The impact of urbanization on health in the countries of the Eastern Mediterranean Region

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Introduction

In 1950 only 29% of the world's total population lived in urban areas. By 1990 the urban population had increased to more than 45%. By the year 2000 this figure will have reached 51% and by the year 2020, 62% of world's then estimated 8.1 billion inhabitants will be living in cities [*1*]. Such demographic changes will continue to have an ecological, economic and social impact on the environment and, as a consequence, on human health. Growth rates of this magnitude will outstrip the capacity of municipalities to provide basic services such as housing, energy, water, sanitation, security, transportation and health care.

The Eastern Mediterranean Region (EMR) has one of the fastest rates of population growth in the world [*1*]. This population pressure has put a severe strain on municipal services, causing pollution, congestion, noise and other undesirable effects. Furthermore, in many large cities squatter settlements and slum areas have grown. The urban poor suffer from traditional diseases caused by poverty and underdevelopment as well as chronic diseases associated with modernization [*2*]. The higher-income groups in the city are, in general, less affected by communicable diseases than the poor, but the rich may suffer from dietary and lifestyle-related ailments. The health of city people depends largely on the people's economic income level, the type of neighbourhood they live in, environmental conditions, their education, lifestyle and many other factors.

This paper seeks to examine the demographic and economic facts that have contributed to the rapid urbanization of the Eastern Mediterranean Region and to discuss the health and environmental impacts of urbanization. The paper also suggests some approaches and strategies to tackle health and regional environmental problems.

Urbanization in the Eastern Mediterranean Region

Urbanization is brought about not only by rural people moving to cities, but is also the result of the natural growth of the urban population and the transformation of rural settlements into urban settlements. It is not only a demographic issue, but also one of location, economics, social, cultural, physical and other factors.

Population growth is a basic feature of urbanization and serves as a crude indicator of urban development. Countries in the Region have experienced a wide range of urban growth. For its least developed countries, the rate of urban population increase is comparatively low. In contrast, in the richer countries the increase is very high (see Fig-

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ure 1). In the middle-income countries the growth rate is also large, and the upward trend is set to continue (see Figure 2).

The average population growth rates in countries of the Region are generally high. Of 24 countries in the world with an average annual population growth rate above 3.5%, 12 are in this Region. These 12 constitute 59% of the total population of the Region [*3*]. The total estimated population in 1996 was about 433 million [*4*], and approximately 45% of the total population are aged less than 15 years. The concentration of the urban population in a few primary cities is quite common, and Table 1 shows the population picture in the largest cities in the Region for the years 1960 and 1990.

Impact of national economic development plans

In most countries, especially those with weaker economies, population movements are essentially towards areas where employment and education opportunities are concentrated, or where survival is more certain. The large cities and metropolitan areas have grown because they contain a higher proportion of nonagricultural jobs and income-earning or educational opportunities. For example, in one large country in the Region, one of its major cities generates 42% of the industrial value-added revenue and holds 50% of all bank deposits, while its population accounts for only 6% of the national population. In another country, the pattern of

Table 1 Population growth in some major cities of the Eastern Mediterranean Region, 1960–90

City	Population in millions	
	1960	1990
Aleppo	0.5	1.7
Alexandria	1.3	3.7
Baghdad	0.4	4.0
Cairo	3.0	9.0
Casablanca	0.6	3.2
Damascus	0.5	2.0
Karachi	5.1	7.7
Lahore	1.4	4.1
Riyadh	0.3	2.0
Teheran	2.0	6.8

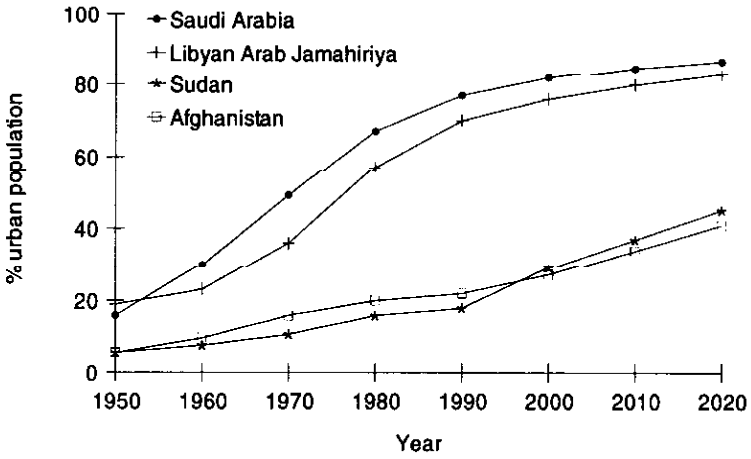

Figure 1 **Urban population growth in some high- and low-income countries in the Eastern Mediterranean Region, 1950–2020**

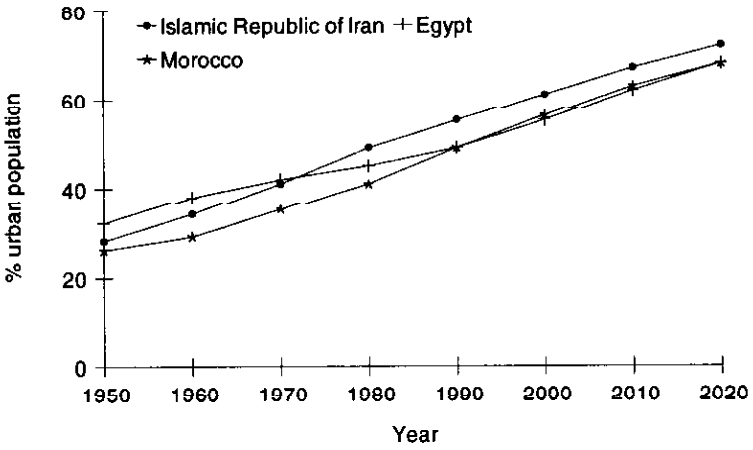

Figure 2 **Urban population growth in some middle-income countries in the Eastern Mediterranean Region, 1950–2020**

development in the 1960s and 1970s favoured the major urban centres. As a result, even in late 1980s, more than 45% of investment for new industries was spent in the capital city and its surroundings. Also, 55% of the total number of doctors in the country and more than 50% of universities and higher education institutions were located in the same capital, which had only 16% of the country's total population [*5*].

The imperatives of national economic growth are focused on urban areas. There is evidence that attempts to limit the growth of very large cities and devolution of economic activities may damage prospects for overall economic growth [*6*].

Health in an urban environment

Health in a city can be best seen within the host, environment and the interaction of the host with the environment. The "host" in this analogy is the urban community. The "environment" represents the physical and social environments. The "interaction" between the host and the environment is the "lifestyle".

Health of different groups in an urban environment

A city is not a homogeneous entity. It is composed of low, middle and high-income groups. Health standards within these groups also vary.

The urban poor are at the interface between underdevelopment and industrialization, and their lifestyle and disease patterns reflect the problems of both. They have inherited poverty, unemployment, malnutrition, inadequate environmental services, communicable diseases, poor shelter and lack of social and health amenities [*2*]. They also experience industrial pollution and other health hazards, an unhealthy lifestyle and stress. They are not consulted, they cannot influence events, and they are not a player in government. Hence, the urban poor suffer from a heavy burden of communicable diseases, high maternal, perinatal, and infant and child mortality. The health consequences of urban poverty also include a high incidence

of cardiovascular diseases, cancer, drug and alcohol abuse, accidents, violence, sexually transmitted diseases and AIDS [2].

Among the urban poor, children and women are especially vulnerable. In addition to physical health hazards, children may be subject to lack of parental supervision, child labour and child abuse. Similarly, low-income women, who are usually confined to low-income occupations in the service sector, may frequently suffer sexual and social harassment. While the rich neighbourhoods of cities tend to suffer least from communicable diseases, environmental pollution and social ills; they suffer from diseases of affluence like diabetes, obesity, hypertension, cancer and cardiovascular conditions. These are caused by an excessive and unbalanced food intake and a sedentary lifestyle [6].

Causes of ill-health in urban areas

While there is a serious lack of data on the health impact of urban living on health in developing countries certain factors are known to influence health problems.

Communicable diseases

Communicable diseases flourish where the environment fails to provide barriers against pathogens. The risks are increased by overcrowding and the importation of pathogens to which people are not resistant. There are many environmental conditions that promote the spread of communicable diseases.

- *Lack of an adequate and safe water supply* is associated with typhoid fever, cholera, hepatitis, gastrointestinal diseases, a number of parasitic diseases, trachoma and skin infections. Many exposures to disease organisms occur in periurban settlements where safe water may not be adequately available.
- *Insanitary disposal of excreta* is a major cause of infant diarrhoea, gastrointestinal infections, cholera and parasitic diseases including schistosomiasis. Improper excreta disposal encourages the breeding of insect vectors.
- *Inadequate disposal of solid waste* is a major factor in the spread of gastrointestinal, parasitic diseases and leptospirosis, primarily as a result of the proliferation of insect and rodent vectors.
- *The absence of drainage of surface waters* results in stagnation of rainwater, flooding and wastewater accumulation, which encourage vector breeding and infections. The urban poor are at risk of acquiring mosquito-borne diseases such as malaria, dengue fever, Japanese encephalitis and filariasis.
- *Inadequate personal and domestic hygiene* increases the risk of faecal–oral, skin, eye and vector-borne infections, while poor food safety practices increase the risk of gastrointestinal and diarrhoeal diseases, and malnutrition.
- *Structurally inadequate housing and overcrowding* contribute to the incidence of tuberculosis, pneumonia, influenza, bronchitis, rheumatic fevers, diarrhoea, measles, rubella and pertussis, as well as gastrointestinal and meningococcal infections.

Noncommunicable diseases and psychosocial health problems

Noncommunicable diseases are associated with exposure to toxins and other hazards that are often intensified by unhealthy living conditions and lifestyles in urban areas. The transport system, the workplace and structural hazards in houses and buildings, all increase the incidence of accidental deaths and injuries, poisoning and burns. Exposure to pollutants, chemicals and hazardous substances result in acute and chronic health impairments. Among such exposures, the

effects of air pollution are of special concern. For example, lead from automobile emissions can affect the nervous system. Carbon monoxide generated by vehicles in dense traffic, dust and gaseous sulphur compounds discharged into the air by power plants and industries can cause respiratory complications, especially among the elderly. An urban lifestyle can also affect diet. A stressful and sedentary urban lifestyle, and associated dietary patterns, can lead to obesity as well as other noncommunicable diseases such as diabetes, cancers and cardiovascular diseases. While urban living can offer opportunities for meeting other people and for participating in cultural, recreational and artistic activities, it can also, paradoxically, increase the isolation of both the individual and the family. Social and emotional stresses are likely to be greatest among those newly arrived, particularly the poor. More broadly, urban stress often finds expression in depression, anxiety, suicide, alcohol dependency, drug abuse, and disabilities due to mental illness. Increases in mental disorders among the older age groups living in cities are well documented, including increases in such problems as juvenile delinquency, violence, and various forms of maladjustment in which psychosocial factors play a major role.

The impact of rapid urbanization on environment and health

Impact on the environment

The rapid increase in population density, reduction in living space, traffic congestion, coupled with the growth of industry, have exposed many people to environmental hazards and put a severe strain on city authorities to produce the necessary services and maintain environmental quality.

Water supply

In spite of the rapid population growth in urban areas safe water supply has been satisfactorily maintained in most cities in the Region. In 14 countries out of 23 more than 95% of urban dwellers have access to water supply [*4*]. However, in many middle-income and low-income countries the urban poor and residents of fringe areas suffer from inadequate access to safe water. In many cities the portion of water wasted through leakage in the distribution systems is high, in some cities leakage rates of 30%–40% are reported. Also, amounts of unaccounted for water, (water lost as leakage in distribution systems, seepage in reservoirs and other losses) of 50% is not infrequent [*8*]. The rapid increase in population density in cities has resulted in heavy traffic, congestion and lack of adequate roads. Hence, it is not usually easy to replace or repair the old pipes in the water distribution systems. Leakage detection and prevention is an expensive and complicated task. The cost of water supply and sanitation in some cities has escalated and is now among the highest in the world. The per capita cost of piped water supply in some instances is reported to be over US $ 2000 [*9*] as water scarcity and the necessity to desalinate contribute to the high cost of water supply development.

Water pollution

Based on 1988 data from 14 countries, it is estimated that only 34% city dwellers are served with piped sewer systems [*10*]. In many cities, municipal and industrial wastewaters are not properly treated, they contaminate the receiving streams and, in some instances, the municipal and industrial wastewaters have contaminated the groundwater aquifers. Many of the most populated cities and nearby industrial zones are situated along the coastline. As a result, in many areas the pollution of coastal waters is already quite

severe. These conditions pose the danger of spreading infectious diseases, contamination of seafood and of the sea water used for desalination [*11*].

Solid waste management

This is the most pressing environmental concern in many secondary and some major cities in the Region. In cities with serious garbage collection and disposal problems, financial and institutional shortcomings are at the root of the difficulty [*12*].

Air pollution

In large urban areas this is already a significant health problem. The two megacities of the Region (Cairo and Karachi) have serious air pollution problems with suspended particulate matter and lead. In Cairo moderate to heavy pollution by carbon monoxide has been noted, and there is pollution from suspended particulate matter in Amman. Teheran is another big city experiencing major air pollution, especially from sulfur dioxide, suspended particulate matter and lead [*13*].

Housing

Green areas around cities are often being eroded or destroyed and urban sprawl is extending into desert and dry lands, creating an inhospitable living environment. Most cities suffer from a severe housing shortage as urban land and housing prices have risen above the affordable income level of the average person. For example, in Lahore, it has been reported that the income levels of 75%–80% of the people do not pay for the cost of a moderate housing unit of a minimum acceptable standard [*14*]. Housing shortages also result in young people delaying marriage creating social problems. In some countries there is often no town planning and in such chaotic developments aesthetic architecture is missing and visual pollution has prevailed [*6*].

Impact on physical health

When comparing data within the Region average infant mortality and overall crude death rates tend to be lower in urban areas than rural areas. However, this masks the health conditions of the urban poor, which may be worse than those of people living in rural areas. Because of the marginal nature of these areas, the delivery of health-care services is difficult. For example immunization in these areas is lower than in rural areas [*6*]. The health of low-income urban women suffers from additional burdens. Because of the necessity to work and supplement family income many rural migrant mothers, on arrival in the cities, tend to abandon breastfeeding of their infants [*6*].

Nutrition data confirms the increase in diet and stress-related problems in urban areas, such as diabetes, hypertension and cardiovascular diseases. It is anticipated that the increase in air pollution, exposure to toxic chemicals and stressful urban life, have contributed to rises in cancer, cardiovascular and other noncommunicable diseases [*14*].

Impact on social health

Tobacco smoking is a major threat to human health. In the last decade tobacco smoking has doubled. The problem is generally found more in urban areas and affects mostly males, although there has been a recent an increase in tobacco smoking among women in some countries of the Region [*15*]. Drug abuse is also a serious social and health problem in some countries.

One of the major problems of rapid urbanization that affects a large number of children is the deplorable condition of inner-city schools. Often schools cannot cope with the large number of children attending them. They lack sufficient classrooms, sanitary facilities and playgrounds, let alone properly trained teachers and suitable curricula. Furthermore, many schools

are located in the midst of polluted areas, surrounded by noise and congestion [*6*].

Needless to say, many health problems associated with urbanization in general are present in the Regions cities, the exceptions being alcohol abuse, excessive promiscuity and prostitution. Islam, being the faith of an overwhelming majority of people in the Region, strictly forbids the use of alcohol and, similar to other religions, rigidly prohibits promiscuity and prostitution. Even though strict alcohol prohibition is exercised in only six countries, the use of alcohol is limited in comparison to other parts of the world.

Major urban health and environment constraints

The main factors affecting urban health are:

- Serious financial and institutional problems for providing adequate environmental health services, such as water supply, sewerage, solid waste management and pollution control.
- Inadequate preventive services in low-income areas where people are most vulnerable.
- Inappropriate use of specialized facilities and referral hospitals as first contact health care.
- Lack of availability and analysis of health and environment data on neighbourhood and community basis.
- City and local governments do not have the necessary institutional power, autonomy and resources to cope with city demands. National ministries and agencies overshadow local authorities.
- Democratic norms and traditions of community consultation, *shura*, are not well developed for city governance. People are not involved or consulted in local government.
- Force of land and housing market makes a mockery of urban development plans, zoning and housing codes. The vested interests are too powerful and often obtain permits and overrule any standards.

Strategic concepts and programmes

Healthy cities

The objective of the healthy cities concept is to bring together political and community leaders, local citizens, community organizations, professional associations and national and international agencies in a collaborative, intersectoral and community-based effort to achieve health for all at the local level.

By putting health on the social and political agendas of local governments, the healthy cities project has made it easier for municipal governments to develop healthy public policies; encourage urban environmental health services to address not only pollution control, but the wider issues of sustainable development; and encourage the reorientation of urban health services. Because the healthy cities project is accountable to the community, the project seeks to encourage people to be more involved in their own health promotion. It also recognizes that people's health is determined by a broad range of factors extending far beyond the health care system [*16*].

In this Region, the healthy cities concept is concerned with the physical, social, economic and spiritual dimensions of health and environment. It addresses issues such as water supply, sanitation, pollution and housing. The concept is also concerned with heritage, maintenance, preservation of cultural and architectural forms, social caring and values, which add to the fulfillment and quality of life. It can encompass projects and activities that can generate income, improve educa-

tion, address women's issues, children needs and enlist volunteer groups' support. In short, it is a flexible and encompassing approach which can address a variety of activities that can support health in an integrated fashion.

Since the start of the healthy cities programme in the Region in 1990 activities have expanded very rapidly. There is a keen interest among professionals, city authorities, national decision-makers and all concerned in most countries. The healthy city network is expanding rapidly and active healthy city projects are operational in many countries in the Region.

Healthy villages

To include physical and social factors that affect health at the village level, the WHO Eastern Mediterranean Regional Office (EMRO) introduced the healthy village concept during a technical consultation on urban environmental health in Alexandria in 1989. Since 1989, the concept has further evolved and has been applied in a number of countries [*17*].

The healthy village approach is a tool to enhance and strengthen primary health care and to accelerate the process of achieving health for all. It addresses the requirements of integrated, sustainable rural development, giving priority to health as an entry point. The concept and activities can build on the existing primary health structure, giving priority to improvements in environmental health and Environmental Health programme, and in the Syrian Arab Republic and Afghanistan. An extensive Healthy *Wilayat* programme has been successful in Wadi Maawil *wilayat* in Oman, and other countries have expressed interest in starting the project [*19*].

Basic development needs

Data from India have shown that a 50% reduction in the infant mortality rate was reached by doubling the income of poor families. Other studies have shown that literacy and education are significant factors in reducing the morbidity and mortality of mothers and children.

These are examples of the impact of the implementation of basic development needs (BDN), an approach based on three aims: organization of the community, building its capacity, and self-reliance and self-management. Basic development needs can play a significant role, especially in poor urban areas, for poverty alleviation, improvement of housing and basic local level infrastructure and environmental services.

Conclusions

1. There is a lack of awareness of urban problems. Rapid urbanization in the Region already has had, and will continue to have, a serious impact on people's lives and well-being. It will drastically affect