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9. ABSTRACT

This report is part of the Syncrisis series, which consists of country profiles describing and analyzing health conditions in particular countries and the impact of those conditions of the country's socioeconomic development. The primary purpose of these studies is to provide a concise and up-to-date introduction to the health situation in a country. National health policy in Syria relates improvements in health status to changes in the rate of overall economic and social development. Health programs receive a low priority in the formulation of the National Development Plans. A large private sector now delivers three quarters of all health services. The lack of a well developed planning capability within the Ministry of Health has served to weaken the position of the Ministry in the competition for limited government funds. The absence of a coherent national health policy is evident in the largely uncoordinated efforts of the private and public sector organizations which make up the Syrian health system. The physical and human resources of the health sector are concentrated in the urban areas in the western part of the country. A major reallocation of health facilities and personnel will be necessary if the rapidly growing population of the Euphrates River basin is to be adequately served. While the health education system is directed primarily to the training of physicians, the development of health facilities has favored the construction of hospitals. The resultant shortage of preventive care facilities and paraprofessional medical personnel has caused the development of a high cost health services delivery system which concentrates primarily on creative care. A major change in health policy and program development at the national level will be required if Syria is to avoid the problems of maintaining a costly and unnecessary system of sophisticated but underutilized health facilities.

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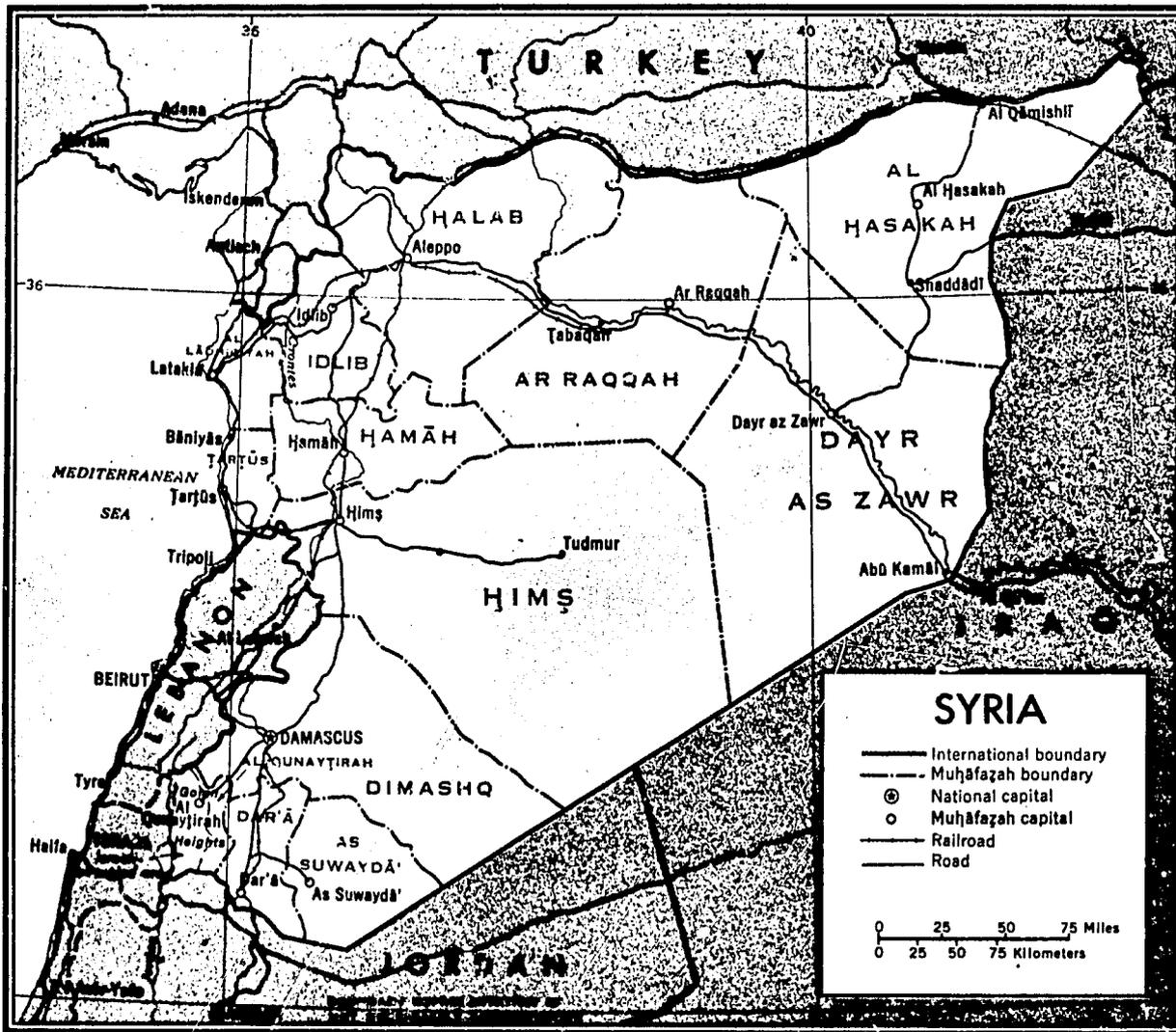
# **THE DYNAMICS OF HEALTH**

*An Analytic Series on the Interactions  
of Health and Socioeconomic Development*

**XXIII**

## **THE SYRIAN ARAB REPUBLIC**

**U.S. DEPARTMENT OF  
HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
OFFICE OF INTERNATIONAL HEALTH  
DIVISION OF PROGRAM ANALYSIS**



Scale 500000:1

SYNCRISIS  
THE DYNAMICS OF HEALTH

XXIII: THE SYRIAN ARAB REPUBLIC

Juliana Weissman  
Division of Program Analysis  
Office of International Health  
U.S. Public Health Service

December, 1977

## PREFACE

This study was prepared within the Division of Program Analysis of the Office of International Health, Public Health Service, U.S. Department of Health, Education and Welfare, at the request and with the support of the U.S. Agency for International Development (AID). It is part of the Syncrisis series, which consists of country profiles describing and analyzing health conditions in particular countries and the impact of those conditions on the country's socioeconomic development.

The primary purpose of these studies is to provide a concise and up-to-date introduction to the health situation in a country, for use by AID and throughout the international health community. The studies do not necessarily reflect United States government policy, and do not include recommendations for specific programmatic actions by AID. They do provide a background against which further analysis and health program development may occur.

Specifically, Syncrisis studies are intended to acquaint the generalist in development administration with (1) interventions in the health system of the country which will contribute to socioeconomic development, and (2) the effects of other developmental activities in health. To the specialist in comprehensive health planning, they will provide both a preliminary document for his work, and an indication of the sources of information available for health planning in that country. For the specialist in a specific aspect of health care, Syncrisis studies are intended to provide insight into the relationship of the subsystem with which he is concerned to the comprehensive health system and the larger society. For each of these professionals Syncrisis studies are intended not as a final definitive document, but rather as a point of departure from which their own professional skills can be applied to develop activities which will benefit the country.

In addition to the principal target audience, which will probably include a few dozen persons for a specific country, it has been demonstrated that Syncrisis studies are useful to others. For this reason the studies are published and made available for sale to the public. Consideration is given in the preparation of the documents to their possible use in health science education in the subject country, in international health education, and by scholars concerned with more general aspects of the country or with closely related sectors.

Syncrisis studies form an unusual resource for the student of comparative health systems. They present, in a uniform format, parallel descriptions of health systems in countries with widely varying cultural, social, economic, and government systems. It is hoped that in the future this aspect of the Syncrisis series can be of increasing value.

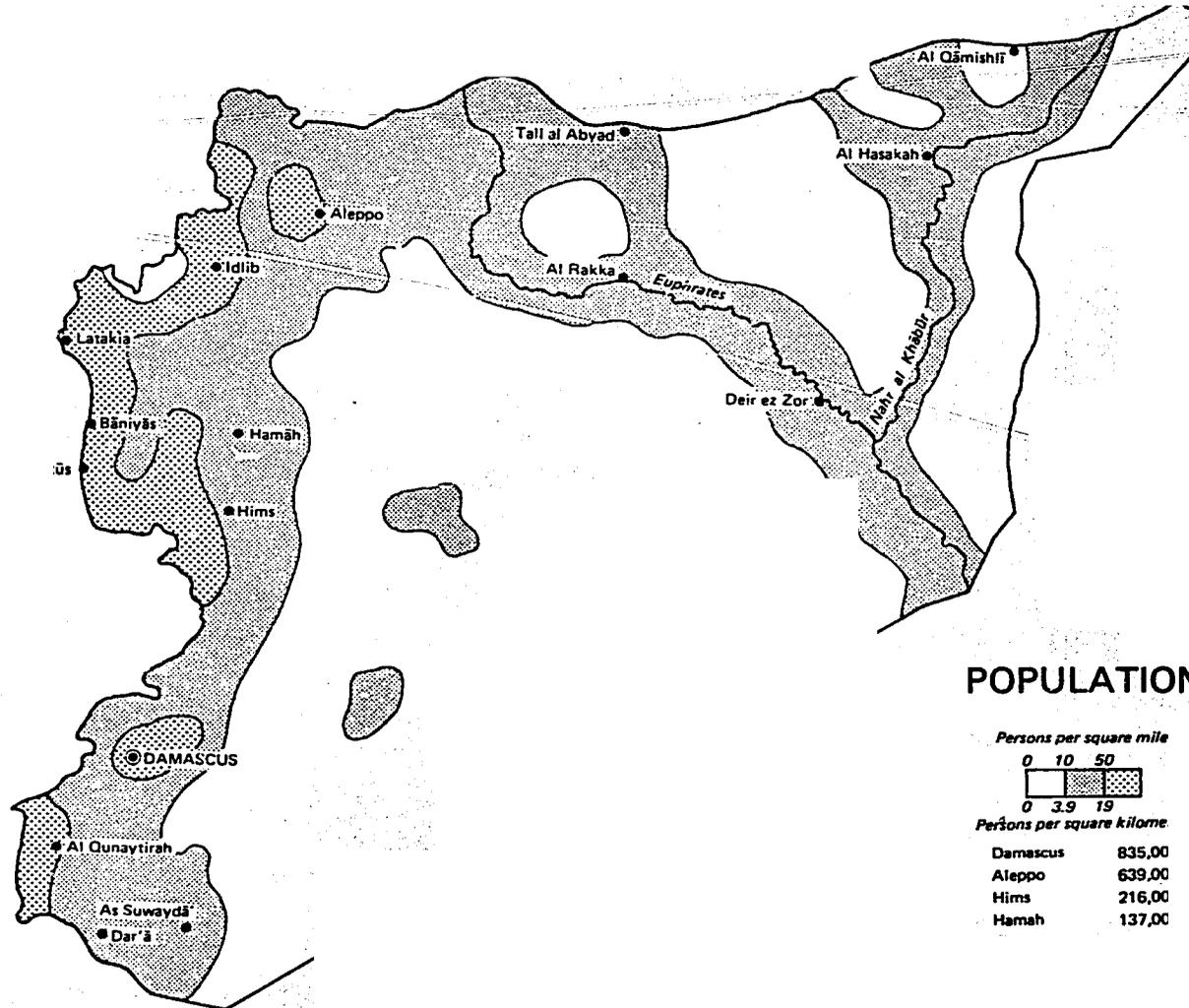
The first draft of the Syncrisis for the Syrian Arab Republic was based on research materials available in Washington, D.C. A team composed of USAID staff and consultants visited the Syrian Arab Republic in April, 1976 and provided additional information which included current documents of the Syrian Arab Republic government. The USAID mission in Damascus later added data relative to the 1977 cholera epidemic.

Although every effort was made to provide an accurate and comprehensive picture of the health situation in Syria, the limitations of a Washington-based research effort and a less than optimal statistical base in the country served to constrain the completeness of the document. The length of each chapter of the study reflects the availability of information and not a desire on the part of the author to assign relative importance to the various health problems of the country.

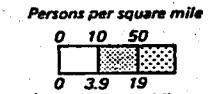
I would like to express my thanks to the many people who assisted me in the preparation of the Syncrisis. Ms. Emily Leonard and the USAID staff in Damascus were particularly helpful in the provision of the latest available information. Mr. Jeremmiiah Norris provided many insightful comments on the final draft, as did Dr. Kenneth Farr of the Office of International Health staff. Finally, special thanks to the secretarial staff of OIH for careful preparation of the final copy.

Juliana Weissman

# Syrian Arab Republic



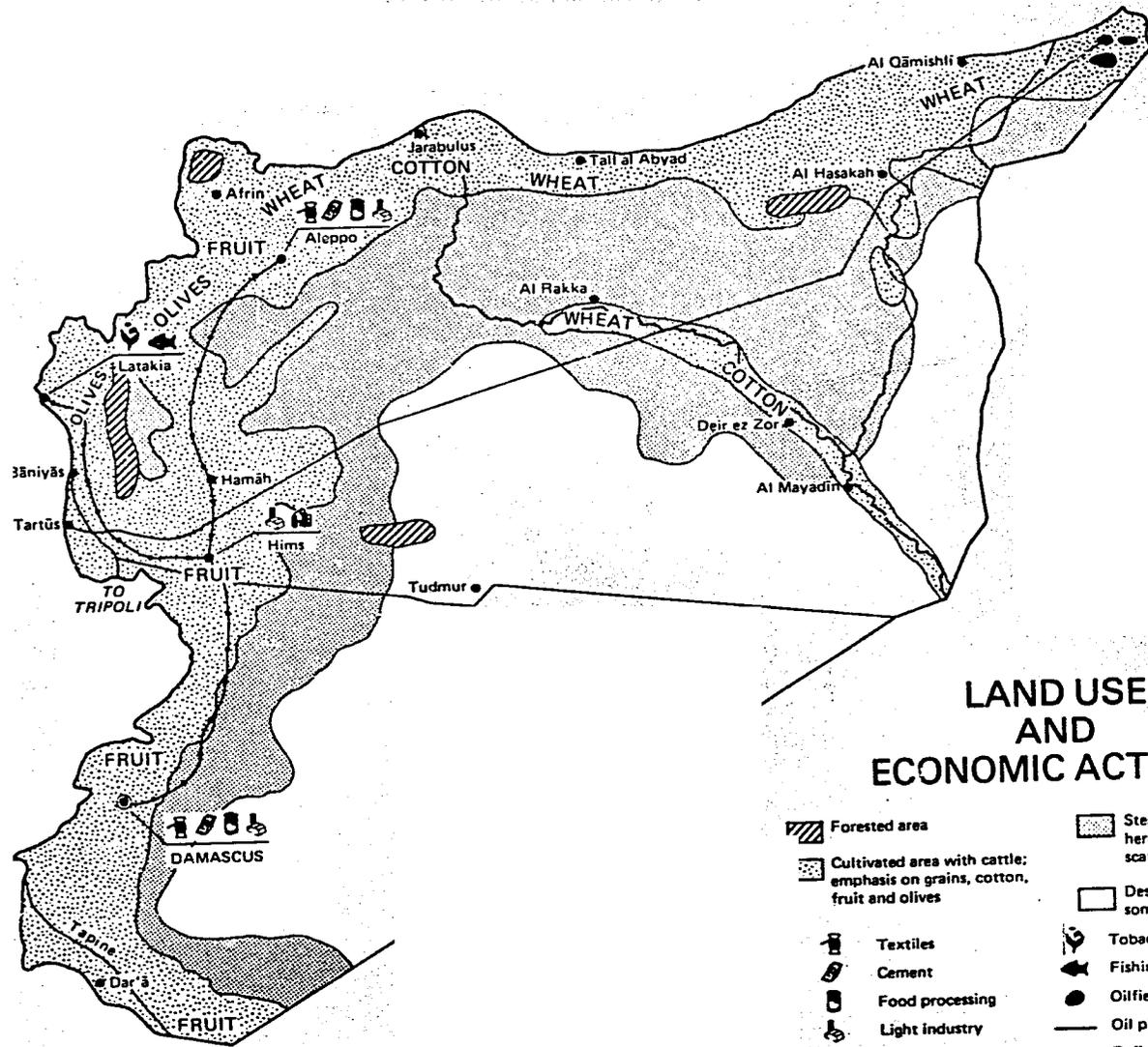
## POPULATION



Persons per square kilome

Damascus	835,00
Aleppo	639,00
Hims	216,00
Hamah	137,00

# Syrian Arab Republic



## LAND USE AND ECONOMIC ACTIVITY

- |   |   |
|---|---|
|  Forested area   |  Steppe land with no herding (sheep) and scattered cultivation |
|  Cultivated area with cattle; emphasis on grains, cotton, fruit and olives |  Desert and steppe with some nomadic herding                   |
|  Textiles  |  Tobacco products  |
|  Cement  |  Fishing port  |
|  Food processing   |  Oilfield  |
|  Light industry  |  Oil pipeline  |
|  Oil refining  |  Refined products pipeline                                     |

TTA

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BASIC COUNTRY DATA

Population (1976)	8.3 million	Crude Birth Rate	47.5/1000 population
Population Density	38 km <sup>2</sup>	Crude Death Rate	16/1000
Population Distribution (1970)	Urban 43% Rural 57%	Infant Mortality Rate per 1000 live births	105.8 Femal 119 Male
Percent 0-15 years old	49%	Maternal Mortality	n.a.
Annual Population Growth Rate	3.1%	Average Life Expectancy	54 years
Percent Literate	47%		
Percent Unemployed	n.a.		
Population With Access to Potable Water	Total 71% Rural 50%		
Percent Children 0-4 years with Protein-calorie malnutrition	n.a.		
Population per physician	1/3065		
Population per Nurse	1/6550		
Percent deliveries in hospital	n.a.		
Gross National Product per capita	U.S. \$660		
Annual Public Sector Health Expenditures per capita	\$6.60		
Currency Equivalents	3.70 Syrian Pounds = U.S. \$1.00		

Abbreviations List

PHA	Public Housing Authority
MOHU	Ministry of Housing and Utili
MOLA	Ministry of Local Affairs
EPEF	Etablissement Public des Eaux de Figeh
S.P.	Syrian Pounds
W.H.O.	World Health Organizator
IBRD	International Bank for Reconstruction and Development (World Bank)
IDA	International Development Association
MOE	Ministry of Education
MOHE	Ministry of Higher Education
MOH	Ministry of Health
MLSA	Ministry of Labor and Social Affairs
MAAR	Ministry of Agriculture and Agrarian Reform
NPC	National Planning Commission
MCH	Maternal-Child Health
U.S.A.I.D.	United States Agency for International Development
CBS	Central Bureau of Statistics
F.A.O.	Food and Agriculture Organization of the United Nator
MSIT	Ministry of Supply and Internal Trade

## Summary and Conclusions

The Syrian Arab Republic is a relatively young nation in a land which has been an important center of civilization for over four thousand years. During the past seven years, under the leadership of President Assad, Syria has become an important spokesman for the Arab nations and has taken a major role in the resolution of the civil war in neighboring Lebanon. Internally, political stability during Assad's presidency has permitted economic development to proceed at a pace which has raised the GNP per capita from about U.S.\$273 in 1969 to \$760 in 1976.<sup>1</sup>

Rapid urbanization during the past decade has contributed to the accelerated development of the country and intensified a whole series of problems which impact on the health status of the Syrian people. Overcrowded housing and overtaxed water and sewerage systems, social services, and health facilities are part of life in all of Syria's major urban areas. In contrast, the people who have remained in rural areas continue to be subjected to the environmental and health problems which have plagued the area for centuries - trachoma, schistosomiasis, tuberculosis, and cyclical bouts of undernutrition which are related to variations in food production and distribution. Poor sanitary conditions and inadequate housing in both urban and rural areas contribute to a high incidence of infectious intestinal and upper respiratory diseases.

A high rate of infant mortality persists despite the best efforts of an overloaded health system. This problem can be attributed to low incomes, high parity, the poor educational and nutritional status of women, and generally unfavorable environmental conditions. The rate of population growth continues to be high which is a reflection of both the rapidly decreasing general mortality rates and the continuing high birth rate. The government has only recently begun to deal directly with the population problem. The first attempt to develop a Maternal and Child Health and Family Planning Program began in 1976 with the assistance of the United Nations Fund for Population Activities. However, if area sociologists are correct in their analysis of the relationship of family size to the status of women, some major modification of social patterns will be necessary if the fertility rate is to be lowered.

National health policy in Syria relates improvements in health status to changes in the rate of overall economic and social development. This is reflected in the low priority which health programs receive in the formulation of the National Development Plans and in the apparent preference for a large private sector which delivers three quarters of all health services. The lack of a well-developed planning capability within the Ministry of Health has served to weaken the position of the Ministry in the competition for limited government funds. The absence of a coherent national health policy is evident in the largely uncoordinated efforts of the private and public sector organizations which make up the Syrian health system.

<sup>1</sup> SARG 1977 Annual Statistical Abstract, and AID Population Program Assistance Annual Report, 1971.

The physical and human resources of the health sector are concentrated in the urban areas in the western part of the country. A major reallocation of health facilities and personnel will be necessary if the rapidly growing population of the Euphrates River basin is to be adequately served.

While the health education system is directed primarily to the training of physicians, the development of health facilities has favored the construction of hospitals. The resultant shortage of preventive care facilities and paraprofessional medical personnel has caused the development of a high cost health services delivery system which concentrates primarily on curative care. A major change in health policy and program development at the national level will be required if Syria is to avoid the problems of maintaining a costly and unnecessary system of sophisticated but underutilized health facilities.

## CHAPTER ON

### POPULATION

#### Population Growth and Dynamics

During the past 15 years, Syria's population has grown at unexpected and unprecedented rates. The crude birth rate was estimated to be 47.5 per 1,000 in 1975, the crude death rate 16/1000. (External migration has had a minimal effect on overall demographic trends in Syria.) The rate of natural increase was just over 3.1 percent (3.3 percent in 1977 based on revised vital rates). If population growth continues at this rate, the population will double in 21 years. The rapid growth has been documented by the census of 1960 and 1970. In 1960, the Syrian population was 4.3 million. By 1970, the population had grown to 6.3 million (See Table 1). The original intercensal population estimate for 1975 was 7.3 million. (See Table 2). That figure has recently been revised to 8.3 million. It now appears that the population will reach 10 million by 1980, rather than by 1985, which was the projection made in 1970.

The population under the age of 15 increased from 46 percent in 1960 to 49 percent in 1970. The proportion of the population, aged 15-59, fell from 46 to 44 percent. The dependency ratio had increased to .88 by 1970.<sup>1</sup> Two thirds of the dependents were children under 15 and the rest were aged, women, students and the unemployed. The high dependency ratio places a heavy burden on the economically active members of the population who must support an increasing number of dependent persons. The government feels the impact as provision must be made for costly educational and training facilities and additional social services, while the economy must expand ever more rapidly in order to employ the growing number of job seekers.

The immediate prospect for a decrease in the rate of population growth is not good. The number of females of reproductive age is increasing at an even faster rate than the rest of the population (4.0% annually between 1960 and 1970).<sup>2</sup> The total fertility rate is high (7.13).<sup>3</sup> There is an inverse relationship between total fertility rate and educational level which was demonstrated in the 1970 census. In Damascus City, women who had been educated had fewer children while the number of children decreased as the educational level attained by the mother increased. (See Table 3).

---

<sup>1</sup> Habbab, Adnan, "Demographic Features Shown Through Population Census," Syrian Socio-Economic Selections, May 1973, p. 25.

<sup>2</sup> 1970 Census.

<sup>3</sup> Syrian Socio-Economic Selections, op. cit. 22 Aug 1973, p.

Table 1  
Population by Age Groups and Sex

Age groups	1960 Census*			1970 Census		
	T	F	M	T	F	M
Less than one year	183373	87232	96141	230502	110789	119713
1 - 4	667917	319277	348640	959037	464635	494402
5 - 9	669992	311884	358108	1075687	516660	559024
10 - 14	493246	234100	259146	840897	397834	443063
15 - 19	365193	181172	184021	602338	295263	307075
20 - 24	325846	164965	160881	460968	221873	239095
25 - 29	312308	162638	149670	351590	183013	168577
30 - 34	266983	127289	139694	322687	166779	155908
35 - 39	229154	111687	117467	317320	158970	158350
40 - 44	156971	73983	82988	263545	125143	138402
45 - 49	141408	67174	74234	203770	96536	107234
50 - 54	132795	72717	60078	153327	74666	78661
55 - 59	90701	44396	46305	117636	56054	61582
60 - 64	110740	59189	51551	129378	65917	63461
65 - 69	63076	29130	33946	85273	42735	42538
70 - 74	63769	33325	30444	85560	42852	42708
75 - 79				40011	18964	21047
80 - 84	77602	37031	40571	35010	17853	17157
85 and over				29516	14790	14726
Not stated	2377	1295	1082	636	249	387
Grand Total	4353451	2118484	2234967	6304685	3071575	3233110

\*Nomads (211670) are excluded.

Source: Central Bureau of Statistics

Table 2  
Population Estimates By Sex & Mohafazat, 1975 and 1980

Mohafazat	1980 <sup>1</sup>			1975 <sup>1</sup>		
	Total	Females	Males	Total	Females	Males
Damascus C	4311	555889	588422	974863	472819	502044
Damascus	9703	412176	437527	723882	350582	373300
Aleppo	1104	879259	921845	1534392	747868	786524
Homs	7027	366650	380377	636400	311860	324540
Hama	4040	345380	358660	599779	293768	306011
Lattakia	2780	257607	275173	453891	219112	234779
Deir-ez-Zo	0454	197974	202480	341147	168390	172757
Idleb	4792	257510	267282	447076	219029	228047
Al-Hasakeh	0796	315202	325594	545899	268100	277799
Al-Rakka	3337	158806	174531	283986	135075	148911
Al-Sweida	1012	94838	96174	162722	80666	82056
Dar'a	7997	160118	157879	270894	136191	134703
Tartous	3139	201787	211352	351960	171633	180327
Quneitra	2552	10868	11684	19213	9244	9969
Tot:	3044	4244064	4408980	7346104	3584337	3701767

<sup>1</sup>Midyear estimates.

Source: Statistical Abstract of the Syrian Arab Republic, 1975.

Table :

## Fertility Rates in Damascus

All Women	5.8
Literate Women	4.2
Primary Cert. holders	3.4
Preparatory Certificate holders	2.5
Secondary Certificate - Ph.D.	1.9

Source: 1970

Unfortunately, although the Syrian educational system is expanding rapidly, only 37 percent of primary school students and 24 percent of secondary school students were female by 1968. In contrast, Syria claimed to have 95 percent of male children enrolled in primary school in 1970. Female enrollment was not expected to reach the same level until 1990.<sup>4</sup> By then, the cohort of females born in 1975 will be of childbearing age and will continue to produce an average of 5.8 live children per woman unless there is a significant change in fertility rates during the next fifteen years.

It has been suggested that an effective method for lowering fertility rates would be to educate female children, if necessary at the expense of male children, and provide job training and placement for young women.<sup>5</sup> Nadia Youssef's work on women and fertility indicates that fertility rates are in fact higher in the Muslim countries of the Middle East and Asia than in non-Muslim countries which are at comparable levels of economic and industrial development.<sup>6</sup> She relates this to a social structure which prevents women from taking advantage of opportunities for education and in many cases prohibits their participation in economic activities. The woman's life is therefore limited to marriage and childbearing. She concludes that unless the role of women in Muslim societies is redefined, there is little hope for any decline in fertility rates.

Studies of married couples in both developing and developed countries indicate that the more equal the division of labor and decision-making in the marriage, the more likely it is that couples will a) communicate with each other

<sup>4</sup> Abu-Lughod, Janet, Problems and Policy Implications of Middle Eastern Urbanization, Studies on Development Problems in Selected Countries of the Middle East, 1972 UNESOB, p. 50.

<sup>5</sup> Ibid.

<sup>6</sup> Youssef, Nadia H., "Women's Status and Fertility in Muslim Countries of the Middle East and Asia." Paper presented to American Psychological Association meeting, 1974.

regarding sex, family size, desires and birth-planning, p) express desire for smaller families, and c) practice effective contraception.

Studies which have been done in developed countries indicate that higher educational levels for women and increased opportunities for "satisfying" work outside the home are associated with lower fertility.<sup>8</sup> Investigations which relate fertility to various social and economic factors in Syrian society need further study before this relationship can be confirmed there. Demographic data and socio-economic indicators which need to be developed include variables such as specific educational levels, economic activity rate of women, urban versus rural residence, educational level of the husband, and the availability of contraceptives and family planning information.

#### Population Density and Distribution

The geographic distribution of population in Syria is uneven. The Mediterranean coastal belt is most heavily populated, with 189.4 people per square kilometer in Lattakia mohafazat. The area bounded by Aleppo and Homs, which adjoins the coastal belt, has a density of 104 to 157 people per square kilometer. The rest of the country is more sparsely populated, with densities ranging from 9-50 people per square kilometer.<sup>9</sup> (See Tables 4 and 5). For the entire nation population density has increased from 24 persons per square kilometer in 1960 to 42 persons per square kilometer in 1976.<sup>10</sup> The density of arable land reaches a high of 314 people per square kilometer in Lattakia, and declines to 21 people per square kilometer in Al Rakka.<sup>11</sup> Although this is far from the situation of some other developing countries (in Egypt, population density reaches 3200 people per square kilometer of cultivable land), Syria, like Egypt, has large areas of desert which can barely support a small nomadic population. The high population growth rate will cause population pressure to increase in the few fertile areas of the country. The expansion of the cultivable areas through irrigation projects is expected to relieve some of this pressure on currently available land by opening new areas for cultivation.

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7 Germain, Adrienne, "Status and Role of Women as Factors in Fertility Behavior: A Policy Analysis," Studies in Family Planning, Vol. 6, No. 7 (1975), p. 194.

8 Germain, Adrienne, loc. cit.

9 1970 Population Census.

10 1977 Statistical Abstract of the government of Syria.

11 Habbab, Adnan, "Syria needs a Population Policy," Syrian Socio-Economic Selections, January 1973.

Table 4  
Population Sex Ratio and Growth Rates  
by Mohafazat

1970 census

Mohafazat	Population by Sex		Total	Sex Ratio	Growth rate %
	Males	Females			
Damascus City	431489	405179	836668	106.5	47
Damascus	320838	300428	621266	106.8	36
Tartous	154985	147080	302065	105.4	31
Lattakia	201785	187767	389552	107.5	29
Idleb	195999	187696	383695	104.4	24
Aleppo	675991	640881	1316872	105.5	32
Al-Rakka	127984	115752	243736	110.6	31
Al-Hasaket	238759	229747	468506	103.9	28
Al-Sweida	70524	69126	139650	102.0	34
Dara	115773	116708	232481	99.2	43
Quneitra	8568	7922	16490	108.2	33
Homs	279053	267239	546292	104.4	31
Hama	262968	251605	514573	104.5	34
Deir-es-Zc	148285	144472	292757	102.6	28
Total	3233001	3071602	6304603	105.1	33

Source: Syrian Socio-Economic Selections, February, 1973.

Table 5

Sex Ratio, Density &amp; Urban Population Ratio in Mohafazat, 1974

Mohafazat	% of total Population	Urban population %	Density per km <sup>2</sup>	Sex ratio
Damascus City	13.7	100	92.1	106.3
Damascus	9.8	29.0		106.6
Aleppo	20.9	53.4	92.3	105.3
Homs	8.6	46.1	14.5	104.2
Hama	8.2	33.6	66.2	104.3
Lattakia	6.1	37.9	189.4	107.3
Deir-ez-Zor	4.6	30.1	9.9	102.7
Idleb	5.9	21.9	68.8	104.2
Al-Hasakeh	7.3	20.2	22.4	103.7
Al-Rakka	3.9	15.9	12.5	110.4
Al-Sweida	2.2	27.4	28.7	101.9
Dar'a	3.7	14.1	71.5	99.0
Tartous	4.8	18.1	180.2	105.2
Queneitra	0.3	--	10.1	108.0
Total	100.0	43.5	38.5	105.1

Source: Syrian Arab Republic Statistical Abstract, 1975.

## Migration

Migratory activities in Syria have caused significant shifts in population within the country during the past 20 years. The urban migration of the rural poor has created a large pool of unskilled labor in the Syrian cities. While the demographic effects of immigration and emigration have been negligible, the emigration of professional and business people (particularly non-muslim groups) has aggravated the shortage of technical and managerial workers. Many of the students who leave to study in foreign countries elect to remain there when they finish their studies. Since 1970 the Syrian government has attempted to encourage the return of business and professional emigres with some success. During 1975 and 1976, many Lebanese of all socioeconomic levels fled to Syria to wait out the civil war in their own country. The volume and impact of this migration has not yet been measured and it is still too early to assess its long-term effects on Syria.

The population movement from rural to urban areas in Syria began at the end of World War II. The urban population has increased from 31 percent in 1947 to 43.5 percent in 1970. It is expected to reach 50 percent by 1980. Between 1960 and 1970, urban population grew by 60 percent (from 1,685,000 to 2,741,000) while rural growth was only 24 percent (2,880,000 to 3,573,000). Close to 40,000 people per year were added to the urban population centers of Syria during the decade.<sup>12</sup> The city of Damascus alone has increased in size from 557,000 in 1960 to 837,000 in 1970.<sup>13</sup> Population density in the city increased from 4720 persons per square kilometer to 7090 persons during the same ten year period.<sup>14</sup> The number of unskilled laborers has increased while the demand for trained manpower continues. The educational system has not been able to develop job training programs fast enough to meet the need for skilled manpower. The rapid growth has placed a tremendous strain on urban services, from water and sewerage systems to education and health facilities.

The rapid growth of the cities is only partially attributable to migration patterns. According to a study published in 1972, most of the growth in the urban areas of Syria has been caused by natural increase (see Table 6).<sup>15</sup> In fact, this is a pattern which is common throughout the Middle East, according to Janet Abu-Lughod. If the growth of the cities is to be controlled in the future, it seems clear that family planning must be considered as an important component of overall development planning.

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<sup>12</sup> Hallak, Nader, Migration from Rural Areas to the Urban Areas: Trends and Effects, Syrian Socio-Economic Selections, February, 1973, p. 9.

<sup>13</sup> Hallak, op. cit., p. 8.

<sup>14</sup> Hallak, op. cit., p. 8.

<sup>15</sup> Abu-Lughod, op. cit., p. 47.

**Table 6**  
Sources of Estimated Growth in Selected  
Cities of the Middle East

City	Est. Growth Rate <sup>a</sup>	Percent Due to Natural Inc. <sup>b</sup>		Percent Due to Net Migration <sup>c</sup>		Average Per Cent of Growth <sup>d</sup> Due to	
		Min	Max.	Min.	Max.	Nat. Inc.	Mig
Damascus	4.7	3.0	3.2	1.5	1.7	66	34
Aleppo	4.1	3.0	3.2	0.9	1.1	76	24
Homs	4.7	3.0	3.2	1.5	1.7	66	34
Hama	3.6	3.0	3.2	.4	.6	86	14
Lattakia	6.4	3.0	3.2	3.2	3.4	48	52

a. 1960 census and preliminary returns of 1970 census were used to calculate growth rates

b. U.N. sources

c. Residual between estimated total growth and range of natural increase rates - a reciprocal range

d. Based on mid-points of range

e: Janet Abu-Lughod, Problems and Policy Implications of Middle Eastern Urbanization, Studies on Development Problems in Selected Countries of the Middle East, 1972, UNESOB, p. 47.

### Family Size and Composition

The composition of the Syrian family has also been affected by both the rapid population growth and migration patterns. Traditionally, one room in a rural household was allotted to each group within the extended family. Young men who migrated to the cities during the 1960's began to establish nuclear family units which lived apart from parents and other relatives. Because of this trend, the size of the family was expected to be smaller in 1970 than in 1960. The 1970 census revealed, however, that the average family size actually grew between 1960 and 1970 from 5.3 to 5.9 people. Almost 75 percent of the population had families of six or more people in 1970. (See Table 7). In Damascus City, 16,000 families were sharing their housing with another family.<sup>16</sup> However, average family size is still larger (6.2) in the rural eastern regions of the country than in the urbanized southern region (5.7). The urban migration may have caused an overall improvement in the housing situation by relieving some of the pressure on rural areas. The family which crowds into an urban slum where there are more than three people for every room may have come from a rural area where more than four people per room shared their quarters with the livestock.

### Marital Status

Syrian women usually marry at a young age (30 percent marry before the age of 20 and over 90% are married by age 24). Most marriages are arranged. Syrian men marry later, with only 35 percent married before the age of 30. Only 2 percent of marriages are polygamous and most involve men over the age of 40. A slightly higher rate of polygamy (2.5 percent) is reported among illiterates and literates without primary certificates. In rural areas where polygamy persists, it is for economic as well as traditional reasons. A man with several wives can put them all to work in the fields (with their children to help) and receive more payment in return than if he has only one wife. Divorce is still a male prerogative in Syria. The wife returns to her family and the husband and his family may take custody of any offspring. They then assume all responsibility for the maintenance and education of the children. Children often remain with their mother until they are six or seven years old, then return to their father. Sons are valued more than daughters because it is assumed that they will support their parents in their old age. Daughters, on the other hand, marry and leave their parental home at a relatively early age. Their economic contribution to most families is still insignificant. The large excess of widows over widowers (See Table 8) can be partially attributed to the fact that women usually marry men who are at least ten years older than they are, and life expectancy is greater for women than men.

<sup>16</sup> Third Five Year Development Plan (1971-1975).

Table 7

## Population and Households by Size of Household

<u>Household</u>	<u>Number of Households</u>	<u>Population</u>
One person	60,654	60,654
2	96,349	192,698
3	100,852	302,556
4	114,553	458,212
5	126,643	633,215
6	129,518	777,108
7	123,141	861,987
8	104,088	832,704
9	79,240	713,160
10	54,153	541,530
11	30,238	332,618
12	17,025	204,300
13	9,333	121,329
14	5,444	76,216
15	9,459	162,506
Public living quarters	1,149	33,892
Total	1,061,839	6,304,685

Source: Syrian Socio-Economic Review, August, 1973.

Table 8  
Population By Marital Status and Sex

<u>Marital Status</u>	<u>Total</u>	SFY	
		<u>Female</u>	<u>Male</u>
Never married	914,005	332,336	581,669
Married	2,067,827	1,067,573	1,000,254
Divorced	19,579	13,143	6,436
Widowed	198,909	170,272	28,637
Not Stated	1,384	1,176	208
Under 15 and Never Married	3,102,981	1,487,075	1,615,906
<b>Total</b>	<b>6,304,685</b>	<b>3,071,575</b>	<b>3,233,110</b>

Source: Syrian Socio-Economic Review, August, 1973.

### Ethnic Composition

Although the Syrian government classifies its population primarily as Arab or foreigner (See Table 9), there are several major ethnic groups which contribute to the diversity of Syrian society. In addition to the four Arabic-speaking Muslim communities (See Table 10) there is an important Christian minority and a small Jewish community as well. These ethnic and religious groups tend to be concentrated in certain areas of the country. While almost 40 percent of the Sunni muslims live in urban areas, the Alawites tend to live in rural areas. The Druzes are concentrated in the southeastern part of the country known as the Jebel Druze, and the Armenian and Jewish communities are primarily urban.<sup>17</sup>

See Statistical Appendix for Registered Births for 1973/74 and additional Tables from the 1970 Census.

Table 9  
Population by Citizenship and Sex

Citizenship	S e x		
	T	F	M
Syrian Arab	6,094,389	2,970,076	3,124,313
Palestinian Arab	155,723	75,273	80,450
Other Arabs	44,369	21,489	22,880
Foreigners	8,652	3,973	4,679
Not Stated	1,552	764	788
Grand Total	6,304,685	3,071,575	3,233,110

Source: 1970 Population Census

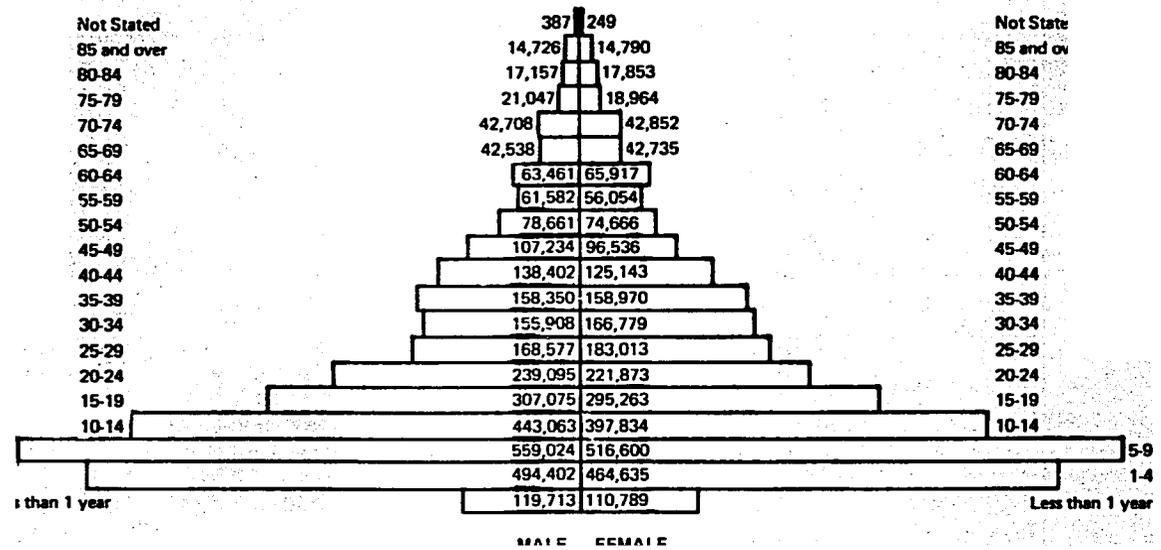
Table 10  
Languages Spoken by Major Religious  
Communities in Syria (1964)

Community	Arabic	Kurdish	Armenian	Turkic	Syriac
Sunni Muslim	60.0	8.0	-	3.0	-
Ismaili and other Shiite	1.0 to 1.5	-	-	-	-
Alawite	11.0 to 15.0	-	-	-	-
Druze	3.0				
Greek Orthodox	4.0				
Armenian Orthodox (Gregorian and Catholic)	0.1				
Other Christian	2.0				
Other	1.0				

Source: Area Handbook, p. 57

Figure 1

SYRIA - POPULATION BY AGE GROUPS AND SEX.



## CHAPTER TWO

### THE HEALTH ENVIRONMENT

There are a number of elements in the Syrian environment which contribute to a generally poor health status. Regular exposure to the dry winds, dust storms, and fine sands of the desert areas result in a high incidence of trachoma and conjunctivitis. During the rainy season (November through April) surface water collects and provides breeding grounds for mosquitoes which increase the threat of malaria. The extensive irrigation systems, especially in the Euphrates river basin, are the major source of schistosomiasis. The rapid growth of urban areas in recent years has far exceeded the capacity of the urban water supply and sewage disposal systems. The result is a high incidence of water-borne diseases such as typhoid, hepatitis, diarrhea, enteritis, and occasionally, cholera. The lack of potable water supply and waste disposal systems in rural areas causes water-borne diseases to be a major health problem there as well.

Societal values and custom often determine which members of a group will be most vulnerable to a particular disease. Nutritional problems are not often found among grown men in Syria probably because they are fed first at every meal. Women and children eat what is left, even though they are more vulnerable to nutritional disorders such as anemia. Far more men than women seek treatment for health problems from the public health facilities. This may be related to the higher value placed on the man's health (since he is the main source of income for most families) or to the fact that men are more mobile than women. In addition, women are often reluctant to be examined by male personnel and may actually be prevented from seeking health care because of the presence of small children in the home.

Women have traditionally been major providers of health care in Syrian society. It is they who consult the healers and herbalists or seek the exorcism of the djinn (evil spirit) at the tomb of a saint.<sup>1</sup> The modern health care system is dominated by male physicians who have, in a sense, usurped the role of women as guardians of the family's health. The limited provision of health education to women has not yet compensated for this loss of power in what was traditionally the woman's sphere of influence. The low educational level of Syrian women makes it all the more difficult to communicate the methods and values of modern medical care. A woman's value is measured by the number of children, especially sons, that she bears, and so many of her health problems are directly related to child-bearing. The high nutritional demands made by menstruation, pregnancy and breast-feeding are not always understood and are frequently unmet. Closely spaced pregnancies, unattended births, and self-induced abortions are life-threatening problems. Although diseases such as malaria, upper respiratory infections, and gastrointestinal infections are an equal threat to all, the relatively poorer nutritional state of women and small

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<sup>1</sup> Note - A Saint is most often a local man or woman who has led a particularly exemplary life. Their tombs are visited to seek help protection or to ensure good fortune.

children makes them more vulnerable to the worst complications of these diseases.

Health problems cannot be isolated from the physical and cultural environment in which they occur. They can often be linked to some other element in that environment, and improvements in health status will not occur unless these other elements are also identified and addressed. The following sections attempt to describe other factors in the Syrian environment which have a significant impact on health status.

### Social Structure

The initial impression which Syria conveys is one of a country which has a unified and reasonably homogeneous population. This impression is dispelled, however, upon closer examination of the composition of the society. Although approximately half of Syria's people are Arabic-speaking Sunni Muslims, the distinctions felt between the Sunni Muslim bedouin, villager, and city dweller are as strong as those felt by the many other religious and ethnic groups which inhabit the country. The so-called ethnic and religious minorities, none of which reaches 15 percent of total population, occupy different physical settings as well as psychological blocs. Each minority group functions within a distinct social sphere and dominates a specific region of the country. The "minority mentality" is widespread in Syria, even among those members of the majority Sunni who live in areas dominated by one of the non-Sunni minority groups. Cultural differences between ethnic groups have arisen which are quite independent of religion or religious practices. Differences in clothing, architecture, etiquette, agricultural practices and outlook distinguish Muslims from Christians, Christians from Druzes, and so on.

There are three traditional social organizations which further divide society. The majority of Syrians (55 percent) live in rural villages and are subsistence farmers. A dwindling number (about 200,000 in 1970) are nomads. The rest, including recent migrants from rural areas, are city dwellers. Marriage restrictions, values, and occupations further separate religious and ethnic groups as practices vary from nomadic settlement to village to city. The extended family is the most important group at all levels of society and loyalty to the family supercedes loyalty to the ethnic group or to the nation.

Education in western languages has created further divisions in society, between generations within families and between social classes within ethnic and religious groups. The French development of the Syrian educational system during the colonial period ensured that Syrians were educated in French. As western technology became more important in Syria, knowledge of English increased. Western languages bring with them a whole series of ideas and values which are often in conflict with traditional Arab and Muslim values. The educated Syrian must perform a delicate balancing act in order to reconcile these differences between Arab and Western worlds.

In Syria, the concept of the nation as an entity has not been particularly strong. Even Syria's leaders have often referred to the Arab brotherhood as a community which transcends national boundaries. The fact that Syria's borders were drawn by the Western powers as recently as 1947 makes them appear more arbitrary than real. Since independence in 1946 and particularly since the 1967

Arab-Israeli War, the Syrian government has emphasized Arab nationalism, which is equated in many people's minds with the Muslim religion. This has left members of non-Muslim groups in a somewhat uncomfortable position. Between 1970 and 1973, Syria experienced a significant emigration of Christian and other non-Arab Syrians of the business, professional, and managerial classes (more than 10,000 estimated). The Syrian government has, since 1973, attempted to encourage the return of some of these emigres by creating a climate more favorable to them. The immigration of Palestinian refugees, and more recently of Lebanese, has added to the sense of a community which is in a constant state of flux. The nomads who migrate freely between Syria, Jordan, and Iraq also refuse to recognize the national boundaries of the Syrian nation.

#### Nomads

The eight purely nomadic tribes in Syria are primarily camel-raisers. They live in four areas of the country - the desert, Taḍmur area, the desert bordering the Euphrates, and near Deir ez Zor. The Badia, which consist of the whole area of the eastern and northeastern portions of the country, are the home of the nomadic tribes. Within this area, the traditional legal privileges of the nomads, which include the right to bear arms, are recognized. Once the boundary is crossed, the nomad is subject to the laws which govern the sedentary population of Syria. The Badia Authority closely monitors the activities of the nomads through its guard stations and assists, when necessary, with medical and other services.

There are special health problems which are directly related to the nomadic life style which adversely affect the nomads as well as the people with whom they come in contact. A number of infectious diseases, including cerebrospinal meningitis and measles are contracted and disseminated by the nomads in their wanderings. Mosquitoes carried by the nomads aid in the spread of malaria while the snails which are the intermediary hosts for schistosomiasis lodge in the hoofs of their cattle.<sup>2</sup>

#### Housing

Adequate housing can make a significant positive contribution to the health of its occupants. Although there is no single definition of "adequate" housing, one widely used standard is that 10 square meters of space per person are desirable. The needs in terms of total living space can vary widely and depend on other factors such as the setting (urban or rural), climate, and culturally determined uses of space. Health problems arise most often when housing is 1) overcrowded, 2) poorly ventilated, 3) constructed in a manner which provides a favorable habitat for insects and rodents, 4) shared with animals, 5) lacking in access to potable water and facilities for the disposal of solid and liquid waste.

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<sup>2</sup> Source UNESOB 1970, p. 110.

In Syria, it is generally agreed that the housing supply is inadequate in both quality and quantity. There is a wide variation in the quality of housing, from spacious, modern buildings with every convenience to the portable goat hair tents of the bedouins. Rural housing conditions are worse than urban. The mud-brick dwellings which are typical of rural areas in Syria shelter an average of four persons per room. Poor peasants have a single room without windows which shelters people, animals, and provisions. A peasant who is slightly better off will have a single room with a window and an enclosed courtyard adjacent to the house which is used for cooking. The men eat there, the children sleep there, and domestic animals feed there. A house with two or more rooms will have a reception room with chairs, a table, and a bed, and a room for provisions, firewood and straw. A third room will be added if someone marries. In the mountain areas stone construction is used; in the plains, wood and brick are used. The walls are covered with clay and then whitewashed. Access to electricity, potable water, and adequate means of sewage disposal are limited. The bedouins live in tents of camel or goat's hair which are divided into living quarters and an area for guests. Others live in reed houses or huts of reed and papyrus.

Migrants to urban areas crowd into the older quarters of the cities or construct housing of tin, wood scraps, and other discarded materials on the urban fringe. The squatter settlements rarely develop in any orderly manner. The result is that it is difficult to install water and sewerage systems or to provide any other services to these areas. In the older sections of town, houses are divided into small apartments, and the space and utilities which were intended for a much smaller population are generally overtaxed.

The inadequacies in housing were documented by the 1970 census. In 1970, average density was 6.2 persons per house. In addition, the following conditions were found:

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1. 57% of houses have no kitchen
  2. 67% have no water closet
  3. 78% have no bathroom
  4. 57% of all families have no access to potable water
  5. 65% of houses have no drainage system
  6. 61% of houses have no electricity (See Appendix for more detail)

Source: Syrian Socio-Economic Selections, February 1973.

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The cost of housing in Syria's urban areas is high. This is partly due to the limited supply of land. Between 1963-1968, land was estimated to represent

26-32 percent of the total cost of a building.<sup>3</sup> In Damascus, the land cost ranged from 40 percent to 150 percent of the cost of the building. Rapid population growth and economic development in Syria have created an increased demand for more and better housing. The private builders who construct most of the housing find it more profitable to meet the needs of the upper income groups, and public subsidies of housing for lower income groups have been extremely limited.

During the 1960's, the government mobilized several agencies which were to promote low-cost housing construction and ownership. The Housing Institute, government-assisted housing co-operatives, the Social Security Institute, and the Popular Loan Fund were to be involved. In 1967, the Housing Institute announced plans for construction of 1,000 houses annually which were to be sold to families whose incomes exceeded S.P. 2000 per year.<sup>4</sup> By 1970, a total of 2000 houses were to be constructed for people whose incomes were below this. In the fall of 1970, the Minister of Municipal and Rural Affairs proposed that 119,000 new units which would accommodate over 600,000 people be constructed during the Third Five Year Plan period.<sup>5</sup> No indication was given as to the number which would be built by the government. In addition, a new town for 50,000 population was to be built on approximately 60 square miles of land in an area west of Damascus. This has since been reduced in scale to accommodate a population of 12,000.

The Syrian government in the early 1970's estimated a housing shortage of 500,000 units, but this is apparently based on the assumption that all sub-standard housing needs to be completely replaced, rather than renovated or improved. Since there is no real consensus as to what constitutes "substandard" housing, the problem of evaluating the situation is further complicated. During the period of the First Five Year Plan (1960-1965), a need of 60,000 units was estimated, and 46,941 units were built.<sup>6</sup> During the Second Five Year Plan (1965-1970) the need was estimated to be 208,953 units and 80,340 units were built.<sup>7</sup> Public housing represented a very small proportion of these totals, 758 units from 1960-1965, and 2614 units between 1965 and 1970. The public subsidies which were allocated to housing during the 2nd Plan Period (U.S.\$12 million) were used primarily for the improvement of public utilities in residential areas.<sup>8</sup>

Information on implementation of the Third Plan is not yet available, however, of the 46 million Syrian Pounds allocated to the Public Housing Authority through 1970, only 23 million were spent. The reasons given for this

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<sup>3</sup> Syrian Socio-Economic Review, March 1973.

<sup>4</sup> U.S. \$1.00 = 3.70 S.P.

<sup>5</sup> Area Handbook, p. 30. (Third Plan = 1970-1975)

<sup>6</sup> The Housing Crisis, Its Reasons and Results, Syrian Socio-Economic Selections, March 1973, p. 7.

<sup>7</sup> Ibid.

<sup>8</sup> Area Handbook, p. 30.

were the lack of technical and administrative skills at the PHA and the refusal of many building contractors to participate in the efforts because of increasing prices and a shortage of some building materials. Although no information is currently available on any improvements which may have been made within the PHA, the cost of building materials doubled between 1970 and 1975. Land prices have also increased considerably.

The Real Estate Bank is the financial institution which has been charged with directing the financing of housing development in Syria. Its success has been limited by the high interest rates it must charge and the complexity of pledges and guarantees required. The complicated administrative and financial procedures necessary to obtain a construction permit have also slowed the pace of construction activity. See Statistical Appendix for additional data on housing conditions.

### Water Supply

Syria is one of the few countries in the Middle East which has in most areas a water supply sufficient to meet its needs. The Euphrates River, which represents 80 percent of the country's water supply, is the major water resource for eastern Syria. Its two most important tributaries in northeastern Syria are the Balikh and Khabour Rivers. The Orontes River in western Syria provides water for the cities of Homs and Hama and the surrounding agricultural areas. The Barada river and the Fiegh spring have provided water for Damascus for several thousand years. Wadis (seasonal streams), other smaller rivers, and underground streams create oases and provide other areas in the arid plateau with water which is used for irrigation and human and animal consumption. The Mediterranean coast is supplied by streams which flow from the coastal mountains to the sea. In southeastern Syria, year-round water shortages occur. Wadis, wells and boreholes provide water in this area. The wells, water lifts, and hillside water channels there are evidence of man's ingenious use of these scarce water supplies over many centuries.<sup>9</sup>

Despite these resources, potable water is not universally available in Syria. Problems of development and distribution occur throughout the country, and human, animal and industrial pollution of water supplies add to the health problems of the population. It has been estimated that between 50 and 70 percent of Syria's population have access to potable water.<sup>10</sup> Access varies widely, from over 98 percent of the population in urban areas such as Damascus to under 50 percent in rural areas. These figures are misleading, however, because water which is clean at its source is not necessarily clean when it arrives at its destination. In urban areas, old distribution systems permit leakage and contamination from sewerage systems and the highly corrosive organic soils. In rural areas, human and animal contamination of ground water sources

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<sup>9</sup> Area Handbook, p. 13.

<sup>10</sup> A 1970 W.H.O. survey estimated 71 percent of the total population had access to potable water. The Syrian Third Development Plan (1971-75) stated that 58 percent of the population had access to potable water when the Plan was in preparation.

create problems. The health status of Syria's people is, therefore, seriously compromised by the lack of potable water. The high incidence of water-borne diseases including cholera, diarrhea and enteritis, hepatitis, and typhoid fever can be directly attributed to the wide use of contaminated water supplies.

#### Waste Disposal

The development of adequate systems for the disposal of solid and liquid wastes is paramount to the maintenance of a good health environment. Although Syria's larger cities have fairly comprehensive sewerage systems, they have not been expanded to the extent necessary to meet the needs of the growing population.<sup>11</sup> None of Syria's cities has a sewage treatment plant and so untreated sewage is emptied into rivers and streams, which causes serious problems for those who must use these water sources further downstream. In Damascus and Aleppo, regular garbage collection is provided. Garbage is buried or used as land fill. In rural areas, sewage and garbage are deposited in shallow pits or left exposed to the air to rot. Garbage disposed of in this way attracts flies, other insects and rodents and so creates another health problem. Untreated night soil is used throughout Syria, which contaminates food supplies and promotes the dissemination of fecal-borne diseases among agricultural workers.

#### Environmental Sanitation Programs

The Syrian government considers the provision of water to be an important social service which must be subsidized. The Third Five Year Development Plan (1970-1975) stated that the goal of the government would be to increase the percent of population with access to potable water from 58 percent to 68 percent.<sup>12</sup> The Plan further stated that attempts would be made to supply potable water to all villages with a population of 500 or more provided that the development costs did not exceed S.P. 150 per capita and S.P. 60 per cubic meter of water. In addition, water sources are to be sought for villages of 400 or more inhabitants if no sources had been previously identified. The proportion of villages and municipalities served would be increased from 45 percent to 55 percent.<sup>13</sup>

Although the Plan period terminated at the end of 1975, information is not yet available concerning the implementation rate achieved. It was estimated that during the previous Plan period (1965-1970), 60 percent of the funds allocated for water supply projects were spent. The implementation rate overall

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<sup>11</sup> Damascus, Aleppo, Homs, Hama, Lattakia, Deir ez Zor, and Dar'a have sewerage systems in the modern sections of the cities. The population served is a small percent of total urban population, however.

<sup>12</sup> Syrian Arab Republic, Troisieme Plan Quinquennal de Developement Economique et Social (1971-1975).

<sup>13</sup> Ibid.

was not good during the first three years of the Third Plan period. This was attributed to poor project preparation and follow-up procedures and a shortage of foreign exchange. Although improved procedures probably caused an increase in project expenditures during 1974 and 1975, the Plan was expected to be no more than 60 percent implemented by the end of 1975.

The Fourth Development Plan (1976-80) has not yet been released in final form. Overall strategy is expected to follow the same directions as the previous plan. The Ministry of Housing and Utilities has given some indication in draft proposals of its intended policies for the new Plan period. The following objectives have been proposed: (1) Independent water authorities are to be established in the mohafazat capitals. It is hoped that eight new public authorities will be installed by 1980; (2) A standard public water system will be supplied to each of the approximately 2400 villages which does not yet have one. The population affected by this will be one million people; (3) Villages which have water supply systems in need of expansion will receive help in enlarging them. The population affected is estimated to be 300,000; (4) Improvement of water quality through disinfection or other treatment in areas where the quality is suspect.

In addition to these investments in water supply systems, the Plan proposes to initiate construction of the sewerage systems in Damascus, Homs and Hama upon completion of IDA-financed feasibility studies. Similar projects for Aleppo, Lattakia, Tartous, Al Sweida, and Dar'a are also proposed. The Syrian government has suggested that the total investment for these sewerage systems will be S.P. 200 million. Outside experts estimate the real cost to be closer to S.P. 700 million, even without any allowance for price increases during the Plan period.

The Ministry of Housing and Utilities and the Ministry of Local Affairs share the responsibility for water supply and sewerage in urban and rural areas. The MOHU provides general guidance on technical problems and project designs to the municipalities and other organizations in the sector. The MOLA supervises the administrative and financial activities relating to water and sewage projects. The central government, through the MOHU, oversees such matters as water rates, personnel, budgets, accounts, and major contracts. There are five independent public water authorities in Syria's five largest cities (Damascus, Aleppo, Homs, Hama, Lattakia) which are also supervised by the MOHU. Each of these water authorities is managed by its own Board of Directors which includes the general manager of the water authority, heads of various departments, and a representative of the workers. The other urban centers have distribution systems which are managed by a department within the municipal government administration. Because most of the municipalities suffer from a chronic shortage of qualified technicians, they depend upon the provincial capital offices of the MOHU for technical support. The provincial offices design local projects and assist the municipalities with the implementation and supervision of these projects.

In order to improve actual project implementation, the MOHU plans to hire more technical staff, coordinate with the Ministry of Industry in the production of materials (such as asbestos, cement, and plastic pipes, chlorine, pumps, etc.), coordinate the use of past and present sector studies throughout the country, and develop more efficient means of utilizing both public and private sector resources. The MOHU estimates the cost of all of its projects at S.P. 950 million. This estimate does not include any provision for inflation (38

percent in 1974) nor does it include the work required in the five urban centers. The planned improvements to the Damascus water supply (see next section) are estimated to cost S.P. 700 million at 1975 prices. The estimated cost of water supply improvements for Aleppo, Homs, Hama, and Lattakia is S.P. 2,300 million based on the same per capita cost as the Damascus improvements.

The Ministry of Public Works and Water Resources is responsible for irrigation, hydroelectric plants and general water resources other than the Euphrates (there is a separate Ministry of the Euphrates). A Pollution Control Department was recently organized within this Ministry to deal with the problems which have been caused by the past lack of pollution control measures. Draft legislation has been prepared which would regulate the discharge of industrial wastes. Other measures which are now under consideration would control general sewage discharges. Progress is limited by a shortage of resources and the diffusion of engineering skills among various authorities. The preliminary research has been done on a study of the pollution of the Barada River as it flows through Damascus, and of the Orontes River, which flows through Homs and Hama and provides the water supply for Hama. There is a study underway which will eventually result in the construction of a waste water treatment plant in Aleppo.

An attempt was made by W.H.O. in 1970 to do a worldwide survey of community and water supplies. The Syrian Arab Republic was included in the survey. The figures quoted below are from the W.H.O. survey but are in conflict with others of the period and must therefore be used with caution.

Table 11  
Community Water Supply

	1962	Population	1970	Populatio
Number house connections	840,000	60%	2,445,000	89%
Public Standposts	420,000	30%	244,000	9%
Total Urban Connections	1,260,000	90%	2,699,000	98%
Rural Population with reasonable access to potable water	-----	---	1,746,000	50%
Total Population access to potable water	-----	---	4,445,000	71%

Source: W.H.O. Statistics Report, Volume 26 #11, 1973.

Nevertheless, this information and other data from the same WHO survey may be useful for the comparison of the situation in Syria with that in neighboring countries. Syria's development of its water resources for human consumption is more complete than in neighboring Iraq, but less advanced than Lebanon or Egypt. An IBRD-financed survey of water supply and sewerage systems in Syria is scheduled to begin before the end of 1976. Particular attention will be given to access by the urban and rural poor to water supply and sewerage systems.

Table 12

Total Population With Access to Potable Water

	<u>1970</u>
Syria	71%
Lebanon	92%
Jordan	77%
Iraq	49%
Egypt	93%

Source: W.H.O. Statistics Report, Volume 26 #11, 1973.

Damascus Water Supply Project

Distribution of water in Damascus is under the direction of the Etablissement Public des Eaux de Figeih. EPEF, or "Figeih," as it is known, was organized in 1932 by a group of Damascus citizens. It began as a communal syndicate but became a state enterprise in 1958. Figeih is managed by a board of seven directors headed by the mayor of Damascus. It includes the technical director of the Municipality, representatives from the Ministries of Finance, Public Works, and Local Affairs, the General Manager of Figeih, and a worker's representative. EPEF policy has always been to provide direct connections to as many consumers as possible through the use of a separate meter connection for each housing unit, including apartment buildings. The system now supplies an estimated 145,000 individual water connections and 305 public taps.<sup>14</sup> The percentage of the Damascus City's population served has been falling in recent years (from 85 percent in 1965 to 75 percent in 1975 and to 73 percent by 1977 est.). This is due to the fact that the city's development has proceeded at a faster pace than EPEF's expansion of services. In addition, the efficiency of the system has fallen.

<sup>14</sup> Damascus Water Distribution Project, AID loan, 1975.

With the financial aid of the International Development Administration, a study of the water supply problems of Damascus was initiated in 1965. A master plan for an improved distribution network was completed by 1973. It was coordinated with an urban plan for Damascus for the period 1964-1984. The master plan includes 1) intensive studies of the Figeh spring to determine its maximum yield and the storage characteristics of the aquifer, and construction of a 15 kilometer tunnel conduit to the city; 2) replacement of old distribution mains in the city; and 3) installation of 370 kilometers of new supply and distribution mains in the newer parts of the city.<sup>15</sup> Production costs have always been low for Figeh, due to the purity of the water (it needs no treatment) and the use of gravity transmission. The current revenues are not expected to cover operating expenses once all components of the new system are in operation. The water tariff system which has long been in use in Damascus provides for the purchase of a right to a fixed amount of water in perpetuity. Every prospective consumer whose property is in excess of 100 square meters must purchase a water right. The water allowance varies depending on the size of the premises, but averages about 80 litres per person per day. Any consumption in excess of this allowed amount is charged at the regular metered rate. In addition, annual fees are charged according to the amount by which the value of the water supplied exceeds the annual value of the water right. The rate for metered consumption for everyone is the same - S.P. .80 per cubic meters (U.S. \$.20 per 1000 gallons). This is quite low (in Jordan, charges are U.S. \$.90 per 1000 gallons). A gradual increase in tariffs will be put into effect which will raise consumer costs to a maximum of S.P. 1.25 per cubic meter by 1984. The EPEF management hopes to serve 90 percent of the population by direct connection by 1985, and the remaining 10 percent with safe public taps. With the current expansion projects now in progress, it is assumed that this goal can be met. An IDA credit of U.S. \$13 million, an IBRD loan of U.S. \$35 million, and an AID loan of U.S. \$48 million may be supplemented by an Arab Fund loan of U.S. \$40 million. The EPEF contribution to the project will be U.S. \$16 million. Because of the unstable situation in the Middle East, costs for the project are higher than they would be otherwise.

It is assumed that improvements in the water supply system will have a positive impact on the health status of the population. Quarterly health reports will be developed during the execution of the project. Health indicators which will be monitored include cases of cholera, typhoid and malaria, as well as intestinal parasites, eye diseases and skin diseases. Although it is possible that interruptions in service caused by construction may temporarily aggravate sanitary conditions, improvements should be significant when the new system is completed.

#### Food Sanitation

The process of transferring a safe and sanitary food supply from its origins to the prospective consumer is a difficult task in many developing countries. The possibilities for food loss and spoilage are great due to the lack of adequate refrigeration and storage facilities. Open air markets attract flies and rodents which facilitate the spread of many diseases. The food

<sup>15</sup> Ibid.

distribution system in Syria is at what might be considered an intermediate stage of development, a mixture of old and new. While modern refrigeration facilities exist in urban areas, the lack of these in rural areas precludes the transfer of perishables such as milk and meat to any place distant from their area of production. The shortage of veterinarians and veterinary assistants (see Health Manpower Section) poses a serious health problem in many areas, for diseased animals may be slaughtered and consumed by the unsuspecting people who patronize a local marketplace. Although modern plants process dairy products in some areas of Syria, in others milk is unpasteurized and unrefrigerated, and may be skimmed or adulterated with unclean water before it is sold.<sup>16</sup> Cheese and butter are often processed in the home, and there the safety of the product depends upon the knowledge and skills of the homemaker. The larger cities -- Damascus, Homs, Hama, Aleppo, and Lattakia -- have regulations which require the inspection of food handlers and premises including restaurants, markets, and food shops. Food handlers must have a medical examination every six months.

There is little information available concerning the present situation in Syria regarding food sanitation. The Animal Health Department of the Ministry of Agriculture and Agrarian Reform and the General Supply Institute are two of the government organizations which are concerned with the supply and processing of animal products. The General Organization for Trade and Processing of Cereals operates mills and the General Organization for Feed has warehouses for grains. The Ministry of Health employs sanitation workers whose job includes the inspection of public facilities such as markets. Slaughterhouses are supposed to be inspected by veterinarians but the limited supply of manpower caused these facilities to be described as "seriously inadequate" by Jacques May in 1961.<sup>17</sup> Slaughterhouses were also found to be wasteful since they included no provisions for processing the valuable by-products of slaughter. Mobile milk processing units which process between one and six tons of milk follow the nomads and their herds in an effort to ensure that safe and sanitary processing is carried out.<sup>18</sup>

16 May, Jacques, The Ecology of Malnutrition in the Near and Far East, p. 479.

17 Ibid., p. 484.

18 Ibid., p. 483.

## CHAPTER THREE

### HEALTH STATUS

The major indicators used to measure the health status of a nation include morbidity and mortality statistics. Ideally the information collected is both complete and accurate. Deaths should be registered and the cause of death determined and recorded by a person who is qualified to do so. Cases of any disease which are reported should be confirmed by a physical examination of the patient or a laboratory test or both. Because of the shortage of trained personnel and the lack of an adequate recording system which reaches throughout the countryside, the data on morbidity and mortality which are collected in Syria must be considered both incomplete and inaccurate. The fact that the data is incomplete and inaccurate does not mean that nothing is revealed in it about the health status of Syria's population. It is unlikely that any major diseases remain undiscovered. It is quite possible, however, that the incidence and prevalence of some diseases is understated, and that the leading causes of morbidity and mortality which are reported do not in fact represent the most important health problems.

#### Mortality

The death rate in Syria is estimated to be 15/1000, however, the number of deaths which are registered are less than 50 percent of the number which are assumed to occur each year. For example, in 1974, an estimated 106,000 deaths occurred, but only 41,233 were registered.<sup>1</sup> (See Table 13). The number of deaths for which causes were recorded by health officials was only 24,258. Of these, 14,181 deaths were attributed to "symptoms and other ill-defined causes." A specific cause of death was, therefore, diagnosed and recorded for approximately 10 percent of all deaths. Diseases of the heart and circulatory system accounted for 40 percent of deaths for which a cause was reported. Diseases of the respiratory system, senility, and diseases of the digestive system each accounted for between 10 and 15 percent of deaths. The recorded causes of death may not be at all representative of the leading causes of death in Syria, for the sample, limited as it is, is probably biased toward the more affluent urban dwellers who are more likely to have access to medical attention at the time of death and to the tangible pathological disorders which can be readily diagnosed.

Infant mortality in Syria is also considered to be high, at 105.8/1000 for females in 1975 and 119.3/1000 for male infants (see Table 14). In the countryside, the newborn infant belongs to Allah until it is seven days old, therefore neonatal mortality may not be accurately reflected in these statistics. The leading causes of death reported for infants and children up to the age of five included diseases of the digestive system, pneumonia and other

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<sup>1</sup> Based on a population estimate of 7.1 million for 1974 and a death rate of 15/1000.

Table 13  
Registered Deaths of Holders of Syrian Arab Nationality By Sex  
& Mohafazat, 1973 & 1974

Mohafazat		Deaths registered out of the legal period			Deaths registered within the legal period		
		Total	Females	Males	Total	Females	Males
Damascus City	1973	304	157	147	5698	2582	3116
	1974	277	134	143	5800	2601	3199
Damascus	1973	927	530	397	3480	1636	1844
	1974	468	240	228	3230	1489	1741
Aleppo	1973	2782	1246	1536	6327	2447	3880
	1974	2156	964	1192	5953	2373	3580
Homs	1973	2768	1495	1273	2911	1268	1643
	1974	721	405	316	2931	1258	1673
Hama	1973	2498	1539	959	2663	1162	1501
	1974	512	248	264	2378	1033	1345
Lattakia	1973	5076	3133	1943	2494	1124	1370
	1974	614	369	245	2154	971	1183
Deir-ez-Zor	1973	806	253	553	936	366	570
	1974	580	192	388	882	336	546
Idleb	1973	2158	1341	817	2283	941	1342
	1974	2026	1209	817	2318	998	1320
Al-Hasakeh	1973	576	148	428	1172	301	871
	(1) 1974	384	88	296	1026	281	745
Al-Rakka	1973	354	105	249	963	346	617
	1974	284	101	183	946	353	593
Al-Sweida	1973	874	606	268	1049	513	536
	1974	198	106	92	899	392	507
Dara'a	1973	1253	813	440	1066	439	627
	1974	221	110	111	1004	439	565
Tartous	1973	2031	1216	815	1223	521	702
	1974	1154	699	455	1227	494	733
Quneitra	1973	100	50	50	771	347	424
	(1) 1974	82	30	52	808	368	440
	1973	22507	12632	9875	33036	13993	19043
	1974	9677	4895	4782	31556	13386	18170

\* Includes, also, the deaths that took place & registered in the same year, even after the legal period.

(1) Some estimated figures

Source: Syrian Statistical Abstract, 1975.

Table 14

## Mortality Measures (Per Thousand), 1960-1980

Measure	1980		1975		1970		1965		1960	
	F	M	F	M	F	M	F	M	F	M
Crude death rate	13.71	14.36	14.43	15.12	15.19	15.92	17.08		---	---
Infant mortality rate	96.48	108.73	105.80	119.29	115.83	130.46	126.32	142.14	137.29	154.38
Age - specific death rate:										
0 - 4	11.46	12.27	14.42	16.36	17.56	18.11	21.01	21.43	24.79	25.07
5 - 9	1.76	2.03	2.29	2.51	2.86	3.03	3.48	3.58	4.15	4.17
10 - 14	1.16	1.34	1.45	1.57	1.76	1.81	2.10	2.07	2.46	2.34
15 - 19	1.74	2.00	2.14	2.35	2.57	2.72	3.03	3.11	3.52	3.53
20 - 24	2.31	3.03	2.80	3.56	3.34	4.12	3.91	4.72	4.52	5.36
25 - 29	2.66	3.06	3.19	3.58	3.77	4.14	4.38	4.73	5.03	5.36
30 - 34	2.89	3.66	3.44	4.17	4.04	4.72	4.67	5.30	5.33	5.91
35 - 39	3.33	4.23	3.90	4.79	4.53	5.39	5.18	6.01	5.88	6.67
40 - 44	4.07	5.68	4.65	6.33	5.26	7.01	5.90	7.73	6.58	8.47
45 - 49	5.04	7.66	5.64	8.38	6.27	9.15	6.92	9.93	7.60	10.75
50 - 54	7.22	11.14	7.95	12.00	8.75	12.90	9.57	13.82	10.42	14.78
55 - 59	10.34	16.24	11.35	17.32	12.42	18.45	13.53	19.61	14.68	20.80
60 - 64	17.03	24.69	18.64	26.26	20.38	27.90	22.18	29.57	24.06	31.30
65 - 69	28.65	38.00	31.06	40.22	33.63	42.53	36.29	44.90	39.06	47.34
70 - 74	51.37	63.17	54.99	66.36	58.79	69.67	62.73	73.07	66.82	76.58
75 - 79	90.50	106.31	95.41	110.91	100.56	115.27	105.89	119.74	111.40	125.82
80 +	184.20	202.25	190.25	207.69	197.47	213.02	203.55	218.21	210.00	223.22
Expectation of life at										
birth	61.25	57.45	58.73	54.49	56.25	52.98	53.75	50.74	51.25	48.49

Source: Syrian Arab Republic Statistical Abstract, 1975.

respiratory infections, meningitis and other diseases of the nervous system, and heart disease. Avitaminosis, poliomyelitis, and measles were also frequently reported to be the cause of death. Although nutritional deficiencies are not often recorded as the principal cause of death, they must be considered an important contributing factor. Well-nourished children do not succumb as frequently to either respiratory infections or diseases of the digestive system. The deaths of children under five which are reported must also be considered to be biased in favor of children in urban areas with reasonable access to the health facilities.

Life expectancy in Syria appears to be rising (See Table 14), although these statistics are also subject to the limitations previously mentioned. Available information indicates that Syria's health status is similar to that of neighboring countries. (See Table 15).

Table 15

Comparative Health Indicators for 1975

	Births/1000	Deaths/1000	Life Expectancy
Syria	45		54 years
Jordan	48		53
Lebanon	40		63
Iraq	48		53

Source: Population Reference

Morbidity

The Morbidity statistics which are currently available are also best used as indicators of the existence of problems, but not necessarily as measures of their extent. The 1965 - 1974 Reported Infectious Diseases by kind (Table 16) and the Number of Cases Treated in Hospitals (Table 17) are important because they are the only information available concerning the kind of health problems that are being brought to the public health system facilities. Accidents, complications of pregnancy, and diseases of the digestive system accounted for over 50 percent of health problems treated in hospitals in 1972. This was the only recent year for which such statistics were published.

Parasitic and Communicable Diseases

Schistosomiasis (Bilharziasis)

Schistosomiasis is endemic in the Tigris - Euphrates basin of Syria. The schistosoma haematobium is the infectious agent with the intermediate host *bulinus truncatus*. Clinical evidence of the disease in humans has been found from Al Rakka to the Iraq border. There have also been reports of schistosomiasis from the two major tributaries of the Euphrates - the Balikh and Khabour Rivers. In Al Rakka, infection rates are between 13 and 25 percent and

Table 16  
Reported Infectious Diseases By Kind, 1965 - 1974

Diseases	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965
Small-Pox	--	--	54	--	--	--	--	--	--	--
Cholera	--	--	514	--	--	--	--	--	--	--
Chicken-pox	867	773	940	779	1401	1097	951	711	226	247
Diphtheria	190	181	125	61	161	274	261	81	54	129
Measles	1931	1783	2236	1585	3055	2348	1359	1751	406	421
Whooping Cough	1077	574	938	1133	879	1867	1098	1284	538	238
Mumps	2004	1509	3149	2767	2602	3402	1854	1517	654	715
Typhoid fever	1078	555	447	456	554	1037	295	336	30	51
Paratyphoid fever	45	45	8	30	40	48	6	5	2	3
Acute poliomyelitis	36	25	43	27	61	98	92	86	41	47
Tuberculosis - Pulmonary	1566	1333	262	58	495	548	671	818	1	2
Tetanus	89	60	38	29	25	19	21	21	18	7
Meningitis	240	227	90	68	64	61	63	42	8	10
Infectious hepatitis	474	155	193	49	114	39	16	5	--	--
Trachoma	461	316	18	16	42	288	219	31	--	--
Rubella	5	4	3	4	12	15	28	10	--	--
Scarlet fever	18	3	3	2	7	6	4	7	--	2
Puerperal fever	--	--	--	--	--	--	3	6	--	--
Anthrax	3	--	--	--	--	1	6	4	--	--
Molluscum contagiosum	34	27	37	5	13	10	16	--	--	--
Dysentery	596	631	585	710	1446	986	258	388	18	5
Malaria	362	302	285	622	3031	2200	1965	1749	798	998
Leprosy	2	--	--	14	3	1	2	--	1	--
Syphilis	--	6	3	--	12	16	3	6	--	--
Scabies	2483	1770	2212	1325	1694	1866	82	161	--	--
Influenza	195	34	42	34	61	23	4	20	--	--
Bilharziasis	1	1	5	--	--	10	1	1	2	--
Ankylostomiasis	--	1	13	--	22	13	19	2	--	--
Leishmaniasis	198	14	39	13	14	30	7	2	1	--
Encephalitis fever	34	--	--	--	--	2	1	1	--	--
Tuberculosis-spinal cord	10	1	--	--	2	7	1	5	--	--
Herpes Zoster	6	2	2	--	2	--	1	--	--	--
Gonorrhoea	47	108	111	14	--	--	3	10	--	--
Scab	857	749	1070	520	415	540	5	--	--	--
Aphthae	2	--	--	--	--	2	1	--	--	--
Erysipelas	3	--	--	1	--	2	--	1	--	2
Vincent's infection	--	1	--	--	--	--	--	1	--	--
Rabies	2	1	3	--	20	15	--	--	--	--
Tuberculose picurole	--	--	--	--	--	1	--	--	--	--
Impetigo	39	71	104	--	8	--	--	--	--	--
Herpes simplex	--	3	--	--	1	--	--	--	--	--
Tuberculosis of skin	--	--	7	--	--	--	--	--	--	--
Total	14955	11265	13579	10322	16256	16850	9316	9062	2798	2877

Source: Statistical Abstract 1974 Syrian Arab Republic.

Table 17

Number of Cases Treated in Hospitals Classified  
According to 17 Disease Groups

972

Group Number	Disease Groups	Number of Cases	Percentage of Cases	Percentage Cases 1969-1971
1	Infective and Parasitic Diseases	9104	5.3	5.8
2	Neoplasms	4940	2.9	3.2
3	Endocrine, Nutritional and Metabolic Diseases	2272	1.3	0.9
4	Diseases of Blood and Blood-Forming Organs	2370	1.4	1.2
5	Mental Disorders	1488	0.9	0.9
6	Diseases of the Nervous System and Sense Organs	7624	4.4	4.5
7	Diseases of the Circulatory System	1421	6.6	6.2
8	Diseases of the Respiratory System	5278	9.4	9.8
9	Diseases of the Digestive System	2899	13.3	3.4
10	Diseases of the Genito-Urinary System	3656	9.1	8.6
11	Complications of Pregnancy, Childbirth and the Puerperium	3145	16.9	16.3
12	Diseases of the Skin and Subcutaneous Tissue	2616	1.5	1.7
13	Diseases of the Musculoskeletal System and Connective Tissue	1537	2.1	2.2
14	Congenital Anomalies	963	0.6	0.6
15	Certain Causes of Perinatal Morbidity & Mortality	43	0.02	1.0
16	Symptoms and Ill-Defined Conditions	1043	6.4	6.5
17	Accidents, Poisoning and Violence	11034	18.0	17.7
18	Unknown	143	0.08	--
	<b>Total</b>	<b>2576</b>	<b>--</b>	<b>--</b>

Source: Annual Statistical Report, 1972, SAR-MOH

they are suspected to be even higher in Deir ez Zor, although no statistics are available. The health control unit in Al Rakka, which consists of an inspector, technical staff, and laborers for spray operations have kept the incidence lower in the past, but the development of the new irrigation system in the Euphrates River Basin has contributed to the spread of the disease. Nomads also contribute to the spread of the disease, for the infected snails lodge between the hooves of their stock and are then carried to other parts of the country. Schistosomiasis is related to high rates of anemia due to blood loss in the intestinal walls, colon, and rectum. Studies in Egypt have shown schistosomiasis to be among the major parasitic infections which are a widespread cause of anemia.<sup>2</sup>

The adverse effects of economic development on health status are clearly illustrated by the increase in schistosomiasis in this area. The breeding ground for the snail hosts has been greatly expanded by the construction of the dam at Tabaqah and the associated irrigation projects. Migration to the area has increased considerably the population at risk. There are indications that schistosomiasis haematobium decreases female fertility. The physicians in the Al Raqqa area are studying this problem. The effects of schistosomiasis on labor productivity in Syria have not been measured but the long-term disabling effects of the disease have been documented elsewhere. The Syrian government is aware of the health implications of its irrigation projects and has been working with WHO on the development of a program to control the disease. In addition, the Ministry of Dam has authorized the allocation of S.P. 2-3,000,000 to the Ministry of Health for the control of schistosomiasis. Other funds and technical assistance will be forthcoming from the international donors who have helped to finance the development of the irrigation systems.

#### Smallpox

Smallpox was reported in Syria as recently as 1972, but no cases have been reported since then. It has been declared eradicated.

#### Cholera

A severe cholera outbreak occurred in 1977. The Syrian government reported 2841 positive cases, 2587 carriers and 87 deaths as of October 26, 1977. This and other outbreaks of cholera, (514 cases in 1972 and 67 cases in 1975) indicate the need for constant public health surveillance and improvements in environmental sanitation controls.

#### Malaria

Malaria was found throughout Syria when WHO and UNICEF began their eradication operations in 1956. In 1964, the population at risk was estimated to be 1.7 million. More complete studies in 1970 revealed 4.4 million to be at

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<sup>2</sup> Patwarden & Darby, The State of Nutrition in the Arab Middle East.

risk.<sup>3</sup> Due to this gross underestimation and to the appearance in 1967 of the DDT - resistant vector Anopheles Sacharovi, the number of cases of malaria rose again between 1965 and 1970. This resulted from the failure of DDT to interrupt transmission before its replacement by dieldrin. WHO planned to have eradication completed in Syria by the end of 1975, but in recent years, there has been a resurgence of malaria in Syria as well as in neighboring countries. In 1977, 2059 cases were reported in Syria alone. WHO is continuing its assistance to the program, and the IBRD is planning to incorporate a malaria control program into its loans for the development of the Euphrates River basin.

### Tuberculosis

Tuberculosis continues to be a serious health problem in Syria. Incidence is higher among the low income groups in Damascus and Aleppo and especially among children who consume unsterilized milk. The crowded housing conditions in low income areas also contribute to the spread of the disease.

The government program for combatting tuberculosis includes examinations (X-rays) for children and adults who exhibit symptoms of the disease, treatment of those who contract the disease, dissemination of information on the prevention and treatment of the disease, and training for health personnel who staff the anti-tuberculosis centers. BCG vaccinations are compulsory for infants and are administered to school children as well. The population covered remains small, however, as can be seen from the following:

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Age	1971 G Vaccinations	Est. 1971 Population
1 - 4	8,053	987,828
5 - 14	136,280	1,974,078
15 + over	1,687	3,531,939

Source: W.H.O. 1971 Report on Infectious Diseases

### Childhood Diseases

Childhood diseases (particularly measles, mumps, and whooping cough) are reported in relatively large numbers. They accounted for over 30 percent of reported infectious diseases in 1974. The seasonal occurrence of these diseases as reported in 1972,<sup>4</sup> with most cases reported in the late winter and early spring, suggest a relationship between the inclement weather and scarce food supplies of this season and lowered resistance to disease. The complications

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<sup>3</sup> "Malaria Eradication in the Near East," J.D. Zulueta and D.A. Muir, Transactions of the Royal Society of Tropical Medicine and Hygiene, Vol. 66, #5, 1972.

<sup>4</sup> Annual Statistical Report, 1972,

from these infections and generally poor nutritional status combine to add to the infant and child mortality during this period.

#### Trachoma

Trachoma is considered to be underreported in Syria. Despite statistics which indicate very few cases of the disease, it remains a major health problem. WHO has provided assistance in the development of a control program which has been ongoing since 1966. The program provides a public health doctor and nurse and fellowships for study abroad.

#### Gastrointestinal Infections

Typhoid fever, dysentery (both amoebic and bacillary), enteritis, infectious hepatitis, and other waterborne diseases contribute significantly to the morbidity statistics for Syria. Unfortunately, there is no information available related to outpatient treatment of these diseases and statistics which are published are inconsistent. The frequency with which diseases of the digestive system are cited as the cause of death tends to support the statement that these diseases are also a significant cause of mortality in Syria.

#### Zoonoses

The most important infectious diseases of sheep are sheep pox and anthrax. The incidence of enterotoxemia and pasteurellosis has increased in recent years. There is also a high incidence of parasite infections such as ticks (external) and roundworms, lungworms, tapeworms and liverfluke. In cattle, foot and mouth disease, rinderpest and blackleg are important and external parasites are also very common. Newcastle disease is a major source of problems for poultry. (See Table 18).

#### Chronic Diseases

Heart disease is one of the most commonly reported causes of death in Syria. Since reporting is heavily biased toward urban areas, it is unknown whether this is a countryside phenomenon or one which afflicts a limited number of urban Syrians. The types of heart disease most often reported are those associated with arteriosclerosis or other chronic degenerative heart conditions. There is no evidence of any large number of streptococcus-related heart problems. Diet and lack of exercise are considered to be leading causes of heart problems in Syria. One Syrian doctor noted that in one area where he worked, 50 percent of the adult population over the age of 30 suffered from senile diabetes. Women were more likely than men to develop this problem.

#### Occupational Diseases

The Ministry of Labor and Social Affairs records information on occupational diseases and industrial accidents. (Tables 19 and 20). No information is available concerning safety codes or provisions for their enforcement. The limited information which is available concerning occupational diseases suggests that reports are made only in those provinces which have a

Table 18  
Animals Attacked by Infectious and Parasitic Diseases 1968-1974  
By Mohafazat 1973-1974

Years and Mohafazat	Name of disease	Infectious diseases						Parasitic diseases (1000)					
		New castle disease	Rabies	Scabies (1000)	Pox of sheep & goats	Blackleg	Anthrax	Foot & mouth disease	Liver flukes	Cases intestinal strongylosis	Pulmonary strongylosis	Blood parasites	Ectoparasitic parasites
1968		461	39	737	448	1	61	182	146	305	493	273	1245
1969		675	1	694	2469	23	127	201	202	221	616	309	858
1970		1254	1	936	1264	5	248	329	241	302	451	519	1092
1971		1910	9	636	1040	1	201	1	259	365	639	412	1490
1972		33679	12	704	485	--	417	39	187	264	235	178	1961
1973		6597	6	865	958	1	212	206	565	586	109	410	2394
1974		1270	5	538	1603	6	154	8	352	613	143	183	2555
<b>1974</b>													
	Amascus	--	--	9	475	--	--	1	80	52	54	13	258
	Leppo	757	5	111	879	1	142	1	21	84	7	18	227
	Qams	--	--	111	--	--	--	--	79	81	14	13	344
	Qama	--	--	--	--	--	--	--	51	164	16	28	540
	Attakia	--	--	17	5	--	--	2	5	2	4	1	26
	Al-Fr-ez-Zor	--	--	52	--	--	--	--	32	79	4	2	311
	Al-Jeb	--	--	203	--	5	--	--	14	51	8	51	51
	Al-Hasakeh	13	--	41	56	--	--	--	6	74	16	9	338
	Al-Rakka	500	--	72	185	--	--	--	3	17	1	1	129
	Al-Sweida	--	--	13	--	--	--	--	31	5	7	8	123
	Dar'a	--	--	1	3	--	12	1	20	1	2	39	195
	Tartous	--	--	8	--	--	--	3	5	2	10	0	12
	Quneitra	--	--	--	--	--	--	--	5	1	0	--	1

\* Figures relating of foot and mouth disease indicate the number of areas affected. The other figures indicate the number of animals infected.

Source: Syrian Arab Republic Statistical Abstract, 1975.

Table 19  
Occupational Diseases by Type 1970 &

	Total		Aleppo		Lattakia		Hama		Damascus	
	1970	1974	1970	1974	1970	1974	1970	1974	1970	1974
Eczema	11	4	2	1	7	2			2	1
Poisoning	1	29							1	3
Eye Ailment	3						1		2	
Tuberculosis	2	1	2					1		
Deafness		16								11
Other		1				1				
<b>Total</b>	<b>17</b>	<b>51</b>	<b>4</b>	<b>1</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>15</b>

Source: Ministry of Labor & Social Affairs

Table 20  
Industrial Accidents by Type of Injury, 1974

Fractures	771
Dislocations	28
Ligament Neurography	614
Internal injuries inc. concussions	200
Amputations and Visceral Organs, hernia	183
Other Wounds	4772
Superficial injuries	1363
Contusions and tripsies	5493
Burns	446
Acute Poisoning	13
Injuries due to weather conditions	91
Asphyxia	1
Elect. injuries	44
Radiation injuries	46
Misc.	267
Other injuries	885
	<b>15217</b>

Source: Ministry of Labor and Social Affairs

ministry office. In contrast, the large number of "industrial" accidents reported suggests that some double-counting may be taking place, or, that "industrial" refers to all work-related accidents. (The word "industry" is used to define various classifications of economic activity).

#### Drug Addiction

No information is available about the extent of drug addiction in Syria. Syria serves as a transshipment route for opium which is grown in Turkey, and for hashish, both of which are carried across Syria to the town of Ramtha, in Jordan, for exportation to Europe. There is apparently some addiction (either psychological or physical) to both drugs in Syria, more in rural areas than urban zones. The use of alcohol is prohibited by the Muslim religion and this is still widely observed.

#### Mental Health

There is no information available relating to the kind of mental health problems which are most common in Syria or the type of treatment which is available. There are two mental health in-patient facilities in the country (in Damascus and Aleppo). There is no information available concerning outpatient treatment of mental health problems.

#### Other Health Problems

No information is currently available concerning general health, venereal diseases, or hydatidosis (which is reportedly a serious problem). Skin diseases such as scab, scabies and leishmaniasis are reported frequently. The presence of these confirms the impression that there are still many Syrians who must contend with poor sanitary conditions and a low standard of living.

## CHAPTER FOUR

### NUTRITION

The nutritional status of a population is an important factor in the development of a nation's human resources. The impact of malnutrition on social and economic development can be measured indirectly through its effect on the quality of the human resources available in a society. Malnutrition has been linked to poor health status, reduced physical development, high infant and maternal mortality rates, and reduced labor productivity. Knowledge of the effects of severe malnutrition on mental development has attracted the attention of leaders throughout the world. The eradication of malnutrition has become a major public policy issue in some of the developing nations.

While Syria cannot be considered to be among the nations of the world which suffer from the most severe nutrition-related problems, there are indications of inadequacies in the production and distribution of food, in the discovery and treatment of nutrition-related health problems, and in the food consumption habits of the people.

#### Production

In normal years, the grains, fruits, vegetables, and livestock produced by Syria are sufficient to sustain the population at its current low level of consumption. At the present time, more than 80 percent of Syria's crops are grown on unirrigated land. Food production is therefore characterized by wide fluctuations in agricultural output which are caused by annual variations in rainfall. These fluctuations are intensified by periodic droughts (which occur every four to five years)<sup>1</sup> and sometimes result in a 30-40 percent increase or decrease in agricultural production from one year to the next. (See Table 21). The instability of food production in Syria has forced the government to become a net importer of foodstuffs in years of poor harvests, while food exports in good years are an important source of foreign exchange earnings. (Industrial crops such as cotton, sugar beets and tobacco earn up to 30 percent of Syria's foreign exchange).

Per capita production of food has not increased during the 1970's - the five year average for 1971-75 is only 78 percent of the 1961-65 average. (See Tables 22 and 23). The F.A.O. estimates that food production has increased at a rate of only 1 percent annually between 1964 and 1973, while the demand for food is growing at an annual rate of 4.6 percent.<sup>2</sup> Population growth during the same period has averaged about 3 percent annually.

<sup>1</sup> May J., The Ecology of Malnutrition in the Far and Near East, p. 474.

<sup>2</sup> F.A.O., The State of Food and Agriculture, 1975, p. 106.

Table 21

The Development of Agricultural Production Compared With Annual Plans, 1971-74  
(Thousand ton)

Crops	1970 - 1971			1971 - 1972			1972 - 1973			1973 - 1974			1974
	Planned	Executed	%	Planned									
Wheat	1106	846	76	1138	1808	158	1519	593	39	1381	1629	117	1776
Barley	648	262	40	642	710	110	653	102	15	714	655	91	763
Lentils	116	87	75	108	96	88	96	23	23	98	83	84	120
Cotton	460	408	88	415	419	100	411	408	99	372	389	96	39
Sugarbeet	290	232	80	295	248	84	312	200	64	308	171	44	301
Tobacco	6.5	7.5	115	12	11.6	96	12	10	83	16	9.4	59	15
Peanuts	23	20	86	21	23.6	112	26	23	88	27	20	85	27
Tomatoes	317	248	78	298	316	106	442	268	60	404	399	90	508
Potatoes	79	72	91	119	119	100	123	115	93	132	114	91	129
Onions	72	90	125	89	81	91	86	99	115	108	131	94	147
Apples	27	34	125	25	42	168	43	41	95	54	44	81	81
Citrus	9.4	16	170	12	19	158	20	29	145	24	32	117	32
Milk	596	441	74	599	458	76	727	393	54	464	437	94	426
Meat	79	76	96	92	98	106	121	62	51	87	67	77	79
Eggs (mln)	270	301	111	300	323	107	349	369	105	386	445	116	512

Source: Ministry of Planning

Table 22

## Production by Commodity, Value and Indices of Total Agricultural and Food Production, Average 1961-65, Annual 1966-75

Commodity	Price Weight	Average 1961-65	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Wheat	59	1,093	559	1,049	600	1,003	625	662	1,808	593	1,630	1,550
Barley	35	649	203	590	512	627	235	123	710	102	655	596
Millet	58	46	15	39	37	21	14	19	27	13	28	30
Beans, Dry	90	2	2	2	3	1	3	4	5	5	6	6
Broad Beans	116	11	13	14	8	9	9	10	13	7	7	8
Lentils	64	64	22	84	47	30	58	61	96	24	83	67
Chickpeas	90	26	16	64	36	45	15	24	36	28	60	27
Vetch	90	48	22	48	40	50	24	52	61	17	52	60
Potatoes	38	44	54	40	50	49	65	73	119	111	105	110
Onions	30	48	50	44	50	50	65	90	81	99	133	120
Sugar Beets	15	112	140	154	166	189	228	232	249	152	139	150
Tobacco	672	8	10	6	9	11	12	7	12	11	10	14
Cotton	426	157	141	120	154	149	150	157	163	156	145	156
Cottonseed	43	349	288	209	240	246	244	251	255	249	241	255
Apples	180	21	26	28	26	30	18	34	42	41	44	46
Pears	150	4	6	6	6	6	6	6	6	4	6	6
Figs, Fresh	51	41	48	61	32	32	38	38	38	31	38	36
Grapes	110	233	206	213	215	230	206	209	208	147	250	275
Olives	181	85	116	113	112	60	85	117	161	73	215	200
Wool, Greasy &	794	10	15	14	14	14	7	6	6	5	7	7
Milk	210							230	230	230	395	500
Meat	86							100	100	100	110	150
Aggregates of Production			--- Million dollars at Constant Prices ---									
Crops		241.3	184.1	224.3	205.4	225.7	189.0	201.4	311.5	179.3	303.5	302.1
Livestock		7.7	11.9	11.1	11.1	11.1	5.6	4.8	4.8	4.0	5.6	5.6
Total Agriculture		249.6	196.0	235.4	216.5	236.8	194.6	206.2	316.3	183.3	309.1	307.7
Total Food		169.7	117.3	169.2	133.8	154.8	117.0	129.8	234.0	105.4	235.0	226.2
Indices of Production			(1961-65 = 100)									
Crops		100	76	93	85	93	78	83	129	74	125	125
Total Agriculture		100	79	94	87	95	78	83	127	73	124	123
Total Food		100	69	100	79	91	69	76	138	62	138	133

Table 22 (Cont'd)

Commodity	Price Weight	Average 1961-65	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Indices of Production												
Per Capita Agriculture		100	72	83	74	78	62	64	95	53	87	83
Per Capita Food		100	63	88	67	75	55	58	103	45	96	90
Index of Population 1961-65 Population = 4,970,000		100.0	110.3	113.9	117.7	121.7	126.0	130.0	134.2	138.6	143.3	148.0

Source: U.S. Dept. of Agriculture

Table 2:  
Indices of Agricultural Production, Plant and Animal,  
1968-1974

1970 = 100%

	1968	1969	1970	1971	1972	1973	1974
Milk	72	96	100	90	80	64	75
Livestock	57	130	100	73	63	139	108
Eggs	104	118	100	102	134	159	174
Cereals	138	193	100	128	290	80	268
Dry Legumes	156	247	100	163	213	111	256
Vegetables	167	138	100	142	202	126	252
Indust. Crops	103	102	100	108	118	110	107
Fruits	120	130	100	129	142	97	187
Others	97	97	100	123	123	159	319

Source: Central Bureau of Statistics, Statistical Abstract, 19

The government is making a major investment in irrigation projects in order to increase output and reduce the proportion of agricultural production which is dependent upon rainfall. Between 20 and 25 percent of capital investment funds have been allocated to the development of the agricultural sector during the past two Plan periods (1965-70 and 1970-75). Resources have been concentrated on the development of the Euphrates and Balikh River basins. The Euphrates river basin development will add approximately 1,500,000 irrigated acres of land to the more than 15 million acres which are currently cultivated.<sup>3</sup> Financial and technical assistance for the development of the Euphrates river basin project have been provided by the U.S.S.R., the U.S. A.I.D., the World Bank, U.N.D.P., and the Arab oil-producing countries. These irrigation projects will deprive nomads of some of their traditional grazing grounds and areas of seasonal farming. Settlement of the nomads and their adjustment to farming may mean the loss of a significant portion of livestock of the country. On the other hand, assistance to the nomads in improving their methods of animal husbandry could aid in projects involving range-conservation, afforestation, and sand-drift control.

#### Food Crops

Cereals, primarily wheat and barley, account for about 60 percent of cropped acreage. Cotton, sugar beets, and tobacco are the major industrial crops. Fruits and vegetables are produced for autoconsumption by small traditional farms and for internal marketing and export by the minority of large, modern farms. (See Table 24).

Up to 45 percent of the cultivated land is left fallow each year. This is due to the fact that the soil is deficient in nitrogen. Increased use of fertilizer and leguminous crops to speed the restorative process could result in a higher utilization rate in the future. It could also provide a valuable source of protein for the Syrian population.

#### Livestock and Poultry

Livestock production in the 1970's was roughly equivalent to livestock production in the 1950's. The agricultural production indices (Table 23) indicate a sharp decline in livestock production in 1970, which was probably related to inadequate rainfall during the 1969-70 winter months. Poultry production in contrast, has increased significantly. (See next page).

<sup>3</sup> The Agricultural Situation in Africa and West Asia, p. 47.

Table 24

## Major Fruits and Vegetables; Area and Production 1964/5 and 1974

	Average 1964/5		1972		1973		1974	
	Area	Product.	Area	Product.	Area	Product.	Area	Product.
<b>Fruits</b>								
Grapes	70.0	218.0	67.0	207.5	74.0	147.0	81.0	250.0
Apricots	9.5	19.0	10.8	39.0	10.0	29.0	11.0	33.0
Apples	7.0	22.9	10.0	42.4	14.0	41.1	16.0	44.3
Pears	2.4	5.5	1.8	5.8	1.6	3.5	1.8	6.2
Plums	1.3	2.9	2.2	11.7	2.3	8.7	2.5	11.5
Peaches	1.5	4.5	2.1	10.5	1.8	8.3	2.6	8.0
Pomaganates	2.7	10.9	3.3	21.1	3.2	13.9	3.4	16.9
Figs	21.5	60.5	21.0	38.0	21.0	31.0	21.0	38.0
Cherries	1.2	1.3	3.6	7.0	3.8	7.3	4.2	3.7
Oranges	1.2	3.5	2.0	8.4	2.1	14.3	2.3	16.3
<b>Total Fruits</b>	<b>118.3</b>	<b>349.0</b>	<b>123.8</b>	<b>391.4</b>	<b>133.8</b>	<b>304.1</b>	<b>145.8</b>	<b>427.9</b>
<b>Vegetables</b>								
Tomatoes	17.6	144.3	21.8	316.0	20.7	269.0	29.9	295.5
Potatoes	4.6	48.3	7.8	119.0	8.3	110.5	8.4	12.5
Onions	4.2	33.0	6.9	80.8	6.8	98.6	8.7	15.3
Cucumbers	8.5	40.8	11.3	95.2	9.5	90.8	12.0	134.8
Aubergines	3.8	34.0	4.9	64.9	--	--	--	--
Squash	3.7	32.6	4.5	49.9	5.0	58.4	6.7	78.8
Beans	4.5	30.2	4.9	31.9	4.7	21.4	6.0	43.1
Peppers	1.9	10.0	2.5	18.5	2.5	20.5	2.9	27.8
Green Beans	1.4	4.7	2.9	19.2	3.3	14.3	4.6	31.3
Cabbage and cauliflower	1.7	25.9	2.9	54.0	3.1	41.8	4.5	70.7
Okra	2.2	5.6	3.5	12.9	2.9	11.1	4.0	15.2
<b>Total Vegetables</b>	<b>54.1</b>	<b>409.4</b>	<b>73.9</b>	<b>862.3</b>	<b>66.8</b>	<b>736.4</b>	<b>87.7</b>	<b>825.0</b>

Source: Central Bureau of Statistics

Livestock and Poultry (in thousands)				
	<u>Sheep</u>	<u>Goats</u>	<u>Cows</u>	<u>Poultry</u>
1958	5912	645	298	2821
1974	5300	684	524	5400

Source: J. May, The Ecology of Malnutrition in the Far and Near East, p. 493, and The Agricultural Situation in Africa and West Asia, p. 49.

Poultry production in 1975 included 512 million eggs and 15,474 tons of poultry meat. An annual per capita production of 70 eggs and two kilograms of poultry meat was reported in 1975.<sup>4</sup> (For milk and meat production, see Table 13). The population increase during the past 20 years has forced the government to import large quantities of meat products in order to satisfy domestic demand. The import gap was estimated to be about 20,000 tons carcass weight equivalent in 1974, according to the State Planning Commission. Recent Government efforts to remedy the situation will hopefully result in an improved situation within the next four or five years.

The nomads tend between 3.5 and 4 million sheep. (Mutton and lamb are traditionally Syria's main meats). Because about 60 percent of the feed requirements for sheep are obtained from grazing in the semiarid areas of Syria, meat and milk production are also greatly affected by the variations in annual rainfall. The Syrian government has undertaken an ambitious campaign to stabilize production through the development of feed warehouses, the creation of a national feed reserve, the introduction of fodder crops on fallow lands, and the establishment of a national feed revolving fund.<sup>5</sup> Cow milk production is expected to increase more slowly as 23 dairy farms are developed through another government program. In addition the government plans to organize a total of 120 dairy cooperatives.

#### Food Distribution

Food storage and distribution facilities are limited, therefore most foods are consumed in or near the area of production. Meat is frequently slaughtered and consumed the same day due to lack of cold storage. Because modern storage and transportation tend to be concentrated in urban areas, the urban population has a wider variety of foods available. Even in years when the harvest is

<sup>4</sup> The Agricultural Situation in Africa and West Asia, p. 49.

<sup>5</sup> J. May, The Ecology of Malnutrition in the Far and Near East

Table 25  
 Estimated Annual Per Capita Consumption  
 (1953-55)

Food	kg.	Calories	Protein
Cereals	118	56%	57%
Starchy Roots	9		
Meat	8		
Fish	1	11	23
Eggs	2		
Milk & Milk Products	84		
Legumes	14	6	14
Vegetables*	32	11	
Fruits	91		
Fats & Oils	10	11	
Sugar	9	5	
*Including onions, potatoes, beets, tomatoes, egg plant, and leafy vegetables.			
Available	1953-5	1961	1970
Total Calories	2100	2530	2650
Total Protein		73.5 gms	75
Energy as a % of Requirement			107

Source: F.A.O.

generally good, poor local conditions may cause food shortages to occur in some areas.

Cow's milk is marketed near areas of production. Locally sold milk is often handled with little regard to hygiene and may be skimmed or adulterated with water. Cheese and butter are processed in the home. Food processing in rural areas, including the production of sheeted apricots (kamaradine), the drying of fruits such as apricots and grapes, the production of dibs, oil, cheese, arak, starch and flour, have traditionally been handcrafts and the quality of the product was dependent on the individual producer. Any attempt by the government to control this type of production has been extremely difficult. As more and more foods are processed in modern factories, it becomes more feasible for the government to exercise control over the means of production.<sup>6</sup>

### Consumption

Detailed information on consumption patterns in Syria is out of date and may not accurately reflect the current situation. However, since food production patterns do not appear to have changed significantly since the last report was published in 1958, some general statements can be made about food consumption.

Cereals are the staple in the diet for the majority of the population. Wheat breads are consumed throughout the country and regional varieties of bread are made which include barley, maize, or millet. Rice is also popular but it must be imported. Cereal consumption provides over half the calories and proteins of the average Syrian diet. (See Table 25).

Animal protein is provided primarily by milk in the form of leban, a soft cheese made from yoghurt. Cheese and clarified butter are also widely consumed. Lamb is the most popular meat, however beef, veal, goat, and camel meat are also consumed. Poultry and egg consumption have become more important during the past five years as production has increased. Meat consumption is very low, even for the Middle East, at eight kilograms a year.<sup>7</sup>

Fish is consumed primarily along the coast and in the Khabour and Euphrates river valleys. Although it is an important source of protein for the people of these areas, consumption even there is low, and annual per capita consumption nationally amounts to only one kilogram.

Vegetables, including legumes, and fruits are also an important element of the Syrian diet. The amount of each consumed varies according to season, distribution patterns, and the economic status of the consumer. In areas where fruits and vegetables are grown, their consumption is regular, even among poor families. In areas where they are scarce, fruits or vegetables may be consumed as seldom as once a month.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid., p. 485.

Fats and oils, which include clarified butter, the fat of fat-tailed sheep, and cotton seed, sesame, and sunflower oils, represent approximately 11 percent of total caloric intake. Refined sugar is consumed in urban areas while dibs, a fruit molasses made from grapes, dates, or figs, is an important sweetener in rural areas.

Diets are more varied in urban areas because of the more sophisticated storage, processing, and distribution systems. A survey of middle class families in Damascus published by the F.A.O. in 1959 revealed the following daily consumption pattern:

Table 26

<u>Food</u>	<u>Calories</u>
Cereal & Cereal Products	1607
Fats & Oils	207
Eggs & Milk	128
Meat & Fish	299
Vegetables	99
Fruits	77
Sugar & Jam	<u>220</u>
Total Calories	2766

Source: F.A.O.

About 50 percent of the family budget was spent on food. In other families surveyed, the amount spent on food ranged from 58 percent in the poorest group to 35 percent in the highest income group. In 1970 the Central Bureau of Statistics estimated that a medium-sized family in Syria needed an annual per capita income of 1800 Syrian pounds to satisfy basic needs for food, clothing, shelter, medical care, etc. The average per capita income at the time was 1000 Syrian pounds.<sup>8</sup> A survey of primary school students published in 1973 revealed the following information: (1) 50 percent eat no milk or milk products; (2) two-thirds do not eat meat; (3) 20 percent eat eggs and vegetables; (4) only one of 40 eats fruits; (5) the majority did not eat breakfast; (6) daily meals were irregular; (7) most students had one daily meal. It included one sandwich for

<sup>8</sup> Syrian Socio-Economic Review, 8-73, p. 14.

dinner or a cake and tea before sleep; (8) 10 percent suffer from goiter due to lack of iodine.<sup>9</sup>

Although rural Syrians often produce for their own consumption and do not therefore register a cash income, observers have confirmed the inadequacy of rural diets. In some villages, bread, burghul (cracked wheat), and leban are the basic diet, while in other areas cheese and maize bread are the staple foods. Vegetables may be consumed as little as once a month in some areas, while in others, locally grown olives, figs, grapes, apples and apricots are consumed in season. Meat is rarely eaten, even by the more prosperous inhabitants of rural areas.

The diet of the sedentary nomads is similar to the diet of other inhabitants of rural areas. The semisedentary and nomadic bedouins subsist on a diet of milk and milk products, cereals and dry bread. Two meals are eaten daily, the main one in the evening. Meat is rarely eaten. Locusts and wild plants are considered delicacies. In the winter, the nomads live on boiled cereal and dry dates. The fat content of the nomad diet is very low, and although the diet is in general well balanced in nutrients, it is low in calories.<sup>10</sup> Because of seasonal variations in consumption however, the nomad diet is sometimes barely at subsistence level. Malnutrition then makes them more vulnerable to infectious diseases such as tuberculosis, in addition to lowering their resistance to epidemic diseases.

The Syrian Ministry of Supply and Internal Trade has responsibility for determination of the level of food imports. Food consumption needs are estimated based on a daily requirement of 2800 calories and 89 grams of protein per capita.<sup>11</sup> The Ministry recognizes the need for reliable consumption data and has recommended the mobilization of technical and administrative personnel to collect, analyze, and publish the necessary information. The Planning and Statistics Agency within the MSIT prepares food consumption projections. The forecasts are considered to be an accurate reflection of consumption patterns. They indicate a deficiency in the consumption of animal protein which points to a need for an increase in the quantity available. Current animal protein consumption in Syria was 12 grams per capita per day in 1976, according to USAID. The government is attempting to raise animal protein consumption to 18 grams by 1980 and to 34 grams at some unfixed future time. This assumes that consumers will either pay the price when more animal protein becomes available or that the government will be able to afford the cost of subsidies.

The Syrian government is also aware of the nutritional deficiencies in the traditional infant diet. A weaning food factory is under construction and is

<sup>9</sup> "The Impact of Population Growth on Food and Nutrition in Syria," pp. 11-15, in Syrian Socio-Economic Review, August, 1973.

<sup>10</sup> J. May, The Ecology of Malnutrition in the Far & Near East, p. 487.

<sup>11</sup> Al-Ra'ath, Damascus, June 2, 1975.

scheduled for completion in 1978. A chickpea and wheat-based product will be manufactured. A number of other ingredients were to be incorporated into the weaning food but the exact formula was still being tested during 1976.

### Nutritional Deficiency Diseases

Current information on nutritional deficiency diseases is limited to the results of a few small surveys and the records of the MOPH facilities. A small, urban-biased study was conducted in 1973. Six percent of the children surveyed weighed less than 60 percent of normal weight, 12-15 percent weighed 60-80 percent of normal, and 25-30 percent weighed less than 90 percent of normal weight.<sup>12</sup> An examination of the records of one MCH Center in Damascus City revealed that 35 percent of preschool children and 47 percent of pregnant women seen in the center had iron deficiency anemia.<sup>13</sup>

Although female children are considered by medical personnel to be the worst victims of malnutrition, hospital admissions for treatment for anemia and avitaminoses in 1972 were more often male than female children. (See below). These statistics probably reflect the higher value placed on the health and well-being of the male child.

Table 27

#### 1972 - Hospital Admissions

	Under 1 yr.		1-4 years	
	Male	Female	Male	Female
Avitaminoses & other nutritional deficiencies (260-269)*	59	40	119	
Anemias (280, 285)	82	49	195	

Source: 1972 Annual Statistical Report Syrian Arab Republic Ministry of Health.

\* WHO

Reports from Syria which date back as much as twenty years indicate the existence of certain nutrition problems in Syria. The high consumption of cereals was considered to be responsible for the absence of Vitamin B deficiency diseases. In one survey Vitamin A deficiency was found among 33 percent of

<sup>12</sup> Joe Davis, M.D., A.I.D., Trip Report, April, 1976.

<sup>13</sup> George Coleman, A.I.D., Trip Report, November, 1975.

children age 5-16. Vitamin C deficiency was found among 58 percent of the same children and was more common in the areas where little fruit was grown. Rickets was common 20 years ago, especially in urban areas. Iron deficiency anemias were a common cause of hospital admission for young children.<sup>14</sup>

The more recent information appears to confirm the existence of a pattern of agricultural production, food consumption, and nutritional deficiencies which has remained relatively unchanged for the past 20 years.

Increases in per capita income, if well distributed, may have caused some improvement in the nutritional status of the population but unfortunately, there are no national nutrition surveys available which either confirm or deny this.

<sup>14</sup> J. May, op. cit., p. 498.

## CHAPTER FIVE

### NATIONAL HEALTH POLICY AND PROGRAM ADMINISTRATION

#### National Health Policy

The formulation of a national health policy has not been an issue of high priority to the Syrian national government. Although each of the national development plans has expressed the concern of the government with social welfare issues, it is implied that the problems will find solutions as economic development proceeds and the standard of living rises. It is significant that the private sector, which provides an estimated 77 percent of all outpatient health care in Syria,<sup>1</sup> was never seriously disturbed by the efforts to nationalize major sectors of the Syrian economy. The size of the private sector and the amount of money which Syrian citizens are apparently willing to spend on private health care (see Health Care Financing) indicates that even when government services are readily available, they are not considered as desirable as private health care.

#### Health Planning

The development plans state in general terms that educational, medical, cultural, social and housing services will be promoted and that in order to provide social security for all, administrative procedures will be developed, and scientific principles and socialist experiments will be applied. The more specific health-related goals of the Five Year Development Plan for 1970-1975 can be summarized as follows:

- To increase the coverage for basic health services from 25 percent to 40 percent of the population.

To construct 11 new hospitals, one in each mohafazat.

To initiate a primary health insurance system to cover civil servants, employees, workers and their families. The number of beneficiaries will be approximately 750,000. The system will be financed by joint contributions of the state or employer and the beneficiary.

To improve medical services by increasing the number of medical practitioners and deepening medical knowledge at all educational levels.

To introduce modern medical treatment including cobalt treatment and physiotherapy and to construct the buildings necessary to house this equipment.

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<sup>1</sup> Family Health Care Inc., Manpower and Health Services in the Syrian Arab Republic, p. 15.

To develop and expand the hospital attached to the Damascus Faculty of Medicine.

To provide better laboratory equipment.

To arrange for the more equitable distribution of medical doctors and improve the ratio between cities and towns through the use of incentives.

To increase the number of dentists, nurses, midwives, technical assistants, and specialized doctors.

To initiate the local processing of medicines and establish an authority which will be responsible for the export, processing, and distribution of medicines.<sup>2</sup>

According to the development plan, the Ministry of Health is responsible for the implementation of health programs and the supervision of all medical services supplied by other government organizations. In addition, the MOH is to coordinate with the Ministry of Supply and Internal Trade on all matters concerned with the importation, distribution, and control of medicine. Although this Plan theoretically terminated more than a year ago, there is no evaluation yet of its implementation. The Plan for 1976-1980 was not yet in final form when this document was prepared.

The planning process in Syria begins about six months before the end of the current Plan when the National Planning Commission circulates instructions and guidelines to all ministries. The staff of the NPC works with the ministries as they prepare sectoral drafts of their portions of the new plan. The draft is sent to the Supreme Planning Council<sup>3</sup> for approval. Within the NPC there are eight staff members who work on social sector programs including health. None are specialists in any area; the policy is to hire generalists who can share responsibilities for several sectors. It becomes extremely important under these circumstances for the Ministry of Health to have the capability to present coherent, well developed planning documents for review by the NPC. The Ministry of Health has, to date been unable to develop this capability. Health plans do not reflect any analysis of health problems in Syria, nor any effort to set priorities or goals. There is, therefore, no way to evaluate progress or the lack of it in the health sector. In fact, the scarcity of reliable statistics pertaining to health problems makes it extremely difficult to formulate realistic health plans for the country. The result has been a health strategy that has focused on the construction of physical facilities such as hospitals and clinics, with little or no attention to programs which address specific problem areas such as MCH, TB, trachoma, etc. With the exception of the malaria eradication program, efforts to develop health programs have been erratic (see

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<sup>2</sup> Troisieme Plan Quinquennal de Developpement Economique et Social, 1971-75.

<sup>3</sup> Note - The Supreme Planning Council is made up of the Minister Plan and the Ministers of the directly productive sectors, party representatives, union representatives, and peasant organization representatives.

section on Health Facilities). One of the results of these disjointed health planning efforts has been that the NPC has given low priority to health programs. Health programs, therefore, receive a smaller proportion of the national budget than might otherwise be possible. The development of reliable data concerning health problems in Syria and the development of a planning capability within the Ministry of Health are of utmost importance if optimum use is to be made of Syria's limited health resources.

Health investments proposed for the 1970 to 1975 Five Year Plan included the following:

- An increase of 7300 hospital beds at a cost of U.S. \$63 million, to reach a national ratio of 1.8 beds per 1000 population.
- A National health insurance plan for government workers and their families; for private sector employees in concerns with four or more employees and their families; and for poor people with medical cards. (There are an estimated 800,000 people in the first two categories and two million in the third).
- Construction of 19 new health centers.
- Improvement of health manpower training with some emphasis on nurse training.
- Improvement of hospital maintenance.
- Consideration of legal and incentive mechanisms to fill the need for physicians in rural areas.
- Establishment of health services and feeding programs in schools.
- Establishment of a weaning food factory.

The existence of a large private sector in health care and the provision of health services by private companies, public, and semi-public entities (e.g. the port authority in Lattakia) makes coordination essential if the resources of the health sector are to be used effectively. The lack of coordination is apparent in the construction of health facilities (See Chapter Seven) and in the development of health manpower training programs.

#### Health Program Administration

##### Public Sector

The Syrian government's efforts in the health sector are centered primarily in the Ministry of Health. The Ministry consists of a small central bureaucracy with a staff of 20 to 30 professionals and a series of semi-autonomous provincial health directorates which employ over 5,000 people. The head of the Ministry is the Secretary General, who is also chairman of the Supreme Public Health Council, an advisory group of Syrian leaders which meets with the Secretary General to decide general directions for health policy. The Secretary General maintains liaison with other ministries such as the Ministry of Agriculture and Agrarian Reform (which supervises veterinary inspection of meat)

and the Ministries of Education (which are responsible for the education of health personnel). He also serves as liaison with international organizations which have health projects in Syria.

There are three Vice Ministers who are responsible for the various operational divisions of the ministry (see Figure 2, Organization Chart). Major decisions which involve questions of policy are referred to them from below and are passed on to the Secretary General and then to the Prime Minister for political clearance. There is apparently some periodic shifting of responsibility for the operational divisions from one Vice Minister to another. The affect of these shifts on the continuity of operations is unknown.

Beneath the Vice Ministers are nine Directorates which carry on daily operations with minimal supervision. Although the organization chart for the Ministry gives the impression of a large bureaucracy, in fact many of the departments and offices listed separately are the responsibility of a single professional with a small staff. The Administrative Affairs Directorate, for example, is headed by one professional whose responsibilities encompass all of those departments or offices listed under the Directorate. There are numerous personnel (i.e. drivers, printers) who are subordinate to this Director; however, the Ministry staff consists of the Director and four or five aides. The central Ministry staff provides technical assistance to the mohafazat health services, which are semi-autonomous.

Health Services are primarily curative, in clinics and dispensaries as well as in hospitals. There are apparently no health programs in special areas such as Maternal and Child Health or Health and Social Education. There are some immunization programs and occasional efforts to find and treat victims of tuberculosis or trachoma. Health facilities and personnel meet the daily demands for health care as they are presented at health facilities, but there is no rational health program which defines the problems, determines the priorities, and develops an integrated program of health services.

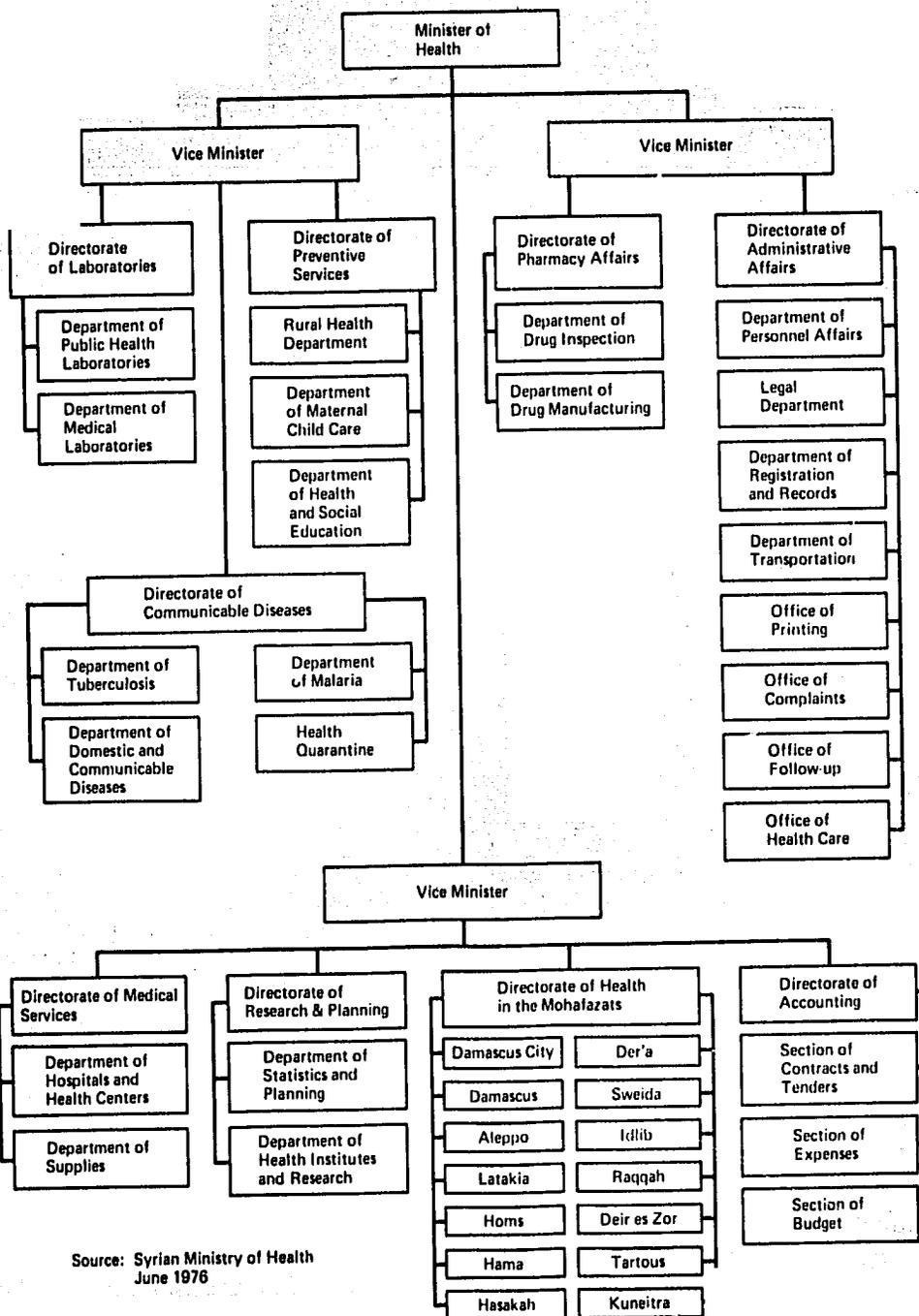
Public health services at the mohafazat level are directed by the physicians who are the mohafazat health officers. According to the law of local administration, financial and administrative control of the health service (as well as of many other government operations) is in the hands of the mohafazat government. The health officer is therefore responsible to the mohafazat for the administrative aspects of the health program and to the Ministry of Health for the technical aspects of the program.<sup>4</sup> The health officer is the supervisor of all public health hospitals, health clinics and dispensaries within the mohafazat. The role of the health officer in the coordination or supervision of environmental sanitation personnel is unclear. The amount of guidance and supervision the health officers receive from the Ministry is limited, and so is the supervision they provide to the lay hospital administrators and medical personnel who report to them. The relationship of health activities at the local level to the directives issued by the Ministry is therefore extremely tenuous. Until these links are strengthened, it is unlikely that program or policy changes initiated at the ministerial level will have any significant impact on the day-to-day operations of health centers and hospitals.

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<sup>4</sup> U.N.D.P. program paper Syr 74/007/B/01/4 Strengthening and Development of Hospital Administrative Services.

Figure 2

ORGANIZATION CHART - SYRIAN ARAB REPUBLIC  
MINISTRY OF HEALTH



Source: Syrian Ministry of Health  
June 1976

The five largest cities in Syria have Municipal Health Districts which are independent of the mohafazat health districts. Aleppo, Damascus, Homs, Hama, and Lattakia use MOH facilities and are reimbursed by the MOH for 50 percent of their respective personnel costs. The municipalities provide all additional funds for personnel and operating expenses. Their primary concerns are communicable disease control, enforcement of sanitation measures, food inspection, refuse and waste disposal, and water purification. Their operations are independent of the MOH, and, as in the provincial offices, they often determine their own health care priorities in the absence of well-defined national health policies. (See Statistical Appendix for additional information).

### Health Care Financing

It is difficult to quantify the cost or amount of medical services purchased in Syria because of the multiplicity of public and private financing mechanisms for health care and the number and variety of ministries and quasi-governmental agencies engaged in the provision of direct services. Recurrent per capita expenditures on health care in the public sector were estimated to be U.S. \$6.60 in 1976,<sup>5</sup> while per capita expenditures in the private sector were estimated to be as high as U.S. \$21.80 in the same year.<sup>6</sup>

The capital expenditures on health budgeted during the Third Plan Period (1971-75) totaled 390 million Syrian pounds. Of that, 258.9 million were budgeted for water supply and sewerage systems. (See Table 28). The remainder was to be divided between hospitals and medical schools.

The capital investment budget for the Five Year Plan is apparently a composite of the mohafazat health budgets which have been developed as part of a multisectoral budget submission to Damascus. This five year health plan is first discussed by local officials in the Ministry of Finance and is then submitted to the Ministries of Health and Plan for incorporation into the national plan. If the budget which emerges from the final negotiations is unacceptable to the Ministry of Health, an appeal may be made to the Prime Minister.

The annual operating budget is also developed at the mohafazat level and presented to the Ministry of Health for approval. (See Table 29). Authorization for the budget is granted in a meeting of the mohafazat officials with the Ministry of Finance. If there are shortages within the budget, the Health Director for the Mohafazat may transfer money from one budget category to another, however, additional funds can be transferred into the health budget only through the Ministry of Finance in Damascus.

<sup>5</sup> The 1971 estimate, according to the IBRD, was U.S. \$2.03.

<sup>6</sup> Family Health Care, Inc., Health Manpower and Health Services in the Syrian Arab Republic, p. 15.

Table 28

## Health Investments for the 3rd 5 Year Plan 1971-75

	Million Syrian Pounds <sup>1</sup>	%
OH hospitals	67.4	17.1
OH mobile health services	.4	.1
University of Damascus Maternity Hospital	2.0	.5
University of Damascus Faculty of Medicine	10.0	2.5
University of Damascus Hospitals	14.0	3.6
University of Aleppo Faculty of Medicine	10.8	2.7
University of Aleppo Public Health Res. center	.4	.1
University of Aleppo Nursing School	1.0	.3
University of Aleppo Hospital	1.6	.4
Moussat Hospital	6.0	1.5
Supreme Council of Science Medical Equipment	3.0	.8
Scientific Plan-Medicine & Pharmacy	5.0	1.3
Social Security Institute - Dispensaries	.2	.1
Social Security Institute - Hospital	6.0	1.5
Minister of Municipal & Rural Affairs Water Supply	63.6	16.3
Damascus Water Authority Water Supply	48.7	12.5
Aleppo Water Authority Water Supply	34.8	8.9
Homs Water Supply Organization Water Supply	18.7	4.7
Lattakia Water Supply Organization Water Supply	2.6	.7
Hama Water Supply Organization Water Supply	1.5	.4
Municipalities Potable Water Projects	42.0	10.8
Municipalities Sewage Systems	47.0	12.1
Municipalities Environmental Medical Service	3.9	1.0
Total	390.6	98.9

<sup>1</sup>Exchange Rate U.S. \$1.00 = 3.70 Syrian Pounds

Source: Syrian Ministry of Health

Table 29  
Ministry of Health Budget, 1976  
(Syrian Pounds)

	Salaries, Sti- pends & Pensions	Gen. Admin. Expenses	Operations & Investment	Contribution to WHO, etc.	Debts & Obligations	Total
Central Admin.	20,174,000	11,075,000	31,951,000	1,373,000	70,000	64,643,000
<u>Mohafazats</u>						
Damascus City	2,007,800	443,500	21,100,000	---	---	23,551,300
Damascus M	3,572,000	2,503,000	7,150,000	---	---	13,225,000
Aleppo	6,055,400	3,789,000	6,150,000	---	---	15,994,000
Lattakia	3,172,000	1,291,000	8,925,000	---	---	13,388,000
Homs	2,953,600	1,507,000	4,000,000	---	---	8,460,600
Hama	3,856,900	1,323,900	4,500,000	---	---	10,180,800
Idleb	2,239,400	685,700	2,650,000	---	---	5,575,100
Jeir ez Zor	2,996,100	1,349,100	2,500,000	---	---	6,845,200
Al Hasakeh	1,663,300	895,000	4,200,000	---	---	6,758,300
Jar'a	1,483,400	963,700	4,500,000	---	---	6,947,100
Al Sweida	2,185,000	1,269,000	300,000	---	---	3,754,000
Al Rakka	1,528,000	500,600	6,300,000	---	---	8,328,600
Luneitra	454,900	578,000	200,000	---	---	1,232,900
Hartous	2,166,600	896,500	12,900,000	---	---	15,963,100
Total	56,508,900	29,570,000	117,326,000	373,000	70,000	194,847,400

Source: Ministry of Health, Exchange Rate: US \$1.00 = 3.70 Syri

ds/

While the public expenditures on health care are estimated to represent only 2.6 percent of the national budget,<sup>7</sup> they represent one of the largest items in the mohafazat budgets. In Lattakia, according to mohafazat officials, health expenditures accounted for 22 percent of the 1976 budget. The only sector which received a larger share of the budget was agriculture (29 percent). It was estimated by local officials that 60 percent of the health monies went to the hospitals, 30 percent to health centers, and 10 percent to administrative expenses.

Information concerning the health-related expenditures of other ministries is difficult to obtain. The Ministry of Labor and Social Assistance estimated that in 1975, every worker covered by health insurance (400,000 in all) consumed 150 Syrian Pounds of health services for a total of 60 million Syrian pounds. In 1972, 300,000 workers were reimbursed for 30,000,000 Syrian pounds worth of health services. The extent of health expenditures in the military, in the education ministries, and in other government entities is not readily available. The available health insurance mechanisms indicate that it is substantial.

There are a large number of third party payment mechanisms in operation in Syria. The Ministry of Education deducts a fixed (unknown) percent from every employee's salary. The employee is reimbursed from this fund for up to 80 percent of health care costs in private sector facilities. The MOH provides free coverage for all employees, but only in the MOH facilities. The Ministry of Labor and Social Assistance and other ministries have a 50 percent reimbursement plan for care in the private sector. Families are also covered in these plans. Factories which employ over 500 workers must provide free medical care in the form of a medical staff on site or reimbursement for care in the private sector.

Between 25 and 35 percent of the population are not covered by any insurance scheme nor are they eligible for free care. They include small shopkeepers, workers in small businesses, etc.

A new health insurance law which is now in preparation would divide the cost of medical insurance between employer, employee, and the government. In addition to paying insurance premiums, a token fee would be charged for each health service provided. The law could cover only workers initially; dependents would be covered at a later date.

#### International Assistance

International assistance in health activities in Syria is varied in both source and the nature of the activity. In 1975 the International Atomic Energy Agency offered aid in the medical application of radioisotopes. In the same year UNESCO granted \$27,100 to the Institute for the Deaf in Syria. The majority of international assistance takes the form of fellowships or consultantships. (See Table 30). Unfortunately little information was

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<sup>7</sup> I.B.R.D., Health Sector Policy Paper, p. 74.

Table 30

## International Assistance to Syrian-Arab Republic

Organization Project	Amount and Years			
	1976	1977	1978	1979
<u>WHO</u>				
Rehabilitation Services	\$61,300	\$88,200	\$113,000	\$101,900
Maintenance and Repair of Medical Equipment	36,900	60,600	59,000	60,700
Nursing Education, Damascus	29,500	31,500	32,000	33,500
Medical Education	35,000	44,000	69,000	77,000
Fellowships	70,000	70,000	75,000	80,000
Advisory Services-Epidemiology		10,500		23,500
Malaria Eradication	90,000	56,300	65,000	69,500
Schistosomiasis Control	81,500	85,400	45,400	19,000
Intensive Care Unit for Cardiovascular Disease	21,000	22,000	35,000	36,500
Mental Health	6,000		13,000	31,500
Pharmaceutical Quality Control Laboratory	28,400	52,200	25,800	15,000
Public Health Laboratory Technology	14,500	15,000	20,000	21,000

Source: 1978-1979 W.H.O. Proposed Program and Budget.

Organization/Project	Amount (U.S. Dollars)	Years
<u>UNDP</u>		
Development of Hospital Administrative Services	\$206,000	Begin 1976
Technical Health Institute	194,742	1974-1978
Occupational Safety and Health	143,990	1975-1977
Faculty of Dentistry-Damascus	304,032	1975-1978
Faculty of Pharmacy-Damascus (Drug policy & management)	141,939	1975-1977
<u>UNDP/IAEA</u>		
Radioisotopes in Medicine and Biology	137,231	1975-1977
<u>UNFPA</u>		
Maternal and Child Health Development MCH/FP Facilities in Syria	399,000	1976-1979
<u>IBRD</u>		
Water Supply Project	35,000,000	1975-1984
Livestock Development	17,500,000	1976-1981
<u>Arab Fund</u>		
IBRD Water Supply Project	40,000,000	1975-1984
<u>USAID</u>		
Development of Health Services	795,000	1976-78
National Technical Health Institute	683,000	1977-79
Nutrition Program (in process of development)	450,000	1978-80

Source: WHO, IBRD, USAID documents

available concerning bilateral assistance in health which is received from Europe and the Arab countries.

Forthcoming bilateral assistance from the United States through USAID will aid in the development of a planning capability in the Ministry of Health, an improved data gathering system for the collection of health statistics, a new system for maintenance and repair of hospital equipment. Technical assistance will be provided by a team of consultants who will remain in Syria for time periods from a few months to two years, according to the specific job assignment.

Multilateral assistance from UNDP, WHO, FAO, and IBRD includes the strengthening of hospital administration (UNDP US. \$206,000), assistance to the medical schools and malaria eradication (WHO), poultry breeding and livestock improvement (FAO and IBRD) and extension of the Damascus water supply system (USAID and IBRD) (See Table 30).

CHAPTER SIX  
HEALTH MANPOWER

Although the health manpower supply in Syria has increased considerably over the past 30 years, the health system today is plagued by personnel shortages and an uneven distribution of manpower. Trained health personnel are heavily concentrated in the capital city of Damascus. Forty-seven percent of the doctors and 50 percent of the nurses were registered in Damascus in 1975 (see Table 31). Dentists and pharmacists also seem to prefer Damascus - over 40 percent are employed there. The doctor/population ratio varies from one physician per 1000 population in Damascus to one per 10,000 in Al Hasakeh and one per 15,000 people in Dar'a. The mohafazat of Aleppo, which has a population equal to that of the mohafazat of Damascus, has one fifth as many nurses as Damascus. In Al Rakka, the province where the intensive development of the Euphrates river basin is in progress, there are four nurses (1/60,750 population) and 45 doctors (1/5983 population). Midwives also work primarily in the cities; over 60 percent are located in Damascus and Aleppo.

The actual number of trained health professionals who are actively practicing medicine in Syria is difficult to ascertain. As can be seen in Table 32, the number of nurses appears to have decreased by more than 50 percent from 1974 to 1975. The note at the bottom of Table 31, however, implies that before 1975, unlicensed nurses were also included in this inventory of nursing personnel. The ratio of two doctors to every licensed nurse suggests a severe shortage of medically trained support personnel. Although 2,400 doctors are reported by the Statistical Abstract, the MOH estimates that there are actually between 2,800 and 2,900 licensed physicians.

The inability of the currently available health personnel to meet the needs of the Syrian people probably stems as much from the inappropriate mix of health personnel as it does from inadequate numbers. The absence of auxiliary personnel in Syria means that doctors and nurses must spend much of their time treating health problems which could be handled by less skilled workers. Their time and skills are not well used and the end result is that fewer people are reached at a higher cost than might otherwise be possible.

Physicians

Syria has a rapidly growing supply of medical doctors who have been trained locally. A government policy which guarantees all baccalaureate graduates admission to a university or technical institute has resulted in rapid expansion of the higher education system including the medical schools. Because medicine is viewed as a choice career, the applicant pool is large and the quality of those selected is considered to be very good. The number of medical school graduates has increased from an average of 70 per year during the 1960's to 238 in Damascus alone in 1975. Aleppo will graduate 118 students this year and a new medical school at Lattakia, which opened in 1975, has an entering class now of 100 (see Table 33). By 1980, the Ministry of Planning estimates that an average of 700 students per year will graduate from all three schools. However, because of the large size of the entering classes during the past two years, the

Table 31

## The Employed in the Medical Professions By Mohafazat, 1975

Mohafazat	Nurses	Midwives	Pharmacists		Dentists		Physicians	
			Average number of persons per pharmacist	No.	Average number of persons per dentist	No.	Average number of persons per physician	No.
Damascus City	689 <sup>†</sup>	338 <sup>†</sup>	2051	508	3187	327	1023	1019
Damascus	...	...	4089	179	5463	134	6716	109
Aleppo	169	211	7051	216	15079	101	2681	568
Homs	53	39	8500	74	12333	51	3835	164
Hama	67	42	9852	61	18781	32	5414	111
Lattakia	63	64	12000	37	15310	29	4311	103
Deir-ez-Zor	35	26	11448	29	18444	18	4486	74
Idleb	40	38	12588	34	30571	14	9953	43
Al-Hasakeh	24	33	19704	27	38000	14	8444	63
Al-Rakka	4	16	15611	18	46833	6	6244	45
Al-Sweida	67	19	16200	10	20250	8	7364	22
Dar'a	9	8	9400	30	23500	12	12261	23
Tartous	46	42	11226	31	19333	18	7404	47
Quneitra	--	1	19000	1	19000	1	2111	9
Total	1267	877	5861	1255	9614	765	3065	2400

70

† Includes Mohafazat:

e: Number of nurses for 1975 is confined to licentiates only.

Source: Syrian Arab Republic Statistical Abstract, 1976

Table 32

## The Employed in the Medical Professions, 1945; 1956-1975

Years	Nurses			Mid-wives	Average number of persons per Pharmacist	Pharmacists	Average number of persons per Dentist	Dentists	Average number of persons per Physician	Physicians
	T	F	M							
1945	--	--	--	245	--	147	--	241	--	616
1956	393	--	--	248	--	392	--	235	--	1079
1957	388	--	--	353	--	409	--	230	--	1137
1958	500	--	--	225	--	339	--	225	--	942
1959	508	--	--	278	--	349	--	229	--	988
1960	685	--	--	299	12946	350	20689	219	4600	985
1961	685	--	--	283	12480	375	19024	246	4675	1001
1962	859	685	174	269	14176	341	16785	288	5004	966
1963	--	698	--	290	14348	348	17099	292	5105	978
1964	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--
1966	--	--	--	--	--	--	--	--	--	--
1967	--	483	--	223	13474	422	16481	345	4053	1403
1968	1030	743	287	371	9536	616	16783	350	4088	1437
1969	--	1044	--	300	10215	594	17190	353	4011	1513
1970	--	1401	--	566	7302	857	16644	376	3856	1623
1971	--	1647	--	873	7394	874	14521	445	3863	1673
1972	--	2345	--	768	6561	1017	12426	537	3486	1914
1973	--	2632	--	932	6781	1016	12282	561	2906	2371
1974	--	3102	--	1161	6497	1096	10441	682	2671	2666
1975	1267	1267	--	877	5861	1255	9614	765	3065	2400

Source: Syrian Arab Republic Statistical Abstract, 1976.

Table 33  
Health Manpower Training in Syria  
1973/74, 1975/76

Ministry of Higher Education

	<u>No. Students</u>	<u>No. Graduates</u>
Damascus	2,219	238
Aleppo	1,786	118
Lattakia (est. 1975)	100	--
Intermediate Medical Institute	321	95
Nursing School (Damascus) <sup>1</sup>	356	131
Pharmacy (Damascus)	876	149
Intermediate Dental Institute (Dental Assts.)	43	N.A.
Dentistry (Damascus)	801	119
Veterinary Assts. - Damascus	N.A.	N.A.
Veterinary Medicine - Hama	N.A.	330
Nurse Specialists	21	21

Ministry of Health

Nursing Schools (1) <sup>2</sup>	1,065	228
National Technical Health Insti	226	125
Midwifery Schools (3)	90	0 <sup>3</sup>
Nurse Aides Schools (4)	109	N.A.
Nursing Instructor/Supervisor	20	N.A. <sup>4</sup>

Source: Health Manpower and Health Services in the Syrian Arab Republic,  
Family Health Care Inc. report to U.S.A.I.D., June, 1976.

<sup>1</sup>In addition, a second school has recently opened in Aleppo.

<sup>2</sup>Nine have all female students, two have all male students. (75% female to 25% male)

<sup>3</sup>The course is changing this year from a one to two-year post-graduate nursing program.

<sup>4</sup>A contract with the East German government provides for the training of twenty nurse instructors per year.

Ministry of Higher Education considers it possible that the number of graduates per year may reach 1,200 by 1980.

Entrance requirements for medical school include twelve years of general education and certificates from the secondary school level in physics, chemistry, and biology. The course of study is divided into two parts. A diploma in fundamental medical studies is awarded after the first three years. Students who do not continue are qualified to teach in secondary schools. The second three years consist of two years of theory combined with practical clinical studies and one year of practical training in a military hospital or a Ministry of Health hospital. Instruction in the medical school is in Arabic. The medical school curriculum appears to be biased in favor of hospital-based medicine and specialized, rather than general practice. This is partly due to the composition of the medical school faculties. Specialists are frequently chosen to teach and they then become the predominant role models for the medical students. There is no information available which indicates the extent to which medical students are exposed to actual "hands on" care.

Specialized training is offered by an Institute for High Science which was established in 1974 at the University of Damascus medical school. Three years of study may be undertaken in general surgery, internal medicine, obstetrics and gynecology, ear-nose-throat, and radiology. The number of students is unknown and there are no graduates of the program yet. Only those students who rank in the top 10 percent of their class may apply.

After medical school, there are two years of military service required followed by an MOH program of obligatory service for all physicians who are not entering training as specialists. Two years must be served in a rural area of the country, usually in a health center. The site may be chosen but it must be approved by the Minister of Health. For the first time in 1976, even the military physicians were asked to serve in the MOH centers. Their salaries were paid by the Ministry of Defense. The MOH salaries are low (650-900 Syrian pounds per month)<sup>1</sup> and most physicians establish a private practice in the area where they are working. Government health services are delivered in the morning and afternoon hours are devoted to private practice. The private practice generates more income per month (est. 2,000-3,000 Syrians pounds) than the public health service does. Since guidelines regarding the conduct of the two practices (public and private) are vague and administrative guidance and supervision is weak or entirely absent in some areas of the country, there is much room for abuse of the system. A doctor who has clinic hours in the morning may in theory provide incomplete services in order to generate business for the private practice in the afternoon. While all fees are set by the MOH, services by a specialist in a hospital command a higher fee than ambulatory care by a general practitioner in a clinic (see fee schedule - Table 33). Because of this, there is a strong economic incentive to specialize and to practice in a hospital setting if possible. Few, if any, doctors can afford to devote themselves full time to public health or preventive medicine. The need for

<sup>1</sup> Health Manpower and Health Services in the Syrian Arab Republic, Family Health Care Inc., June, 1976, p. 72. Note: Exchange rate 3.7 Syrians Pounds = U.S. \$1.00.

Table 34  
Selected Physician, Dental, and Laboratory Fees<sup>1</sup>

	Fee Range (Syrian Pounds)	
	Low	High
<b>PHYSICIAN</b>		
Generalist Office Visit	5	10
Specialist Office Visit	10	20
Tonsillectomy	150	200
Hernia Repair	225	500
Gall Bladder Removal	450	700
Hysterectomy	500	700
<b>DENTIST</b>		
Oral Exam	5	10
Simple Filling	15	10
Cleaning	30	50
Full Dentures (no extractions)	300	700
<b>LABORATORY<sup>2</sup></b>		
White Blood Count and Differential		8
Erythrocyte Sedimentation Rate		5
Sodium Pro-Thrombin Time		10
Amylase, VDRL		15
Protein Bound Iodine		35
Serum Electrophoresis		60

<sup>1</sup>Source: Ministry of Health Fee Schedule in effect May 1976.

<sup>2</sup>No range; fixed fee for laboratory services.

Note: Exchange Rate 3.7 Syrian Pounds = U.S. \$1.00.

these specialities is not great (20-45 by 1985 would probably be adequate)<sup>2</sup> and it would not necessarily be costly for the government to establish a separate salary schedule for those few doctors who would choose to become full time public health doctors.

The geographic distribution of the doctors is another problem which the government feels will solve itself as more doctors are trained. The obligatory service in rural areas and the competitive pressure of urban areas combined with the tendency of doctors to return to their area of origin are factors which point to the eventual dispersion of doctors to all parts of the country. This may in fact provide a sufficient supply of doctors for provincial capitals and larger towns, but there are still many villages and poor rural areas which will be unable to support the private practice which provides the major part of most doctors' incomes. The economic incentives to specialize will continue to attract doctors away from general practice just as the lack of peer contact and poor social environment will discourage many doctors from settling in remote areas. Therefore, even though the doctor/population ratio will probably improve in the next few years, the access of the Syrian people to more and better health care will not necessarily improve as a result.

Emigration is also depleting the supply of doctors. Syria's physicians are not only leaving public practice for private practice, they are leaving Syria in increasing numbers. Saudi Arabia, Kuwait, and the United Arab Emirates were cited by the medical school faculty members as the most popular destinations for emigrants. The United States alone issued immigration visas to 68 Syrian physicians in 1975. This and other emigration probably account for a significant part of the decrease in doctors employed in Syria between 1974 and 1975. In addition to the migration of trained doctors, an estimated 15,000 Syrians are studying medicine abroad. About 5,000 are in Spain and 10,000 are in Eastern and Western Europe and the United States. The government is attempting to restrict emigration by limiting the number of visas granted for study abroad. Exit visas are approved for medical graduates who wish to acquire specialty training abroad, but again, only if they are in the top 10 percent of their class. In 1976 there were about 400 M.D.'s in West Germany and approximately 600 in the United States.

#### Nurses

Nursing as a profession has not yet been well developed in Syria. The number of nurses is small, (1,267 in 1975, or .53 per physician) and plans to increase the number trained have not been fully implemented. The recorded growth of the Syrian nursing population shows an irregular pattern (see Table 35) which is only partially explained by the inclusion of unlicensed nurses before 1975.

<sup>2</sup> Ibid., p. 74.

Table 35  
Nurses Employed In Syria in 1968-1

	<u>Number</u>	<u>Increase over Previous year</u>
968	1,030	547
969	1,044	14
970	1,401	357
971	1,647	246
972	2,345	698
973	2,632	287
974	3,102	470
975	1,267	(1,835)

Source: Syrian Arab Republic Statistical Abstract, 1975.

Nursing education responsibilities are divided between the Ministry of Health and the Ministry of Higher Education (see Table 33). Entrance requirements are nine years of general education for the MOH schools and 12 years of general education for the MOHE school. The nursing schools are usually directed by physicians and dentists who do this in addition to other activities.<sup>3</sup> In 1976 there were 12 nursing schools in Syria. The MOHE school in Damascus had a total of 387 students, 21 of whom were enrolled in a one year nurse specialist program in either pediatrics, surgery, ENT, or anesthesia. The anticipated graduating class was 131 students. The other 11 schools (two for men with 211 enrolled and nine for women with 854 enrolled) will graduate approximately 228 students in 1976.

Nurses are obligated to work for three years in a government hospital after graduation. Most prefer to work in government health centers rather than in hospitals. The work is much easier, according to some nurses, and since there are few nurse aides or orderlies in Syrian hospitals, nurses presumably carry out many of their responsibilities in the hospital setting.

Nursing supervision is a problem also. The head nurse at one Damascus hospital is expected to be single and reside at the hospital. The result is that the nursing supervisor is usually a young, relatively inexperienced woman and turnover in the position is high. Supervision of the nursing staff by a hospital administrator is made difficult because of the fact that the nurse's union has the right to review and suppress any complaint which concerns a nurse's performance of duties. Because of the limited supply of nurses, hospitals and some health centers are not adequately staffed. Rural areas tend to suffer most since there is no obligatory service requirement there for nurses.

The fact that most nurses are women creates several additional problems. Traditionally, Syrian women live with their families until they are married. Their mobility is therefore limited. Feminine modesty strictly limits intimate contact with adult males. This naturally limits the nurses' scope of work with male patients. Because the nurses' professional standing is not well established in Syria, health professionals from doctors to hospital administrators to nurses themselves tend to have a low regard for the work of the nurses. This undoubtedly discourages many a nurse's efforts to maintain a high standard of competence. There is some indication that the question of nursing education will be addressed by the new Five Year Plan, but the Plan has not been finalized as of this writing. Nursing care is not limited to the public sector facilities. Many nurses work in the private sector while some divide their time between public and private sector jobs.

There are four schools in Syria which train nurse aides. The schools and their enrollment are: Damascus (40), Aleppo (17), Lattakia (24), and Deir ez Zor (28). Nine years of general education are required for admission. The schools are administered by the Ministry of Health and are for women only. The course of study is one year.

The Syrian government has a contract with the East German government which provides for the training of 20 nurse instructors per year.<sup>4</sup> The duration of the contract is unknown.

#### Midwives

In 1975 there was approximately one midwife for every 1,250 fertile women (age 15-44) in Syria. Since 60 percent of them were registered in either Damascus or Aleppo provinces in 1975, only 300 midwives were serving the rest of the country. The midwives perform deliveries at home and charge a fee which is set by the government. The midwives are trained in three schools sponsored by the MOH and one school administered by the MOHE. Entrance requirements include nine years of general education and three years of nursing school. There were 90 female students enrolled in the MOH schools in 1976, but since the course was being changed from a one to two year program, there were no graduates in 1976. It is estimated that trained midwives perform about 60 percent of deliveries. Complicated deliveries are referred to a physician. Since the midwives maintain a private practice in addition to their public health work, the conflict of interest issue arises for them as well as for doctors. They tend to give very little prenatal and postnatal care but it is not known whether the fee schedule, lack of time, or inadequate training is responsible for this.

#### Health Visitors

In 1972, there were 207 obstetric health visitors in Syria. They were trained to make home visits and to give inoculations and assist in the delivery.

<sup>4</sup> Health Manpower and Health Services in the Syrian Arab Republic, Family Health Care, Inc., June 1976, p. 61.

of maternal and child health care. Unsatisfactory selection criteria for trainees resulted in poor productivity on the job, however, and the program was subsequently discontinued. There has been some discussion during 1976 of reinstating the program. These "social health visitors" would have a high school diploma and would work under the supervision of the MCH section of the health centers. Their activities would be limited to health education.

#### Dentists and Dental Assistants

Over 70 percent of Syria's 765 dentists were practicing in either Damascus or Aleppo in 1975. While this concentration provides one dentist for every 3,000 people in Damascus City, it provides only one per 15,000 population in Aleppo. The population per dentist ratio is worst in Al Hasakeh and Al Rakka mohafazats where other health manpower is also in short supply. (See Table 31).

There is a School of Dentistry in Damascus which has a total of 801 students (26 percent are women). The graduating class in 1976 was expected to be 119. There is also a school for dental assistants, the Intermediate Dental Institute, which has 43 students enrolled. Information about its entrance requirements, curriculum, and graduates was not available.

#### Pharmacists

In 1975 there were 1,255 pharmacists employed in Syria. The faculty of Pharmacy at the University of Damascus graduates about 150 new pharmacists each year. Total enrollment was 876 students in 1975/76. Forty-two percent of the students were women. (Less than 10 percent of physicians in Syria are women). Approximately 45 pharmacists have had post-graduate training outside of Syria. Pharmacists, like physicians, are required to serve in rural areas for one year, but, unlike physicians, they are permitted to establish private business. The pharmacist may open a private pharmacy in a small town, or purchase the business from another as long as it is in a geographic area designated by the government. Prescriptions are filled at prevailing market prices. The pharmacist profits from the enterprise while the government has provided service to a rural area at virtually no cost to the MOH. The pharmacist is not required to live in the area, and may commute there if desired. The community does not necessarily have access to a pharmacist around the clock.

#### Health Technicians

Auxiliary medical personnel trained in Syria include laboratory technicians, X-ray technicians, pharmacy assistants, sanitarians, and anesthetics assistants. The National Technical Health Institute in Damascus and the Aleppo Intermediate Medical Institute offer training to over 500 students each year. (See Table 33). The school in Damascus is under the Ministry of Health and responds to the perceived needs of the Ministry. The school in Aleppo is directed by the Ministry of Higher Education and responds to the needs of the Aleppo medical school. There has as yet been no effort to coordinate the training offered by the two schools, although they offer similar programs.

Between 1961 and 1970, 120 students graduated from 6-one year courses at the Institute in Damascus. Recently, with assistance from WHO, the courses have been expanded and admission requirements changed. A baccalaureate in science (12 years of general education) is now required. Formerly, nine years of general education were sufficient. Applicants must pass an entrance examination and be between 18 and 25 years old. Practical training is offered in the Damascus Hospital, public health centers, the Military Hospital, and a drug factory. The courses for health visitors and health educators which were being discussed in 1972 apparently were never added to the curriculum.

Laboratory training is the most popular course. One of the reasons is the short (six hour) work day, which leaves time for private work and a second income. Although the number of laboratory and anesthetics technicians graduated each year can adequately meet the demands of the health sector, the same cannot be said of X-ray technicians. There is a critical countrywide shortage of trained X-ray technicians in Syria, and the inability of the Institutes to find sufficient qualified teachers means that the number of graduates in this specialty will continue to be small. The curriculum of the pharmacy technicians is reportedly not appropriate to the demands of their work after graduation. The environmental sanitarians are also said to lack a relevant training program and well-defined work after graduation. Expansion of the National Health Technical Institute has been planned without consideration of the size and type of programs offered by the Aleppo Institute.

#### Veterinarians and Veterinary Assistants

There are about 120 graduate veterinarians in Syria. Only 40 of them work in the Ministry of Agriculture and Agrarian Reform's Animal Health Service. The rest are either in the military or are assigned to other duties. There are approximately 200 veterinary assistants who work in the field offices of the veterinary services. There are no veterinarians who work in the private sector.

There are Schools of Veterinary Medicine in Hama and Aleppo. The school in Hama is being expanded and will produce 330 graduates per year after 1979. In Aleppo, 388 students were enrolled in 1976 in the undergraduate preliminary science courses needed for the School of Veterinary Medicine. The number of graduates per year was not available. In addition, there is a school for veterinary assistants in Damascus. Expansion of this school is projected at a lower rate than expansion of the Veterinary Medicine Schools.

According to the F.A.O., one veterinarian is recommended for 20,000 head of livestock. Syria's projected need for veterinarians is estimated to be 400-500. The current training efforts are expected to result in a surplus of veterinarians by 1981 and an imbalance between veterinarians and other animal health workers. At the suggestion of outside experts, Syria has planned to undertake a study of the manpower requirements and training needs in the animal health area. The study is scheduled to be completed during the third quarter of 1977.

### Health Care Administrators

The majority of the health care administrators in Syria are either medical doctors who have had no specialized training in administration or administrators who have not had the kind of special training which would equip them to deal with the technical aspects of problems in health care administration. Health planners, hospital administrators, municipal and mohafazat health officers all fall into one of these two categories. There is only one trained hospital administrator in the country and he is no longer working in this profession. There are no educational or training institutions in Syria which offer courses in health care planning, financing or administration. Plans for assistance in the development of hospital administration capabilities have been formulated by UNDP, and USAID is offering assistance in the development of a health planning capability within the central Ministry of Public Health. The universities in conjunction with the medical schools appear to be the appropriate location for programs in health planning and health care administration.

### Traditional Healers

The herbalists who were traditionally part of the health care system in Syria are now legally barred from medical practice. There are conflicting opinions as to the number who still manage to practice their art. While the health professionals in two provinces confirmed the presence of herbalists there, many others stated that the modern health care system had largely replaced the practice of traditional healers. Many people have used the treatments of the herbalist in conjunction with the treatment of a physician, but this is apparently declining. Because of the clandestine nature of the herbalists' activities, it is unlikely that the number who continue to practice will ever be known.

### Health Manpower Projections

The health manpower projections for the fourth Five-Year Plan (1976-81) include the training of the following health personnel:

Physicians	3000	(600 per year)
Medical technicians	1800	(360 per year)
Nurses and Midwives	2000	(400 per year)
Dentists	925	(185 per year)
Pharmacists	900	(180 per year)

About 25 percent of the physicians will be encouraged to specialize in: radiology, anesthesiology, blood diseases, pediatrics, general surgery, neurology, and neurosurgery.

The medical schools are currently operating at a level which should include the production of 3000 physicians during the Plan period. The other schools

however, will need to be expanded to produce the planned number of graduates. (Compare with Table 33). The imbalance between physicians and other health personnel will continue at least to the end of the decade unless these plans are revised.

CHAPTER SEVEN  
HEALTH FACILITIES

The Syrian health care delivery system includes public, private, and military hospitals, public health clinics, laboratories, and many private medical practices. Although the number of facilities has grown considerably since independence, there are a number of weaknesses in the system which prevent the most efficient delivery of health services to Syria's population. Rural areas suffer from a shortage of facilities of all kinds, while even in the relatively better served urban areas, the lack of coordination between the various subsectors of the health system result in a less than optimal delivery of services. The absence of an overall health strategy has caused some uneven programming which is apparent in the constant changes in the function of the health centers and clinics (see Table 36). The construction of new facilities is not coordinated with the production of trained health personnel - the result is hospitals which cannot be opened and clinics which operate only a few hours a week.

Hospitals

The development of hospitals in Syria during the past 25 years has been impressive. In 1949 there were 19 hospitals in Syria with a total of 1,465 beds. By 1975 there were 104 hospitals with 7479 beds (see Table 37). Population growth has been equally rapid, however, and so the population per hospital bed ratio has changed very little.

The geographic distribution of hospitals favors Damascus and Aleppo, while Al Hasakeh and Al Rakka have population per bed ratios which are ten times as great as those in the large urban areas. The Ministry of Public Health has attempted to correct the maldistribution of facilities by constructing a 350-bed hospital in Al Rakka; however, staff recruitment has been a problem. The same problem was encountered recently when a new hospital was opened in Al Hasakeh. (These hospitals were completed in 1976 and are not included in the Tables.)

According to the Third Development Plan (1971-75), 11 new hospitals were to be constructed during the Plan period, which would have increased the number of hospital beds available to 10,118. Apparently, three hospitals were built (Lattakia, Deir ez Zor and Al Hasakeh), while hospitals were enlarged in Aleppo, Homs, Hama, and Tartous. A fourth hospital, Al Rakka, was completed in 1976. According to the Mohafazat officials in Lattakia, three MOPH hospitals with a total of 444 beds will be constructed there between 1976-80.

Other hospital construction is being undertaken by the Red Crescent (200 bed hospital in Damascus), the Ministry of Higher Education (400 bed teaching hospital in Lattakia), and the Ministry of Labor and Social Affairs (200 beds in Aleppo and 400 beds in Damascus). These will be the first hospital facilities built by the Syria Red Crescent and the MLSA. Construction of all of these facilities will serve to further widen the facilities gap between urban and rural areas. The country wide distribution of health manpower will also be effected if the staffing needs of these facilities are to be met. The occupancy

Table 36  
Clinics and Health Centers, 1955-197

Years	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Clinics	95	95	95	138	186	208	183	196	195	210	219	234	229	239	250	234	204	148	84	52	38**
Maternity and child care	12	12	12	12	13	14	27	32	42	48	47	51	48	53	66	54	42	27	21	16	16
T. B.	-	-	-	-	-	-	-	4	4	3	3	3	3	3	4	6	8	8	11	11	12
Malaria	-	-	-	-	-	-	-	11	9	9	10	10	10	14	12	14	13	13	13	13	13
Scab	-	-	-	-	-	-	-	4	4	4	4	1	1	-	-	-	-	-	-	-	-
Bilharziasis	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	2	3	2	3	7
Rural health	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	3	6	1	-	-
Trachoma	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1
Ankylostomiasis	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-
Health centres for essential services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	108	155	191	192
Total	107	107	107	150	199	222	210	251	258	278	287	303	296	320	343	319	316	314	288	287	279

\*\* Includes clinics related to Ministry of Health only.

Source: Syrian Arab Republic Statistical Abstract, 1976.

Table 37  
Hospitals, Sanatoriums and Beds, 1949, 1956-1975

Year	Total		Sanatoriums		Private Hospitals		State Hospitals		
	Average number of persons per bed	Beds	No.	Beds	No.	Beds	No.	Beds	No.
1949	-	1465	19	175	3	-	-	1290	16
1956	-	5067	84	705	4	1712	58	2650	22
1957	-	5317	84	705	4	1712	58	2900	22
1958	-	4577	75	860	5	1229	48	2488	22
1959	-	4563	74	848	5	1175	47	2540	22
1960	894	5067	78	860	5	1253	49	2954	24
1961	844	5543	81	1000	4	1236	52	3307	24
1962	866	5583	82	780	4	1339	52	3464	26
1963	844	5914	82	780	4	1341	52	3793	26
1964	854	6037	85	780	4	1400	55	3857	26
1965	897	5943	81	780	4	1320	51	3843	26
1966	901	6111	82	800	4	1328	51	3983	27
1967	916	6206	87	788	4	1340	56	4078	27
1968	957	6135	82	792	4	1248	51	4095	27
1969	986	6156	81	781	4	1219	50	4156	27
1970	1007	6216	81	763	4	1196	49	4257	28
1971	996	6491	85	780	4	1229	52	4482	29
1972	974	6854	88	1132	5	1229	55	4493	28
1973	1032	6678	94	780	4	1280	60	4618	30
1974	1054	6753	98	780	4	1350	65	4623	29
1975	983	7479	104	780	4	1436	69	5263	31

Note: These institutions are distributed by present name.

Source: Syrian Arab Republic Statistical Abstract 1976

rates of the hospitals which are currently operating in Syria are low (see Table 38), which indicates underutilization of existing hospital facilities.

The reasons for the underutilization of hospital capacity are unclear. The statistical data on the operation of individual hospitals is sent regularly to the MOH but the information is not used either to measure the effectiveness and efficiency of the hospital system or to make long-range plans and project needs.

The government hospitals are headed by physicians who have clinical duties in the hospital as well as a private practice. They are in effect part-time administrators at best. Many of the daily administrative tasks are handled by the assistant to the director, usually a lay administrator who is unaware of some of the technical aspects of administering a hospital such as the cost of care, the efficiency of the use of hospital beds, and the importance of complete and accurate medical records. The result is that the standards for administrative services and for the delivery of professional care are often unsatisfactory.<sup>1</sup>

There are approximately 69 private hospitals in Syria. The majority are in Damascus and Aleppo. These hospitals are owned and operated by doctors in private practice and usually have between 15 and 45 beds (see Table 42). The most current information available regarding the specialties of the private hospitals was published in 1972. Recent observations have confirmed that emphasis continues to be in obstetrics and surgery.

A low average length of stay may be indicative of efficiency, lack of diagnostic facilities, or the high cost of hospital care. In Syria the low average length of stay in both public and private hospitals appears to be a combination of these three factors. Statistics are skewed further downward because all emergency patients are kept overnight. Wound infection rates in private hospitals are extremely low which indicates that the quality of care is good in those facilities.

Private hospitals must reserve at least 20 percent of their room space for public patients. This has created problems in some areas where the local government reimbursement to a hospital is less than the fee charged for a private care patient (see Table 40 for Private Hospital Rates). The inability or unwillingness of local governments to pay the full cost of care to a private hospital serves as a disincentive to the development of more private hospital beds. Although the government is authorized to assist in the development of private sector hospitals, no assistance has been given. (See Statistical Appendix for Occupancy Rates in Private Hospitals).

The quality of hospital care is always difficult to assess. Staffing patterns give some indication of the amount of individual attention that patients might receive, while the quality of staff training is a major determinant of the kind of care offered. In Syria, the nursing shortage affects both public and private hospitals. Private facilities, perhaps because of their smaller size and the more personalized nature of a proprietary establishment, may offer on-the-job training to the nursing staff as well as better

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<sup>1</sup> UNDP, Strengthening and Development of Hospital Administrative Services, p. 3 & 4.

Table 38

## Patients of State Hospitals and Sanatoriums - 1975

Mohafazat	Average length of stay per patient (days)	% of beds occupancy	No. of discharged patients
Damascus City	5	66	57029
Damascus	5	60	5466
Aleppo	6	54	17229
Homs	4	66	14374
Hama	7	54	9866
Lattakia	6	67	10874
Deir-ez-Zor	5	20	5896
Idleb	4	43	5950
Al-Hasakeh	4	45	3259
Al-Rakka	4	53	1282
Al-Sweida	5	66	8521
Dar's	8	87	5059
Tartous	4	71	8066
Quneitra			

Source: Statistical Abstract, 1976, Syrian Arab Republic

Table 39  
Hospitals, Sanatoriums and Beds By Mohafazat, 1975

Mohafazat	Total			Sanatoriums		Private Hospitals		State Hospitals	
	Average number of Persons per bed	Beds	No.	Beds	No.	Beds	No.	Beds	No.
Damascus City	430	2423	25	253	1	421	19	1749	5
Damascus	968	756	4	200	1	-	-	556	3
Aleppo	827	1841	33	115	1	557	25	1169	7
Homs	1278	492	11	-	-	226	10	266	1
Hama	1586	379	9	-	-	98	7	281	2
Lattakia	1470	302	6	-	-	50	4	252	2
Deir-ez-Zor	1103	301	5	-	-	15	1	286	4
Idleb	2391	179	2	-	-	11	1	168	1
Al-Hasa keh	6650	80	2	-	-	-	-	80	2
Al Rakka	3747	75	2	-	-	45	1	30	1
Al-Sweida	806	201	1	-	-	-	-	201	1
Dar'a	2518	112	1	-	-	-	-	112	1
Tartous	1030	338	3	212	1	13	1	113	1
Quneitra	-	-	-	-	-	-	-	-	-
Total	983	7479	104	780	4	1436	69	5263	31

Source: Syrian Arab Republic Statistical Abstract, 1976.

Table 40

Private Hospital Rates  
 Syrian Arab Republic 1970

Room Rates	Syrian Pounds*
Single room w/bath & sitting room	75/day
Single room w/bath only	60
Single room w/o bath	40
Double room w/bath	35
Double room w/o bath	30
3-4 bed ward	20
4 + bed ward	15
<b>Surgical Procedures</b>	<b>(minimum-maximum)</b>
Tonsillectomy	150-200
Cholecystectomy	450-600
Simple hernia repair	225-350
Hysterectomy (type unspecified)	500-600
<b>Uncomplicated Delivery, with</b>	<b>500</b>
5 days hospitalization, including cost of physician during time of hospitalization for delivery but excluding pre-and post-natal care	
Exchange rate	U.S. \$1.00 = 3.7 Syrian Pounds

Source: Family Health Care, Inc.

supervision, both of which can contribute much to the quality of care. However, nursing personnel in the private sector are paid only as much as the individual doctor, or private hospital wishes to pay, and salaries are reportedly lower than in the public sector.

The quality of the physical structures which house hospital facilities varies from outdated and in need of renovation to brand new. Equipment also varies widely in quantity, type, condition, and quality. The inefficient design of a new public hospital in one Syrian city and a request for assistance in the design of another facility suggest a shortage of qualified hospital architects.

Public hospitals offer a wide range of services, but most of the specialized services were available only in Damascus and Aleppo as recently as five years ago (see Table 41). However, over 1000 beds have been added to the hospital facilities in Syria since this report was published so it is possible that specialized treatment is now available in the other mohafazats.

Emergency cases are treated at the nearest hospital whether public or private. By law this treatment is free. In private hospitals, the patient is advised of the cost of further care after the initial emergency has been treated and may then elect to be moved to a public hospital for free care or remain as a paying patient in the private facility.

#### Specialized Hospitals

There are two mental hospitals (Damascus and Aleppo) with a total of 710 beds. There are three tuberculosis hospitals (Damascus, Aleppo, and Tartous) with a total of 1,075 beds. In 1972 the Damascus hospital had an average length of stay of 13.8 days while the others averaged 98 days and 103 days respectively. All three hospitals are approximately the same size. In 1972 there was one leprosarium with 180 beds.

#### Outpatient Care

Outpatient care in Syria is offered by the clinics and health centers of the Ministry of Health and by physicians and midwives in private practice.

The Ministry of Health operated 279 general and special clinics in 1975. There are three basic types of clinics: large polyclinics, health centers and dispensaries, and specialty clinics which were being converted to integrated health centers. The majority of health centers are staffed by physicians and offer basic services in three areas: curative, preventive (includes MCH and immunizations) and environmental health. Services are reportedly fragmented with the emphasis on curative medicine. In rural areas services are available free to the entire population. In less remote areas and in urban areas, clinic services are only available to those who possess a health card. (Health cards are issued by the Mohafazat government to individuals who earn less than 400 S.P. per month. Income level is generally certified by the Muktar - local leader).

Table 41  
Number of Beds According to Various Specialities in Government Hospitals by Mohafazat - 1972

Mohafazat:	Damascus	Aleppo	Lattakia	Homs	Hama	Hasakeh	Deir-Ez-Zor	Dar'a	Sweida	Idleb	Al Rakka	Tartous	Al-Quneitra	Tot
Internal	444	146	40	96	53	26	120	55	95	60	10	35	-	118
Pediatrics	179	63	39	24	12	11	40	-	16	-	-	-	-	38
Surgical	407	155	51	74	64	20	70	45	82	60	15	9	-	105
Obstetrical	182	13	28	21	26	4	40	-	1	30	5	13	-	36
Ophthalmology	98	25	4	21	12	4	-	-	-	-	-	-	-	16
E.N.T.	111	14	6	10	-	-	-	-	-	-	-	-	-	14
Orthopedics	161	27	-	-	-	-	-	-	-	-	-	-	-	18
Urology	70	35	-	-	-	-	-	-	-	-	-	-	-	10
Venereology	10	15	-	-	-	2	-	-	-	-	-	-	-	2
Internal	500	210	-	-	-	-	-	-	-	-	-	-	-	71
Municipal	215	50	-	-	-	4	-	-	-	-	-	-	-	26
Maternity	60	-	-	-	-	-	-	-	-	-	-	-	-	6
Internal	18	-	-	-	-	-	-	-	-	-	-	-	-	1
Emergency	253	197	-	-	-	-	120	-	-	-	-	212	-	78
Physiotherapy	38	-	-	-	-	-	-	-	-	-	-	-	-	3
Emergency	-	82	-	-	-	2	-	-	-	-	-	-	-	8
Cardiac diseases	-	20	-	-	-	-	40	-	-	-	-	-	-	6
Total	2746	1052	168	246	167	73	430	100	194	150	30	269	-	562

Source: Annual Statistical Report, 1972, Ministry of Health

Table 42

Number of Beds According to Various Specialities in Private Hospitals by Mohafazat - 1972

Mohafazat	Damascus	Aleppo	Lattakia	Homs	Hama	Al- Hasakeh	Deir-Ez Zor	Dar'a	Sweida	IdFeb	Al Rakka	Tartous	Al- Quneitra	Total
Internal	42	56	10	34	10	-	-	-	-	-	-	-	-	152
Pediatrics	12	11	-	10	-	-	-	-	-	-	-	-	-	33
Surgical	141	223	20	131	30	-	15	-	-	12	-	6	-	578
Obstetrical	82	141	20	31	15	-	-	-	-	3	-	7	-	299
Ophthalmology	31	23	-	-	-	-	-	-	-	-	-	-	-	54
E.N.T.	34	15	-	-	-	-	-	-	-	-	-	-	-	49
Orthopedics	15	30	-	-	-	-	-	-	-	11	-	-	-	56
Urology	-	7	-	-	-	-	-	-	-	-	-	-	-	7
Venereology	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mental	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Communicable	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dermatology	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dental	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Radio Therapy	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Emergency	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cardiac Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	357	507	50	206	55	-	15	-	-	26	-	13	-	1229

Source: Annual Statistical Report 1972 Ministry of Health

Rural health centers are the most difficult to staff; a recent survey revealed 20 centers were without physicians. The military placed physicians in these centers as a temporary measure but Ministry of Health personnel were expected to staff them in 1977. In addition to a physician, the health center staff usually includes one or two nurses, two or three health visitors, an environmental sanitarian, and one or two watchmen. Some health centers also have the services of a dentist. The health centers are open only in the morning. Those which do not have a full time physician are visited once or twice a week by a physician assigned to a nearby health center in the same mohafazat. In the mohafazats that have physicians assigned to all health centers, the physicians sometimes visit the nearby dispensaries on a weekly basis. The mohafazats which are furthest from the coast (Al Hasakeh, Al Rakka, and Deir ez Zor) have the most difficulty staffing the health centers.

Dispensaries which were a part of the outpatient facilities in 1972 (see Table 43) have either been upgraded and are now health centers or they have been converted to special purpose clinics (for tuberculosis, schistosomiasis, etc.) These were not necessarily separate physical facilities; therefore, their conversion to other activities is often a minor undertaking.

There are an unknown number of private dispensaries which are owned and operated by physicians in private practice. Their size, equipment and services offered vary according to the specialty of the physician and the size of the practice. The General Federation of Trade Unions operated six dispensaries and eight pharmacies in 1974. Every mohafazat had a pharmacy except Tartous, Idleb, Al Hasakeh, Dar'a, and Quneitra. The six dispensaries serve Damascus, Homs, Hama, Lattakia, Aleppo, and Deir ez Zor.

#### Other Health Facilities

##### Laboratories

Data on the number and distribution of laboratories in Syria is incomplete, however, there are four government laboratories in Damascus. The central laboratory manufactures cholera, rabies, smallpox, and typhoid vaccines. A Central Veterinary Laboratory produces veterinary biologicals. Laboratories are reported to be ill-equipped, particularly those which are not associated with hospitals. Physicians are apparently not trained to make full use of laboratory services, and until they are, improvements in laboratory facilities will result in little or no benefit to patients.

##### Pharmacies

Most of the drugs and pharmaceuticals used in Syria are sold through private pharmacies which are licensed by the Ministry of Health. The majority are imported from Europe. Simex, the Syrian government Import-Export Company, controls the importation of drugs. Public hospitals have their own well-stocked pharmacies.

Table 43  
Health Centers and Dispensaries by Mofazat 1972

	Ministry of Health		Private Dispensaries
	Dispensaries	Health Centers	
Damascus	6	43	14
Aleppo	11	23	13
Lattakia	7	9	2
Homs	17	10	3
Hama	17	8	1
Al Hasakeh	10	4	--
Deir ez Zor	3	12	--
Dar'a	--	19	1
Al Sweida	5	11	--
Idleb	17	2	--
Al Rakka	--	14	--
Tartous	11	2	--
Quneitra	10	1	--
	114	158	34

Source: Annual Statistical Report 1972, Syrian Ministry of Health.

### Medical Supplies and Equipment

The majority of hospitals are said to possess the basic equipment which is appropriate to a community hospital. This presumably includes some X-ray equipment, i.v supplies, sterilizers, refrigeration equipment, operating room supplies, some equipment for emergency care, and a laboratory which can do serology, hematology and chemical analysis.

Equipment maintenance and repair are a problem in part because the two are considered to be the same thing in some areas. Qualified biomedical engineering staff are limited. The wide variety of types of equipment from all over the world would present a challenge for the most skilled maintenance staff. Often, major repairs can be made only in Damascus. Despite these limitations, the equipment in most hospitals is functioning.

Other institutions which offer health services include three Institutes for the Physically Handicapped and Disabled (Homs, Hama and Damascus). These provide resident care for a total of 65 people, and vocational rehabilitation services for an additional 150 people. Ten institutions for the blind house 152, 115 of whom are males between the ages of 7-18 years of age. There are also two institutions for deaf-mutes in Damascus and Aleppo which care for 198. The 26 orphanages in Syria shelter over 1,800 children, the majority of whom are males 7-12 years old. Every mohafazat except Dar'a has a facility for the aged. A total of 17 institutions provided care for 267 old people in 1974.

### Military Health Facilities

The Syrian military provides health care for career military personnel and their immediate families and for enlisted men (but not for their families). Information on the size and location of military medical facilities is not available. The military administers all blood banks and on occasion loans military medical personnel to the Ministry of Health to staff public health facilities. Military personnel also assist the nomadic tribes in medical emergencies when necessary.

CHAPTER EIGHT  
PALESTINIAN REFUGEES IN SYRIA

The United Nations Relief and Works Agency has been organizing and operating camps for the Palestinian refugees since 1950. By the end of June, 1974, 1,583,646 refugees were registered with UNRWA. At that time there were 628,537 refugees living in 63 camps in East Jordan, the West Bank, Gaza, Lebanon, and Syria. In addition, approximately 60,000 people inhabit the perimeters of the camps and benefit from the sanitary services of the camps. These people are either unregistered refugees or homeless squatters. There are 10 refugee camps in the Syrian Arab Republic with a total population of 33,229. This is a relatively small proportion of the refugee population in Syria, which totals about 178,267. Four of the camps are designated as emergency camps and were established to shelter the people displaced by the 1967 hostilities.

The basic health policy of the UNRWA has been to develop a program of integrated community health services which includes medical care with emphasis on preventive medicine, environmental health, and supplementary feeding. Technical supervision of the Agency health programs has been provided by the World Health Organization.

UNRWA services include communicable disease control, school health programs, health education, immunization programs, prenatal care, and supervised childbirth. Environmental health services provide for the development of self-help programs which include construction of surface drains and pavement of pathways. The provision of potable water, sanitary disposal of wastes, drainage of rain water and insect and rodent control are other activities which continue to receive attention. Nutrition-related programs include the provision of basic rations, milk, high protein supplements, vitamins, and hot meals to vulnerable groups among the refugees. Nutrition education and nutrition awareness campaigns are a part of school and clinic activities.

In 1974 there were 20 UNRWA health clinics in Syria. Outpatient care is offered to the 137,774 refugees registered with the clinics. Two-thirds of the UNRWA health centers are staffed full-time by one or more medical officers and a supporting staff, while ten mobile health teams serve the other clinics. At half of these there is a nurse or midwife on full-time duty for first aid and minor problems. Syrian dayahs (midwives) deliver many refugee babies in the home and receive private fees for their services. However, they work under the supervision of the health center staff.

In addition to the UNRWA clinics, there are five health centers which are operated by voluntary agencies. Their activities are included in the UNRWA report on the activities of the 20 UNRWA clinics. Many of the contributions for Palestinian refugee relief are pooled, as are efforts in the field.

Although UNRWA does not operate any hospitals in Syria, hospital beds are made available to the refugees through an arrangement with the Syrian government. During 1974, 107 beds were made available for refugees, which were occupied at a low 60 percent rate.

Other health facilities include three clinical laboratories in health centers at Aleppo, Homs, and Yarmouk camps and two new ones at the Dar'a Camp and Damascus Polyclinic. Additional laboratory services were subsidized in Damascus and other areas.

Demands for mental health care have increased steadily in the camps. Much of this is attributed to the social, economic, and psychological pressures created by the refugees' situation. Table 44 summarizes the use of the clinics and hospitals during 1974.

#### Tuberculosis

Of 748 persons referred for tuberculosis examinations, only nine cases were diagnosed and treated. An additional four persons were diagnosed as having non-respiratory tuberculosis, one of whom required hospitalization

#### Maternal and Child Health

Nineteen prenatal clinics registered 2,470 women in 1974. Of 2,398 deliveries registered, 1,868 took place in the home, 244 in camp maternity centers, and 286 at a hospital. During 1974 there were 2,384 live births recorded, 35 stillbirths, and two maternal deaths. Postnatal home visits totaled 2,005.

There were 6,881 children from 0-3 years registered in the 19 MCH centers in Syria. Immunizations for smallpox, DPT, polio, BCG, measles, and TAB were administered as part of the preventive health care program of the clinics. Approximately 8 percent of children 0-1 year were considered to be underweight, with 7.1 percent classified as having first degree malnutrition (75-85 percent average weight), 4.2 percent second degree malnutrition (60-75 percent average weight), and 0.3 percent third degree malnutrition (below 60 percent average weight).

#### Deaths of Refugee Children 0 - 6 Years

	<u>Number</u>	<u>Percent</u>
All causes	88	100
Diarrheal diseases	52	59.1
Respiratory infections	12	13.7
Prematurity	0	0
Nutritional deficiency	2	2.3
Perinatal causes	1	1.1
Congenital anomalies	1	1.1
Accidents	4	4.5
Measles	3	3.4
Other and unknown causes	13	14.8

Table 44

Activities of UNRWA Clinics in Syria, 1974

Population eligible for services	159,892
Medical consultation	
1st visit	94,122
Repeat visits	273,782
Injections	146,118
Dressings and skin treatments	92,909
Eye treatment	27,245
Dental treatment	13,761
<b>Total</b>	<b>647,937</b>

Hospital services

Bed available

General	77
Pediatric	0
Maternity	6
Tuberculosis	20
Mental	4

Total 107

Beds per 1,000 population	.66
Total bed days available	37,595
Bed days used	22,586
Percent used	60%

Source: UNRWA Annual Report, 1974.

During 1974, 7,736 school children were examined and the following were found to be the most common health problems:

Dental caries	23.7%
Ascariasis	18.7
Simple goiter	14.1
Anemia	8.5
Hypertrophy of tonsils	7.5
Undernutrition	6.0
Conjunctivitis	4.6
Infective skin conditions	3.0
Acute upper-respiratory infections	.3

#### Environmental Sanitation

The UNRWA programs which are concerned with environmental sanitation serve approximately 28 percent of the total refugee population in Syria. In addition to the 50,000 registered refugees who are entitled to use the sanitation services, an unregistered population of 1,173 use the same sanitary facilities. A little over half (53 percent) of this population is served by private water connections (assuming that ten persons are served by one connection). The remainder (47 percent) are served by 27 public water points which have a total of 153 taps. The supply of water per capita per day averages 16 litres.

Garbage disposal in six camps is provided by contractual or municipal removal; three camps incinerate or use sanitary fill for garbage disposal.

The majority of the refugee population has private latrines available in the refugee camps. An average of ten people use each private latrine. Although the average family size is six persons, it is not uncommon for family members who live side by side to share both water and latrine facilities. Public latrines serve approximately 5 percent of the population in the established camps and 12 percent of the population of the emergency camps. There is one public latrine seat for every 35 people.

Insect and rodent control is another activity of the UNRWA. Activities are directed at the control of flies, body lice, bed bugs, rodents, and fleas.

#### Nutrition and Supplementary Feeding

Basic rations of flour, pulses, oils and fats, sugar, and rice are distributed to refugees. The caloric value of the basic rations is approximately 1,500 calories per person per day. Extra rations of flour, pulses, and oils and fats are given to pregnant women and nursing mothers. Basic rations were given to 102,856 people in 1974. Extra dry rations - corn-soy-milk supplement and wheat-soy-blend - were also distributed to 25,343 persons.

Hot meals were served in 17 feeding centers to displaced children 6-15 years old, eligible children under six years, older children, sick adults and hardship cases when medical recommendation is made. The beneficiaries of this program totaled 8,696 people. In addition, infants up to one year, school children, pregnant and nursing women, and special medical cases received 30-40 grams of milk powder per day. Approximately 38,676 people received milk.

Vitamins are distributed through UNRWA-operated elementary schools and a monthly emergency protein supplement of one 12-ounce tin of meat and 500 grams of corn-soy-milk were given to 16,168 persons, all displaced refugees.

### Education

The Department of Education of UNRWA is responsible for basic, professional and vocational training. In 1974-75, UNRWA sponsored 58 Syrian medical students and three pharmacy students. The Vocational Training Center in Damascus offered training for 18 laboratory technicians and 47 assistant pharmacists. Other courses which were open to refugees but which were not given in Syria included nursing, midwifery, physiotherapy, X-ray technicians, and public health inspectors. These courses were offered in other countries in the area. It is interesting to note that in the refugee camps, the school enrollment in elementary and secondary schools is almost 50 percent female. This is true for all of the Palestinian refugee camps in every country.

In summary, UNRWA has developed a comprehensive health and welfare system in the refugee camps which has done a great deal to alleviate the problems associated with serving a large population of displaced persons. Budgetary constraints, interruptions in the delivery of food and other supplies, and disruptions caused by the political situation in the Middle East continue to plague the program; however, most essential services continue to function. The information presented on disease control, sanitary services, nutrition, and maternal and child health show impressive results in improvement of health and living conditions in the camps. Due to the current political crisis in the area, it is unlikely that the 1975 or 1976 reports on refugees will be available soon.

The relief services budget of the UNRWA amounted to \$88.7 million U.S. in 1974. Relief services, which included basic rations and supplementary feeding, totaled \$37 million; education services, including vocational and professional training, totaled \$38.9 million; and health services totaled \$10.2 million. The following funds were used in field operations in Syria:

Recurrent costs (US \$)

Medical services	563,000
Environmental sanitation	138,000
Supplementary feeding	777,000
Total	<u>1,478,000</u>

\*Non-recurrent costs

Medical services	275,000
Environmental sanitation	54,000
Supplementary feeding	14,000
Total	<u>343,000</u>

\*Includes buildings, extraordinary maintenance, equipment and non-consumable supplies.

Tables 45-48 provide further information on the refugee camps in the Syrian Arab Republic.

Table 45

## Palestinian Refugees in Syria

REFUGEE POPULATION REGISTERED ---			
	Eligible for full service	Eligibility limited	Total
Damascus	122,835	14,132	36,967
South	10,687	903	11,590
Homs, Hama	10,820	1,510	12,330
North	15,550	1,830	17,380
	159,892	18,375	78,267
REFUGEE LIVING IN CAMPS Registered and unregistered pop.			
	Registered	Unregistered	Total
Khan Esnie	7,689	87	7,776
Khan Danou	3,909	43	3,952
Dera'a	2,331	183	2,514
Homs	6,394	-	6,394
Hama	3,203	-	3,203
Neirab	9,390	-	9,390
Sub-total	32,916	313	33,229
Emergency Camps			
Sbeineh	5,861	399	6,260
Qabr Essit	4,885	116	5,001
Dera'a	2,228	35	2,263
Jaramana	4,289	310	4,599
Sub-total	17,263	860	18,123
10 camps total	50,179	1,173	51,352

Source: UNRWA Annual Report of the Director of Health, 1974, pp. 58-61.

Table 46

JNRWA Health Personnel in Syria  
(1974)

Doctors (full-time)	20
Doctors (part-time)	1
Doctors (contractual)	2
Medical nutritionist (1 in UNRWA headquarters)	-
Dentists (full-time)	1
Dentists (part-time/contractual)	1
Graduate nurses (including nurse- midwives and public health nurses)	19
Midwives - qualified	7
Auxiliary nurses	34
Midwives - traditional (UNRWA reg. in Jordan)	-
Sanitation officers	1
Food supervisors	1
Laboratory technicians	6
Pharmacists	1
Health education workers	4
Others: Medical	37
Sanitation	14
Milk and feeding	<u>22</u>
Sub-total	171
Labor Category	
Medical	37
Sanitation	73
Milk and supplemental feeding	<u>85</u>
Sub-total	195
Grand total	366

Source: UNRWA Annual Report of the Director of Health, 1974, pp. 62-63.

Table 47

Communicable Diseases Reported As of June 30, 1974

Chickenpox	513
Conjunctivitis	6,908
Diarrheal diseases	
(0-3 years)	15,039
(over 3 years)	6,088
Diphtheria	1
Dysentery (amoebic and bacilla)	354
Enteric group fevers	127
Gonorrhoea	2
Infectious hepatitis	175
Influenza	3,851
Measles	286
Meningitis (cerebrospinal)	3
Mumps	694
Pertussis	6
Poliomyelitis	2
Syphilis	1
Trachoma	107
Tuberculosis (respiratory)	0

No cases of cholera, plague, yellow fever, smallpox, typhus, relapsing fever, brucellosis, leprosy, endemic typhus, bilharziasis, leishmaniasis, malaria, rabies, scarlet fever, tetanus, or tetanus neonatorum were reported.

Source: UNRWA Annual Report of the Director of Health, 1974.

Table 48

Number of Pupils in UNRWA/UNESCO Schools  
(by grade, as of May 31, 1974)

Elementary		Boys	Girls	Total
Year	1	2,559	2,384	4,943
	2	2,615	2,294	4,909
	3	2,387	2,222	4,809
	4	2,391	2,034	4,425
	5	2,199	1,738	3,937
	6	1,933	1,638	3,571
	Total	14,284	12,310	26,594
Preparatory				
Year	1	1,881	1,474	3,355
	2	1,504	1,270	2,774
	3	1,792	1,382	3,174
	4	-	-	-
	Total	5,177	4,126	9,303
University Scholarship Holders				
Course		Male	Female	Total
Medicine		57	11	68
Dentistry		-	-	-
Pharmacy		4	1	5
Nursing		-	-	-
	Total	61	12	73

Source: UNRWA Annual Report of the Director of Health, 1974

## CHAPTER NINE

### SYRIA IN PERSPECTIVE

#### Geography and Climate

The Syrian Arab Republic includes approximately 72,335 square miles of desert, plains, and mountains within its borders. Its only natural boundary is 104 miles of Mediterranean coast. Artificially drawn borders with Turkey, Lebanon, Jordan and Iraq were established by the European powers after World War I. The border with Israel was set as part of the 1949 armistice agreement. Most Syrians regard the borders with Jordan, Lebanon, and Iraq as arbitrary lines which artificially separate them from other Arabs. Only the borders with Turkey and Israel represent true cultural and political dividing lines.

Geographically, Syria is divided into two principal zones: the Coastal Zone, which is relatively small, and a much larger eastern plateau. The two areas are separated by an imposing 5,000-foot mountain range called the Jebel Ansariyeh. The ridge rises gradually from the sea, leaving room for a narrow coastal plain. The eastern side drops abruptly to the Orontes River valley which is often flooded in winter and spotted with malarial marshes in summer. More hill ranges border the eastern side of the valley; these fan out to the south and west and include the Anti-Lebanon range and Mt. Hermon (9,000 feet), Syria's highest mountain. Along the eastern side of the hills lie several shallow basins. Aleppo, Syria's largest city, is situated in one of these basins. In another is Syria's capital, Damascus, which is in an oasis irrigated by five streams.

The Jebel Druze occupies the extreme southwest corner of Syria. The western part of this area is fertile and produces good cereal crops, but further east, the soil cover disappears and a barren countryside of lava sheets and caverns emerges.

The eastern zone of Syria is steppe or open desert, except close to the banks of the Euphrates River and its tributaries. Major irrigation projects have increased the area of cultivable land during the past decade. The area between the eastern bank of the Euphrates River and the Tigris River at the extreme eastern corner of Syria is known as the Jezireh (Arabic word for island). Its topography is similar to that of the rest of the east.

Syria's two geographic zones can be further differentiated by their climatic variations. The temperate and humid effects of the Mediterranean are felt only along the narrow coastal belt, while the central and eastern portions of the country show the effects of the desert. Rainfall varies from 30-40 inches along the coast to between four and ten inches annually east of the hills. Most of the rain in both areas falls between November and May. Winter frost is rare along the coast, but common in the eastern part of the country. Altitude also has its effect; the lower temperatures in the mountains result in snow which often lasts from late December to April or May. Annual mean temperatures along the coast range from 47 degrees Fahrenheit in January to 90 degrees Fahrenheit in August. Inland, the temperature range is wider, from 40 degrees Fahrenheit in the winter to 110 degrees Fahrenheit in the summer. In

the barren desert region of the southwest, the sandstorms which are common during February and May damage the sparse vegetation and prevent grazing.

## History

The Syrian Arab Republic occupies a major part of a region which has a rich and varied history. The earliest settlers of the region were the Semitic Canaanites, Phoenicians, Hebrews, and Aramaeans. The Phoenicians built flourishing ports along the Mediterranean coast and gave Syria the world's first alphabet. From the Phoenician settlers in the eighteenth century B.C. to the present-day Baathist rulers, Syria had seen a succession of flourishing indigenous civilizations interspersed with periods of foreign domination. The nation, as it is currently defined, has boundaries which were drawn during this century and which have been disputed as recently as 1967, when Israel invaded and occupied the Golan Heights in Southern Syria.

Damascus and Aleppo, two of the oldest cities in the world, were greatly expanded by the Aramaeans, the former as their capital city, the latter as a military post. The Aramaeans promoted the use of the alphabet in daily business and are sometimes credited with giving the area its current name of Syria (derived from Syriac, the dialect which was spoken around Damascus).

Syria was a prosperous nation with three major cities -- Damascus, Tudmur (Palmyra), and Bushra al Sham in the Hawran region. During Hadrian's reign, the Hawran was irrigated and became the breadbasket of the Middle East, while the cities in the area became important trading centers. The Romans constructed roads, wells, and aqueducts which are still in use in this century. Roman tax collection systems established during this time formed the basis for Syria's land tax structure.

In 324 A.D. the Byzantine Emperor, Constantine, divided Syria into two parts and the area was governed by Christian Arabs loyal to Byzantium. Their descendants still inhabit Syria and Lebanon. In the seventh century A.D., Muhammad and his followers invaded Syria from the Arabian peninsula. Byzantium, beleaguered by intermittent uprisings and split by religious differences, was unable to offer any resistance to the Muslim forces. From Damascus, Muslim armies under the Umayyad caliphs spread out across Europe and North Africa. Russia and India were invaded, and southern Spain was conquered in 755 A.D. Damascus, as capital of this vast empire, achieved a glory unrivaled since Aramaean times. Postal and fiscal systems were organized, coins were minted, hospitals built, underwater canals were constructed to deliver water to towns, and trade centers prospered. Many educated Jews and Christians, primarily from Greece, were employed in the caliphal courts where they practiced medicine, alchemy, and philosophy.

The Umayyads used Syria primarily as a base for military operations. They exacted tributes from non-Muslims and kept them disarmed. Hellenistic custom and Roman law were followed, which meant that Muslim laws were applied only to those who shared their religion or nationality. The other religious communities (milla) were administered by their respective leaders. The influence of this administrative and legal system can be seen in the modern Syrian legal codes. The Umayyad leaders assumed that the large subject population would continue to pay tribute indefinitely, but many Syrians converted to Islam and the Arabic

language rapidly replaced Aramaic. The Mawalis<sup>1</sup> unfulfilled expectations of full economic and social equality, shrinking revenues, and tribal rivalries all served to undermine the Umayyad conquerors. With Persian support the Abbassid Muslims pressed in from the East and gained control of the empire in 750 A.D. The center of the empire was transferred to Iraq and Syria became a province of the new kingdom. Muslim expansion throughout the world and Muslim rule of Christian holy places roused Europe and in the twelfth century Crusaders poured into the Middle East. During the next 150 years Christian states were organized in Antioch, Tripoli, Jerusalem and Edessa. Aleppo, Homs, Hama, and Damascus were not conquered but broke into small dynasties. During this period, the Syrians repelled several invasion attempts by the Mongols as well until in 1303, the Egyptian Mamluks gained control of the entire area. War, famine, and intermittent outbreaks of the plague in the fourteenth and fifteenth centuries contributed to the general decline of the area during the Mamluk rule.

Ottoman Turks won Syria in a battle near Aleppo in 1516 and continued south to conquer Egypt in 1517. The general decline in the region which had begun in the fourteenth century continued under the Ottoman Turks. Local rule by pashas who bought their positions contributed little to the economic prosperity of the region. Only the region of Lebanon fared well under the control of independent Druze administrators. Despite this stagnation, foreign traders continued to be attracted to the area for exports of fruit, spices and textiles which were demanded by the growing European markets. By 1600 Aleppo had eclipsed Damascus as the chief marketplace of the Middle East. With the traders came missionaries, scientists, teachers and tourists, most of whom were Christian. France, influenced by memories of the persecution of non-Muslims which inspired the Crusades, began to demand certain rights for French nationals. Sultan Sulayman I granted France extraterritorial rights in Syria in 1535; the French government and the Christians living in Syria turned this privilege into political semiautonomy for their community. The British were granted similar rights in 1580 for the Levant Company in Aleppo, and Russia later claimed protective rights for the Greek Orthodox community. Western influence grew as the educational efforts of the missionaries increased. The American Presbyterian Mission founded the Syrian Protestant College (renamed American University of Beirut) in 1866 while the Jesuits founded their University at Beirut in 1875.

During the rule of the Ottoman Sultan Mahmud II, reforms were introduced which modernized the political structure of Syria. The semi-independent pashas were replaced by salaried officials who were supervised by a centrally administered government. Some effort was made to develop a western style school system. The feudal privileges of the landowning classes were ended, although their social and economic dominance continued. The revival of Arabic literature which grew from these changes paved the way for the growth of Arab nationalism in the twentieth century.

Although Western expansion into Syria was initially economic and industrial, the 1860's saw political interventions increase. The Druze rebellion in the province of Lebanon in 1860 against Christian landlords precipitated the arrival of French troops to quell the disturbances. The Sultan was forced to institute new laws for the protection of French nationals in Lebanon, and under the

Statute of 1861, Lebanon was officially detached from Syria and was largely administered by the French. During World War I the Turks aligned themselves with Germany, and the British and French saw their opportunity to weaken Ottoman influence and gain more of a foothold in Syria. They encouraged Sharif Husayn of Mecca, an Ottoman appointee in Syria, to lead an Arab uprising, offering vague promises that he would then be the leader of a free Syria. By October 1918 Prince Faysal had managed, with British help, to overthrow Turkish rule and enter Damascus a hero.

Faysal, as military governor, consolidated his control over all but the Mediterranean portions of the country, where the French maintained their influence. He convened the General Syrian Congress in 1919 which proclaimed Syria a free and sovereign country and made Faysal king. He and his supporters then began to reconstruct the country. Arabic was established as the official language, and textbooks were translated from Turkish. The Faculty of Law at the Syrian University and the Arab Academy in Damascus were opened during this period, and Faysal appointed a committee to draw up a constitution for the new country.

Although Faysal was taking positive steps to ensure a viable, free Syria, various forces were at work which would undermine Arab unity. Unknown to Faysal, the French, British and Russians had met secretly during the war to decide the fate of their holdings in the Middle East. Under the Sykes-Picot agreement of May 16, 1916, France was to be given paramount influence in Syria, the Arabs were to be given small areas to control, and the British were to be given control of Transjordan (presently Jordan and Israel) and Iraq. In 1917 Lord Arthur Balfour promised Zionists a "national home" in Palestine, a promise predicated on the British retaining control of this area. The end of World War I did not see these ambitions diminished, and even Woodrow Wilson could not gather support for the Arab cause at the Conference of Versailles.

Disappointed and angered by his failure to gain support from the European community, Faysal returned to proclaim Syria an independent nation. France and Britain, however, refused to recognize Faysal's autonomy, and in April 1920 they met in San Remo, Italy, to partition the Arab world into mandates as they had previously agreed upon in the Sykes-Picot agreement. French troops forced Faysal into exile, from which he returned in 1921 as king of Iraq. The French divided Syria into five regions which were designed primarily to fragment Syrian nationalist movements. Syrians in Damascus, although cut off from the rest of their countrymen, continued to pressure the French for independence. These well educated, wealthy Syrians objected more to French suppression of basic liberties including censorship of newspapers and other public media than they did to the thwarting of Arab unity. Taking their cue from the Iraqis, who gained an elected assembly from the British in 1924, the Syrians pressed the French for similar concessions. On February 9, 1925, the French permitted the formation of the People's Party, whose leaders proceeded to demand eventual French recognition of Syria as a free nation, and to improve education and restore civil liberties at once.

The French sought to justify their control of Syria by pointing out that internal unrest demanded their continued presence. However, they had not anticipated the degree to which their interference angered the Syrians. In 1925 the Druzes, angered because the French exercised more control in their affairs than had the Ottoman Turks before them, openly rebelled and within months had consolidated their military control of the Jebel Druze. Buoyed by the success

of the Druzes, Syrian nationalists in Aleppo and Damascus initiated similar rebellions, forcing the French into drastic military action to subdue them. During the next ten years Syrian independence was in a constant state of negotiation. The Syrians wanted complete control of the region, including Lattakia, the Jebel Druze, and Lebanon (which the French had separated from Syria) and the French wished to maintain their influence in the area. Unrest in Palestine, French refusal to ratify a treaty finally agreed upon in 1936, and cession of Alexandretta to Turkey by France contributed to the crisis which ended in open riots in 1941. Just as the Vichy High Commissioner promised to restore partial self government, the Allies invaded Syria and the Free French Government instead formally recognized Syrian independence in September, 1941. Gradually power was transferred from French to Syrian hands. French reluctance to transfer control of the Troupes Speciales, which had been an integral part of the French forces in Syria and Lebanon, led to further disturbances in May of 1945. The British armed forces intervened and the French troops and administrative personnel were evacuated. The Troupes Speciales were turned over to the Syrian Government and in April, 1946, Syria's full independence was accomplished.

The past 30 years have been characterized by political and economic instability as Syria shed the remnants of its colonial past to become an independent nation. The Arab nationalist movements which were organized during the fight for independence disintegrated once independence was achieved, for this was their only real area of agreement. The lack of unity which is so often characteristic of a heterogeneous society was manifested as first one, then another group gained the advantage in the political arena. Economic policies changed almost as often as the government, which has had 19 different heads of state during 30 years of independence. Arab nationalism and socialism have been major issues. The interpretation of both of these terms has been debated and modified continuously. Banks and factories have been nationalized under one government, private business has been encouraged under another. Attempts have been made to establish political unity with other Arab nations, but these have failed so far.

The Baath (Arab Socialist Resurrection) Party has been an important political force since its formation in 1953. It was the product of a merger between two older parties, the Arab Resurrection Party and the Arab Socialist Party. The combining of the intellectual leadership of the Resurrection Party with the broader-based organizational structure of the Socialist Party produced a well-organized party whose program of social reform attracted wide support. Exceptions to this have been among the older, more conservative generations, who have opposed reform, and among the non-Arab minorities who have been wary of the party because of its intense Arab nationalism which sometimes appears to exclude them.

The current government of Syria has been in power since 1970 and is headed by General Hafiz al Assad. President Assad and other military leaders in the Baath Party seized power from more radical civilian party members in November of 1970. Although pan-Arab nationalism and socialism are still the bases of political and economic policy, a more pragmatic approach has developed which has led to improved relations with western nations (while ties with the communist countries are also maintained) and to more moderate expressions of pro-Arab and anti-Israel sentiments. Attempts have been made to attract international business to finance economic development in Syria, and to improve economic conditions in order to slow the emigration of business and professional people.

The recent crisis in Lebanon has given President Assad an opportunity to amplify his role as a spokesman for Arab unity in the Middle East. His assiduous use of armed forces is credited by some with preventing total chaos in Lebanon. Although reunion of Lebanon and Syria seems unlikely at this point in time, there is no question that Syria will have some influence on the new leadership in Lebanon.

### Political Structure

The Syrian political structure is dominated by a strong executive, an elected legislative body and an independent judicial system. The Constitution which was approved by the Syrian electorate in 1973 was drafted by a 173-member People's Council which was appointed by President Assad in 1971. The Constitution is not substantially different from a provisional constitution which had been in effect since 1964. It provides for the election of a President by universal suffrage every seven years. He is to be nominated by the People's Council and must be a member of the Regional Command of the Baath Party. The President has the power to appoint and dismiss the Prime Minister, the Cabinet ministers (there were 27 ministries in 1971), one or more vice-presidents, and officers of the armed forces. He may also dissolve the legislature but must appoint a new one within 60 days. This action must be based on a decision of the Baath Party Regional Command.

The People's Council, which includes women and members of Syria's ethnic and religious minorities, sanctions laws, discusses government policy, and approves the national budget and any treaties. It monitors the activities of the Cabinet and may express disapproval of one or more ministers' actions by withdrawing its confidence.

When the Council is not in session the President assumes legislative powers, but his actions must be presented to the Council for approval when it reconvenes. Council members are appointed by the President on behalf of the Baath Party Regional Command. They serve two-year terms and are confirmed by a national referendum.

The judicial system is headed by a High Judicial Council which has the power to appoint, dismiss, or transfer the judges who head Syria's courts. The Council is composed of senior civil judges who must have a law degree, at least two years of experience in a law office, and pass a competitive examination.<sup>2</sup> There is a Supreme Court with seven judges, a Court of Cassation, and nine courts of appeal. In addition there are close to 100 magisterial courts, juvenile courts, and the religious courts which still handle problems of personal status, such as marriage, divorce, child custody and inheritance. Modifications of the traditional Muslim law have helped to improve the status of women and clarify customary laws of inheritance. Minority groups and nomadic tribes continue to use customary law through special provisions - the Syrian government intervenes only when intertribal frictions become serious.

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<sup>2</sup> Area Handbook, p. 138.

## Economy

Syria's independence marked the beginning of a new direction in economic development. In 1963, the Baath Party accession to power resulted in a nationalization of major industries and an agrarian reform program which have changed the entire structure of the Syrian economy. The capitalist system which was formerly dominated by a land-owning Sunni Muslim elite has been replaced by a publicly owned and regulated economy which is under the control of the new Alawite Muslim military elite which rose to power with President Assad. The country's development process has stimulated industrial growth at the expense of agriculture. Industrial development encouraged the migration of rural laborers to the cities in search of higher wages and better living conditions.

Industrial and agricultural production each accounted for just over 20 percent of the Gross Domestic Product in 1970. Changes in the structure of the Syrian economy are reflected in the fact that cotton has recently been replaced by oil as the major source of export earnings. Because of the increase in oil prices and a generally high rate of inflation, (30 percent in 1975, up from an average annual rate of 6 percent between 1970 and 1973), the industrial share of the GDP had increased to 30 percent by 1974. This trend is expected to continue as oil production increases and other industrial development continues. Syria's oil reserves are estimated to be 300 million tons. Production increases are planned as follows:

8 million tons, 1976  
12 million tons, 1978  
14 million tons, 1980

Because of the low quality of the crude oil, large price increases are not expected. Syria's geographical importance to the other oil-producing countries is expected to decrease now that the Suez Canal has reopened. This will probably be reflected by lower revenues from the Syrian oil pipeline. Efforts are being made to attract more foreign capital and foreign partners to aid in the exploration and development of new oil fields.

Phosphate is the other mineral resource which is a major source of Syrian foreign exchange earnings. Production is to increase from one million tons in 1974 to four million tons by 1980. The low quality of the Syrian product and the general decline in the price of phosphate is expected to offset the increase in production.

A modern industrial sector in Syria was established after World War II by Syrian merchants. Food processing industries developed as a natural outgrowth of agricultural production. Other industries grew in response to consumer demand (textiles, footwear, cooking utensils) or because of the fact that high transportation costs made it more economical to manufacture the product near the center of consumption (cement, other building materials, and glass). In 1965, the Syrian government nationalized all large and medium-sized firms. Based on 1966 book values, this amounted to about 75 percent of the total capital invested in this sector. The government share in industry has grown since then, as investment, especially in oil and phosphate production, has increased. The 1975-80 Five-Year Plan will continue to emphasize industrial development, although major investments will also be made in the agricultural sector.

Private enterprise still plays a part in the industrial sector, and the Constitution guarantees the right to private property when it is in the public interest. The trend to nationalize during the 1960's was reversed by President Assad in an attempt to stem the emigration of the much needed professional and managerial classes. Accommodation with many proprietors and encouragement of further private investment in Syria have been characteristic of government policy since 1970.

For Syria, the planned growth rate of Gross Domestic Product for 1970-75 was 8.2 percent annually. It now appears that this may have been exceeded slightly during 1974-75; the projected growth rate was 8.4 percent. Aggregate investment in Syria is expected to grow by 17 percent between 1973 and 1980 in both public and private sectors. This may make it possible to sustain an annual growth of GDP of 11 percent during those years.

Planned public sector investments include expansion of the irrigated area served by the Euphrates and Khabour Rivers, construction of two new oil pipelines and storage facilities. Private and quasi-private investment will be directed to agriculture, the irrigation of horticultural crops, development of small industries, and possibly tourism. Financing for private sector investment is expected to come from domestic savings, which are also growing by 17 percent annually. Public sector investment will be financed in part by the increase in oil and phosphate earnings and in part by the substantial transfer payments which have been made by the other Arab countries since 1973. Tax revenues, which now represent approximately 11 percent of GDP, are not expected to increase by much. Levels of salaries and wage earners' incomes are low (see Tables 50 and 51) and it is the policy of the government to allow wage earners to benefit from economic growth. Nevertheless, the resource mobilization of the government has improved considerably in recent years. Government revenues as a percentage of GDP increased from 19 percent in 1970 to 25 percent in 1973.

Some of the major constraints to development in Syria are the lack of sufficient skilled manpower, the need for improved project preparation and implementation and ineffective mobilization of domestic resources. In order to finance long-term growth, improvements will be necessary in the administration of tax collection (including broadening of the tax base) and in the basic structure of financial mechanisms. If the encouragement of private initiative continues, and trained Syrians continue to return from abroad, the shortage of skilled manpower should ease.

Despite the recent ascension of oil to first place in export earnings, the Syrian economy is still dominated by the agricultural sector. It accounted for 23 percent of the Gross Domestic Product in 1974, when more than 50 percent of the Syrian labor force was engaged in agricultural work. In 1967, about 47 percent of Syria's land was classified as arable, 21 percent was uncultivable, 29 percent was pasture and 3 percent was forest.<sup>3</sup> About 70 percent of the arable land, or 37 million hectares, was cultivated that year. The wide fluctuations in agricultural output (see Nutrition Section) and poorly conceived planning efforts of the Ministry of Agriculture have caused serious supply problems in recent years, particularly in livestock and poultry production. A recently instituted integrated planning system in the Ministry of Agriculture is

<sup>3</sup> Area Handbook, p. 241.

expected to provide the means through which agricultural growth will keep pace with population growth.

According to the Ministry of Labor and Social Affairs, the Syrian labor force totaled 1,612,075 in 1974.<sup>4</sup> Approximately 50 percent of the labor force works in the agricultural sector (see Table 49) and another 25 percent work in mining, manufacturing, and construction. Slightly over 10 percent of the work force is female; the majority of women are employed in the agricultural sector. In the industries where women are employed, their average hourly wages are lower than those of male workers. (See Table 50). In the agricultural sector, women earn S.P. 5.5 daily while men earn S.P. 6.5. The type of work performed is unknown.

The average monthly minimum wage varies according to the type of work performed, but is generally higher in the public sector than the private sector. The range is from 95 Syrian pounds per month for manufacture of machinery to 384 pounds for manufacture of fabricated metal products. In the restaurants and hotels, the private sector wages are higher. In 1973, it was estimated that the average Syrian family needed 1,800 Syrians pounds annually per capita to acquire the basic necessities.<sup>5</sup> In 1972, the per capita annual income was about 1,297 pounds (see Table 51). Although income is rising rapidly, inflation during the past few years has increased and has offset wage gains. Workers on fixed salaries are suffering most from the inflation which was estimated as follows:

Retail goods - Damascus	20%
Food	25%
Overall foodstuffs	40%
Building materials	30%

Source: Third Development Plan 1970-1975.

#### Transportation and Communications

The transportation system of Syria includes one of the oldest railroad lines in the Middle East (across the Jezirah from Iraq to Turkey), one of the newest major lines (Lattakia to Al Rakka), an extensive network of roads, and some important airports and seaports. The road network is more extensive in the more heavily populated western part of the country; the main roads follow the principal north-south physical features of the land. Over 8,725 miles of

<sup>4</sup> Annual Statistical Bulletin of the Ministry of Social Affairs and Labor, October, 1975, p. 86.

<sup>5</sup> Syrian Socioeconomic Review, Aug. 1973.

Table 49

Economically Active Population (10 years and over)  
By Industry and Sex

Industry	Sex		
	T	M	
Agriculture, forestry, hunting and fishing	752,404	107,237	645,167
Mining and quarrying	8,949	237	8,712
Manufacturing	190,345	20,452	169,893
Electricity, gas and water	7,565	218	7,347
Construction and building	114,890	640	114,250
Wholesale, retail trade, restaurants and hotels	144,854	2,052	142,802
Transport, storage and communication	63,934	856	63,078
Financing, insurance, real estate and business services	9,978	1,073	8,905
Community, social and personal services	214,161	27,909	186,252
Seeking work for the first time	58,653	7,027	51,626
Not stated	5,043	176	4,867
Grand Total	570,776	167,877	1,402,899

Source: 1970 Census.

**Table 50**  
**Average Weekly Earnings by Sex &**  
**Division of Economic Activity, May 1**

	Average weekly hours		Average weekly earnings <sup>1</sup>	
	Men	Women	Men	Women
Mfg. Textiles	44.0	45.4	74.90	51.10
Mfg. Wearing Apparel	50.4	50.3	80.10	51.45
Mfg. Leather, leather subst.	40.3	47.5	78.15	55.10
Mfg. Plastic Products	44.0	45.8	51.85	45.25
Mfg. Glass & Glass Products	39.8	38.2	85.25	47.10
Iron & Steel Basic Indust.	48.0	51.8	68.05	66.65
Mfg. Machinery Exc. Elec.	45.1	44.0	73.70	57.50
"Elec." Apparatus, Appliances Supplie	45.5	44.3	80.65	54.35
Average Overall	44.7	43.1	76.70	49.75

Source: Ministry of Labor and Social Affairs

<sup>1</sup>Exchange Rate: U.S. \$1.00 = 3.70 Syrian Pounds.

Table 51

Per Capita Income in Syria<sup>1</sup>

<u>Constant Prices</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
Per Capita Income (US\$)	225	243	269
Annual Increase (%)		+ 8%	+ 11%
Per Capita Income (S.P.)	858	929	1,027
<u>Current Prices</u>			
Per Capita Income (US\$)	238	271	300
Per Capita Income (official rate)	269	307	340
Per Capita Income (Syrian pounds)	1,028	1,171	1,297

## Percent of Families by Monthly Income, 1970

<u>Income - Syrian pounds</u>	<u>Percent</u>	<u>Accumulated Percer</u>
Under 100	4.4	4.4
100-199	17.2	21.6
200-299	20.4	42.0
300-399	17.1	59.1
400-499	13.5	72.6
500-599	7.4	80.0
600-699	5.2	85.3
700-799	4.0	89.2
800-899	3.3	92.5
900-1999	5.9	98.4
2000-3999	1.0	99.4
4000 and over	0.6	100.0

Source: Syrian Socio-Economic Review, 1973.

<sup>1</sup>In Syrian Pounds, Exchange Rate U.S. \$1.00 = 3.70 Syrian Pounds.

surfaced roads had been constructed by 1976.<sup>6</sup> Major east-west lines link Damascus and the other major cities to the phosphate mines near Tudmur, the agricultural lands near the Balikh and Euphrates Rivers, and to Baghdad in Iraq.

Lattakia is Syria's major port facility. The smaller port of Baniyas is used only to ship oil which arrives by pipe from Iraq, while Tartous exports Syria's crude oil. Major airports are located at Damascus and Aleppo.

Syria's communications system includes an extensive network of radio stations which are the most influential channel of information in the country. Both radio and television networks are owned and operated by the government's Syrian Broadcasting and Television Corporation. Listening to the radio is a common activity in coffeehouses and other public places as well as in the home.<sup>7</sup> Syrian transmitters broadcast to Lebanon, Egypt, Turkey, North Africa, Iran, and the Arabian Peninsula countries. An Arab radio and television network, linked by Telstar communication satellites, was under discussion in 1970.

Virtually all of the Syrian population has direct access to radio, television, newspapers, posters, or films. Inexpensive radio transistors are used even in the most remote areas. Although radio or other mass communications media have not been used to disseminate health education and information, the potential is obviously excellent.

#### Education

The traditional educational system of the Muslim countries was the kuttab, housed in a mosque, where students learned the teachings of the Prophet Muhammad and received rudimentary instruction in reading, writing, and arithmetic. The kuttabs were virtually the only schools in Syria until the end of the 19th century when government-operated schools were developed under the Ottoman administration. Some kuttabs are still in existence in the poorer rural areas where there are no government schools.

Private schools were also established during the 19th century by French Catholic missionaries and local Christians. These schools, which were modeled after the French educational system, educated the Syrian elite for many years. Many of their graduates continued their studies in France. During the period of the French Mandate (1920-46), preference for jobs in the civil service was given to French-educated Syrians and only French diplomas were recognized. The new route to power and position in Syria is through the public education system. Most of the new power groups in the Syrian government are composed of men of middle or lower class origin who obtained a technical, secular education in the public school system.

Both public and private schools are found in the modern Syrian educational system. The curriculum of both is prescribed by the Ministry of Education and

<sup>6</sup> Statistical Abstract, Syrian Arab Republic, 1977.

<sup>7</sup> Ibid., p. 17

consists of six years of primary education, three years of general or vocational intermediate level education, and three years of secondary education which is divided into three separate courses - general academic, vocational or technical training, and teacher training. There are two universities, the Technical Health Institute, the High Institute of Agriculture, the High Institute of Fine Arts, the High Industrial Institute, the Oriental Institute of Music, the High Commercial Institute (in Aleppo), and the Institute of Industrial Education (in Aleppo). Both universities and all of the institutes have four year programs which lead to the awarding of the equivalent of a bachelor's degree. The Institutes, however, emphasize practical training rather than theory.

The Syrian government hoped to make free primary education available to 80 percent of eligible children by the end of 1976. This is an ambitious goal, and may not be realistic if the current budgetary constraints remain unchanged. An annual expenditure of 4.04 percent is allotted for education. This is low (most developing countries spend between 10 and 20 percent of the national budget for education) and probably reflects to some extent the fact that priority is placed in other areas, such as national defense.

According to the Ministry of Education, 70 percent of eligible children were enrolled in school by 1973 (85 percent of the male children and 55 percent of female children). The total number of children enrolled was 1,102,652 (See Table 52). The 1970 census indicated that there were 1.9 million children age 5-14. By 1973, this group had increased to over two million children, which would mean that approximately 52 percent of school age children were actually attending school in 1973. Whatever the actual number may be, it seems clear that it will be difficult for the educational system to expand at a rate which will keep pace with the rapid population growth.

Shortages of qualified teachers as well as classrooms have occurred during the expansion of the educational system. Primary school teachers are supposed to be graduates of teacher training institutions; secondary school teachers must have the equivalent of a bachelor's degree. Because of the teacher shortage, these requirements are being waived and less qualified applicants are accepted with the provision that they attend special teacher training courses during the summer vacation period. The shortage of classrooms is especially acute in the sciences and technical studies where equipment and laboratory space are required. As a result, admission to courses of study in the sciences is limited and highly competitive.

Universities have expanded rapidly also, as reflected in the budget of the Ministry of Higher Education which grew from 80 million Syrian pounds in 1962 to 282 million in 1973. By 1974 the number of students had grown from 24,000 to 61,156 (See Table 53).

Participation of women in the educational system has been very limited, as can be seen by the statistics on literacy rates. The illiteracy rate for women reaches a high of 98 percent in Eastern Syria. The highest level of participation of women in the educational system is at the primary school level, where 39 percent of the students were women, according to the 1976 Statistical Abstract. The following chart illustrates the participation of women in the educational system of Syria in 1975. This is in sharp contrast to the situation in the Palestinian refugee camps, where 50 percent of the students at both primary and secondary levels are female.

Table 52

Schools, Sections, Teachers and Pupils at Primary Level  
1945, 1956-1

Years	Average number of teachers per section	Average number of pupils per section	Pupils	Teachers	Sections	Schools
1944/45	...	..	148,428	4,054	...	1,072
1955/56	0.8	26	345,367	10,364	13,413	2,719
1957	0.8	25	352,181	10,854	14,355	2,808
1958	0.7	25	389,570	11,685	15,727	2,989
1959	0.8	26	423,883	12,452	16,482	3,083
1960	0.8	24	423,958	13,292	17,353	3,261
1961	0.7	25	482,536	14,363	19,335	3,509
1962	0.7	25	518,756	14,827	20,630	3,632
1963	0.7	26	578,692	16,060	22,594	3,887
1964	0.7	25	628,370	17,554	24,989	4,204
1965	0.7	25	665,545	18,431	26,722	4,433
1966	0.7	25	705,934	19,542	28,406	4,647
1967	0.7	25	742,681	20,658	29,916	4,875
1968	0.7	25	767,895	21,228	30,565	4,881
1969	0.7	25	813,225	22,249	32,260	5,069
1970	0.7	25	845,130	23,431	33,808	5,261
1971	0.7	26	924,969	25,134	35,833	5,500
1972	0.7	26	1,005,739	27,922	38,623	5,914
1973	0.7	26	1,102,652	30,356	42,819	6,446
1974	0.7	26	1,160,088	31,565	44,617	6,530
1975	0.7	25	1,211,570	34,995	47,518	6,760

\*Includes kindergarten till 1959.

Source: Syrian Arab Republic Statistical Abstract, 1976

Table 53

## University Student &amp; Graduates By Sex, University &amp; Faculty, 1974/1975

Faculty	University	Graduates			Students			New Students		
		T	F	M	T	F	M	T	F	M
Medicine	Damascus	276	35	241	2530	401	2129	532	77	455
	Aleppo	100	9	91	1456	211	1245	406	76	330
	Teshreen	--	--	--	114	22	92	112	22	90
Pharmacy	Damascus	152	67	85	903	444	459	199	125	74
	Aleppo	--	--	--	--	--	--	--	--	--
	Teshreen	--	--	--	--	--	--	--	--	--
Dentistry	Damascus	69	14	55	885	239	646	194	56	138
	Aleppo	--	--	--	--	--	--	--	--	--
	Teshreen	--	--	--	--	--	--	--	--	--
Sciences	Damascus	391	77	314	5222	1432	3790	1852	550	1302
	Aleppo	199	38	161	2478	484	1994	970	164	806
	Teshreen	26	10	16	591	129	462	257	66	191
Engineering	Damascus	353	10	343	4048	410	3638	952	137	815
	Aleppo	301	21	280	4459	453	4006	1353	141	1212
	Teshreen	--	--	--	356	74	282	151	32	119
Agriculture	Damascus	275	27	248	2519	313	2206	820	120	700
	Aleppo	226	18	208	2034	205	1829	515	83	432
	Teshreen	88	17	71	1057	185	872	359	63	296
Fine Arts	Damascus	53	15	38	420	116	304	123	40	83
	Aleppo	--	--	--	--	--	--	--	--	--
	Teshreen	--	--	--	--	--	--	--	--	--
Letters	Damascus	579	392	1187	15269	4120	11149	3349	1122	2227
	Aleppo	454	146	308	3878	1225	2653	931	255	676
	Teshreen	63	17	46	1029	316	713	199	48	151
Law	Damascus	400	35	365	5945	689	5256	1556	226	1330
	Aleppo	--	--	--	--	--	--	--	--	--
	Teshreen	--	--	--	--	--	--	--	--	--
Commerce	Damascus	265	56	209	3031	722	2309	901	274	627
	Aleppo	--	--	--	--	--	--	--	--	--
	Teshreen	--	--	--	--	--	--	--	--	--
Shari'a	Damascus	101	27	74	910	265	645	248	85	163
	Aleppo	--	--	--	--	--	--	--	--	--
	Teshreen	--	--	--	--	--	--	--	--	--
Social Science	Damascus	229	93	136	523	140	383	--	--	--
	Aleppo	--	--	--	--	--	--	--	--	--
	Teshreen	--	--	--	--	--	--	--	--	--
Economic	Damascus	--	--	--	--	--	--	--	--	--
	Aleppo	154	12	142	929	151	778	415	82	333
	Teshreen	--	--	--	--	--	--	--	--	--
Veterinary	Damascus	--	--	--	--	--	--	--	--	--
	Aleppo	36	--	36	570	--	570	223	--	223
	Teshreen	--	--	--	--	--	--	--	--	--
Total	Damascus	143	848	3295	42205	9291	32914	10726	2812	7914
	Aleppo	1470	244	1226	15804	2729	13075	14813	801	4012
	Teshreen	177	44	133	3147	726	2421	1078	231	847

Source: Syrian Arab Republic Statistical Abstract, 1976

### Percent Female Students in Syrian Schools

	Students (% Female)
Preprimary	44%
Primary	39%
Intermediate	31%
Secondary	29%
Teacher Training	53%
All 3rd level Ed.	20%

Syrian analysis of the high rate of illiteracy in rural areas (see Table 54) cites the insufficient number of schools and lack of motivation as the reasons for male illiteracy. Most jobs in rural areas require little or no formal education. Those who are motivated to learn find few rewards for their efforts and usually migrate to urban centers in search of better jobs. Female illiteracy is seen as a reflection of the social status of women in Syria. It is regarded as an exercise in futility to educate women, since they do not work. It is feared also that women who become educated also develop some independence, and this creates other problems, such as a reluctance to accept arranged marriages and other parental controls.

There is no question that the low level of education in Syria contributes to the health problems of the country. Lack of exposure to the educational system means that the health education taught in the schools is not widely disseminated either. Ignorance of basic sanitary practices contributes to the spread of many of the infectious diseases which are endemic in Syria. Lack of knowledge of human reproduction and the health benefits of such basic measures as spacing of pregnancies and care of the newborn contribute to maternal and infant mortality rates at the same time that they insure a continued high rate of fertility. Although it is probably true that women become more independent as they become educated, it is also true that they have a much lower rate of fertility as their level of education increases. In 1970, the average illiterate rural woman in Syria had five living children, while the literate urban woman had three children. Also as noted previously, fertility rates in 1970 ranged from 5.8 for all women to 1.9 for those with a secondary certificate or more.

The government has embarked on an adult literacy campaign in an attempt to raise the general educational level of the Syrian people. Courses are offered in urban schools and an agreement with various industries has been made to allow workers to take one half hour per day to attend literacy classes. The classes appeared to be almost evenly divided between men and women in 1975. No evaluation of the results of the literacy campaign is available.

In 1975, 13,803 Syrian university students were studying abroad at their own expense and another 811 were studying on government scholarship.<sup>8</sup> Over 400 of the students on government scholarship were studying in the U.S.S.R. Medicine and engineering were the most common specialties of all students studying overseas. (See Table 56).

<sup>8</sup> Syrian Statistical Abstract, p. 652, 53.

Table 54

Rate of Illiteracy in R  
by Sex (Mohafazat Centers excluded)

1970 Census

<u>Region</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Coastal	26%	76	50
Damascus	31	72	51
Mid	32	84	58
Southern	32.3	83.5	58.5
Northern	50	93.5	72
Eastern	62	94	78
Total Rural Areas	38.8	83.8	63.5
Total Country	34.5	73	53.4

Source: Syrian Central Bureau of Statistics

Table 55

## Classes, Teachers &amp; Enrolled in the Anti-Illiteracy Schools By Sex &amp; Mohafazat, 1974 &amp; 1975

Mohafazat		Enrolled			Teachers	Classes
		T	F	M		
Damascus City	1974	858	424	434		58
	1975	179	26	153		8
Damascus	1974	1073	190	883		39
	1975	860	318	542		31
Aleppo	1974	751	119	632		40
	1975	698	175	523		57
Homs	1974	407	50	357		16
	1975	1003	25	978		16
Hama	1974	2430	1192	1238		116
	1975	674	162	512		27
Latakia	1974	1088	486	602		46
	1975	759	309	450		35
Deir ez Zor	1974	384	82	302		31
	1975	333	40	293		16
Idleb	1974	121	34	87		11
	1975	279	136	143		32
Al Hasakeh	1974	2680	180	2500		106
	1975	22	11	11		1
Al Rakka	1974	1650	--	1650		49
	1975	420	--	420		14
Al Sweida	1974	--	--	--		61
	1975	--	--	--		--
Dar'a	1974	150	50	100		7
	1975	--	--	--		--
Tartous	1974	180	120	60		139
	1975	5230	3814	1416		181
Quneitra	1974	179	139	40		10
	1975	524	162	362		20
G. Total	1974	11951	3066	8885		729
	1975	10981	5178	5803		438

Source: Statistical Abstract, 1976.

Table 56

Students Studying on Their Own Expense Under Supervision of Ministry  
Higher Education, By Subject of Study at the End of 1975

Country of Study	Total	Fine arts	Law & commerce	Literature	Sciences	Engineering	Medicine
Arab Countries	3359	22	1262	1145	243	430	257
Western countries:	6790	48	290	315	412	1905	3820
Germany (west), Italy, France, Belgium, Swit- zerland, Turkey, Aus- tria, England							
Socialist countries	2649	17	46	53	228	869	1436
U.S.A. & Canada	765	2	51	22	92	283	315
Others	240	--	8	7	21	84	120
<b>Total</b>	<b>13803</b>	<b>89</b>	<b>1657</b>	<b>1542</b>	<b>996</b>	<b>3571</b>	<b>5948</b>

Note: Before 1971, students were under the supervision of the Ministry of Education.

Source: Syrian Arab Republic, 1976 Statistical Abstract.

**APPENDICES**



Appendix I-A

Registered Births of Holders of Syrian Arab Nationality By Sex & Mohafazat  
1973 & 1974

Mohafazat		Births registered out of the legal period			*Births registered within the legal period			
		Total	Females	Males	Sex ratio at birth	Total	Females	Males
Damascus City	1973	1129	552	577	105	30705	14945	15760
	1974	821	398	423	105	32287	15747	16540
Damascus	1973	4866	2530	2336	107	22253	10767	11486
	1974	2987	1595	1392	104	23009	11283	11726
Aleppo	1973	62151	34643	27508	105	52175	25453	26722
	1974	30879	16713	14166	100	53402	26717	26685
Homs	1973	9621	5459	4162	104	23324	11450	11874
	1974	4714	2547	2167	99	26109	13137	12972
Hama	1973	8823	4862	3961	104	22461	11016	11445
	1974	4907	2616	2291	98	24834	12544	12290
Lattakia	1973	1794	1007	787	107	15345	7412	7933
	1974	1079	546	533	105	15962	7793	8169
Deir-ez-Z	1973	19551	10627	8924	105	11164	5454	5710
	1974	8627	4272	4355	104	13048	6403	6645
Idleb	1973	13103	7512	5591	106	17408	8464	8944
	1974	6319	3381	2938	101	19160	9517	9643
Al-Hasakeh	1973	12738	6641	6097	105	11466	5587	5879
	(1) 1974	10428	5305	5123	98	14881	7500	7381
Al-Rakka	1973	10297	5487	4810	97	13903	7069	6834
	1974	6686	3517	3169	97	11180	5683	5497
Al-Sweida	1973	2062	1063	999	101	5489	2725	2764
	1974	849	437	412	107	5503	2658	2845
Dar'a	1973	3627	2006	1621	105	10497	5120	5377
	1974	1866	954	912	98	11565	5827	5738
Tartous	1973	1723	995	728	107	12069	5828	6241
	1974	767	407	360	104	12445	6108	6337
Quneitra	1973	530	281	249	105	6040	2943	3097
	(1) 1974	413	225	188	102	6540	3241	3299
Total	1973	152015	83665	68350	105	254299	124233	130066
	1974	81342	42913	38429	101	269925	134158	135767

\*Includes, also, the births that took place and registered in the same year, even after the legal period.

) Some estimated figures.

Source: Annual Statistical Abstract 1975, Syrian Arab Republic

Appendix I-8

Population (10 years and over) by Educational Status and Sex

Educational Status	Sex		
	T	F	M
Illiterate	2,158,187	1,449,089	709,098
Literate *	1,030,701	297,732	732,969
Primary Certificate	530,550	153,807	376,743
Preparatory Certificate	162,234	44,537	117,697
Secondary Certificate	102,882	21,388	81,494
Vocational Certificate	22,628	8,059	14,569
University and Master Degree	29,466	4,482	24,984
Ph.D. & S.D. Degree	2,136	151	1,985
Not Stated	678	246	432
Grand Total	3,188,862	1,979,491	1,209,371

\* Includes all persons who can read and write but they don't have any certificate.

Source: Syrian socioeconomic review, 1973.

Appendix I-C

Urban Population by Cities and Towns and Sex  
1970

Cities and Town Population in cities and towns

Damascus Government	Jamascus City	836668	405179	431489
	Al-tal	15122	7600	7522
	Douma	30980	14725	16255
	Zabadani	11890	5834	6056
	Katana	14519	7005	7514
	Ktaifeh	8211	3957	4254
	Nabek	14985	7488	7497
	Daraya	22312	10596	11716
	Mukhayamel Yarmouk	64273	30971	33302
Homs gov.	Homs	215423	103618	111802
	Tadmor	12705	6223	6482
	Talkalakh	6568	3209	3359
	Al-Rastan	7509	3641	3868
	Al-Kseir	9240	4579	4661
	Mukharramel Fukani	2170	1068	1102
Hama gov.	Hama	137421	65887	71534
	Salamiyeh	21677	10615	11062
	Skeilbiyel	6952	378	3574
	Musiaf	8709	4249	4460

Source: Syrian Socio-Economic Review, July, 1973 (from 1970 census)

Note: Quenitra province is not included.

Appendix I-C (Cont'd)

Urban Population by Cities and Towns and Sex  
1970

Cities	Population in cities and towns by sex			
	T	F	M	
Tartous gov.	Tartous	29842	14321	15521
	Banias	13787	6750	7037
	Saffita	7753	3821	3932
	Dreikish	3357	1581	1776
	Sheikh Badr	467	221	246
Lattakia gov.	Lattakia	125716	60378	65338
	Jableh	16660	8136	8524
	Haffeh	3301	1623	1678
	Kurdaha	3357	1597	1760
Idleb gov.	Idleb	34515	16418	18097
	Ariha	12944	6290	6654
	Jisrel Shughour	15163	7208	7955
	Harem	5404	2613	2791
	Muarretel Nu'man	16938	8320	8618
Aleppo gov.	Aleppo	639428	308197	331231
	Izaz	11927	5847	6080
	Al-bab	21371	10311	11060
	Jarablos	3813	1917	1906
	Ifrin	10074	4886	5188

Source: Syrian Socio-Economic Review, July, 1973 (from 1970 census).

Note: Quenitra province is not included.

Appendix I-C (Cont'd)

Urban Population by Cities and Towns  
1970

Cities		Population in cities and towns by sex		
		T	F	M
Aleppo Cont'd	Ainel Arab	7257	3540	3717
	Manbej	14635	7012	7623
Al-Rakka	Al-Rakka	37151	17618	19533
	Tal Abiad	2135	980	1155
Deir-ez-Zor	Deir-ez-Zor	66164	31513	34651
	Al-Boukama	12811	6244	6567
	Al-Mayadin	10083	4988	5095
Al-Hasakeh	Al-Hasakeh	32746	15524	17222
	Rassel Ain	7687	3704	3983
	Al-Kamishli	47714	23210	24504
	Al-Malkieyh	7738	3780	3958
Dar'a	Dar'a	27651	13268	14383
	Izra'	5542	2754	2788
Sweida	Al-Sweida	29524	14367	15157
	Al-Shahba	4313	2110	2203
	Salkhad	4869	2449	2420
Total of pop. in cities and towns.		2741171	323308	1417863

Source: Syrian Socio-Economic Review, July 1973 (from 1970 census).

Note: Quenitra province is not included.

Appendix I-D

Damascus City Population By Age and Sex, 1970 Census

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
Under 1	14,212	13,502	27,714
1 - 4	57,868	54,546	112,414
5 - 9	68,891	65,466	134,357
10 - 14	55,643	53,016	108,659
15 - 19	41,436	39,842	81,278
20 - 24	37,010	35,289	72,299
25 - 29	30,577	27,935	58,512
30 - 34	27,454	23,827	51,281
35 - 39	25,135	20,670	45,805
40 - 44	19,508	16,384	35,892
45 - 49	14,557	12,663	27,220
50 - 54	9,988	9,712	19,700
55 - 59	8,819	7,843	16,662
60 - 64	6,836	8,405	15,241
65 - 70	4,378	5,700	10,078
70 +	9,152	10,355	19,507
Not Stati	25	24	49
TOTAL	131,489	105,179	236,668

Source: Syrian Socio-Economic Review, July, 1973.

Appendix I-E

Economically Active Population by Type of Activity and Sex

Type of Activity	Sex		
	T	F	M
Out of home	1,454,257	147,481	1,306,776
At home	16,150	11,407	4,743
Total	1,470,407	158,888	1,311,519
Others	41,716	1,962	39,754
Seeking work for the first time	58,653	77,027	51,626
Total	100,369	8,989	91,380
<b>Total of labour force</b>	<b>1,570,776</b>	<b>167,877</b>	<b>1,402,899</b>
Student	772,815	230,281	542,534
Housewives	1,449,425	1,449,425	---
Retired	12,298	472	11,826
Dependent	66,357	35,780	30,577
Income recipient	16,138	7,641	8,497
Unable to work	151,052	87,866	63,186
Not stated	601	1,149	452
<b>Total</b>	<b>2,468,686</b>	<b>1,811,614</b>	<b>657,072</b>
Total of Pop. 10 years and over	4,039,462	1,979,491	2,059,971
Total of Pop. less than 10 years	2,265,223	1,092,084	1,173,139
<b>Grand Total</b>	<b>6,304,685</b>	<b>3,071,575</b>	<b>3,233,110</b>

Source: 1970 Census

Appendix II-A

\*Rooms Per Occupied Dwelling and Number of Person Per Room

Mohafazat		Average Number of persons per room	Average Number of rooms per dwelling	Number of rooms	Number of dwelling units	Number of person
Damascus City	Urban	2.0	3.6	411117	115157	836668
Damascus	Urban	2.6	2.8	69371	24565	182292
	Rural	2.6	2.7	168372	61659	438974
Homs	Urban	2.5	3.0	103494	34671	253615
	Rural	3.2	2.2	91349	41137	292561
Hama	Urban	2.8	2.8	62578	22729	174759
	Rural	4.0	1.9	86099	46342	339989
Tartous	Urban	2.2	2.9	25554	8893	55206
	Rural	4.0	2.0	61002	30851	246859
Lattakia	Urban	2.2	2.8	67462	24018	149034
	Rural	3.4	1.7	69909	40866	240518
Idleb	Urban	2.5	2.7	34480	12855	84964
	Rural	3.3	1.9	91582	48824	298731
Aleppo	Urban	2.3	3.1	313945	100610	708505
	Rural	3.5	1.8	176140	97328	608367
Al-Rakka	Urban	2.9	2.4	13645	5771	39286
	Rural	3.7	1.9	56000	29869	204450
Deir-ez-Z	Urban	2.6	2.9	34575	11755	89057
	Rural	3.4	2.2	60785	27675	203722
Al-Hasake	Urban	3.0	2.6	32934	12830	95885
	Rural	3.2	2.2	116193	53267	372621
Al-Sweida	Urban	2.3	2.7	16956	6358	38706
	Rural	2.7	2.3	37821	16457	100944
Dar'a	Urban	2.7	2.6	12396	4693	33193
	Rural	3.2	2.4	62929	26675	199288
Quneitra	Rural	3.3	2.1	5043	2399	16490
Grand Tot	Urban	2.3	3.1	1198507	384905	2741170
	Rural	3.3	2.1	1083224	523349	3563514
	Total	2.8	2.5	2281731	908254	6304684

\*Results of 1970 housing Census

Source: Statistical Abstract 1976, Syrian Arab Republic

## Appendix II-B

## \*Occupied Dwellings by Kind of Facilities

Mohafazat		Dwellings with toilets	Dwellings with bath	Dwellings with kitchen	Dwellings with electrical supply	
					With Private electricity	With community electricity
Damascus city	Urban	113080	86758	101543	76	107147
Damascus	Urban	23629	13998	18139	5	16156
	Rural	37550	15477	16031	114	23678
Homs	Urban	30748	16628	26793	63	27920
	Rural	6847	2143	14657	93	3901
Hama	Urban	21071	11120	14699	19	19960
	Rural	5518	1928	10487	183	2030
Tartous	Urban	8175	4115	7316	32	7397
	Rural	3980	1379	5262	187	1727
Lattakia	Urban	22536	11660	20578	121	21406
	Rural	5635	1563	6910	148	1907
Idleb	Urban	11989	4191	7474	3	9524
	Rural	16343	2548	9536	75	7055
Aleppo	Urban	96849	57028	87207	23	82477
	Rural	13114	1481	69947	224	1987
Al-Rakka	Urban	5106	1874	3309	-	2696
	Rural	4033	1932	15093	16	1909
Deir-ez-Zor	Urban	10389	7669	8517	26	9738
	Rural	413	291	5709	263	635
Al-Hassakeh	Urban	10643	4805	8876	18	9151
	Rural	3396	2710	12506	368	2130
Al-Sweida	Urban	5187	1783	3133	2	5441
	Rural	953	332	1720	11	1253
Dar'a	Urban	3588	1210	2569	2	3453
	Rural	1316	484	1390	34	3207
Quneitra	Rural	168	92	186		
Grand Total	Urban	362990	222839	310153	390	322366
	Rural	99266	32360	169434	716	51419
	Total	462256	255199	479587	106	373785

\*Results of 1970 Housing Census.

Source: Statistical Abstract 1976, Syrian Arab Republic.

## Appendix II-C

## \*Distribution of Persons by Nature of Water Supply

Mohafazat		Water supply system				
		Others	Spring	With well inside	Without piped water	With piped water
Damascus City	Urban	5621	311	28974	45801	755961
Damascus	Urban	5837	2144	40758	12387	121166
	Rural	80759	45733	111786	43813	156883
Homs	Urban	14315	1055	37695	8478	192072
	Rural	103997	49308	87792	21655	29809
Hama	Urban	5414	620	5973	6616	156136
	Rural	125090	77769	43032	71165	22933
Tartous	Urban	936	1087	2712	1964	48507
	Rural	43777	127654	28237	23067	24124
Lattakia	Urban	5357	245	13895	4757	124780
	Rural	52149	140622	19291	17228	11228
Idlib	Urban	1947	1842	12699	5924	62552
	Rural	53865	101406	55704	44404	43352
Aleppo	Urban	11304	2309	44168	38372	612352
	Rural	367604	52318	120935	54950	12560
Al-Rakka	Urban	1322	220	148	6974	30622
	Rural	173586	17582	2166	456	10660
Deir-ez-Zor	Urban	6288	44	--	5545	77181
	Rural	201479	549	159	12	1523
Al-Hasakeh	Urban	11420	764	24359	7737	51605
	Rural	276023	21439	64245	2623	8291
Al-Sweida	Urban	2354	199	180	2726	33247
	Rural	10337	7618	215	73366	9408
Dar'a	Urban	5	48	11	6172	26957
	Rural	10902	23210	624	83440	81112
Quneitra	Rural	3016	6027	23	4724	2700
Grand total	Urban	72120	10888	211572	153453	2293138
	Rural	1502584	671235	534209	440903	414583
	Total	1574704	682123	745781	594356	2707721

\*Results of 1970 Housing Census

Source: Statistical Abstract 1976, Syrian Arab Republic

Appendix II-C (Cont'd)

Common sewerage system		Dwelling with water supply		Occupied dwellings
With private septic tanks	Municipal sewerage	Without piped water	With piped water	
5446	27521	507	104002	115157
3608	20086	505	15494	24565
2010	16093	104	21410	61659
2639	27785	314	25751	34671
1758	1304	386	1313	41137
2942	18981	023	19938	22729
2157	768	368	3045	46342
2377	6381	343	7885	8893
2554	480	085	3075	30851
2258	21004	839	20165	24018
2310	1199	084	1782	40866
2276	10548	003	9186	12855
6879	4805	809	6629	48824
4453	33005	625	86938	100610
2357	784	696	1794	97328
770	3597	112	4396	5771
737	1902	48	1790	29869
2099	8214	875	9997	11755
9	150	1	176	27675
784	8589	992	6872	12830
376	376	256	1165	53267
2102	1889	492	5529	6358
91	9	365	1608	16457
882	1649	828	3854	4693
380	125	316	10690	26675
53	12	705	395	2399
2636	29249	458	32007	384905
1671	28007	223	54872	523349
1307	57256	681	374879	908254

APPENDIX II-D

\*Distribution of Persons in Occupied Dwellings  
by Type of Lighting

Mohafazat		Total	Type of Lighting			
			Others	Kerosene	Private electricity	Public electricity
Damascus City	Ur	829392	101	56924	566	771801
Damascus	Urban	181410	20	30546	28	150816
	Rural	420435	3	240294	769	179369
Homs	Urban	250513	10	41143	420	208940
	Rural	282478	2	253693	1015	27768
Hama	Urban	173279	83	16971	124	156101
	Rural	306996	158	289342	1276	16220
Tartous	Urban	54553	1	9074	168	45310
	Rural	242709	-	228257	1376	13076
Lattakia	Urban	147740	2	14653	552	132533
	Rural	237266	4	223862	897	12503
Idleb	Urban	84309	-	19692	36	64581
	Rural	286119	3	240683	595	44838
Aleppo	Urban	703135	60	118816	158	584101
	Rural	585168	11	569450	1396	14311
Al-Rakka	Urban	39001	-	20050	-	18951
	Rural	191980	4905	175680	135	11260
Deir-ez-Zo	Urban	88398	-	13456	184	74758
	Rural	187686	2688	178646	1658	4694
Al-Hassake	Urban	94950	14	26735	98	68103
	Rural	355802	5911	331278	2693	15920
Al-Sweida	Urban	37954	7	4907	12	33028
	Rural	94925	-	87618	56	7251
Dar'a	Urban	30871	-	7272	13	23586
	Rural	182899	-	157074	254	25571
Quneitra	Rural	15915	-	15915	-	-
Grand total	Urban	2715505	298	380239	2359	2332609
	Rural	3390378	13685	2991792	12120	372781
	Total	6105883	13983	3372031	14479	2705390

\*Results of 1970 Housing Census.

Source: Statistical Abstract 1976, Syrian Arab Republic

Appendix III-A  
 Ministry of Health Personnel  
 By Mohafazat

Damascus <sup>1</sup>	1808	Al Hasakeh	232
Aleppo	744	Al Rakka	171
Homs	363	Al Sweida	259
Hama	411	Dar'a	194
Lattakia	365	Tartous	269
Deir ez Zor	282	Quneitra	48
Idleb	273	Total <sup>2</sup>	1419

By Educational Level

Doctorate	465	Professionals	306
M.A.	3	Secondary	622
University	229	Intermediate	435
Technical	926	Primary	574
		Total <sup>2</sup>	1560

<sup>1</sup>Statistical Abstract does not indicate this, but the Ministry Staff and Damascus City Staff are probably included in this since they are not listed elsewhere.

<sup>2</sup>These totals were taken from the Statistical Abstract. No explanation is given for the difference.

Source: Syrian Arab Republic Statistical Abstract, 1975.

APPENDIX IV-A

Patients of Private Hospitals - 1975

Mohafazat	Average length of stay per patient (days)	% of beds occupancy	No. of discharged patients
Damascus City	4	44	14840
Damascus	-	-	-
Aleppo	5	44	4594
Homs	4	58	8577
Hama	5	41	2371
Latakia	5	15	782
Deir-ez-Zor	8	11	82
Idlib	5	22	137
Al-Hasakeh	-	-	-
Al-Rakka	-	-	-
Al-Sweida	-	-	-
Dar's	-	-	-
Tartous	2	14	332
Quneitra	-	-	-

Source: Statistical Abstract, 1976, Syrian Arab Republic

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