

## URBANIZATION

**Zhang Ming**, *Institute of Geography, Chinese Academy of Sciences, China*

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### 1. Introduction

While human beings are welcoming the first sunshine of the new millennium, a great tidal wave has been growing ever stronger with the sounding bell of the new century. This is urbanization.

Urbanization is a historical process characterized by the movement of people to cities, resulting in population centralization. It results in the transfer of geographical location of people, change of profession and corresponding change of production and lifestyle. It not only includes the concrete changes that can be seen but also includes the invisible

changes in spirit and culture. In a sense, the history of human civilization is also a history of urban development and the urbanization process.

At the end of the nineteenth century, an American graduate finished his dissertation with the title of "Urban Development in the Nineteenth Century." In this paper, global urbanization is summarized as one of the most obvious features of the century through a great number of facts. In the twentieth century, the process of global urbanization has gone forward and the level of urbanization is now nearly 50%. The twentieth century is remarkable in many ways, not the least of which, from the standpoint of human settlement, is the unabated concentration of population in urban areas. When the twentieth century began, 150 million people lived in urban settlements, representing less than 10% of the world's population. At the close of the century, the world's urban population will have increased twenty-fold to 2926 million, accounting for almost half of the world's population. Overall, the twentieth century witnessed the rapid and sustained urbanization of human societies, and the process continues. This dramatic rise began in 1945, after the end of World War II. During the postwar period, the long period of stability in the great power relationships was conducive to the twin processes of population explosion and attendant urbanization, especially in developing countries.

With the rapid development of the economy and changes in production and lifestyles, there will be more and more people who would like to live in cities in the twenty-first century. By 2010, the level of urbanization in China will be 45%. By 2030, over three-fifths of the world population will live in cities. As one of the main social, cultural and economic factors which cause global environmental change, research on urbanization becomes more and more important. How to build a highly-efficient, healthy and equitable urban society as well as how to face the more serious challenge of urbanization on the limits of the environment, resources and population, is a question each country and the entire human race must contend with.

## **2. General Process of Urbanization**

Since the industrial revolution at the beginning of the eighteenth century, world urbanization has experienced three main periods. They are the primary period, accelerating period and advanced period. These three periods are classified according to the urbanization level, the rate of urban population to the total population. Among them, the growth of the urbanization level from 30% to 70% is identified as the accelerating period. In general, the higher the economic development level, the higher the urbanization level. When the western developed countries entered the advanced period of urbanization, most developing countries were still in the accelerating period of urbanization, or even in the primary period. That is to say, in the course of urban development of the twenty-first century, the developing countries will face a more serious challenge than the developed countries.

## **3. Main Problems Caused by Urbanization**

While people are enjoying industrial civilization and urbanization, they are disturbed by "urban disease". At the same time rapid global urbanization also makes "urban disease" popular and does serious harm to people entering the new era. Today, poverty, housing

density, shortage of water, transportation traffic and environmental pollution are menacing the normal life and health of urban residents throughout the world. In many countries, the growth of urban population exceeds the job opportunities provided by the economic development. The rate of urban unemployment and percentage of the population living in poverty are continuously increasing. There are about 500 million people in the world whose housing is very poor. In some big cities in Africa, Latin America and Asia, a great number of people live in slums and wickiups. Moreover, there are 100 million people without housing. The urban water supply is insufficient and not clean. Ten million people die from drinking unclean water each year. Wastes from energy sources in cities further enhances the greenhouse effect. Air pollution, congested traffic, and lack of methods to effectively clear away rubbish all contribute to the deterioration of the physical and mental health of residents. Such problems are serious even in developing countries.

With the development of the social economy, the growth of urban areas has produced concentrations of human population of unprecedented magnitude, and governments are failing to manage the resulting environmental and social service problems.

The interaction between population dynamics and environmental and social problems is of great importance because population growth and environmental degradation can contribute both to migration pressures and to the potential for civil conflict. The population-environment interaction is a main factor in the growing proportion of people living in and around cities. Population growth fuels the growth of urban areas in two ways: as "natural increase," stemming from high birth rates within metropolitan areas, and as migration from outlying rural areas, where the labor force tends to grow more rapidly than employment. Urban populations are growing faster than those of surrounding areas. The average growth rate for cities and their environments in developing countries is 3.5% per year, compared to 1.9% for these countries as a whole. Indeed, a recent study of national and urban population growth in developing countries found that on average each 1% increase in national population growth yields a 1.78% increase in urban population.

The population increments being added to urban areas in developing countries today have no precedent in history, so there is little guidance to predict the magnitude of the problems they may pose. But it is clear that many cities have reached the point where further population growth jeopardizes the delivery of basic services to all.

People move to cities to improve their economic opportunities and quality of life, and urban migrants have often adapted swiftly to the stresses of city life. As a recent United Nations report on urban areas noted, however, "...the situation is rapidly changing. Many options previously available to low-income urban populations, such as that of settling in unused public land and low-density central city neighborhoods, are rapidly disappearing. While the demand for land is growing—indeed, it has been calculated that rapid urbanization is likely to lead to a doubling in size of built-up urban areas in most developing countries over the next 15 to 20 years—the supply in most developing country cities is both genuinely and artificially limited."

The environmental by-products of large and concentrated urban populations pose direct threats to health and to the quality of city life. In Mexico City, considered home to the world's worst air pollution, most children who are tested have elevated lead levels. Ozone pollution, with concentrations that are often three times as high as the World Health Organization safety standard for ozone, have led the city government to curtail driving and industrial activity to help clear the air. A recent scientific study suggested that the primary culprit for city air pollution may be the combustion of liquefied petroleum gas, which is used to heat homes and cook food throughout the city. At the same time, the need to provide fresh water to a growing population of about 16 million in an arid mountain valley has forced Mexico City to overdraw its underground supplies of fresh water and pipe water from across the surrounding mountains, at a high and growing cost in electricity. The level of the city aquifer is sinking by more than three feet per year, causing land to subside and structures to buckle in the city center.

In Cairo, a city of nearly 10 million people, space in public parks is in such demand that many charge admission. Even the grassy median of the road between the city and its airport has become the scene of family picnics, with cars whizzing by a few yards away. The further adaptations that continued population growth will require in many urban areas are hard to imagine.

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### **Biographical Sketch**

**Zhang Ming** is an assistant Professor with the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China. He earned his PhD in Physical Geography, Institute of Geography, Chinese Academy of Sciences in July 1998. He obtained his B. S. and M.S. degrees in Regional Geography, Shaanxi Normal University, Xi'an City of China in 1992 and 1995 respectively.

During his research career, Dr. Zhang has contributed to a variety of projects, including the Project Study on the Land-Use & Land-Cover Changes in and Around Bohai Regions, A Study on the Eco-geographic Regional System of China and its Application in Global Change, Modeling Land-Use & Land-Cover Changes in Europe and Northern Asia (in cooperation with the International Institute for Applied Systems Analysis, Austria, and Institute of Geography, CAS), and was responsible for the case study of the Yulin Prefecture. In June-August, 1997, as a Young Scientist of Summer Programme at the International Institute for Applied Systems Analysis in Austria, he worked on statistical analysis of the driving forces of Land-Use and Cover Changes (LUCC). In 2000, the Shanghai Scientific and Technical Publishing House published Dr. Zhang's scientific book, *The Surface of Earth—Home of Human Beings*. In addition, he has published 15 papers on land use and land cover change, landscape ecology and land planning.