

GEOA-CC4-09-TH REGIONAL PLANNING AND  
DEVELOPMENT

Topic No. 6

DEMOGRAPHIC AND ENVIRONMENTAL INDICATORS OF  
DEVELOPMENT.

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# DEMOGRAPHIC INDICATORS OF DEVELOPMENT

Demographic characteristics of a country provide an overview of its population size, composition, territorial distribution, changes over time and the components of changes such as origin, mortality and social mobility. Population statistics include indicators that measure the population size, sex ratio, density and dependency ratio while vital statistics include indicators such as birth rate, death rate, and natural growth rate, life expectancy at birth, mortality and fertility rates. These indicators for the country as well as the states help in identifying areas that need policy and programmed interventions, setting near and long-term goals and deciding priorities and understanding their role in the pattern of an integrated development for the country.

- **Crude Birth Rate** Annual number of births per 1,000 population.
- **Crude Death Rate** Annual number of deaths per 1,000 population.
- **Rate of Natural Increase** It refers to the difference between the number of live births and the number of deaths occurring in a year, divided by the mid-year population of that year, multiplied by a factor (usually 1000). It is equal to the difference between the crude birth rate and the crude death rate. This measure of the population change without migration effect.
- **Life Expectancy at Birth** The number of years newborn children would live if subject to the mortality risks prevailing for the cross-section of population at the time of their birth.
- **Mortality Rate** or **death rate**, is a measure of the number of deaths (in general, or due to a specific cause) in a particular population, scaled to the size of that population, per unit of time. Mortality rate is typically expressed in units of deaths per 1,000 individuals per year;
- **Maternal mortality ratio** - Annual number of deaths of women from pregnancy-related causes per 100,000 live births. Maternal mortality refers to deaths due to complications from pregnancy or childbirth.
- **Infant Mortality Rate** The **infant mortality rate** is the number of **deaths** of children under one year of age per 1,000 live births.
- **Sex Ratio** The sex ratio is the ratio of males to females in a population
- **Dependency Ratio** The dependency ratio is a measure of the number of dependents aged zero to 14 and over the age of 65, compared with the total population aged 15 to 64. This demographic indicator gives insight into the number of people of non-working age, compared with the number of those of working age. It is also used to understand the relative economic burden of the workforce, and has ramifications for taxation.
- **Total Fertility Rate** The number of children that would be born per woman if she were to live to the end of her child-bearing years and bear children at each age in accordance with prevailing age-specific fertility rates.

- **Level of Literacy**

Literacy is the ability to both read and write with understanding a short, simple statement in everyday life. It is a key factor for socio-economic progress. There should be minimum difference between male and female literacy. Higher rate of male literacy and low rate of female literacy indicate lack of development and presence of gender discrimination.

**Adult Literacy** It is the percentage of persons aged 15 and over who can read and write. In developed countries the adult literacy rate is much higher than the developing countries.

**Gross primary or secondary school enrolment ratio** - The number of children enrolled in a level (primary or secondary), regardless of age, divided by the population of the age group that officially corresponds to the same level. Greater enrolment ratio indicate greater level of development.

**Net attendance Ratio**- It indicates participation in schooling among those of official school age which is 6-11 for primary and 12-17 for secondary stage. Higher attendance ratio indicate better schooling facilities as more children attend school and level of development is higher.

**Status of Women or level of Gender Disparity**

Rate of gender violence, Female literacy and access of women to education, inheritance rights for women, effectiveness of family planning programs, ratio of women to men in various occupations , comparison of pay for similar work by men and women, number of women in international, national, regional, state and local government, percent of women in policymaking and decision making inheritance rights for women, loans given to women, average child bearing age etc. are the indicators of the status of women in a society. Strong position of women indicate a better level of gender development .Reduction of gender disparity indicate towards better level of development.

- **Health Indicators**

The health profile of the population of a country indicate the level of development it can achieve. It includes various indicators like immunization status, frequency and intensity of infections ,number of people vaccinated, mortality rates by causes, Epidemic and Pandemic frequencies, rates of use of antibiotics, physicians and health care facilities per capita etc. The better the quality of health standard of the population, the more developed the country is.

- **Socio-Political Indicators**

State of human Rights, individual freedom, political freedom and democracy, status of corruption and quality of regulation and enforcement of laws for people's protection without any bias are various indicators that indicate the level of development. Greater degree of freedom of movement and speech ensure a democratic environment. Lower levels of crime and offence and strict legal measures indicate greater personal security and protection of life and property. A stable elected government and proper policy measures help in increasing the levels of development in all respect. Existence of social security for the backward classes(both social and economic) help to bring about higher levels of development.

## ENVIRONMENTAL INDICATORS

- **Environmental indicators** are very important indicators as development should not take place at the cost of environment. It includes those that monitor aspects such as water quality, water availability, rate of deforestation, soil erosion, and existence and quality of habitats. The degree at which the society is responding to environmental changes and concerns, for example those policies, actions or investments that are introduced to solve the problem indicate the level of development for a country. Environmental indicators can be developed and used at a wide variety of geographic scales, from local to regional to national levels. Developed nations of the world should take appropriate measures to reduce the level of pollution and amount of waste generation and emissions of greenhouse gases. It becomes essential to provide decision-makers and the general public with relevant information on the current state and trends in the environment. It Helps decision-makers to better understand cause and effect relationships between the choices and practices of businesses and policy-makers versus the environment. Better developed nations should take steps to monitor and assess the effectiveness of measures taken to increase and enhance ecological goods and services.

- **Role in Climate Change** – The increase in generation of CO<sub>2</sub> and greenhouse gas emission intensities are related to greater levels of industrial development. But better levels of development should be associated with controlled and positive contribution towards reduction of pollution level so that climate change can be monitored effectively. The effects of increasing atmospheric greenhouse gases concentrations on global temperatures and the earth's climate and effects on ecosystems, human settlements, agriculture and other socio-economic activities are to be considered while determining the level of development of a country.
- **Effect on Ozone Layer** – Generation of ozone depleting substances and their control should be an important indicator for deciding the level of development. Stratospheric ozone depletion (e.g. over the Antarctic and the Arctic oceans) remains a source of concern due to the impacts of increased ultraviolet B radiation on human health, crop yields and the natural environment.
- **Status of Air Quality**– Intensities of emission of sulphur dioxide and nitrogen dioxide is the main reason behind air pollution. Causes of growing concentration of toxic air pollutants in both urban and rural areas. The reduction of these emissions is an indicator for higher levels of development.
- **Reduction in Waste Generation**– Controlled waste generation intensities and scientific disposal indicate a higher level of development. It should not affect the quality of freshwater available. Waste water treatment facilities, measures for waste minimisation, waste prevention and recycling and their rates and status all indicate the level of development achieved by a particular country.
- **Status of Freshwater Resources** – The intensity of use of water resources, the impacts and rate of water pollution, acidification, toxic contamination on human health, the state of drinking water treatment and reducing pollution loads from municipal and industrial sources are all related to the level of development. Countries with higher level of development should have low levels of water pollution, lower levels of contamination and better treatment facilities of water resources ensuring safe water for all people of the country.

- **Use of Forest Resources and conservation measures**– The level and intensity of use of forest resources, the impact of human activities on forest diversity, natural forest growth and regeneration are important indicators for level of development for a country. The pressure of human activities like agriculture, industrialization, expansion of transport network, unscientific and illegal forestry, burning of forests result in loss of forest cover and indicate lower levels of development. The scientific and limited use of forest resources, greater afforestation and use of substitutes all indicate higher levels of development.
- **Use of Fish and Marine Resources** –Regulated intensity of the use of fish resources, scientific fishing techniques, coastal development and reducing pollution loads from land-based sources and marine transport are indicators for higher levels of development.
- **Use of Energy Resources** –Greater usage of non conventional energy resources, minimum use of fossil fuels , use of green energy and reduction of pollutants from power generation and transport all indicate higher levels of development.
- **The Biodiversity Status** – The impact of human activities on biodiversity loss can be physical that include habitat alteration and loss through changes in land use and cover, chemical that includes toxic contamination, acidification, oil spills etc or biological including decrease in population and species structure through the release of exotic species or by the commercial exploitation of wildlife resources are very prominent in less developed countries. Control of extinction and maintenance of habitat resulting in enriching biodiversity indicate a higher level of development.