

## Population NOTES

**Prophecy of Malthus** – the fate of human kind was that due to human nature concerning food and passion, the only way to *maintain* populations (instead of it increasing) was through war, pestilence, famine and disease.

**Human Demography** – the study of human populations and the factors affecting these populations

**Population Dynamics** – the study of population growth and change (for ALL populations – not just humans)

### Factors affecting Population Control:

**Density-dependent:** competition for resources, predation, parasitism, disease

**Density-independent:** natural catastrophes (flood, fire, etc), anthropogenic (human induced – habitat destruction, bioaccumulation of pesticides, global climate change, etc)

### Environmental Impact

**I = Population x Affluence x Technology**

One child born in the U.S. has 30 times the impact as a child born in a developing country

### Factors Affecting Birth Rates & Fertility Rates

- Level of education of females - ↑ education = ↓ birth rate
- Level of affluence of family - ↑ affluence = ↓ birth rate
- Importance of children as part of the labor force - ↑ manual labor = ↑ birth rate
- Access to services (medical, health, family planning) - ↑ rural area = ↑ birth rate
- Age of female at marriage - ↑ age = ↓ birth rate
- Employment opportunities for women - ↑ opportunities = ↓ birth rate
- Religious & Cultural Beliefs - ↑ r & c taboos = ↑ birth rate
- Stability of governments - ↑ stability = ↓ birth rate

**Total Fertility Rate (TFR)** – average # of children a woman will have during her child-bearing years (15-44)

**Replacement-level Fertility** – the # of children that a couple needs to replace themselves (should be 2)

**Growth Rate (%)** =  $[(\text{Birth Rate} - \text{Death Rate}) + (\text{Immigration} - \text{Emigration})] \div \text{Current Population}$

**Crude Birth Rate (CBR)** = Birth Rate per 1000 people per year; **Crude Death Rate (CDR)** = Death Rate per 1000 people per year

**Annual rate of population change (%)** =  $(\text{CBR} - \text{CDR}) \div 10$

\*\*\* **Doubling Time:** The average amount of time for the population to double =  $70 \div \text{growth rate of the population}$   
(don't change the % when dividing)

### Infant mortality increases when:

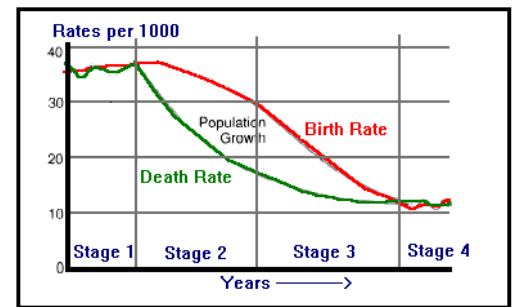
- There is inadequate food supply
- Poor sanitation leading to poor health
- Greater abuse of substances
- Higher level of poverty

**Infant mortality** and **Life Expectancy** are the two statistics that give the best view of a country's overall health

## \*\*\*\*\*Demographic Transition:

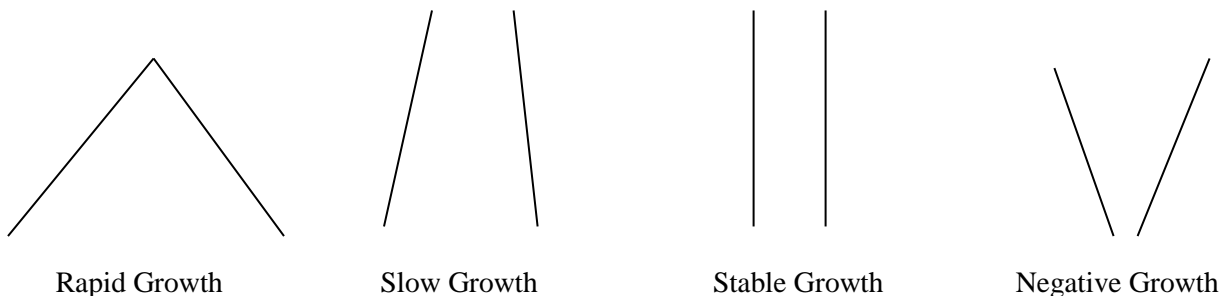
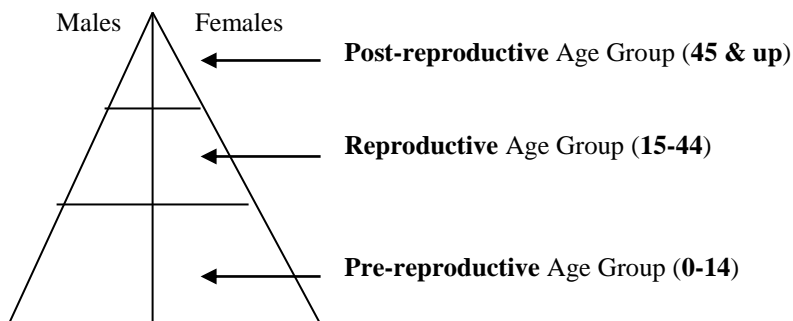
- Stage 1: **Pre-Industrial** – both Birth Rate & Death Rate are high due to general living conditions (during Hunter-Gatherers & Agricultural Society)
- Stage 2: **Transitional** - when Birth Rates remain high but Death Rate declines due to advances of medicine and better sanitation
- Stage 3: **Industrial** – Birth Rate starts to decline because of easier lifestyle during industrial revolution and Death Rates remain low
- Stage 4: **Post-Industrial** – Both Birth Rates and Death Rates are low because of factors mentioned above. This leads to Zero Population Growth (ZPG) – where the births = deaths
- Stage 5: **?Information age?** – birth rate is lower than death rate so there is negative growth (the population is decreasing)

## The Demographic Transition



\*\*\*\*\*Notice that the Population Growth Rate keeps *INCREASING* until ZPG is achieved.

**Age Structure Diagrams (Population Pyramids) :** shows the # and the proportion of males to females in each age group in the population for a given year



\*\*\*\*\***Determine which one by looking at the PRE-reproductive and Reproductive groups** (NOT the Post-reproductive group)

## Methods use to slow or stabilize population growth in developing countries:

Islamic leaders have reinterpreted Mohammed's words as supporting birth control

Egypt – promotes marrying at a later age, popular TV programs promote birth control

China – incentives (medical, dental care) to limit # children to one  
penalties (all govt. fund, perks) cease if a 2<sup>nd</sup> child is born

India – men having 3 or more children have to have a vasectomy  
increased adult literacy programs and education on birth control

Mexico – educational reform, family planning and healthcare

Nigeria – better health care through more nurses & doctors, marriages at later ages