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AN ANALYSIS OF THE HEALTH STATUS  
PROBLEMS, SERVICES, FACILITIES,  
AND MANPOWER OF  
THE SULTANATE OF OMAN

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During The Period:  
JUNE 23 - JULY 7, 1980

1318

Supported By The:  
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT 74-3  
(ADSS) AID/DSPE-C-0053

AUTHORIZATION:  
Ltr. AID/DS/HEA: 9/29/80  
Assgn. No. 583-040

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## I. INTRODUCTION

The purpose of this report is to provide an account of the health sector in Oman that will serve as a background for the bilateral assistance program of the Near East Bureau. The analysis of the health status, problems, services, facilities, and manpower was undertaken within the context of the total scope of development. Therefore, a description of the country, its population, government, social systems, economy, and resources is provided.

The report is a synthesis of the consultant's personal experience in the region, contacts with Omani officials, current literature, and reports on Oman. It is important to state that, because of the limited data available on Oman, the author makes no claim that the report is comprehensive.

While the report suggests a broad spectrum for bilateral assistance, the consultant's recommendations are limited to certain areas in which AID has vast experience and where Oman has an explicit interest.

## II. THE COUNTRY: ITS POPULATION, CULTURE, AND RESOURCES

### Demographic Profile

The Sultanate of Oman occupies a strategic area at the southeastern end of the Arabian Peninsula facing the Arabian Sea and the Gulf of Oman. The country's boundaries (see Figure 1) remain mostly unfixed, and the size is estimated to be between 100,000 and 120,000 square miles.

Oman is the second largest country on the Arabian Peninsula after Saudi Arabia. Separated from the latter by the Rub Alkhali (Empty Quarter), the country is bordered by the sea, which provides access to foreign countries and also links the coastal towns of Oman. The Musandam Peninsula, the northernmost point in Oman, is separated from the main body of the Sultanate by a strip of territory which is part of the United Arab Emirates (UAE). Oman's insulation from the Arabian interior by the desert is reinforced by the formidable Hajar Mountains, which form a belt between the coast from the Musandam Peninsula (Ras Musandam) to the city of Sur. The desert and the mountains have protected Oman from invasions from the interior of the Peninsula.

The country is divided by natural features into several distinct areas: the Musandam Peninsula; the Batinah Plain; the Muscat-Matrah Coastal Area; the Oman Interior, which comprises the Jabal Akhdar (Green Mountain), its western foothills, and the desert fringes; Dhofar Province, in the south; and the off-shore island of Masirah. The coastline of the Sultanate stretches almost 1,100 miles.

The climate varies from region to region. In the coastal area, summers are hot and humid. In the interior, it is hot and dry, except in mountain areas, where altitudes vary from 3,000 feet to 9,000 feet and the climate is temperate the year round. The climate of the southern region is more temperate than the climate of the north. Rainfall in the Hajar Mountains may reach 15 inches, maintaining the water reservoir under the plateau and the springs for low-lying areas. Precipitation on the coast and on the interior planes ranges from one inch to five inches in the late winter. Dhofar receives between 25 inches and 30 inches of rainfall annually during the southwest monsoon (between June and September) and it has constantly running streams which make the province Oman's most fertile area.

No census had ever been taken in Oman. Population estimates vary between 750,000 and 1.5 million. For planning purposes, the government uses the 1.5 million figure. IBRD, the world bank, estimates the annual rate of growth at 3.1 percent. Population density is presumed to be 8 per square mile, but in the Interior it is probably less than 1 per square mile. About one-third of the population lives in the Batinah and in coastal cities, approximately one-half of the total population resides in the Interior. One-sixth of this group is presumed to be Bedouin. The population is mostly Arab, but in the towns of the capital area--Muscat, Matrah, Sib, and Bashw--there are many Indians, Pakistanis, Baluchis, and East Africans. The capital towns have a population of approximately 25,000; Dhofar Province has 50,000, Batinah, 150,000, and Musandam, 10,000.



## History

The Portuguese conquered Oman in 1508. Their influence predominated for more than a century, with only a short interruption by the Turks. The remains of fortifications built during Portuguese occupation can still be seen at Muscat.

After the expulsion of the Portuguese in 1650, and while resisting Persian attempts to establish hegemony, the Sultanate extended its conquest to Zanzibar, to the Portuguese settlements in East Africa, and to its dominions on the Arabian Peninsula. It established Omani trading colonies on the coast of Persia (now Iran) and also extended a measure of control over the Makran coast (now Pakistan) of mainland Asia. (The last remnant of its holding, Gwadar, was ceded to Pakistan in 1958.) By the early 19th Century, Muscat and Oman was the most powerful state in Arabia.

The Sultanate was the object of Franco-British rivalry for influence throughout the 18th Century. The British gradually developed an Agreement of Friendship with Oman. During the 19th Century Oman and the United Kingdom concluded several treaties of friendship and commerce and in 1951 signed a new Treaty of Friendship, Commerce and Navigation. U.K.-Oman ties have remained friendly.

Toward the middle of the 19th Century, sons of the ruler quarreled over his successor. As a result of this struggle, the empire was divided in 1861, through the mediation of the British Government, into two separate principalities: Zanzibar and its east African dependencies and Muscat and Oman. The former paid the Sultanate an annual subsidy until Zanzibar became independent in early 1964.

From 1913 to 1920, the Sultan was faced with a rebellion by members of the Ibadhi sect who resided in the mountainous interior and who wanted to be ruled exclusively by their religious leader, the Imam of Oman. This conflict was resolved by the Treaty of Sib, which granted autonomy to the Imam's followers while recognizing the sovereignty of the Sultan.

When the Imam died in 1954, intermittent fighting broke out in support of his successor. The insurgents were defeated in 1959. The Sultan then declared the Treaty of Sib terminated and voided the office of the Imam.

In 1964 a separatist tribal revolt, aided by certain Communist and leftist governments, broke out in Dhofar Province. The insurgents in that province were defeated militarily in late 1975. Since that time, Dhofar has been generally peaceful, although a handful of rebels remain at large in the Dhofar mountains.

## Government

The Sultan of Oman is an absolute monarch who rules with the aid of his ministers. The Sultanate has no constitution, legislature, or legal political parties.

The judicial system is based mainly on the Sharia (the Koranic laws and oral teachings of Muhammad). Jurisdiction is exercised by quadis, men versed in the religious code. In the less populated areas and among the Bedouin, tribal custom is often the only law. Civil and criminal codes and a secular court system are being developed.

Administratively, the populated regions are divided into numerous wilayats (districts) presided over by walis (governors), who are responsible for settling local disputes, collecting taxes, and maintaining peace in their districts.

Most wilayats are small in area; an exception is the wilayat of Dhofar, which embraces the entire province. The wali of Dhofar is an important government figure and holds ministerial rank.

## Development Efforts

The present Sultan, Qaboos Bin Said, who was educated in England, assumed power on July 23, 1970, in a palace coup directed against his father, Said Bin Taimur. The deposed father was exiled to London, where he died. The new Sultan was confronted with insurgency in a country already plagued by endemic diseases, illiteracy, and poverty.

Sultan Qaboos reorganized the Cabinet to give Omanis more positions of responsibility and he brought his uncle Tari'k from exile to act as his adviser. Qaboos abolished many of his father's harsh and irritating restrictions, which had caused thousands of Omanis to leave the country. He also launched a major development program to upgrade educational and health facilities, to build a modern infrastructure, and to develop the country's material resources.

In a major effort to curb insurgency in Dhofar, Sultan Qaboos expanded and reequipped the armed forces and coupled a grant of amnesty for all surrendered rebels with a vigorous prosecution of the war in Dhofar.

By early 1975, the guerrillas were confined to an area comprising approximately 20 square miles. Shortly thereafter they were effectively defeated. As the war drew to a close, civil action programs took on increasing importance in those parts of the province that had been freed of rebel control. These programs have since become major elements in the government's plan to win the allegiance of people formerly under rebels' domination.

Since Tari'k's resignation as prime minister in late 1971 (he is at this time the Sultan's personal adviser), Sultan Qaboos has assumed more of the day-to-day responsibility for governing. The Sultan enjoys popularity for the sweeping changes he has made but must face the rising expectations which they have engendered.

### Religion

In Oman the ruling family and the majority of ordinary Omanis are Ibadhi Muslims. The population includes Indian Muslims and several Sunni tribes. Among the latter are the Shihuh and Qara, in the Interior, and the Kathiri and Mahrah, in Dhofar. The merchant class includes some Hindus.

### Social Systems

Oman has a long tradition of isolation and localism and the ethnography of its hundreds of tribes is little known. Traditionally, the family and the tribe are the dominant social institutions. The inhabitants may be residents of cosmopolitan port cities or isolated tribesmen speaking aboriginal tongues. Although the population is estimated to be nearly 85 percent Arab, there are significant concentrations of non-Arabs in Muscat and Matrah, where non-Arabs predominate.

Baluchis (Pakistanis), Indians (Hindus, Muslims, Sikhs, and Christians), and Negroes form the three large minority groups. The Arabs are divided among two groups: the Hinawi, who are descendants of the first Arab settlers, of southern and Yemeni origin, and orthodox Ibadhi Muslims, and the Ghafiri, who are the descendants of the second wave of Arab settlers who came mainly from the north and central portions of Arabia. Though the latter were Ibadhi Muslims, they were more receptive to the outside influences of several Sunni and Wahhabi tribes.

Two tribes are of special interest: the Shihuh and Qara. Both speak non-Arabic Semitic languages. The Shihuh are seminomadic and reside in the eastern part of Oman. The Qara are in Dhofar.

The advent of the oil industry and the growing strength of the central government have hastened the decline of the tribes' power. Education is providing a natural vehicle for the development of loyalties to groups other than the family and the tribe.

### The Individual, The Family, and the Sexes

Social life centers in the family, even when rapid development occurs, and the individual's loyalty to his family overrides most other obligations. Sexual segregation has been basic to social life and remains significant.

The extended family household is quite common in the Interior. The nuclear family is common in the cities. Marriage is a family rather than a personal affair. In many places women wear veils when they go outside their homes. Tribal women fulfill important economic functions, have more freedom, and do not wear the veil.

The development of educational systems has presented women with options other than traditional marriage and household life.

### The Economy

Before 1967, when oil began to be exported, the economy was based almost entirely on subsistence agriculture and fisheries.

All traditional sources of income were eclipsed after the discovery of oil in the Interior near Gahud in 1964. Petroleum Development (Oman) Ltd. started production in August 1967. The percentage ownership in the output of this company is as follows: 60 percent by the Sultanate government and 40 percent by foreign interests (Royal Dutch Shell, 85 percent; Compagnie Francaise des Petroles, 10 percent; and Partex, 5 percent). In 1977 Oman exported approximately 125 million barrels of oil. Per capita income rose from well under \$100 in 1967 to over \$2,000 in 1977.

Oman does not have the immense oil resources of some of its neighbors. Recent attempts to discover new fields have been disappointing. Given present production rates, the two billion barrels of proven reserves are not expected to last more than 20 years.

The government is undertaking many development projects to create a decent standard of living both now and in a post-oil economy. It is believed that fish and agricultural production can be increased significantly with the application of modern technology. A modern international airport at Sib and a deepwater port at Matrah have been built. A national road network also is being built (see Figure 2).

An airport and seaport at Salalah, the capital of Dhofar Province, are also being constructed. The airport in the capital is virtually completed.

Some of the largest budgetary outlays are going to provide the basic educational and health services needed to strengthen the country's human resources.

As oil revenues grew in the early 1970s, the government greatly expanded its expenditures for both defense and development and in early 1975 it found itself in a deficit budget situation.

A tightening of expenditures and financial help from other countries have improved the situation since then, but budgetary restrictions remain.

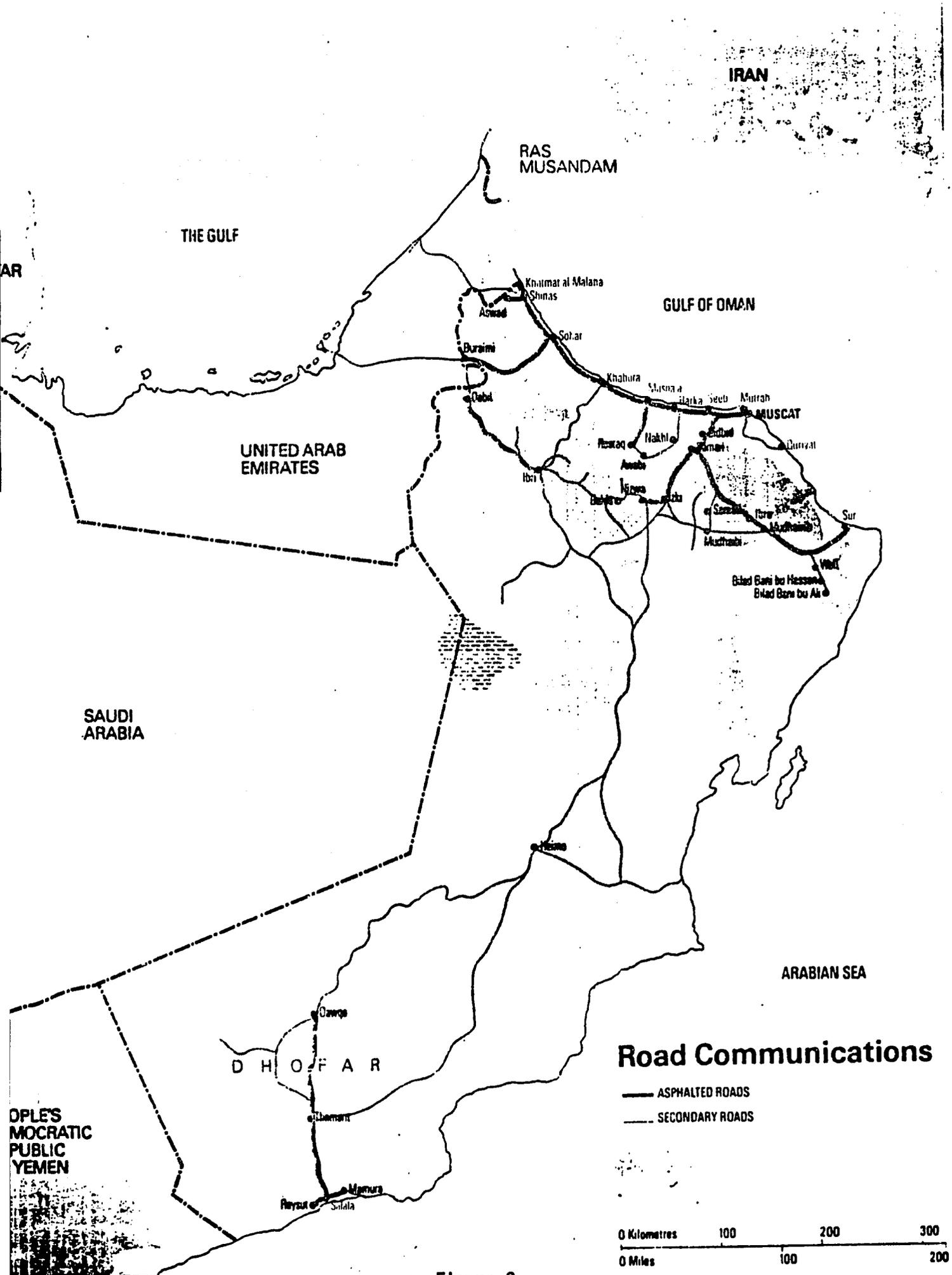


Figure 2

## A. Agriculture

Farming is the main source of livelihood for about half of the population. Before 1967 farm products and fish were the only earners of foreign exchange. Subsistence farming dominates Omani agriculture. Farm land is limited and new sources of water must be developed before farming can be extended. One-third of the land is for date cultivation. Alfalfa, the second crop, is used as forage for livestock. Ten percent of the area is devoted to limes and 10 percent to onions. Other crops are bananas, coconuts, mangoes, oranges, papayas, tobacco, and various vegetables. Among the livestock are goats, cattle, donkeys, sheep, camels, and chickens. In the Interior wheat, millet, and sorghum are grown. Dhofar Province is the cattle-raising area. Irrigation is obtained by the old falaj system, which may be many miles in length. There is a need to use modern motor pumps. The goal of further developing agriculture is to increase the cultivated area and to improve water supplies and crop production.

## B. Fisheries

Fishing is second only to farming as an economic activity. Fish are important to the diet of the people on the coast. Dried and salted fish are sold throughout the country. The government is planning to modernize and expand the fishing industry and to develop it into an important exporting industry.

## C. Mineral Resources

Clay for pottery, tile and marble for building, and copper and asbestos exist in commercially exploitable deposits.

## Education

In early 1970, there were only three primary schools in the Sultanate. There were 300 teachers--in Muscat, Matrah, and Salalah--reserved for about 900 boys. By 1978 there were 352 schools. The enrollment was 86,000 students. There were 3,900 teachers. (See Tables 1 and 2.) The government has been implementing the recommendations of UNICEF and UNESCO, which are aimed at updating the curriculum. Local training beyond secondary schooling was limited in 1978-1979 to one teacher-training institute in Muscat, which enrolled 115 teacher trainees; a vocational training center under the Ministry of Social Affairs and Labor, in Matrah, which enrolled 346 trainees in 1978-1979; and an institute of public administration, which offers a one-year program to train students as secretaries. Omani students who wish to have a university education are sent abroad. In 1978-1979, 700 students were studying abroad. Handicapped students, for whom there are no educational facilities, are sent to Kuwait or Saudi Arabia.

TABLE 1

## Government Schools, Pupils &amp; Teachers

Numbers

	69/70	70/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79
<b>SCHOOLS</b> <b>Total</b>	<b>3</b>	<b>16</b>	<b>41</b>	<b>68</b>	<b>111</b>	<b>176</b>	<b>207</b>	<b>261</b>	<b>310</b>	<b>352</b>
<b>Primary</b>	<b>3</b>	<b>16</b>	<b>41</b>	<b>64</b>	<b>105</b>	<b>163</b>	<b>181</b>	<b>213</b>	<b>237</b>	<b>257</b>
Male	3	12	28	46	64	88	82	85	87	73
Female	—	3	5	8	24	44	51	51	55	50
Co-education	—	1	8	10	17	31	48	77	95	134
<b>Preparatory</b>	—	—	—	<b>4</b>	<b>5</b>	<b>11</b>	<b>23</b>	<b>45</b>	<b>67</b>	<b>86</b>
Male	—	—	—	3	3	9	21	39	48	55
Female	—	—	—	1	2	2	2	6	14	20
Co-education	—	—	—	—	—	—	—	—	5	11
<b>Secondary</b>	—	—	—	—	<b>1</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>9</b>
Male	—	—	—	—	1	1	2	2	4	7
Female	—	—	—	—	—	1	1	1	2	2
<b>PUPILS</b> <b>Total</b>	<b>900</b>	<b>6941</b>	<b>15332</b>	<b>24481</b>	<b>35565</b>	<b>49229</b>	<b>55752</b>	<b>64975</b>	<b>75887</b>	<b>85937</b>
Male	900	5805	13382	20409	27691	36851	40708	46510	53510	59319
Female	—	1136	1950	4072	7874	12378	15044	18465	22377	26618
<b>Primary</b>	<b>900</b>	<b>6941</b>	<b>15332</b>	<b>24335</b>	<b>35225</b>	<b>48576</b>	<b>54457</b>	<b>62630</b>	<b>70671</b>	<b>77974</b>
Male	900	5805	13382	20303	27430	36351	39640	44668	49294	53025
Female	—	1136	1950	4032	7795	12225	14817	17962	21377	24949
<b>Preparatory</b>	—	—	—	<b>146</b>	<b>318</b>	<b>571</b>	<b>1095</b>	<b>2015</b>	<b>4680</b>	<b>7278</b>
Male	—	—	—	106	239	437	925	1609	3819	5765
Female	—	—	—	40	79	134	170	406	861	1513
<b>Secondary</b>	—	—	—	—	<b>22</b>	<b>82</b>	<b>200</b>	<b>330</b>	<b>536</b>	<b>685</b>
Male	—	—	—	—	22	63	143	233	397	529
Female	—	—	—	—	—	19	57	97	139	156
<b>TEACHERS</b> <b>Total</b>	<b>30</b>	<b>196</b>	<b>445</b>	<b>735</b>	<b>1195</b>	<b>2115</b>	<b>2230</b>	<b>2878</b>	<b>3552</b>	<b>3865</b>
Male	30	166	385	619	961	1610	1659	2168	2598	2762
Female	—	30	60	116	234	505	571	710	954	1103
Average per school	10.0	12.2	10.9	10.8	10.8	12.0	10.8	11.0	11.5	11.0
Pupil - Teacher ratio	30.0	35.4	34.5	33.3	29.8	23.3	25.0	22.6	21.4	22.2

\* Includes pupils at pre-primary stage.

NOTES : 1. The school system consists of the following three levels : Primary 6 years; Preparatory 3 years; Secondary 3 years.

2. The school year begins in September and ends in May.

3. The number of schools is not the number of buildings. In many cases one building is used for 2 schools morning and afternoon.

(Statistical Year Book 1978)

TABLE 2

## Teachers in Government Schools by Sex and Nationality

Numbers

Nationality	Male							Female							Total						
	72/73	73/74	74/75	75/76	76/77	77/78	78/79	72/73	73/74	74/75	75/76	76/77	77/78	78/79	72/73	73/74	74/75	75/76	76/77	77/78	78/79
Omani	375	352	284	249	313	313	358	46	59	70	71	90	104	122	421	411	354	320	403	417	480
Egyptians	169	345	822	927	1224	1393	1542	55	132	346	375	468	645	830	215	477	1168	1302	1692	2028	2372
Jordanians	60	219	405	360	368	432	548	3	25	63	84	97	115	129	63	244	468	444	465	547	677
Sudanese	—	1	30	27	73	254	431	—	—	11	20	34	55	88	—	1	41	47	107	309	519
Saudis	—	18	30	50	130	147	143	—	—	—	—	—	—	—	—	18	30	50	130	147	143
Palestinians	—	17	19	25	40	19	15	—	11	9	12	9	8	7	—	28	28	37	49	27	22
British	—	—	—	—	—	—	9	—	—	—	—	—	—	6	—	—	—	—	—	—	15
Pakistani	—	—	—	—	—	—	26	—	—	—	—	—	—	12	—	—	—	—	—	—	38
Others	24	9	20	21	20	50	6	12	7	6	9	12	27	14	27	36	16	26	30	32	20
Total	619	961	1610	1659	2168	2598	3078	116	234	505	571	710	954	1208	735	1195	2115	2230	2878	3552	4286

(Statistical Year Book 1978)

### Comparison With Other Arab States in the Arabian Gulf\*

Oman shares many apparent similarities with its Arab neighbors on the Gulf, but in some ways it is unique.

All of the Arab countries had a close connection with and dependence on the United Kingdom, yet Oman has been officially independent since the 17th Century.

Except for their oil reserves and for potential fishing industries, the Arab countries possess no natural resources, yet in Oman agriculture is an important resource and will be especially so in future post-oil years.

Governments are traditional, paternalistic and, in varying degrees, authoritarian monarchies. In each of the royal families there are several adult males who exercise great influence. The ruler consults with them when making major decisions. In Oman the Sultan is the royal family and his advisors serve at his pleasure.

Indigenous populations are mostly Arab Muslims, but the governments and economies are heavily dependent on foreign workers and advisors. Sultan Said, Sultan Qaboo's father, sealed Oman off from the world, and Sultan Qaboos has been trying since 1970 to compensate for his father's omissions but his financial resources are not great. The only educated Omanis are the sons and daughters of Omani families who lived abroad during the period of Sultan Said's enforced isolation. The government depends heavily on expatriates.

None of the governments are socialistic, yet all are welfare states and all that have oil money are extravagant, by any standards, in spending for the benefit of their citizens. This is an expansion of the tribal belief that no man is rich if a member of his clan is poor.

The societies of the Gulf are based on Islamic Bedouin values which developed over the centuries in the interior deserts of the Arabian Peninsula. Because new technologies, ideas, and customs have been introduced by expatriates and because all of the governments have introduced social and educational services, traditional societies have been undergoing social change. However, in Oman, Sultan Qaboos's efforts have been hampered by the need to devote large amounts of time, energy, manpower, and money to crushing the insurgency in Dhofar Province. Also, the oil revenues have not been generous and over one-third of the population lives in the Interior, which is difficult to reach physically and socially.

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\*Kuwait, Bahrain, Qatar, United Arab Emirates "Federation of Seven Emirates."

Various governments of the Gulf, including Saudi Arabia, refer to the need for a regional (or Gulf) security pact. It is not clear if the pact would include only the monarchies, in which case Iran and Iraq would be excluded, or be composed of Arab states, in which case Iraq would be eligible for admission but Iran would be excluded. Formal alliance outside the Arab League would not be expected. However, in 1979 Oman took the formal step of giving the U.S. an airbase. It is interesting that the first American treaty in the area was negotiated with Oman in 1833 and was called the Treaty of Amity and Commerce. This treaty remained in effect until 1958, when it was replaced by a similar but updated version. Also, the first Arabs from the region to visit the U.S. officially were the Omani delegates, who arrived in New York in 1840.

### III. HEALTH STATUS, HEALTH FACILITIES, AND HEALTH MANPOWER

#### Health Status

In the rural interior, as well as in underprivileged towns, Omanis live under marginal conditions. The fertility rate and the infant mortality rate (IMR) are high. Approximately 40 percent of the population is of dependent age. This demographic pattern is a sequence of underdevelopment and would lead to further underdevelopment if uninterrupted. One of the reasons for high fertility is that both sexes, particularly females, marry at young ages. In many villages most girls are married by the age of 15 and are thus exposed to the risks of pregnancy at puberty. The level of education in such areas is low and favors the males. As resources become available, people think of male education but express a favorable attitude toward education of both sexes. As education increases it may raise the age of marriage, lower fertility, and lower the IMR. Another factor which increases fertility is universality of marriage; 90 percent of women of marriageable age are married. Also, remarriage after divorce and following the death of a husband is common. The bride's cost is reduced for previously married women.

A study by UNICEF (1974) in the Interior yielded the following statistics:

- o IMR: 132-176 deaths per 1,000 live births;
- o Neonatal mortality: 38-69 deaths per 1,000 live births;
- o Pre-weaning mortality: 172-234 deaths per 1,000 live births;
- o General fertility: 178 births per 1,000 women of child-bearing age;
- o Crude birth rate: 40-45 births per 1,000 population;
- o Life expectancy: 45-48 years.

Three killers of infants are respiratory infections, gastroenteritis, and diarrhea and malaria.

Among the causes of environmental hygiene problems are keeping animals in the homes; poor lighting and poor ventilation in the absence of smoke vents for cooking fires; contamination of water; inadequate garbage and solid waste disposal; prevalence of insects and rodents; improper handling of food in the market place; contamination of home wells and some public wells; and contamination of falaj systems with detergents.

Personal hygiene problems are numerous. The lack of hand washing is attributed to a lack of education of mothers and insufficient water supplies. Other problems result from soiled clothes or mothers wiping the faces of young children with their head cover or using their own merwads (eye liner) to apply Kohl in their children's eyes. Trachoma is transmitted in the latter instance.

In villages, medical care is a combination of folk, spiritual, and modern approaches. Practitioners include the mutawa (who is often a Koranic teacher), wasum experts, magicians, herbalists, midwives, pharmacists, private physicians, and government physicians. The mutawa is the pivot of the village health system. He is the first person consulted and he offers preventive and curative medical services as well as family advice.

Information on the causes of diseases is non-existent. Most people believe disease is caused by jinn, devils, demons, or the evil eye. Others believe that god or physical factors, such as the heat of the sun, cold, and exhaustion, cause illness. It is necessary to study the widely used book, "The Essence of Law," by Sheikh Ibon Hamid El Salmi, to better understand local health practices. There are no major cultural blocks to modern cures. In general, oral medications are resisted and injections are preferred.

It is common to use amulets and charms for children and women to prevent evil eye since children and women are considered more vulnerable to it.

The majority of mothers uses honey before breastfeeding. This is a source of possible contaminations, since it is put in the mouth of the baby by the finger. The majority gives a laxative to rush out meconium stools. Most mothers do not breastfeed after birth, although breastfeeding strengthens the sucking reflex and the colostrum. The initial breast milk, which they discard, is high in antibodies and protein content.

Breastfeeding is done for two years, though some mothers may wean a child at age one and others breastfeed past the second year. Bottle feeding is gaining in popularity in villages. The introduction of supplements varies from region to region, and usually the semi-solid supplements are placed in the babies' mouths by hand. Later, as the child grows, he is given finger foods. Milk is not continued in the diet after weaning, and children are put on the family diet directly. Fruits are prestige foods and are rarely given to children. Cooking practices do not help preserve the vitamins in foods. Diet during pregnancy tends to be deficient because women eat less to give space to the growing fetus. Diet during breastfeeding is much more positive, and both nursing women and the members of their families understand the need for increased intake of animal protein and other foods which increase the mothers' milk.

Legumes, such as lentils, chick peas, and beans, are known but are not widely used. Milk is used with tea and bread for breakfast; powdered milk is used as a supplement, mainly in bottles, while fresh milk from goats and cows is a prestige food offered to guests or made into leban and labneh. Chicken is ritual food. Chickens are kept for eggs.

The leading communicable disease nationwide is malaria, which accounts for 47 percent of diagnosed communicable diseases. The second most important disease is enteritis, which represents 29 percent. Respiratory infections, measles, helminthiasis, tuberculosis, and leprosy follow in the list. Trachoma is a major public health problem. Undernutrition and growth retardation are common among preschool and young school children. Oman has the highest prevalence of malnutrition among preschool children in the Gulf countries. Kwashiorkor is rare, but marasmus is very common as a sequela of enteritis, measles, or other debilitating diseases. The school health service conducted a survey in 1977-1978 on the incidence of parasites among school children. The total number examined was 2,548. Of this number, 346 showed positive results. A nutrition survey also was conducted. The results are as follows:

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ORAL AND DENTAL SIGNS DUE TO NUTRITIONAL DEFICIENCY  
AMONG SCHOOL STUDENTS, BY AGE AND SEX (CAPITAL AREA)

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	<u>Primary Schools</u>	<u>Preparatory Schools</u>	<u>Secondary Schools</u>
Age of Children	6-12	13-18	19-24
Number Examined	12,254	510	211
Deficiency Signs In Percentage of Total Examined			
Vitamin B (Glossitis)	2%	4%	4.7%
Vitamin C (Scurvy)	0.1%	0.4%	0.6%
Iron (Anemia)	4.2%	7%	3.3%
Calcium	2.6%	9%	10.9%
Fluorosis	0.8%	6.2%	6.8%

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## Health Care Services

In speaking of the goal of health care, Sultan Qaboos stated: "Health is one of the society's foundations and a basic right for each citizen anywhere in the nation. Health is a necessity for national development since an individual who is healthy physically and mentally would be able to work, be productive and reach the goal of development."

Health care services are divided administratively into curative medical services and preventive services. The curative services are delivered through the facilities described below. (See Tables 3, 4 and 5.)

### 1. Hospitals

There are 13 hospitals in Oman, five in the capital towns and eight in the rest of the country.

### 2. Health Centers

There are 12 health centers. Each is a small hospital facility with 12 to 24 beds and is located in a small town. These centers can be expanded, if necessary, to a hospital set-up. There are four small health centers exclusively for maternity care. Each has four beds. A health center is staffed by two physicians, 10 nurses, and several orderlies. Each center may have an x-ray unit and a laboratory facility. Staff perform minor surgery and handle obstetrical confinements.

### 3. Dispensaries

Dispensaries are outpatient clinics. There are 47 dispensaries spread all over the country. A dispensary is administered by a health technician with a knowledge of pharmacy.

### 4. Mobile Medical Units (Dispensaries)

Mobile medical units make regular periodic visits to remote areas to offer their services. They reach these areas by land, sea, or air.

**Table 3 Government (Civil) medical and public health establishments and beds**  
Number at the end of

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Hospitals	—	5	10	12	13	13	13	13	13
Health Centres	9	10	7*	5*	11	11	11	12	12
Dispensaries	10	13	27	30	32	40	42	45	47
Public Health Compounds	—	—	—	2	2	4	4	5	5
Public Health Units	—	—	—	—	—	6	9	9	13
Quarantine Units	—	—	—	—	—	6	6	7	7
Public Health Central Centres (Capital area)	—	—	—	—	—	11	12	11	12
Beds	12	216	526	664	934	1000	1252	1409	1409

**Location of Government (Civil) medical and public health establishments and beds, regionwise during 1978**

**Hospitals** : Sumail (50), Tanaam (50), Arrahma-Mutrah (118 of which 25 TB and 29 mental), Assada-Muscat (16), Muscat (24), Nizwa (50), Sohar (50), Al Nahda-Ruwi (178), Salalah (300), Sur (50), Buraimi (50), Khoula-Mina al Fahal (185), Hosiyaq (50).

**Health Centres** : Quriyat (6), Masnaa, Ibra (24), Bukha (16), Saham (8), Bahla (24), Sinaw (24), Bilad Bani Bu Ali (24), Bilad Bani Bu Hassan (24), Bayah (24), Khasab (24), Masirah (24).

**Dispensaries** : Sib, Barka, Shinas, Khabura, Ali, Nakhl, Adam, Dank, Kamil, Mudaibi, Ibri, Al Khod, Suwaiq, Fanja, Izki, Hamra, Manah, Ghafat, Birkat al Mawz, Dariz, Mudairib,\* Taqa, Marbat, Mudhai, Thamrait (Midway), Abu Baqra, Shelim, Aiga, Wafi, Muhdah (4)\*\* Hibi (4),\*\* Mamur, Wadi Bani Ruwaha, Awabi, Hail-Ghaf, Madha (4),\*\* Sadha, Yanqal (4),\*\* Taiwi, Dhalkoot, Jebel Al Akhdhar, Bidiya, Dagmar, Rekhut, Hask, Kuria Muria, Al Ashkharah.

**Public Health Compounds** : Sumail, Nizwa, Saham, Salalah, Buraimi.

**Public Health Units** : Sib, Bahla, Sohar, Mudhairib, Masirah, Sur, Dhank, Al Hamra, Quriyat, Khasab, Bilad Bani Bu Ali, Bilad Bani Bu Hassan, Al Ashkharah.

**Quarantine Units**: Mina-Qaboos, Mina-Raysut, Mina-Al Fahal, Sib Airport, Salalah Airport, Khatmat Al-Malahah, Wadi Hiti.

\* Three health centres were upgraded to hospitals during 1972 and two more during 1973.

\*\*Maternity centres.

**NOTES:** 1. Figures in brackets show the number of beds.

2. Civil hospitals outside capital area also undertake public health work where there are no separate public health facilities.

(Statistical Year Book 1978)

TABLE 4

Regional distribution of Medical and Public Health Establishments (Civil) and Beds during 1978

Region	Number						
	Hospitals	Health Centres	Dispensaries	Beds	Public Health Compounds	Quarantine Centres	Public Health Units*
Northern	—	3	—	64	—	—	2
Batinah	1	2	8	66	1	2	2
Capital**	5	—	1	521	—	3	—
Oman Interior	3	1	13	174	2	—	2
Eastern	1	6	11	176	—	—	7
Dhahirah	2	—	4	108	1	—	—
Southern	1	—	10	300	1	2	—
Total	13	12	47	1409	5	7	13

\*Unit of a hospital or health centre and not an independent unit.

\*\*Capital area includes independent centres of insect control environmental health (general and for Capital area), malaria control, control of infectious diseases, laboratories for water analysis and bacteriology, centres of mother and child welfare, school health education and sanitation, dental centre and a nursing school.

(Statistical Year Book 1978)

TABLE 5

Distribution of Beds by specialities during 1978

Type of Unit	No. of Units	Number of beds									Total
		General Surgery	Medicine	Gynaecology Obstetrics	Paediatrics	Ophthalmic	T. B.	E. N. T.	Dermatology	Psychiatry	
Hospitals	13	235	347	240	175	65	42	32	4	31	1171
Health Centres	12	16	88	92	26	—	—	—	—	—	222
Dispensaries	47	—	—	16*	—	—	—	—	—	—	16
<b>Total</b>	<b>72</b>	<b>251</b>	<b>435</b>	<b>348</b>	<b>201</b>	<b>65</b>	<b>42</b>	<b>32</b>	<b>4</b>	<b>31</b>	<b>1409</b>

\*These beds are distributed among 4 sub-maternitycentres at the rate of 4 beds in each centre.

(Statistical Year Book 1978)

The Ministry of Health is planning to expand four existing hospitals by adding 250 beds to the facilities' present capacity of 300 beds. The hospitals are Khoula, Sur, Nizwa, and Sohar. Another expansion is planned for the Khoula Hospital outpatient clinic for gynecology and obstetrics. When expansion is completed, the clinic will be able to handle up to 500 visits daily. Four new operating rooms for gynecology, obstetrics, orthopedics, and general surgery are planned. Also in the planning stage is the expansion and modernization of blood banks and medical laboratories and the expansion of the two health centers in Masandam. In addition, a 60-bed psychiatric hospital, a pediatric hospital, eight health centers and maternity centers, and 21 dispensaries will be constructed.

Among the preventive services offered in Oman are maternal and child health care, school health, health education, malaria control, dental health, insect and rodent control, environmental health, and cholera control. A national vaccination of preschool children against poliomyelitis and pertussis covers school children. Comprehensive examinations are made when children enter primary, preparatory, and secondary school. In several schools there is a school nurse, supervised by the school health doctor, who covers several schools. Besides the comprehensive examination of students, students are treated and vaccinated against communicable diseases. In 1977, 36,902 students were attended for treatment and 62,834 received vaccinations.

Health education activities are modest but are considered to be good, given the facilities and manpower available (one health educator and two technicians). Activities include programs in health education (presented on television and radio) and the preparation and distribution of posters to schools and health centers.

### Health Manpower

Oman has a serious problem in staffing its health services. The country, with only a 10-year history of primary and secondary schools, has a limited number of nationals working in the health field. Of the approximately 250 physicians working in Oman, only 25 are Omani and they received their entire education outside the country. Many physicians are Pakistani or Indian. Most nurses and health technicians are also from India or Pakistan. Midwives are mainly from other Arab countries, but their assistants are recruited locally. The latter provide both service and advice against harmful prenatal and post-natal practices and demonstrate hygienic delivery conditions, because it is unlikely that a woman will have professional assistance for each delivery. In receiving such help, the recipients will be encouraged to advise their neighbors and will seek and accept guidance for other health problems.

There are no available data on health providers outside the Ministry of Health. There is no published information on health manpower (doctors, dentists, midwives, pharmacists, etc., and their assistants) in private practice in the

private sector. A 1976 report mentions that there were 125 Indian and Pakistani doctors who had private practices in Oman but most were government-sponsored.

It is not clear if the government has a master plan for the development of health manpower. There is need at all levels for Omanis trained in the health field. According to 1978-1979 statistics, 66 Omanis were studying medicine abroad. (See Table 6.) The greatest need is for Omanis trained to provide primary health care. The effort to motivate Omanis to enlist in the health services should begin at the community level and as early as the start of primary education. The communities should be well informed so that they can share the responsibility, with health professionals, for the improvement of their health conditions.

When Sultan Qaboos started to develop public services in the country in 1970, there was an urgent need for curative medical services; the public health services received less attention. By 1975, it was realized that a large number of diseases are preventable through immunization, health education, and vector control. There is not enough health manpower to staff the preventive medical services, however. What is more important is to teach all the providers of medical care the principles of disease prevention in a country where most of the morbidity and mortality is caused by preventable diseases.

An indirect health manpower resource has been the armed forces. The role of the armed forces since 1970 has not been limited to training and combat; the military services have participated in the development of the country through civic action. The armed forces are the country's principal employer and they constitute one of the main means of education. In the Interior they are the chief agency of medical aid and disease control. Other contributions that have benefited the public have been roadbuilding and communications.

TABLE 6

Omani students studying in Colleges and Universities Abroad classified by Sex, Subject and Country of study during: 1978/79

Numbers

Subject of Study	COUNTRY OF STUDY																												Grand Total	
	Egypt		Jordan		Iraq		-Syria		Kuwait		Bahrain		Qatar		U.S.A		France		U. K.		India		Pakistan		Other		Total			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		M+F
Medicine	27	8	—	1	2	1	4	1	1	—	—	—	—	—	1	—	1	—	3	—	6	4	2	1	3	—	50	16	66	
Pharmacology	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	2	
Engineering	8	4	1	1	2	3	—	—	—	—	10	—	—	—	85	10	3	—	4	2	1	—	2	—	4	—	120	20	140	
Science	10	6	3	1	—	—	—	—	—	3	—	—	—	—	7	4	3	—	—	—	—	—	1	—	2	—	26	14	40	
Agriculture	3	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—	1	—	7	—	7	
Culture	—	1	3	5	—	1	—	—	1	—	—	—	—	13	—	1	2	—	—	—	—	—	—	1	—	—	18	10	28	
Literature	26	9	3	9	2	—	1	—	—	1	—	—	—	—	1	1	—	—	—	—	—	—	—	—	3	—	36	20	56	
Law	6	—	3	—	—	—	3	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	12	1	13	
Business	42	7	16	11	—	—	4	—	1	—	1	7	—	—	27	2	1	—	16	2	1	1	1	1	—	110	31	141		
Economics and Political Science	13	2	7	—	—	2	1	—	—	—	—	—	—	—	29	4	—	—	—	—	2	2	—	—	—	—	52	10	62	
International Relations and Secretarial	—	3	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9	9	
Information	4	5	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	5	6	11	
Sociology	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	3	4	
Islamic Law	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10	—	10	
Civil Aviation	—	—	—	—	—	—	—	—	—	—	—	—	24	—	22	—	—	—	—	24	—	—	—	—	—	—	—	70	—	70
English Language	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11	—	—	—	—	—	—	11	—	11	
Others	16	—	—	—	—	—	—	—	—	—	4	—	—	—	2	—	1	2	—	—	—	—	—	—	—	—	23	2	25	
<b>Total</b>	<b>167</b>	<b>49</b>	<b>36</b>	<b>28</b>	<b>6</b>	<b>7</b>	<b>13</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>15</b>	<b>13</b>	<b>37</b>	<b>—</b>	<b>179</b>	<b>24</b>	<b>9</b>	<b>3</b>	<b>58</b>	<b>4</b>	<b>10</b>	<b>7</b>	<b>6</b>	<b>3</b>	<b>13</b>	<b>—</b>	<b>552</b>	<b>143</b>	<b>695</b>	

(Statistical Year Book 1978)

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#### IV. RECOMMENDATIONS FOR ASSISTANCE

From the earlier discussion, we can conclude that there is a broad spectrum of health problems and that the Omanis would welcome assistance in combating these problems. Oman's desire to improve and expand the health care system is a serious one, and there is ample opportunity for the United States to offer assistance in health and health-related areas.

One may remark, and correctly, that Oman is receiving substantial aid. Oman is being assisted by the United Nations Development Program (UNDP), International Bank for Reconstruction and Development (IBRD, World Bank), Food and Agriculture Organization (FAO), World Health Organization (WHO), United Nations Children Fund (UNICEF), and other specialized United Nations agencies. Bilateral programs are being conducted with countries such as Britain, Japan, and Germany, which compete in both industrial and commercial markets. Oman receives material assistance from its Arab and Muslim sister countries, such as Saudi Arabia, United Arab Emirates (UAE), Kuwait, Qatar, and, before 1979, Iran. However, by standards of the UNDP and U.N. specialized agencies, Oman is too rich to qualify for assistance. Of the many experts who are advising the government, many do so on a funds-in-trust arrangement. Bilateral assistance, whether from foreign or Arab countries, is mainly for industry and commerce. The Omanis not only desire but also can benefit from and assimilate additional assistance, especially in solving their public health problems.

A major problem which is plaguing Oman is malaria, and the need for its control is pressing. The Ministry of Health is receiving financial assistance from its Gulf neighbors and technical assistance from the World Health Organization. However, the long experience of AID in malaria control can be of help to the Omanis. In many countries, AID has teamed up with WHO and UNICEF in malaria control programs.

Another major health problem is enteritis and diarrheal diseases whose control is complex. There is a need for improved environmental sanitation and personal hygiene practices and health education in child care. AID has experience in helping countries launch programs to control such diseases. There are several other public health problems, such as trachoma, measles, tuberculosis, etc., which AID has assisted other countries in controlling. However, there is a lack of health manpower at the village level--a basic problem. What is lacking most in Oman is a developed and sufficient infrastructure at the grass roots level, with well trained and supervised staff who are followed up by a regional and central organization. These primary providers will collect information, assist in the implementation of communicable disease control programs, such as malaria, enteritis, trachoma, etc., and educate the family in child care. The United States has much experience in assisting less developed countries in developing primary care and it certainly would be of help to Oman in this crucial area.

Health planning and health manpower development at all levels are also important areas in which the Omanis are interested in receiving assistance.

**Appendix A**

**SENIOR GOVERNMENT OFFICIALS CONCERNED WITH HEALTH ACTIVITIES**

## Appendix A

### SENIOR GOVERNMENT OFFICIALS CONCERNED WITH HEALTH ACTIVITIES

#### Ministry of Health

Dr. Mubarak Khaduri, Minister of Health

Dr. Ahmed A. El Ghassani, Director of Public Health

Dr. Abdel Raouf Ferjani, Advisor to Ministry of Public Health

Dr. A. Zouher, Director of School Health

Mr. Ahmed Niazi, Head, Health Education

#### Ministry of Education

Ahmad Abol Allah Al Ghazali, Minister

#### Ministry of Agriculture, Fisheries, Petroleum and Minerals

Said Ahmad al Shanfari, Minister

#### Ministry of Labor and Social Affairs

Khalfan bin Nasir Al Wahaybi, Minister

#### Ministry of Information and Culture

Fahad Mahmud Al Bu Said, Minister

#### Council of Development

Mr. Ragiha Abdel Amir, Director General of National Statistics

**Appendix B**  
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## Appendix B

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