Human Population And The Environment

Things to be learned…

➢ Population growth, variations among nations

➢ Population explosion

➢ Family welfare program

➢ Environment and human health

➢ Human rights

➢ Value education

➢ Women and child welfare

➢ Role of information technology in environment

➢ Case studies

Introduction

- Population :-

    Group of individuals of species occupying a definite geographic area at a given time

Population Growth

■ Global Population Growth-

Year	Population (in billions)
1700	0.6
1850	1
1930	2
1960	3
1987	5
2000	6.1
2050	9.1

- The population will continue to grow till equilibrium is achieved.

  i.e. Number of births = Number of deaths

- Population growing by 90 million/year.
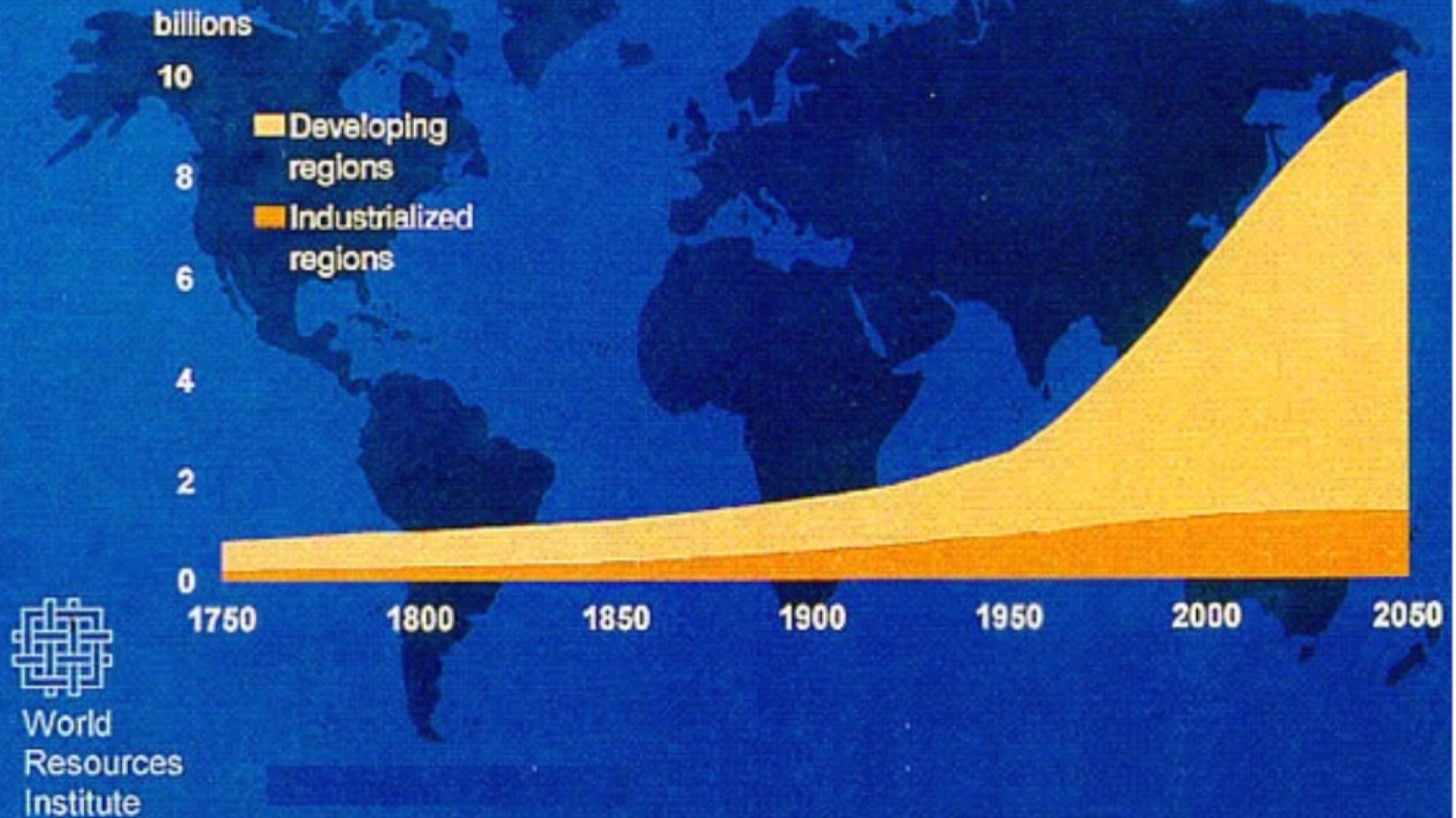
- Of which 93 % in developing countries

❖ **Reasons for growth-**

- Spread of public health programmes in developing countries
- Rise in food production after World War II

❖ Every second 4-5 children are born and 2 people die

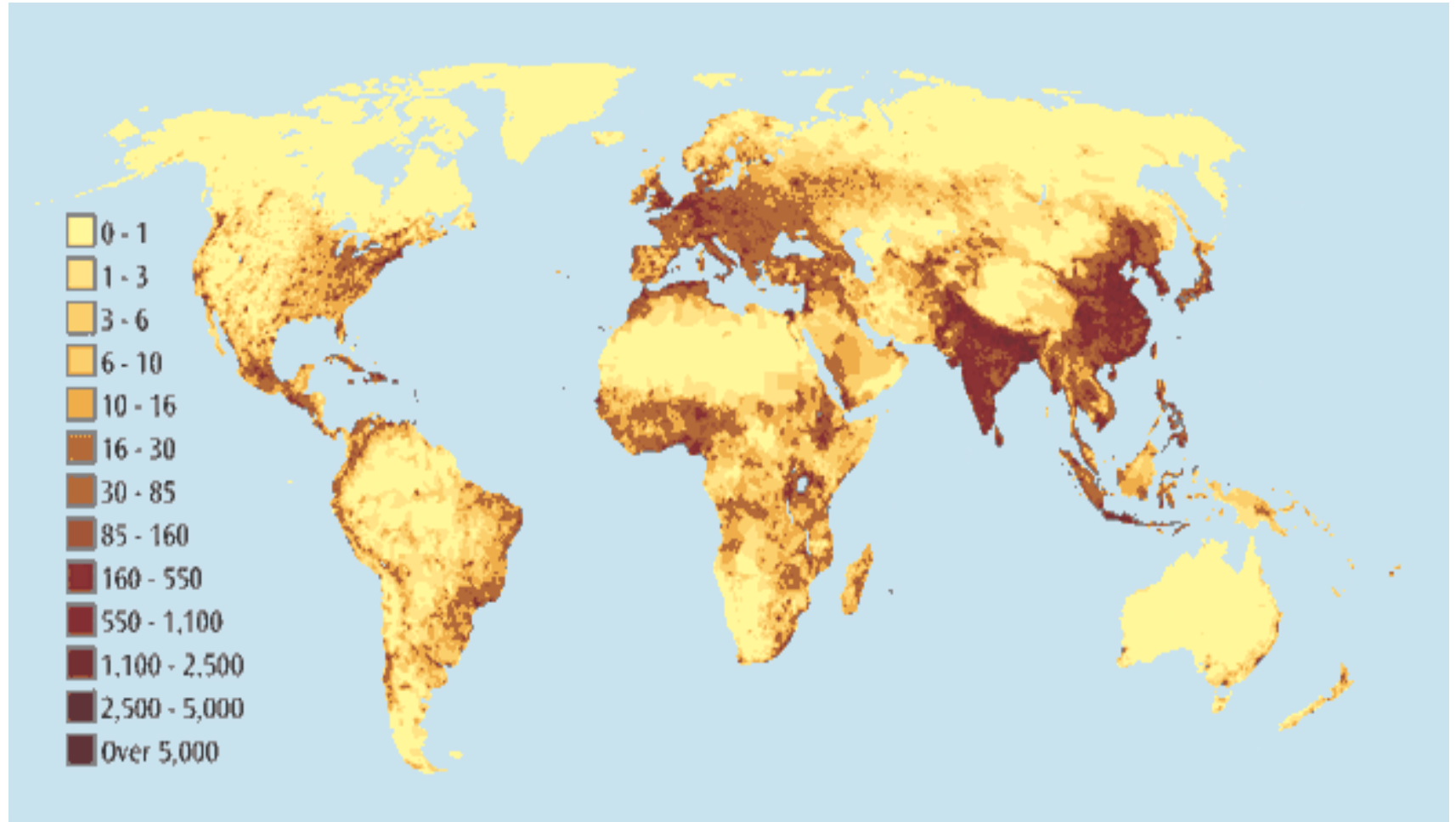❖ Nearly 2.5 persons gets added every second

First 10 largest countries (**<u>Projected for 2050</u>**)

Sr. No.	Country	Population (In Millions)
1	India	1628
2	China	1369
3	United States	404
4	Indonesia	312
5	Nigeria	304
6	Pakistan	285
7	Brazil	244
8	Bangladesh	211
9	Ethiopia	188
10	Congo	182

Human Population Density

Legend:
- 0 - 1
- 1 - 3
- 3 - 6
- 6 - 10
- 10 - 16
- 16 - 30
- 30 - 85
- 85 - 160
- 160 - 550
- 550 - 1,100
- 1,100 - 2,500
- 2,500 - 5,000
- Over 5,000

- [..\EVS\Course PPT\Videos\7 World Population Explosion.flv](..\EVS\Course PPT\Videos\7 World Population Explosion.flv)
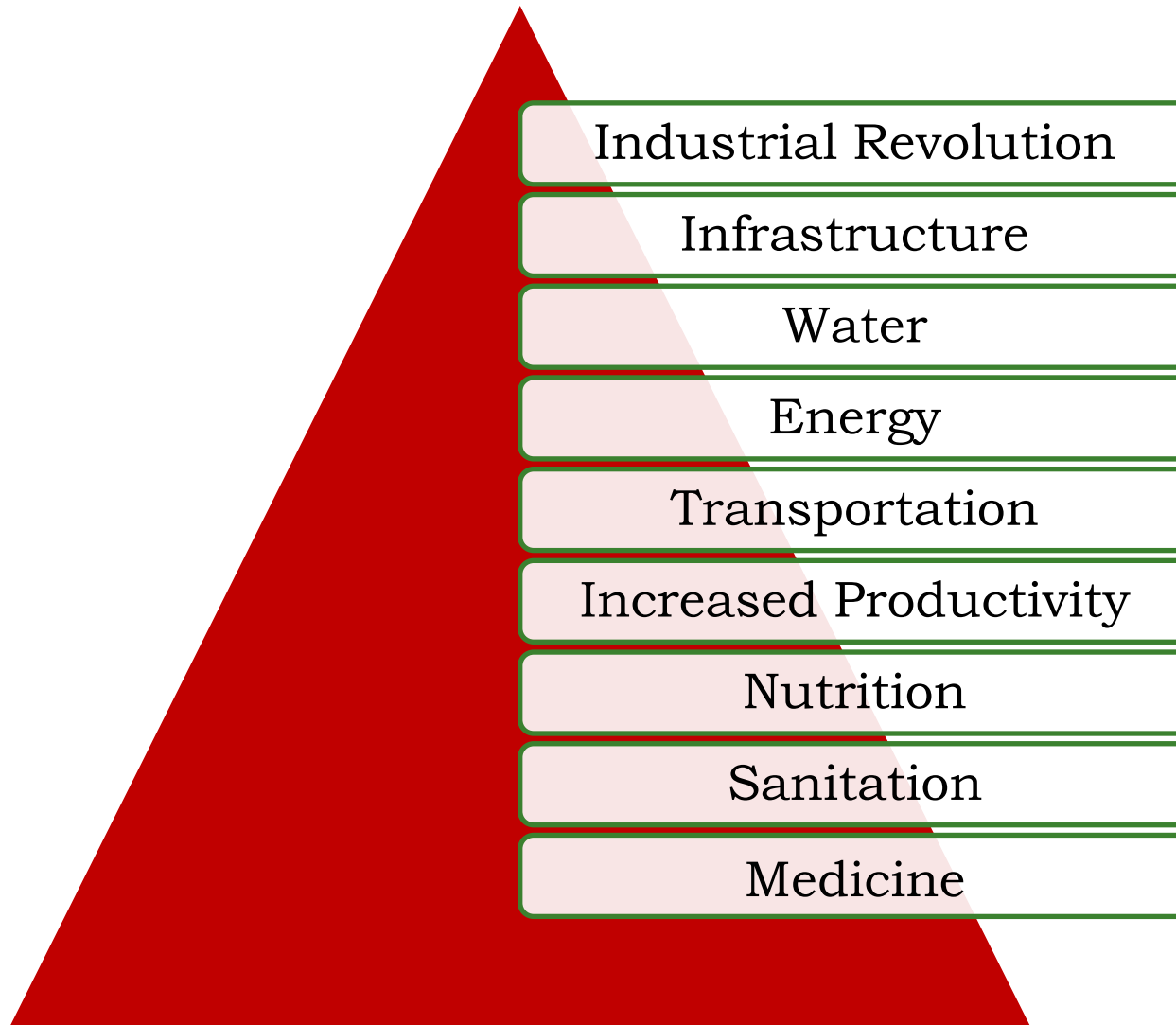
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Maximum Carrying Capacity

- The maximum population size that can be supported by environment.

❑ Carrying capacity increased by clever use of science and technology.

❑ Limit to max population size in given space and resource base.

❑ Population has been able to maintain Exponential Growth during past 100 years.

Industrial Revolution

Infrastructure

Water

Energy

Transportation

Increased Productivity

Nutrition

Sanitation

Medicine

Population Growth Rate

- Human population growth rate is measured as annual average growth rate.

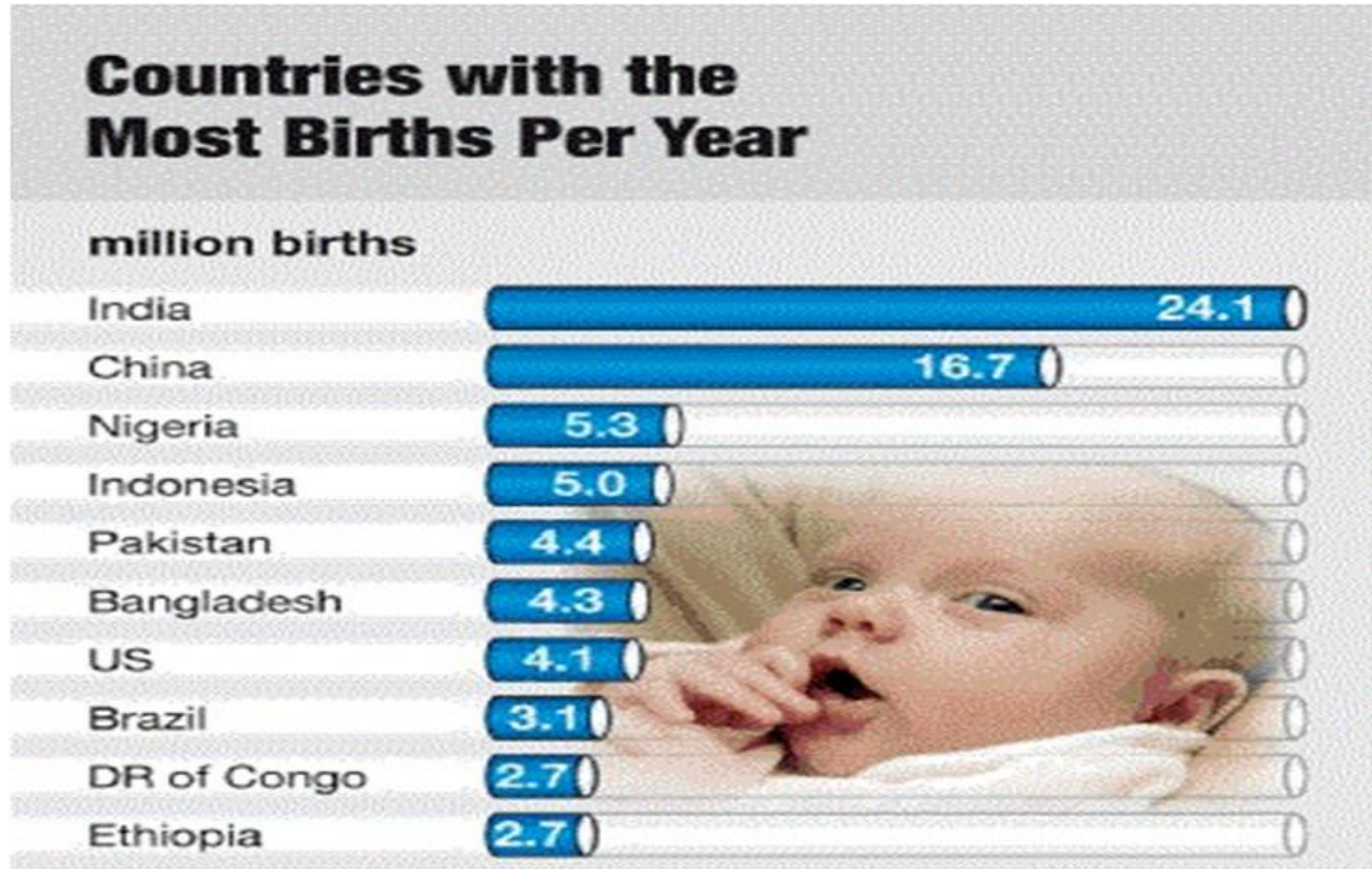$$\text{Avg annual growth rate (\%)} = \frac{(P_2 - P_1)}{(P_1 * N)} * 100$$

Where,

P_1 = Population size in previous Census

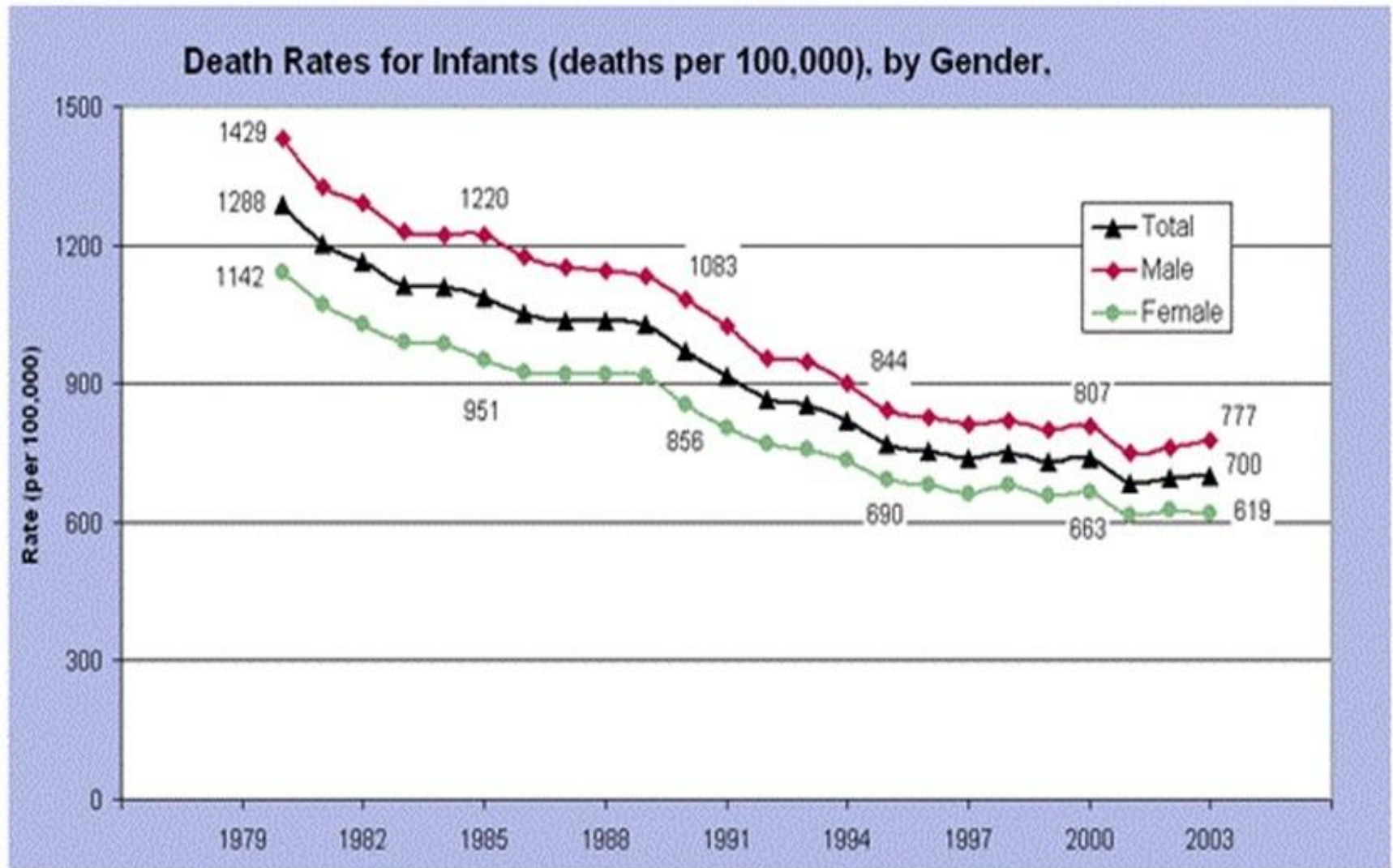P_2 = Population size in present Census

N = No of years between two Census

Growth Rate depends on Several Factors

1. Rate of Birth (Fertility)

Countries with the Most Births Per Year

million births

Country	million births
India	24.1
China	16.7
Nigeria	5.3
Indonesia	5.0
Pakistan	4.4
Bangladesh	4.3
US	4.1
Brazil	3.1
DR of Congo	2.7
Ethiopia	2.7

- **Birth Rate-** Number of babies produced per 1000 individuals

- **Total Fertility Rate-** Avg number of children that would be born to women in her lifetime

- **Replacement Level-** Number of children a couple must produce to replace themselves
  - It is always higher than 2.0. Since some children die before reaching reproductive age.

Death Rates for Infants (deaths per 100,000), by Gender.

2. Mortality

- Death Rate per thousand individuals.

- Reduction in mortality rate because of industrial revolution, Improved personal Hygiene, Modern medicines etc.
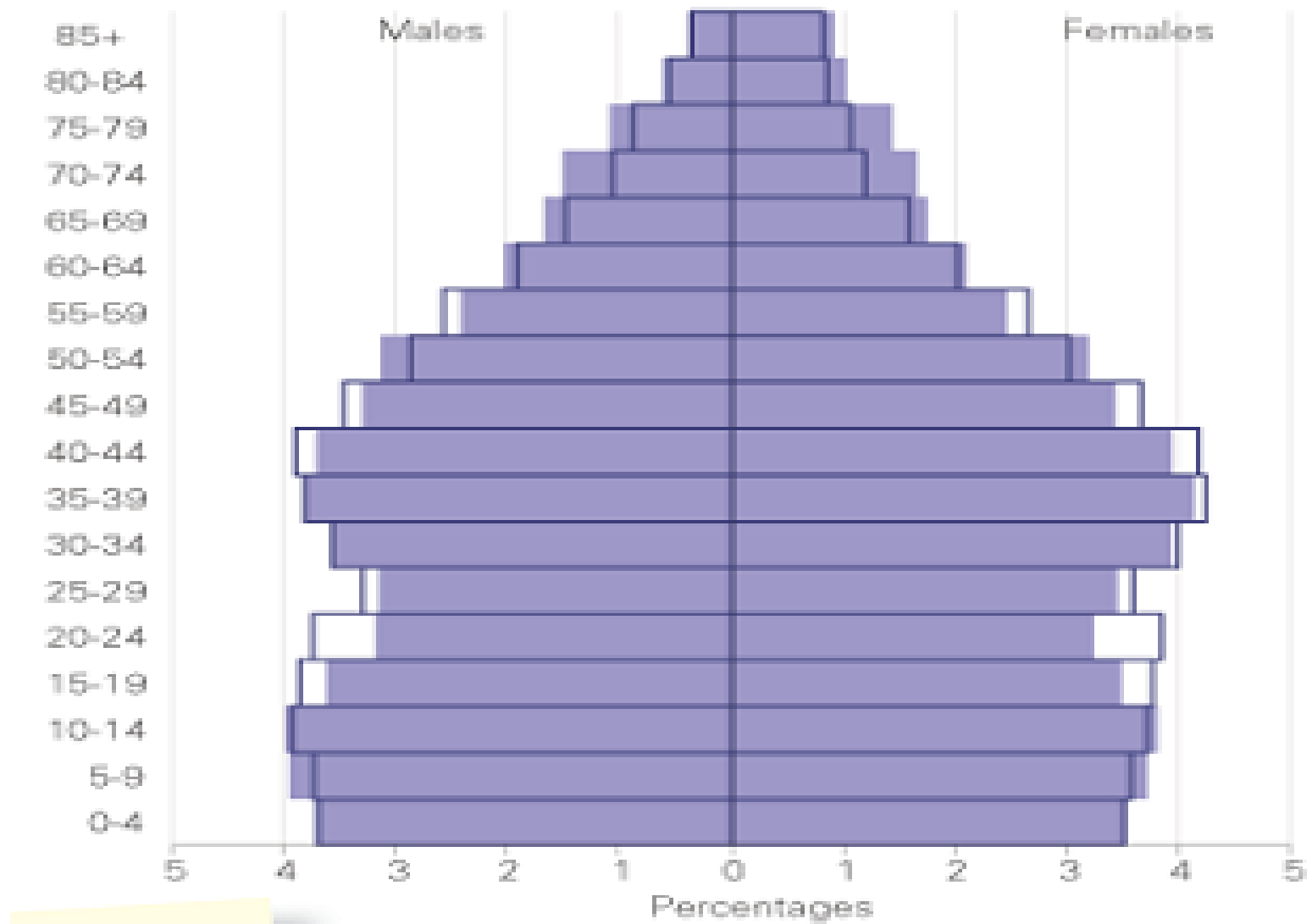
3. Migration

- Movement of individuals into or out of place/ country (within country).

4. Age and sex structure

- Proportion of individuals of different ages within that population is age structure.

- Proportion of active males and females in a population influence population growth.

Population Explosion

■ An enormous growth of human beings is called as population explosion.
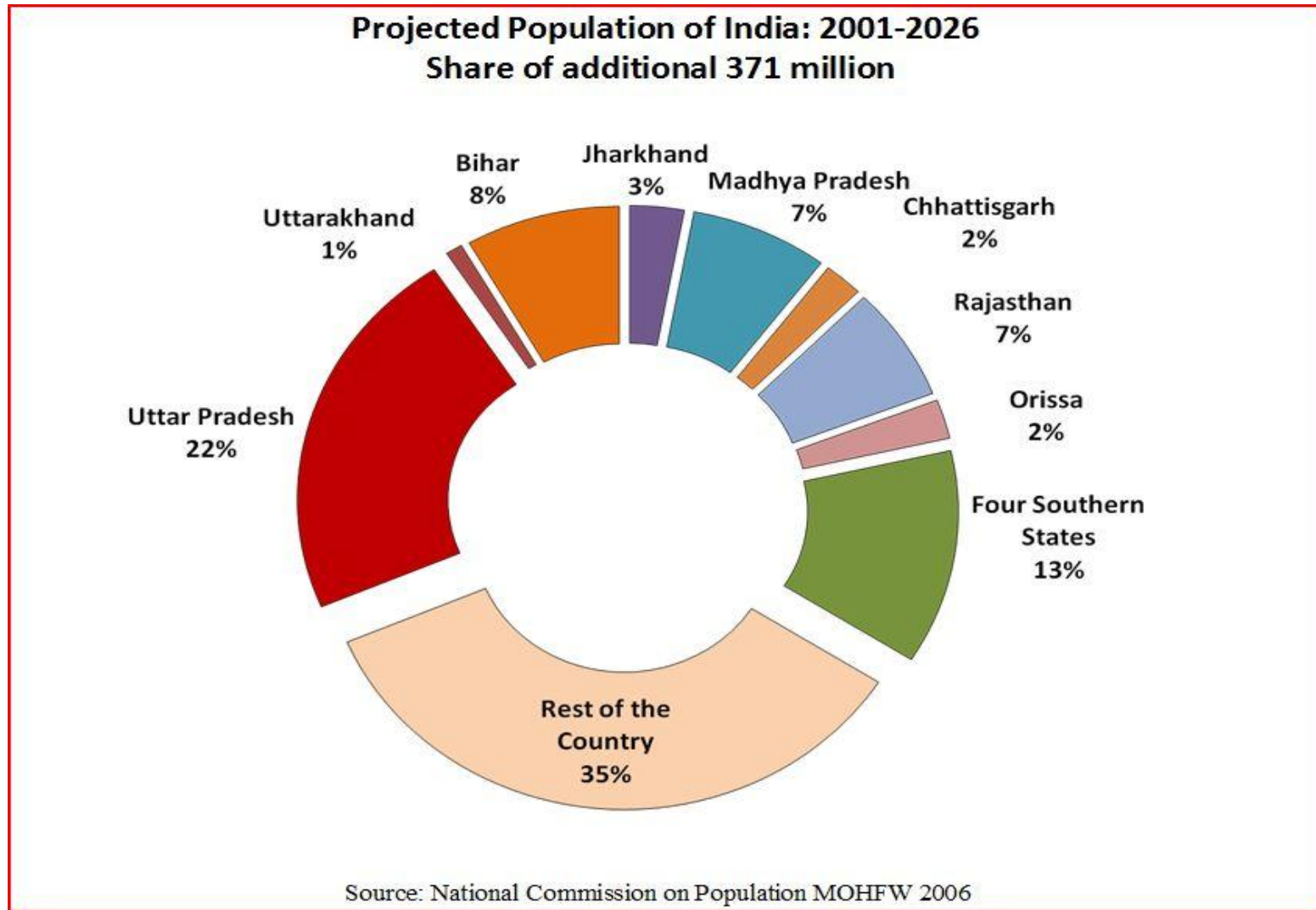
Causes

1. Fertility
2. Reduced Infant Mortality Rate
3. Increased food production
4. Longevity

Impacts

- <u>Pollution</u> – increase in cars and emission of greenhouse gases into atmosphere

- <u>Deforestation</u> –to build houses for increasing population

- <u>Freshwater Availability</u> – increase in waste production and contamination of water

- <u>Natural Resources</u> – increase burning of fossil fuels, excessive use of coal

- <u>Global Warming</u> – overall increase in temperature and chances of natural disasters

- <u>Habitat Loss</u> – change in ecosystems affecting tropic levels
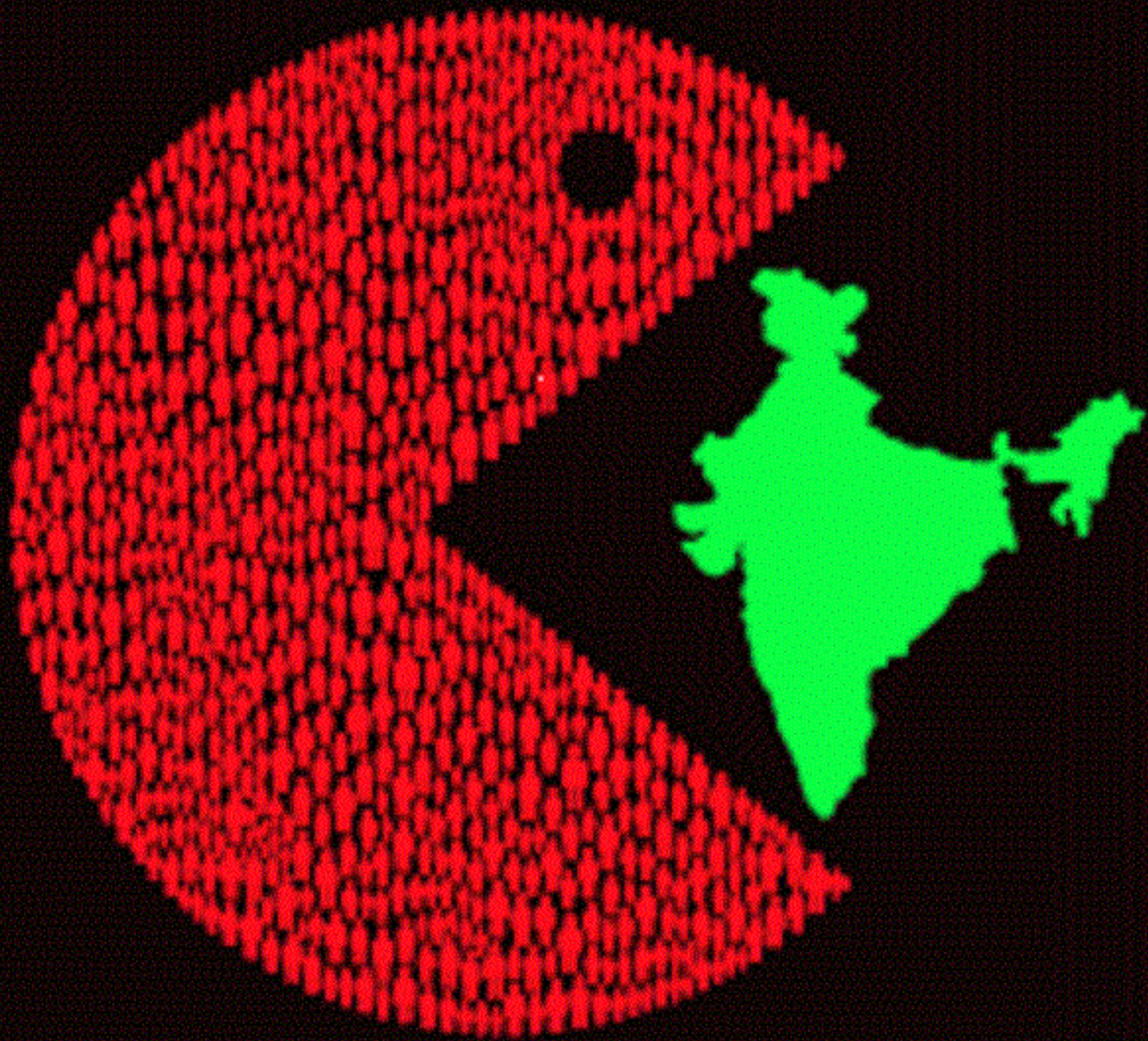
- [..\EVS\Course PPT\Videos\7.2 The Effects of Overpopulation.flv](..\EVS\Course PPT\Videos\7.2 The Effects of Overpopulation.flv)

Population Explosion in India

Projected Population of India: 2001-2026
Share of additional 371 million

Source: National Commission on Population MOHFW 2006

Reasons…

- Higher fertility rate due to failure of family planning

- Predominating religious or superstitious nature

- Importance of male child

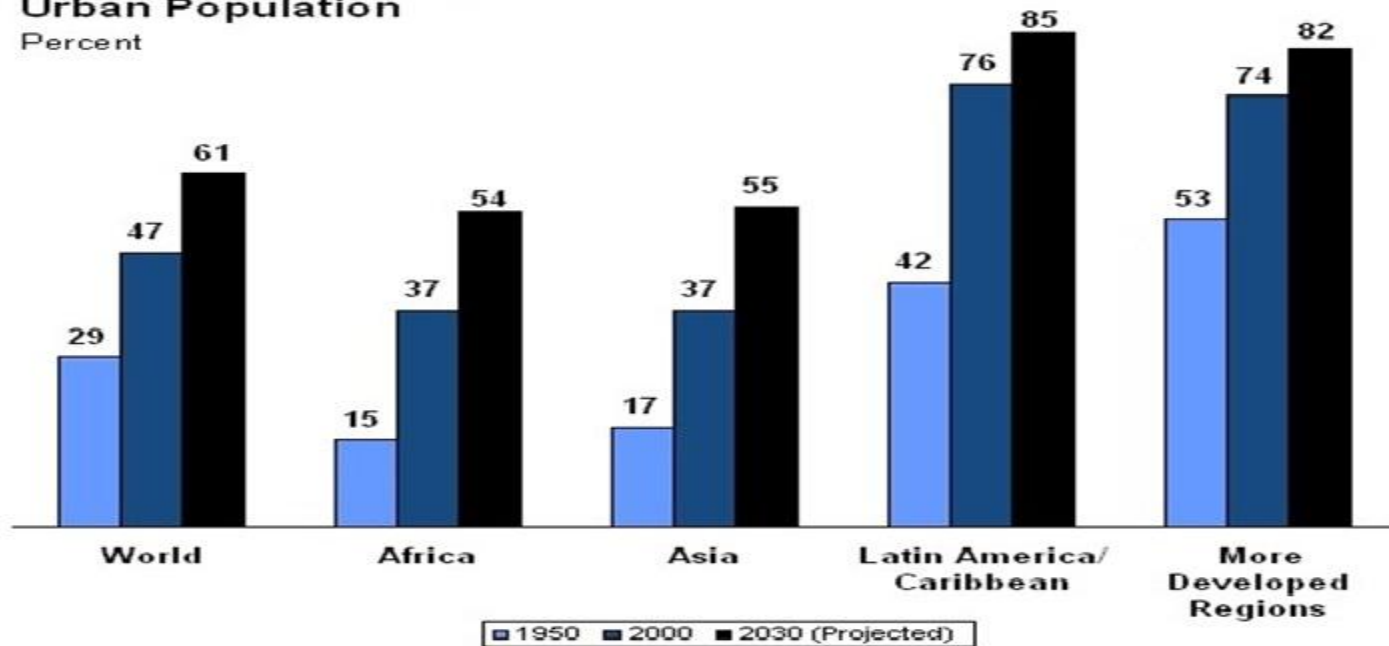- Social insecurity

- Poverty and backwardness

Urbanization

Its Implications…

Urbanization

- In 1950, 29 % people lived in urban areas
- By 2000, 47 % people lived in urban areas
- By 2030, estimates show that this will grow to 61 %
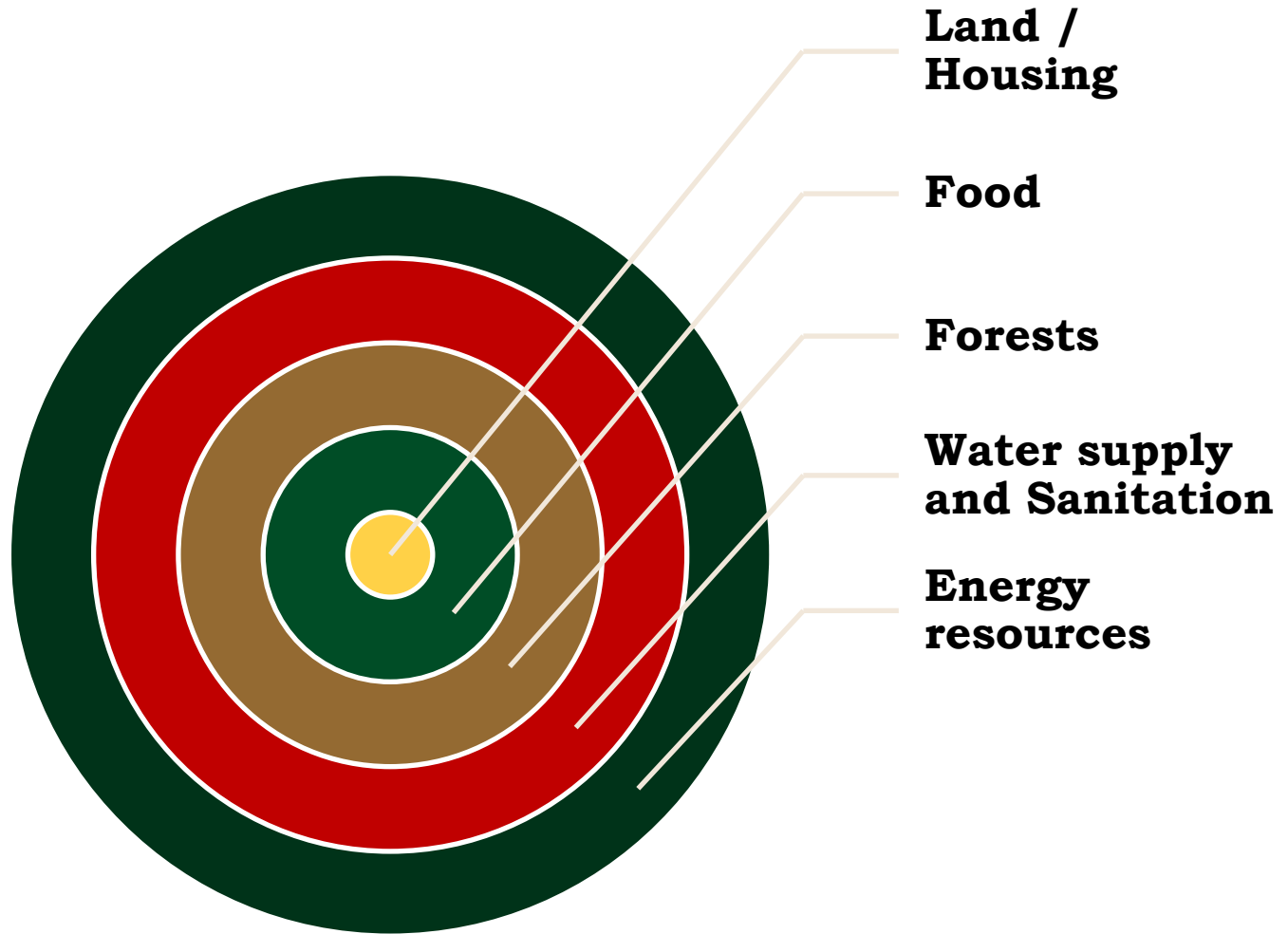
Trends in Urbanization, by Region

Urban Population
Percent

Region	1950	2000	2030 (Projected)
World	29	47	61
Africa	15	37	54
Asia	17	37	55
Latin America/Caribbean	42	76	85
More Developed Regions	53	74	82

Causes

- Rural problems like drought, discrimination, unemployment

- All major developments in cities

- Better life in cities

- Standard of living

Environmental Implications

Land / Housing

Food

Forests

Water supply and Sanitation

Energy resources

Family Welfare Programmes

- Basic training of Multi Purpose Health Worker

- Village health guides schemes

- Rural Health Training Center

- Family welfare Training and Research Centre, Mumbai

Human Health and Environment

- The huge population pressurizes and degrades the environment physically, chemically and biologically.

- The state of health of people depends on clean environment.

- The changes in human environment increases the incidence of many diseases.

- Various diseases-
  - HIV/ AIDS, TB, Malaria, Water borne diseases

Continued…

- Climate and Health

  - Bhopal Gas Tragedy, Hazardous chemicals like pesticides, DDT, endosulfan etc

- Infectious diseases

- Water related diseases

- Risks due to chemicals in food

- Cancer and the environment

- ..\..\Videos\Population Problems.flv

Human Rights

- The universal declaration of human rights adopted by UNO on 10th Dec 1948

- On May 16, 1994 the United Nations drafted declaration of Human Rights and Environment

  - The principles

  - Significance

- Equity-Wealth, resources, energy distribution

- Nutrition, Health and Human rights

- Intellectual property rights

Fundamental Rights Include

- Rights of life liberty and security of a person
- Right to own property
- Right to freedom of opinion and expression
- Right to an adequate standard of living
- Right to education , freedom of thought, conscience and religion.
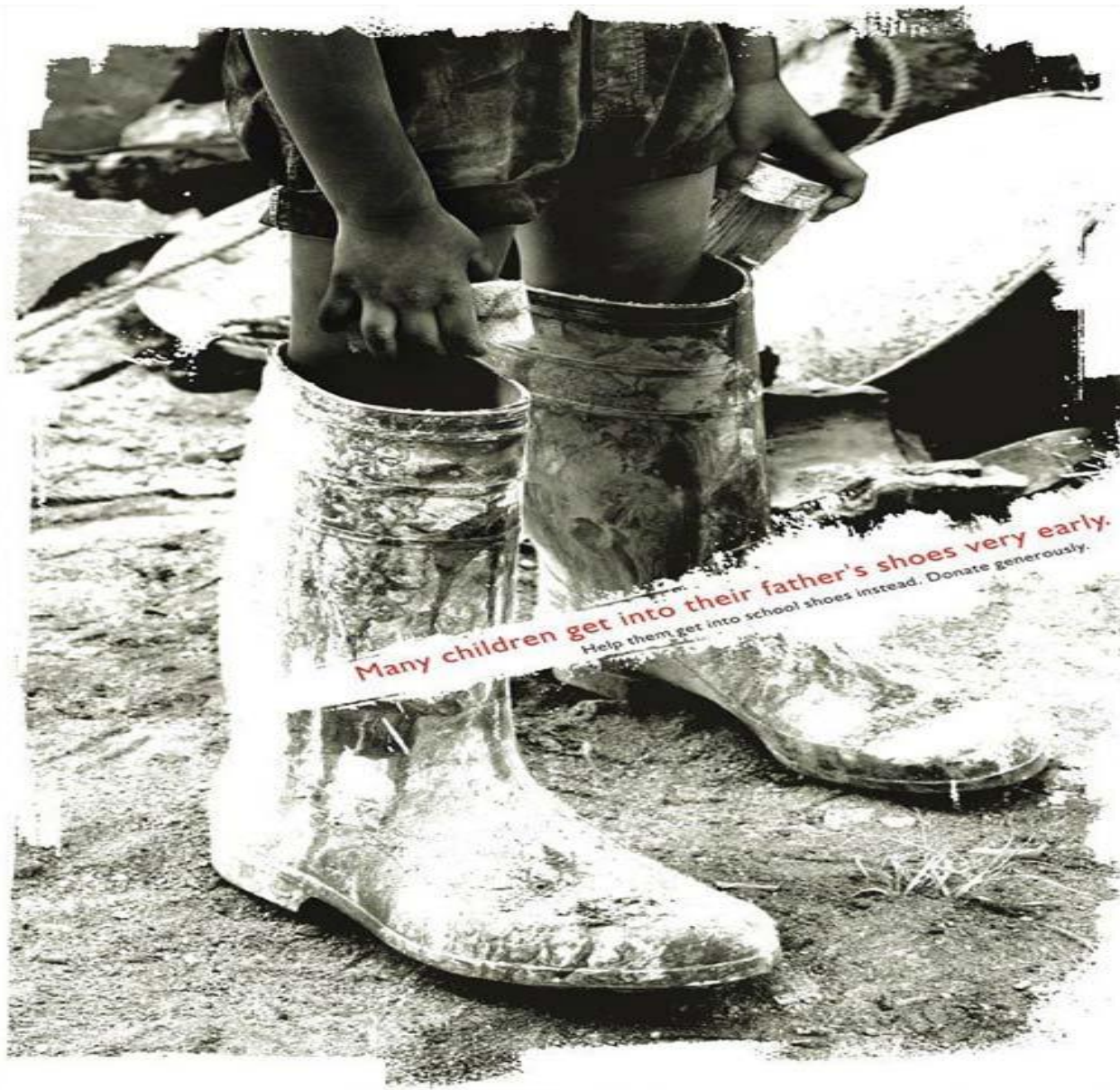- Right to freedom from torture and degrading treatment.

Value Education

Values deal with ones own principles and standards from which we judge what is right and wrong behaviour.

- Environmental values-Preservation of Environment

- Valuing nature-Ecologist view

- Valuing cultures-Tribal people closeness

- Social justice-Traditional things

- Human heritage-Protection of wilderness

- Equitable use of resources

- Common property resources-Government taking over

- Ecological degradation

Adopt. You will receive more than you can ever give.

Many children get into their father's shoes very early. Help them get into school shoes instead. Donate generously.
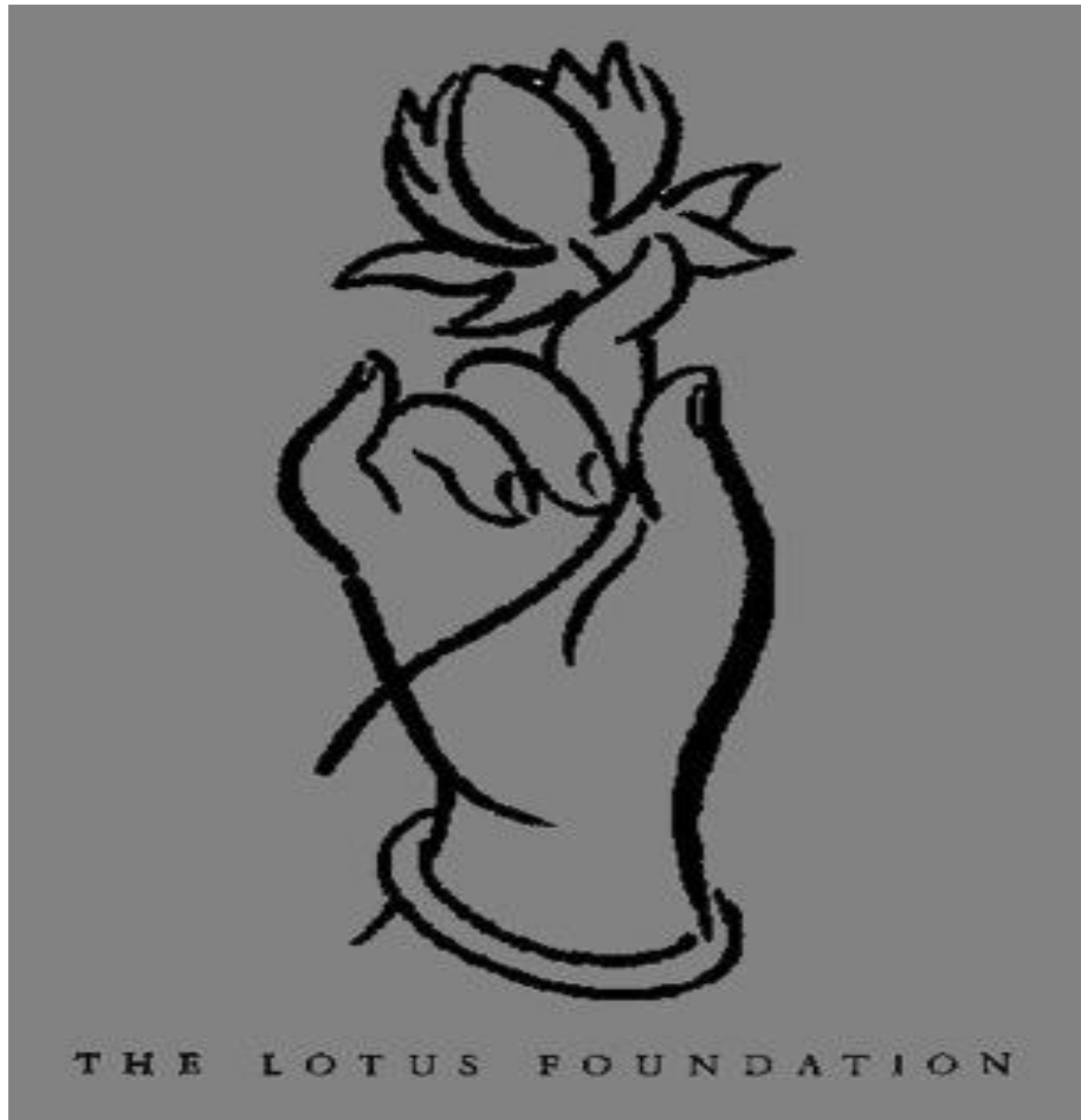
Women and Child Welfare

- ***"You can tell the condition of a nation by looking at the status of its women" – Jawaharlal Nehru***

- Women and children constitute three fourth of human population

- Usually the soft targets

- Suffer mainly because they are weaker, helpless and economically dependent.

- Collection and burning of household fuel by women

- Women's problems with regard to water supply and sanitation

- Women and children in hazardous occupation

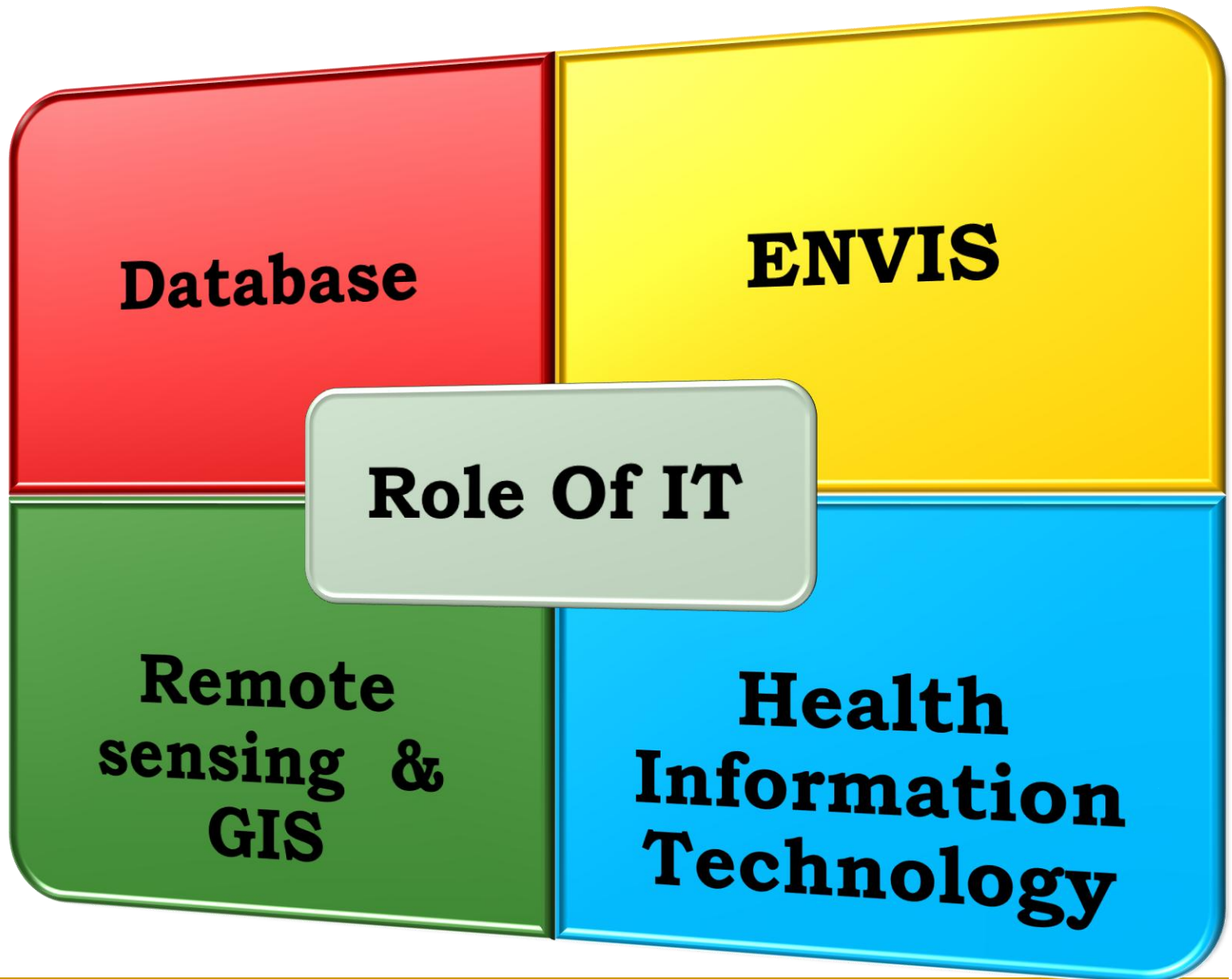- Problem of cookstove pollution

Women and Child Welfare in India

- Sarva Shikshan Abhiyan

- Balika Samridhi Yojana

- Integrated Child development service.

- Special programs for development of women and children in rural area

Integrated Child Development Services Scheme

THE LOTUS FOUNDATION
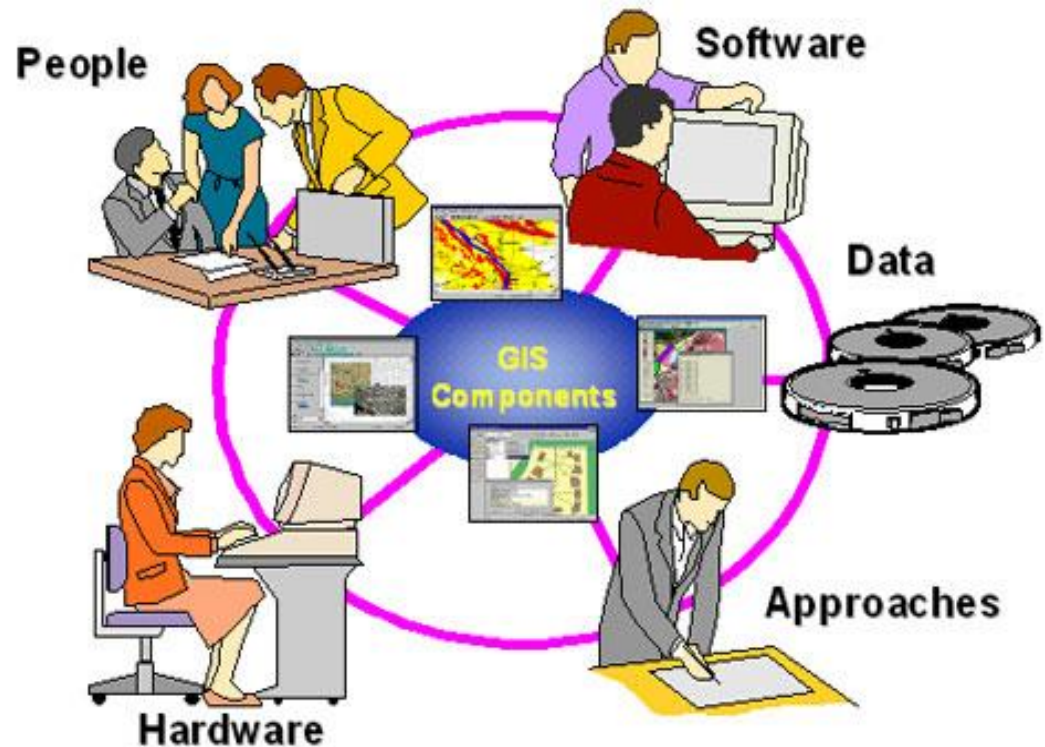
Role of IT in Environment and Health

❖ **Database**

✓ Ministry of Environment & Science

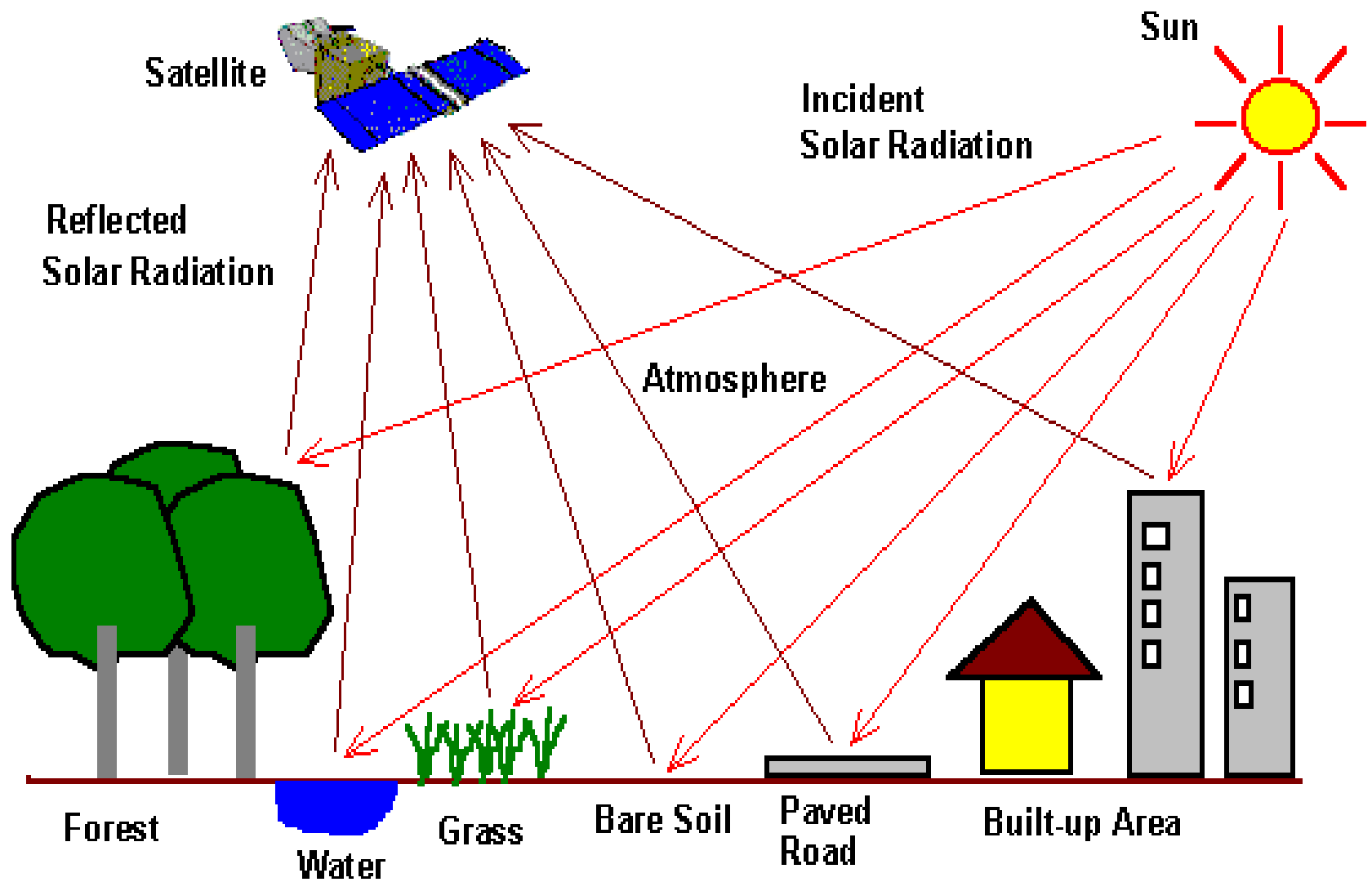✓ Wildlife database

✓ Forest cover database

✓ Diseases database

❖ **Environmental Information Systems (ENVIS)**

✓ Network in pollution control

✓ Clean / Green Technologies

✓ Renewable energy

❖ **Remote sensing and Geographical Information Systems (GIS)**

✓ Resource mapping

✓ Environmental Conservation

✓ Water logging

✓ Deforestation

Health Information Technology

- ✓ Audio, visual and data communication for medical diagnosis, treatment
- ✓ MRI (Magnetic Resonance Imaging)
- ✓ Testing DNA
- ✓ Creating DNA database
- ✓ Finger prints
- ✓ Medical records
- ✓ X ray
- ✓ Laser Treatments

Thank You…