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**Equitable Access to
Basic Necessities in
the Balqa-Amman Region**



Hashemite Kingdom of

Jordan

Agency for International Development
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1980

**EQUITABLE ACCESS TO BASIC NECESSITIES
IN THE BALQA-AMMAN REGION
HASHEMITE KINGDOM OF JORDAN**

**A Draft Report Prepared
for the
Amman Urban Region Planning Group**

By

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PREFACE

With support from the United State Agency for International Development, the Amman Urban Region Planning Group (AURPG) was created in 1978 to accomplish three objectives:

- To establish a planning process that would help produce and co-ordinate the diverse elements of a comprehensive or integrated growth management strategy for the Balqa-Amman Region.
- To help the Government of Jordan to develop the professional and other capacities required to sustain a regional planning process.
- To assist the Jordanian staff of the AURPG in preparing an initial comprehensive regional plan.

The present paper is a draft chapter prepared for this initial comprehensive regional plan. Each chapter in the plan was structured according to a common format. Evidence included in the several chapters came from a variety of sources: The junior staff of the AURPG, published reports, fugitive documents, and, in the present instance, by highly selective field work operations by the author.

This chapter covers a wide range of topics that were to be viewed from the somewhat controversial evaluative perspective of "social justice for the regional poor." Injustice was defined as a lack of "access" to various resources. According to the original terms of reference for the chapter, four dimensions of access were to be examined: economic access, physical access, the timing of access, and "eligibility of access." Income and income distribution were to be used as surrogate measures of health and well-being. This orientation to social justice proved to be less attractive than the alternative adopted for the chapter: Rather than rely on universally-applicable criteria relating to access, the analysis of the several sectors covered in the chapter addressed considerations traditional to each content area; performance measures relating to health and well-being were substituted for money incomes as the major "dependent variables"; and based on these changes, the character of the recommendations was altered.

The terms of reference were overly ambitious because of the number of different basic necessities to be reviewed and because each sector was to be analyzed with regard to the present conditions in it for the Region, the major influences on these conditions, institutional responses that address the needs of the sector, and, for each sector separately, recommendations relating to both realistic ends and the means to achieve these ends. This ambitious assignment helps explain why this chapter in its present form is so long. An abbreviated version was to be prepared using the more detailed analysis of the present document as the supporting evidence that individual ministries would examine with regard to their particular programs and responsibilities.

It should be emphasized that this chapter is a draft submitted for subsequent editing and modification in response to the views of relevant government ministries and the staff of the AURPG. Because this is only one of 14 chapters, it is anticipated that, in order to assure consistency, the final version of the paper will reflect the recommendations made in the other chapters and the completeness of the analyses in them.

A chapter such as this requires the time, cooperation, and understanding of a number of agencies and individuals. Arch Dotson, Principal American Advisor to the AURPG, Marian Kawash, Salwa Snowber, and many others were very helpful in collating information, arranging appointments, and gaining access to government agencies.

Robert E. Mitchell
1 May 1980

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EQUITABLE ACCESS TO BASIC NECESSITIES

1. OBJECTIVE

To assure the realizations, as soon as feasible, of an adequate and decent state of health and well-being for every Jordanian citizen, family, and neighborhood.¹

2. MEANING OF OBJECTIVE

Several key terms in this objective warrant emphasis and clarification, including:

Realization does not imply that Government must "provide," although it will be necessary in many instances--for example, with regard to public education, sewers, and water.

Adequate implies "objective" standards--for example, nutritional standards, or quality standards for water.

Decent implies value judgments and standards that will vary among groups and over time. These value standards also relate to concepts of fairness, equity, and justice--for example, areas that should receive high priority in obtaining new water distribution systems.

Feasible involves financial, administrative, social, and political consideration. Funds may be available for some projects, but the manpower to manage a completed project may not exist.

Individual, family, and neighborhood define the human social and physical beneficiaries.

Health and well-being, like per capita or total GNP, gain meaning when specified, as will be done in Section 3 of this chapter.²

2.1 The National Commitment

Commitments to improve access to adequate and decent levels of health and well-being have been widely expressed in constitutions, statements of national leaders, and in various official documents. For example:

The Government, within the limits of its potential, guarantees all citizens the right to education and employment, and also to security and equal opportunity.³

It is the Government's responsibility to ensure for every citizen, justice and individual integrity, and to grant him freedom of speech and constructive criticism, to guarantee him a just pay and future security, and to provide him the health, education, leadership and all other public services required for modern life.⁴

It is the individual's right to feel "that it is his right to have the country's wealth distributed in a most comprehensive and equitable manner."⁵

The "long-term objectives of economic and social development in the Kingdom" include the "achievement of the highest possible...development of manpower capabilities," and the "distribution of economic activities, public services and ensuing gains on a more equitable basis among the various regions of the Kingdom."⁶

The national political commitment to the social justice objective is clear and serious. The degree to which this commitment is realized is a measure of the nation's political maturity.⁷

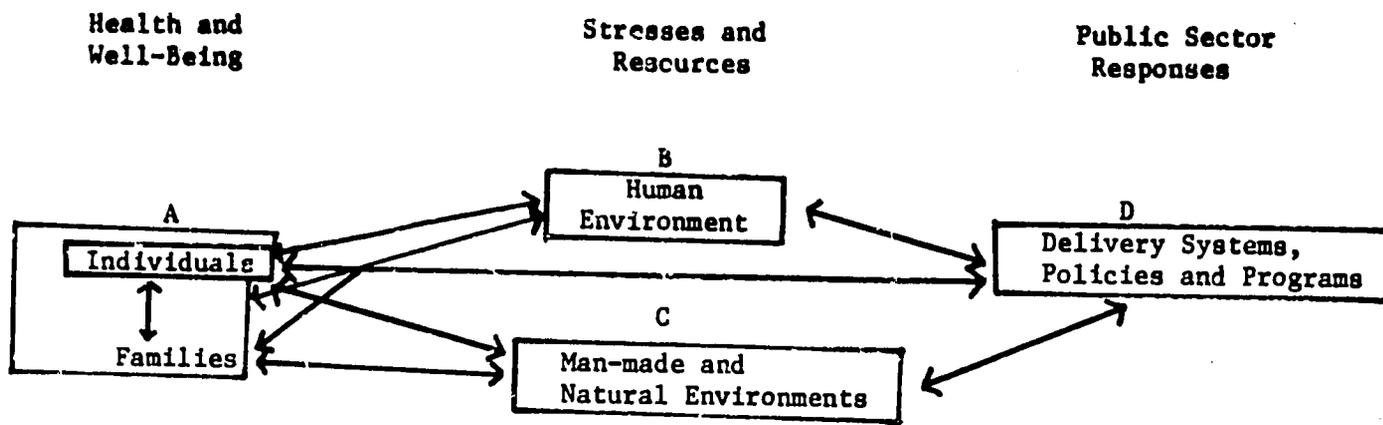
2.2 Measurement and Analysis

Health and well-being are multi-dimensional concepts. Although attention will be given to both families and neighborhoods, the initial focus will be primarily on individuals. Health and well-being are measured with regard to traditional indicators of health, education, and occupational status. Two separate but related sets of influences on these statuses will be examined: (1) noxious (negative) stresses in the natural and man-made environments (water, sewerage, shelter, etc.), and

(2) the human environment, as represented by family income and family size. Income is not used to indicate well-being. Instead, it is one among a number of influences on health and well-being.

Figure 1 schematically outlines the logic and flow of the analysis. After examining the physical and human environments, attention is given to the more traditional sectoral or governmental responses to removing environmental stresses and assisting both individuals and families enhance their health and well-being.

FIGURE 1
The Analytical Perspective



Examples of Indicators

A
Morbidity
Mortality
Nutrition
Educational levels
Regular employment
Civic participation

Examples of Indicators

B
Income
Family size

C
Water consumption
Waste disposal
Housing conditions

Sectors

D
Health
Education
Water
Waste disposal
Shelter
Income support
Neighborhood development

The data used in the analysis should be viewed as approximations of underlying conditions. They often focus on deprivations and deficiencies, rather than positive features. And instead of reporting information on all phases of a person's or family's life cycle, on specific sub-regions within the Region, and on conditions over time, the information often refers to one period only and to the entire Region or the Kingdom. Even then the information often is incomplete and dated. Where possible, however, the analysis will attempt to estimate the general magnitude of a condition, problem, or opportunity, and also to indicate whether there are significant differences in health and well-being among different areas and between the poor and non-poor.

3. STATE OF HEALTH AND WELL-BEING OF THE AMMAN REGION

Life expectancies, infant mortality rates, and crude death rates are the most widely used indicators of health conditions in a society. Infant mortality rates are especially sensitive to the extent and distribution of poverty. Government health systems, however, typically respond to the kinds of health problems their citizens present to health professionals. Therefore, information on morbidities is important as well. This information addresses five policy decisions:

- (1) the degree to which the known causes of the morbidities can be controlled and, therefore, the degree to which the demands on the health system can be reduced;
- (2) the extent to which the health problems can be cured;
- (3) the level and mix of health manpower needed to both prevent and cure illnesses;
- (4) which populations--for example, income group or neighborhoods--most suffer from different morbidities; and
- (5) strategies needed in order to benefit these populations.

Life expectancy information is available for the Kingdom at large. Because of high rates of fertility and, at times, the influx of immigrants, the age structure must be statistically controlled to yield age-specific mortalities. As seen below, expectation of life at birth has increased from 44.5 years in 1950-54 to 56.2 years in 1970-74. This change reflects an increase of one year per annum during the 1960's.

TABLE 1

LIFE EXPECTANCY IN KINGDOM ^a	
1950-54	44.5
1954-59	47.2
1960-64	49.7
1965-69	52.2
1970-74	56.2

a. The last figure refers to East Bank estimates made by the Population Council. The earlier estimates cover both East and West Banks and were made by the United Nations. Westinghouse Health Systems, National Health Planning in Jordan, Phase Two: Health Policy Strategy, (Columbia, Maryland, 1977). (Hereafter referred to as "Westinghouse,") Except where otherwise noted, the figures in this section are taken from Westinghouse, especially from Appendix A.

Mortality: age, causes, and distribution : The Population Council estimated that the crude (unadjusted for age structure) death rate began to decline in 1960, dropping from 21.1 per 1000 population in 1955-59 to 14.5 in 1970-74. Unlike the economically more developed nations, a high proportion of all deaths in Jordan are among younger people, with infant mortality being an especially serious health problem. In the United States, 25% of the population is age 14 or younger. This group accounts for only 4.4% of all deaths. Approximately 51% of Jordan's population is under age 15, but this group accounts for 43% of all deaths in the Kingdom, with 28% among infants under age 1 year, 10% between 1 and 4 years old, and 5% for those 5 to 14.

Infant mortality rates, however, have been declining, dropping from 159.3 in 1961 for males to 91.3 in 1972. (The decline for females was from 143.2 to 80.9.) The 50% reduction in infant mortality (death before age 1) between 1960 and 1970 produced a 12% increase in life expectancy. (These figures, according to the Westinghouse study, are subject to a wide margin of error.)

Infant mortality rates, however, are still unnecessarily high, for the causes of these deaths have been arrested in other countries. The Westinghouse study argues

"that it is socially and biologically possible for as few as 1 percent of all births to die in infancy, whereas the...figure for Jordan is 9 percent...[A]s many as 8 percent of the total births that result in deaths in the first year of life...are preventable."

That they are preventable is reflected in their causes: "prematurity (alone or in association with other causes) accounts for two-thirds of all neonatal (under 28 days) deaths." Diarrheal diseases explain (alone or in combination with other causes) one-third of postnatal (28 days to 11 months) deaths; respiratory infection accounts for one-fifth, and malnutrition (mainly marasmus) explains the other fifth.

As indicated earlier, infant mortality rates are very responsive to differences in the health and well-being of parents. Table 2 indicates both rural-urban and, especially, "class" differences in infant mortality rates. These rates are 80% higher for illiterate mothers than for those who have been to secondary school or more. They are about 70% higher for low-income (Class 1) mothers than for mothers in the highest income category (Class 3), and they are 23% higher for non-urban than for urban mother.

Even these startling differences fail to capture true differences in the mother's health status. A recent CARE study, for example, found that 85% of a sample of rural mothers (80% of these mothers had at least one living child under age 6) had some kind of maternal health problem that was related to food and nutrition; 37% of the mothers had a child who died under age 7, 33% had some form of miscarriage or abortion, and 11% had stillbirths.⁸ Both mothers and infants are at risk.

TABLE 2
 INFANT MORTALITY BY SOCIAL CHARACTERISTIC:
 EAST BANK, 1972

Social Characteristic	Deaths under age 1 per 1,000 live births
Residence:	
Urban	78
Semi-urban and rural	96
Mother's education:	
Illiterate	96
Preparatory	75
Secondary and university	53
Socioeconomic class:	
Class 1	91
Class 2	75
Class 3	54
Marital status:	
(Married once) husband present	85
Husband not present	105

Source: Westinghouse, p. A-31.

Low-income mothers and their children, as well as those who live in rural areas, have a high risk of serious illness and death. This high risk is exacerbated by high rates of fertility, as seen in Table 3. Rural-urban differences in children ever-born and surviving are small, but class or socio-economic differences are clear. Phrased differently, there are 3283 live births per 1000 mothers in the highest socio-economic class, whereas the figure are 5019 for Class 2, and 5269 for the poorest group of mothers.⁹

In summary, although these figures refer primarily to the entire Kingdom, their relevance to the Amman Region is clear--for the Region has the highest proportion of urban, educated, and higher-income families in the country. There are disparities in health status between poor and non-poor, educated and uneducated, rural and urban. These dimensions overlap. More educated and affluent families are able to reduce birth risks by having fewer pregnancies. It also seems likely that the health delivery system--including preventive health and nutritional services--are not reaching enough poor and rural families.

Morbidity: Jordan has not had a large-scale health survey and, as a consequence, information on both the incidence (who is most likely to have an illness) and prevalence (how many have it) of morbidities is absent. Official statistics, therefore, are suggestive at best.

The Ministry of Health (MOH) collects information on "reportable diseases." In 1975, the four most common such diseases nationwide were:

- Measles (2226 cases). This is a major but preventable killer of children.
- Mumps (2082 cases), a relatively harmless childhood disease.
- Trachoma (1239 cases), a disease that can be managed in ways to prevent blindness.
- Enteric diseases (typhoid fevers, dysentery, and infectious hepatitis). They "are closely related to the degree of water contamination and personal hygienic practices."

Hospital admissions statistics indicate that diseases of the digestive system are the leading problem, accounting for 18% of all admissions. Respiratory, genitourinary systems, and complications of pregnancy follow in order.

TABLE 3
CHILDREN EVER BORN AND CHILDREN SURVIVING
PER WOMAN AGES 40-49: 1972

	Children Ever Born (1)	Children Surviving (2)	Ratio (2)/(1)
National	8.2	6.8	.83
Urban	8.1	6.8	.84
Semi-urban	8.7	7.5	.86
Rural	8.3	6.5	.78
Illiterate	8.6	7.0	.81
Preparatory and Primary	7.3	6.5	.89
Secondary/Vocational	4.7	4.5	.96
University	-	-	-
Socio-Economic Class			
Class 1	8.6	6.9	.80
Class 2	8.0	6.9	.86
Class 3	5.3	5.0	.94
Age of First Marriage			
15	9.3	7.2	.77
15-19	8.5	7.0	.82
20-24	7.7	6.7	.87
25-29	5.6	4.7	.84
30-34	2.9	2.9	-
35-39	1.8	1.5	-
40-49	-	-	-

Source: Westinghouse, p. A-23.

The annual health surveys of the School of Health Section of the Division of Preventive Medicine (MOH) is the closest there is to a study of the prevalence and incidence of morbidities, but this study is limited to first and seventh graders only, the timing of the survey among regions may vary, the information derives from physical examinations only that are administered by as few as one Medical Doctor (there are no blood, urine, or stool tests), and until the spring of 1979, no examinations were conducted in Amman. The information, therefore, is again suggestive at best.

The first Amman surveys were initiated in about 16 schools (among 6th graders only) beginning March 1979. Four of these schools--two in predominantly urban poor areas and two in middle-income neighborhoods--were identified and the individual student examinations were hand-tallied. The average number of symptoms per student is unknown, but for present purposes it is assumed that a student has a maximum of one symptom only.

As Table 4 indicates, the urban poor schools have prevalence rates up to 6 times higher than those in middle-income schools. Skin diseases are the leading symptom, followed by ear-nose-throat, eye, and internal difficulties.

TABLE 4
PERCENT OF STUDENTS WITH DIAGNOSED SYMPTOMS,
BY NEIGHBORHOOD

<u>School</u>	<u>Skin Disease</u>	<u>Ear, Nose, Throat</u>	<u>Eye</u>	<u>Internal</u>	<u>Total</u>
Urban Poor A	16.2%	10.1%	3.2%	1.8%	31%
Urban Poor B	6.2%	5.1%	4.1%	6.2%	22%

Middle- Income C	3.4%	1.5%	1.5%	1.7%	8%
Middle- Income D	0.3%	2.2%	0.6%	2.1%	5%

Source: AURPG handtally of original medical reports.

The class patterning of morbidities is clear, but the ranking of morbidities departs from those reported in other studies. Using a different classification system, the 1975-76 survey of student health in seven areas outside the Region found ear-nose-throat disorders twice as prevalent as the second most significant problem, those relating to the digestive system. Again, time of year and larger numbers of younger children not surveyed in Amman explain these differences.

If younger children contribute a disproportionately large share of the disorders (that is, their symptom rates would be higher than the rates for seventh graders), then it would seem that urban poor students are worse off than students in small villages in the Region. In 1978-79, 16% of the Salt and Mataba 1st and 7th graders were found to have symptoms. Less than one-half percent of the Salt students and 5% of those in Mataba had skin disorders; their major maladies related to ear-nose-throat (nearly 9% for Salt, and 6% for Mataba).

In recognition of the limitations of the morbidity data, the World Bank financed health expert working on health problems in the slum areas of Amman and Zarqa developed a subjective or judgmental scoring system to rank maladies among the urban poor. The rating scheme was based on a combination of prevalence and seriousness. Table 5 present the resulting ranking. Despite their high prevalence among urban 6th graders in two Amman urban poor schools, skin and eye diseases are ranked last in this list. (The consultant who prepared this report relied on official morbidity information and did not collect information on the actual morbidities experienced in slum areas.)

To the extent that these various morbidity statistics can be trusted, they indicate that most diseases are preventable (e.g., they are water and sewage borne) and curable. Most significantly, the urban poor have much higher rates of disorders than do the urban non-poor. It also seems plausible that the urban poor may be more likely than students in smaller cities and rural areas to suffer from selected health problems. To the extent also that maladies affect student academic performance, it would seem that the urban poor are at a distinct disadvantage when compared with other students. Because of their lowered health status, these students are not fully capable of taking maximum advantage of Jordan's heavy investment in education for its youth. If student health conditions also reflect the health of parents, then the stratification of health and related well-being parallels that

TABLE 5
PRIORITIES AMONG DISEASE GROUPINGS

<u>Group</u>	<u>Score</u>
Gastroenteritis/food poisoning group	400
Complication of pregnancy/birth injuries, etc.	240
Pneumonia/bronchitis	192
Accidents	160
Streptococcal infections/pertussis/ENTs	132
Acute URI/measles/influenza	120
General acute and chronic illnesses	105
Parasitic & Bacillary Dystentery	100
Salmonellosis/infective hepatitis, etc.	100
Animal borne diseases	96
Dental diseases	90
Neoplasms/circulatory diseases	72
Meningococcal/TB/rubella, etc.	56
Nutritional illnesses	50
Physical and mental handicap	48
Skins and eye diseases	45

Source: Halcrow Fox, Interim Sector Report No. II, Health in the Amman-Zerga Slum Areas, February 1978, p. 31.

noted for infant and maternal mortality and health. The Balqa-Amman Region has a health gradient that parallels the income gradient, and on the basis of the health symptoms identified, it would seem that the delivery of health services to the population of the Region is similarly class-patterned. It should be emphasized, however, that the data reported here are potentially biased in unknown ways. It is quite possible that the biases mask rather than emphasize class and rural-urban differences.

Nutrition: Only scattered, incomplete, and typically outdated information are available on the nutritional status of the population. It is generally felt, however, that there have been significant improvements in the nutritional area, although serious deficiencies still exist, especially among the poor, infants, and mothers. FAO in 1977 reported that the average Jordanian was obtaining only 90% of his per capita daily requirements of calories.¹⁰

Pre-school children suffer special problems. A WHO study published in 1974 reports that serum retinol levels, indicators of a low vitamin A status are found in 34 to 76% of pre-school children.¹¹ Hijazi's recent analysis of government hospitals admissions records indicate that 20% of the total number of children admitted to these institutions were suffering from malnutrition; 85% were marasmic. Westinghouse, which reports Hijazi's findings, indicates that other observations of hospital admissions records place the malnutrition figure close to 30% and that marasmus affects 80 to 90% of these children.

As indicated earlier, a recent study by CARE discovered that approximately 85% of the rural mothers surveyed suffered from some kind of maternal health problem that is related to food and nutrition. Consistent with evidence collected in other countries, Hijazi's recent findings report that pregnancy wastage is high among malnourished mothers, especially among mothers who have had many closely-spaced pregnancies. This information on maternal and infant mortality and health difficulties suggests that the spatial and class patterning of malnutrition is the same as that for infant mortality. Furthermore, malnourishment is, in theory at least, avoidable, although the syndrome that must be broken involves fertility levels, poverty, and dieting practices.

Malnutrition has multiplier effects. It contributes significantly to increased risk of severe morbidity and mortality, it links mother and family health to the health and future development of children. (High

TABLE 6
HEALTH INDICATORS FOR SELECTED COUNTRIES

	Infant mortality per 1000 live births	Life expectancy at birth (in years)
USA ^a	18	71
West Germany ^a	20	71
Israel	22	72
West Bank	40-50	NA
Lebanon	59	64
Gaza	79	NA
Syria	93	57
Jordan (East Bank)	97	53
<hr/>		
Iraq ^a	99	53
Egypt	116	52
Pakistan ^a	132	50
India ^a	139	50
Saudi Arabia	152	45
Zaire ^a	160	44
Nigeria ^a	180	41

^a Taken from Population Reference Bureau, as cited in Overseas Development Council, The U.S. and World Development, Agenda for Action 1976, New York, 1976. Infant mortality figures refer to 1975; life expectancies refer to the average for the years 1970-75.

The West Bank/Gaza information is from the Government of Israel, 1975, and for the other countries the information is from the Population Reference Bureau, 1977 World Population Reference Sheet.

birth rates, for example, contribute to infant mortality.) Anemia and/or hunger, for example, can detract from school performance and therefore, affect a child's future career possibilities. Studies have identified a relationship between prenatal and perinatal complications and reading problems; also, that malnutrition affects intellectual and other types of development (e.g., head circumference and visual-motor development).¹²

From the various studies cited above, it is not possible to estimate the total number of persons and families suffering from different afflictions or how seriously these afflictions impair the functioning of those who have them. That is, it is not possible to estimate how health the population is, or how good a job Government has done in removing health hazards and in providing curative care. Comparative international statistics on infant mortality and life expectancies, however, provide a standard of accomplishments and challenges. As noted earlier, (1) these measures reflect poverty levels and, probably, the distribution of poverty, and (2) the causes of infant mortality, as well as a high proportion of other morbidities in Jordan, are both preventable and curable.

Table 6, based primarily on estimates drawn from incomplete data, suggest that Jordan's overall health status is about the same as Iraq's but higher than Egypt's and Saudi Arabia's in the region. It is lower, however, than Syria's and Lebanon's. The West Bank's health status is especially revealing, for it provides a possible standard for evaluating potential progress and lost opportunities in Jordan. Jordan's infant mortality rate is at least double that for the West Bank, and it is also higher than conditions in the Gaza.

Jordan's health status has improved remarkably over the years, despite its current middle-level position in the hierarchy presented by Table 6. But given its middle-level status, it is not surprising that there are clear rural-urban and socio-economic differences in health status. The major target groups that must be addressed in the future, if all Jordanians are to realize an adequate and decent health status, are the poor, especially the urban poor, rural residents, and the very large high-risk population of mothers and children. On the latter, the Westinghouse study concluded:

"Among the adult population, a special group, women in the childbearing age (15-44 years), deserve special attention. This portion alone represents about 19 percent or roughly one-fifth of the population. Women in the childbearing age and children under 5 years of age thus constitute about 41 percent of the population, while these potential mothers and their children under 15 years add up to over 70 percent of the population. Figure 2 illustrates this high risk group.

"Childbearing, delivery, lactation, and frequent short-spaced pregnancies make women in the 15-44 age group highly vulnerable to the effects of agents causing disease and possibly leading to death. Biological and environmental considerations coupled with low nutritional status put women in the childbearing age and their children at a much higher risk of becoming diseased and dying than the rest of the population. By the weight of both its number and its vulnerability, this group imposes itself now and for years to come as the single most important target group for the health care system."¹³

3.2 Educational Accomplishments

Jordanians are becoming an increasingly literate and educated population, indicating that the quality of the nation's human resources has been improving. Even though many of the most highly trained citizens have migrated to the Gulf States and elsewhere, the resident population is still highly literate, educated, trainable, and able to contribute to both the improvement of their own well-being and to the welfare of the Kingdom.

Literacy levels and patterns are indicators of the development of human resources. In 1961, only 32% of the Kingdom's population age 15 and older was literate; this increased to 66% in 1972. There are sex, regional, and income differences in literacy rates, as seen in Table 7. The Amman Governate has the highest literacy levels, with the 1976 adult male level at 84.2%, and the level for adult females at 63.6%. The respective national averages are 79.6% and 54.4%.¹⁴ Balqa villages (54%), Amman villages (58%), and Madaba City (61.4%) have the lowest overall adult literacy rates in the Region. The other more urbanized areas have a total literacy rate of 74% or higher.

A handtally of adult (typically male) heads of households in several slum areas in Amman and Zarqa indicates a range of low literacy levels-- with only 31% of those in East Wahdat being literate and approximately half being literate in Wadi Haddadah and Wadi Abdoun.¹⁵

TABLE 7

LITERACY PERCENTAGES (PERCENT WHO CAN
READ AND WRITE OF POPULATION AGED 15+)
IN JORDAN BY SEX AND MODE OF LIVING IN
1972 COMPARED WITH 1961

Mode of living	Year	Literacy Percentages		
		Total	Males	Females
Urban areas	1972	66.1	80.1	52.1
	1961	46.1	62.1	29.0
Rural areas	1972	43.5	63.8	22.4
	1961	23.5	43.5	5.7
Total	1972	62.0	77.1	46.8
	1961	32.4	50.1	15.2

Source: Abdel-Aty, p. 52 based on:

- 1) First census of population vol. 1, April 1964, pp. 119-124.
- 2) Extracted from Table 4, p. 96 of Multipurpose Household Sample Survey of 1972.

Being illiterate does not mean, of course, being uninformed. Media other than print have increased in coverage, however. The number of TV sets in the Kingdom increased from 55,000 in 1970 to 250,000 in 1975. In 1974, there was one radio for every two persons, one television set for every 32 persons, and one telephone for every 90 persons. These ratios have no doubt improved considerably since 1974, and, furthermore, many illiterate citizens have access to these communication facilities.

As the number of schools in the Region and Kingdom have increased, so have the educational levels of the population. Every fourth person in Jordan is a student. In 1922, there were only 3316 students enrolled in Government Schools in the East Bank. This increased to 6905 in 1939-40, and levelled off during World War II at about 10,000 between 1940-41 and 1946-47. In 1961, 35% of those aged 5 to 24 were students; this increased to nearly 62% in 1972.¹⁶ By 1974-75, 96% of all primary-school age children were in primary school; it was 80% for preparatory school, and 46% for secondary schools.¹⁷

Although girls have lower enrollment rates than boys, the gap between the two has been narrowing. For example, in 1961, 70.6% of boys age 7 were enrolled, in contrast to 50% of 7-year old girls. In 1972, the respective percentages were 73.3 and 72. For 11-year olds, the 1972 figures were 97.5 and 94.4. It is not until age 14 that the rates diverge by about 10%--39.5% for boys and 78.3% for girls.¹⁸ Only a small minority of the entire younger age group in the Kingdom does not have at least some minimal level of formal education, but there is a definite drop-out at the higher levels, and at every level, girls are less likely than boys to be in school, as seen in Table 8.

TABLE 8
PERCENT OF SCHOOL AGE POPULATION ENROLLED IN SCHOOL
BY EDUCATIONAL LEVEL AND SEX, 1974-1975

	<u>Boys</u>	<u>Girls</u>	<u>Total</u>
	%	%	%
Primary (grades 1-6)	100	92	96
Preparatory (grades 7-9)	88	72	80
Secondary (grades 10-12)	54	38	46
Post Secondary	14	7	11

Source: Westinghouse, p. 12.

The Region has experienced a growth of enrollment over the years from 204,768 in 1974 to 250,410 in 1977. Intra-regional differences emerge, however, as reflected in the proportion of students at each level. Rural girls are especially likely to drop out of school. Scattered information indicates that children from lower-income families are the educationally most disadvantaged. First, they are the least likely to enroll in school. Despite the law on compulsory education, 5% of the children age 10-15 living in one slum area are not in school and an estimated (a very crude estimate only) minimum of about 30% of younger school age children in the neighborhood are not in school.¹⁹ It seems that many poor children begin school late, and subsequently stay in school a fewer number of years.

Overall repeater rates generally run from 8 to 15 percent, with drop-out rates of 3% for the elementary levels and 11% at the preparatory levels. The progression rates between the two levels is about 98%. (These figures refer to 1972/73.) Those who do drop out, according to a recent study, do so for social but especially economics reasons. Early school leavers account for about one-fifth of the population between 12-14 years of age and half of the 15-17 year age group. Sixty percent of the male dropouts said economic necessity forces them to leave school and seek a job.²⁰ Lower female attendance and higher dropout rates are attributable to similar influences, but income-short families are more likely to invest in a son's rather than a daughter's education. In rural villages, socio-cultural features also are reported to play a role, as parents are more willing to send their sons than their daughters to the next village. Nationwide, this preference has resulted in more and smaller girls' schools.²¹

Rural-urban and socio-economic differences in school enrollment rates are apparent. But are there similarly patterned differences in student attitudes and their intellectual preparations, so that they can do well once they are in school? Many studies in Europe and North America have documented that gaps exist between certain ethnic, socio-economic, and geographical groups even before students enter school. Just as students are health disadvantaged, the "cumulative effects" of their living environments result in educational disadvantages that schools should recognize and respond to. Other programs would also be needed, according to these studies, in order to "innoculate" disadvantaged children from the educational effects of their "deficit" human and physical environments.²²

No studies exist on the distribution and seriousness of the educationally-disadvantaged in Jordan. Tests have not been administered to pre-school children and, in fact, the only current nationwide uniformly graded tests are not administered until a student's final year in secondary school (the tawjihi examination). By that time, the educationally most disadvantaged have no doubt left school, although Government's nearly automatic "social promotion" policy suggest that there are only minimal standards of performance and quality.

Despite these shortcomings, the school pass rates (the proportion of all students scoring above the minimal standards required) of about two dozen secondary schools in Amman were examined by the AURPG staff. The schools were selected on the basis of their known locations in urban poor or middle-income areas. The pass rate information for boys' and girls' schools were ranked separately.

Because the standards for passing a test are typically very low--requiring, for example, a score of only 50% in some subject areas--the pass rates did not vary enough to give meaningful results. Given the resources, it would have been desirable to examine the proportion of students in each school scoring in the top or bottom quartiles nationally. This was not possible and, therefore, the highly tentative results are suggestive only. They hint that poverty may have a significant effect on test performance for girls, as urban-poor schools are disproportionately represented in the lower-half of test scores for math, Arabic, science, and English (the only four sets of scores examined).

If a more detailed study confirmed these tentative findings for both girls and boys, and if the revealed differences among surviving seniors are even more pronounced among pre-schoolers and elementary school students, then the significance of home environments assumes even greater importance, one that the schools and the community have yet to consider.

In sum, elementary and preparatory education are quantitatively well developed in the Kingdom and in the Amman Region. Official estimates indicate that quantitative expansion will continue. Government schools in the Balqa-Amman Region can expect to add 15,000 new students in 1980-81, and 10,500, 18,600, 14,800, and 12,600 new students each year through 1984-85. There will be approximately 289,000 students in 1979-80; in 1984-85 there will be approximately 360,000. Literacy rates, which are already high by Middle Eastern standards,²³ will continue to climb.

Although progress in developing human resources has been impressive, the benefits have not been equally shared. The urban poor, rural residents, and females benefited least. Their dropout rates represent a loss to themselves and to the country. The educationally-disadvantaged may start off behind, in addition to falling further behind at successively higher levels of schooling.

Differences in beneficiaries suggest there are significant differences in the quality of the Kingdom's stock of human resources. Further qualitative differences in education (the curriculum) and the degree to which programs address the needs of the disadvantaged will be considered later.

3.3 Participation in the Labor Force

Jordan's unemployment rate dropped from 8% in 1971 to 2% in 1975.²⁴ It would appear that the developing human resources described above have been nearly fully mobilized and put to productive use for the nation. These figures, however, mask differences in accomplishments and some potentially serious problems in the years ahead. Because manpower issues are covered in Chapter III-11 (Human Resources), only brief attention to several major developments are reviewed here.

In 1975, Government estimated the domestic civilian non-farm work-force to be about 182,000 persons. It anticipated that this sector would increase by 57% (another 104,700 jobs) between 1975 and 1980. Unemployment dropped, but to keep it low, a great number of new jobs had to be created. Demand and supply were brought into balance in large part because large numbers of Jordanians migrated in search of work outside the country. Unlike migrants from other countries in the region, the Jordanians, until recently, took their families with them, thereby reducing the need for school places, health facilities, schools, and other services provided in Jordan for residents.

Until 1973, the migrants were primarily in clerical or more skilled jobs, but after 1973 the demand for labor changed and both skilled and unskilled (who less often took their families with them) left in large numbers. Birks and Sinclair estimate that 28% (or about 150,000) of the Jordanian work force were employed outside the country in 1975. Because they took their families with them, there were about 663,700 Jordanians absent from the Kingdom at the time.

According to the two researchers on this ILO project:

"It now seems likely that the direction of migration of Jordanian workers will reverse, as they are replaced increasingly by Far Easterners in the peninsula. Concurrently the decline in remittances will create additional problems in the economy."

Because of their skills, income, and style of life, it seems likely that a high proportion of return migrants will settle in the Amman region. This will create considerable pressure on the job market, on the employment opportunities of the increasingly larger numbers of school leavers and graduates, and on housing, educational, health, and other services.

Not all 663,700 migrant Jordanians and their families will return. Those who do return will not all come at once. Perhaps only a small minority will return. It seems likely that the least educated and least skilled--and especially those in the construction sector--will be the first to return. According to the National Planning Council, 40% of the migrant workers are in the construction sector. As the construction boom (especially in Saudi Arabia) levels off and declines, this sector will be the first to return its foreign labor force. If it is assumed that half the migrants will return and that they have the same size families as other migrants, then the Kingdom will have to absorb another 30,000 workers and a total population of about 133,000. Amman, of course, does not currently have the jobs, housing, school places, or other facilities to absorb such a large number of new families and workers.

The timing and size of the return migration aside, the resident population exhibits differences in employment problems in at least three respects: women, agriculture, and the poor.

Women have a low rate of labor force participation, a feature common throughout the Middle East and North Africa. Jordan, with about 13.5% of the 1975 labor force composed of women, is among the highest in the region, being higher than Egypt (7.4%), Libya (5.1%), and Algeria (4.3%). But Jordan is well below economically more developed countries, including the Soviet Union (50%) and Sweden (27%). Whereas 34.9% of all Jordanian men are in the paid labor force, only 3.9% of the women are. Inter-sectorial and rural-urban differences are included in these rates. For example, women comprise 33% of the agricultural sector's working force but only 13.6% of the non-military civilian sector.²⁵ About 70% of the gainfully employed

women are in the Amman Region.²⁶ Official statistics, however, are limited. One study of a single village in the Amman Region, for example, found that "most of the agricultural work is performed by elder men, women, and children." Able-bodied men would be underemployed if they remained in their villages. That is, the economic base of many villages "consists of a diminishing agricultural or pastoral sector, and an increasing out-of-village employment sector."²⁷ Because they have relatively low levels of education, these migrants are less able to compete for higher-paying jobs in Amman's labor market.

Very little is known about this labor market and how it operates. But it is not surprising that those in the lowest job categories in the Region are the least educated and, therefore, have the least opportunity for improving their economic conditions. According to the 1975 labor force survey, 37% of the Region's unskilled workers are illiterate; only 4.7% of those in skilled manual occupations are illiterate, whereas the proportions of illiterate in four progressively higher-level positions are too small to report. As noted earlier and as will be mentioned again later, these illiterate urban workers tend to have large families, limited incomes that translate into even lower per capita incomes, adverse shelter and neighborhood conditions, and, apparently, their family members (as seen in the school health survey) are more likely to have health problems. They and their children are caught in a syndrome of poverty that in large part is beyond their own abilities to transcend--at least, under the present conditions of services they are provided.

Although rates of unemployment are low nationally, they can be quite high in low-income areas. The five-slum study conducted as part of the World Bank urban project, for example, found 21% of the heads of households in one neighborhood had no work (only a maximum of 5% of these were housewives). In another community, only 46% of the heads of households were "permanently employed." Their income is unpredictable, a condition that a large-scale five-nation study found to be especially destructive to mental health and family well-being.²⁸

Beneath the national figures on high employment, thus, lie a number of serious current and possible future difficulties:

- a. At present, the large pool of talented females has been untapped;
- b. Economic conditions in many rural villages have forced men to migrate and leave their wives and dependents to do the farming;
- c. The urban poor have few skills to work themselves out of their poverty;
- d. Many neighborhoods have fairly high rates of unemployment and even higher rates of employment insecurity; and
- e. Finally, the possibility of a large re-migration of workers and their families could further exacerbate the problems that the resident poor currently experience.

3.4 Social Fabric and Civic Responsibilities

Jordan, like so many other rapidly developing societies, has experienced a remarkable change in its population, social, and legal structures. To neglect these changes and to focus only on economic development can lead to serious social and political difficulties, as many other countries have learned too late. Instead of viewing national development as economic development, it would be economically and politically prudent to focus on social development--with economic growth as a means to achieve it

Because attention has been fixed on economics, very little is known about social change. The earlier discussion of health, human resources, and manpower fails to capture changes in social relations and the social structure. As an indication of some relevant recent changes and possible harbingers of the future, brief attention will be given to three related features: (1) changes in the family as reflected in the development of a new age category: adolescence, (2) changes in the family as reflected in husband-wife relations, and (3) several issues relating to citizenship and social networks within neighborhoods.

(1) Adolescence is relatively new to Jordan and other Arab societies. Instead of entering the family's world of work at an early age, children now prolong their dependency and obtain independence from full-time parental supervision by attending school. Adolescence becomes an "age-stratified, marginal, prolonged dependency with relatively little power or

status." In Jordan, children are obligated to attend the first nine years of school. They are in adult-dominated organizations not controlled by their parents. They are also put in contact with large numbers of peers who exercise non-family influences over one another.

Labor force and school participation rates indicate the rise of this new social category. In 1961, only 36% of the boys age 15-18 were attending school. This increased nearly double to 68% in 1972. The rise for girls age 15-18 was nearly five-fold, from 12% to 57%. The decline in labor force participation rates was less dramatic than the changes in enrollment ratios, in part because family labor is not adequately covered in the earlier census. In 1961, % of the boys age 15-19 were in the labor force; this dropped to about 31% in 1972. The drop for girls was from % down to 3%. Relatively few parents today had an adolescence. Their children are the first in their families to experience this new status.

The 1976-80 Five-Year Plan recognized but was unable to document some of the problems youth and their families encounter:

The intellectual concerns of the contemporary world have brought in their wake a set of anxieties and uncertainties and have propelled the younger generation into courses of action of patterns of behaviour characterized by a sense of indecision, suffering, indirection, and lack of enthusiasm for being of service to their country. Furthermore, the scarcity of opportunities for intellectual pursuits in literature, art, writing, reading, acting or even hobbies constitutes a real problem for the young men and women of today.

The emergence of our society from the traditional patterns governing Arab societies in the past has had repercussions affecting the younger generation. This is a discernible generation gap, which must be bridged in the interest of averting its negative consequences. Conventional life patterns, family ties, traditions, man-woman relations, spiritual bonds in society and town-village relationships are now facing new challenges in a new world. These challenges are already reflecting themselves on society in general and on the youth in particular. It goes without saying that the emergent needs of the younger generation must be secured, if future development is to be healthy and sound.²⁹

Larger cities, such as Amman, provide adolescents with greater opportunities to meet one another, and these urban environments make it more difficult for parents to supervise their children. Again, the Five-Year Plan recognized this:

"Overcrowdedness in some urban areas, coupled with backwardness in others, has created a climate accentuating social problems, like deviation, vagrancy and juvenile delinquency." (p. 336)

Statistics on cases involving youths are incomplete and inadequate. They indicate very few cases--only 1263 for Amman-Zarqa in 1975 and 1305 in 1977.

According to records kept by the Ministry of Social Affairs, about half of the Amman Region's juvenile cases in 1975 were students.³⁰ It is possible that school dropouts are over-represented among these youth. Schools, it would seem, help children keep out of trouble. They can and should be a positive force in the lives of youth.

But how positive are these influences? Unfortunately, official statistics report only on pathologies, not the positive promotive features of a population. However, as will be indicated later, there is little evidence that earlier graduates of schools express positive leadership in the community. Students in Jordan, like their parents, seem much more job, income, and individually-oriented rather than being oriented toward playing a positive leadership and citizenship role in their communities.

(2) Family changes are not limited to adolescents and parent-child relationships. Husband-wife relationships have also been changing, even among Bedouins. Dr. Abu-Jaber's study of badia society found that half his respondents claim they had a choice in selecting their marriage partners, suggesting a trend toward greater freedom.³¹ Greater freedom is also partially reflected in rising divorce rates, which according to Professor Mahammed Barhous of the University of Jordan, are currently at about 10%, with the highest rates among the most educated.³²

Divorce is especially hard on the poor. Stigma is still attached to divorce, and the women are "always" considered to be the ones at fault. "Lower class women find it especially hard to remarry under these circumstances. This group in particular are often found to work to support themselves and their children, since their families are not economically able to assume this." (Most divorced women return to the paternal household, and fathers consider themselves to be financially responsible for divorced daughters.)

Approval and practice of family-planning is still another indicator of changes in husband-wife relations, a change that contributes to the health of mothers and infants, as noted earlier. The National Fertility Survey of 1972 reports that only 33% of the sample of women interviewed disapprove of family-planning. Those who most need to manage their

health through managing spacing and size are the least likely to give their approval: 44% of the illiterate disapprove, while only 4% of secondary school graduates and no university graduates disapprove.

With rising levels of education, it seems highly probable that younger people will have more freedom to decide whom to marry, more spouses will feel free to terminate unpleasant marriages, and couples will be more deliberate in regulating their fertility behavior. The poorest and least educated, however, will be the last to change. Their traditionalism is part of their poverty syndrome, one that adversely affects their children's health and well-being as well as their own.

(3) Youth seem to reflect their parents in their lack of civic involvement. Slightly more than 200 voluntary and charitable organizations are registered with Government. About 60% of these are in Amman. While they perform valuable services, often providing training and help to the less fortunate, there are very few--if any--neighborhood-based organizations helping to solve neighborhood problems. This is especially so where cooperation is most needed: in low-income areas. The five-slum study found very little evidence of self-help extending beyond one's own dwelling--for example, building a paved walk or roadway, or digging a drainage ditch.

A number of civil servant groups have created housing cooperatives and there are cooperative provision stores. Although such developments hold promise, they are not found among the poor. Because Government has only limited funds and manpower, citizens may have to help solve their own problems rather than passively wait on a paternalistic municipal or national agency. The apparent narrow economic self-interest of Jordanians found in all walks of life may be incompatible with modern urban living.

4. FACTORS INFLUENCING PRESENT CONDITIONS

The foregoing discussion examines selectively present health and well-being in the Region. Key findings have been summarized in each major section. If, however, policy measures are to be fashioned to deal with these conditions as desired, it is essential to identify more specifically the main factors that cause or contribute to them.

4.1 Individual and Family Resources

Undoubtedly, one major set of such influences is economic. Earlier, economic resources were rejected as a direct measure of health and well-being. Their function is rather different. Such resources cannot mean such a condition; but they are a major influence upon it.

4.1.1 Income and the Poverty Line

Income is a resource allowing families to purchase well-being. Some elements of health and well-being cannot be easily purchased, or they are in very short supply, such as sewers, potable water or even high quality education. Families also differ in how well they manage their money--for example, their choice of diets or the investments they make in preventive health care. More than money--or water, or sewers--may be necessary to improve the health and well-being of many citizens.

Despite these limitations, there is no doubt that a family's income significantly influences health and well-being. Level of income--or distance above or below the poverty line--is not the only important influence. Distribution (the amount of economic inequality in a country) also is important. For example, GNP seems to have little association with life expectancy, but the correlation with income distribution is appreciably stronger.³³

The distribution of income helps identify the beneficiaries of government-assisted programs. It also helps in determining pricing and subsidy levels for selected services. It is essential for estimating whether government services are inequitably distributed--whether there is, perhaps, socialism for the rich and free enterprise for the poor. In short, one standard for assessing the degree of social justice is provided by the distribution of services in relation to the distribution of family income.

Precise assessment requires data not available in Jordan. Ideally, information should:

Measure government and private transfers. For example, the free medical services of the Royal Medical Services should be added to the recipients' income, as should the subsidies (welfare) incorporated in food prices sold at government stores for all levels of the civil service. Taxes also should be subtracted from income.³⁴

Include remittances, an important component of the Jordanian economy. In 1973, for example, remittances accounted for 11% of imports and 5.5% of G.D.P. By 1976 these figures rose to 31.2% and 32.4% respectively.³⁵

Be translated into per capita income--that is, a monthly income of JD 40 has one meaning to a 3-person family and another to a 10-person family.³⁶

The Royal Scientific Society will shortly publish the results of its national study of the distribution of income based on 15,201 family interviews conducted in 1973-74 by the Department of Statistics. While useful as a historical benchmark and for providing an understanding of Jordanian society, economic developments (including internal and foreign migration, remittances, and expanded government services) since 1974 severely limit the relevance of these materials for understanding the Balqa-Amman Region in 1979-80. We necessarily, therefore, rely on estimates that have unknown biases.

Halcrow-Fox, as a part of their World Bank Urban Project in Amman, received the assistance of Jordanian and expatriate consultants in estimating 1979 income distributions for three populations: the national urban population of households, and households in the Amman and Zarqa slums separately (Table 9). They provide further estimates regarding income inequalities:

- The richest 20% of households earn 45% of the total incomes,
- The average income of the richest 10% is 13 times that of the poorest 10%.

The Housing Corporation has a different set of income distribution estimates. It assumes that 53% of the families earn less than 67 JD per month, whereas Halcrow-Fox assumes that only about 25% of the national urban population are at this level or below.

TABLE 9
HOUSEHOLD MONTHLY INCOME DISTRIBUTION

<u>Percentile</u>	<u>National Urban</u>	<u>Amman Slums</u>	<u>Zarqa Slums</u>
20	JD 60	JD 44	JD 42
40	JD 96	JD 56	JD 62
60	JD 116	JD 74	JD 78
80	JD 175	JD 112	JD 116

Source: Halcrow-Fox, Jordan Urban Project, Interim Report, May 1979, p. 3.

Table 9, to the degree it relies on the research of the RSS, may understate the poverty problem of the lowest 20 percent. This is because of the differential effects of inflation.

The World Bank estimated Jordan's per capital G.N.P. in 1976 to be US \$610. There was very little growth in per capita growth of GNP between 1975 and 1977, and G.D.P. per capita actually fell about 5% per annum. Birks and Sinclair conclude, on the basis of these figures, that "as long as inflation is running about 33% annum, little growth can be expected of national income in real terms."

Anyone who has spent time in Jordan over the past decade, and especially during the past few years, would probably take exception to this conclusion. There has been considerable development and improvements, especially in material well-being, but the benefits and costs of success have been unequally distributed, in part because of inflation. For example, the average annual increase in food prices since 1975 has been about 10%, while the increase in wages has averaged only 5% per annum. The initially low purchasing power of the urban poor, who tend to work as paid laborers in unskilled and semi-skilled occupations, has been further limited by these inflationary pressures. Price trends in housing have been particularly dramatic. Using a different time frame, urban land prices rose 500% between 1970-76, construction costs rose 170%, G.D.P. (including remittances) rose 135%, but the salaries of civil servants rose 50%.

Given the inadequacies of the information on income and income distribution, the determination of a poverty line is necessarily arbitrary. Considerable information is needed to draw such a line--for example, information on the economics of scale for different types and sizes of families, how these economies affect per capita income needs, and the market basket that should be used to determine a minimally adequate income. Nutritional surveys and studies based on the costs of locally available foods have not been conducted. Therefore, the Government's decision to have food prices account for 48% of the expenditure items in the cost of living index may not be realistic for the poor--for example, the lowest 20% of urban families. (The 48% figure is not, however, out of line with what is used in other developing countries.³⁷)

If World Bank procedures are followed, the poverty line would be drawn at the 40th percentile (of the national urban distribution, in this instance), which is for the family earning between JD 500 and JD 1100 per annum. The size of the family at this level is not indicated. As indicated earlier, the Housing Corporation defines low-limited income as families earning less than JD 67 per month. Dajani, relying on 1976 income statistics, draws the household poverty line at JD 600 to JD 100 per annum or JD 60 to JD 166 per capita per annum.³⁸ He emphasizes that these are crude figures only. The upper limit is near the 40th percentile, according to Table 9. Dajani terms his poverty line a "subsistence level" and accounts for only 2 to 4 percent of the Amman population. Table 9, however, indicates that the figure might be closer to 10% to 15% of the national urban families. Table 10 indicates that up to 46% of the Amman slum households and 30% of those in Zarqa are at or below Dajani's "subsistence level."

The figures in Table 10 indicate how difficult it is to determine the poverty level, the size of the population "at risk" and, therefore, how high a priority and how large an investment is necessary to successfully eliminate urban poverty. Suffice it to say that there are clear inequalities in the resources families have in order to meet their basic human needs and to assure their health and well-being.

The challenges are forced deprivations these low-income families encounter are further indicated by crude estimates of expenditure patterns. In calculating these estimates, it was assumed that 48% of a family's expenditures (income is used to measure expenditures) are spent on food. This is the figure adopted in the cost-of-living index. Second, from the

TABLE 10
HOUSEHOLD MONTHLY INCOME DISTRIBUTION IN AMMAN AND ZARQA SLUMS ^a

Monthly Household Income Group JD per month	Monthly Household Income Mid-Point JD per month	Percentage of Households	
		Amman %	Zarqa %
35-45	40	19	10
45-55	50	27	12.5
55-65	60	19	15
65-75	70	16	17.5
75-85	80	11	20
85-95	90	9	22.5

^aSee Table 9 for source.

Dajani and Halcrow-Fox studies, the high and low monthly expenditures were identified for water and sewer services, electricity, health, and shelter. Applying these figures to the JD 60 per month family that is at the 20th percentile indicates that a family that only had these limited expenditures could have a monthly surplus of 24JD or a deficit of 23JD.

The cost of shelter is crucial to these calculations. If a family owns its own dwelling unit in an illegal settlement, it is assumed that there are no shelter costs and, hence, the 24JD surplus. If the family lives in a modest central city apartment or in a modest suburban apartment in the southern part of Amman, the monthly costs are 40JD, which, along with other high estimates for essential services, leads to the deficit. If the first family pays 40 JD for housing, it will have a monthly deficit of 6 JD.

In fact, of course, families have other needs than those listed--for example, they need clothing, transportation, and they will have unusual medical expenses (related to the higher birth rate, mortality, and morbidity found among those with low incomes). Larger size families have reduced per capita consumption possibilities. Furthermore, because a high minority of low-income families lack a regular job and the income predictability this implies, they are forced to manage their income wisely and save, or they

are forced to forego essential expenditures when unemployed.

The preceding rather extended analysis may now be summarized. A family's income is a critical factor in the health and well-being of its members. Many basic essentials--such as water and housing--differ widely in their cost, and any single expenditure need can further unbalance an already precarious budget. Since few families are able to live on "deficit" financing,³⁹ they are forced to cut back on some of their essentials. When they scrimp on health and nutrition, the consequences can be serious. Very little is known about how in fact these families--and they could constitute up to 30% of the Amman population, not Dajani's minimum of 2%--cope with their poverty. It would seem, however, that about anything that is done to help the poor will be of some benefit. But a single intervention alone is not likely to solve their problems. Development policies, programs, and strategies are needed, not a single policy, program, or strategy.

4.1.2 Family Size, Resources, and the Maternal "Depletion Syndrome"

Family size is relevant to family resources and needs and, therefore, to family health and well-being. Size, independently of income, has an influence on health and well-being.

The economic impact of size, however, warrants emphasis. Most importantly, available resources can be translated into per capita income and consumption figures. A two-person family with a monthly income of JD 40, for example, might be classified as non-poor, while a family with 12 members and 100 JD a month might be classified as poor. The first family has a per capita income of JD 20; the second has less than 9 JD per capita. Dajani found that large households tend to consume less water per capita than do smaller families. In part, this lower consumption is dictated by the family's lower per capita income. They have other expenditure needs.

Jordan's high birth rate (and the resulting larger families) yields a larger population of young people and a high dependency ratio. As Chapter II-1 (Demographic) indicates, approximately half the Kingdom's population is under age 15; another 3% is over age 65, yielding a dependency ratio (the size of the dependent population in relation to the number of persons in the economically productive age) of 114 to 100. In the more highly developed countries, these ratios tend to be approximately 80 to 100.

TABLE 11
 SIZE OF URBAN JORDANIAN HOUSEHOLDS AND NUMBER OF
 EMPLOYED PERSONS PER HOUSEHOLD

Persons in House- hold	Total No. of Wage Earners in Sample	Total Families in Sample	% Families in Household Category	Population in Household	Persons Employed per Household	Persons Supported per Wage Earner
1	62	282	1.9	282	.20	1.0
2	602	1,840	6.4	3,680	.64	-
3	1070	3,117	7.2	9,351	1.031	2.9
4	1500	5,160	12.0	20,656	1.16	3.4
5	1902	7,700	10.7	38,500	1.23	4.1
6	2248	10,488	12.2	62,928	1.28	4.7
7	2247	11,788	11.7	82,516	1.33	5.3
8	2243	12,376	10.8	99,008	1.44	5.6
9	1949	11,898	9.2	107,082	1.40	6.4
10 or more	<u>3694</u>	<u>24,776</u>	<u>17.3</u>	<u>297,312^a</u>	1.59	6.3+
	Total	89,425	99.4	721,315		

Source: Department of Statistics, The Multi-purpose Household Survey, January - April, 1976, Amman, June 1977.

^a Average size family in this category is assumed to have 12 persons.

Table 11 presents the distribution of families in Amman by size of family and number of persons employed in each size. Among other things, this table indicates that half the households⁴⁰ in Amman have 7 or more persons; the largest single group of households, 17.3%, has more than 10 persons; the average number of persons employed per household is 1.27;⁴¹ and 41% of all Amman residents live in households with 10 or more persons; 56% live in households with 9 or more persons.

The 1974 Multi-Purpose Household Survey conducted by the Department of Statistics found that urban households tend to be slightly larger than rural ones. CARE's recent Kingdom-wide sample of rural mothers, however, reports that "the approximate family size is 10-12 family members living together normally in a house or dwelling." This survey may have used a different definition of a family or household. It does not limit a family to a single dwelling unit, either.⁴²

Using the previous definitions of household and family unit, it appears that only a minority of families are other than conjugal/nuclear (married parents living with their unmarried children). Dajani and Murdock report that most rural houses are owner-occupied and hold nuclear families. "Non-nuclear family households do not really consist of extended families... but rather nuclear families with an aged mother or father, an unmarried or widowed aunt, or an unmarried son or brother." This seems to describe urban family living arrangements as well. However, many families in low-income areas are headed by women, usually widows. There are 27% such households in Jena'a and 19% in East Wahdat, but only 8% in the other three low-income areas surveyed by Halcrow-Fox.⁴³

Both nationwide and within the Amman urban area there are class-related difference in family size, with larger families being found most frequently among the poor (which means their per capita incomes are further depressed). The National Fertility Survey conducted in 1972, for example, concluded that the average number of live-births per woman over her reproductive life, by the education attainment of the wife, was:

- 4.1 live-births for a university-educated woman
- 4.4 live-births for a secondary school-educated woman
- 7.0 live-births for a primary and secondary school educated women
- 8.6 live-births for illiterate women.⁴⁴

As noted earlier, women in Class Category 1 (highest) desire an average of 3.8 children, Class 2 desires 5.3, and the lowest income women desire 7.9 children. Because infant and child mortality rates are higher in low-income families, class differences in completed families are not as large as these fertility figures would indicate. Class differences still appear, however. For whereas about 18% of urban families are size 10 or more, 3 of the 5 urban slums in the World Bank study had 25% or more 10-person-plus households.

Therefore, Jordanian families (households) are large. Urban families tend to be larger than rural ones; and the urban poor have the highest proportion of large families.

In addition to the implications these large families have for the per capita consumption patterns and well-being of family members, large families and high fertility have seriously adverse health effects on mothers and infants--effects that are especially felt among the urban poor. They are referred to cumulatively as the maternal "depletion syndrome."⁴⁵

Childbearing in Jordan is spread out over a mother's entire reproductive age span and, as the 1972 National Fertility Study found, the average number of live births per woman was somewhat over 7. Thirty-nine percent of the mothers bore at least 10 children. Consecutive and sometimes overlapping phases of pregnancy and lactation begin before the mother's own physical growth is completed.⁴⁶ The mother's nutritional needs are never satisfactorily met, and, apparently, low birth weight and both maternal and neonatal mortality are common enough to be considered normal by those suffering these conditions. The CARE survey, as noted earlier, found that approximately 85% of the mothers interviewed has at the time some kind of maternal problem related to food and nutrition. Research elsewhere has shown:

"a sharp and steady increase in risk of death occurring after the third birth. Although the differentials are most marked where obstetric care is minimal, higher maternal mortality... continues to occur in women of high parity after improved obstetrical care has reduced mortality."⁴⁷

Despite Jordan's advances in health care, a majority of mothers (up to 60%) are attended at birth by the traditional midwife (dayah) or have no one to attend them.

Hijazi's previously cited research in Jordan confirms the effects of high fertility, large families, and poverty upon infant mortality rates. For example, children more than fifth in the birth order were more likely to be malnourished than earlier borns, and that the household size of the malnourished tended to larger. Infant mortality is different from "live births," so that statistics on the latter do not adequately reflect the human wastage of high fertility. The 1972 National Fertility Study is unclear about the meaning attached to "infant mortality," but 24% of the mothers had at least one such occurrence; 7% had two or more of them. 33% of the mothers interviewed by CARE had some form of miscarriage or abortion, and about 11% had stillbirths. These mothers had an average of about 8 pregnancies.

In sum, high fertility and large families have effects on health and well-being that are independent of the effects of income alone. When high fertility, large families, and poverty are found together, the deleterious effects are exaggerated. The first two influences are most common among the poor in the Amman region. The third influence is by definition poverty-related. Below it will be shown that the poor--including mothers and their infants--also live in the environmentally most hazardous and deprived conditions, further endangering their access to basic necessities and, therefore, their health and well-being.

4.2 Environmental Stresses and Resources

Other chapters treat the natural and man-made environments. Brief attention will be given here, however, to key environmental factors that affect health and well-being.

4.2.1 Water

Water is important for both economic development and health reasons. The same quality of water need not be provided for both (development and health), and, in fact, at least one major world metropolis has been able to provide households with two distinct types of water--salt water for flushing and potable water for other domestic uses. The quantitative and qualitative aspects of water might be considered separately, for studies have failed to demonstrate a statistical relationship between the economic growth and health of a population, on the one hand, and the quantity of high-quality water, on the other hand.⁴⁸ But for the most part, these

findings refer to water-rich countries that are able to use the same quality water for drinking as they use for flushing toilets, watering lawns, and industrial purposes. Water, on the other hand, is thought by many to be Jordan's most scarce resource and, as such, the quantity and quality of this resource affects the pattern of industrial growth and the basic human needs of the residents.

The quantity and quality of water affects Jordanians through the transmission of diseases and through impacts on personal hygiene. Enteric disease (dysentery, infectious hepatitis, and typhoid fevers) are the fourth most important group listed in official "reportable diseases," and it is felt that they would be much more significant if complete data were available. These diseases are related both to water contamination and personal hygienic practices. According to the Westinghouse study, approximately one-third of post-neonatal deaths are related to diarrheal diseases, and these too are water connected.

Adequate water of an acceptable quality is essential to personal hygiene. Studies have indicated that personal cleanliness is related to the lack of transmission of dysenteric and other enteric diseases.⁴⁹ The mother's personal hygiene is widely considered to be more important than water itself in protecting infants from diarrheal diseases, but this cleanliness requires minimally adequate supplies of acceptable quality water. The Halcrow-Fox, World Bank-financed study of health conditions in Amman slum areas concluded that:

"The importance of water... is not that it is necessarily seriously implicated as a source of disease transmission but that it is one of the principal means of hygienic personal behavior to interrupt faecal-oral transmission routes. From this point of view the precise quality of the water available is nowhere as important as the quantity available for washing and cleaning."⁵⁰

Because water is a necessity that people must obtain in some manner, this resource has economic well-being implications as well as health ones. Therefore, the cost of water also must be considered.

But is adequate water of any quality--regardless of cost--now available? Or if available, available to whom? At present, slightly more than 80% of Amman's population is served by individual household connections to the AWSA system. None of the 55 villages in the Region for which information is available have piped water providing this same level of connections--80%. Twelve have no piped water connections at all, 26 connect to less than 50%

of the households, and 17 serve 50% to 90% of the homes.⁵¹ Even those connected to a water system receive irregular or infrequent service, and because of seasonal variations in supplies, there are seasonal differences in the sources families use. Per capita consumption levels and expenditures on water also probably vary by season.

It is not known how much water per capita is essential for a family, although one recent international comparative study found a minimum use of about 5 lcd (liters per capita per day) for 7 countries, 20 lcd or less for 24 countries, and 40 lcd or less for 45 countries.

"Consumption which falls to as low as 5 lcd is probably about the minimum necessary to sustain life..[A]t the lower end of the scale, as increased quantities of water are consumed, expected health benefits become greater."⁵²

Government has set a water goal of 100 to 200 lcd. In fact, consumption levels are much lower. In 1975, the estimate for Amman was 40 lcd; for the rest of the country (other than the Jordan Valley), the estimate was 20 lcd, although one estimate puts the national average at 60 to 70 lcd, the average for 372 villages and towns having a piped water system 40 lcd, and other villages at 10 lcd, while Amman was estimated to have 40 lcd.⁵³ WHO reports a world average for developing countries of between 35 and 90 lcd, indicating that Jordan is at the low end of the scale. (Damascus had an estimated 163 lcd in 1975, about four times as much as Amman.)

The quality of this water varies, with one 1975 study finding that 37% of the wells in the Amman-Zarqa area had fecal bacteria (before being chlorinated).⁵⁴ In January 1976, an epidemic of bacillary dysentery affected approximately 4300 persons in the Salt area.

Good quality or not, households in the Amman area must often pay very high prices for water (and for sewerage services as well) when they are not connected to the official system. According to Dajani, some of these families pay in excess of 15% of their incomes on water and sewerage. The Halcrow-Fox study found "substantial numbers" of families in slums spending 3 JD or more per month for water. The fee schedule that different sources charge for water will be mentioned in a later section of this chapter.

In sum, the Region's water system is a serious impediment to the health and well-being of the population. Waterborne diseases are, themselves, a major health problem, but the lack water for personal hygiene

may be an even more significant influence. The cost of water, especially for those who purchase it from private vendors, is still another stress, especially for the poor. As will be seen, the poor are the least likely to have water connections, so that they are triple-deprived: the quality is low, the quantity is insufficient for hygienic purposes, and the high expenditure levels on water require that expenditures on other needs be reduced.

It is difficult, however, to estimate the exact health and well-being effects that might result from higher levels of water service. If the non-serviced rural villages encounter problems similar to rural areas in East Africa, then the estimates of health effects prepared by White, Barclay, White might be useful as a rough guide. With a disease pattern different from Jordan's, the estimated effectiveness of providing excellent water supplies was that 52% of the water-related diseases would be abolished.⁵⁵ The estimated reduction rates for specific diseases found in Jordan include:

<u>Disease</u>	<u>Estimated Rate of Reduction</u>
Bacillary dysentery	50
Trachoma	60
Gastroenteritis(age 4 weeks to 2 years)	50
Gastroenteritis(over 2 years)	50
Skin and subcutaneous infections	50
Diarrhea of the newborn	50

The authors qualify these estimates as "little more than guesses." They do, however, provide crude targets-of-the-possible.

Other experts have emphasized that there are multiple causes of the above diseases and the courses that they take. Certainly large quantities of potable water are not enough. The significance attached to personal hygiene--along with the storage and other uses of water, as well as diets--indicates that technical assistance in the form of public education must accompany water development projects if the full benefits of these physical investment projects are to realize their full potential.

4.2.2 Sanitation

Although more public attention is given in Jordan to water than to wastedisposal, the two are closely related as they affect health and well-being. In fact, one recent review reports liquid (human) wastes are a much more significant health hazard than is water.⁵⁶ Wastes taken from the home must be adequately protected so that they do not support other disease carriers. Hygienic considerations also are important. For example, an inside water closet is not enough; it is important that the facility be kept clean, a major task in large families.

As AWSA expands its water system, provides regular use, and consumption rates increase, the provision of sanitary sewers will become even more important. When the per capita consumption of water rises above 40 lcd--Amman's current level--a waterborne sewage disposal system "becomes inevitable."⁵⁷

Amman's sewerage system currently serves about 150,000, or 21% of the population, in contrast to 500,000, or 71% of the population served by the water system. According to Dajani, about 80% of the residents depend on cesspools and septic tanks for their wastewater disposal. Salt is the other Jordanian city with a sewer system, but it has been evaluated as badly in need of renovation. Households relying on cesspools must have them emptied periodically. This creates both a special and a general health hazard. It is special in the low-income areas which, because of narrow accessways and steep slopes, must usually be served by hand instead of by mechanical means. As the Halcrow-Fox health study concluded, this process entails high risks of infection directly and through spillage. The problem is general, however, in that the disposed wastes percolate through the sand and the gravel into the community's water supply aquifers. The hazards will become even greater as the water system is expanded over the next few years ahead of the sewerage system. It is, thus, not surprising that the absence of a sewer system was ranked as the major disadvantage in 3 of the 5 slum neighborhoods surveyed by Halcrow-Fox. But the residents of such areas cannot afford sewer connections, even if allowed to connect. The fixed fees above (that is, disregarding the length of the feeder from house to trunk) run to approximately 200 JD. The sewerage lines in Amman could serve 50% of the population, but residents cannot afford the connecting charges. In the fourth slum area, rubbish and dirt, or solid waste disposal, was rated by more residents as the major disadvantage.

Solid waste is a serious health hazard that is too easily overlooked. Although Amman has a refuse collection, transportation, and disposal system, the system has been evaluated as "underequipped, undermanned, and disposal by open-burning dumps," a process that threatens health "because of rodent and insect infestations and air and water pollution."⁵⁸ Dajani claims that Amman's

"rodent problem is a particularly serious one, since it could wipe out all the benefits obtained through the availability of more plentiful high-quality water, and the sanitary disposal of wastewater."

Waste disposal is an especially serious hazard in slum areas. In one such area, East Wahdat, 100% of the interviewed households dispose of their rubbish by throwing it in the street or wadi. From 56% to 90% of the households in the other areas say that the refuse man picks-up their refuse, but they seem to mean by that that "we hand it to the refuse man when he is around but normally we throw it in the street." Most families also seem to dispose of their sullage by tipping it into these same streets. Even when residents take their refuse to collection points to be hauled away by municipal trucks, these collection points become "ideal habitats for rodents and flies."

In sum, it appears that the development of water systems is well ahead of the development of sanitary waste disposal arrangements. A failure to develop sewage and solid waste disposal systems would be counterproductive to the development of water supplies, and, similarly, the development of only one disposal system without the other could be counterproductive. A comprehensive environmental health strategy is necessary. Such a strategy should be of special benefit to the poor, since they are least well-served now. Since the long-range development programs for water and sewers will reach many of these areas last, an immediate action program for them would be warranted.

As with water, providing services will not be sufficient to remove the hazards created by waste disposal problems. Residents in low-income neighborhoods in economically developed countries frequently dispose of their garbage haphazardly rather than use the official and more sanitary facilities provided them. Furthermore, in some less developed countries, residents dispose of solid waste by dumping it into the sewers, thereby clogging them and creating further health problems. Again, educational campaigns and other devices will be necessary in order to assure that

facilities are properly used in ways to protect the health of the residents and of the larger community.

4.2.3 Shelter

Shelter is relevant in a number of ways to health and well-being. To some, good housing is itself a measure of well-being. To others, it is a flow of services--including water, sewers, and access to educational, health, employment, shopping and other resources. The external shell of the house provides shelter, but this, the most expensive of the flow of services to the family, is only one of number of services. Given the array of services that can define housing, it is not surprising that housing has implications for health as well as well-being. And housing serves numerous social and economic or investment functions for a family.

It is not possible to classify Jordanian houses according to the multitude of diverse services that define them. As a consequence, it is not possible to identify and measure the impacts that any service package might have on health and well-being. Some of the major services have already been reviewed--that is, water and waste disposal. The present section is limited in its coverage, focusing primarily on features that relate to family and economic well-being. Occupancy conditions and residents' attitudes toward their housing are emphasized.

According to the Multipurpose Household Survey of 1976, the average urban house has 2.8 rooms, while the rural house has 2.2 rooms. The average for the Balqa-Amman region was 2.7. According to the Halcrow-Fox survey, the average dwelling in the five slum areas varied from a low of 1.87 to a high of 2.3, which is below the urban average. The proportion of one-room houses ranged from 17% to 40%. The majority had 1 or 2 rooms only--ranging from a low of 66% in one area to a high of 81% in another.

The official reports and studies by consultants are not clear about what is meant by a "house." There is a confusion between a building and a dwelling unit. One study refers to unpublished Department of Statistics information indicating that the average residential building in Amman had 1.9 households in 1971.⁵⁹ The evidence is not clear, but it appears there is relatively little doubling-up of "unrelated" families, although this possibility warrants further study because of the health impacts it has been shown to have on the separate families.⁴⁰

Rural occupancy rates per room in the Region are higher than is found in urban areas--with an average of 3 persons per room for rural and 2.4 for urban. The rates are much higher in low-income areas, ranging from 3.6 to 5. in the five-slum survey.

That is, the average size family in Jordan is high, with the highest rates among the poor. But the average size dwelling has few rooms, especially in the low-income areas. Poverty helps explain both family and dwelling unit size. The product of the two is high room occupancies, congestion, and density.

Density measures require information on the amount of livable space in a dwelling unit. The Housing Corporation has adopted 60m^2 as the standard for low-income families. In El-Jofeh, a neighborhood with 4.3 persons per room (the second highest of the five slums), 80% of the houses have less than the 60m^2 standard. Family members individually have less than 7m^2 per person in this neighborhood.

Occupancy costs vary greatly according to tenure, when the house was built, where it is located, and the household's tenure status. The 1976 Multipurpose Household Survey found that 28% of the households in the Region rent. Rentership rates are much lower in illegal settlements, with only one community--Jena'a--having a relatively high rate of renting (30%). But the other families in these communities differ in whether they own both their housing and land on which it stands, or only the house. And, again, occupancy costs are not available. It would seem, therefore, that low-income residents in illegal settlements probably have low housing costs (they get little in services in return), but renters who live elsewhere are, according to Halcrow-Fox, paying substantial rents relative to the family's income. Modest apartments in the Central City area cost between 40 and 50 JD per month, whereas modest apartments in the southern part of the city cost about 40 JD.

Despite their crowded environments and minimal services, complaints about a lack of room or a lack of water were low (in response to a question about the main disadvantage of the dwelling). Forty percent of those in Jena'a complained about not enough room, but, as Table 12 indicates, there is nearly a perfect inverse ranking between average number of persons per room in a community and the proportion of responses that indicate that there is no disadvantage in the resident's housing. East Wahdat has an occupancy rate of 5.1, but no one in the community saw a disadvantage in

their housing (in this neighborhood, none saw any advantage either). In many low-income areas in the developing world, residents invest fairly heavily in improving their housing. This is true in some of the five slum areas surveyed by Halcrow-Fox, but it was not found in others as seen in Table 12. The final column indicates whether they are willing to make such improvements.

TABLE 12
AN INVERSE RELATIONSHIP BETWEEN OCCUPANCY RATES
AND SEEING NO HOUSING DISADVANTAGE

	<u>Persons Per Room</u>	<u>% Answering no Disadvantage about Their Dwelling</u>	<u>% Who Made an Improvement in their Dwelling</u>	<u>% Prepared to Carry Out Improvement in Dwelling</u>
East Wahdat	5.1	100	1	0
Jofeh	4.3	71	57	65
Wadi Haddadah	3.9	67	33	48
Jena'a	3.8	44	47	53
Wadi Abdoun	3.6	45	66	70

Source: Halcrow-Fox five slum survey

East Wahdat could be a "slum of despair," with high congestion, no positive or negative attitudes toward one's dwelling, no past history of improvement of their environment, and no plans to do so in the future. At the other extreme, Wadi Abdoun could be a "slum of hope," one where occupancy conditions are relatively less unfavorable and where residents have a history and a future in improving their immediate physical living environments.

That is, housing obviously plays different roles in the lives of families in different neighborhoods, even though all the neighborhoods are relatively deprived low-income areas. This suggests that Amman has housing problems, not a housing problem. There is considerable variation in the occupancy costs, occupancy conditions, and attitudes toward housing. This wide diversity calls for considerable sensitivity and sophistication on

the part of public agencies assuming responsibility to help meet Amman's shelter and human needs. In some areas, clearance, relocation, and new housing may be the only answer. In others, in situ community improvements are the socially and economically most appropriate solutions.

Different types of responses definitely will be required. As the AVRPG's technical papers on housing and urban design indicate, Amman has a large backlog of need and, with a very large number of new families to be formed, a large stock of new housing will be needed--up to perhaps 14,000 a year at the most (although the official estimates are much lower). Whatever the ideal quantitative target is, Jordan does not have the resources to build and finance all the units that might be desired. What implications does this likelihood have for the health and well-being of those who choose to live in the urban area? If Government lowers building standards, will this have seriously adverse effects?

On the basis of the Wadi Abdoun experience, the answers to these questions would be "no." In fact, if lower standards mean lower costs, the trade-off between economic and physical well-being may be advantageous to those moving into lower standard housing. But will higher densities result in lower levels of health? Again the answer is "no." There are easier ways to control airborne diseases and host-parasite relationships than by manipulating housing. Insecticides and inoculations are cheaper and much more effective solutions. But, of course, adequate water and waste disposal systems must be provided. They must, however, be provided anyway and regardless of building and occupancy standards.⁶¹

Probably the most challenging and difficult problem facing Jordan in its efforts to meet its housing problem is one of being able to make definite political and economic commitments to doing something about housing and urban environments, especially for low and moderate-income families.

4.2.4 Neighborhoods

Throughout this chapter references have been made to rural-urban and intra-city differences in the distribution of health, well-being, and both the human and environmental influences on health and well-being. As will be seen, the term "neighborhood" does not seem to apply to the spatial patterns identified, at least insofar as neighborhoods imply a "sense of community" within small geographical areas. The concept of "neighborhood," however, is a central organizing principle in city or town planning. The 53

World Bank-funded urban project in Amman, for example, makes assumptions about local catchment areas and service delivery systems for them. It seems likely that planning, especially physical planning, will continue to identify target neighborhoods according to their problems and the treatment strategies best suited to solving the problems.

Two separate perspectives on low-income neighborhoods are briefly reviewed in this section. First, the relationship between these small areas and the larger region are explored and, second, variations among neighborhoods are noted.

Understanding the relationship between neighborhoods and the larger region will help in identifying trajectories of growth and change for individual areas. It is useful to know where a neighborhood has come from, what directions it is taking, and the reasons for change. Rather than working against market forces and trends, it is better to understand, work with, and build on them.

This type of approach is nice in theory, but, unfortunately, the basic background research on urban dynamics does not exist. It is not known, for example, where people locate when they first move to the city, how much intra-city mobility there is, how the housing and land markets function, how much change there is in patterns of economic activity, or the patterns and kinds of exchange between different neighborhoods. The limited information on "slum" areas collected by Halcrow-Fox, however, provides some clues on the role of these neighborhoods.

Very briefly, these communities are fairly old (by Amman standards) areas, they seem to have a stable low-income occupationally immobile population, the areas have relatively low unemployment rates, the communities export their workers to jobs elsewhere in the Region, and although the neighborhoods provide these labor services to the larger community, the larger community tends to ignore the communities when it comes to the provision of services. The imbalance in relations tends to describe the UNRWA camps as well as the slums, many of which are "unofficial" camps.

In support of these "findings," the five-slum survey indicates that 75% of the heads of households in 4 of the 5 slums have lived in their neighborhoods for ten or more years. (The geographically mobile, of course, no longer live in the neighborhoods and, therefore, were not interviewed.) The information on unemployment is not adequate, for the researchers report that there is a confusion between "housewife" and "no work."

Employment information for one area--El-Jofeh--is available from two separate reports, one indicating that 16% of household heads are economically inactive, the other indicating that only one percent have "no work." The information, therefore, is not usable. But in El-Jofeh, only 22% of the workers have ever changed occupations (although they no doubt change jobs and employers). More importantly, only 9% of the employed in this one neighborhood work in the same general area. This area--and most of the others--export their workers elsewhere. The slums are sources of cheap labor for the region, although they differ in the degree this is so. Finally, as suggested several places earlier and as will be noted again, these areas are the least well serviced with regard to water, waste disposal, and health services.

Latin Americans have found similar "imbalances" in their countries. The relationships described have been labelled "exploitive" and a form of "internal colonialism." These are value-laden terms that assume a number of underlying economic and political processes that need not exist. Nevertheless, it seems clear in Jordan that low-income neighborhoods are not a "cancer" on society. Given the property tax system in Amman, the revenue system nationally, and the means by which services (such as education) are funded, it does not seem that these low-income neighborhoods are much different from others in the balance between revenues they generate and the costs of services provided them in return. In fact, these areas probably suffer a more unfavorable imbalance than wealth neighborhoods. The imbalance is negative for slums; it may be positive for higher-income neighborhoods.

The degree of balance is one possible measure of "social justice." Efforts to enhance the health and well-being of the poor, however, should not be based on some mathematical expression of balance. As noted elsewhere in this chapter, the commitment to equity is based on other more constitutional grounds.

The second of two perspectives on neighborhoods noted earlier involves an overlapping of spatial patterns relating to the types of occupants (their health and well-being, income, family size, etc.), their housing, the different environmental conditions previously discussed, and the vitality of social life and social networks in local neighborhoods. Such information is obviously not available, although the forthcoming national census will provide some of the missing data. That there is an overlap, however, was

noted several places earlier in the chapter, especially with regard to comparisons between the five slums, on the one hand, and the urban, regional, and national situations, on the other hand. Residents in low-income areas tend to have the highest proportion of low-income families, large families, poor health, high occupancy conditions, houses not connected to the water or sewer systems, etc. Still a finely detailed mapping of social areas is not available. If it were, it would probably differ in some respects from what is found in many large cities in either the developing or developed countries.

One does not see in Amman large seas of poor areas. Instead, there seem to be smaller pockets. The steep-sloped hilly terrain further masks poverty. Densities in some areas are quite high. The Halcrow-Fox team, for example, summarized the conditions of the Amman poor as follows:

"Highly overcrowded conditions prevail throughout the wide variety of housing forms occupied by some 4-500,000 people in lower income families...

The slums, where the worst housing conditions are found, cover only limited areas. Over the years, considerable growth seems to have taken place within these areas through increased densities, which now reach about 1000 persons per hectare."⁶²

Several classification schemes have been used to delineate different types of neighborhoods. The World Bank consultants rely primarily on location to identify four types of low-income areas (the first four listed in Table 13). The AURPG technical study on urban design adds the last five settlement types in the Table. Both sources of these classifications specify where on a map the specific settlements types are located.

Another more traditional approach to classification is to simply list the districts according to their popularly called names--for example, Sport City, Jabal Hussein, or Sha'lieh. Dajani estimated both the population and the proportion of the urban poor for 23 such areas (Table 14; also Table 15).

The classification scheme one adopts depends on the purposes to be achieved. The World Bank group is concerned with low-income housing problems; Dajani is concerned with the beneficiaries of expanded water and sewerage systems; and the AURPG urban design paper specifies the several purposes behind its classification. All these classifications, however, tend to take a static view of the urban man-made physical environment.

TABLE 13
SETTLEMENT TYPES

<u>Estimated Population</u>	<u>Settlement Type</u>
160,000	UNRWA (official camps)
60,000	Unofficial camps or squatter areas
600,000	Lower-income suburbs
50,000	Peripheral low-income villages
50 to 70,000	Planned middle-class sub-divisions (generally built by the Housing Corporation or the Armed Forces)
350,000	Unplanned middle-income areas
80,000	Unplanned upper-income areas
20,000	Planned upper-income areas (such as some of the cooperative housing estates)
50,000	Traditional rural villages outside the urban scheme

When developed further, these various classifications can be related to the distribution both of environmental hazards and of public services. That is, neighborhoods can be ranked according to deficiencies and, indirectly, quality of life so that areas of greatest need can be targeted.⁶³ Dajani, for example, identifies the areas where the "worst situations" exist and "that areas with the highest income have been provided with the best services with respect to both water and sewerage." The Halcrow-Fox team, based on an analysis of similar patterns, concludes that "there is a clear lack of social equity between the richer and poorer areas of town in the provision and maintenance of public services."⁶⁴ The patterns of noxious influences, deprivations, and deficiencies reviewed earlier in this chapter tend to overlap one another. They have an accumulative effect. Amman's disadvantaged live in multiply-polluted environments.

With so much economic mobility and physical improvements occurring within the Region, why have the residents of these deprived neighborhoods not acted cooperatively with one another to help solve the problems in their immediate neighborhoods? Jordan has limited resources and, therefore, citizens themselves will have to take some responsibility for meeting neighborhood needs. They

TABLE 14
DISTRIBUTION OF POPULATION AND URBAN POOR IN AREAS
TO BE SERVED BY PROPOSED PROJECTS¹

Area	Population			Urban Poor ²
	1977	1981	1990	
1. Jabal Amman**	47	58	82	insignificant
2. Sport City	3	4	10	
3. Jabal Hussein	40	50	80	low
4. Wadi Haddada	12	13	20	very high
5. Nazzal	40	42	75	high
6. Nadif*	30	40	54	high
7. Ashrafiya	39	45	85	very high
8. Assour	15	18	30	medium
9. Hashemi	24	31	60	medium
10. Shamsani**	2	3	16	none
11. Adboun**	6	8	18	none
12. Smissani	7	10	20	none
13. Marka	40	50	65	medium
14. Nuzha	24	29	40	medium
15. Sha'lieh*	10	15	23	very high
16. Zahour	3	4	6	low
17. Tadj*	45	48	64	medium
18. Mahatta*	1	13	13	medium
19. Jofeh*	37	40	45	high
20. Qala*	12	13	15	medium
21. Nasr*	40	48	50	high
22. Webdeh	23	25	30	low
23. Refugee Camps (Wahdat & Hussein)	165	180	170	medium

¹Data is based on VBB report and IBRD estimates. All figures should be considered to be rough estimates.

²Insignificant: less than 5 percent; low: 5-15 percent; medium: 15-25 percent; high: 25-35 percent; very high: more than 35%.

*Areas to be served by sewerage in Contract 1S.

**Areas to be served by water and sewerage in Contract 5WS.

Source: Dajani, p. 10.

TABLE 15
SOME POVERTY INDICATORS IN SELECTED AREAS IN AMMAN

	IBRD Estimate % Poor	Planned Density in Persons/ 1000 m ²	Estimated Assessed Annual Rental (JD)
Ashrafiyah	30	60	200
J. Abdoun	0	35	1560
J. Amman	2	35	1200
Jofeh	20	60	200
Mahatta	20	60	180
Nadif	25	60	160
Nasr	30	60	160
Nazzal	25	60	320
Nuzha	25	60	100
Qala'ah	20	60	360
Sha'lieh	25	60	360
Shamsani	0	40	800
Smissani	0	35	1040
Tadj	20	60	260

Source: Dajani, p. 15.

will have to become part of the delivery system and part of the solution, rather than the problem.

As noted earlier, there is very little apparent sense of citizen responsibility or cooperative community self-improvement in the Region, especially in the poor neighborhoods that most need an activated civic consciousness. Only limited information is currently available on this matter; the Halcrow-Fox team will provide confirming evidence in the course of their researches. In the materials made available for one community, El-Hofeh, it appears that residents do not identify their neighborhoods by their accepted boundaries. Instead, residents consider their immediate neighbors as constituting their neighborhood. Despite the stability of this particular neighborhood and the long tenure of the respondents, only 7% responded that they knew of the existence of a community social organization. In fact, these were village-based groups that instead of facilitating an identification with the larger neighborhood may act in just the opposite manner. The respondents were aware of informal leaders, such as Mukhtars, elders, and sheiks. But only 30% felt these leaders played any role in the community. These were not positive-promotive or development roles, but referred to mediation, counselling, and advice. Everyone in this particular neighborhood had suggestions on what improvements were needed in the area. But only 3% of the El-Jofeh residents believe that the residents themselves have the primary responsibility for making the improvements; 64% indicate that it is the Government's (or UNRWA's) sole responsibility. Again, this 33% or the 3% have not been activated. A passive acceptance of a paternalistic relationship between "authorities" and "subjects" seems to exist.

A new summation may now be offered.⁶⁵ The preceding sections have examined the state of access in the Region to basic necessities that are required for health and well-being. Despite the length and detail of this examination, it has been selective and has focused only upon the key aspects and basic factors of present conditions. The data are limited and incomplete, as has been indicated. But the findings, and particularly the full set of findings, are so consistent with one another and with the context of conditions disclosed by the analyses of other objectives as to leave little rational doubt as to their correctness.

What has been found, quite simply, is a configuration, a pattern, of disadvantage. It can be placed, not exactly but close enough, both socially and physically. Some elements were referred to earlier as comprising a 'syndrome' or a 'vicious circle,' by which was meant that conditions appear together and that their causes are reinforcing. Thus it is that:

- "the lower class patterning of morbidities is clear..."
- "most significantly, the urban poor have much higher rates of disorders than do the urban non-poor."
- "to the extent that maladies affect student academic performance, it would seem that the urban poor are at a distinct disadvantage when compared with other students."
- "serious deficiencies (in nutrition) still exist, especially among the poor, infants, and mothers."
- "this information on maternal and infant mortality and health difficulties suggests that the spatial and class patterning of malnutrition is the same as that for infant mortality."
- "malnutrition has multiplier effects."
- "the major target groups that must be addressed in the future, if all Jordanians are to have adequate access to health, are the poor, especially the urban poor, rural residents, and the very large high-risk population of mothers and their children."
- "scattered information indicates that children from lower-income families are educationally the most disadvantaged."
- "the urban-poor, rural residents, and females benefited least. Their drop-out rates represent a loss to themselves and to the country. The educationally disadvantaged start off behind; and they fall further behind at successively higher levels of schooling."
- "but it is not surprising that those in the lowest job categories are the least educated and, therefore, have the least opportunity for improving their economic conditions."
- "whereas 34. (%) of all Jordanian men are in the paid labor force, only 3.9% of the women are."
- "in another community, only 46% of the heads of households were 'permanently employed.' Their income is unpredictable, a large-scale five nation study found to be especially destructive to mental health and family well-being."

- "those who most need to manage their health through limiting the number of and spacing pregnancies are least likely to give their approval..."
- "...the average increase in food prices since 1975 has been about 10%, while the increase in wages has averaged only 05% per annum."
- "...up to 46% of the Amman slum households and 30% of those in Zarqa are at or below Dajani's 'subsistence.'"
- "When high fertility, large families, and poverty are found together..., the deleterious effects are compounded."
- "none of the 55 villages in the Region has piped water at the same level of connections (as Amman)."
- "...some families pay in excess of 15% of their incomes for water and sewerage."
- "but the residents of such (low income) areas cannot afford sewer connections, even if allowed to connect."
- "waste disposal is an especially serious hazard in slum areas."
- "highly overcrowded conditions prevail throughout the wide variety of housing forms occupied by some 400,000 - 500,000 people in lower income families..."
- "...there seems to be very little sense of citizen responsibility or community self-improvement in the Region, especially in the poor neighborhoods that most need an activated civic consciousness."

The pattern is now plain. The conjunctions and reinforcements may be laid out along several intersections. Those most deprived of adequate and equitable access to the basic necessities for health and well-being are:

- (1)Demographically: children (especially infants) and females (of all ages).
- (2)Economically: low middle income to low income to subsistence level.
- (3)Occupationally: unskilled to semi-skilled.
- (4)Educationally: illiterate to least schooled.
- (5)Locationally: in general, rural, but specifically in urban pockets.

If these conditions were cross-arrayed in a matrix, the overlaps and weights would be quite apparent. The most numerous, most deprived segment of the

regional population is the urban poor, and among them, especially infants, other children, and females. Their rural counterparts are only less numerous. The factors that produce this position are so interdependent and so impeding that it is quite unlikely, given present public policy, that many could break the pattern. They are, practically, deprived of access to health and well-being.

5. PROPOSALS FOR THE PLAN PERIOD⁶⁶

Health and well-being issues are addressed by a large number of government ministries and agencies. It is beyond the scope of the present chapter to examine every possible relevant program administered by these bodies. Some will be analyzed in greater detail in other chapters--for example, sewer, water, and housing. Also, because health and well-being are multi-dimensional concepts, it will not be possible to review all the relevant programs even the major mainline government bodies administer. Only selected features will be examined.

Each sectorial review will cover the major delivery systems providing services, the services delivered, how relevant these services are to the needs of the Region, the impact that the present strategies have on the poor, and proposals for strategies that will address the objective of enhancing the health and well-being of the Region's population, especially the poor of the Region.

The problem addressed in each sector relates to health and well-being; the target population will be primarily the regional poor; the results or outcomes to be achieved are improved health and well-being; impediments to the realization of the outcomes will refer to a combination of official policies, delivery systems, and the characteristics of the intended beneficiaries themselves.

Throughout this section the location of particular government facilities and services will be mentioned to provide an indication of the access that the rural and urban poor have to these resources. Rather than present a separate table or tabulation for each resource separately, Appendix Tables A, B, C, and D summarize this information.

These tables have limitations that should be noted. Appendix Tables A and B summarize the services provided to villages in the different sub-governates. This information can be deceptive, because detailed information is lacking on the size of the villages being served, whether they are growing or declining, the ease of access residents in an unserved village have to services located elsewhere, whether villages lend themselves to clustering in order to form a common catchment or service area, and how villages differ in the overlapping of services and facilities located within them. (The CARE village service classification rating addresses this last issue.) Appendix Table D for the urban Amman area have some of

the same limitations as above. Furthermore, it will be frequently noted that access to a service facilities should be distinguished from the services actually provided by the facility.

Investments to improve access very often involve decisions regarding the exact physical place to locate a resource (as well as how to charge for the services the resource delivers). Decisions relating to types of services often involve broad policy and program formulation--for example, the curriculum of schools, salary and tax policy, and construction standards for low-income housing. This section will be concerned with non-location-specific general policy issues, as well as with matters regarding criteria for the placing of facilities in particular areas.

5.1 The Health Sector

5.1.1 Vertical Fragmentation

Jordan has as many as nine health delivery systems, three of which are organized vertically at the national level by Government or an international agency. Opinion differs on how much coordination there is among the multiple actors in the health system. As of now, Government has not adopted a national health policy that would provide the basis for coordination. The systems are noted according to the proportion each covers:

- Ministry of Health (MOH): Through its various facilities (hospitals and ambulatory care centers) is the largest system. In 1975 it accommodated slightly over two-thirds of all outpatient visits in the Kingdom.
- UNRWA (United Nations Relief and Works Agency for Palestine Refugees) delivers preventive and primary care in about 20 outpatient clinics to the approximately 32% of the population eligible for these services. It is estimated that 571,000 (92%) of the approximately 623,000 refugees registered with UNRWA are eligible for service. Only about one-third of this population lives in camps. The others are thought to rely on the same health care services as the rest of the Kingdom's population.
- Royal Medical Services provides health services to active and retired military personnel and their dependents. In 1975 an estimated 22% (420,000) of the Kingdom's population qualified for these services; only 5% of the total are considered the "primary military population." By 1977, the RMS was estimated to service a population of 630,000. By 1985, the number is expected to increase to about 830,000, 51% (422,100) of whom

will reside in the RMS's Amman Planning Area. The Service's ambulatory care facilities are in 20 locations throughout the country. In 1976, 1,900,000 visits were made for ambulatory care; this will increase to an estimated 2,276,000 visits in 1985.⁶⁷

- The private health sector covers medical doctors and traditional midwives (dayah). The former are thought to account for one-third of all physicians and about 5% of all outpatient visits. Most of these professionals practice in Amman and Zarqa.
- The other actors include: The University of Jordan's Medical School and faculty; the Ministry of Religious Affairs through a hospital in Amman, and various other private, religious, philanthropic, and commercial groups.

Many Jordanians can select among any of these systems. A refugee who served in the military would be able to do this.

Health experts seem to be aware of the problems of fragmentation, duplication, and failures to coordinate. It is beyond the scope of the present chapter to address the multiple problems raised by this situation. However, since a very large (a disproportionately large) percentage of all health resources from these different sectors are located in the Amman region, it is obvious that wielding the separate systems into a more coherent national system could bring disproportionately large benefits to the Region.

5.1.2 Service Facilities

Health services are delivered through hospitals, ambulatory facilities and private offices of private physicians.

Jordan has a hospital-oriented health delivery system. About 75% of the MOH's budget at mid-decade was spent within hospitals. Up to 90% of the nation's total health expenditures (including private, military, and UNRWA) were spent on hospital care.⁶⁸ Approximately 70% of all hospital beds in the different sectors are located in the Amman Region and, therefore, the Region probably accounts for a disproportionately large share of all health spending.

Hospitals, however, seem to serve somewhat as clinics. Bed occupancy rates are generally low, being about 71% for the MOH facilities, 59% for the RMS, and 51% for the private sector. Approximately 90% of all hospital patients "come from areas immediately surrounding the hospital in question. Areas more than 30-50 kilometers from hospitals are very much less adequately served."⁶⁹ Westinghouse's researchers found that the hospitals were "often

called upon to handle problems that should have been prevented in the first place or cared for much earlier at a lower point in the health delivery system." That is, Jordan seems to have an imbalanced health delivery system: too few clinics and health clinics easily accessible at the neighborhood level and too much money in large capital-intensive hospitals that, because of the shortage of lower-level clinics, in fact serve as clinics to those living nearby.

The MOH operates clinics that have a variety of names: basic health center, comprehensive health center, town clinic, village clinic, health center, and health sub-center. These units differ according to type of structure, whether they operate in conjunction with other types of facilities, and their staffing patterns. The important distinction seems to be between clinics staffed by a full-time physician and those visited by a doctor only once or twice a week.

In 1975, the MOH operated 81% (441) of the nation's 543 ambulatory care facilities existing at the time. These facilities serviced nearly 2.2 million ambulatory visits for an average of 6034 visits per freestanding clinic--in contrast to the average of 28,577 ambulatory visits made to hospitals that same year, suggesting that one hospital serves--or displaces--a minimum of five locally-based clinics that would be much nearer to those who need their services.

There were 82 urban and 250 rural clinics in 1975-76. They seem to provide only minimal services. Staffed predominantly by a male nurse, they are visited twice weekly by a physician from a "government health center" who examines patients and provides primary curative services. The clinic nurse "is unable to provide the kinds of ongoing services most needed at the local level: simple, routine curative services...health education, especially in nutrition and hygiene, simple case-finding including MCH outreach, ongoing sanitation and other environmental health activities, and monitoring of vital statistics."⁷⁰ It is little wonder that hospitals are so popular a source of ambulatory care. But it would be a fallacious self-fulfilling prophecy for health experts--or even maintaining at present levels--hospital outpatient clinics. The nature of the supply of services provided by the MOH creates the anticipated pattern of demand.

Maternal and Child Health (MCH) centers cater to new mothers, infants, and pre-school children. Half the Kingdom's 41 MCH centers existing in 1976

were located in communities of 10,000 or more population. Twelve were physically integrated in the same building with other MOH centers. The remaining 27 were staffed by one midwife each. Each medical center provides backup medical support to three MCH centers. As will be noted later, these centers are judged to be especially ineffective with regard to coverage, staff patterns, and the scheduling of services provided. These criticisms are significant, for the centers address the high-risk population identified earlier as needing priority attention.

In addition to MOH MCH centers, charitable organizations also provide services. There were about 39 such centers in mid-decade providing medical service, food, and education. Families registered with the centers are visited in their homes by midwives.⁷¹

A family planning program was initiated by private individuals in 1972 with the establishment of a society for family planning and protection. Amman has four family-planning clinics, each served by a doctor.

Finally, the Division of Preventive Medicine in the MOH, in collaboration with the MOE, performs three health-related functions in schools: (1) it provides health education, (2) conducts sanitary inspections of schools, and (3) conducts health screening tests of first and seventh grade pupils. The survey team is also available after school to school-age patients for follow-up medical and dental service. The screening tests in Amman commenced for the first time in March 1979.⁷²

5.1.3 Impact on the Poor

Clinics: Jordanians average about two visits per capita per year to ambulatory care facilities (these are national figures and include services provided by the different health sectors).⁷³ Little is known about the "patient care gradient" in Jordan and the degree to which access to services depends on a family's income and location.

"Access" can be measured in different ways--for example, by linear distance, travel distance, travel time, travel costs, or the effort required to travel (a serious consideration for those who are ill or injured). Jordan's topography, transportation system, and climate make it difficult to assess along these different dimensions. One can examine, however, the physical locations of MOH health care facilities.

Appendix Table A indicates that nearly 29% of all East Bank villages have a health or MCH clinic. The Sub-Governate of Amman falls below this average by 10 percentage points. Balqa is at about the level of the national average. Translated into absolute numbers, the Amman Sub-Governate has 29 clinics, 3 MCH centers, and one dental clinic for the 165 villages surveyed in the Region by CARE (Appendix Table C). The respective figures for Balqa are 23.3 and zero for 88 villages. Presumably more villages could have clinics if they chose to raise funds for this purpose. Villages must provide must provide the physical building by renting or construction. They can apply to the Municipal and Rural Loan Fund (MVLFF) for a loan to do this. Once available, the MOH will provide the required staff.

With more villages--and perhaps a higher density of villages--than other sub-governates, and with the presence of both Salt and Amman, the villagers in this region may have easy access to clinics, as well as to the services of UNRWA, RMS, and private physicians. According to Dajani and Murdock, "almost all villages in Jordan have either a clinic within the village or access to one in a nearby town or village."

Most villagers would seem to have to travel some distance to obtain health care. Urban residents typically have to travel much shorter distances, but access in urban areas is thought to be a serious problem. In part, this is because the distribution of health facilities does not parallel the distribution of the population most in need: those with low or moderate incomes. In this regard, Chapter 3 on urban design concludes that:

"The location of social infrastructure and related establishments catering to daily needs are not always related to neighborhoods having the greatest population densities...With the exception of schools, most...parks, community centers, and health care facilities are not located within easy access of residential areas."

The average distance to a health care facility (a clinic or a hospital) is 1.2 kilometers. While this could be walked easily by a healthy person, the sick, elderly, pregnant mother, or mother with infant might find this a great effort. The distances are even greater in some high-density low-income areas. For example, residents in Jabal Al Nazal (62 persons per donum) and Jabal Al Nadeif (75 persons per donum) must travel up to 3kms. Zarqa, with approximately 500,000 people, does not have much primary care available anywhere.

Access, therefore, must consider densities, poverty, and health needs. The World Bank-funded urban health paper for Amman argued that the MOH should not apply community-wide standards in deciding where to place health facilities. Instead, "health care should not be equally distributed but should be allocated in proportion to needs and the needs of the slum areas are the highest." A "distance-in-kms" standard of access, therefore, may be inappropriate.

One among many possible criteria would be the time required before the patient is actually served by the appropriate health worker (queuing time).⁷⁴ This appears to be a major problem in both rural and urban areas, and it raises questions about the staffing and scheduling patterns of health clinics.

Government community clinics, "the nearest and potentially the first point of contact between the health care system and the population they serve," are typically staffed by a male nurse who provides simple first aid, gathers patients together when the physician pays his twice weekly visit, gives injections and other medications in individual cases when the physician prescribes, and keeps the clinic premises clean. He is "a combination porter, janitor, clerk, and nurse aid."⁷⁵ The clinics do not provide the kinds of ongoing services most needed at the local community level.

In addition to the only minimal services provided by the full-time nurse and the travelling physician, patients are never sure whether they will get to see either type of health worker (physician or nurse) because of the number of other patients seeking help or because the visiting doctor is not on duty that day. It is little wonder that large numbers of patients are turning to the private sector or travel long distances to other less intensively-used clinics.

Dajani and Murdock found the above problem in villages that had clinics:

"Villagers are continuously faced with the problem of physician unavailability; a villager cannot even be certain of seeing the physician the day the latter is in the village, due to the relatively short duration of the physicians' visits and the large number of patients. This forces many villagers to seek help in clinics in other villages or towns, thus increasing the additional costs of transportation and inconvenience. The problem is thus mainly one of staffing rather than physical facilities." (Emphasis added)

There are three major strategies that might help solve the staffing problem. First, scheduling patterns could be changed. Ambulatory care in RMS outpatient units, for example, were found to work on a first-come, first-served basis. This resulted in an excessive workload during the morning hours. It was estimated that if certain reforms were made--including block scheduling of outpatient activities and scheduling follow-up visits for the afternoons--the overall productivity of physicians and dentists should increase by more than 60 percent (based on a private consultant's report for the RMS). Second, as recommended by Westinghouse, a new cadre of health workers might be developed, as has been done in a number of economically developing and developed countries. They range from Chinese barefoot doctors to paraprofessionals in the United States and zemstvo system in Russia. These paraprofessionals would provide a wide range of preventive services (under the supervision of professionals), and "extend simple, clearly specified curative services." Other countries adopting this strategy, according to the Westinghouse report, have been able to reduce the number of patient visits to health center-level physicians by up to 65%. Third, private doctors might be utilized in ways to help relieve the pressure on the public sector.

Increased efficiency in the use of scarce health manpower should enable more clinic-users to obtain higher quality services.

More basic primary health service clinics that are adequately staffed, operated, and located closer to those who most need them should especially benefit the poor. Such clinics are a high priority item among the poor and among those who have analyzed the health needs of low-income populations in Amman. The five-slum survey asked respondents for their social services priorities among kindergartens/nurseries, primary schools, clinics, and childrens' play areas. In two of the four areas asked this question, clinics were by far (80% and 66%) the top priority. The World Bank-funded health expert studying these same areas determined that primary health care facilities (including MCH) would by far do most to help meet the health needs of the poor residents. Secondary care (including MCH), public health education, water quality, and excreta disposal intervention followed in that order in a list of 13 different strategies.

MCH Centers: Maternal Child Health centers are a special type of health facility that address the high risk, high priority population identified earlier. The Westinghouse study concluded that the "MCH program and other activities related to the needs of women and children are thus potentially as important an institution for increasing life expectancy in Jordan as any other activity in the health service system." Government has also proposed that MCH services be a high priority emphasis. The Five Year Plan 1976-1980 listed as its first health goal: "Expand and improve preventive services, with special attention to student health care and mother and child care." That this emphasis will be of special benefit to the poor was seen earlier with regard to the class distribution of student health symptoms and fertility. Although some minimal progress has been made in this area, the need remains overwhelmingly large and serious.

On the basis of an analysis of proposed expenditures, the Westinghouse study concluded that "only a small fraction of proposed plan spending is actually directed toward the accomplishment" of the stated goal. "Not only is there a gap between stated objectives and proposed expenditures, but there is little correlation between proposed and actual expenditures." That is, the health delivery system remains a hospital-based, doctor-oriented sector, not one oriented to the major needs of the population, especially the poor.

An indication of how well the Region is served is seen in Table 16. There are 18 MCH centers for which estimates of target populations are available (there appear to be two other centers for which information is not complete). The target population refers to 70% of the estimated populations in the designated areas (the high risk ratio mentioned earlier). An average center serves a target high risk population of 48,327 residents in potential need. But the average is greatly reduced by clinics located in smaller areas. In contrast, Zarqa has only one clinic to meet the needs of its 207,645 high-risk target population, and Amman's seven clinics must serve, on average, a target population of 82,209.

With such uneven coverage, such huge clientele, and the failure to move decisively to realize the priority health sector goal for the 1976-1980 period, it is not surprising that the clinics themselves have a poor record and that progress in lowering maternal and infant morbidity and

TABLE 16
MCH COVERAGE OF TARGET GROUPS IN REGION

<u>Location</u>	<u>Number of Clinics</u>	<u>Average Target Population per Clinic</u>	<u>Total Population of Area (a), (c)</u>
Amman	7	82,209	822,085
Sahab	1	7,610	10,871
Wadi Elseir	1	11,969	17,098
Madaba	1	22,356	31,936
Zarqa	1	207,645	296,635
Salt	1	21,945	31,350
Suweileh	1	11,024	15,748
Russeif	NA	NA	46,432
Naur	1	3,581	5,116(a)
Ein El Basra	1	1,443	2,062(a)
Ghoreih(d)	1	NA	NA
Faheis	1	3,461	4,944(a)
Mahes	1	2,250	3,214(a)
Al Azraq(d)	1	1,145	1,636(a)

- a. MVLFF estimates for non-urban areas
- b. AURPG estimates for urban areas.
- c. Total estimated population, not the 70% who are at risk. The Amman at-risk population is 575,400.
- d. Only two rural MCH clinics in Region.

mortality has not been as fast as might be anticipated was possible. Westinghouse estimates that maternal and child health services cover only about 20% of all pregnancies with at least one prenatal visit. Postnatal care is even lower at 6%. About 38% of all deliveries are attended by a trained health worker (MD or midwife), with 4% attended by the midwives of the MCH centers. The traditional midwife (dayah)--not a trained midwife or obstetrician--plays the major role in the childbirth situation. Hijazi found in his study that over 82% of births occur at home, 7% of all births are attended by a doctor, 28% by a registered midwife or nurse, 49% by a "trained" woman (some of whom are not registered 'trained' dayahs), and 16% of the mothers had no one attending them at all. MCH centers have in the past reached only a small proportion of all infants. The centers have provided less than 1 of 4 new births with the full schedule of the triple vaccine and polio immunizations.

The same array of staffing and scheduling problems found for clinics are faced by MCH centers. The government midwives carry out their activities during regular center operating hours and are not available--except on a private practice basis--after hours (the births attended under these private arrangements are not counted among MCH activities). In most centers, only one service is provided each day of the week. A mother with a gynecological conditions, a sick child, and also thinks she is pregnant would have to visit a MCH center different days of the week to address all three conditions.

Despite the disincentives for not attending clinics and centers, large numbers of people do. But only a very low proportion of mothers visit MCH centers for themselves and their children. Nothing is really known about the determinants of usage patterns--that is, about client-based impediments. It is thought that the cost of medical services are not a major obstacle. The RMS, a heavily subsidized system, initiated free service in 1973. Government employees have free care in MOH facilities, and others pay 300 fils for a GP visit, 100 fils for prescriptions, 800 fils for dentists, and JD 2,000 for specialists. Private GP visits cost between JD 1 and JD2, and often up to JD 5, plus market prices for drugs, etc. Experiences in the past suggested that patients associate quality of service with the costs for them and that higher fees lead to greater demand for those charging them: the specialists. In any event, the fee structure does not seem to be a major deterrent to seeking health care.

For the above and other reasons, the Halcrow-Fox health consultant on the World Bank urban project placed a very high emphasis on the importance of public health education. One way to gain access to women in need of care, for example, is to go through their children--for example, to emphasize that prenatal care is vitally important to the health of the unborn child, not just the health of the mother. Later on, if the clinic is to treat mothers when they bring their infants for care, then maternal and infant care services must be offered at the same time, a scheduling and staffing challenge the MCH centers have yet to meet.

Before a public health education campaign is launched, more research is needed on the determinants of client decision-making. Government would certainly not wish to create an awareness and demand that would be frustrated by the currently inadequate services provided by clinics and centers. The increased demand might possibly be channeled to the hospital outpatient facilities, further distorting an already unbalanced system.

Family Planning: The Five Year Plan 1976-80 accepted as a

"fundamental concept that the family is the basic unit of society, and that, as such, it must be provided with appropriate social care and community services not only to protect it against disintegration and deviations but also to help it organize itself, secure and adequate income, and enhance its living standards both economically and socially."⁷⁶

This same type of commitment served as the basis for the development of national family policies in some countries. Population policies were the initial keystone to the development of a more comprehensive strategy to enhance the health and well-being of families.⁷⁷ Jordan's official current five-year plan sets the basis for a similar linkage by establishing, as one of the key principles of its overall development strategy:

"There is a need for adopting a clear policy regarding family planning, which aims at raising the social, economic, and health conditions of citizens and enabling all families to determine the ideal number of their members, within the framework of acquainting them with the implications and effects of population growth and with the possibilities and methods of family planning."⁷⁸

That there is a need for families, especially low and moderate-income families, to manage their growth was seen earlier with regard to the distribution of family sizes and how size is related to poverty and to both maternal and infant mortality and morbidity. That there is a growing

awareness and acceptance of managing personal fertility behavior is seen in the results of the 1972 National Fertility Survey: 67% of all ever-married women interviewed approved of family planning. Over half--56%--of illiterate women approved, 77% of those who attended primary approved, while 88% of those who attended preparatory school and 97% of those who attended secondary school and 100% of those who attended a university indicated their approval. The need for and opportunity to assertively pursue the development strategy included in the five year plan existed and still exists in Jordan.

It appears that very little has been done to realize the opportunities and to meet the needs that are so closely related to the health and well-being of the population. A private voluntary family planning and protection association was created late in 1972 and has been operating primarily by means of grants from international sources. Amman has four centers, two in Jabel Hussein. Information collected from one of these clinics indicates that the number of visits has been increasing yearly, but the total is quite small. In 1973, 211 visits were made, in 1978 there were 5183 visits to this same clinic, and during the first six months of 1979 the attendance rate is ahead of that for the same period in 1978. But about 60% of the visits are return calls by accepters.

Government has not made it a priority to encourage families to become aware of and to avail themselves of techniques to help them manage their growth.

What then is Government's policy toward families? Although the policy is one by default rather than by design, the deficient elements in the policy have very striking effects on families. In the present context, MCH centers and managed family growth were to be key program elements. But rather than address the health and well-being of mothers, infants, and children, these needs have been slighted by the health sector. Government's implied policy, therefore, is an anti-family policy. This anti-family policy, as noted a number of times, most adversely affects those least able to cope with adversity: the poor and those with only modest incomes. Their health and well-being are not being enhanced.

Preventive Health: The MOH's Directorate of Preventive Medicine is concerned with environmental health and health education, malaria eradication, tuberculosis control, control health, and immunizations relating to maternal and child health. The screening work of the school

hygiene program was noted earlier. This screening, however, is based on physical examinations, not urine, stool, and blood tests that would provide valuable supplementary screening information.

Government seems to realize that its immunization program is operating well below acceptable levels, and to this end, WHO is providing assistance in the development of an expanded immunization effort. If implemented, this should be of special benefit to the poor who live in environments that support particular types of contagious diseases.

5.1.4 Recommendations

These recommendations are limited to the issues and evidence presented in this chapter. They also are directed to policies, principles, and projects that would especially benefit low and moderate-income families in ways that would enhance their health and well-being. Three basic policy decisions are recommended, as are strategies to implement these policies.

POLICY I: Develop a National and Regional Health Policy That Would:

- I.1 Give highest priority to re-allocating existing resources and to expanding additional resources that would be directed to two target populations;
 - a) High-risk populations of mothers and their children
 - b) Low and moderate-income persons living in urban and rural areas
- I.2 Define the proper mix of health centers and health manpower necessary to meet the needs of the two target populations. To this end:
 - a) A cap should be placed on any further expansion of outpatient ambulatory facilities in hospitals.
 - b) Capital and operating budgets should be developed for programs to meet different levels of need-satisfaction among urban and rural low and moderate-income areas.
 - c) Expenditure-control procedures should be developed to assure adherence to the proposed budgets.
- I.3 Immediately increase the efficiency and performance of existing clinics and centers by reforming staffing and scheduling patterns in these facilities.
- I.4 Increase the performance and efficiency of the national health resource by coordinating the fragmented system of the four major health providers: MOH, RMS, UNRWA, and the private sector.

POLICY II. Develop and Coordinate Health Sector Programs with Programs in Other Sectors to Provide a More Consistent and Comprehensive Approach to the Enhancement of Health and Well-Being of Families

II.1 A preventive health strategy should be developed, including the

- a) Expansion of immunization
- b) The addition of stool, urine, and blood tests in the school health screening program
- c) Promotion of health and hygiene awareness and information, especially among mothers.

II.2 Additional MCH centers should be immediately developed and located in areas that have a high concentration of low and moderate-income families.

II.3 Through the use of mass media, neighborhood-based campaigns, and existing health clinics and MCH centers, the need for and information about healthy, managed family growth should be provided.

- a) To assure that this program receives priority and that efforts be coordinated, a special family-management unit--funded initially at JD 1 million--should be established within the MOH.
- b) Additional resources and training should be provided health facilities to enable and encourage them to extend assistance on family-management matters.

POLICY III. To Protect and Enhance the Health and Well-Being of the Target Population, Their Usage of Health Facilities Should Be Increased. To This End:

III.1 Health clinics and MCH centers should be located in areas with high concentrations of low and moderate-income families (See I.2 and II.2)

III.2 The staffing and scheduling patterns in these clinics should be reformed so that patients will be encouraged to use them (See I.3)

III.3 Both urban and especially rural health facilities should integrate preventive, curative, nutritional, family-planning, and environmental sanitation services.

III.4 Neighborhood and community-based outreach programs should be developed, rather than only waiting on potential patients to visit local health facilities.

- a) A pilot program should be developed involving the placement of medical students from the University of Jordan in local clinics.
- b) Local residents should be involved on a paid or unpaid basis to perform outreach services.
- c) Research and citizen health-use decisions should be conducted so that health education and outreach programs are better informed.

5.2 Education Sector

5.2.1 Three Major Providers

Education in Jordan and in the Region is provided primarily by three separate systems: the Ministry of Education (MOE), UNRWA, and private schools. Schools are organized on the 6-3-3-4 model with compulsory attendance through the first 9 grades. Except for the private sector, education is free. Other variations and developments will be briefly noted.

As indicated earlier, education is quantitatively well-developed in the Kingdom. The sector accounts for approximately 7% of central government expenditures. Nearly 15% of the educational funds are supplied through foreign aid. (Government continues to pay teachers' salaries and rents for the West Bank.) During the first 4 or 5 years of the decade, public expenditures on education increased at 8.5% per annum at current prices, but the growth in real terms was much slower, between 1.0% and 1.5% p.a. This is thought to compare favorably with the average growth of total enrollments of about 7% p.a.

Government schools under the MOE are responsible for about 70% of all students nationally, UNRWA accounts for another 19 to 22%, and the private sector together with a small military sector accounts for 8 or 9%. The relative proportions vary by level of school, primarily because UNRWA feeds its preparatory school graduates into MOE secondary schools. In the Amman region, for example, 64% of the primary students, 70% of the preparatory, and about 86% of the secondary school pupils are in the MOE system. The comparably percentages for the private sector are 9, 6, and 13.

Unlike the situation in the health sector, fragmentation among the three major providers was not considered a major issue in education.

5.2.2 Types of Schools

Government does not operate kindergarten and nursery schools, but there seems to be an increasing demand for these facilities. For example, the number of children at this level increased threefold--from 14,621 to 50,428--in one year only between 1973/74 and 1974/75. In 1978, there were 84 of these schools in the Region; 73 were in Amman; 11 were in rural areas.

Formal education begins at the primary school level, and with nearly automatic promotion, students enter the preparatory cycle at grade 7. As noted earlier, the big slippage in enrollment occurs at the 10th grade, when attendance is no longer compulsory. Secondary schools have five streams: academic/general, commercial, industrial, agricultural, and nursing. About 40% of the students have been enrolling in the science stream within general academic programs. The University of Jordan and the newly established university at Yarmouk provide university training for students who qualify. Many more Jordanian students attend universities outside the country than within it. Birks and Sinclair estimate that half of all Jordanians outside the country are in educational programs.

In addition to the pyramidal system of education, there are also special vocational, apprenticeship, and literacy training programs. The diversity of providers, types of schools, student enrollment patterns, and trends in these features warrant a separate series of studies. The present section is limited to features primarily affecting low and moderate-income persons.

5.2.3 Impact on the Poor

Coverage and Access: The MOE is compelled to provide free education for the first 9 years of school, but it appears that the number of seats in school has a major influence on enrollment rates. Most schools are rented and were not designed for their present purposes (the rooms are too small, laboratory and play space is lacking, and lavatory facilities are often severely deficient). But by adding new schools at a rapid rate and running two shifts per school, the quantitative need of seating a very high proportion of students is being met.

Fifty new schools were provided in the Region during the period 1975-78. Half of these were secondary schools, 18 preparatory, and 7 elementary. 43 of the schools were placed in Amman, split about evenly between separate schools for boys and separate schools for girls. Most (36) new schools are being built as schools, rather than being rented. Table 17 lists the

number of schools by level and location for rural and urban areas in 1978.

About 70% of all villages in the Amman Sub-Governate (but only 61% for Balqa) have boys and/or girls elementary schools, which is the national average (70.8%; see Appendix Table A). But Amman villages are well below the national average for preparatory schools. (It is not known whether the CARE figures include UNRWA schools.) Rural students in the region, therefore, have easier access to elementary than to higher-level schools. Dajani and Murdock conclude that, for the Kingdom's villages as a whole,

"Educational problems in rural Jordan definitely do not lie in unavailability of school buildings. Almost every village in Jordan has an elementary school,⁷⁹ many have preparatory schools and some have secondary schools. Where such facilities are not provided in a village, there are always available facilities in nearby places."

TABLE 17
DISTRIBUTION OF SCHOOLS IN RURAL AND URBAN AREAS, 1978

<u>Urban</u>	<u>Kinder- garten</u>	<u>Elementary</u>	<u>Prep.</u>	<u>Secondary</u>
Amman	45	240	112	61
Wadi Elseir	1	5	4	3
Suweileh	2	12	-	2
Sahab	-	5	-	1
Zarqa	11	128	62	25
Ruseifa	7	24	10	2
Salt	8	20	11	8
Madaba	3	21	8	3
Total				
Urban	73	455	207	105
Rural	11	152	222	29

Source: AURPG information from MOE

Because there are fewer preparatory and secondary schools in rural areas, students typically must travel to another village if they are to continue their education. Dajani and Murdock found that the cost of transportation was beyond the means of many villagers. Average transportation costs to the nearest secondary school were estimated to be about JD 70 per

student per year, an expense that "automatically precludes poorer students from attending secondary schools."

One possible indication of the enrollment effects created by the distribution pattern of schools in rural areas is seen in the proportion of total enrollments in the Region that are found in Amman. In 1978, Amman had 38% of all primary school students, 42% of all preparatory students, and 51% of students enrolled in secondary schools. The Amman urban area has a higher retention rate than the other areas of the Region. An unknown proportion of the rural drop-out rate very likely is attributable to the location of schools and the costs of reaching them.

The Amman urban area, as with the Kingdom generally, loses students through drop-out in the higher grades, as seen in Section 3.2 of this chapter. For the Region as a whole in 1977/78, 64% of the public school pupils are in elementary school, 23% are in preparatory cycle, and 13% are in the secondary cycle. (The bulge attributable to larger numbers of young children entering schools for the first time should be partially offset by the transfer to UNRWA preparatory school graduates to the public secondary schools.)

The emphasis the MOE has placed on providing new secondary schools (half the 1975-78 total of new schools in the Region) indicates that Government is attempting to correct the space and access problem at this level.

Physical access, as measured by travel distance, should not be a major problem for most students. Appendix Table D, taken from the chapter on urban design, reports that the average distance students must travel to a school is 0.6 km. Schools are physically most accessible of all public facilities. These figures, however, can be deceiving, for they do not refer to different types of schools--for example, vocational schools.

Vocational Education: Beginning in 1970-71 with a UNESCO educational appraisal team's report and subsequent follow-on MOE collaboration with the World Bank, it was determined that there was a structural imbalance between the kinds of training provided by Jordan's schools and the manpower needs of the Kingdom. A World Bank report concluded that:

"The pressure of social demand has led to an overexpansion of academically-oriented general secondary education not supported by adequate reforms of curricula and pedagogical methods, which has perpetuated traditional attitudes toward practical work and

thus increased the disequilibrium between employment expectations and the availability of corresponding jobs...

In spite of growing shortages of sub-professionals and technicians, vocational and technical education have been seriously neglected..."

Reform efforts proceeded with UNDP/ILO assistance, a national vocational training scheme was inaugurated in 1973. In 1976, the Vocational Training Organization Law was issued and provided for what is now known at the Vocational Training Corporation. The VTC and MOE have different responsibilities in the area of vocational education. The MOE, through its Department of Industrial Education and Training, has as its target group the school age population enrolled in the regular educational system. It is attempting to inject more vocational content into the curriculum and to raise the proportion of males in vocational programs. The VTC's target group consists of (1) preparatory school leavers who, because of their school performance record, are unable to enter secondary schools and must, therefore, enter the work force, and (2) workers at any age already in the labor market but in need of skills upgrading.

That is, vocational education is proceeding along with educational reform, although the two should be considered separately. The MOE has set a target of increasing the proportion of boys in the vocational tracts from the current 20% up to 30% by 1980, with an increase for girls from 12% up to 20%. Because progress in reaching these goals is not as anticipated, various additional measures are under consideration at this time by the responsible authorities.

In addition to the MOE and VTC, vocational training program activities are covered by the Ministry of Labor, Ministry of Social Affairs, and various private voluntary organizations. All of these efforts have been faulted for one reason or another--for example, the failure to provide diversified training opportunities for women. Many providers in the past emphasized sewing classes for women. Since vocational training is offered through apprenticeships in many firms, women have encountered barriers here as well. The Department of Womens Affairs has experimented with new approaches, however. In Haj Nazzal, a bakery has been provided as part of a pilot project. In Souf they are building on local craftsmanship to form small-scale cottage industries.

TABLE 18
 PRECENTAGES OF 9th GRADE STUDENTS DIRECTED
 TO 10th GRADE VCCATIONAL AND ACADEMIC PROGRAMS, BY INCOME AND SEX

		<u>Percent Directed To</u>	
		<u>Academic Track</u>	<u>Vocational Tr</u>
		%	%
Boys' Schools	<u>Area of School</u>		
	Urban Poor A	65	17
	Urban Poor B	65	16
	Middle Income C	69	17
	Middle Income D	76	11
Girls' Schools	Urban Poor W	68	20
	Urban Poor X	72	19
	Middle Income Y	74	15
	Middle Income Z	83	6

Source: AURPG handtally of MOE data

The diversity of providers and training, as well as the pace of change in this area, soon outdates any summary and evaluations. Suffice it to say, developments both within the formal school system and outside it through the VTC and others promise to be of special benefit to low and moderate-income families--if the system functions as proposed.

There is some indication that students in "urban poor schools" are only slightly more likely than students in middle-income schools to be tracked into the secondary school vocational program. The information comes from a handtally of the presumed destinations of graduates from eight preparatory schools in 1978 (Table 18). Class patterns of tracking are somewhat more evident among girls than among boys. This information is suggestive only, for earlier evidence indicated that lower-income children are the least likely to progress from preparatory to secondary schools.

There seem to be two major vocational education challenges relating to low and moderate-income students. First, in order to enroll these students in the secondary school vocational track, it will be necessary to reduce drop-out rates among the poor, and also to provide school places and the requisite training facilities for vocational training so that the experience is worthwhile. (This will be expensive to do, for a technical student costs Government 450 JD a year, or ten times that of the academic student.)⁸⁰ If drop-out rates remain high, then the vocational spaces will be filled by middle and moderate-income students. While this will benefit the nation, it only serves to exacerbate class differences. Second, since young school drop-outs probably begin their work careers in lower-paid positions that may require longer and irregular work hours, it may be difficult to enroll these youths in the VTC and other training programs. The location of training facilities could become crucial for these younger workers.

If enrollments in Literacy Training Centers are any indication, then it would seem that there are many low-income workers--and housewives--who will attend evening programs in order to improve their skills. Table 19 represents the occupational backgrounds of 4032 students recently attending one of the 258 literacy classes offered by the MOE in the Amman Region.

Quality of Education: Educational systems that expand as rapidly as Jordan's has inevitably have problems relating to quality. For example, half the teachers lack the desired credentials; school buildings, especially the rented ones, are inadequate; there are alleged inadequacies in the curriculum and in teaching methods; and low standards of excellence produce automatic promotion and a resulting mix of achievement levels in the same classroom and school. These failings seem to apply throughout the system. (Further research would be needed to determine whether resources are allocated in ways that discriminate against some areas and favor others.)

TABLE 19

OCCUPATIONAL BACKGROUND OF STUDENTS ATTENDING
MOE LITERACY TRAINING CLASSES

<u>Occupation</u>	<u>Males</u>	<u>Females</u>
Farmers	384	-
Industrial workers	125	15
Laborers	320	5
Military	33	-
Housewives	-	2370
Craftsmen	204	150
Unspecified	97	257

Educational quality may not improve much if the system responds to future enrollment growth by employing current teaching strategies and methods. There will be approximately 289,000 students enrolled in the Region's schools in 1979-80. This is estimated to increase by 25%--or nearly 72,000 students--by 1984-85. How to improve educational quality in the face of meeting quantitative increases will be a major challenge in the years ahead.

5.2.4 Recommendations

The recommendations will not refer to issues and characteristics of the entire educational system--such as retiring the rental schools, improving the quality of buildings and facilities provided, increasing the qualifications of teachers, improving the curriculum where appropriate, and adopting new teaching strategies (and techniques) in order to better cope with increasing student enrollments in the years ahead. Instead, the three general policies address features especially influencing the well-being of low and moderate-income persons.

POLICY IV: Increase School Enrollment Rates Among Low and Moderate-Income Urban and Rural School-Age Children

IV.1. School enrollment rates for grades 1 through 9 should be the same for low and moderate-income rural and urban children as they are for middle and higher-income children.

IV.2. Barriers to enrollment should be removed by, among other things:

- a) Providing rural children with transportation services or financial assistance for travel where transportation is an impediment to school attendance.
- b) Provide--at least on an experimental basis--financial assistance to the kinds of children who have been shown do not attend school for socio-economic reasons.
- c) Locate new schools in areas where non-enrollment is of greatest significance because of family incomes. To this end:

Proposed sites for new schools should be accompanied by a minimum of two alternative sites in low and moderate-income areas, and written justification should be provided--and made known to the local residents--why the designated site received priority over the other two.

POLICY V: Reduce the Wastage of Human Resources by Lowering School Drop-Out Rates Among Low and Moderate-Income Rural and Urban School Age Children

V.1. Rates of progression by low and moderate-income children from preparatory schools to secondary schools or vocational training programs should be the same as rates of progression by middle and higher-income children from preparatory to secondary schools.

V.2. Financial assistance--at least on an experimental basis--should be provided low and moderate-income children who, for reasons of economic necessity, may not otherwise be able to attend school or a vocational training program.

V.3. Realizing that educational and learning disadvantages begin in the home before a child enters school, and realizing that the home environments of many low and moderate-income children are not conducive to studying,

- a) Research should be conducted to identify and measure the possible learning impediments suffered by low and moderate-income children. Based on the findings, and if appropriate, experiments to compensate for these impediments should be developed.
- b) Neighborhood-based and supervised study centers, perhaps in the schools themselves, should be made available to students for study purposes.

POLICY VI: Increase the Access of Young Workers and Drop-Outs to Vocational Training Programs and Opportunities

VI.1. Experiment with financial assistance to workers or their employers to facilitate the realization of this objective.

5.3 Water and Sanitation

Water and sanitary disposal of both liquid and solid wastes were covered earlier, and they are the subject of AURPG technical papers. Furthermore, the "water problem" is one of the most extensively studied in Jordan.

Because of the earlier coverage of water and sanitation issues, the present section will focus on selected (primarily economic) impacts current and proposed systems (will) have on the poor.

The importance of both water and sanitation do not warrant further elaboration, other than to remember that the misuse of water and sanitary facilities and processes can considerably reduce the health impacts new systems might help produce.

Solid waste was seen to be handled, in theory at least, by a government agency, but in fact it is often dumped in the nearest convenient place, especially in the slum areas. Only about 20% of Amman is served by a sewer system; the other 80% rely on cesspools and septic tanks that must be periodically pumped out at a cost to the user. Sewers and water systems are operated by the Amman Water and Sewer Authority (AWSA). Over 70% of all Amman households are connected to the AWSA system, but since the supply varies by time of year, users often must rely on other sources as well. In addition to AWSA water connections, residents obtain water from AWSA tankers, private tankers, or from neighbors and other sources (e.g., springs and wells).

5.3.1. Impact on the Poor

Thirty percent of the villages in the Amman Sub-Governate have access to improved water; the national rural average is 36%. Balqa is the second-least well served in this regard with only 9% of the villages having such access (See Appendix Table A). A Municipal and Village Loan Fund survey of 55 villages in the Region in 1978 found that 43 settlements had some piped water provision; 17 of the systems cover 50-79% of the homes; none served over 80%.

In the Amman urban area, the poor are served least and last. Dajani concluded that "areas with the highest incomes have been provided with the best service with respect to both water and sewerage." Some low-income areas are scheduled to be provided with water by 1981, and one area, Hashemi, will have good sewerage connections as well. Many of the low-income areas will still have 30% or more of their populations unconnected to the system by the end of AWSA's current development phase (in 1981). (See Table 20.) Phrased differently, planned system improvements will increase the population served in low-income areas to about 68% by 1981, but only one-half of the unplanned settlements of Taj, Mahatta, Qalah, and Jofeh will have access to the AWSA network.⁸¹

Due to both lack of connections and the cost of water, especially for those without a connection, the poor have the lowest lcd, low and moderate-income households consume 30 to 70 lcd, the middle-income households consume 70 to 110 lcd, and the upper-income consumer between 110 and 300 or more lcd.

Those who have to purchase water from tankers and depend on tankers for emptying their cesspools have to pay more for these services than those with connections. They have less and pay more, which means that the proportion of their income expended on water and sewer services is high as well. Table 21 assesses the economic effects that different sources of water have on the lowest fifth of the income distribution. AWSA sources are the cheapest, and the quality of this water is more predictable. Private tankers have the highest charges.⁸²

If families do not increase their water consumption greatly, they will be economically better off when they are hooked up to the ASWA systems for both water and sewerage. Dajani estimates that low-income renters will save an annual amount of JD 41, 63.5, or 40.5 depending on whether they will obtain water, water and sewerage, or sewerage alone.

TABLE 20
PROJECTED WATER AND SEWER SERVICE IN DIFFERENT
AMMAN NEIGHBORHOODS

Area	% Sewered		% Water	
	1981	1990	1981	1990
Abdoun	32.5	93.9	75.0	100.00
Ashrafiyah	30.5	60.0	66.6	100.00
Hashemi	7.10	69.0	80.6	100.00
J. Amman	58.4	92.5	94.8	100.00
J. Hussein	53.0	72.9	90.0	100.00
Jofeh	47.0	55.7	45.0	100.00
Mahatta	26.0	67.2	45.0	100.00
Marka	20.4	80.8	60.0	100.00
Nadif	41.0	51.5	50.0	100.00
Nasr	30.4	86.9	50.0	100.00
Nazzal	32.8	74.9	80.9	100.00
Nuzha	38.9	78.9	82.7	100.00
Qala'ah	45.4	53.8	45.0	100.00
Qussour	43.3	43.0	83.3	100.00
Refugee Camps	42.2	70.5	94.0	100.00
Sha'alieh	53.3	74.1	80.0	100.00
Shamsani	73.3	75.0	73.3	100.00
Smissani	90.0	90.0	100.0	100.00
Tadj	51.8	62.0	75.0	100.00
Wadi Haddada	46.1	21.4	53.8	100.00
Zuhcur	50.0	81.0	75.0	100.00

Source: Dajani, p. 21.

TABLE 21
THE ECONOMICS OF WATER, BY SOURCE

<u>Source of Water</u>	<u>Quantity^a</u>	<u>Monthly Cost</u>	<u>Percent of Income 20th Percentile^b</u>
AWSA connection	6.72 m ³	0.600 JD	7.0%
AWSA tanker	6.72 m ³	1.5 JD	2.5%
Private tanker	6.72 m ³	8.4 JD	13.4%
Neighbors	6.72 m ³	5.04 JD	8.0%

^a. Quantity based on 28 lcd for a household of 8 persons, which is the average size among low-income households.

^b. 40 JD per month for urban population.

The five-slum survey indicates that low-income families place a high priority on water, if not sewers. The question asked of the respondents allowed some ambiguity, but as noted earlier, "sewerage" was listed as the most frequently mentioned "disadvantage of the area" in 3 of the 5 neighborhoods, and it was second in a fourth area. But when asked for their priorities for environmental improvement, all five areas gave the highest proportion of their votes to "water supply." (It is unclear whether sewers were given as an answer option. It is not listed in the response categories.)

There are at least two major impediments that low-income residents face in obtaining connections when they become available. They are legal/administrative and financial.

Legal impediments in the past have prevented AWSA from extending its system into illegal settlements. The landlord was required to have legal tenure, and to provide connections implied that Government recognized the occupant's legal status as owner. Other requirements for sewer and water connections pertain to bringing dwelling units up to "standard" and, for sewers, filling the cesspit in the back (the connection is made in front). Also, owners (or renters) must use one of the approximately 20 plumbers AWSA has recognized to do this work. AWSA, however, exercises no control over the prices (which are said to be inordinately high) these plumbers charge. Furthermore, the plumbers do not provide credit, and AWSA itself

has no means to provide credit. This is important, for the household must pay for the connection within three months of the work being completed.

In short, legal and administrative requirements add considerably to the cost of connections. Many low-income families may not be able to take advantage of the services being offered them, even though their recurring costs very likely would be lower once they are served.

Because of rent control, many owners may be unwilling to make connections, but Dajani suggests that renters frequently pay these costs themselves because they recognize the benefits of AWSA water. Sewer connections have less observable benefits and the connections are most costly. Renters, as well as owners, are less likely to take advantage of this very significant service.

The economic impact on the poor who wish to connect to the systems can be considerable. A water connection can cost from 50 to 95 JD, which represents 1 to 2 1/2 months income that must be paid within the required three months. Again, no credit is provided to allow the staggering of payments over a longer period of time.

5.3.2 Recommendations

Because water and sanitation issues have been studied a number of times already, the present section will again limit its focus to policies and strategies designed primarily to benefit low and moderate-income families.

- POLICY VII: Develop Credit and Financial Means to Enable Low and Moderate-Income Families to Connect their Dwellings to the AWSA Water and Sewer Systems at a Reasonable Cost.
- POLICY VIII: Immediately Develop a Comprehensive Environmental Health Strategy that Would, Among Other Things:
- VIII.1 Address the liquid and solid waste problems in areas not now adequately serviced.
 - VIII.2 To the maximum extent possible, link this strategy to a more general community development effort at the local level.
 - a) A trash receptacle program involving paid local resident workers should be developed on an experimental basis.
 - VIII.3 A public education program should be developed relating to the hygienic uses of water and sanitary facilities.

VIII.4 In villages and other municipalities without waste disposal facilities, places should be designated for the discharge of sewage disposal tanker loads as well as solid wastes.

5.4 Shelter

As a physical expression of urban growth, and as the locus of family life, housing and the problems associated with it call for attention and comment in any country, especially in areas growing as rapidly as the Amman region. But there is not a single housing problem. In Section 4.2.3 of this report, housing was seen to be the intersection of a number of services that define the meaning of shelter. Housing conditions were seen to vary widely within the Region, and in the future it will be necessary to distinguish between issues relating to new residential growth and those relating to the preservation and improvement of the existing housing stock. With an estimated annual need of up to 8500 new units--and even up to 14,000--it is obvious that this is one problem that "won't go away." Finally, the cost of housing and the fact that shelter constitutes a family's living environment means that housing has a significant impact on a population's health and well-being.

Housing is the subject of a separate Chapter (Chapter III.6), and it is also considered in a number of other chapters. Therefore, the present review can be brief.

The Five Year Plan 1976-1980 recognized the:

Lack of a comprehensive housing plan based on population distribution, economic activity and the availability of basic public facilities. This is due to the lack of integrated regional planning.⁸³

To remedy this lack, the Plan established certain production targets, and as an organization measure called for the following:

Entrust the National Housing Council with the formulation of a housing policy...within the framework fo a national and regional plan for the rational distribution of economic activity within the Kingdom.⁸⁴

Jordan still does not have a national housing policy, and it does not have a Ministry responsible for housing as such. There is no agency expressly concerned with the housing needs of the poor. There are, however, several major agencies--and the private sector--active in providing housing.

The private sector is building about 8000 units annually in the Region. These are intended primarily for upper-income families. The public sector is building about 450 units annually, whereas the Regional deficit in housing for low and middle-income household is growing at the rate of some 1500 units per year.⁸⁵

The Housing Bank and the Housing Corporation are the two most active housing institutions in Jordan. Founded in 1974, the Bank finances most private and public cooperative housing in the country and provides significant support for the Housing Corporation. It has assisted in the construction of over 20,000 housing and commercial units in its short history.

Limited income groups are the major concern of the Housing Corporation. It acquires land and builds multi-unit housing projects. It makes individual units available to eligible families (usually on the basis of a long-term purchase contract), or it sells the entire project to another governmental agency--such as the Municipality of Amman, which in turn rents or sells the units to eligible families. The Corporation completed or had under construction about 8900 units by the end of 1978. People who are displaced by public works projects, public servants, and other limited-income applicants are the Corporation's major beneficiaries. It is currently addressing its activities to families earning less than 200 JD per month.

On the basis of the World Bank's consultant's review of the housing delivery system, it was concluded that:

"There are no institutions currently directing their efforts specially and as a priority to the lowest income groups and the poorest housing areas of Amman and Zarqa. The two existing main institutions and municipalities are willing and interested to reach these areas but for a variety of reasons, which in general are beyond their control, are currently unable to do this."⁸⁶

5.4.1 Impact on the Poor

Obviously very little is being done for the poor. The non-poor, however, are being assisted and subsidized. This assistance is reflected in (1) the higher level and more complete provision of essential services (water, sewers, roads) to the middle and higher-income areas than to low and moderate-income neighborhoods, and (2) the deep subsidies (welfare payments) provided through the Housing Corporation's projects.

Through a variety of devices, one project was estimated to be providing its occupants with a 50% subsidy.⁸⁷ Residents in this project "would have to double what they are currently paying in order to make the project self-liquidating at a 10% discount rate." There are more than 20,000 families in Amman with incomes less than JD 90 per month. Although seriously in need of better housing, these families cannot afford to live in a Housing Corporation project even with a 50% subsidy.⁸⁸

One reason housing is not affordable is because of the fairly high building standards that have not been adopted. A well-constructed unit of 75m² cost 4500 JD, plus land and infrastructure, which adds another 1500 JD and results in a total cost of 6000 JD. If a family earning 65 to 80 JD per month spent 25% of its income on housing, it could afford to pay 16 to 20 JD per month. With 8.5% financing, a 15-year term, and a 10% downpayment, the family could afford a site and housing that cost 1800 to 2250 JD, a bare one-third of what a well-built 75m² unit costs.⁸⁹

Lower and more flexible standards can, however, appreciably lower the costs of housing, and, in fact, the forthcoming World Bank-financed project will concentrate on families with incomes in the 40 to 90 JD per month range, which is below the 40th percentile nationally at the higher (90JD) level and below the 20th percentile at the other extreme. To make this new initiative possible, credit and other innovations will be needed along with more flexible building standards.

5.4.2 Recommendations

Most of the recommendations listed in Chapter III-6 on housing refer in various degrees of specificity to the needs of low and moderate-income families. They do not have to be repeated again here, except to emphasize the need for a policy decision to adopt a housing policy.

POLICY IX: A National Housing Policy Should Be Adopted and an Organization Should Be Created Responsible for the Implementation of this Policy. Among Other Things, the Policy Should Specifically Address:

- The needs of low and moderate-income families
- Ways to meet the needs of these families over the next 10 years
- The needs for new housing separately from the needs of existing housing and the neighborhoods in which they are located.

- The adoption of lower and more flexible building, zoning, and subdivision standards so that affordable decent housing can be provided citizens.
- Credit mechanisms especially suited to meeting the needs of low and moderate-income families.

5.5 Income Enhancement

Seven long term objectives for economic and social development were listed in the Five Year Plan 1976-1980. Number 3 in the list called for the "achievement of a better and more equitable distribution of national income."⁹⁰ A wide range of economic development, subsidies, and social services have evolved in a piecemeal fashion. The "system" of supports lacks an overall coherence and consistent set of purposes that might be used to evaluate the appropriateness of any particular program feature. The difficulty of developing a coherent strategy is compounded by the number and fragmentation of ministries and groups providing support assistance, as well as by the variety of particular needs (such as maternal and infant nutritional requirements) these agencies are responsible for addressing.

Jordan is certainly not unique in having an incoherent income-enhancement system. But because some support programs can seriously distort the economy over time and also be highly regressive in their incidence, Jordan has a special need to examine and reform the system before further economic and social development leads to new ad hoc but permanent responses that adversely affect incomes and their distribution.

Earlier sections of this chapter identified some of the needs that income-support programs might address: Poverty is accompanied by large families and by health, housing, and other needs; food is thought to account for at least 48% of a family's expenditures; families differ in type, size, and need, with some special problems relating to female heads of household; maternal and infant nutrition problems exist among rural and urban poor; those in lower-level occupations have limited education, and therefore, limited opportunities for upward job and economic mobility; there is a low rate of female labor force participation; etc.

A partial listing of support programs that address these needs would include three standard sectors:

- Health care provided free or heavily subsidized by the RMS, MOH, and UNRWA
- Education, compulsory the first nine years and free the first

12 years--provided by MOE and UNRWA (for grades 1-9)

-- Housing, a modest subsidized system primarily for the non-poor-- provided by the Housing Corporation.

To help meet the needs of the retired, the Social Security Corporation was recently created. When eventually developed, the system will provide for five kinds of benefits: retirement pensions, work-related accident insurance, unemployment payments, general health insurance, and family assistance. Only the first two are scheduled to be activated in the initial year of the Corporation.

The Department of Social Welfare provides cash assistance to especially needy families and individuals--for example, widows, divorcees, the crippled and disabled, the aged, wives of prisoners, and those suffering from emergency situations. Families with an income of 12 JD per month or lower qualify for assistance in cash or in kind. This is only a minor program in the Region. 785 cases, 80% of them in Amman, were provided assistance valued at 4755 JD in 1977. As Table 22 indicates, the Amman Governate, despite the absolute size of its poverty population, received the least amount of assistance.

Food, which was indicated to cover an estimated 48% of a family's expenditures, is a major national concern and several specific programs provide subsidized food or food in-kind. Food policy more generally, of course, increased 45% between 1975 and 1976, but imports of "food stuffs" increased by 65%.⁹¹

The entire population benefits from the Ministry of Supply's price support program for wheat and the price control program for meat (and rent). Civil servants receive additional assistance through the government stores that sell them food and other items at a subsidized rate. This subsidy cost Jordan JD 2.25 million in 1979; .8 million JD was for food, while the balance was for other household items.

Both of these programs suffer from vertical and horizontal inequities. Vertical inequities arise because the non-poor spend more, the cost of subsidizing them is disproportionately high. Horizontal inequities arise because, at any level of income, only civil servants qualify for subsidies. Combining the two inequities means that the poor who work in the private sector do not receive subsidies, while higher-level civil servants do.

TABLE 22
POVERTY INDICATORS

Governate	Input Variables		
	Annual Cash Assistance to the Elderly and the Handicapped in JD's Per 1000 Population	Annual Rehabilitation Expenditures in JD's Per 1000 Population	Emergency Aid to Families in JD's Per 1000 Population
Amman	29.630	2.800	1.000
Irbid	74.750	35.300	1.770
Balqa	66.270	14.620	0.930
Karak	154.200	43.520	0.560
Ma'an*	266.230	9.830	2.140
East Bank Average	57.670	15.600	1.240

*Due to the small population of Ma'an and the uncertainty as to the number of people living in the Governate, indicators which are given per 1000 people are highly susceptible to error.

Source: Dajani and Murdock, drawing on the Annual Report of the Department of Social Welfare to the National Consultative Council, July 1978. All figures are for 1977.

Several food programs operated by the MOH, the Ministry of Social Affairs, and private voluntary agencies address mother and children with nutritional needs. The programs of the MOH are directed through the MCH centers within the Region and involve a monthly distribution of 2 kilograms of corn soya milk mixture and 1 kilogram of dried skim milk to each child attending the center. Within the Region there are approximately 8,643 children registered at 24 MCH centers. Food supplies in this and other programs depend upon donors, such as the U.S. Food for Peace Program, UNICEF, and CARE/MEDICO.

The Ministry of Labor and Social Affairs along with CARE/MEDICO directs a total of 129 feeding centers of which only 26 are within the Region serving 15,045 children. Private voluntary agencies also operate 29 feeding centers within the Region and the total amount of beneficiaries from these programs is 3,725.

All of these programs are generally for preschool children and the total number of beneficiaries is probably less than 10% of that age group.

No cost estimates are available for the various food programs, but questions arise relating to the value and effectiveness of this approach to addressing nutritional problems. The target groups addressed are those that various studies have shown to be the most vulnerable to malnutrition. However, there is very little differentiation beyond making food available to these groups. The program has relied heavily on the availability of foreign donor contributions without being directed at what the real needs are and the most effective means of meeting them.

The Westinghouse study concluded that most of these programs are aimed at school-age children, who are clearly less at risk and less benefited by supplemental feeding than infants and pre-schoolers. "There is little evidence to prove that nutritional status is markedly improved by feeding projects."⁹²

None of the food and other programs described above will solve the basic and long term problems of poverty in Jordan. The long term solution requires the creation of new jobs, increases in worker productivity, and fair wages for work performed. There are, however, immediate income-enhancement opportunities. Vocational training programs were already mentioned in this regard, but other possibilities relate to the development of small-scale enterprises in low-income neighborhoods and especially

for the involvement of local women in these enterprises. These promising opportunities, however, are beyond the scope of the present chapter to explore more fully.

5.5.1 Recommendations

POLICY X: In Order to Move Toward a More Coherent Income-Enhancement Policy That Specifically Addresses the Needs of Low-Income Families and Individuals, Government Should Initiate a Thorough Review and Evaluation of Existing Benefits and Subsidies

X.1 This review should also include:

- Strategies to reform food programs, as well as the contributions that a large-scale nutrition-education campaign might have on the nutritional health of mothers and children.
- The effects of increasing Government salaries and, at the same time, eliminating government stores that provide subsidized products only to civil servants.
- The costs and benefits of alternative welfare and subsidy programs.

POLICY XI: In Order to Create New Jobs and Enhance Family Incomes of Those in Need, a Small Enterprise Development Program Should Be Specifically Developed and Implemented in Selected Low and Moderate-Income Neighborhoods.

XI.1 To the maximum degree possible, this program should, at least on an experimental basis:

- Be linked more generally to a local neighborhood-development strategy that involves residents in the improvement of their own neighborhoods
- Involve women
- Provide credit, marketing, and appropriate technical assistance.

5.6 Citizenship and Neighborhood Development

The Five Year Plan 1976-1980 adopted the following development strategy:

Development of a comprehensive national challenge whose requirement can only be met through continuous participation of the citizen in the political, economic, and social fields...⁹³

The minimal progress in effecting this participation may be the major failure of the Five Year development program. As documented in Section 3.4, citizens in low-income areas have a low sense of awareness that anyone in their neighborhoods play a leadership role other than to provide advice

personal matters; they are unaware of any local community organizations and, in fact, relatively few seem to exist nationally; and they tend to feel that Government, not the local residents themselves, has the responsibility to make improvements in the neighborhood. There was little evidence of any cooperative self-help improvements, even though some neighborhoods have a fairly stable population.

In many other developing countries, low-income citizens are motivated to become involved in programs to improve their neighborhoods; they simply lack the resources and official encouragement to do so. Even this basic motivation seems lacking in Amman. The urban Jordanian is economically motivated. The Jordanian seems to be the rational, individualistic, and selfish economic man. There is an apparent absence of a more altruistic civic-minded sense of responsibility that precipitates a positive involvement in the local neighborhood or larger community.

A basis for the development of positive citizenship may exist more in villages than in Amman. There are 16 five-member municipal councils and 34 three-member village councils in the Region. About two-thirds of the councils are elected. Access to those community leaders is much easier and closer than is possible in Amman and Zarqa. Local urban neighborhoods, which can be much larger than a village, lack the same council-type structure and opportunities to exercise positive citizen leadership.

Scattered efforts have been made over the past five years to develop social organizations, especially among adolescents. For example, there were 2100 male scouts and 1378 girl scouts registered in the Amman Region in 1978. The Region has four youth centers, 63 sports clubs (some of which have high entry and user fees), and 13 clubs in Amman and another 80 in Zarqa associated with a social service center and under the supervision of a charitable organization. It appears that efforts are being made to "seed" social groups, especially for youth, but practically nothing, if anything, is being done to develop citizenship opportunities in low-income areas.

.6.1 Recommendations

POLICY XII: Government Should Provide the Resources and Encouragement Necessary to Local Neighborhoods so that Instead of Relying only on the Authorities for Solutions to Local Problems, the Residents Themselves Will Work Together Cooperatively to Enhance Neighborhood, Family, and Individual Health and Well-Being.

XII.1 At least on an experimental basis, a Community Development Loan Fund, similar to the Municipal and Village Loan Fund, should be created, and both assistance and encouragement should be provided local neighborhoods to draw on this fund.

POLICY XIII: Governmental Ministries and Municipal Agencies Should Coordinate Their Programs and Provide Mechanisms That Will Help Improve the Planning for and Development of Local Neighborhoods.

XIII.1 The Ministries and agencies should adopt common boundaries for local service areas.

XIII.2 At least on an experimental basis, a city district officer should be assigned to local neighborhoods to provide prompt horizontal coordination of vertically-administered government programs, to animate citizenship and community development programs, and to facilitate the processing of citizen enquiries and complaints.

XIII.3 Citizen advisory councils should be created, at least on an experimental basis, for selected local service facilities, such as health clinics.

XIII.4 Village and local neighborhoods should be encouraged and assisted to develop their own five-year improvement programs that address issues of health and well-being.

XIII.5 The Regional Planning Agency, in conjunction with the Department of Statistics and the Ministry of Social Affairs, should prepare a semi-annual report on the Region's health and well-being, including, among other things, progress realized, goals unmet, and alternative strategies to meet needs over the next two years.

FOOTNOTES

1. The first edited version of this chapter compressed the objective to read "To improve access to basic necessities required for health and well-being." When expressed in this way, it is not necessary to define all the terms specified in the original objective noted here. The original is preserved because it more clearly identifies the assumptions involved in such an objective.
2. Health and well-being are emphasized in related international development concerns. For example:
 - Basic human needs (BHN) tend to focus on basic physiological needs. Although questions have been raised about the scientific basis for establishing standards and departures from them, international agencies (e.g., FAO and WHO) use "consensus" standards. Instead of measuring income, the BHN approach measures actual levels, patterns, and quality of living along several "basic" dimensions of health and well-being.
 - The War Against Hunger, or campaign against poverty, also focus on selected basic human needs, health, and welfare.
 - Human Rights include, among other things, the assurance of equal and fair access to opportunities to achieve health and well-being. The concern is with removing impediments to free access; it does not refer to equality or uniformity with regard to life styles, money, or material resources. "Impediments" to access, however, include more than legal or administrative obstacles: established patterns of living can create disadvantages--for example, children living in unsanitary neighborhoods may have higher rates of illness and, therefore, not do as well in their school work as children from other neighborhoods. Inadequate neighborhood well-being adversely affects individual and family health that in turn affects well-being now and in the future.
 - Human resources involve two related concerns: (1) the development of people, and (2) development by people. National development can be seen as the development of human resources. People must be brought up to adequate levels of health and well-being so that they can then contribute to national development. This two-stage process provides a useful definition of social development.
3. Constitution, The Hashemite Kingdom of Jordan.
4. His Majesty King Hussein in his instructions to the Prime Minister on the occasion of the establishment of the Ministry of Municipality and Rural Affairs, February 13, 1965.
5. National Planning Council, The Three Year Development Plan (1973-1975), Amman, 1973, p. 16.
6. NPC, Five Year Plan 1976-1980, Amman, 1976, pp. 26, 35.
7. The commitment is to health and well-being as ends in themselves, not as means to the achievement of other development objectives. The role of health in contributing to national economic development, for example, has not been proven, but good health itself is a high priority social

7. objective in its own right. Instead of the traditional economic concern for the social aspects of economic development, national leaders are increasingly defining the challenge as the economic dimensions (and, hence, feasibility) of social development. See J. Jarrett Clinton, Health, Population and Nutrition Systems in the LDC's: A Handbook (Washington, D.C.: Family Health Care, 1979), p. 100 ff; World Bank, Health Sector Policy Paper (Washington, D.C.: World Bank, 1975), Chapter 3.
8. Survey of Beliefs and Practices Affecting Food Habits in Jordan, A Preliminary Report (Care-Jordan, March 1979), p. 9.
9. S. H. Abdel-Aty, Population, Education, and Development in Jordan (University of Jordan, 1977), p. 49.
10. Food and Agricultural Organization, The Fourth World Food Survey (Rome: FAO, 1977).
11. K. Somesara Rao, "Malnutrition in the Eastern Mediterranean Region," WHO Chronicle, Vol. 28, 1974, p. 174.
12. Reported in World Bank Staff Working Paper, No. 323, Priorities in Education: Pre-School; Evidence and Conclusions (1979), p. 6.
13. Westinghouse, pp. 16-17.
14. Jarir Dajani and Minerva Murdock, Assessing Basic Human Needs in Rural Jordan (Washington, D.C.: USAID, 1978), p. 22. Hereafter this source is identified as Dajani and Murdock.
15. Halcrow-Fox, Amman Urban Project Survey, 1978.
16. Abdel-Aty, pp. 55, 72.
17. Westinghouse, p. 12.
18. Abdel-Aty, p. 55.
19. Halcrow-Fox, a Report on Slum and Squatter Settlements in Amman, Jordan (1978?), pp. 28-30.
20. El Khabib, Leakage in Education, 1976-77.
21. Dajani and Murdock, p. 20.
22. For a review of the evidence and alternative intervention strategies, see World Bank Staff Working Paper No. 323, op. cit.
23. World Bank estimates of adult literacy in 1974 are indicated in percentages in parens.: Lebanon (68), Jordan (62), Kuwait (55), Syria (53), Iran (50), Egypt (40), Algeria (35), Iraq (26), Saudi Arabia (15). World Bank, World Development Report 1978 (Washington, D.C., 1978), p. 111.

24. J.S. Birks and C.A. Sinclair, International Migration Project Country Case Study: The Hashemite Kingdom of Jordan. University of Durham, 1978, p. 29. Much of the present section is taken from Birks and Sinclair.
25. Proceedings of the Second Symposium on Manpower Development: The Role of Jordanian Women, Department of Women Affairs, 1976.
26. Kamel Abus-Jaber, et al., Conditions of Some Working Women in Jordan, University of Jordan, 1977.
27. Dajani and Murdock, pp. 51 and 64.
28. Robert E. Mitchell, Levels of Emotional Strain in Southeast Asian Cities: A Study of Individual Responses to the Stresses of Urbanization and Industrialization. Taipei: Asian Folklore and Social Life Monographs, 1972.
29. Five Year Plan 1976-1980, pp. 318-19.
30. About 20% were under the age of 12, 45% were 12 to 15, and 36% were age 16-18.
31. Reported in Rima Tutunji, Report on the Status of Women in Jordan, USAID, Jordan, 1978.
32. Ibid.
33. Milton Roemer, "Health, Income Distribution and Source of Health Expenditures in Developing Countries," pp. 14-17 in Health or Wealth: Reassessment of an Old Dilemma. Office of International Health, U.S. Department of H.E.W., July 1978. The positive coefficient of correlation for 20 selected countries rises from .495 to .624.
34. If the failure to pay one's income tax is a white collar crime, then it would appear that a very large percentage of the well-to-do in Jordan would be in prison. Dr. Saleh Khasawneh, Director of Income Tax Department, feels that if collection rates were up to par with other developing countries, tax revenues would increase by 50%. If they were up to par with collection rates in economically developed countries, revenues would be 200% more. The tax evasion rate is one indicator of the lack of civic consciousness. It may also indicate that the poor, actually may be subsidizing the richer tax evaders. For the Jordanian situation, see Jordan Times, July 24, 1979, p. 3.
35. Birks and Sinclair, p. 49.
36. Often times, the "income per adult equivalent of a household" is computed. For example, infants age 0 to 2 years are weighted 0.1; ages 2 to 10 years are weighted 0.5 unit, and ages 10 and above are weighted 1.0. See World Bank Staff Working Paper No. 237, Income Distribution and the Economy of the Urban Household: The Case of Belo Horizonte, 1976, p. 3.

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37. A World Bank study bases the "absolute poverty basket" on the cost of food component for the lowest twentieth percent of the income distribution. This procedure combines absolute and relative (the 20th percentile) considerations. A recent Bank study in Peru used "the low ratio of non-food to food expenditures of 0.3:1." Nationally, average per capita non-food expenditures in Peru are 1% greater than food expenditures, about what the Jordan figure is. At the 20th percentile in Lima, Peru's largest city, food and non-food expenditures are about equal. World Bank Staff Working Paper No. 273, The Measurement of Spatial Differences in Poverty: The Case of Peru, 1978, Chapter 4.
 38. Dajani, pp. 11, 14.
 39. No information on helping or family-supported networks for the poor is available, but the Halcrow-Fox data suggest these networks are weak. It is no wonder that remittances are so important to many families.
 40. Households are not synonymous with families. They may include renters.
 41. Because of this, the last column in the table should be ignored.
 42. Further research is needed on how best to define a family and the consequences of using different definitions. For example, a definition limited to a common purse would differ from one that is based on the exchange of monetary gifts or gifts at the Festival or Ramadan. As in other countries in the region, many parents will provide their married sons with free room, while the two families handle board independently of one another. The son's family is neither owner nor renter but, instead, a particular type of guest.
 43. These differences, which seem to be class-patterned, suggest that a classification of poor families would be useful for policy and programming purposes. For example, there are (1) the permanently-dependent poor (the elderly and handicapped); (2) the single-parent poor who have no other potential wage earners in the family, (3) the two-or-more adult family poor that has only one wage earner, and (4) the family with all its two-or-more adult members gainfully employed. See Robert E. Mitchell, Perspectives on Socio-Economic Planning for the Regional Poor, AURPG and USAID/NE/TECH/SA
 44. Computed by Abdel-Aty, p. 48. For the effect of "class" on the number of live births, see his p. 49.
 45. D.B. Jelliffe and E.F.P. Jelliffe, "Breast is Best: Modern Meanings," The New England Journal of Medicine, Vol. 297, No. 17, Oct. 27, 1977.
 46. The recent CARE rural survey found some mothers whose first pregnancy occurred at age of 14.
 47. Health Sector Policy Paper, World Bank, 1975, p. 15; Health Aspects of Population Trends and Prospects, New York, United Nations, 1973, p. 17.
 48. O. Koenigsberger, et al., Infrastructure Problems of the Cities of Developing Countries (New York: Ford Foundation, n.d.).
 49. Water and Man's Health, AID Technical Series--No. 5, Washington.
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50. Halcrow-Fox, Health in the Amman-Zerqa Slum Areas, February 1979, p. 10.
 51. Municipal and Village Loan Fund Survey, 1978. According to the Jordan Five Year Plan 1973-1976, 87 of the 228 villages in the Amman Governate had distribution systems to houses, 131 had no piped water supply, and 10 apparently had water but no distribution system to households.
 52. K.A. Pisharoti, "Environmental Health, with Special Reference to Rural Areas." In Abdel Oman, ed., Community Medicine in Developing Countries (New York: Springer, 1974), p. 341.
 53. Westinghouse, p. 28.
 54. Asem Shehabi, Bacteriological Pollution in the Drinking Water of Jordan, Ministry of Health, Jordan.
 55. Gilbert White, David Barclay, and Ann White, Drawers of Water: Domestic Water Use in East Africa (Chicago: University of Chicago Press, 1972).
 56. Koenigsberger, et al., op. cit.
 57. Ibid.
 58. Westinghouse, p. F-20.
 59. "Critical Issues in Public Sector Housing Development," AURPG, November 1978, p. 1.
 60. This type of sharing is very common in many cities in the developing countries. In contrast to doubling-up among kinsmen, doubling-up among unrelated families has been shown to be an especially stressful situation to the inhabitants and can result in emotional strain and withdrawal from both family and work responsibilities. This is true for doubling-up relations on the higher floors of multistory buildings. See Robert E. Mitchell, "Some Social Implications of High Density Housing," American Sociological Review, February 1971.
 61. The most likely adverse effects will be on children if the community does not provide study areas for them outside the congested home.
 62. Halcrow-Fox Interim Report, May 1979, p. iv.
 63. Even small areas, however, differ from one another in ways that would affect programming strategies and project implementation procedures. For example, there are fairly sizeable differences among the five slums with respect to the proportions of female heads of household, age of the head, rural-urban origins, length of residence in the neighborhood, income, household size, size of dwelling, average number of persons per room, type of construction, tenure status, access to electricity and water, waste disposal practices, perceived disadvantages of the area, suggestions for improvement, priorities for environmental and social service improvements, willingness to move or stay, etc.
 64. Halcrow-Fox Interim Report, May 1979, p. 60. Emphasis added.

65. To provide added emphasis to the previously reported findings in this paper, Arch Dotson drafted the following three long paragraphs, ending with the introduction to Section 5.
66. This section departs in three ways from the truncated version edited for the Interim Report of the AURPG. First, the public and private sector "responses" to each set of problem issues are included in the present version. One must understand the present delivery system and trends in it before making recommendations for change and improvement. Certainly responsible Jordanian leaders will want to judge how adequately the present analysis understands existing systems and why certain features in these systems are candidates for change. Because of this greater attention to an analysis of existing systems, the present section is much longer than its edited version. Second, the recommendations are more systematically and comprehensively detailed in the present version. It should be emphasized again, however, that these are draft recommendations only. Finally, the edited version developed a "critical factor display" format that included three columns; (1) stresses and resources, (2) health and well-being, and (3) "intersections."
67. These figures, drawn from a 1977 consultant's report, do not exist for the other health sectors. Westinghouse is a major source for the other information.
68. Westinghouse, p. 3.
69. Westinghouse, p. 38.
70. Ibid., p. D-32.
71. "The Role of Jordanian Women in the Field of Education, Social, and Medical Care," in Proceedings of the Second Symposium on Manpower Development: The Role of Jordanian Women. Department of Women Affairs, Ministry of Labor, Amman, 1976.
72. Food distribution programs will be considered in Section 5.5.
73. There is a difference of opinion on whether this is a high or low figure. The Westinghouse study says it is lower than the 3 to 5 contacts common to more industrialized nations. The U.S. figure, on the other hand, is 1.7. See Syncrisis: The Dynamics of Health: XXI: The Hashemite Kingdom of Jordan. U.S. Public Health Service, 1977, p. 28.
74. Portal-to-portal time is another criterion that covers both distance and waiting time. The actual "treatment time" is a consideration in all access standards and, therefore, can possibly be eliminated from any single standard. However, there may be morbidity-specific standards. Mothers will travel farther for a child's broken bone than for an infant's diarrhea. If this is so, then the pattern and frequency of morbidities should be mapped in order to provide guidelines for health campaigns and for the location of specific health facilities.
75. Westinghouse, p. D-31.

76. Five Year Plan 1976-1980, p. 335.
77. For the Swedish experience that influenced other countries, see Alva Myrdal's Nation and Family, first published in the 1930s.
78. Five Year Plan 1976-1980, p. 28.
79. The CARE survey reported in Appendix Table A suggests that this is a slight exaggeration.
80. Much useful information on these programs is provided by Paula S. Harrell's Vocational Education and Training in Jordan, USAID, Amman, 1978.
81. Based on analysis of data presented by IBRD appraisal report on Amman water and sewerage project.
82. AWSA tankers charge 1 JD for 4m^3 , 1.5 JD for 7m^3 , and 2.5 JD for 11m^3 . Private tankers charge between .750 and 1.250 JD per m^3 , and neighbors charge between 500 and 750 fils per m^3 .
83. Five Year Plan, 1976-1980, p. 349.
84. Ibid., p. 350.
85. AURPG, Critical Issues in Public Sector Housing Development, 1978, p. 1.
86. Halcrow-Fox Interim Report, May 1979, p. 8.
87. See fn. 80, p. 10.
88. Ibid., pp. 18, 21.
89. From Chapter III-6, Housing.
90. Five Year Plan, 1976-1980, p. 26.
91. Birks and Sinclair, p. 20.
92. Westinghouse, pp. 27, G-11.
93. Five Year Plan, 1976-1980, p. 27.

APPENDIX TABLE A
AVAILABILITY OF SERVICES BY SUB-GOVERNATE

Sub-Governate	Percent of Villages Having:							
	Improved Water	Boys & Girls Elementary Schools	Boys & Girls Preparatory Schools	Post Offices	Health or MCH Clinic	Child Feeding Center	Electricity	Municipal or Village Council
Ajboun	30.5	63.8	41.7	47.2	16.6*	2.8*	11.1	22.2
Amman	30.3	70.3	18.8*	42.9	19.4*	1.2*	5.5	20.6
Aqaba	40.0	70.0	30.0	10.0*	70.0	10.0	10.0	20.0*
Balqa	9.0*	61.4	21.6*	53.4	29.5	5.7	5.7	20.5
Irbid	58.4	86.4	61.6	85.6	27.2	24.0	14.4	52.8
Jerash	4.4*	86.7	26.1	35.6*	20.0*	8.9	2.2*	20.0*
Karak	57.7	98.7	52.6	28.2*	65.4	12.8	6.1	61.9
Ma'an	21.2*	38.1*	16.2*	18.8	27.9	3.4*	1.7*	10.2*
Madaba	33.9	71.2	25.4	47.4	15.2*	0.0*	0.0*	10.2*
Mafraq	60.6	76.7	29.3	43.5	19.2*	13.2	2.0*	23.2
Ramtha	73.3	73.3	40.0	60.0	33.3	6.7	13.3	73.3
Tafila	45.4	63.6	24.2	84.8	45.4	3.4*	0.0*	27.3
Zarqa	10.2*	66.7	23.1*	30.8*	28.2	2.6*	2.6*	23.1
East Bank Average	36.0	70.8	31.1	52.8	28.7	8.2	5.4	27.8

*An asterisk denotes a percentage which is less than 75% of the East Bank Average for the particular category.

Source: CARE Data, taken from Dajani and Murdock

APPENDIX TABLE B
DISTRIBUTION OF VILLAGE TYPES BY SUB-GOVERNATE

Sub-Governate	Care Level of Service Classification							% of Villages		
	A	B	C	D	E	F	Total	A & B	C & D	E & F
Ajboun	0	3	5	8	2	18	36	8.3	36.1	55.5
Amman	2	4	13	29	35	78	161	3.7	26.0	70.3
Aqeba	0	1	1	1	3	4	10	10.0	20.0	70.0
Balqa	1	2	15	7	17	47	89	3.4	24.7	71.9
Irbid	8	17	37	23	20	19	124	20.1	48.4	31.5
Jerash	1	1	8	4	6	23	43	4.7	27.9	67.4
Karak	0	11	30	15	18	5	79	13.9	57.0	29.1
Ma'an	1	3	14	10	11	80	119	3.4	20.1	76.5
Madaba	0	0	8	10	14	27	59	0.0	30.5	69.5
Mafraq	0	1	19	15	25	38	99	2.0	34.4	63.6
Ramtha	0	0	6	3	3	1	14	7.0	64.3	28.7
Tafila	0	0	10	6	6	11	33	0.0	48.5	51.5
Zarqa	2	0	7	2	4	24	39	5.1	15.4	71.8
East Bank Total	15	47	173	133	164	375	905	6.6	34.3	59.1

Source: CARE Data, Taken from Dajani and Murdock.

APPENDIX TA

Selected Services by

Governorates	# of Communities	Schools/Educational Services				Health				Water Improved			Agric. Services		Postal/Tele.		
		B	U	B	G	B	G	Clinics	MCH	Dental	Piped	Other	Guide Center	Ext	Coops	Post Office or Branch	Tele
Ajloun	36	5	1	17	15	23	22	6	0	0	11		1	1	0	17	
Amman	165	6	5	43	31	114	119	29	3	1	50		0	1	4	67	
Aqaba	10	1		3	3	7	7	7	0	0	4					1	
Balqa	88	3	0	25	19	55	54	23	3	0	8		3	0	10	47	
Irbid	125	18	11	85	77	108	108	30	4	1	73		18	1	7	107	1
Jerash	45	2	1	16	12	39	38	9	0	0	2		1	0	2	16	
Karak	78	8	5	47	41	78	75	48	3	0	45		0	0	14	61	
Ma'an	118	2	1	24	18	49	40	32	1	0	25		0	0	4	34	
Madaba	59	0	0	19	15	43	41	0	1	0	20		4	0	7	23	
Mafraq	99	0	0	36	29	76	76	18	1	0	60		2	2	0	43	
Ramtha	15	1	0	7	6	11	11	5	0	0	11		0	0	0	9	
Tafila	33	3	0	12	8	21	21	15	0	0	15		2	0	2	28	
Zerka	39	1	0	13	9	26	25	11	0	0	4		3	3	3	12	
	910	40	24	347	283	650	637	241	20*	2	328		34	8	63	480	4

* also 21 MCH Clinics in Urban areas

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Co-Governate

Social Services

Local Administration

Com.Center Building	Child Fdg.	Sewing/ Knitting	Kg	Adult Lit.	Savings Society	Financial Help	Council Bldg.	Village Council	Municipal Council	Other Community Owned Buildings	CARE Village Classification						Total
											A	B	C	D	E	F	
1	1		1		4			3	5		0	3	5	8	2	18	36
5	2	6	5		0	0	0	27	7	0	2	4	15	30	35	79	165
1	1						1	1	1	1	0	1	1	1	4	3	10
4	5	5	3	1	2	0	0	15	3	0	1	2	15	4	18	48	88
21	30	23	16		18	13	0	50	16		8	5	39	23	23	20	125
2	4	3	0		7	0	0	7	2		0	1	8	6	7	23	45
2	10	0	1		9	0	0	34	14	0	0	10	32	13	19	4	78
4	4	1	2		2	0	3	10	2	0	1	1	16	9	11	80	118
0	0	0	1	0	0	0	3	5	1		0	0	7	9	15	28	59
2	13	0	0		0	1	0	19	4	0	0	1	18	17	22	41	99
0	1	0	0		2	0	0	10	1		0	1	6	4	3	1	15
0	1	0	0		0	0	0	8	1		0	0	10	6	6	11	33
1	1	1	0		0	0	0	7	2		0	2	7	2	4	24	39
43	75	39	29		44	24	7	195	57		12	41	179	132	166	380	910
	95*		53*		180*												

* From other data

DISTRICT	NUMBER OF FACILITIES IN DISTRICT			
	<u>SCHOOLS</u>	<u>PARKS</u>	<u>RECREATION CENTERS</u>	<u>RELIGIOUS FACILITIES</u>
Alradwan 83	0	0	0	1
Al Shmisani 93	3	0	1	1
Jabal Al Weibden 91	11	0	1	2
Jabal Al Hussein 92	6	0	0	4
Jabal Amman 81	6	0	0	4
Al Ahder 72	6	0	0	0
Nazal 71	3	0	0	0
Al Nadeh 61	4	0	0	4
Al Ashrafiyeh 51	12	0	0	8
Al Awdeh 52	6	0	0	1
Al Zehour 62	4	0	0	2
Al Rawdeh 63	0	-	-	-
Al Rayyhan 53	0	-	-	-
Al Manarah 43	4	0	0	0
Mayden Alsebac 42	8	0	1	3
Al Taj 41	18	0	0	5
Al Madina 1	9	0	0	4
Jabal Alnuzha 21	7	0	0	1
Umm Uthaynah 86	1	0	0	0
Al Dahyeh	1	0	0	-
Al Kosur 22	3	0	0	1
Al Hashemy 23	7	0	0	4
Hamseh 33	8	0	0	2
Marka 34	3	0	0	3

N.A. - Not Available

1. Retail areas for purchase of groceries, pharmaceutical needs, and other daily shopping needs.

Source: AJRPG

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BLE D

<u>NUMBER PUBLIC UTILITIES</u>	<u>DISTANCE TRAVELED FROM RESIDENTIAL AREAS</u>						
	<u>SCHOOLS</u> (km)	<u>SHOPPING AREAS¹</u>		<u>PARKS</u> (km)	<u>RECREATION AREAS</u> (km)	<u>HOSPITAL</u> (km)	<u>RELIGIOUS FACILITIES</u> (km)
		<u>CENTRAL</u> (km)	<u>LOCAL</u> (km)				
1	-	1.75	0.50	-	-	0.5	0.6
1	1.0	2.00	0.80	N.A.	0.6	0.8	0.9
4	0.3	0.70	0.25	N.A.	0.5	0.8	0.7
2	0.5	0.45	0.35	N.A.	N.A.	0.9	0.6
2	0.6	0.60	0.25	N.A.	N.A.	0.8	0.5
0	0.6	1.50	0.45	N.A.	N.A.	3.0	1.0
0	0.7	1.50	0.25	N.A.	N.A.	3.0	1.2
0	0.5	1.50	0.25	N.A.	N.A.	2.0	0.5
1	0.5	1.00	0.25	N.A.	N.A.	0.6	0.6
0	0.6	1.50	0.25	N.A.	N.A.	0.9	0.8
0	0.5	2.50	0.40	N.A.	N.A.	1.2	0.6
0	N.A.	4.00	0.30	N.A.	N.A.	N.A.	N.A.
0	N.A.	3.50	0.40	N.A.	N.A.	N.A.	N.A.
0	0.6	3.50	0.40	N.A.	N.A.	N.A.	N.A.
0	0.6	3.00	0.40	N.A.	N.A.	1.2	0.8
0	0.4	2.00	0.25	N.A.	N.A.	1.0	0.7
0	0.5	1.00	0.40	N.A.	N.A.	0.7	0.6
0	0.7	0.40	0.25	N.A.	N.A.	1.3	1.0
0	0.8	3.50	0.50	N.A.	N.A.	1.5	1.2
-	0.6	3.50	0.35	N.A.	N.A.	1.6	1.2
0	0.6	2.50	0.20	N.A.	N.A.	1.8	0.8
0	0.5	3.00	0.20	N.A.	N.A.	15	0.6
0	0.5	0.45	0.30	N.A.	N.A.	0.7	0.5
1	0.9	0.60	0.30	N.A.	N.A.	0.6	0.5