# Ch. 2 Population

Key Issue 1: Where is the world’s Population Distributed?

*Demography- the scientific study of population characteristics.*

*Overpopulation- the status of not just the total number of people on Earth, but also the relationship between the number of people and the availability of resources.*

Nearly two-thirds of the world’s population live in 4 main regions:

-East Asia –One-fifth of world pop—Five-sixths live in China alone

-South Asia—One-fifth of world pop—Three-fourths live in India

-Southeast Asia—approx. one-twelfth of world pop

-Europe—One-ninth of world pop

All of the above mentioned population clusters are located w/in 500 miles of ocean coasts

*Ecumene- portion of Earth’s surface permanently occupied by humans.*

Approximately three-fourths of world population lives on less than 5% of Earth’s surface. Generally inhospitable lands are:

-Dry Lands too dry for farming cover 20% of land surface.

-Wet Lands too wet for habitation are generally near the equator.

-Cold Lands too frigid to support civilization.

-High Lands too steep, cold, snow-covered for habitation.

*Arithmetic density- total number of people divided by total land area.*

*Physiological density- total number of people divided by total arable land area. Agricultural density- total number of farmers divided by total arable land area.*

Key Issue 2: Where has the world’s population increased?

*Crude birth rate- (CBR) total number of live births per every 1000 people per year. Crude death rate- (CDR) total number of deaths per every 1000 people per year.*

*Natural increase rate- (NIR) % by which a population grows in a year (excluding migration).*

*Doubling time- the number of years needed to double a population (assuming constant NIR)*

*Total Fertility Rate- (TFR) the average number of births a woman will have in her lifetime.*

*Infant Mortality Rate- (IMR) the annual number of deaths of infants under 1 year old compared to number of live births.*

*Life expectancy- the average number of years a newborn can expect to live at current mortality levels.*

*Agricultural revolution- domestication of animals.*

*Industrial revolution- a conjunction of major improvements in technology that transformed the process of manufactured goods.*

*Medical revolution- the diffusion of med tech from MDC’s to the LDC’s.*

*Zero population growth- (ZPG) occurs when TFR = 2.1. (again excluding immigration)* The NIR was 1.3 % during the first decade of the 21st century, hit its all-time high of 2.2 % in 1963, slowly fell throughout the latter part of the century, and has declined sharply during the past decade. Although the NIR is lower now than in the 1960’s, the number of people being added to the population is still larger because there is a larger base number to multiply the percentage with. Virtually 100% of the natural increase is located in LDC’s, primarily sub-Saharan Africa. The TFR has dropped dramatically in MDC’s, normally hovering around 2, and has exceeded 6 in some African countries. Just as the NIR, TFR, CBR, and CDR, the IMR is also highest in LDC’s, again primarily in Sub-Saharan Africa. Only life expectancy and doubling time are higher in MDC’s.

Key Issue 3: Why is population increasing at different rates in different countries?

*Demographic Transition- a geographic model that divides a country’s development into 4 stages based on its population growth patterns. It has been attempted to have been drawn and explained below:*

Stage 1

Stage 2

Stage 3 Stage 4

Natural Increase

Birth

Death

Low growth High growth Decreasing growth Low growth

STAGE 1: Fluctuating high death and birth rates produce little growth

STAGE 2: Death rate plummets as a country enters the ag and industrial revolutions, causing plentiful food supplies and enhanced hygiene are dispersed to the masses. Birth rate stays relatively constant, therefore the NIR skyrockets.

STAGE 3: The death rate continues to fall, not as dramatically as in stage 2 though. The birth rate also falls as more families decide to have fewer children for economic and social reasons. As a result, the NIR begins to taper off and fall.

STAGE 4: ZPG is obtained through both the improved standards of living as a result of development and also because of social customs.

\*STAGE 5: Some argue that a stage 5 may exist and that some W. European countries and perhaps the U.S. will or have already entered. It is effectively the same as stage 1, except the birth and death rates are extremely low, but NIR fluctuates around 0.

*Population pyramids- a representation of a country’s population displayed by age and gender groups on a bar graph. Normally shows the % of the total pop in 5-year age brackets with youngest at base of pyramid and oldest at the top. The length of the bar represents the % of total pop in that group. Males on left, females on right.*

*Dependency ratio- the number of people who are too young or too old to work, compared to the number of people who are.*

*Sex ratio- the number of males per 100 females.*

*Census- an enormous data source containing various geographical information about a population.*

Key Issue 4: Why might the world face an overpopulation problem?

Thomas Malthus proposed in his *Essay on the Principle of Population* 1798, that the population grows faster than the food supply. He claimed that while population expanded at a geometric or exponential rate, food supply increased arithmetically or linearly.

However, the continued evolution of agriculture has continued to provide the world with an adequate amount of food. The problem now is distribution of food, not the actual production of it. Also, the birth rates declined sharply in the latter part of the 20th century, thus the world population expanded to only 6 billion compared to Malthus’s predicted 10.

Neo-Malthusians claim that more LDC’s are in stage 2 of the demographic transition that ever before in history, thus putting a larger strain on the food supply. They also modified Malthus’s theory by stating that the population growth is out-stripping not just food production, but a wide variety of resources, such as oil, natural gas, etc.

Critics of Malthus claim that population growth stimulates new technology and that as strain is put on any resource, the inventive human being will simply develop an alternative method once it is economically feasible.

*Pandemic- a disease that occurs over a wide geographic area and affects very high proportion of the population.*

*Epidemiology- the study of diseases that affect large numbers of people.*

*Epidemiologic transition- an alternative form of the demographic transition that associates various degrees of medical advancement with the stages of population growth shown in the d. t.*

STAGE 1: pestilence and famine. Infectious and parasitic diseases are primary causes of death. Black Plague

STAGE 2: receding pandemics; diseases spread quickly as poor people crowd into rapidly growing industrial cities. Cholera

STAGE 3 & 4: degenerative and human-created diseases; vaccination virtually eliminates infectious disease in MDC. The life expectancy continues to expand and chronic disorders such as heart attacks, cardiovascular diseases, and cancer begin to grow more prevalent. STAGE 5: some propose that an age of the reemergence of infectious and parasitic diseases will happen, as the once eradicated diseases adapt and become immune to the antibiotics that have been used to control them AIDS (acquired immunodeficiency syndrome) has been the most lethal epidemic in years. 99% of new cases within the last decade have been in LDC’s, most notably in sub-Saharan Africa. As a result, these countries have seen their CDR soar when it should be dropping. (Most of these countries are in Stage 2 of the dtm)