 Including waste and marketing losses.   *3(7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 $y = a + bx$ a = 8.159   b = 0.32268
       r = 0.93 (df.=13, significance level = 5%: r > 0.5139)
*6 $y = a + bx$ a = 3.862   b = 0.04725
       r = 0.43 (df.=13, significance level = 5%: r < 0.5139, no correlation
          average figure between 1974 and 1988 was applied to the feature yield)
*7 $y = a + bx$ a = 4.041   b = 0.20479
       r = 0.68 (df.=13, significance level = 5%: r > 0.5139)
*8 $y = a * x^b$ a = 38.479   b = -0.73493
       r = 0.84 (df.=13, significance level = 5%: r > 0.5139)
*9 $y = a + bx$ a = 0.683   b = 0.00400
       r = 0.17 (df.=13, significance level = 5%: r < 0.5139, no correlation
          average figure between 1974 and 1988 was applied to the feature area)
*10 $y = a + b * LOG$ a = 4.587   b = -0.92341
       r = 0.55 (df.=13, significance level = 5%: r > 0.5139)
*11 $y = a + bx$ a = 0.012   b = 0.00114
       r = 0.44 (df.=10, significance level = 5%: r < 0.5760, no correlation, average figure
          between 1974 and 1988 was applied to the feature products coming from the West Bank)
*12 $y = a * x^b$ a = 1.828   b = -0.84963
       r = 0.86 (df.=13, significance level = 5%: r > 0.5139)
Note: x = Year in order   y = Production or per capita consumption

-B.35-

Year	Year in Order	Supply*1							Demand*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Produc- tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Popula- tion*4 (1,000)	Per Capita Consump- tion (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Almond												
Actual												
1974	1	0.55	4.33	2.38	1.33	*	–	3.71	1,680	2.21	3.71	–
1975	2	0.65	3.63	2.36	1.30	*	–	3.66	1,760	2.08	3.66	–
1976	3	0.66	3.64	2.40	0.57	*	–	2.97	1,850	1.61	2.97	–
1977	4	0.68	3.24	2.20	1.52	0.31	–	4.03	1,940	2.08	4.03	–
1978	5	0.69	2.74	1.89	0.58	0.31	–	2.78	2,030	1.37	2.78	–
1979	6	0.70	2.53	1.77	1.21	0.22	–	3.20	2,130	1.50	3.2	–
1980	7	0.71	2.46	1.75	0.78	0.39	–	2.92	2,220	1.32	2.92	–
1981	8	0.50	2.20	1.10	1.40	0.29	–	2.79	2,310	1.21	2.79	–
1982	9	0.51	2.55	1.30	1.01	0.28	–	2.59	2,400	1.08	2.59	–
1983	10	0.55	2.73	1.50	0.87	0.35	–	2.72	2,490	1.09	2.72	–
1984	11	0.56	2.86	1.60	1.11	0.48	–	3.19	2,590	1.23	3.19	–
1985	12	0.60	3.00	1.80	0.33	0.25	–	2.38	2,690	0.88	2.38	–
1986	13	0.66	1.52	1.00	1.05	0.21	–	2.26	2,790	0.81	2.26	–
1987	14	0.64	3.13	2.00	0.12	0.50	–	2.62	2,890	0.91	2.62	–
1988	15	0.69	1.88	1.30	0.76	*	*	*	2,990	*	*	–
Projected		*5	*6		*7					*8		
1995	22	0.62	2.00	1.20	0.90	–	–	2.10	3,800	0.65	2.50	-0.40
2000	27	0.62	1.90	1.20	0.90	–	–	2.10	4,600	0.53	2.40	-0.30
2005	32	0.62	1.80	1.10	0.90	–	–	2.00	5,400	0.44	2.40	-0.40
Peache												
Actual												
1974	1	0.19	2.42	0.46	–	0.0	0.03	0.43	1,680	0.26	0.43	–
1975	2	0.21	2.29	0.48	–	0.1	0.03	0.55	1,760	0.31	0.55	–
1976	3	0.23	2.09	0.48	–	0.3	0.11	0.67	1,850	0.36	0.67	–
1977	4	0.24	1.67	0.40	–	–	0.02	0.38	1,940	0.20	0.38	–
1978	5	0.23	1.96	0.45	–	–	0.08	0.37	2,030	0.18	0.37	–
1979	6	0.26	1.62	0.42	–	1.0	0.24	1.18	2,130	0.55	1.18	–
1980	7	0.28	1.57	0.44	–	0.8	0.19	1.05	2,220	0.47	1.05	–
1981	8	0.58	3.10	1.80	–	1.6	1.70	1.70	2,310	0.74	1.70	–
1982	9	0.63	6.67	4.20	–	1.6	0.30	5.50	2,400	2.29	5.50	–
1983	10	0.66	6.67	4.40	–	0.1	0.20	4.30	2,490	1.73	4.30	–
1984	11	0.68	4.26	2.90	–	0.3	0.30	2.90	2,590	1.12	2.90	–
1985	12	0.71	4.37	3.10	–	–	0.10	3.00	2,690	1.12	3.00	–
1986	13	0.75	5.73	4.30	–	–	0.10	4.20	2,790	1.51	4.20	–
1987	14	0.83	0.96	0.80	–	–	0.01	0.79	2,890	0.27	0.79	–
1988	15	1.03	3.98	4.10	–	–	0.03	4.07	2,990	1.36	4.07	–
Projected		*9	*10							*11		
1995	22	1.30	3.30	4.30	–	–	–	4.30	3,800	1.40	5.30	-1.00
2000	27	1.60	3.30	5.30	–	–	–	5.30	4,600	1.50	6.90	-1.60
2005	32	1.90	3.30	6.30	–	–	–	6.30	5,400	1.60	8.60	-2.30

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + bx   a = 0.632   b = -0.00104
        r = 0.06   (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature area)
*6 y = a * x^b   a = 4.331   b = -0.24581
        r = 0.72   (df.=13, significance level = 5%: r > 0.5139)
*7 y = a + bx   a = 1.280   b = -0.04389
        r = 0.48   (df.=13, significance level = 5%: r < 0.5139, no correlation, average figure
                    between 1974 and 1988 was applied to the feature products coming from the West Bank)
*8 y = a + b * LOGx a = 2.392   b = -1.29964
        r = 0.93   (df.=13, significance level = 5%: r > 0.5139)
*9 y = a + bx   a = 0.027   b = 0.05921
        r = 0.95   (df.=13, significance level = 5%: r > 0.5139)
*10 y = a + bx   a = 1.747   b = 0.19300
        r = 0.46   (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature yield)
*11 y = a + b * LOGx a = -0.076   b = 1.12295
        r = 0.58   (df.=13, significance level = 5%: r > 0.5139)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (7/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1 Area (1,000ha)	Yield (t/ha)	Produc- tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Demand*1 Popula- tion*4 (1,000)	Per Capita Consump- tion (kg)	Total Demand (1,000t)	*1 Balance (1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Plum and Prune												
Actual												
1974	1	0.61	4.59	2.80	0.91	0.10	0.81	3.00	1,680	1.79	3.00	-
1975	2	0.63	4.90	3.09	3.00	0.20	1.90	4.39	1,760	2.49	4.39	-
1976	3	0.66	4.85	3.20	2.71	0.30	1.78	4.43	1,850	2.39	4.43	-
1977	4	0.68	4.35	2.96	2.87	0.10	0.80	5.13	1,940	2.64	5.13	-
1978	5	0.68	3.59	2.44	3.28	0.10	2.34	3.48	2,030	1.71	3.48	-
1979	6	0.72	2.61	1.88	0.79	0.80	1.63	1.84	2,130	0.86	1.84	-
1980	7	0.75	2.32	1.74	2.87	0.50	2.27	2.84	2,220	1.28	2.84	-
1981	8	0.51	3.14	1.60	5.28	0.30	2.60	4.58	2,310	1.98	4.58	-
1982	9	0.57	4.04	2.30	6.20	1.60	3.90	6.20	2,400	2.58	6.20	-
1983	10	0.59	3.73	2.20	3.15	0.10	2.70	2.75	2,490	1.10	2.75	-
1984	11	0.62	3.55	2.20	3.71	0.20	2.60	3.51	2,590	1.36	3.51	-
1985	12	0.62	3.71	2.30	3.93	-	2.20	4.03	2,690	1.50	4.03	-
1986	13	0.67	4.18	2.80	3.00	-	1.30	4.50	2,790	1.61	4.50	-
1987	14	0.79	1.39	1.10	0.48	-	0.10	1.48	2,890	0.51	1.48	-
1988	15	0.81	3.70	3.00	2.30	-	1.10	4.20	2,990	1.40	4.20	-
Projected		*5	*6		*7					*8		
1995	22	0.66	2.80	1.80	3.00	-	-	4.80	3,800	0.56	2.10	2.70
2000	27	0.66	2.70	1.80	3.00	-	-	4.80	4,600	0.16	0.80	4.00
2005	32	0.66	2.60	1.70	3.00	-	-	4.70	5,400	0.00	0.00	4.70
Apricot												
Actual												
1974	1	0.21	4.86	1.02	0.14	0.10	0.25	1.01	1,680	0.60	1.01	-
1975	2	0.23	4.52	1.04	0.25	0.90	0.78	1.41	1,760	0.80	1.41	-
1976	3	0.25	4.72	1.18	0.04	2.30	0.59	2.93	1,850	1.58	2.93	-
1977	4	0.26	3.96	1.03	0.07	0.10	0.03	1.17	1,940	0.60	1.17	-
1978	5	0.27	3.19	0.86	0.38	0.70	0.44	1.50	2,030	0.74	1.50	-
1979	6	0.29	2.31	0.67	0.05	1.00	0.28	1.44	2,130	0.68	1.44	-
1980	7	0.33	1.88	0.62	0.01	0.70	0.11	1.22	2,220	0.55	1.22	-
1981	8	0.18	3.89	0.70	0.09	0.90	0.20	1.49	2,310	0.65	1.49	-
1982	9	0.21	3.81	0.80	0.12	1.80	0.30	2.42	2,400	1.01	2.42	-
1983	10	0.22	2.73	0.60	0.09	1.90	0.20	2.39	2,490	0.96	2.39	-
1984	11	0.25	2.40	0.60	0.01	0.60	0.10	1.11	2,590	0.43	1.11	-
1985	12	0.28	2.50	0.70	0.03	2.00	0.30	2.43	2,690	0.90	2.43	-
1986	13	0.32	1.88	0.60	0.02	1.80	1.50	0.92	2,790	0.33	0.92	-
1987	14	0.29	2.07	0.60	0.04	-	0.01	0.63	2,890	0.22	0.63	-
1988	15	0.22	4.09	0.90	-	0.40	0.02	1.28	2,990	0.43	1.28	-
Projected		*9	*10		*11					*12		
1995	22	0.25	2.20	0.60	0	-	-	0.60	3,800	0.70	2.70	-2.10
2000	27	0.25	2.10	0.50	0	-	-	0.50	4,600	0.70	3.20	-2.70
2005	32	0.25	2.00	0.50	0	-	-	0.50	5,400	0.70	3.80	-3.30

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + bx   a = 0.616   b = 0.00554
    r = 0.30 (df.=13, significance level = 5%: r < 0.5139, no correlation
              average figure between 1974 and 1988 was applied to the feature area)
*6 y = a + b * LOGx   a = 4.901   b = -1.55637
    r = 0.55 (df.=13, significance level = 5%: r > 0.5139)
*7 y = a + b * LOGx   a = 2.033   b = 1.15423
    r = 0.25 (df.=13, significance level = 5%: r < 0.5139, no correlation, average figure
              between 1974 and 1988 was applied to the feature products coming from the West Bank)
*8 y = a + bx   a = 2.318   b = -0.07979
    r = 0.56 (df.=13, significance level = 5%: r > 0.5139)
*9 y = a + b * LOGx   a = 0.227   b = 0.03330
    r = 0.26 (df.=13, significance level = 5%: r < 0.5139, no correlation
              average figure between 1974 and 1988 was applied to the feature area)
*10 y = a * x^b   a = 5.181   b = -0.21437
    r = 0.64 (df.=13, significance level = 5%: r > 0.5139)
*11 y = a + bx   a = 0.187   b = -0.01221
    r = 0.53 (df.=13, significance level = 5%: r > 0.5139)
*12 y = a + bx   a = 0.974   b = -0.03439
    r = 0.46 (df.=13, significance level = 5%: r < 0.5139, no correlation
              average figure between 1974 and 1988 was applied to the feature consumption)
Note: x = Year in order   y = Production or per capita consumption

Year	Year in Order	Supply*1							Demand*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Produc-tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Popula-tion*4 (1,000)	Per Capita Consump-tion (kg)	Total Demand (1,000t)	(1,000t)
Pomegranate		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Actual												
1974	1	0.60	7.08	4.25	-	-	0.61	3.64	1,680	2.17	3.64	-
1975	2	0.62	6.56	4.07	-	-	0.97	3.10	1,760	1.76	3.10	-
1976	3	0.65	6.49	4.22	-	-	0.49	3.73	1,850	2.02	3.73	-
1977	4	0.68	4.93	3.35	-	-	0.32	3.03	1,940	1.56	3.03	-
1978	5	0.69	4.78	3.30	-	-	0.25	3.05	2,030	1.50	3.05	-
1979	6	0.74	3.31	2.45	-	0.10	0.58	1.97	2,130	0.92	1.97	-
1980	7	0.77	3.13	2.41	-	0.10	0.60	1.91	2,220	0.86	1.91	-
1981	8	0.33	5.76	1.90	-	-	0.90	1.00	2,310	0.43	1.00	-
1982	9	0.34	5.88	2.00	-	-	0.90	1.10	2,400	0.46	1.10	-
1983	10	0.35	5.71	2.00	-	0.10	0.90	1.20	2,490	0.48	1.20	-
1984	11	0.36	4.72	1.70	-	-	0.90	0.80	2,590	0.31	0.80	-
1985	12	0.38	4.74	1.80	-	-	0.60	1.20	2,690	0.45	1.20	-
1986	13	0.41	4.39	1.80	-	-	0.50	1.30	2,790	0.47	1.30	-
1987	14	0.49	3.06	1.50	-	-	0.40	1.10	2,890	0.38	1.10	-
1988	15	0.54	7.78	4.20	-	0.30	0.40	4.10	2,990	1.37	4.10	-
Projected		*5	*6							*7		
1995	22	0.40	5.20	2.10	-	-	-	2.40	3,800	0.35	1.30	1.10
2000	27	0.38	5.20	2.00	-	-	-	2.00	4,600	0.30	1.40	0.60
2005	32	0.36	5.20	1.90	-	-	-	1.90	5,400	0.27	1.50	0.40
Apple												
Actual												
1974	1	0.68	3.49	2.37	-	8.00	0.07	10.30	1,680	6.10	10.30	-
1975	2	0.70	3.81	2.67	-	8.70	0.96	10.41	1,760	5.90	10.41	-
1976	3	0.73	3.47	2.53	-	21.20	1.46	22.27	1,850	12.00	22.27	-
1977	4	0.77	2.84	2.19	-	8.90	0.55	10.54	1,940	5.40	10.54	-
1978	5	0.79	2.97	2.35	-	14.40	1.37	15.38	2,030	7.60	15.38	-
1979	6	0.77	2.99	2.30	-	23.00	0.85	24.45	2,130	11.50	24.45	-
1980	7	0.80	2.85	2.28	-	21.00	0.78	22.50	2,220	10.10	22.50	-
1981	8	0.72	4.44	3.20	-	27.30	0.20	30.30	2,310	13.10	30.30	-
1982	9	0.85	5.18	4.40	-	40.40	0.30	44.50	2,400	18.50	44.50	-
1983	10	0.87	5.40	4.70	-	46.00	0.20	50.50	2,490	20.30	50.50	-
1984	11	0.91	4.84	4.40	-	29.70	0.30	33.80	2,590	13.10	33.80	-
1985	12	0.93	3.12	2.90	-	53.10	0.20	55.80	2,690	20.70	55.80	-
1986	13	1.06	2.36	2.50	-	31.80	-	34.30	2,790	12.30	34.30	-
1987	14	1.15	1.74	2.00	-	17.60	-	19.60	2,890	6.80	19.60	-
1988	15	1.24	3.87	4.80	-	8.60	-	13.40	2,990	4.50	13.40	-
Projected		*8	*9							*12		
1995	22	1.30	3.60	4.70	-	-	-	4.70	3,800	11.00	41.80	-37.10
2000	27	1.50	3.60	5.40	-	-	-	5.40	4,600	11.00	50.60	-45.20
2005	32	1.70	3.60	6.10	-	-	-	6.10	5,400	11.00	59.40	-53.30

*1 Including waste and marketing losses. 　　　　*3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
　　(Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + b * LOGx   a = 0.728   b = -0.24517
　　　　r = 0.52 (df.=13, significance level = 5%: r > 0.5139)
*6 y = a + b * LOGx   a = 6.503   b = -1.58681
　　　　r = 0.38 (df.=13, significance level = 5%: r < 0.5139, no correlation
　　　　　　average figure between 1974 and 1988 was applied to the feature yield)
*7 y = a * x^b   a = 2.920   b = -0.68634
　　　　r = 0.78 (df.=13, significance level = 5%: r > 0.5139)
*8 y = a + bx   a = 0.593   b = 0.03400
　　　　r = 0.91 (df.=13, significance level = 5%: r > 0.5139)
*9 y = a * x^b   a = 3.573   b = -0.02478
　　　　r = 0.06 (df.=13, significance level = 5%: r < 0.5139, no correlation
　　　　　　average figure between 1974 and 1988 was applied to the feature yield)
*10 y = a * x^b   a = 6.355   b = 0.24490
　　　　r = 0.39 (df.=13, significance level = 5%: r < 0.5139, no correlation
　　　　　　average figure between 1974 and 1988 was applied to the feature consumption)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (9/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1 Area (1,000ha)	Yield (t/ha)	Production (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Demand*1 Popula-tion*4 (1,000)	Per Capita Consump-tion (kg)	Total Demand (1,000t)	Balance*1 (1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Pear												
Actual												
1974	1	0.16	3.81	0.61	–	0.20	0.06	0.75	1,680	0.45	0.75	–
1975	2	0.17	3.71	0.63	–	0.90	0.16	1.37	1,760	0.78	1.37	–
1976	3	0.17	4.12	0.70	–	2.00	0.33	2.37	1,850	1.28	2.37	–
1977	4	0.18	2.67	0.48	–	1.20	0.01	1.67	1,940	0.86	1.67	–
1978	5	0.18	3.00	0.54	–	0.20	0.02	0.72	2,030	0.35	0.72	–
1979	6	0.19	2.58	0.49	–	1.40	0.04	1.85	2,130	0.87	1.85	–
1980	7	0.20	2.40	0.48	–	1.20	0.16	1.52	2,220	0.68	1.52	–
1981	8	0.07	2.86	0.20	–	0.70	0.06	0.84	2,310	0.36	0.84	–
1982	9	0.07	2.86	0.20	–	2.60	0.10	2.70	2,400	1.13	2.70	–
1983	10	0.08	2.50	0.20	–	3.00	0.05	3.15	2,490	1.27	3.15	–
1984	11	0.09	2.22	0.20	–	2.50	0.20	2.50	2,590	0.97	2.50	–
1985	12	0.10	2.00	0.20	–	3.90	0.10	4.00	2,690	1.49	4.00	–
1986	13	0.12	2.50	0.30	–	2.30	0.10	2.50	2,790	0.90	2.50	–
1987	14	0.13	1.54	0.20	–	–	–	0.20	2,890	0.07	0.20	–
1988	15	0.17	3.53	0.60	–	0.60	–	1.20	2,990	0.40	1.20	–
Projected		*5	*6							*7		
1995	22	0.14	2.10	0.29	–	–	–	0.29	3,800	0.76	2.90	-2.61
2000	27	0.14	2.00	0.28	–	–	–	0.28	4,600	0.76	3.50	-3.22
2005	32	0.14	1.90	0.27	–	–	–	0.27	5,400	0.76	4.10	-3.83
Banana												
Actual												
1974	1	0.50	24.3	12.14	0.94	–	–	13.08	1,680	7.79	13.08	–
1975	2	0.51	22.7	11.56	1.43	–	–	12.99	1,760	7.38	12.99	–
1976	3 .	0.59	24.7	14.60	1.92	–	–	16.52	1,850	8.93	16.52	–
1977	4	0.59	27.0	15.92	1.32	–	–	17.24	1,940	8.89	17.24	–
1978	5	0.68	23.3	15.87	1.75	–	–	17.62	2,030	8.68	17.62	–
1979	6	0.72	20.1	14.50	1.66	–	–	16.16	2,130	7.59	16.16	–
1980	7	0.70	22.8	15.94	1.90	–	–	17.84	2,220	8.04	17.84	–
1981	8	0.31	38.7	12.00	3.39	–	–	15.39	2,310	6.66	15.39	–
1982	9	0.46	28.3	13.00	4.28	–	–	17.28	2,400	7.20	17.28	–
1983	10	0.53	35.7	18.90	3.87	–	–	22.77	2,490	9.14	22.77	–
1984	11	0.56	30.5	17.10	8.26	–	–	25.36	2,590	9.79	25.36	–
1985	12	1.03	29.8	30.70	7.40	–	–	38.10	2,690	14.16	38.10	–
1986	13	0.84	33.1	27.80	7.64	–	–	35.44	2,790	12.70	35.44	–
1987	14	1.03	43.2	44.50	4.65	–	–	49.15	2,890	17.01	49.15	–
1988	15	0.86	35.9	30.90	5.96	–	–	36.86	2,990	12.33	36.86	–
Projected		*8	*9		*10					*11		
1995	22	1.00	45.0	45.00	10.00	–	–	55.00	3,800	12.00	46.00	9.00
2000	27	1.20	51.0	61.00	13.00	–	–	74.00	4,600	12.50	58.00	16.00
2005	32	1.30	56.0	73.00	15.00	–	–	88.00	5,400	13.00	70.00	18.00

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + bx   a = 0.178   b = -0.00486
        r = 0.47   (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature area)
*6 y = a + bx   a = 4.150   b = -0.22433
        r = 0.67   (df.=13, significance level = 5%: r > 0.5139)
*7 y = a * x^b   a = 0.783   b = -0.10159
        r = 0.10   (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature consumption)
*8 y = a + bx   a = 0.442   b = 0.02739
        r = 0.59   (df.=13, significance level = 5%: r > 0.5139)
*9 y = a + bx   a = 20.320   b = 1.12750
        r = 0.75   (df.=13, significance level = 5%: r > 0.5139)
*10 y = a * x^b   a = -0.062   b = 0.47754
        r = 0.85   (df.=13, significance level = 5%: r > 0.5139)
*11 y = a * x^b   a = 6.461   b = 0.20122
        r = 0.57   (df.=13, significance level = 5%: r > 0.5139)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (10/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1							Demand*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Produc-tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Popula-tion*4 (1,000)	Per Capita Consump-tion (kg)	Total Demand (1,000t)	(1,000t)
Citrus		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Actual												
1974	1	1.87	28.0	52.27	122.53	0.30	89.38	85.72	1,680	51.0	85.72	-
1975	2	2.08	27.5	57.20	164.63	0.40	128.14	94.09	1,760	53.5	94.09	-
1976	3	2.10	33.2	69.71	207.14	1.10	136.79	141.16	1,850	76.3	141.16	-
1977	4	2.12	33.2	70.34	168.61	0.30	129.68	109.57	1,940	56.5	109.57	-
1978	5	2.15	31.5	67.79	148.46	0.70	138.82	78.13	2,030	38.5	78.13	-
1979	6	2.57	19.6	50.37	168.14	0.50	93.19	125.82	2,130	59.1	125.82	-
1980	7	2.58	23.1	59.53	138.12	1.40	122.11	76.94	2,220	34.7	76.94	-
1981	8	3.18	26.1	83.00	146.71	0.70	139.26	91.15	2,310	39.5	91.15	-
1982	9	3.85	22.5	86.50	139.98	1.40	142.37	85.51	2,400	35.6	85.51	-
1983	10	3.88	30.3	117.60	106.52	1.50	109.92	115.70	2,490	46.5	115.70	-
1984	11	3.93	24.2	95.10	123.41	0.30	122.87	95.94	2,590	37.0	95.94	-
1985	12	4.92	23.6	116.00	111.23	0.90	118.66	109.47	2,690	40.7	109.47	-
1986	13	5.04	23.0	115.70	102.30	1.00	118.68	100.32	2,790	36.0	100.32	-
1987	14	5.20	24.2	125.80	79.53	0.10	79.1	126.33	2,890	43.7	126.33	-
1988	15	5.30	26.8	141.90	47.83	0.00	54	135.73	2,990	45.4	135.73	-
Projected		*5	*6		*7					*8		
1995	22	7.30	26.0	190.00	95.00	-	-	285.00	3,800	27.0	103.00	182.00
2000	27	8.70	26.0	226.00	89.00	-	-	315.00	4,600	20.0	92.00	223.00
2005	32	10.10	26.0	263.00	83.00	-	-	346.00	5,400	13.0	70.00	276.00
Quince												
Actual												
1974	1	0.018	3.33	0.06	-	-	-	0.06	1,680	0.036	0.06	-
1975	2	0.018	3.33	0.06	-	-	-	0.06	1,760	0.034	0.06	-
1976	3	0.020	3.50	0.07	-	-	-	0.07	1,850	0.038	0.07	-
1977	4	0.021	2.86	0.06	-	-	-	0.06	1,940	0.031	0.06	-
1978	5	0.022	3.18	0.07	-	-	-	0.07	2,030	0.034	0.07	-
1979	6	0.023	2.61	0.06	-	-	-	0.06	2,130	0.028	0.06	-
1980	7	0.027	1.48	0.04	-	-	-	0.04	2,220	0.018	0.04	-
1981	8	0.007	4.29	0.03	-	-	-	0.03	2,310	0.013	0.03	-
1982	9	0.010	4.00	0.04	-	-	-	0.04	2,400	0.017	0.04	-
1983	10	0.008	5.00	0.04	-	-	-	0.04	2,490	0.016	0.04	-
1984	11	0.010	8.00	0.08	-	-	-	0.08	2,590	0.031	0.08	-
1985	12	0.010	4.00	0.04	-	-	-	0.04	2,690	0.015	0.04	-
1986	13	0.010	2.00	0.02	-	-	-	0.02	2,790	0.007	0.02	-
1987	14	0.020	5.00	0.10	-	-	-	0.10	2,890	0.035	0.10	-
1988	15	0.030	3.33	0.10	-	-	-	0.10	2,990	0.033	0.10	-
Projected		*9	*10							*11		
1995	22	0.020	3.70	0.07	-	-	-	0.07	3,800	0.026	0.10	-0.03
2000	27	0.020	3.70	0.07	-	-	-	0.07	4,600	0.026	0.12	-0.05
2005	32	0.020	3.70	0.07	-	-	-	0.07	5,400	0.026	0.14	-0.07

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + bx   a = 1.160   b = 0.27807
        r = 0.97 (df.=13, significance level = 5%: r > 0.5139)
*6 y = a + bx   a = 29.845   b = -0.42393
        r = 0.46 (df.=13, significance level = 5%: r < 0.5139, no correlation
                   average figure between 1974 and 1988 was applied to the feature yield)
*7 y = a + b * LOGx   a = 187.56   b = -69.18737
        r = 0.59 (df.=13, significance level = 5%: r > 0.5139)
*8 y = a + bx   a = 57.452   b = -1.39821
        r = 0.55 (df.=13, significance level = 5%: r > 0.5139)
*9 y = a * x¯b   a = 0.021   b = -0.17901
        r = 0.30 (df.=13, significance level = 5%: r < 0.5139, no correlation
                   average figure between 1974 and 1988 was applied to the feature area)
*10 y = a + bx   a = 2.903   b = 0.10300
        r = 0.30 (df.=13, significance level = 5%: r < 0.5139, no correlation
                   average figure between 1974 and 1988 was applied to the feature yield)
*11 y = a + b * LOGx   a = 0.038   b = -0.01539
        r = 0.51 (df.=13, significance level = 5%: r < 0.5139, no correlation
                   average figure between 1974 and 1988 was applied to the feature consumption)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (11/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1							Demand*1			*1 Balance
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Population*4 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Tomatoes												
Actual												
1974	1	12.05	15.3	184.9	0.01	-	87.91	97.0	1,680	57.7	97.0	-
1975	2	13.37	11.4	151.8	0.22	-	52.90	99.1	1,760	56.3	99.1	-
1976	3	11.02	13.2	145.3	2.27	0.1	61.94	85.7	1,850	46.3	85.7	-
1977	4	11.09	14.0	155.7	3.33	0.0	46.54	112.5	1,940	58.0	112.5	-
1978	5	13.73	14.7	201.5	4.76	0.5	82.91	123.9	2,030	61.0	123.9	-
1979	6	13.21	14.8	195.4	4.51	-	91.17	108.7	2,130	51.1	108.7	-
1980	7	13.66	15.1	206.2	3.25	0.1	105.17	104.4	2,220	47.0	104.4	-
1981	8	14.26	23.9	341.4	7.27	-	127.98	220.7	2,310	95.5	220.7	-
1982	9	15.65	24.0	375.4	15.17	-	152.31	238.3	2,400	99.3	238.3	-
1983	10	17.21	23.7	408.2	10.72	-	125.52	293.4	2,490	117.8	293.4	-
1984	11	15.57	22.8	354.6	20.15	-	128.00	246.8	2,590	95.3	246.8	-
1985	12	13.71	28.6	392.3	21.71	-	108.20	305.8	2,690	113.7	305.8	-
1986	13	9.64	31.7	305.9	16.06	-	94.90	227.1	2,790	81.4	227.1	-
1987	14	7.82	34.3	268.4	4.58	-	94.45	178.5	2,890	61.8	178.5	-
1988	15	7.41	39.2	290.8	1.15	-	116.90	175.1	2,990	58.5	175.1	-
Projected		*5	*6		*7					*8		
1995	22	12.60	33.0	416.0	43.00	-	-	459.0	3,800	73.0	277.0	182.0
2000	27	12.60	36.0	454.0	66.00	-	-	520.0	4,600	73.0	336.0	184.0
2005	32	12.60	39.0	491.0	95.00	-	-	586.0	5,400	73.0	394.0	192.0
Squash												
Actual												
1974	1	0.87	8.8	7.63	-	-	4.25	3.4	1,680	2.0	3.4	-
1975	2	1.21	14.2	17.16	-	-	7.30	9.9	1,760	5.6	9.9	-
1976	3	1.78	10.5	18.61	-	-	7.60	11.0	1,850	6.0	11.0	-
1977	4	1.78	10.2	18.07	-	-	10.44	7.6	1,940	3.9	7.6	-
1978	5	1.55	13.8	21.37	-	-	14.60	6.8	2,030	3.3	6.8	-
1979	6	1.43	19.3	27.53	-	-	18.07	9.5	2,130	4.4	9.5	-
1980	7	1.95	12.8	24.96	-	-	20.59	4.4	2,220	2.0	4.4	-
1981	8	2.52	13.5	34.00	-	-	28.71	5.3	2,310	2.3	5.3	-
1982	9	4.62	16.0	73.80	-	-	40.17	33.6	2,400	14.0	33.6	-
1983	10	5.30	15.7	83.10	-	-	32.65	50.5	2,490	20.3	50.5	-
1984	11	5.92	13.3	78.70	-	-	23.50	55.2	2,590	21.3	55.2	-
1985	12	3.71	18.7	69.50	-	-	23.90	45.6	2,690	17.0	45.6	-
1986	13	3.38	15.4	51.90	-	-	18.00	33.9	2,790	12.2	33.9	-
1987	14	2.31	20.6	47.50	-	-	14.39	33.1	2,890	11.5	33.1	-
1988	15	2.22	15.0	33.30	-	-	14.90	18.4	2,990	6.2	18.4	-
Projected		*9	*10							*11		
1995	22	4.60	18.0	83.0	-	-	-	83.0	3,800	15.0	57.0	26.0
2000	27	5.10	18.6	95.0	-	-	-	95.0	4,600	16.0	74.0	21.0
2005	32	5.60	19.1	107.0	-	-	-	107.0	5,400	17.0	92.0	15.0

*1 Including waste and marketing losses.　　　　　　　　　　*3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
　　(Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 $y = a + bx$　　　$a = 13.961$　　$b = -0.16675$
　　　　$r = 0.27$ (df.=13, significance level = 5%:　$r < 0.5139$,　no correlation
　　　　　　　　average figure between 1974 and 1988 was applied to the feature area)
*6 $y = a * x^b$　　$a = 9.478$　　$b = 0.40865$
　　　　$r = 0.82$ (df.=13, significance level = 5%:　$r > 0.5139$)
*7 $y = a * x^b$　　$a = 0.066$　　$b = 2.09665$
　　　　$r = 0.82$ (df.=13, significance level = 5%:　$r > 0.5139$)
*8 $y = a * x^b$　　$a = 47.339$　　$b = 0.20813$
　　　　$r = 0.50$ (df.=13, significance level = 5%:　$r < 0.5139$,　no correlation
　　　　　　　　average figure between 1974 and 1988 was applied to the feature consumption)
*9 $y = a * x^b$　　$a = 0.848$　　$b = 0.54530$
　　　　$r = 0.76$ (df.=13, significance level = 5%:　$r > 0.5139$)
*10 $y = a + b * LOG$　$a = 9.231$　　$b = 6.54773$
　　　　$r = 0.67$ (df.=13, significance level = 5%:　$r > 0.5139$)
*11 $y = a + b * LOG$　$a = -0.214$　　$b = 11.15940$
　　　　$r = 0.56$ (df.=13, significance level = 5%:　$r > 0.5139$)
Note:　x = Year in order　　y = Production or per capita consumption

Table B.1.9 (12/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1							Demand*1			Balance*1 (1,000t)
		Area (1,000ha)	Yield (t/ha)	Produc-tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Popula-tion*4 (1,000)	Per Capita Consump-tion (kg)	Total Demand (1,000t)	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Eggplant												
Actual												
1974	1	3.84	16.3	62.69	~	-	22.17	40.5	1,680	24.1	40.5	.
1975	2	3.51	24.5	85.82	~	-	21.77	64.1	1,760	36.4	64.1	.
1976	3	2.83	15.6	44.01	0.55	-	16.70	27.9	1,850	15.1	27.9	.
1977	4	2.91	16.9	49.15	1.01	0.1	19.01	31.3	1,940	16.1	31.3	.
1978	5	2.67	18.2	48.57	0.74	0.1	16.45	33.0	2,030	16.2	33.0	.
1979	6	3.38	20.5	69.41	1.56	-	27.19	43.8	2,130	20.6	43.8	.
1980	7	3.42	23.8	81.45	1.76	-	26.36	56.9	2,220	25.6	56.9	.
1981	8	3.86	25.7	99.30	4.73	-	33.64	70.4	2,310	30.5	70.4	.
1982	9	6.42	17.1	110.00	7.11	-	37.60	79.5	2,400	33.1	79.5	.
1983	10	5.61	16.7	93.90	2.28	-	27.44	68.7	2,490	27.6	68.7	.
1984	11	2.81	26.2	73.70	1.71	-	35.20	40.2	2,590	15.5	40.2	.
1985	12	2.72	28.1	76.30	3.31	-	31.70	47.9	2,690	17.8	47.9	.
1986	13	2.38	33.6	80.00	1.90	-	27.00	54.9	2,790	19.7	54.9	.
1987	14	1.61	30.4	48.90	-	-	22.71	26.2	2,890	9.1	26.2	.
1988	15	1.07	32.6	34.90	0.01	-	26.00	8.9	2,990	3.0	8.9	.
Projected		*5	*6		*7					*8		
1995	22	3.30	38.0	125.0	1.80	-	-	126.8	3,800	21.0	80.0	46.8
2000	27	3.30	43.0	142.0	1.80	-	-	143.8	4,600	21.0	97.0	46.8
2005	32	3.30	48.0	158.0	1.80	-	-	159.8	5,400	21.0	113.0	46.8
Cucumber												
Actual												
1974	1	1.27	8.6	10.98	1.85	-	3.92	8.9	1,680	5.3	8.9	~
1975	2	1.20	14.3	17.10	1.60	1.6	4.39	15.9	1,760	9.0	15.9	~
1976	3	1.71	10.7	18.38	3.53	-	6.26	15.7	1,850	8.5	15.7	.
1977	4	1.53	14.2	21.66	3.69	0.1	4.76	20.7	1,940	10.7	20.7	~
1978	5	1.70	13.3	22.58	4.57	0.2	14.68	12.7	2,030	6.2	12.7	~
1979	6	2.53	17.6	44.54	3.91	-	12.08	36.4	2,130	17.1	36.4	~
1980	7	3.03	21.2	64.19	1.44	-	23.69	41.9	2,220	18.9	41.9	.
1981	8	4.28	24.8	106.20	2.85	-	43.26	65.8	2,310	28.5	65.8	.
1982	9	3.20	27.3	87.50	2.28	-	54.74	35.0	2,400	14.6	35.0	.
1983	10	4.09	26.5	108.20	0.47	-	59.11	49.6	2,490	19.9	49.6	.
1984	11	3.44	28.8	99.10	0.26	-	58.00	41.4	2,590	16.0	41.4	.
1985	12	6.48	19.2	124.70	0.17	-	58.50	66.4	2,690	24.7	66.4	.
1986	13	2.16	42.9	92.70	0.04	-	39.60	53.1	2,790	19.0	53.1	.
1987	14	2.44	45.4	110.70	-	-	43.27	67.4	2,890	23.3	67.4	.
1988	15	2.10	38.1	80.00	~	~	44.30	35.7	2,990	11.9	35.7	.
Projected		*9	*10		*11					*12		
1995	22	4.20	42.0	176.0	0.01	-	-	176.0	3,800	23.0	87.0	89.0
2000	27	4.50	47.0	212.0	0.01	-	-	212.0	4,600	24.0	110.0	102.0
2005	32	4.90	53.0	260.0	-	-	-	260.0	5,400	25.0	135.0	125.0

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a * x^b   a = 4.241   b = -0.18469
        r = 0.33 (df.=13, significance level = 5%: r < 0.5139, no correlation
                average figure between 1974 and 1988 was applied to the feature area)
*6 y = a + bx   a = 14.680   b = 1.05000
        r = 0.75 (df.=13, significance level = 5%: r > 0.5139)
*7 y = a * x^b   a = 0.002   b = 2.35922
        r = 0.44 (df.=13, significance level = 5%: r < 0.5139, no correlation, average figure
                between 1974 and 1988 was applied to the feature products coming from the West Bank)
*8 y = a + bx   a = 28.188   b = -0.93679
        r = 0.46 (df.=13, significance level = 5%: r < 0.5139, no correlation
                average figure between 1974 and 1988 was applied to the feature consumption)
*9 y = a * x^b   a = 1.108   b = 0.42828
        r = 0.70 (df.=13, significance level = 5%: r < 0.5139, no correlation
                average figure between 1974 and 1988 was applied to the feature area)
*10 y = a * x^b   a = 7.265   b = 0.57077
        r = 0.89 (df.=13, significance level = 5%: r > 0.5139)
*11 y = a * x^b   a = 44.711   b = -2.64328
        r = 0.58 (df.=13, significance level = 5%: r > 0.5139)
*12 y = a + b * LOG a = 4.128   b = 14.16907
        r = 0.69 (df.=13, significance level = 5%: r > 0.5139)
Note: x = Year in order   y = Production or per capita consumption

Year	Year in Order	Supply*1							Demand*1			Balance *1
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Population*4 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Potatoes												
Actual												
1974	1	0.27	7.8	2.10	0.49	19.8	1.25	21.1	1,680	12.6	21.1	-
1975	2	0.36	25.3	9.10	0.39	15.3	1.36	23.4	1,760	13.3	23.4	-
1976	3	0.59	14.1	8.30	0.78	17.1	2.60	23.6	1,850	12.7	23.6	-
1977	4	0.59	12.7	7.50	0.27	27.5	0.97	34.3	1,940	17.7	34.3	--
1978	5	0.69	14.6	10.10	0.94	14.1	1.20	23.9	2,030	11.8	23.9	-
1979	6	0.36	12.5	4.50	-	13.8	0.11	18.2	2,130	8.5	18.2	-
1980	7	0.59	14.2	8.40	0.94	19.0	0.99	27.4	2,220	12.3	27.4	-
1981	8	0.42	21.7	9.10	1.61	40.1	1.90	48.9	2,310	21.2	48.9	-
1982	9	0.75	15.3	11.50	2.51	24.4	1.19	37.2	2,400	15.5	37.2	--
1983	10	0.78	32.9	25.70	3.87	26.5	2.04	54.0	2,490	21.7	54.0	-
1984	11	1.26	21.1	26.60	4.97	23.8	5.20	50.2	2,590	19.4	50.2	--
1985	12	1.30	20.2	26.30	4.38	16.2	5.50	41.4	2,690	15.4	41.4	-
1986	13	1.56	24.7	38.50	3.93	13.4	1.70	54.1	2,790	19.4	54.1	-
1987	14	2.14	22.5	48.20	6.34	3.9	11.28	47.2	2,890	16.3	47.2	--
1988	15	2.51	20.6	51.70	3.19	2.4	8.60	48.7	2,990	16.3	48.7	-
Projected		*5	*6		*7						*8	
1995	22	2.80	25.0	70.0	4.70	--	-	74.7	3,800	16.0	61.0	13.70
2000	27	3.40	27.0	92.0	5.10	-	--	97.1	4,600	16.0	74.0	23.10
2005	32	4.10	28.0	115.0	5.40	-	-	120.4	5,400	16.0	86.0	34.40
Cabbage												
Actual												
1974	1	0.44	18.9	8.30	-	-	3.26	5.0	1,680	3.00	5.0	-
1975	2	0.69	21.9	15.10	-	--	2.97	12.1	1,760	6.89	12.1	--
1976	3	0.63	25.4	16.00	-	0.2	2.78	13.4	1,850	7.25	13.4	-
1977	4	0.57	23.5	13.40	-	0.2	2.56	11.0	1,940	5.69	11.0	-
1978	5	0.47	18.9	8.90	-	0.9	4.64	5.2	2,030	2.54	5.2	-
1979	6	0.69	26.5	18.30	-	0.9	4.61	14.6	2,130	6.85	14.6	-
1980	7	0.70	23.9	16.70	-	0.2	5.26	11.6	2,220	5.24	11.6	-
1981	8	0.80	19.3	15.40	-	-	7.63	7.8	2,310	3.36	7.8	-
1982	9	0.84	24.5	20.60	-	-	8.08	12.5	2,400	5.22	12.5	-
1983	10	1.30	24.3	31.60	-	-	9.09	22.5	2,490	9.04	22.5	-
1984	11	2.08	27.6	57.50	-	-	12.34	45.2	2,590	17.44	45.2	-
1985	12	1.15	25.1	28.90	-	-	8.40	20.5	2,690	7.62	20.5	-
1986	13	1.04	26.8	27.90	-	-	6.80	21.1	2,790	7.56	21.1	-
1987	14	0.70	28.7	20.10	-	-	6.43	13.7	2,890	4.73	13.7	-
1988	15	0.66	24.5	16.20	-	-	9.70	6.5	2,990	2.17	6.5	-
Projected		*9	*10								*11	
1995	22	1.10	27.0	30.0	-	-	-	30.0	3,800	6.3	24.0	6.0
2000	27	1.20	28.0	34.0	-	-	-	34.0	4,600	6.3	29.0	5.0
2005	32	1.30	28.0	36.0	-	-	-	36.0	5,400	6.3	34.0	2.0

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + bx   a = -0.106   b = 0.13129
        r = 0.87 (df.=13, significance level = 5%: r > 0.5139)
*6 y = a * x^b   a = 10.259   b = 0.29066
        r = 0.62 (df.=13, significance level = 5%: r > 0.5139)
*7 y = a + b * LOG   a = -1.277   b = 4.43709
        r = 0.75 (df.=13, significance level = 5%: r > 0.5139)
*8 y = a + bx   a = 12.161   b = 0.43071
        r = 0.51 (df.=13, significance level = 5%: r < 0.5139, no correlation
        average figure between 1974 and 1988 was applied to the feature consumption)
*9 y = a * x^b   a = 0.440   b = 0.30941
        r = 0.60 (df.=13, significance level = 5%: r > 0.5139)
*10 y = a * x^b   a = 19.683   b = 0.10199
        r = 0.60 (df.=13, significance level = 5%: r > 0.5139)
*11 y = a + b * LOG   a = 4.349   b = 2.42389
        r = 0.22 (df.=13, significance level = 5%: r < 0.5139, no correlation
        average figure between 1974 and 1988 was applied to the feature consumption)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (14/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1							Demand*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Population*4 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(1,000t)
Cauliflower		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Actual												
1974	1	0.68	19.3	13.10	-	-	4.71	8.4	1,680	5.0	8.4	-
1975	2	1.48	24.3	35.90	-	-	6.29	29.6	1,760	16.8	29.6	-
1976	3	0.88	21.6	19.00	-	0.10	5.06	14.0	1,850	7.6	14.0	-
1977	4	0.81	19.3	15.60	-	0.10	5.16	10.5	1,940	5.4	10.5	-
1978	5	0.56	27.5	15.40	-	0.20	7.85	7.8	2,030	3.8	7.8	-
1979	6	0.64	23.9	15.30	-	0.10	4.87	10.5	2,130	4.9	10.5	-
1980	7	0.56	27.9	15.60	-	0.10	10.68	5.0	2,220	2.3	5.0	-
1981	8	1.87	18.3	34.30	-	-	11.08	23.2	2,310	10.1	23.2	-
1982	9	2.11	21.1	44.60	-	-	13.60	31.0	2,400	12.9	31.0	-
1983	10	2.61	22.0	57.30	-	-	16.71	40.6	2,490	16.3	40.6	-
1984	11	1.97	21.0	41.30	-	-	15.00	26.3	2,590	10.2	26.3	-
1985	12	1.67	21.2	35.40	-	-	12.30	23.1	2,690	8.6	23.1	-
1986	13	1.38	26.4	36.50	-	-	9.60	26.9	2,790	9.6	26.9	-
1987	14	1.39	22.8	31.70	-	-	9.80	21.9	2,890	7.6	21.9	-
1988	15	1.45	25.0	36.20	-	-	11.10	25.1	2,990	8.4	25.1	-
Projected		*5	*6							*7		
1995	22	1.30	23.0	30.0	-	-	-	30.0	3,800	8.6	33.0	-3.0
2000	27	1.30	23.0	30.0	-	-	-	30.0	4,600	8.6	40.0	-10.0
2005	32	1.30	23.0	30.0	-	-	-	30.0	5,400	8.6	46.0	-16.0
Pepper												
Actual												
1974	1	0.56	8.1	4.56	-	-	2.26	2.3	1,680	1.4	2.3	-
1975	2	1.00	6.3	6.28	-	-	3.33	3.0	1,760	1.7	3.0	-
1976	3	0.88	7.7	6.78	-	-	3.36	3.4	1,850	1.8	3.4	-
1977	4	0.85	8.2	6.98	-	-	3.84	3.1	1,940	1.6	3.1	-
1978	5	0.72	9.3	6.68	-	0.10	4.96	1.8	2,030	0.9	1.8	-
1979	6	1.46	7.4	10.82	-	0.10	8.11	2.8	2,130	1.3	2.8	-
1980	7	1.51	8.2	12.32	-	0.10	6.59	5.8	2,220	2.6	5.8	-
1981	8	1.57	8.4	13.20	-	-	10.51	2.7	2,310	1.2	2.7	-
1982	9	1.87	8.3	15.50	-	-	12.43	3.1	2,400	1.3	3.1	-
1983	10	2.56	12.7	32.50	-	-	17.15	15.4	2,490	6.2	15.4	-
1984	11	2.46	11.3	27.80	-	-	19.60	8.2	2,590	3.2	8.2	-
1985	12	1.61	17.1	27.50	-	-	18.90	8.6	2,690	3.2	8.6	-
1986	13	1.81	14.8	26.80	-	-	18.90	7.9	2,790	2.8	7.9	-
1987	14	1.73	17.8	30.80	-	0.13	20.49	10.4	2,890	3.6	10.4	-
1988	15	1.30	22.5	29.30	-	-	23.60	5.7	2,990	1.9	5.7	-
Projected		*8	*9							*10		
1995	22	2.10	24.0	50.0	-	-	-	50.0	3,800	2.3	9.0	41.0
2000	27	2.30	29.0	67.0	-	-	-	67.0	4,600	2.3	11.0	56.0
2005	32	2.30	33.0	76.0	-	-	-	76.0	5,400	2.3	12.0	64.0

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + bx   a = 0.751   b = 0.07325
          r = 0.51 (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature area)
*6 y = a * x^b   a = 21.055   b = 0.03790
          r = 0.23 (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature yield)
*7 y = a * x^b   a = 5.895   b = 0.13780
          r = 0.20 (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature consumption)
*8 y = a + b * LOG   a = 0.431   b = 1.27312
          r = 0.73 (df.=13, significance level = 5%: r > 0.5139)
*9 y = a + bx   a = 3.847   b = 0.92000
          r = 0.86 (df.=13, significance level = 5%: r > 0.5139)
*10 y = a + bx   a = 1.122   b = 0.14893
          r = 0.49 (df.=13, significance level = 5%: r < 0.5139, no correlation
                    average figure between 1974 and 1988 was applied to the feature consumption)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (15/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1							Demand*1			Balance *1
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Popula- tion*4 (1,000)	Per Capita Consump- tion (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Okra												
Actual												
1974	1	0.69	3.46	2.39	-	-	0.58	1.8	1,680	1.1	1.8	-
1975	2	0.79	3.15	2.49	-	-	0.49	2.0	1,760	1.1	2.0	-
1976	3	0.75	2.75	2.06	-	-	0.50	1.6	1,850	0.8	1.6	-
1977	4	0.96	3.13	3.00	-	-	0.08	2.9	1,940	1.5	2.9	-
1978	5	0.83	2.48	2.06	-	-	0.43	1.6	2,030	0.8	1.6	-
1979	6	0.94	1.13	1.06	-	-	0.28	0.8	2,130	0.4	0.8	-
1980	7	1.10	3.46	3.81	-	-	1.14	2.7	2,220	1.2	2.7	-
1981	8	1.10	3.18	3.50	-	-	1.30	2.2	2,310	1.0	2.2	-
1982	9	0.97	2.06	2.00	-	-	0.90	1.1	2,400	0.5	1.1	-
1983	10	1.21	3.31	4.00	-	-	1.80	2.2	2,490	0.9	2.2	-
1984	11	1.09	2.02	2.20	-	-	0.80	1.4	2,590	0.5	1.4	-
1985	12	1.37	2.19	3.00	-	-	1.30	1.7	2,690	0.6	1.7	-
1986	13	0.98	4.08	4.00	-	-	0.50	3.5	2,790	1.3	3.5	-
1987	14	0.94	4.36	4.10	-	-	0.80	3.3	2,890	1.1	3.3	-
1988	15	1.30	3.54	4.60	-	-	1.60	3.0	2,990	1.0	3.0	-
Projected		*5	*6							*8		
1995	22	1.27	3.00	3.80	-	-	-	3.8	3,800	0.9	3.4	0.4
2000	27	1.32	3.00	4.00	-	-	-	4.0	4,600	0.9	4.1	-0.1
2005	32	1.37	3.00	4.10	-	-	-	4.1	5,400	0.9	4.9	-0.8
Lettuce												
Actual												
1974		*	*	*	-	-	-	-	1,680	-	-	-
1975		*	*	*	-	-	-	-	1,760	-	-	-
1976		*	*	*	-	-	-	-	1,850	-	-	-
1977		*	*	*	-	-	-	-	1,940	-	-	-
1978		*	*	*	-	-	-	-	2,030	-	-	-
1979		*	*	*	-	-	-	-	2,130	-	-	-
1980		*	*	*	-	-	-	-	2,220	-	-	-
1981	1	0.51	19.0	9.70	-	-	-	9.7	2,310	4.2	9.7	-
1982	2	0.53	17.5	9.30	-	-	-	9.3	2,400	3.9	9.3	-
1983	3	0.77	26.1	20.10	-	-	-	20.1	2,490	8.1	20.1	-
1984	4	1.01	25.9	26.20	-	-	-	26.2	2,590	10.1	26.2	-
1985	5	1.00	18.6	18.60	-	-	-	18.6	2,690	6.9	18.6	-
1986	6	1.15	23.0	26.40	-	-	-	26.4	2,790	9.5	26.4	-
1987	7	0.69	28.6	19.70	-	-	-	19.7	2,890	6.8	19.7	-
1988	8	0.55	23.1	12.70	-	-	-	12.7	2,990	4.2	12.7	-
Projected		*8	*9							*10		
1995	15	0.78	23.0	18.0	-	-	-	18.0	3,800	3.6	14.0	4.0
2000	20	0.78	23.0	18.0	-	-	-	18.0	4,600	3.6	17.0	1.0
2005	25	0.78	23.0	18.0	-	-	-	18.0	5,400	3.6	19.0	-1.0

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 $y = a * x^b$ a = 0.671   b = 0.20569
    r = 0.81 (df.=13, significance level = 5%: r > 0.5139)
*6 $y = a + bx$ a = 2.602   b = 0.04389
    r = 0.23 (df.=13, significance level = 5%: r < 0.5139, no correlation
    average figure between 1974 and 1988 was applied to the feature yield)
*7 $y = a * x^b$ a = 1.046   b = -0.10395
    r = 0.21 (df.=13, significance level = 5%: r < 0.5139, no correlation
    average figure between 1974 and 1988 was applied to the feature consumption)
*8 $y = a * x^b$ a = 0.559   b = 0.21317
    r = 0.47 (df.=6, significance level = 5%: r < 0.7067, no correlation
    average figure between 1974 and 1988 was applied to the feature area)
*9 $y = a * x^b$ a = 18.626   b = 0.13940
    r = 0.54 (df.=6, significance level = 5%: r < 0.7067, no correlation
    average figure between 1974 and 1988 was applied to the feature yield)
*10 $y = a * x^b$ a = 4.969   b = 0.22273
    r = 0.41 (df.=13, significance level = 5%: r > 0.5139)
    average figure between 1974 and 1988 was applied to the feature consumption)
Note: x = Year in order   y = Production or per capita consumption

Year	Year in Order	Supply*1							Demand*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Population*4 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Water Melon												
Actual												
1974	1	7.14	8.3	59.11	–	3.10	9.62	52.6	1,680	31.3	52.6	–
1975	2	6.41	7.8	50.24	–	3.40	3.03	50.6	1,760	28.8	50.6	–
1976	3	6.74	9.3	62.77	–	7.80	1.60	69.0	1,850	37.3	69.0	–
1977	4	5.48	6.6	36.29	–	3.00	0.08	39.2	1,940	20.2	39.2	–
1978	5	5.31	4.8	25.65	2.49	2.40	0.15	30.4	2,030	15.0	30.4	–
1979	6	1.23	2.8	3.48	1.15	5.30	0.08	9.9	2,130	4.6	9.9	–
1980	7	4.56	5.9	27.09	4.91	3.40	0.49	34.9	2,220	15.7	34.9	–
1981	8	3.42	5.7	19.40	12.26	8.50	0.39	39.8	2,310	17.2	39.8	–
1982	9	2.46	10.2	25.20	16.50	5.70	0.15	47.3	2,400	19.7	47.3	–
1983	10	4.94	14.9	73.70	30.41	3.10	2.44	104.8	2,490	42.1	104.8	–
1984	11	3.69	12.6	46.50	39.23	1.00	5.20	81.5	2,590	31.5	81.5	–
1985	12	3.80	17.1	65.00	40.42	0.50	5.70	100.2	2,690	37.3	100.2	–
1986	13	2.03	29.9	60.70	22.96	0.90	6.30	78.3	2,790	28.1	78.3	–
1987	14	3.18	28.8	91.70	17.81	–	7.26	102.3	2,890	35.4	102.3	–
1988	15	3.72	27.1	100.70	6.96	0.10	11.20	96.6	2,990	32.3	96.6	–
Projected		*5	*6		*7					*8		
1995	22	2.50	36.0	90.0	28.00	–	–	118.0	3,800	26.0	99.0	19.0
2000	27	2.30	44.0	101.0	30.00	–	–	131.0	4,600	26.0	120.0	11.0
2005	32	2.20	52.0	114.0	32.00	–	–	146.0	5,400	26.0	140.0	6.0
Onion												
Actual												
1974	1	1.12	7.5	8.38	0.05	8.30	1.12	15.6	1,680	9.3	15.6	–
1975	2	1.09	6.7	7.25	0.93	5.20	1.55	11.8	1,760	6.7	11.8	–
1976	3	0.96	5.5	5.29	1.05	6.60	2.68	10.3	1,850	5.5	10.3	–
1977	4	1.03	7.5	7.70	0.59	7.50	0.44	15.4	1,940	7.9	15.4	–
1978	5	1.30	6.2	8.01	1.10	8.90	3.61	14.4	2,030	7.1	14.4	–
1979	6	0.71	6.1	4.30	0.05	15.60	5.09	14.9	2,130	7.0	14.9	–
1980	7	0.71	10.9	7.75	–	10.60	5.92	12.4	2,220	5.6	12.4	–
1981	8	1.11	10.5	11.70	2.78	17.20	7.69	24.0	2,310	10.4	24.0	–
1982	9	1.51	13.4	20.20	2.76	19.60	4.30	38.3	2,400	15.9	38.3	–
1983	10	1.75	14.1	24.60	1.47	19.10	4.15	41.0	2,490	16.5	41.0	–
1984	11	1.13	7.9	8.90	3.91	16.20	3.96	25.1	2,590	9.7	25.1	–
1985	12	1.29	10.6	13.70	4.58	8.60	4.07	22.8	2,690	8.5	22.8	–
1986	13	1.77	12.1	21.40	5.44	14.40	2.05	39.2	2,790	14.0	39.2	–
1987	14	1.25	14.5	18.10	5.01	4.50	1.53	26.1	2,890	9.0	26.1	–
1988	15	3.28	13.6	44.50	2.07	4.70	1.00	50.3	2,990	16.8	50.3	–
Projected		*9	*10		*11					*12		
1995	22	2.50	18.0	45.00	7.00	–	–	52.0	3,800	17.0	65.0	-13.0
2000	27	2.90	21.0	61.00	8.00	–	–	69.0	4,600	20.0	92.0	-23.0
2005	32	3.40	23.0	78.00	10.00	–	–	88.0	5,400	23.0	124.0	-36.0

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a * x^b   a = 7.549   b = -0.35656
       r = 0.58 (df.=13, significance level = 5%: r > 0.5139)
*6 y = a + bx   a = -0.199   b = 1.62321
       r = 0.80 (df.=13, significance level = 5%: r > 0.5139)
*7 y = a + b * LOG   a = -9.538   b = 27.90994
       r = 0.66 (df.=13, significance level = 5%: r > 0.5139)
*8 y = a + bx   a = 0.666   b = 0.36411
       r = 0.44 (df.=13, significance level = 5%: r < 0.5139, no correlation
            average figure between 1974 and 1988 was applied to the feature consumption)
*9 y = a + bx   a = 0.661   b = 0.08407
       r = 0.61 (df.=13, significance level = 5%: r > 0.5139)
*10 y = a + bx   a = 5.278   b = 0.56607
       r = 0.79 (df.=13, significance level = 5%: r > 0.5139)
*11 y = a + bx   a = -0.468   b = 0.32343
       r = 0.77 (df.=13, significance level = 5%: r > 0.5139)
*12 y = a + bx   a = 5.756   b = 0.52964
       r = 0.60 (df.=13, significance level = 5%: r > 0.5139)
Note: x = Year in order   y = Production or per capita consumption

Year	Year in Order	Supply*1							Demand*1			Balance*1 (1,000t)
		Area (1,000ha)	Yield (t/ha)	Production (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Population*4 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	
Snake Cucumber		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Actual												
1974	1	1.08	5.51	5.95	-	-	-	6.0	1,680	3.5	6.0	-
1975	2	1.26	4.45	5.61	-	-	-	5.6	1,760	3.2	5.6	-
1976	3	1.12	3.93	4.40	-	-	-	4.4	1,850	2.4	4.4	-
1977	4	1.15	3.93	4.52	-	-	-	4.5	1,940	2.3	4.5	-
1978	5	1.06	3.08	3.27	-	-	-	3.3	2,030	1.6	3.3	-
1979	6	0.78	1.32	1.03	-	-	-	1.0	2,130	0.5	1.0	-
1980	7	1.11	7.05	7.83	-	-	-	7.8	2,220	3.5	7.8	-
1981	8	1.27	5.20	6.60	-	-	-	6.6	2,310	2.9	6.6	-
1982	9	1.19	4.54	5.40	-	-	-	5.4	2,400	2.3	5.4	-
1983	10	1.35	4.59	6.20	-	-	-	6.2	2,490	2.5	6.2	-
1984	11	1.17	5.13	6.00	-	-	-	6.0	2,590	2.3	6.0	-
1985	12	1.28	2.89	3.70	-	-	-	3.7	2,690	1.4	3.7	-
1986	13	0.65	4.31	2.80	-	-	-	2.8	2,790	1.0	2.8	-
1987	14	0.69	6.09	4.20	-	-	-	4.2	2,890	1.5	4.2	-
1988	15	1.03	7.38	7.60	-	-	-	7.6	2,990	2.5	7.6	-
Projected		*5	*6							*7		
1995	22	1.10	4.60	5.10	-	-	-	5.1	3,800	2.2	8.4	-3.3
2000	27	1.10	4.60	5.10	-	-	-	5.1	4,600	2.2	10.1	-5.0
2005	32	1.10	4.60	5.10	-	-	-	5.1	5,400	2.2	11.9	-6.8
Carrot												
Actual												
1974	1	0.058	28.8	1.67	-	0.90	0.07	2.50	1,680	1.5	2.50	-
1975	2	0.050	20.4	1.02	-	0.70	0.15	1.57	1,760	0.9	1.57	-
1976	3	0.030	19.0	0.57	-	1.70	0.50	1.77	1,850	1.0	1.77	-
1977	4	0.031	11.6	0.36	-	1.10	0.20	1.26	1,940	0.6	1.26	-
1978	5	0.015	17.3	0.26	-	0.30	0.17	0.39	2,030	0.2	0.39	-
1979	6	0.036	15.8	0.57	-	2.20	0.54	2.23	2,130	1.0	2.23	-
1980	7	0.041	10.5	0.43	-	3.20	1.20	2.43	2,220	1.1	2.43	-
1981	8	0.040	10.0	0.40	-	3.40	1.70	2.10	2,310	0.9	2.10	-
1982	9	0.050	18.0	0.90	-	3.80	0.70	4.00	2,400	1.7	4.00	-
1983	10	0.010	20.0	0.20	-	3.70	0.70	3.20	2,490	1.3	3.20	-
1984	11	0.050	10.0	0.50	-	4.20	0.50	4.20	2,590	1.6	4.20	-
1985	12	0.060	21.7	1.30	-	3.90	0.40	4.80	2,690	1.8	4.80	-
1986	13	0.030	33.3	1.00	-	5.50	0.20	6.30	2,790	2.3	6.30	-
1987	14	0.040	10.0	0.40	-	2.00	0.10	2.30	2,890	0.8	2.30	-
1988	15	0.030	20.0	0.60	-	0.60	0.02	1.18	2,990	0.4	1.18	-
Projected		*8	*9							*10		
1995	22	0.040	18.0	0.72	-	-	-	0.72	3,800	1.1	4.20	-3.48
2000	27	0.040	18.0	0.72	-	-	-	0.72	4,600	1.1	5.10	-4.38
2005	32	0.040	18.0	0.72	-	-	-	0.72	5,400	1.1	5.90	-5.18

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 $y = a + bx$ $a = 1.195$ $b = -0.01446$
     $r = 0.30$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
               average figure between 1974 and 1988 was applied to the feature area)
*6 $y = a + bx$ $a = 3.745$ $b = 0.11018$
     $r = 0.31$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
               average figure between 1974 and 1988 was applied to the feature yield)
*7 $y = a + b * LOG$ $a = 3.241$ $b = -1.25592$
     $r = 0.48$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
               average figure between 1974 and 1988 was applied to the feature consumption)
*8 $y = a + b * LOG$ $a = 0.045$ $b = -0.00920$
     $r = 0.22$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
               average figure between 1974 and 1988 was applied to the feature area)
*9 $y = a * x^b$ $a = 21.020$ $b = -0.12819$
     $r = 0.26$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
               average figure between 1974 and 1988 was applied to the feature yield)
*10 $y = a + bx$ $a = 0.900$ $b = 0.03000$
     $r = 0.24$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation
               average figure between 1974 and 1988 was applied to the feature consumption)
Note: x = Year in order y = Production or per capita consumption

Table B.1.9 (18/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1							Demand*1			Balance*1
		Area (1,000ha)	Yield (t/ha)	Produc- tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Popula- tion*4 (1,000)	Per Capita Consump- tion (kg)	Total Demand (1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Sweet Melon												
Actual												
1974	1	1.51	9.7	14.71	-	-	1.46	13.25	1,680	7.9	13.25	-
1975	2	1.22	5.3	6.50	-	-	0.81	5.69	1,760	3.2	5.69	-
1976	3	1.18	4.3	5.08	-	0.10	1.63	3.55	1,850	1.9	3.55	-
1977	4	1.16	4.7	5.48	-	0.40	1.46	4.42	1,940	2.3	4.42	-
1978	5	1.27	4.1	5.15	0.65	0.70	2.48	4.02	2,030	2.0	4.02	-
1979	6	1.01	12.9	12.98	0.15	1.10	0.87	13.36	2,130	6.3	13.36	-
1980	7	0.91	11.2	10.22	1.52	0.40	4.19	7.95	2,220	3.6	7.95	-
1981	8	1.82	5.1	9.30	3.91	-	-	13.21	2,310	5.7	13.21	-
1982	9	1.52	8.6	13.10	3.02	0.50	5.13	11.49	2,400	4.8	11.49	-
1983	10	2.37	14.4	34.10	7.26	0.40	14.85	26.91	2,490	10.8	26.91	-
1984	11	2.63	13.2	34.70	7.55	0.40	14.40	28.25	2,590	10.9	28.25	-
1985	12	3.52	14.7	51.60	7.17	0.40	13.40	45.77	2,690	17.0	45.77	-
1986	13	1.56	17.4	27.10	4.79	0.40	8.40	19.10	2,790	6.8	19.10	-
1987	14	2.81	17.0	47.70	2.20	1.80	11.61	37.89	2,890	13.1	37.89	-
1988	15	5.33	10.8	57.40	0.92	1.10	12.60	45.90	2,990	15.4	45.90	-
Projected		*5	*6		*7					*8		
1995	22	3.10	21.0	65.00	4.00	-	-	65.00	3,800	12.0	46.00	19.0
2000	27	3.20	25.0	80.00	4.00	-	-	80.00	4,600	13.0	60.00	20.0
2005	32	3.40	28.0	95.00	4.00	-	-	95.00	5,400	13.0	70.00	25.0
Pea												
Actual												
1974	1	0.020	8.5	0.17	-	-		0.17	1,680	0.10	0.17	-
1975	2	0.075	6.9	0.52	-	-		0.52	1,760	0.30	0.52	-
1976	3	0.038	4.7	0.18	-	-		0.18	1,850	0.10	0.18	-
1977	4	0.006	5.0	0.03	-	-	-	0.03	1,940	0.02	0.03	-
1978	5	0.023	1.7	0.04	-	-	-	0.69	2,030	0.34	0.69	-
1979	6	0.031	8.7	0.27	-	-	-	0.42	2,130	0.20	0.42	-
1980	7	0.025	3.6	0.09	-	-	-	1.61	2,220	0.73	1.61	-
1981	8	0.050	4.0	0.20	-	0.40	-	4.51	2,310	1.95	4.51	-
1982	9	0.100	6.0	0.60	-	0.10	-	3.72	2,400	1.55	3.72	-
1983	10	0.100	4.0	0.40	-	0.20	-	7.86	2,490	3.16	7.86	-
1984	11	0.100	4.0	0.40	-	0.30	-	8.25	2,590	3.19	8.25	-
1985	12	0.090	5.6	0.50	-	0.10	-	7.77	2,690	2.89	7.77	-
1986	13	0.080	5.0	0.40	-	0.20	-	5.39	2,790	1.93	5.39	-
1987	14	0.180	5.0	0.90	-	0.20	-	3.30	2,890	1.14	3.30	-
1988	15	0.040	5.0	0.20	-	-	-	1.12	2,990	0.37	1.12	-
Projected		*9	*10							*11		
1995	22	0.150	5.2	0.80		-	-	4.80	3,800	2.30	8.70	-3.90
2000	27	0.180	5.2	0.90		-	-	4.90	4,600	2.50	11.50	-6.60
2005	32	0.210	5.2	1.10		-	-	5.10	5,400	2.70	14.60	-9.50

*1 Including waste and marketing losses. *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
   (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 $y = a + b * LOG$ $a = 0.381$ $b = 1.98947$
   $r = 0.57$ (df.=13, significance level = 5%: $r > 0.5139$)
*6 $y = a + bx$ $a = 4.195$ $b = 0.75393$
   $r = 0.72$ (df.=13, significance level = 5%: $r > 0.5139$)
*7 $y = a * x^b$ $a = 0.468$ $b = 0.98054$
   $r = 0.60$ (df.=9, significance level = 5%: $r < 0.6021$, no correlation, average figure
     between 1978 and 1988 was applied to the feature products coming from the West Bank)
*8 $y = a + b * LOG$ $a = 0.795$ $b = 8.23445$
   $r = 0.57$ (df.=13, significance level = 5%: $r > 0.5139$)
*9 $y = a + bx$ $a = 0.014$ $b = 0.00629$
   $r = 0.61$ (df.=13, significance level = 5%: $r > 0.5139$)
*10 $y = a + b * LOG$ $a = 7.034$ $b = -2.29489$
   $r = 0.43$ (df.=13, significance level = 5%: $r < 0.5139$, no correlation,
     average figure between 1974 and 1988 was applied to the feature yield)
*11 $y = a + b * LOG$ $a = -0.492$ $b = 2.09167$
   $r = 0.61$ (df.=13, significance level = 5%: $r > 0.5139$)
Note: x = Year in order   y = Production or per capita consumption

Table 8.1.9 (19/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1 Area (1,000ha)	Yield (t/ha)	Produc-tion (1,000t)	West Bank & Ghaza*2 (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*3 (1,000t)	Demand*1 Popula-tion*4 (1,000)	Per Capita Consump-tion (kg)	Total Demand (1,000t)	*1 Balance (1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Mulukhiyeh												
Actual												
1974		-	-	-	-	-	-	-	1,680	-	-	-
1975	1	0.30	20.0	6.0	-	-	-	6.0	1,760	3.4	6.0	-
1976	2	0.42	21.9	9.2	-	-	-	9.2	1,850	5.0	9.2	-
1977	3	-	-	-	-	-	-	-	1,940	-	-	-
1978	4	0.26	20.4	5.3	-	-	-	5.3	2,030	2.6	5.3	-
1979	5	0.45	29.8	13.4	-	-	-	13.4	2,130	6.3	13.4	-
1980	6	0.59	16.8	9.9	-	-	-	9.9	2,220	4.5	9.9	-
1981	7	0.79	29.9	23.6	-	-	-	23.6	2,310	10.2	23.6	-
1982	8	1.10	26.1	28.7	-	-	-	28.7	2,400	12.0	28.7	-
1983	9	0.88	26.6	23.4	-	-	-	23.4	2,490	9.4	23.4	-
1984	10	0.80	25.0	20.0	-	-	-	20.0	2,590	7.7	20.0	-
1985	11	0.72	25.0	18.0	-	-	-	18.0	2,690	6.7	18.0	-
1986	12	0.38	40.0	15.2	-	-	-	15.2	2,790	5.4	15.2	-
1987	13	1.10	26.3	28.9	-	-	-	28.9	2,890	10.0	28.9	-
1988	14	1.09	24.8	27.0	-	-	-	27.0	2,990	9.0	27.0	-
Projected		*5	*6							*7		
1995	21	1.40	26.0	36.0	-	-	-	36.0	3,800	9.8	37.0	-1.0
2000	26	1.60	26.0	42.0	-	-	-	42.0	4,600	10.3	47.0	-5.0
2005	31	1.90	26.0	49.0	-	-	-	49.0	5,400	10.7	58.0	-9.0
Garlic												
Actual												
1974	1	0.076	16.8	1.28	-	0.50	-	1.8	1,680	1.1	1.8	-
1975	2	0.073	16.0	1.17	-	0.60	-	1.8	1,760	1.0	1.8	-
1976	3	0.061	14.3	0.87	-	0.20	-	1.1	1,850	0.6	1.1	-
1977	4	0.026	8.1	0.21	-	0.30	-	0.5	1,940	0.3	0.5	-
1978	5	0.048	7.9	0.38	-	0.80	-	1.2	2,030	0.6	1.2	-
1979	6	0.026	7.3	0.19	-	0.90	-	1.1	2,130	0.5	1.1	-
1980	7	0.017	7.1	0.12	-	1.40	-	1.5	2,220	0.7	1.5	-
1981	8	0.020	10.0	0.20	-	1.30	-	1.5	2,310	0.6	1.5	-
1982	9	0.040	5.0	0.20	-	1.40	-	1.6	2,400	0.7	1.6	-
1983	10	0.100	3.0	0.30	-	2.70	-	3.0	2,490	1.2	3.0	-
1984	11	0.160	7.5	1.20	-	1.90	-	3.1	2,590	1.2	3.1	-
1985	12	0.110	6.4	0.70	-	1.80	-	2.5	2,690	0.9	2.5	-
1986	13	0.190	5.3	1.00	-	1.60	-	2.6	2,790	0.9	2.6	-
1987	14	0.220	4.5	1.00	-	0.70	-	1.7	2,890	0.6	1.7	-
1988	15	0.390	5.6	2.20	-	0.10	-	2.3	2,990	0.8	2.3	-
Projected		*8	*9							*11		
1995	22	0.330	4.0	1.30	-	-	-	1.3	3,800	0.8	3.0	-1.7
2000	27	0.410	3.6	1.50	-	-	-	1.5	4,600	0.8	4.0	-2.5
2005	32	0.500	3.3	1.70	-	-	-	1.7	5,400	0.8	4.0	-2.3

*1 Including waste and marketing losses.   *3 (7) = (3) + (4) + (5) - (6)
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*4 Source: Department of Statistics and Projection of JICA Study Team.
*5 y = a + bx   a = 0.279   b = 0.05147
        r = 0.69 (df.=11, significance level = 5%: r > 0.5529)
*6 y = a + bx   a = 19.303   b = 0.14020
        r = 0.51 (df.=11, significance level = 5%: r < 0.5529, no correlation
                  average figure between 1975 and 1988 was applied to the feature yield)
*7 y = a + b * LOG   a = 2.888   b = 5.22307
        r = 0.61 (df.=11, significance level = 5%: r > 0.5529)
*8 y = a * x^b   a = 38.479   b = -0.73493
        r = 0.84 (df.=13, significance level = 5%: r > 0.5139)
*9 y = a * x^b   a = 19.383   b = -0.51357
        r = 0.84 (df.=13, significance level = 5%: r > 0.5139)
*10 y = a + bx   a = 0.706   b = 0.00929
        r = 0.16 (df.=13, significance level = 5%: r > 0.5139)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (20/22)   DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply (Green) *1															Demand (Green) *1			Balance *1
		Olive for Pickles							Olive for Oil								Popula-tion*5	Per Capita Consump-tion	Total Demand	
		Area	Yield	Produc-tion	From W.Bank	Import	Export	Net Supply	Milled Oil	Oil Pro-duction	From W.Bank	Import	Export	Net Oil	Supply Green	Total Supply*4				
		(1,000ha)	(t/ha)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000t)	(1,000)	(kg)	(1,000t)	(1,000t)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Olive Actual																				
1981	1	23.81	0.79	18.90	1.14	0.40	1.85	3.98	14.61	3.54	2.30	1.05	1.69	5.20	21.46	25.44	2,310	11.0	25.44	-
1982	2	24.45	1.76	43.10	2.74	0.22	0.89	9.29	35.88	7.64	7.26	1.83	0.80	15.93	74.81	84.10	2,400	35.0	84.10	-
1983	3	24.98	1.01	25.20	0.95	0.09	1.43	4.27	20.54	4.79	2.11	0.09	1.32	5.67	24.31	28.58	2,490	11.5	28.58	-
1984	4	25.51	1.51	38.50	1.41	0.11	1.40	7.14	31.48	7.69	4.22	1.67	1.17	12.41	50.80	57.94	2,590	22.4	57.94	-
1985	5	28.51	0.80	22.70	0.03	-	0.54	4.01	18.18	4.09	0.21	3.05	0.12	7.23	32.14	36.15	2,690	13.4	36.15	-
1986	6	35.11	1.30	45.70	1.83	0.26	1.19	8.45	38.15	7.07	2.85	7.40	1.87	15.45	83.37	91.82	2,790	32.9	91.82	-
1987	7	37.18	0.65	24.10	0.32	-	0.50	7.09	16.83	3.88	2.43	0.57	0.26	6.62	28.72	35.81	2,890	12.4	35.81	-
1988		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	2,990	*11	*	-
Projected																				
1995	15	54.00 *7	1.10 *8	59.00	1.20 *9	-	-	1.20	-	-	3.10 *10	-	-	3.10	14.10 *6	74.30	3,800	20.0	76.00	-1.70
2000	20	66.00	1.10	73.00	1.20	-	-	1.20	-	-	3.10	-	-	3.10	14.10	88.30	4,600	20.0	92.00	-3.70
2005	25	77.00	1.10	85.00	1.20	-	-	1.20	-	-	3.10	-	-	3.10	14.10	100.30	5,400	20.0	108.00	-7.70

*1 Including waste and marketing losses.
*2 Agricultural products coming from the West Bank and Ghaza Strip.
    (Source: Agricultural Statistics Indicators 1974-1980 & 1981-1988, MOP.)
*3 Conversion factor from green to oil: 20%
*4 (15) = (3) + (7) + (14)

*9 $y = a + bx$ $a = 1.964$ $b = -0.18571$
    $r = 0.44$ (df.=5, significance level = 5%: $r < 0.7545$, no correlation,
                 average figure between 1981 and 1987 was applied to the feature products coming from the West Bank)

*10 $y = a + bx$ $a = 4.530$ $b = -0.36893$
    $r = 0.36$ (df.=5, significance level = 5%: $r < 0.7545$, no correlation,
                 average figure between 1981 and 1987 was applied to the feature products coming from the West Bank)

*11 $y = a * x^b$ $a = 15.534$ $b = 0.10674$
    $r = 0.15$ (df.=5, significance level = 5%: $r < 0.7545$, no correlation,
                 average figure between 1981 and 1987 was applied to the feature consumption)

*5 Source: Department of Statistics and Projection of JICA Study Team.
*6 Conversion factor from olive oil to green olive: 0.22
*7 $y = a + bx$ $a = 19.227$ $b = 2.32000$
    $r = 0.92$ (df.=5, significance level = 5%: $r > 0.7545$)
*8 $y = a + bx$ $a = 1.339$ $b = -0.05535$
    $r = 0.29$ (df.=5, significance level = 5%: $r < 0.7545$, no correlation,
               average figure between 1981 and 1987 was applied to the feature yield)

Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (21/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1				Demand*1			*1 Balance
		Production (1,000t)	Import (1,000t)	Export (1,000t)	Total Supply*2 (1,000t)	Population*3 (1,000)	Per Capita Consumption (kg)	Total Demand (1,000t)	(tons)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Red Meat									
Actual									
1974	1	7.42	3.36	--	10.78	1,680	6.4	10.78	-
1975	2	7.64	3.60	-	11.24	1,760	6.4	11.24	-
1976	3	6.46	4.44	-	10.90	1,850	5.9	10.90	-
1977	4	7.81	7.28	-	15.09	1,940	7.8	15.09	-
1978	5	7.58	14.31	--	21.89	2,030	10.8	21.89	-
1979	6	7.11	15.45	-	22.56	2,130	10.6	22.56	-
1980	7	8.11	13.23	-	21.34	2,220	9.6	21.34	-
1981	8	8.55	30.05	-	38.60	2,310	16.7	38.60	-
1982	9	8.71	29.92	-	38.63	2,400	16.1	38.63	-
1983	10	10.19	23.08	-	33.27	2,490	13.4	33.27	-
1984	11	9.92	23.81	-	33.73	2,590	13.0	33.73	-
1985	12	10.91	56.49	-	67.40	2,690	25.1	67.40	-
1986	13	6.56	39.36	-	45.92	2,790	16.5	45.92	--
1987	14	7.96	40.25	-	48.21	2,890	16.7	48.21	-
1988		8.34	*	*	*	2,990	*	*	-
Projected		*4					*5		
1995	22	8.00	-	--	8.00	3,800	19.6	74.00	-66.00
2000	27	8.00	-	-	8.00	4,600	20.7	95.00	-87.00
2005	32	8.00	-	-	8.00	5,400	21.7	117.00	-109.00
Broiler									
Actual									
1974	1	17.25	1.95	--	19.20	1,680	11.4	19.20	--
1975	2	19.10	1.41	-	20.51	1,760	11.7	20.51	-
1976	3	22.50	1.72	-	24.22	1,850	13.1	24.22	--
1977	4	27.00	1.34	-	28.34	1,940	14.6	28.34	-
1978	5	23.61	3.30	-	26.91	2,030	13.3	26.91	--
1979	6	31.70	1.99	--	33.69	2,130	15.8	33.69	--
1980	7	33.57	4.40	-	37.97	2,220	17.1	37.97	-
1981	8	28.10	5.03	-	33.13	2,310	14.3	33.13	-
1982	9	28.50	9.29	-	37.79	2,400	15.7	37.79	--
1983	10	41.50	7.39	-	48.89	2,490	19.6	48.89	-
1984	11	49.00	8.30	-	57.30	2,590	22.1	57.30	-
1985	12	55.00	2.61	-	57.61	2,690	21.4	57.61	-
1986	13	63.50	3.06	-	66.56	2,790	23.9	66.56	--
1987	14	63.00	2.16	-	65.16	2,890	22.5	65.16	-
1988		*	*	*	*	2,990	*	*	--
Projected		*6					*7		
1995	22	87.00	-	--	87.00	3,800	23.00	87.00	0.00
2000	27	105.00	-	-	105.00	4,600	24.00	110.00	-5.00
2005	32	122.00	-	-	122.00	5,400	25.00	135.00	-13.00

*1 Including marketing losses.   *2 (4) = (1) + (2) - (3)
*3 Source: Department of Statistics and Projection of JICA Study Team.
*4 y = a + bx   a = 7.084   b = 0.15000
          r = 0.47 (df.=12, significance level = 5%: r < 0.5324, no correlation
                    average figure between 1974 and 1987 was applied to the feature production)
*5 y = a + b * LOGx   a = 2.616   b = 12.64794
          r = 0.79 (df.=12, significance level = 5%: r > 0.5324)
*6 y = a + bx   a = 9.512   b = 3.52534
          r = 0.93 (df.=12, significance level = 5%: r > 0.5324)
*7 y = a + b * LOGx   a = 8.486   b = 10.75755
          r = 0.85 (df.=12, significance level = 5%: r > 0.5324)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.9 (22/22) DEMAND AND SUPPLY OF AGRICULTURAL PRODUCTS

Year	Year in Order	Supply*1				Demand*1			*1 Balance (million
		Produc-tion (million)	Import (million)	Export (million)	Total Supply*2 (million)	Popula-tion*3 (1,000)	Per Capita Consumption (No.)	Total Demand (million)	
Eggs (no. of eggs)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Actual									
1974	1	51	-	-	51	1,680	30	51	-
1975	2	86	-	1	85	1,760	48	85	-
1976	3	161	-	1	160	1,850	86	160	-
1977	4	214	-	-	214	1,940	110	214	-
1978	5	265	-	2	263	2,030	130	263	-
1979	6	385	-	8	377	2,130	177	377	-
1980	7	335	-	22	313	2,220	141	313	-
1981	8	340	-	59	281	2,310	122	281	-
1982	9	365	-	54	311	2,400	130	311	-
1983	10	415	-	85	330	2,490	133	330	-
1984	11	390	-	36	354	2,590	137	354	-
1985	12	520	-	132	388	2,690	144	388	-
1986	13	500	-	74	426	2,790	153	426	-
1987	14	425	-	95	330	2,890	114	330	-
1988		380	*	*	*	2,990	*	*	-
Projected		*4					*5		
1995	22	550	-	-	550	3,800	170	650	-100
2000	27	580	-	-	580	4,600	180	830	-250
2005	32	610	-	-	610	5,400	190	1,030	-420

*1 Including marketing losses.   *2 (4) = (1) + (2) - (3)
*3 Source: Department of Statistics and Projection of JICA Study Team.
*4 y = a + b * LOGx   a = -2.263   b = 409.8283
        r = 0.95 (df.=12, significance level = 5%: r > 0.5324)
*5 y = a + b * LOGx   a = 42.40   b = 97.0167
        r = 0.82 (df.=12, significance level = 5%: r > 0.5324)
Note: x = Year in order   y = Production or per capita consumption

Table B.1.10 MARKETABILITY OF AGRICULTURAL PRODUCTS

(Unit: 1,000 t)

	Demand			Supply			Balance			Marketa-
	1995	2000	2005	1995	2000	2005	1995	2000	2005	bility
FIELD CROPS										
1 Wheat (grain)	456	552	648	81	81	81	-375	-471	-567	A
2 Lentils	4.9	5.5	5.9	3.1	3.1	3.1	-1.8	-2.4	-2.8	A
3 Vetch	3.0	3.0	3.0	1.3	1.2	1.1	-1.7	-1.8	-1.9	A
4 Chick pea	17	22	27	1	1	1	-16	-21	-26	A
5 Rice	90	110	140	-	-	-	-90	-110	-140	A
TREE CROPS										
6 Olive (green)	76	92	108	74	88	100	-2	-4	-8	A
7 Grape	80	97	113	72	81	87	-8	-16	-26	A
8 Fig	2.6	2.8	3.0	2.3	2.3	2.2	-0.3	-0.5	-0.8	B
9 Almond	4.9	6.0	7.0	1.0	1.0	0.9	-3.9	-5.0	-6.1	A
10 Peach	3.0	4.7	4.3	4.9	6.3	7.6	1.9	1.6	3.3	C
11 Plum and Prune	2.1	0.8	0.0	4.8	4.8	4.7	2.7	4.0	4.7	C
12 Apricot	2.7	3.2	3.8	0.6	0.5	0.5	-2.1	-2.7	-3.3	A
13 Pomegranate	1.3	1.4	1.5	2.4	2.0	1.9	1.1	0.6	0.4	B
14 Apple	42	51	59	5	5	6	-37	-46	-53	A
15 Pear	2.9	3.5	4.1	0.3	0.3	0.3	-2.6	-3.2	-3.8	A
16 Banana	46	58	70	55	74	88	9	16	18	C
17 Citrus	103	92	70	285	315	346	182	223	276	C
18 Quince	0.10	0.12	0.14	0.07	0.07	0.07	-0.03	-0.05	-0.07	B
VEGETABLES										
19 Tomato	277	336	394	459	520	586	182	184	192	C
20 Squash	57	74	92	83	95	107	26	21	15	C
21 Eggplant	80	97	113	127	144	160	47	47	47	C
22 Cucumber	87	110	135	176	212	260	89	102	125	C
23 Potato	61	74	86	74	97	120	13	23	34	C
24 Cabbage	24	29	34	30	34	36	6	5	2	C
25 Cauliflower	33	40	46	30	30	30	-3	-10	-16	A
26 Sweet Pepper	9	11	12	50	67	76	41	56	64	C
27 Okra	3.4	4.1	4.9	3.8	4.0	4.1	0.4	-0.1	-0.8	B
28 Lettuce	14	17	19	18	18	18	4	1	-1	A
29 Water Melon	99	120	140	118	131	146	19	11	6	C
30 Onion (green & dry)	65	92	124	52	69	88	-13	-23	-36	A
31 Snake Cuc.	8	10	12	5	5	5	-3	-5	-7	A
32 Carrot	4.2	5.1	5.9	0.7	0.7	0.7	-3.5	-4.4	-5.2	A
33 Sweet Melon	46	60	70	65	80	95	19	20	25	C
34 Peas	9	12	15	5	5	5	-4	-7	-10	A
35 Mulukhiye	37	47	58	36	42	49	-1	-5	-9	A
36 Garlic	3.0	4.0	4.0	1.3	1.5	1.7	-1.7	-2.5	-2.3	A
LIVESTOCK PRODUCTS										
37 Red Meat	74	95	117	8	8	8	-66	-87	-109	A
38 Broiler	87	110	135	87	105	122	0	-5	-13	A
39 Eggs (Million eggs)	650	830	1,030	550	580	610	-100	-250	-420	A

Remarks: A: High   B: Moderate   C: Low

Table B.2.1 REGION'S PRESENT POSITION IN JORDAN

Aspects	Unit	Figure Whole Country	Figure Study Area	Share of Study Area (%)
1. Land Area and Population				
1) Land area	(km2)	89200 *1	8100	9.1
2) Population	(1,000)	2700	143	5.3
3) Population density	(P/km2)	30	18	-
4) Annual growth rate	(%)	4	2.8	-
5) Urban pop. ratio *2	(%)	70	24	-
2. Employment	(1,000)			
1) Agricultural sector		39.2	4.8	12.2
2) Mining & manuf'g sector		53.1	3.4	6.4
3) Other productive sector		60.8	2.9	4.8
4) Service sector		114.6	3.3	2.9
5) Public sector		234.7	14.4	6.1
(Total)		(502.4)	(28.8)	(5.7)
3. GDP/GRDP	(Million JD)			
1) GDP/GRDP by industry				
- Agricultural sector		114.5	9.3	8.1
- Mining & manuf'g sector		291.2	47.2	16.2
- Other productive sector		151.8	5.6	3.7
- Service sector		622	15	2.4
- Public sector		426.4	21.1	4.9
(Total)		(1,605.9)	(98.2)	(6.1)
2) Per capita GDP/GRDP	(JD)	595	687	-
(Excluding mining sector contribution)			381	-
3) Per capita household income				
(1980)	(JD)	641	495 *3	-
4. Total Planned Investment 1986-1990		2706	227	8.4
5. Infrastructure				
1) School enrollment ratio	(%)	30	30	-
2) Hospital beds	(Nos.)	n.a.	190	-
3) Number of physician per 10,000		11.36	5.6	-
4) Electrification ratio	(%)	90.8	87.1	-
5) Electric power consumption	(GWh/yr)	2151	175 *4	8.1
6. Water	(MCM/yr)			
1) Municipal water supply		68	3.5	5.1
2) Industrial water supply		41	10.1	24.6
3) Irrigation water supply		409	11	2.7
7. Agriculture				
1) Arable land	(1,000ha)	684 *5	125	18.3
2) Irrigated land	(1,000ha)	57	3.2	5.6
3) Farm household	(1,000)	58	13	22.4
4) Wheat production	(1,000t)	163 *6	11.7 *7	7.2
5) Yield of cereal	(t/ha)	1.1 *6	0.9 *7	-
6) Number of sheep	(1,000)	283 *6	19.7 *7	7.0
7) Number of goats	(1,000)	56.7 *6	13.7 *7	24.2

Note: Basic data year: 1985   *1 Land area of the East Bank
*2 Population ratio who live in urban with more than 5,000 person.
*3 Old Karak governorate
*4 Karak, Tafila and Shubak areas.
*5 Normally used for agriculture.
*6 1988   *7 Katak and Tafila (1988)
Source: (1) The Study on Integrated Regional Development Master Plan
              for the Karak - Tafila Development Region, 1988, JICA.
          (2) Statistical Yearbook 1988, Department of Statistics.

Table B.2.2 LAND HOLDING SIZE IN KARAK GOVERNORATE (1983)

Size of Group (dunum)	Land Holders (No.)	(%)	Area (dunum)	(%)	Average Size (dunum)
< 5	1,085	14.4	2,650	0.5	2.4
5 - 10	535	7.1	3,558	0.7	6.7
10 - 20	920	12.2	12,183	2.3	13.2
20 - 30	753	10.0	17,246	3.2	22.9
30 - 40	697	9.3	22,421	4.2	32.2
40 - 50	518	6.9	21,901	4.1	42.3
50 - 100	1,465	19.5	96,013	17.9	65.5
100 - 200	938	12.5	121,023	22.6	129.0
200 - 500	505	6.7	139,355	26.0	276.0
500 - 1,000	82	1.1	51,962	9.7	633.7
1,000 - 2,000	19	0.3	25,182	4.7	1,325.4
2,000 - 5,000	1	0.0	2,000	0.4	2,000.0
5,000 - 10,000	-	-	-	-	-
10,000 - 25,000	1	0.0	20,596	3.8	20,596.0
25,000 <	-	-	-	-	-
Total/Mean	7,519	100.0	536,090	100.0	71.3

Source: National Village Survey 1983, Department of Statistics.

Table B.2.3 MODE OF LAND HOLDING IN KARAK GOVERNORATE (1983)

Size of Group (dunum)	Land Holders (No.)	(dunum)	Free Holders (No.)	(dunum)	Lease Holders (No.	(dunum)
< 5	1,085	2,650	1,070	2,615	15	35
5 - 10	535	3,558	530	3,528	5	31
10 - 20	920	12,183	914	12,098	6	85
20 - 30	753	17,246	748	17,126	5	120
30 - 40	697	22,421	691	22,222	6	199
40 - 50	518	21,901	517	21,861	1	40
50 - 100	1,465	96,013	1,454	95,216	11	797
100 - 200	938	121,023	929	119,807	9	1,216
200 - 500	505	139,355	493	135,642	12	3,713
500 - 1,000	82	51,962	79	50,047	3	1,915
1,000 - 2,000	19	25,182	19	25,182	-	-
2,000 - 5,000	1	2,000	1	2,000	-	-
5,000 - 10,000	-	-	-	-	-	-
10,000 - 25,000	1	20,596	1	20,596	-	-
25,000 <	-	-	-	-	-	-
Total/Mean	7,519	536,090	7,446	527,940	73	8,151

Source: National Village Survey 1983, Department of Statistics.

Table B.2.4 ORGANIZATION OF KARAK AGRICULTURAL GOVERNORATE (1989)

A. STRUCTURE   No. of Staff: Head Office 83   Branch Office 61   Total 144

(Head Office)

1. Administrative Section	11	4. Forest and Range Section	32
- Director	1	- Engineer/Agronomist	2
- Section chief	1	- Guards (ranger)	15
- Store keeper	2	- Nursery sub-engineer	2
- Clerk	1	- Nursery worker	13
- Personal administrator	1		
- Cashier	1	5. Livestock and Animal	
- Car arranger	1	Health Section	23
- Typist	3		
		- Veterinarian	3
2. Agricultural Section	9	- Assistant veterinarian	6
(including extension)		- Typist	6
- Engineer/Agronomist	5	- Animal production eng.	3
- Sub-engineer	4	- Nursery	3
(agricultural school)		- Laboratory worker	2
		6. Statistic Section - Clerk	3
3. Project Section	3		
		7. Cropping Pattern Section	2
- Engineer/Agronomist	1		
- Surveyor	1	- Engineer/Agronomist	1
- Assistant	1	- Assistant	1

(Branch Office)

1. Mazar	11	3. Rabba (research)	17
- Engineer/Agronomist	2	- EnEngineer/Agronomist	10
- Veterinarian	1	- FiField assistant	1
- Assistant veterinarian	2	- WoWorker	6
- Ranger	6		
		4. Ghwair (research -field crop)	9
2. Qasre	13	- Engineer/Agronomist	2
		- Field assistant	2
- Engineer/Agronomist	2	- Worker	5
- Assistant engineer	2		
- Veterinarian	1	5. Ghor Safi (vegetable, fruit)	11
- Assistant veterinarian	2		
- Ranger	6	- Engineer/Agronomist	6
		- Field assistant	1
		- Worker	4

B. VEHICLES

	Sedan	Pick-up	Tractor	Sprayer	Tanker
- Karak	5	3	2	1	2
- Rabba	1	2	2	-	-
- Qastre	-	1	1	1	-
- Mazar	-	1	1	1	-
- Ghweir	-	1	2	-	-
- Safi	-	2	2	1	-
Total	6	10	10	4	2

C. BUDGET   530,519 JD/year

400 liter/month/car (gasoline)

Table B.2.5 ORGANIZATION OF TAFILA AGRICULTURAL GOVERNORATE (1989)

A. STRUCTURE   No. of Staff: Head Office 43   Branch Office 92   Total 135

(Head Office)

1. Administrative Section	8	3. Statistic Section - Clerk	2
- Deputy director	1	4. Livestock and Animal	
- Section chief	1	Health Section	8
- Personal administrator	1		
- Clerk	2	- Veterinarian	2
- Store keeper	1	- Engineer	1
- Typist	2	- Nursery	3
- Workers/Driver	12	- Garde	2
- Car arranger	1		
		5. Forest and Range Section	17
		- Engineer	1
2. Agricultural Section	8	- Ranger	3
		- Clerk	1
- Engineer/Agronomist	6	- Nursery worker	9
- Clerk	1	- Garde	2
- Worker	1	- Temporary worker	1

(Branch Office)

1. Al-Hassa Station	81	2. Aima Station	3
- Engineer	-	- Sub-engineer	1
- Clerk	3	- Messenger	2
- Worker	75		
- Garde	3		
2. Busaira	3	4. Tawwaneh Station	5
- Engineer	-	- Engineer	1
- Sub-engineer	1	- Garde	4
- Messenger	2		

B. VEHICLES

	Sedan	Pick-up	Tractor	Sprayer	Tanker
- Tafila	3	5	2	2	2
- El-Hassan	1	1	1	1	1
- Busaira	-	-	-	-	-
- Aima	-	-	-	-	-
- Tawwaneh	-	1	1	-	-
Total	4	7	4	3	3

C. BUDGETS   114,000 JD/year

Table B.2.6 (1/2) FARMGATE PRICES OF FARM INPUTS AND OUTPUTS
(AS OF DECEMBER 1989)

	(Unit)	Prices (JD)		(Unit)	Prices (JD)
Crops and Livestock Products					
- Wheat	(ton)	140	- Water melon	(ton)	70
- Barley	(ton)	90	- Sweet melon	(ton)	100
- Lentils	(ton)	150	- Cabbages	(ton)	70
- Chick peas	(ton)	250	- Cauliflower	(ton)	80
- Vetch	(ton)	300	- Sheep *1	(head)	35
- Olive (green)	(ton)	250	- 3-4 months*2	(head)	30
- Olive oil	(ton)	2,060	- Goats *1	(head)	35
- Grape	(ton)	500	- 3-4 months*2	(head)	30
- Fig	(ton)	250	- Chicken	(head)	2.50
- Apple	(ton)	280	- Milk of sheep		
- Apricot	(ton)	325	and goats	(kg)	0.30
- Peach	(ton)	400	- Dry yogurt	(kg)	2.00
- Pear	(ton)	600	- Milk oil	(kg)	5.00
- Tomatoes	(ton)	80	- Wool	(No.)	0.70
- Eggplant	(ton)	60	- Eggs	(No.)	0.04
- Cucumber	(ton)	100			
Seed and Seedling					
- Wheat	(ton)	140	- Tomatoes *4	(tray)	2.50
- Barley	(ton)	90	- Eggplant *4	(tray)	2.50
- Lentils	(ton)	270	- Cucumber	(kg)	28.00
- Chick peas	(ton)	400	- Water melon	(kg)	11.50
- Vetch	(ton)	300	- Sweet melon	(kg)	34.00
- Seedling of tree *3			- Cabbages	(kg)	16.00
1 year	(No.)	0.50	- Cauliflower	(kg)	60.00
2 years	(No.)	1.00			
Animal Feeds					
- Barley	(ton)	60	- Bran	(ton)	40
- Sorghum	(ton)	55	- Hey	(ton)	110
Fertilizer					
- Diammonium phosphate (DAP)			- Urea (46%)	(kg)	110
(21:18:0)	(ton)	115	- T.S.P. (45%)	(kg)	160
- Compound			- Organic		
fertilizer *5	(ton)	160	fertilizer *6	(ton)	15
Agro-chemicals					
- Pesticides and			- Harbicides	(litre)	3.50
insecticides	(litre)	10.00			

*1 Average liveweight: 50kg   *4 Seedling
*2 Average liveweight: 20kg   1 tray (200 seedlings) = JD 2.5
*3 Olive, grape, apple, etc.   *5 Content 15:15:15
                                     *6 For chicken, sheep and goats

Source: Farm interview survey

	Prices				Prices	
	(Unit)	(JD)			(Unit)	(JD)

Hired Cost of Farm machinery *1

- Plow *2	(dunum)	1.00		- Harvester *3	(dunum)	1.25
- Seed drill	(dunum)	0.80		- More	(dunum)	1.30
- Sprayer *4	(dunum)	1.00		- Rake	(dunum)	0.35
Hired Cost of Animal (day)		8.00		Labor *5	(day)	5.00

Purchasing Price of Farm Machinery

- Tractor (75 PS class)		9,000
- Disc plow (3 disks, 2 bimehes)		1,500
- Chisel plow (12 legs, 2.5m wide)		750
- Disc harrow (2.5m wide, 2 rows, 18 disks)		1,000
- Seed driller (with fertilizer, 2.5m wide)		4,500
- Sprayer (tactor mounted, 600 litre, 10m wide)		1,200
- Knapsack type sprayer (20 litre)		50
- Combine harvester (100PS, 4.5m wide)		42,000
- Wagon (3 tons)		1,000
- Rake (2m wide)		500
- More (rotary, 1.6m wide)		2,400
- Pump (2 inch, with engine, 2 HP)		300
- Pump (3 inch, with engine)		600
- Suction hose (2 inch)	(m)	5
- Common hose (2 inch)	(m)	2
- Common hose (3 inch)	(m)	3
- Water tanker (2 m3)		600
- Bulldozer (D8)		187,000
- Bulldozer (D6)		116,000

Others

- Milling cost				- Vinyl for multch (m2)		0.03
Olive *6	(kg)	0.206		- Vactination (time/head)		0.09
Wheat *7	(kg)	0.015		- Bag	(No.)	0.45
- Transportation *8 (ton)		10.00		- Box	(No.)	0.25
- Construction cost of building				- Grazing fee		
Water tank	(m2)	12		MOA/JCO *9	(head)	0.005
Office	(m2)	370		Private *10	(dunum)	0.50
- Drip irrigation system				- Construction cost of fence		
	(dunum)	80			(m)	1.50

- Water (from Water Authority)

0- 20 m3	(JD/ton)	0.10	(minimum 1.2 JD)
21- 40 m3	(JD/ton)	0.19	(minimum 2.0 JD)
41-100 m3	(JD/ton)	0.40	(minimum 5.8 JD)
> 100 m3	(JD/ton)	0.50	(minimum 21.8 JD)

*1 Including allowance of operator
*2 Disc plow
*3 Cutting wide: 3.8 m
*4 Capacity: 600 liter
*5 Including two meals
*6 JD/kg of olive oil
*7 JD/kg of grain
Source: Farm interview survey

*8 By truck: Average cost from
   the project area to central
   market of Amman.
*9 Fodder Shrub Project (MOA/JCO)
*10 Grazing in the fields of wheat
   and barley.

Table B.2.7 TYPICAL FARM BUDGET - PRESENT CONDITION

		Dhiban (JD)		Abyad (JD)		Tafila (JD)	
Family size (persons)		8.7		10.1		9.3	
Farm size (dunum/household)		82		250		156	
Raising head of sheep and goats (head/household)		79		74		80	
I. Gross Income		5,424		5,762		5,035	
1) Farm Income		4,484		4,642		4,405	
(Crops)							
- Wheat	(dunum)	60	504	173	1,453	63	529
- Barley	(dunum)	2	11	66	356	75	405
- Other field crops *1	(dunum)	3	29	3	29	3	29
- Olive	(dunum)	6	306	2	19	8	408
- Other tree crops *2	(dunum)	3	260	6	521	4	347
- Vegetables *3	(dunum)	8	989	-	-	3	260
(Livestock)							
- Sheep and goats	(head)	10	350	10	350	10	350
- Lambs and kids	(head)	37	1,110	35	1,050	38	1,140
- Yorgoult	(kg)	219	438	205	410	222	444
- Milk oil	(kg)	88	440	82	410	89	445
- Wool	(kg)	67	47	63	44	68	48
2) Non Farm Income		940		1,120		630	
II. Gross Outgoings		5,376		5,712		5,043	
1) Production Cost		2,466		2,572		2,473	
(Crops)							
- Seed & seedlings		148		219		147	
- Fertilizers		71		6		34	
- Agro-chemicals		177		69		147	
- Labor cost		245		428		317	
- Farm machinery		169		494		311	
- Animals		0		0		0	
- Materials		238		99		143	
- Transportation cost		159		66		100	
- Miscellaneous		60		68		60	
(Livestock)							
- Labor cost		493		462		499	
- Feeds		576		539		583	
- Vaccines		21		20		22	
- Miscellaneous		109		102		110	
2) Living Expenses		2,910		3,140		2,570	
- Foods		1,370		1,670		1,120	
- Others		1,540		1,470		1,450	
III. Net Reserve		48		50		-8	

*1 Lentils and chick peas
*2 Grape, apricot, peach, apple, etc.
*3 Tomatoes, water melon, cauliflower, etc.

Table B.2.8 (1/3) RESULTS OF FARM INTERVIEW DURVEY - NUMBER OF LIVESTOCK IN DHIBAN AREA

Sample No.	Horse	Sheep	Goats	Cow	Camel	Chicken	Barley Q'ty (t)	Barley U.P. (JD/t)	Barley Amount (JD)	Bran Q'ty (t)	Bran U.P. (JD/t)	Bran Amount (JD)	Sorghum Q'ty (t)	Sorghum U.P. (JD/t)	Sorghum Amount (JD)	Others Kind	Others Q'ty (t)	Others U.P. (JD/t)	Others Amount (JD)
1 DA- 1		25	6	2			12.0	60	720	15.0	45	675	15.0	55	825				
2 DA- 2		135		6			7.0	60	420	7.0	45	315	6.0	55	330				
3 DA- 3		60																	
4 DA- 4		30	15				12.0	60	720	1.5	40	60	1.5	55	83				
5 DA- 5				6			10.3	60	618	10.3	40	412	10.3	75	773				
6 DA- 6			1,000				24.0	60	1,440	24.0	40	960	24.0	55	1,320				
7 DA- 7		100	30				8.5	60	510	8.5	50	425	8.5	50	425				
8 DA- 8	5	500					1.5	60	90	1.5	40	60	0.2	55	11				
9 DA- 9			175				6.0	60	360	6.0	40	240	6.0	55	330				
10 DA-10		150																	
11 DA-11		200	50	10			3.0	60	180	3.0	45	135	3.0	55	165				
12 DA-12		80	10				7.0	60	420	7.0	40	280	5.0	55	275				
13 DA-13		50								60.0									
14 DA-14		150	20				7.0	60	420	7.0	40	280	6.0	55	330				
15 DA-15			710		22		72.0	60	4,320	0.6	40	24	9.0	60	540				
16 DA-16		50	20	2			12.0	60	720	12.0	40	480	12.0	55	660				
17 DA-17	1	30	70				3.5	60	210	1.0	40	40	3.5	60	210				
18 DA-18		100	15				5.5	60	330	3.6	40	144	6.0	55	330				
19 DA-19		85	15				24.0	60	1,440	1.5	55	83	1.5	40	60				
20 DA-20	1	400					1.0	60	60	1.0	40	40	1.0	50	50				
21 DC- 1																			
22 DC- 2			2																
23 DC- 3			2							0.5	40	20	1.0	55	55				
24 DC- 4																			
(DC-5)*1						(10,000)*1													
25 DC- 6																			
26 DC- 7																			
27 DC- 8																			
28 DC- 9																			
29 DC-10																			
30 DC-11	1	12	4																
31 DC-12	4	30																	
32 DC-13		60	30																
33 DC-14	1		10	6			4.0	60	240	4.0	40	160							
34 DC-15																			
35 DC-16																			
36 DC-17		10	10																
37 DC-18																			
38 DC-19																			
39 DC-20				1															
40 DF- 1																			
41 DF- 2																			
42 DF- 3																			
43 DF- 4																			
44 DF- 5																			
45 DF- 6																			
46 DF- 7		6	3																
47 DF- 8	1			2			2.7	60	162	4.0	40	160							
48 DF- 9	2	18	20																
49 DF-10																			
50 DF-11																			
51 DF-12																			
52 DF-13			20																
(DF-14)*1		18	5			(6,000)*	(1.0)	60	(60)				(1.0)	55	(55)	Straw	(1.0)	40	(40)
53 DF-15																			
54 DF-16																			
55 DF-17			65				3.0	60	180	3.0	40	120	3.0	55	165				
56 DF-18																			
57 DF-19			5																
58 DF-20																			
Total	16	2,299	2,308	39	22	0	226		13,560	182		5,113	123		6,936		0	0	0
Average*2	0.3	39.6	39.8	0.7	0.4	0	3.9		233.8	3.1		88.1	2.1		119.6		0	0	0

*1 Excluding broiler   *2 Average per one farmer

Table B.2.8 (2/3) RESULTS OF FARM INTERVIEW DURVEY - NUMBER OF LIVESTOCK IN ABYAD AREA

Sample No.	Horse	Sheep	Goats	Cow	Camel	Chicken	Barley Q'ty (t)	Barley Price (JD/t)	Barley Amount (JD)	Bran Q'ty (t)	Bran Price (JD/t)	Bran Amount (JD)	Sorghum Q'ty (t)	Sorghum Price (JD/t)	Sorghum Amount (JD)	Others Kind	Others Q'ty (t)	Others Price (JD/t)	Others Amount (JD)
1 KA- 1			250				24.0	60	1,440	18.0	40	720	18.0	55	990				
2 KA- 2		230	20				24.0	60	1,440	18.0	40	720	18.0	55	990	Vetch	12.0	185	2,220
3 KA- 3		50	10				6.0	60	360	6.0	40	240	6.0	55	330				
4 KA- 4		90	10				12.0	60	720	1.0	40	40	1.0	55	55				
5 KA- 5		50	5																
6 KA- 6		110	30				2.0	60	120	2.0	40	80	2.0	55	110				
7 KA- 7		170					2.0	40	80	2.0	60	120	2.0	2	4				
8 KA- 8		50	200				2.5	62	155	2.5	42	105	2.5	57	143				
9 KA- 9		75	15				6.0	60	360	6.0	40	240	6.0	55	330				
10 KA-10		50	50				8.0	60	480	8.0	40	320	8.0	55	440				
11 KA-11		300	10				3.0	60	180	3.0	55	165	3.0	40	120				
12 KA-12		80	7				6.0	60	360	6.0	40	240	6.0	55	330				
13 KA-13		100	10				12.0	60	720	12.0	40	480	12.0	55	660				
14 KA-14		43	7				6.0	60	360	6.0	40	240	6.0	55	330				
15 KA-15		267	80			20	20.0	60	1,200	20.0	40	800	20.0	55	1,100				
16 KA-16		180	20				24.0	60	1,440	18.0	40	720	12.0	55	660				
17 KA-17		70					6.0	60	360	6.0	55	330	6.0	40	240				
18 KA-18		70	30				6.0	60	360	6.0	40	240	6.0	55	330				
19 KA-19	1	70	15				6.0	62	372	6.0	42	252	6.0	57	342				
20 KA-20		250	50				3.0	60	180	3.0	40	120	3.0	55	165				
21 KC- 1																			
22 KC- 2																			
23 KC- 3																			
24 KC- 4			20				1.0	60	60	0.5	40	20	0.5	55	28	straw	2.0	100	200
25 KC- 5		150					15.0	60	900	10.0	40	400	10.0	55	550	Straw	20.0	40	800
26 KC- 6																			
27 KC- 7		120					10.0	60	600	10.0	40	400	10.0	55	550	Straw	15.0	120	1,800
28 KC- 8		500	50				50.0	62	3,100	20.0	45	900	30.0	55	1,650	Straw	25.0	40	1,000
29 KC- 9																			
30 KC-10																			
(KC-11)*1						(20,000)*1													
31 KC-12																			
32 KC-13																			
33 KC-14																			
34 KC-15			25				2.0	60	120	3.0	40	120				Straw	4.0	10	40
35 KC-16																			
36 KC-17			5			50													
37 KC-18																			
38 KC-19																			
39 KC-20		150				50													
40 KF- 1																			
41 KF- 2																			
42 KF- 3																			
43 KF- 4																			
44 KF- 5		120																	
45 KF- 6		60																	
46 KF- 7		10																	
47 KF- 8				4															
48 KF- 9																			
49 KF-10																			
50 KF-11																			
51 KF-12																			
52 KF-13																			
53 KF-14																			
54 KF-15																			
55 KF-16																			
56 KF-17																			
57 KF-18		20	5																
58 KF-19																			
59 KF-20																			
Total	1	3,435	924	4	0	120	257		15,467	193		8,012	194		10,446		78		6,060
Average*2	0	58.2	15.7	0.1	0	2.0	4.3		262.2	3.3		135.8	3.3		177.1		1.3		102.7

*1 Excluding broiler   *2 Average per one farmer

Table B.2.8 (3/3) RESULTS OF FARM INTERVIEW DURVEY - NUMBER OF LIVESTOCK IN TAFILA AREA

Sample No.	Horse	Sheep	Goats	Cow	Camel	Chicken	Barley Q'ty (t)	Barley Price (JD/t)	Barley Amount (JD)	Bran Q'ty (t)	Bran Price (JD/t)	Bran Amount (JD)	Sorghum Q'ty (t)	Sorghum Price (JD/t)	Sorghum Amount (JD)	Others Kind	Others Q'ty (t)	Others Price (JD/t)	Others Amount (JD)
1 TA- 1		42	2				20.0	40	800	20.0	60	1,200							
2 TA- 2			19			6													
3 TA- 3	1	30	20																
4 TA- 4	1	120	15			50	12.0	55	660	7.0	38	266	55.0	55	3,025				
5 TA- 5		80	30				8.0	55	440	5.0	38	190	3.0	55	165				
6 TA- 6		200	20				15.0	55	825	10.0	38	380	5.0	55	275				
7 TA- 7		350	50				30.0	55	1,650	20.0	38	760	10.0	55	550				
8 TA- 8		72	38				3.0	60	180	2.0	40	80							
9 TA- 9	1	60					6.0	60	360	6.0	40	240	6.0	55	330				
10 TA-10		200	40				30.0	60	1,800	30.0	40	1,200							
11 TA-11	1	150																	
12 TA-12			70			20													
13 TA-13		400	20				60.0	60	3,600	10.0	40	400	60.0	66	3,960				
14 TA-14		283	17				25.0	60	1,500	25.0	40	1,000	10.0	55	550				
15 TA-15	2	200	10				2.0	60	120	5.0	40	200	2.0	50	100				
16 TA-16	2	200	20				15.0	60	900	15.0	40	600	3.0	55	165				
17 TA-17			200				7.0	60	420	7.0	40	280	7.0	55	385				
18 TA-18		200	16				24.0	60	1,440	12.0	40	480	24.0	50	1,200				
19 TA-19		74	246		46		15.0	60	900	15.0	40	600	15.0	55	825				
20 TA-20		55	257				10.0	35	350	10.0	40	400	10.0	55	550				
21 TC- 1																			
22 TC- 2		30					3.0	60	180	3.0	50	150	3.0	55	165				
23 TC- 3																			
24 TC- 4		250	50																
25 TC- 5																			
26 TC- 6																			
27 TC- 7		200																	
28 TC- 8																			
29 TC- 9	1		10			15													
30 TC-10																			
31 TC-11			7																
32 TC-12																			
33 TC-13			27			10													
34 TC-14		10																	
35 TC-15	2	54	9				0.3	80	24	0.3	45	14				Straw	0.5	50	25
36 TC-16		10	1																
37 TC-17																			
38 TC-18		50					3.0	100	300	2.0	40	80	6.0	55	330				
39 TC-19		200					7.0	60	420	4.0	40	160	3.0	55	165				
40 TC-20			5				1.0	30	30	2.0	20	40							
41 TF- 1																			
42 TF- 2																			
43 TF- 3																			
44 TF- 4																			
45 TF- 5		30	30																
46 TF- 6																			
47 TF- 7			6				1.5	60	90	1.5	60	90							
48 TF- 8																			
49 TF- 9																			
50 TF-10		40																	
51 TF-11																			
52 TF-12			20				3.0	60	180	3.0	40	120							
53 TF-13																			
54 TF-14																			
55 TF-15	1	50	20				7.0	60	420	4.0	45	180							
56 TF-16																			
57 TF-17	1	70	50				6.0	55	330	6.0	45	270							
58 TF-18			5				1.0	55	55	1.0	20	20	1.0	20	20				
59 TF-19							1.7	60	102	2.3	30	69							
60 TF-20		20					2.0	60	120	2.0	40	80	2.0	45	90				
Total	13	3,730	1,330	0	46	101	319		18,196	230		9,549	225		12,850		1		25
Average*2	0.2	62.2	22.2	0	0.8	1.7	5.3		303.3	3.8		159.1	3.8		214.2		0		0.4
G. Total*	30	9,464	4,562	43	68	221	801		47,223	605		22,673	542		30,232		79		6,085
Average*2	0.2	53.5	25.8	0.2	0.4	1.2	4.5		267	3.4		128	3.1		171		0.4		34
Feed consumption per head (sheep + goats)(kg)							57			43			39				0.01		

*1 Total sumple: 177 farmers excluding broiler.   *2 Average per one farmer

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Table B.2.9 (1/3)   RESULTS OF FARM INTERVIEW SURVEY -
                    NON-FARM INCOME AND LIVING EXPENSES
                    IN DHIBAN AREA

	Sample No.	Family Size (persons)	Non-farm income (JD/year)	Living Expenses (JD/year)		
				Food	Others	Total
1	DA- 1	10	1,560	2,400	1,800	4,200
2	DA- 2	14	1,260	4,000	1,800	5,800
3	DA- 4	3	840	600	1,400	2,000
4	DA- 5	24	3,600	3,200	1,200	4,400
5	DA- 6	5	6,525	5,500	1,800	7,300
6	DA- 7	14	3,560	2,800	1,200	4,000
7	DA- 8	10	0	3,000	1,800	4,800
8	DA- 9	3	1,470	1,200	1,200	2,400
9	DA-10	11	0	3,000	1,500	4,500
10	DA-12	5	990	1,000	900	1,900
11	DA-14	11	2,088	2,000	1,200	3,200
12	DA-15	10	0	600	2,400	3,000
13	DA-16	15	552	1,200	1,200	2,400
14	DA-17	5	1,200	2,400	1,200	3,600
15	DA-18	6	1,044	1,500	1,200	2,700
16	DA-19	12	0	2,000	1,200	3,200
17	DA-20	6	0	300	1,500	1,800
18	DC- 1	9	0	1,000	960	1,960
19	DC- 2	16	1,440	600	1,200	1,800
20	DC- 3	4	1,500	350	1,500	1,850
21	DC- 4	9	1,320	700	2,100	2,800
22	DC- 5	8	2,400	800	2,000	2,800
23	DC- 6	10	300	400	1,200	1,600
24	DC- 7	11	0	500	1,200	1,700
25	DC- 8	12	300	500	1,500	2,000
26	DC- 9	2	0	3,000	1,200	4,200
27	DC-10	9	170	130	840	970
28	DC-11	5	600	300	1,200	1,500
29	DC-12	9	200	350	1,200	1,550
30	DC-13	7	0	400	1,200	1,600
31	DC-14	9	0	500	1,800	2,300
32	DC-15	6	0	3,000	1,000	4,000
33	DC-16	5	1,200	100	1,200	1,300
34	DC-17	7	850	300	1,000	1,300
35	DC-18	5	850	150	1,000	1,150
36	DC-19	14	500	400	1,500	1,900
37	DC-20	10	1,200	100	1,200	1,300
38	DF- 1	8	0	200	200	400
39	DF- 2	1	0	300	600	900
40	DF- 3	5	0	500	1,000	1,500
41	DF- 4	20	0	10,000	3,000	13,000
42	DF- 5	16	0	350	600	950
43	DF- 6	7	500	300	300	600
44	DF- 8	3	0	700	700	1,400
45	DF- 9	7	2,250	300	1,800	2,100
46	DF-10	13	7,000	2,000	12,000	14,000
47	DF-11	16	1,800	100	1,800	1,900
48	DF-12	6	360	1,000	1,200	2,200
49	DF-13	3	0	300	1,400	1,700
50	DF-14	3	500	6,200	2,000	8,200
51	DF-15	7	0	100	1,000	1,100
52	DF-16	5	1,680	1,100	3,000	4,100
53	DF-17	11	0	360	360	720
54	DF-18	6	0	1,000	2,000	3,000
55	DF-19	9	0	200	1,000	1,200
n = 55		477	51,609	75,290	84,460	159,750
Average		8.7	940	1,370	1,540	2,910

Table B.2.9 (2/3) RESULTS OF FARM INTERVIEW SURVEY -
NON-FARM INCOME AND LIVING EXPENSES
IN ABYAD AREA

	Sample No.	Family Size (persons)	Non-farm income (JD/year)	Living Expenses (JD/year)		
				Food	Others	Total
1	KA- 1	12	0	3,200	1,200	4,400
2	KA- 2	7	0	3,600	2,400	6,000
3	KA- 3	6	0	1,200	1,200	2,400
4	KA- 4	5	0	2,000	1,200	3,200
5	KA- 5	4	0	1,500	800	2,300
6	KA- 7	10	0	3,400	1,000	4,400
7	KA- 8	4	0	5,000	500	5,500
8	KA- 9	15	585	1,000	750	1,750
9	KA-10	10	430	1,500	600	2,100
10	KA-11	24	0	7,500	1,500	9,000
11	KA-12	7	727	1,000	240	1,240
12	KA-13	22	2,075	2,000	1,200	3,200
13	KA-14	3	1,410	1,000	960	1,960
14	KA-15	8	2,555	3,500	1,200	4,700
15	KA-16	8	1,230	3,000	1,200	4,200
16	KA-17	10	1,800	1,200	1,800	3,000
17	KA-18	4	1,080	1,000	1,200	2,200
18	KA-19	11	0	700	1,200	1,900
19	KA-20	7	0	9,000	2,000	11,000
20	KC- 1	11	2,500	400	3,600	4,000
21	KC- 2	19	3,100	600	3,000	3,600
22	KC- 3	12	1,440	1,200	1,600	2,800
23	KC- 4	19	1,200	300	2,400	2,700
24	KC- 5	9	0	350	1,500	1,850
25	KC- 6	6	300	115	700	815
26	KC- 7	11	600	3,300	1,200	4,500
27	KC- 8	11	12,000	8,000	2,500	10,500
28	KC- 9	8	1,000	1,000	1,200	2,200
29	KC-10	11	3,000	1,000	6,000	7,000
30	KC-12	9	2,000	2,100	1,800	3,900
31	KC-13	6	600	2,800	300	3,100
32	KC-14	5	1,500	600	1,200	1,800
33	KC-15	10	1,300	600	1,500	2,100
34	KC-16	16	200	700	1,600	2,300
35	KC-17	13	1,000	100	1,500	1,600
36	KC-18	5	2,000	1,000	1,300	2,300
37	KF- 1	9	1,440	3,750	750	4,500
38	KF- 2	2	300	300	1,200	1,500
39	KF- 4	7	0	150	1,000	1,150
40	KF- 5	7	0	200	1,500	1,700
41	KF- 6	8	0	200	320	520
42	KF- 8	7	1,848	150	1,300	1,450
43	KF- 9	2	720	100	1,200	1,300
44	KF-10	9	1,560	150	1,500	1,650
45	KF-11	19	1,560	1,750	2,000	3,750
46	KF-12	21	1,200	250	1,000	1,250
47	KF-13	18	600	100	1,500	1,600
48	KF-14	7	850	120	1,200	1,320
49	KF-18	12	0	150	600	750
50	KF-19	22	1,600	600	2,200	2,800
51	KF-20	7	0	600	2,400	3,000
	n = 51	515	57,310	85,035	74,720	159,755
	Average	10.1	1,120	1,670	1,470	3,140

Table B.2.9 (3/3)   RESULTS OF FARM INTERVIEW SURVEY -
NON-FARM INCOME AND LIVING EXPENSES
IN TAFILA AREA

| | Sample No. | Family Size (persons) | Non-farm income (JD/year) | Living Expenses (JD/year) | | |
				Food	Others	Total
1	TA- 1	4	0	500	800	1,300
2	TA- 3	17	0	500	500	1,000
3	TA- 4	11	0	250	1,200	1,450
4	TA- 5	10	1,200	600	2,400	3,000
5	TA- 6	10	0	2,000	1,200	3,200
6	TA- 7	6	960	3,000	1,000	4,000
7	TA- 8	9	960	500	960	1,460
8	TA- 9	9	950	1,110	600	1,710
9	TA-10	17	500	1,500	2,000	3,500
10	TA-11	42	0	120	2,400	2,520
11	TA-12	5	0	400	1,500	1,900
12	TA-13	5	0	4,000	2,400	6,400
13	TA-14	11	0	2,000	1,800	3,800
14	TA-15	5	0	2,000	700	2,700
15	TA-16	7	0	2,200	1,600	3,800
16	TA-17	5	0	3,000	1,800	4,800
17	TA-18	16	1,200	2,000	2,000	4,000
18	TA-19	4	0	2,000	600	2,600
19	TA-20	3	0	1,000	1,200	2,200
20	TC- 1	6	720	1,000	1,500	2,500
21	TC- 2	7	680	100	600	700
22	TC- 3	6	1,186	400	800	1,200
23	TC- 4	5	2,670	5,700	3,000	8,700
24	TC- 5	8	0	1,500	1,000	2,500
25	TC- 6	10	1,440	600	1,800	2,400
26	TC- 7	5	0	1,000	1,500	2,500
27	TC- 8	7	996	1,000	1,500	2,500
28	TC- 9	18	960	250	1,920	2,170
29	TC-10	15	1,116	350	1,440	1,790
30	TC-11	11	0	100	1,200	1,300
31	TC-12	13	432	100	1,200	1,300
32	TC-13	14	1,560	100	1,200	1,300
33	TC-14	9	480	100	1,200	1,300
34	TC-19	5	1,200	3,000	720	3,720
35	TC-20	6	0	200	500	700
36	TF- 1	11	1,200	500	2,400	2,900
37	TF- 2	12	0	1,400	2,400	3,800
38	TF- 3	8	1,400	500	1,400	1,900
39	TF- 4	5	480	200	600	800
40	TF- 5	7	1,800	1,000	2,500	3,500
41	TF- 7	17	980	100	1,100	1,200
42	TF- 8	12	960	200	500	700
43	TF- 9	3	0	4,000	1,200	5,200
44	TF-10	9	0	600	1,200	1,800
45	TF-11	7	3,600	800	4,500	5,300
46	TF-12	9	0	700	960	1,660
47	TF-14	2	0	80	1,500	1,580
48	TF-15	7	0	600	1,000	1,600
49	TF-16	9	1,200	500	1,200	1,700
50	TF-17	5	0	1,000	600	1,600
51	TF-19	7	0	1,100	2,200	3,300
52	TF-20	11	1,740	600	2,500	3,100
	n = 52	482	32,570	58,060	75,500	133,560
	Average	9.3	630	1,120	1,450	2,570

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STEERING COMMITTEE

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CHIEF CLERK

LEGAL ADVISOR

THE UNDERSECRETARY

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- Division of Scholarships

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- Division of Person
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- Division of Accounts
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- Division of Supplies

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- Division of Construction
- Division of Survey & Design
- Division of Agri. Machin.
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- Division of Livestock
- Division of Animal Health
- Division of Veterinary & Medicin
- Division of Quarantine

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- Division of Statistics

Department of Projects -----NCARTT
- ZARQA RIVER BASIN PROJECT
- HIGHLAND DEVELOPMENT PROJECT

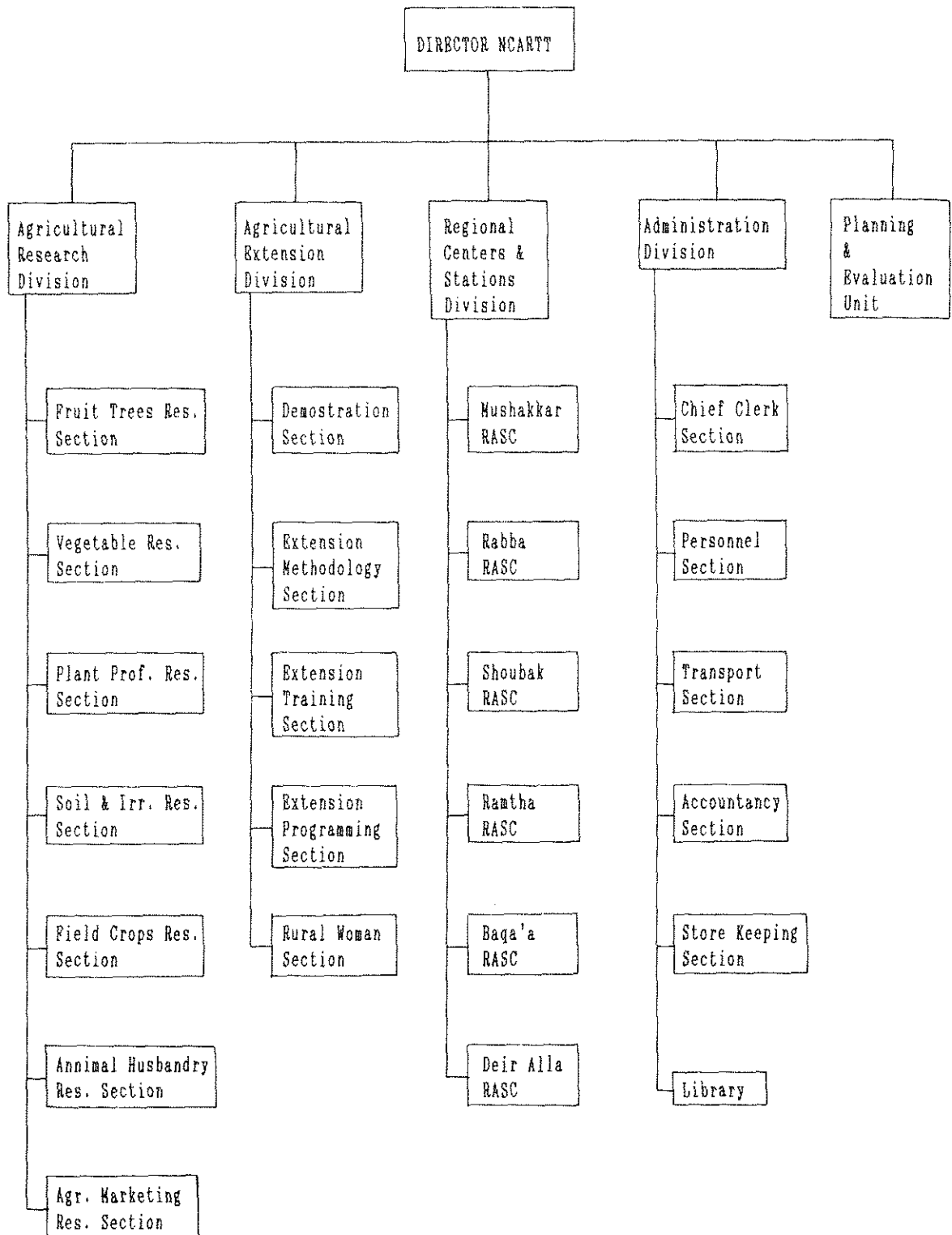Fig. B.1.1 Organizational Chart of Ministry of Agriculture

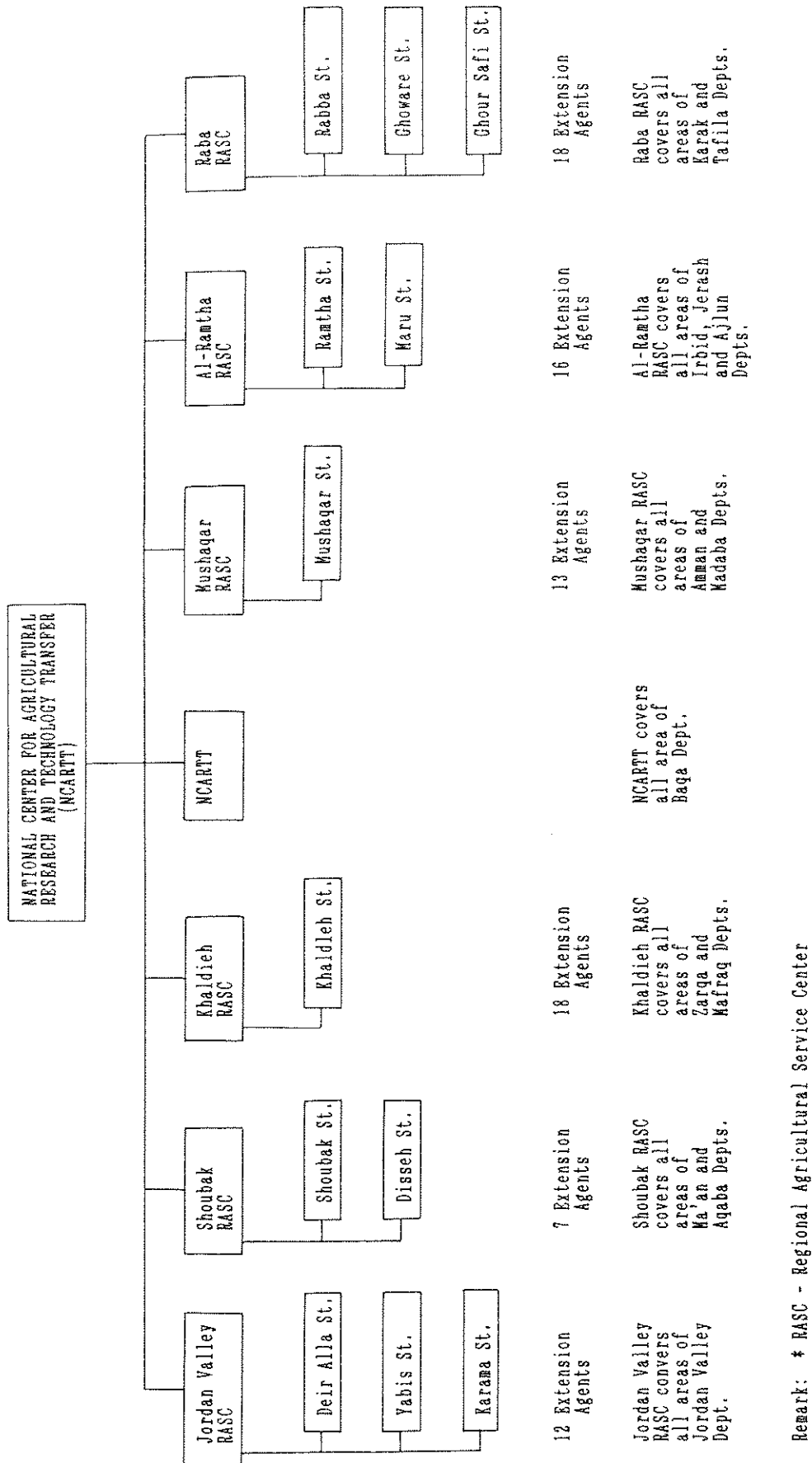Fig. B.1.2 Organizational Chart of NCARTT

Fig. B.1.3   Extension System of Jordan

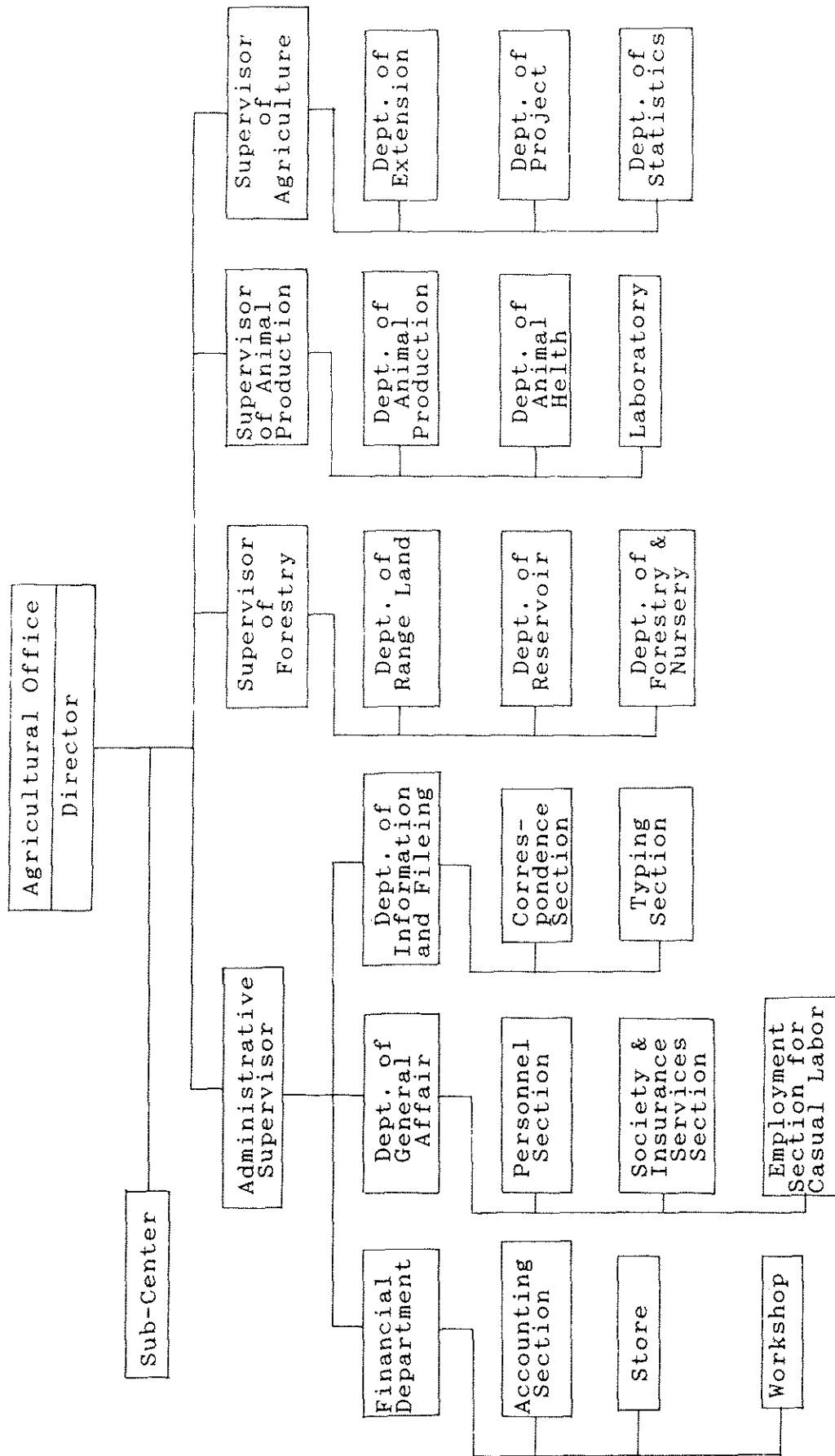Remark: * RASC - Regional Agricultural Service Center

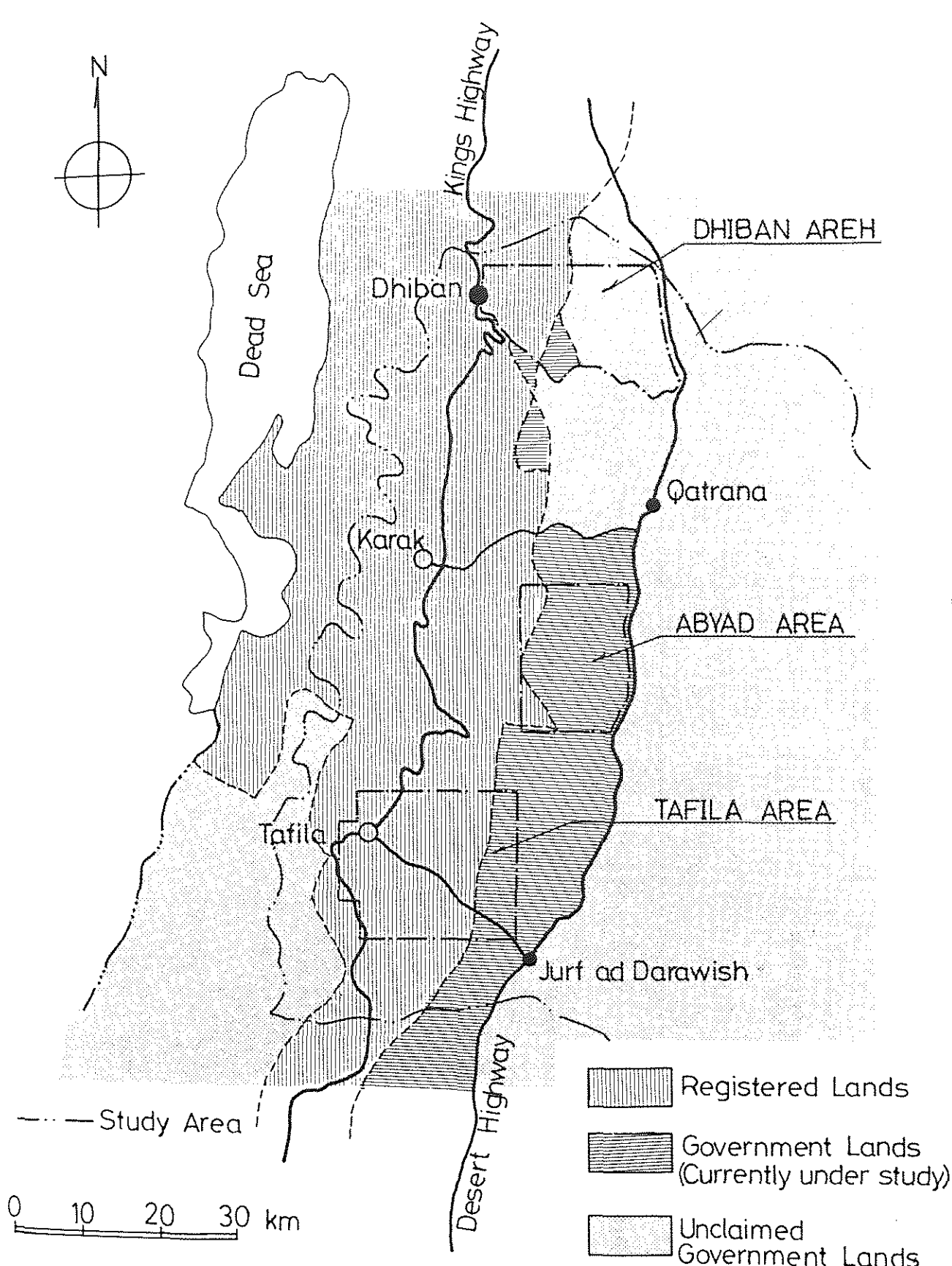Fig. B.1.4 Organizational Chart of Agricultural Office (Governorate)

Fig. B.2.1   Land Tenure Status

Map labels: Dead Sea, Kings Highway, Dhiban, DHIBAN AREH, Qatrana, Karak, ABYAD AREA, TAFILA AREA, Tafila, Jurf ad Darawish, Desert Highway

Legend:
- Registered Lands
- Government Lands (Currently under study)
- Unclaimed Government Lands
- Study Area

Scale: 0 10 20 30 km

Jordan Cooperative Organization Karak Branch Office

Cooperative Bank

Agricultural Cooperative Societies

Non-Agricultural Cooperative Society

Cooperative Projects in Karak Governorate
- Karak Machinery Services Project
- Fattening Sheep Project
- Seeds Project
- West Uajoma Project
- Feeds Project

Agricultural Societies for Several Purposes

1. Agri. Cooperative Villages in South Karak
2. Agri. Cooperative Villages in North Karak
3. Yaroot Agricultural Cooperative Society
4. Hamaideh Agricultural Cooperative Society
5. Amro Agricultural Cooperative Society
6. South Taibeh Agri. Cooperative Society
7. Ail Agri. Cooperative Society
8. Mu'tah Agri. Cooperative Society
9. North Qatrana Agri. Cooperative Society
10. South Qatrana Agri. Cooperative Society
11. White Valley Agri. Cooperative Society
12. Ader Agri. Cooperative Society
13. East Karak Agri. Cooperative Society
14. Ghour Safi and Viva Agri. Cooperative Society
15. Mazara'a and Haditha Agri. Cooperative Society
16. Society of Desert Forestation
17. Cooperative Sociaty for Karak Station (under establishing)

Special Agriculture

1. Society for the Farmers of Karak

1. Karak Society for Fattening Sheep
2. Shihan Society for Fatting Sheep
3. Cooperative Society for Fattening Sheep in South Nazar
4. Cooperative Society for Fattening Sheep in North Qatrana (under establishing)

1. Cooperative Society for Hen and Chicken (closed)

Saving

1. Cooperative Society of Government Employee for Saving in Karak

Housing

1. Housing Society in Mo'ab
2. Housing Society for University of Mu'tah

Several Purposes

1. Economic Cooperative Society
2. Rakeen Cooperative Society
3. Shaheed Cooperative Society
4. Training and Pro-duction Cooperative Society for Women of Mo'ab
5. Cooperative Society for Women in Manshiet Abu Hamoor
6. Cooperative Society for Employee of Phosphate Company in Hasa and Abyad
7. Society of Active Cooperation for Women in Sarfa (under establishing)

Fig. B.2.2 Organizational Structure of Cooperatives
—JCO Karak Branch Office