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POPULATION AND ASSOCIATED ISSUES

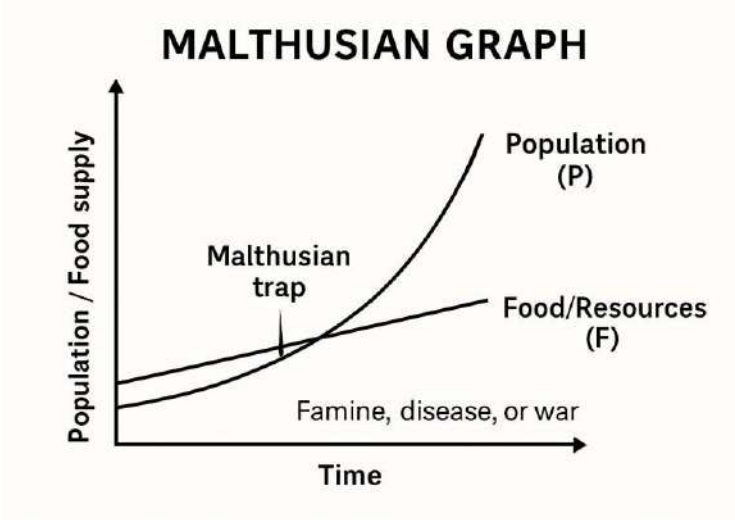
Malthusian Population Theory

The Malthusian Population Theory is a concept in demography and economics, first proposed by British scholar Thomas Robert Malthus in his 1798 work, An Essay on the Principle of Population. The theory explores the relationship between population growth and resources, particularly food supply.

Population Growth: Malthus argued that populations tend to grow exponentially (1, 2, 4, 8, 16...), doubling at regular intervals if unchecked.

Food Supply: In contrast, he believed that food production increases only arithmetically (1, 2, 3, 4, 5...), due to limitations in land and technology.

Inevitable Crisis: Because population grows faster than food supply, Malthus predicted that this imbalance would eventually lead to shortages, famine, disease, and increased mortality—what he called "Malthusian catastrophes."



Checks on Population: Malthus identified two types of checks to control population:

Preventive Checks: Measures that reduce the birth rate, such as moral restraint, delayed marriage, and celibacy.

Positive Checks: Factors that increase the death rate, including famine, disease, and war.

Criticisms and Modern Relevance

- Technological Advances: Critics argue that Malthus underestimated the impact of technological progress in agriculture, which has allowed food production to keep pace with or even exceed population growth in many regions.
- Demographic Transition: Modern demographic theories suggest that as societies develop, birth rates decline, leading to stabilized populations.

- Contemporary Concerns: Despite criticisms, the Malthusian perspective remains relevant in discussions about sustainability, resource depletion, and environmental limits.

The Malthusian Population Theory was foundational in shaping early debates about population and resources. While some of its predictions have not materialized due to advances in technology and changes in social behavior, the core idea—that unchecked population growth can strain resources—continues to influence discussions on global sustainability.

Demography : Formal and Social Demography

Demography is the scientific study of human populations, focusing on their size, structure, distribution, and changes over time. Within demography, two main branches are recognized: formal demography and social demography.

Formal Demography: Formal demography is the quantitative study of population processes. It focuses on the measurement and mathematical analysis of population dynamics. Key Areas:

- Birth rates (fertility)
- Death rates (mortality)
- Migration
- Population growth and projections

Methods:

Uses statistical and mathematical models to analyze population data, often independent of social or economic factors, as calculating life expectancy, population doubling time, or constructing population pyramids.

Social Demography : Social demography (or population studies) examines how social, economic, cultural, and political factors influence population trends and structures.Key Areas:

- The impact of education, income, and health on fertility and mortality
- The role of culture and policy in migration patterns
- Social consequences of population changes (e.g., aging, urbanization)

Methods:

Combines demographic data with insights from sociology, economics, anthropology, and other social sciences, as studying how women's education levels affect birth rates, or how urbanization influences family size.

Both formal and social demography are essential for understanding population dynamics. Formal demography provides the tools to measure and predict changes, while social demography helps explain why these changes occur and what their broader impacts might be.

Demographic Variables: An Overview

Demographic variables are statistical characteristics of populations used to identify and analyze groups within a society. These variables are essential in fields such as marketing, sociology, public health, and education, as they help organizations and researchers understand the composition and needs of different population segments.

Variable	Key Use
Age	Dependency ratio, labor force
Gender	Gender equity, policy targeting
Education Level	Economic productivity, social mobility
Marital Status	Household and fertility analysis
Occupation	Economic structure
Income	Inequality, poverty, welfare
Religion	Cultural and demographic analysis
Ethnicity / Caste	Social policy, affirmative action
Household Size	Housing, consumption, welfare planning
Urban/Rural	Infrastructure and development
Migration Status	Urban planning, labor markets
Fertility Rate	Population growth
Mortality/Life Expectancy	Health system performance

Distribution Pattern of Population in the World

The distribution pattern of population refers to how people are spread across the Earth's surface. Population distribution is highly uneven — some areas are densely populated, while others are almost uninhabited. Patterns of Population Distribution-

Clustered / Concentrated

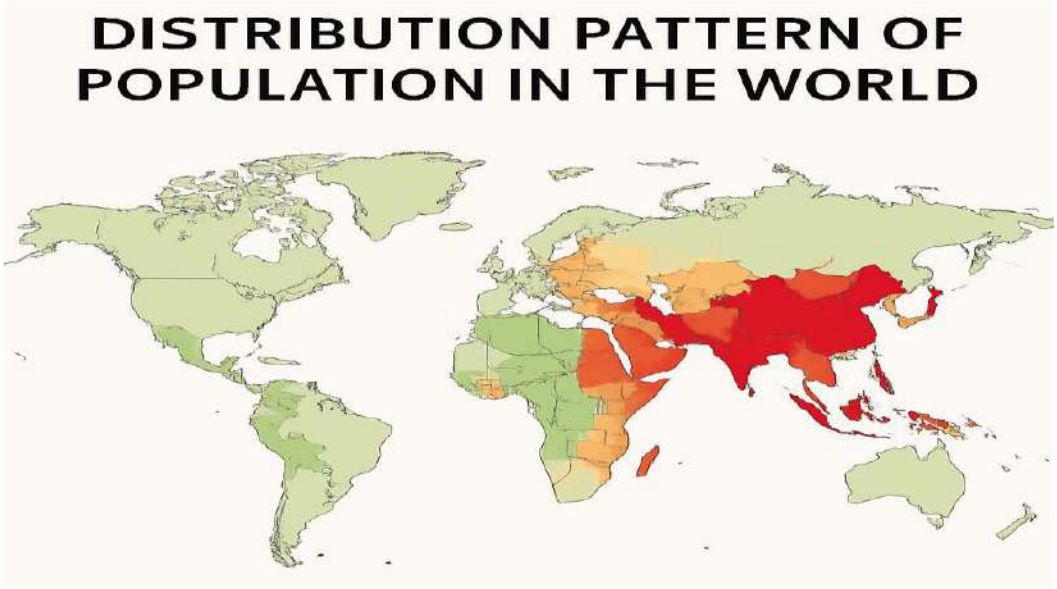
People live very close together in specific regions. Reasons: Fertile plains, river valleys (Ganges, Yangtze), industrial development, water access, favorable climate

- East Asia (China, Japan, Korea)
- South Asia (India, Bangladesh, Pakistan)
- Europe (especially Western Europe)
- Southeast Asia (Java in Indonesia, Philippines)

Sparse / Scattered

Very few people per square km Reasons: Harsh climate, poor soil, remoteness, lack of infrastructure

- Deserts (Sahara, Arabian)
- Mountains (Himalayas, Andes)
- Cold regions(Siberia, Greenland, Antarctica)
- Rainforests (Amazon, Congo)



Most Densely Populated Regions (2025 estimates)

Region	Features
South Asia	India, Bangladesh – river valleys, agriculture
East Asia	China, Japan – industrialized, urban
Europe	High urbanization, small area
Southeast Asia	Archipelagos with dense settlements
Northeastern USA	Megacities and industrial centers

Least Densely Populated Areas

Area	Reason
Greenland	Cold, icy
Sahara Desert	Arid, water scarcity
Amazon Basin	Dense forest, inaccessible
Tibet Plateau	High altitude
Antarctica	**Extreme cold is uninhabited continent of world - no settlements**

Factors Affecting Population Distribution

Physical Factors:

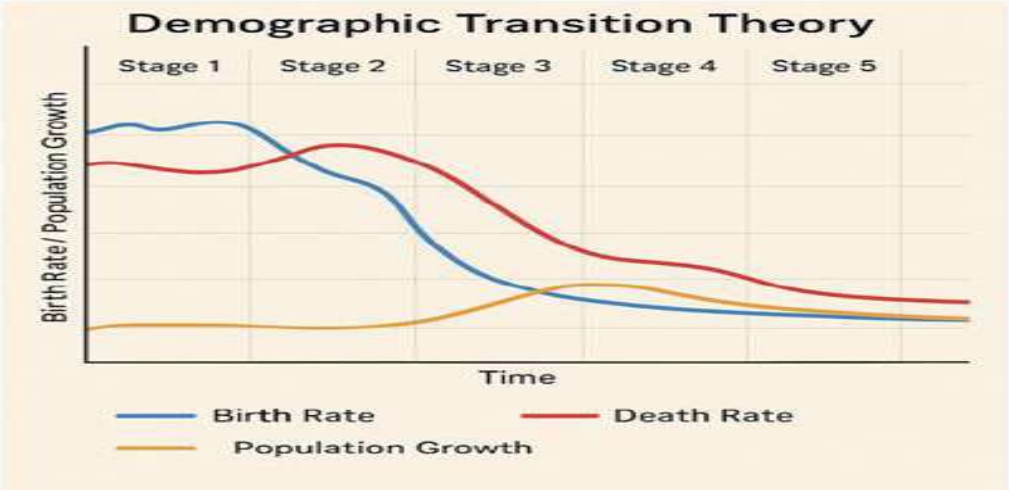
- Climate: Moderate climates preferred
- Soil: Fertile soil supports agriculture
- Water availability: Rivers, lakes
- Terrain: Flat lands preferred over mountains

Human Factors:

- Urbanization: Cities attract population
- Economic opportunities: Jobs in industry, services
- Infrastructure: Roads, electricity, internet
- Politics: Peace, governance, migration policy

Demographic Transition Theory (DTT)

Demographic Transition Theory explains how population growth changes over time as a country develops economically. It links birth rates, death rates, and population growth to stages of industrial and social development.



The 5 Stages of Demographic Transition

Stage	Birth Rate	Death Rate	Population Growth	Examples
1	High	High	Very slow or zero	Pre-industrial societies
2	High	Rapidly falling	Very rapid	Early developing countries
3	Falling	Slowly falling	Slows down	Middle-income countries
4	Low	Low	Stable or slow growth	Developed countries
5	Very low	Low or rising	Negative or zero growth	Some advanced economies

Stage 1: High Stationary

- Birth rate: High — due to lack of contraception, infant mortality, need for labor
- Death rate: High — due to poor healthcare, disease, famines
- Population growth: Minimal or zero
- Example: Prehistoric or tribal societies (no country is in Stage 1 today)

Stage 2: Early Expanding

- Death rate falls rapidly — better food, sanitation, medicine
- Birth rate remains high
- Population grows rapidly
- Example: 19th-century Britain, current Sub-Saharan African countries

Stage 3: Late Expanding

- Birth rate declines — due to urbanization, education, family planning
- Death rate continues to fall slowly
- Population growth slows
- Example: India, Mexico, South Africa (in transition)

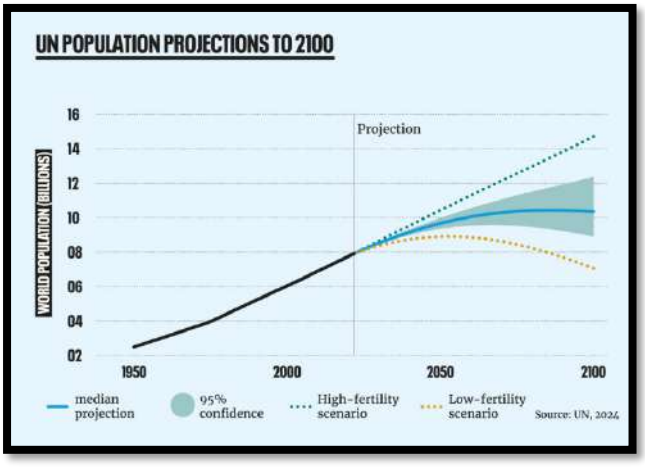
Stage 4: Low Stationary

- Birth and death rates are both low
- Population stabilizes
- Lifestyle: Urban, educated, women in workforce
- Example: USA, Australia, China (nearing Stage 4)

Stage 5 Declining

- Birth rate drops below death rate
- Population declines (aging population)
- Example: Japan, Germany, Italy, South Korea

World Population Prospects 2024 is the most recent set of projections from the United Nations Population Division (UNPD), released every two years.



While other organisations also make detailed population projections, the UN's have traditionally been seen as the most authoritative and have a good track record of accuracy on the global scale.

Its most likely projection (called the medium variant) is for a population of 8.5 billion in 2030, crossing 10 billion by 2061, with the global population peaking at 10.3 billion in the mid-2080s. After peaking, the global population will plateau and then gradually decline.

The 2024 prospects offer a more optimistic outlook than the previous 2022 prospects, with the peak of global population revised slightly lower.

Distribution Pattern of Population in India

India shows highly uneven population distribution — some regions are extremely dense while others are sparsely populated. This pattern is shaped by geography, climate, resources, and development.

Densely Populated Areas -These areas have over 500 people per sq. km

Region	Reasons for High Density
1. Indo-Gangetic Plains	Fertile soil, flat terrain, rivers, agriculture
2. Delhi NCR	Urbanization, jobs, infrastructure
3. Kerala	High literacy, healthcare, urban spread
4. Coastal Maharashtra, Tamil Nadu	Ports, trade, urban centres like Mumbai, Chennai
5. Punjab & Haryana plains	Irrigation, fertile land, agriculture

Moderately Populated Areas These areas have 200–500 people per sq. km

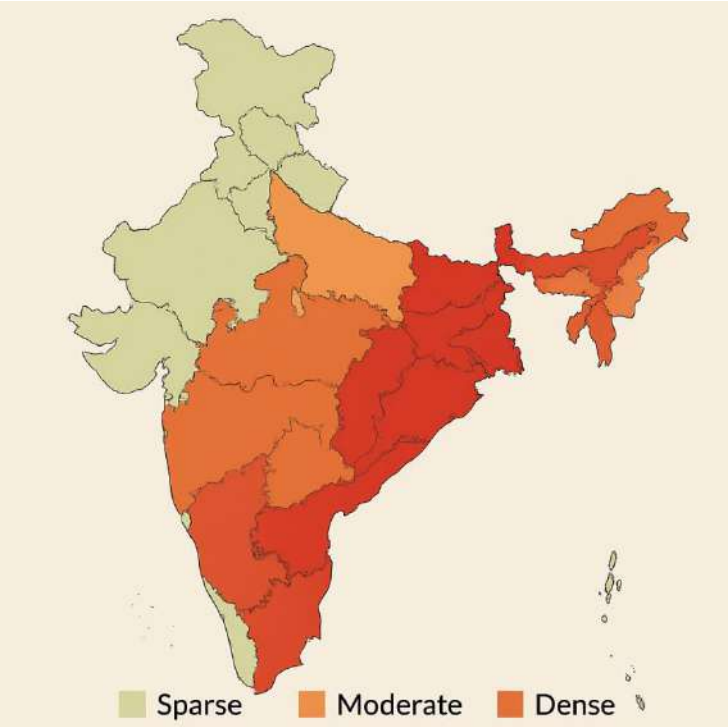
Region	Reasons for Moderate Density
Karnataka, Gujarat	Industrialization and mixed terrain
Madhya Pradesh, Odisha	Interior states with some urban centres
Andhra Pradesh	Coastal and agricultural balance

Sparsely Populated Areas These have below 200 people per sq. km .

Region	Reasons for Low Density
Rajasthan (Thar Desert)	Arid land, water scarcity
Himalayan States (J\&K, Himachal, Uttarakhand)	Rugged terrain, cold climate
North-East (except Assam)	Forested hills, remote areas
Chhattisgarh, Jharkhand (forested interiors)	Tribal regions, less infrastructure

Urban Population Clusters Highly dense cities with 10,000+ people per sq. km. These cities attract migration and have infrastructure, but also face overcrowding, slums, and pollution.

- Mumbai
- Delhi
- Kolkata
- Bengaluru
- Chennai
- Hyderabad



Key Factors Affecting Population Distribution in India

Physical:

- Fertile plains (Ganga, Brahmaputra)
- Climate (moderate areas more populated)
- Water bodies (rivers, coasts)

Human:

- Urbanization and job availability
- Infrastructure (roads, power, hospitals)
- Cultural and historical centers
- Agriculture and industrial development

Determinants of Population Change

Population change is influenced by three main demographic processes:

- **Birth Rate (Fertility)**
- **Death Rate (Mortality)**
- **Migration**

Fertility - Actual reproductive performance -the number of live births produced by an individual, couple, or population.

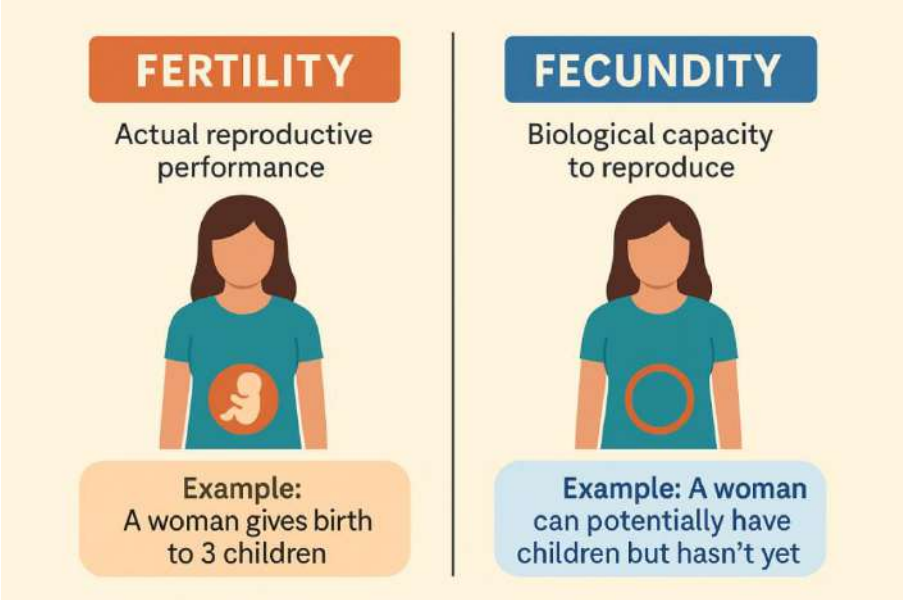
- It is realized reproduction, not just biological potential.
- Influenced by biological, social, cultural, and economic factors.
- Measured through fertility rates (CBR, GFR, TFR, etc.).

- A woman gives birth to 3 children → her fertility = 3.

Fertility and fecundity are related but not identical concepts in demography and reproductive studies.

Fecundity- The biological capacity to reproduce — the physiological ability to have children.

- Determined by health, age, reproductive system functionality, etc.
- Not directly visible unless observed over time or through medical examination.
- A woman may be capable of bearing children (high fecundity) but have none due to choice, infertility in partner, or social reasons.



Total Fertility Rate (TFR) The average number of children a woman would have over her lifetime if she experienced the current age-specific fertility rates (ASFRs) throughout her reproductive years (15–49 years).

- It is synthetic: assumes current fertility rates remain constant in the future.
- Affected by cultural, social, economic, and health factors.
- A direct indicator of potential population growth or decline.

Replacement Level of Population The fertility level at which a generation exactly replaces itself without migration. **Its value varies as -**Developed countries-2.1 children per woman and Developing countries-2.3 – 2.5 (to account for higher infant/child mortality)

- Not all children survive to adulthood.
- Slightly above 2 ensures enough daughters reach reproductive age.

TFR > Replacement level → Population grows (if mortality and migration are constant).

TFR = Replacement level → Stable population.

TFR < Replacement level → Population declines over time.

Key Influencing Factors:

- Cultural and religious beliefs
- Child marriage and fertility norms
- Education level, especially of women
- Access to contraception and family planning
- Infant mortality rate (higher mortality → more births as insurance)
- Economic needs (e.g., children as labor or old-age support)

Implications of High Fertility

High fertility means the average number of children per woman is well above the replacement level (≈ 2.1).It has wide-ranging social, economic, and environmental effects:

1. Demographic Implications

- Rapid Population Growth - Strain on land, housing, and public infrastructure.
- Youth Bulge - Large proportion of young dependents; high dependency ratio.
- Lower Median Age - Population remains younger for longer.
- Slower Demographic Transition -Countries stay in early stages of demographic change.

2. Economic Implications

- Pressure on Education Systems - More schools, teachers, and resources needed.
- Job Market Pressure - Future large labor force may face unemployment if job growth lags.
- Lower Per Capita Income - More people sharing limited economic resources.
- Higher Public Spending - Governments must invest more in health, childcare, and schooling.

3. Social Implications

- Reduced Female Workforce Participation- More women occupied in childbearing and rearing.
- Intergenerational Poverty- Families with many children may invest less per child in education and health.
- Health Risks for Mothers- Closely spaced and multiple births can lead to maternal mortality and morbidity.

4. Environmental Implications

- Resource Strain- More demand for water, food, energy, and land.
- Deforestation & Urban Sprawl -To accommodate housing and agriculture.
- Waste & Pollution Increase-Larger population generates more waste and emissions.

5. Political Implications

- Governance Challenges-Difficulties in delivering services equitably.
- Potential for Social Unrest- Youth unemployment can contribute to instability.
- Need for Population Policies- Family planning, health awareness, and women's empowerment.

Mortality- The number of deaths per 1,000 people in a year.

- High death rate - population declines
- Low death rate-contributes to growth if births are higher

Key Influencing Factors

- Healthcare and medical facilities
- Nutrition and sanitation
- Disease outbreaks (e.g., COVID-19, cholera, malaria)
- War and violence
- Age structure of population (more elderly → higher death rate)

Infant Mortality Rate (IMR) The infant mortality rate is the number of deaths of infants under one year of age per 1,000 live births in a given year and region. It is a key indicator of a country's health status, healthcare quality, and socio-economic conditions.

Importance of IMR:

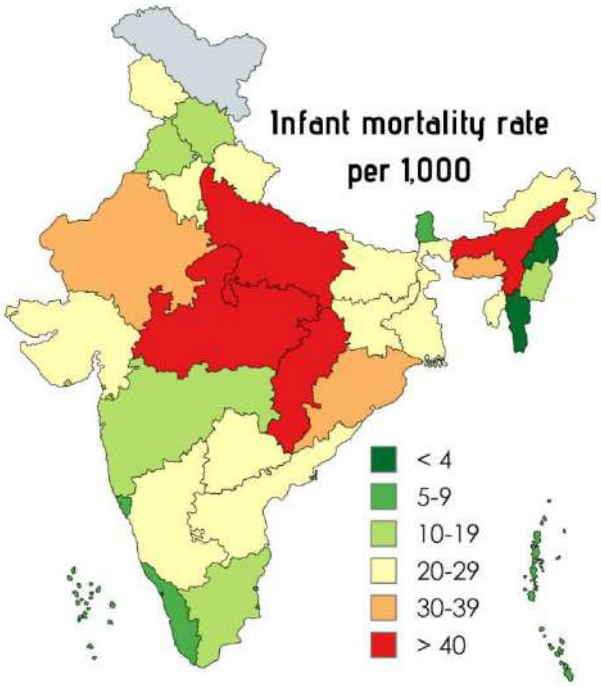
- Health Indicator: Reflects maternal health, quality of healthcare, nutrition, and sanitation.
- Socio-economic Measure: High IMR often indicates poverty, poor education, and weak public health systems.
- Policy Use: Guides government and international agencies in targeting health interventions.

Factors Affecting IMR:

- Maternal factors: Age, nutrition, health status, education.
- Healthcare: Availability and quality of prenatal, delivery, and postnatal care.
- Socio-economic: Poverty, sanitation, housing, clean water.
- Disease prevalence: Infectious diseases, malnutrition.

Pattern of IMR India's overall IMR has seen considerable progress, dropping to approximately 27 deaths per 1,000 live births by 2021.

- India's decline in infant mortality has been notable—down nearly fourfold from 129 per 1,000 in 1971 to 27 per 1,000 in 2021
- Several states like Maharashtra, Kerala, and Tamil Nadu have already met UN's Sustainable Development Goal (SDG) targets for infant and child health



Top Performers (Lowest IMR)

- States such as Nagaland (3), Mizoram (3), Sikkim (5), Kerala (6), Tamil Nadu (8), Goa (8), and Lakshadweep (8) have impressively low IMRs
- For instance, Mizoram stands out with an IMR of just 3 per 1,000 live births, a testament to its effective public health system and high immunization coverage

Lagging Behind (Highest IMR)

- Madhya Pradesh leads with the highest IMR at 40 deaths per 1,000 live births according to SRS 2022 data
- Other states with relatively high IMRs include Assam (34), Chhattisgarh (38), Madhya Pradesh (40), Odisha (35), and Uttar Pradesh (37)

Maternal Mortality Maternal mortality refers to the death of a woman while pregnant or within 42 days of the end of pregnancy (regardless of the pregnancy's duration or site), from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (like road accidents).

Importance of Reducing MMR

- Reflects women's health status and healthcare quality.
- Linked to Sustainable Development Goal 3.1: Reduce global MMR to <70 per 100,000 live births by 2030.

Types of Maternal Death

- Direct obstetric deaths – caused by pregnancy complications (e.g., postpartum hemorrhage, obstructed labour, eclampsia, unsafe abortion).
- Indirect obstetric deaths – due to pre-existing diseases worsened by pregnancy (e.g., heart disease, malaria, anemia).

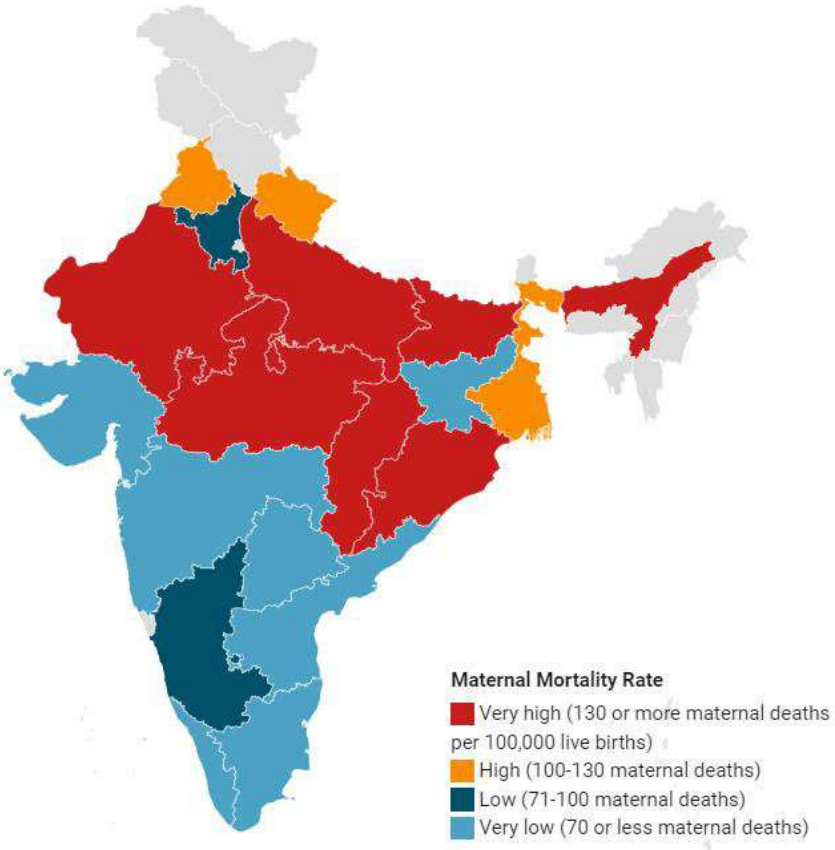
Causes of Maternal Mortality

Medical causes:

- Severe bleeding (postpartum hemorrhage)
- Infections after childbirth
- High blood pressure during pregnancy (preeclampsia/eclampsia)
- Complications from unsafe abortion
- Obstructed labour

Socio-economic causes:

- Poor nutrition
- Lack of antenatal care
- Poverty & illiteracy
- Delay in reaching medical facilities



Broader Trends and Highlights

Category	Highlights
Progress	National MMR has broadly declined over the past decade, marking improved maternal healthcare access and outcomes.
Top Performers	Southern states and some western counterparts show strong outcomes, with Kerala leading among them.
Areas Requiring Focus	Central, northern, and northeastern states still grapple with high MMR tied to infrastructural and socio-economic hurdles.
Recent Breakthroughs	Bihar indicates sharp improvement—MMR dropped from 118 to 100 exceeding national decline trends
Persistent Challenges	Madhya Pradesh, despite improvement, remains the highest at 159, calling for urgent healthcare interventions
Successful Case Study	Karnataka reduced MMR from 108 to 63 , showing a 41% drop and meeting SDG thresholds

Migration: Movement of people from one area to another (can be internal or international).

- Immigration (coming in) increases population
- Emigration (leaving) decreases population

Key Influencing Factors:

- Economic opportunities (jobs, wages)
- Political conditions (conflict, persecution, law)
- Environmental factors (drought, natural disasters)
- Education, urban lifestyle, global networks

Age-Sex Pyramid:

An age-sex pyramid, also known as a population pyramid, is a graphical representation that shows the distribution of various age groups in a population, which typically forms the shape of a pyramid when the population is growing. This chart is divided by gender (male and female) and age cohorts, providing valuable insights into the demographic structure of a society.

Horizontal Axis: Represents the population size, usually separated into males (left) and females (right).

Vertical Axis: Represents age groups, typically in 5-year intervals (e.g., 0-4, 5-9, 10-14, etc.).

Shape: The overall shape of the pyramid can indicate the population growth rate and demographic trends.

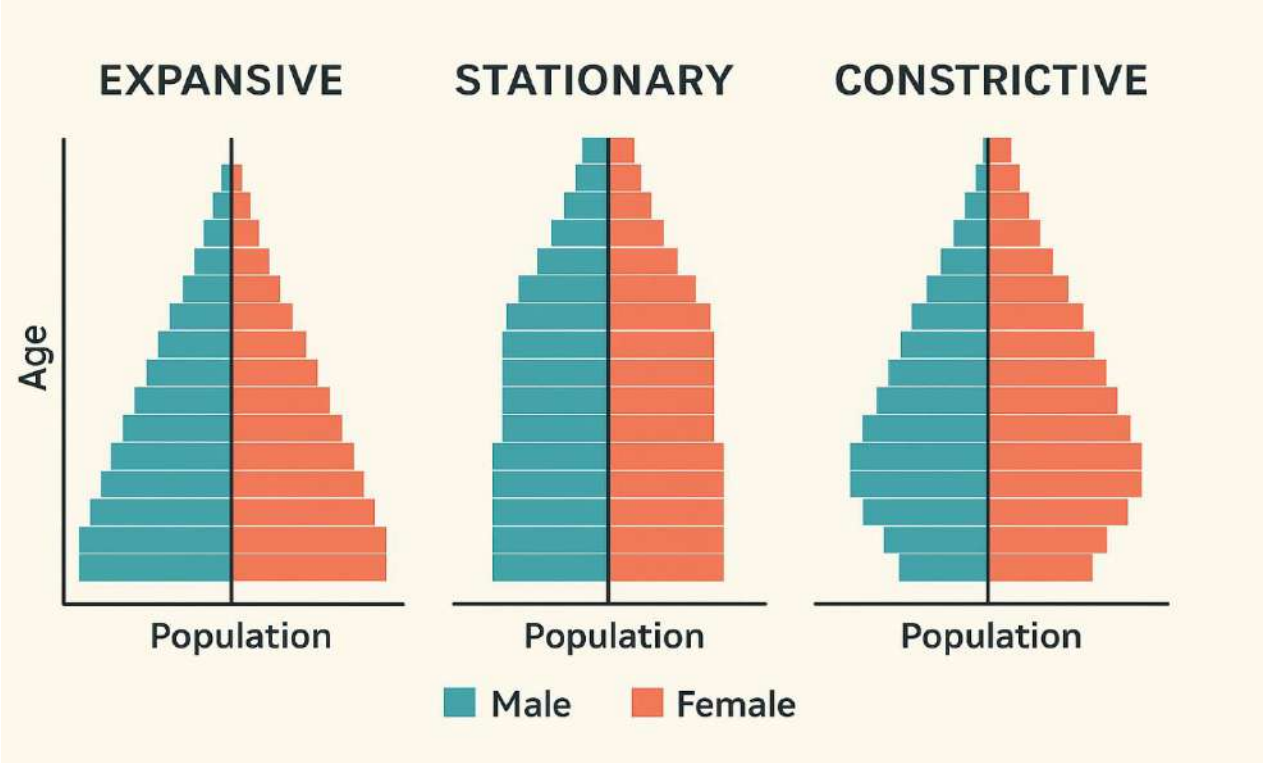
Types of Age-Sex Pyramids

Expansive Pyramid

- Broad base, indicating a high birth rate.
- Narrow top, showing fewer older people.
- Common in developing countries.

Constrictive Pyramid

- Narrower base, suggesting lower birth rates.
- Bulging middle, indicating a larger proportion of working-age people.
- Seen in countries with declining birth rates.



Stationary Pyramid

- Roughly equal numbers across age groups.
- Indicates low birth and death rates.
- Typical of developed countries with stable populations.

Uses of Age-Sex Pyramids

- Policy Planning: Helps governments plan for schools, healthcare, and pensions.
- Economic Analysis: Indicates potential workforce size and dependency ratios.
- Social Services: Identifies needs for childcare, eldercare, and other services.

Age-sex pyramids are essential tools for demographers, policymakers, and researchers. They provide a snapshot of a population's structure and help forecast future trends, enabling better decision-making for societal needs.

Population Composition refers to the structure of a population based on various demographic, social, and economic characteristics. It helps in understanding the diversity and needs of a population and is important for policy-making, economic planning, and social services.

Key Components

- Age Composition
- Sex Composition
- Rural–Urban Composition
- Marital Status Composition
- Religious & Ethnic Composition
- Educational Composition
- Economic Composition

Age Composition refers to the distribution of a population into different age groups.

It's usually divided into three broad categories:

Young Age Group (0–14 years) school going children, dependent on working-age population.

Implications:

- High dependency ratio.
- Need for investment in education, childcare, and health services.
- Potential for a youth bulge leading to economic growth if jobs are available (demographic dividend).

Working Age Group (15–64 years) economically active population, backbone of productivity.

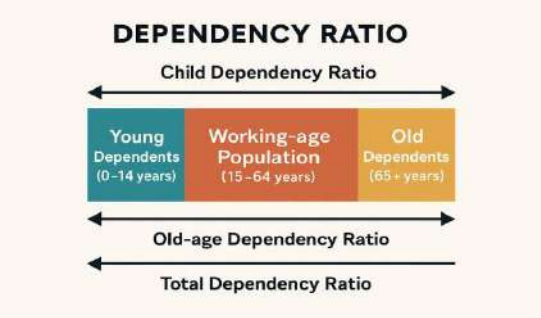
Implications:

- Higher proportion → higher economic output.
- Requires job opportunities, skill development.
- If unemployed → social unrest, migration.

Old Age Group (65 years and above) Retired or near-retired, dependent on pensions and healthcare.

Implications:

- Higher healthcare and social security costs.
- Ageing population can strain working-age support.
- Need for elderly-friendly infrastructure.



Dependency Ratio is a demographic measure showing the proportion of dependents (those typically not in the labor force) to the working-age population. It reflects the economic burden on the productive population.

High ratio - Fewer workers supporting more dependents → greater economic strain.

Low ratio -More workers per dependent → possible demographic dividend.

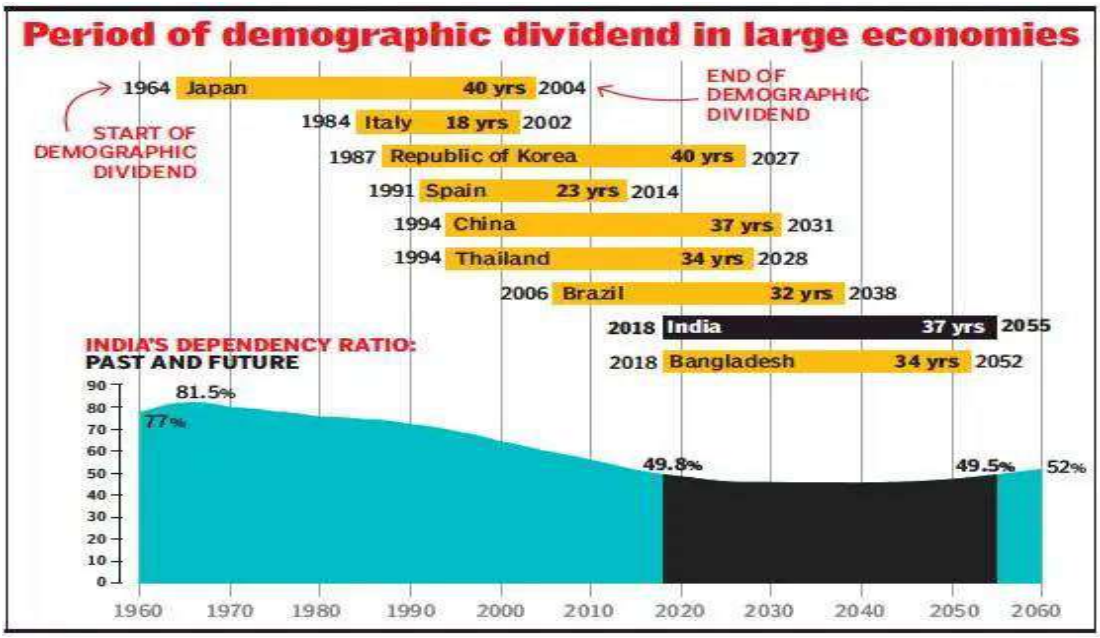
Types of Dependency Ratios

Child Dependency Ratio (CDR)- Shows economic burden from children.

Old-age Dependency Ratio (OADR)- Shows economic burden from elderly.

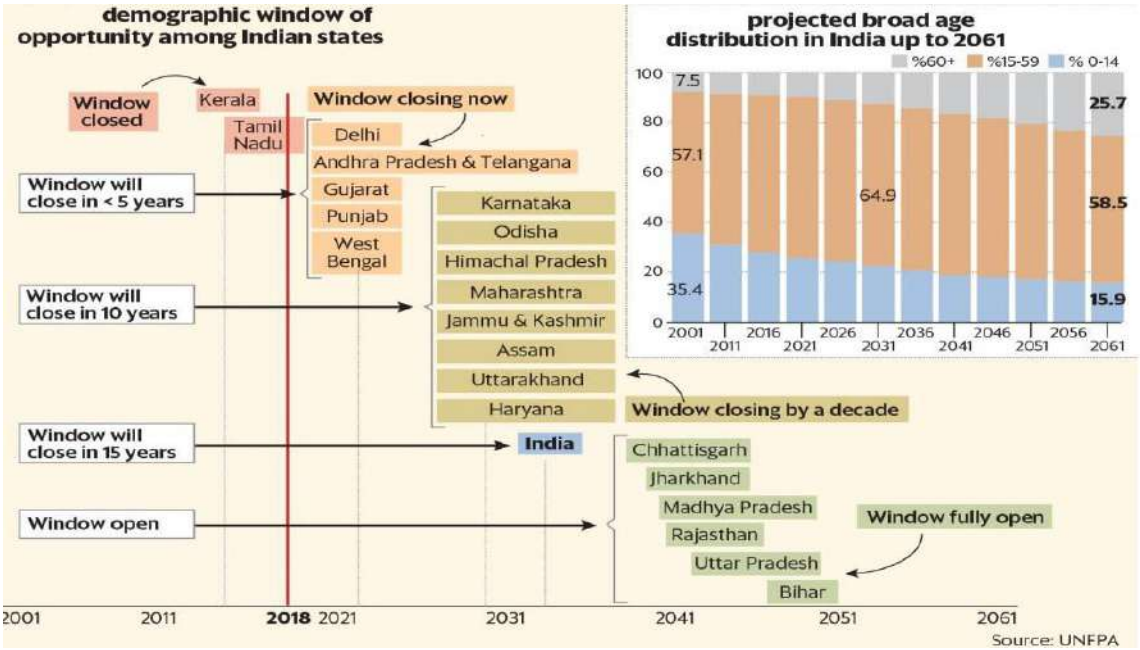
Total Dependency Ratio (TDR)- Combined economic burden from both children and elderly.

Demographic Window (also called Demographic Dividend phase) refers to a period in a country's demographic transition when the working-age population (15–64 years) is proportionally larger than the dependent population (children under 15 and elderly above 64). It typically lasts 30–50 years, depending on speed of demographic transition. Ends when aging population starts to dominate, increasing old-age dependency.



Characteristics

- Occurs after fertility rates decline — fewer children are born, reducing the young dependency burden.
- Mortality rates are already low, so more people survive to working age.
- Large working-age population relative to dependents → potential for higher economic productivity.



Benefits

- Higher labor supply- more workers for economic growth.
- Increased savings rate - working-age people save more, boosting investment.
- More tax revenue -better funding for infrastructure and services.
- Potential innovation boost - younger populations tend to be more adaptive to technology.

Risks

- Without jobs and skills, unemployment rises, leading to social unrest.
- Could result in a youth bulge problem — high crime, instability.
- Once the window closes (population ages), dependency ratio rises again.

Sex Composition refers to the proportion of males and females in a population at a given time. The most common measure is the Sex Ratio. If the sex ratio is above 100- more males than females. If the sex ratio is below 100- more females than males.

Factors Affecting Sex Composition

- Birth ratio- Biologically, slightly more boys are born than girls
- Differential mortality- Males often have higher mortality rates at many ages.
- Migration- Male-dominated labor migration or female migration for marriage changes sex ratio.
- Cultural and social factors- Son preference, gender-selective practices, discrimination.
- Wars & conflicts- More male deaths may shift balance toward females.

Importance of Studying Sex Composition

- Demographic planning-impacts marriage patterns, family structure, and fertility.
- Economic impact- male vs. female labor force participation.
- Social implications-imbalances can lead to social tensions (e.g., "bride shortage").
- Health policy- maternal health, women's welfare programs.

Sex Composition Pattern in India

India's sex composition has shown persistent male dominance, though with gradual improvement in recent decades. More males than females historically, due to cultural, social, and biological factors. Gradual rise in overall sex ratio, but child sex ratio remains low.

Trends in Sex Ratio (Females per 1,000 Males)

Census Year	Sex Ratio (Total)	Child Sex Ratio (0–6 years)
1951	946	—
1971	930	—
1991	927	945
2001	933	927
2011	940	919
NFHS-5 (21)	1020	929

Regional Variations

North–South divide: Southern states generally have better female survival due to higher literacy, better healthcare, and weaker son preference. Northern states have strong patriarchal traditions and gender bias.

Higher sex ratios (more females):

- Kerala, Tamil Nadu, Andhra Pradesh, Chhattisgarh, Odisha.

Lower sex ratios (more males):

- Haryana, Punjab, Uttar Pradesh, Rajasthan, Delhi.

Factors Affecting Sex Composition in India

- Cultural- Son preference, dowry system, patrilineal inheritance.
- Biological- Slight natural male birth advantage (105 boys per 100 girls at birth).
- Social discrimination- Gender-selective abortions, neglect of girl child.
- Mortality rates- Female child mortality often higher in certain regions due to neglect.
- Migration- Male-dominated labor migration from poorer states to cities.

Implications of Skewed Sex Ratio

- Marriage squeeze-Shortage of brides in male-heavy regions.
- Social issues-Trafficking, polyandry in extreme cases.
- Economic effects-Lower female labor participation.

- Gender inequality- Reinforces patriarchal systems.

Literacy Composition in India

Percentage of people aged 7 years and above who can read and write with understanding in any language. There has been steady improvement, but gender gap persists. Overall Literacy Rate Trends (1951–2011)

Census Year	Total (%)	Male (%)	Female (%)
1951	18.33	27.16	8.86
1971	34.45	45.96	21.97
1991	52.21	64.13	39.29
2001	64.84	75.26	53.67
2011	74.04	82.14	65.46

Regional Variations (2011 Census)

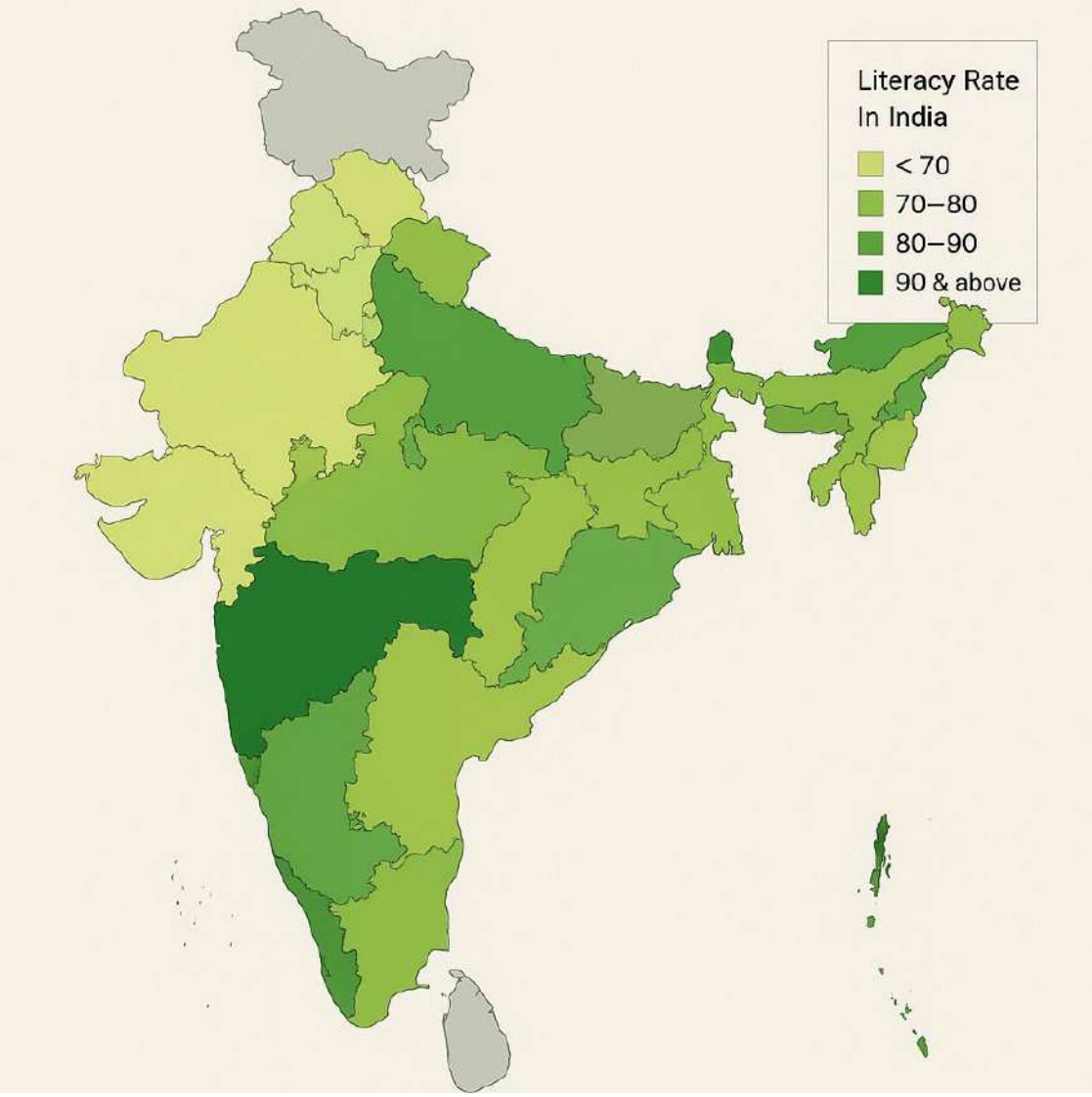
- High literacy states: Kerala (94%), Lakshadweep (91%), Mizoram (91%), Tripura (88%), Goa (88%).
- Low literacy states: Bihar (61.8%), Arunachal Pradesh (65.4%), Rajasthan (66.1%), Jharkhand (66.4%), Andhra Pradesh (67.4%).
- Urban–Rural gap: Urban literacy (84%) higher than rural (68%).

4. Gender Gap

- Male–Female literacy gap (2011): 16.68 percentage points.
- States with high gender gap: Rajasthan, Bihar, Uttar Pradesh.
- States with low gender gap: Kerala, Mizoram, Meghalaya.

Factors Influencing Literacy Composition

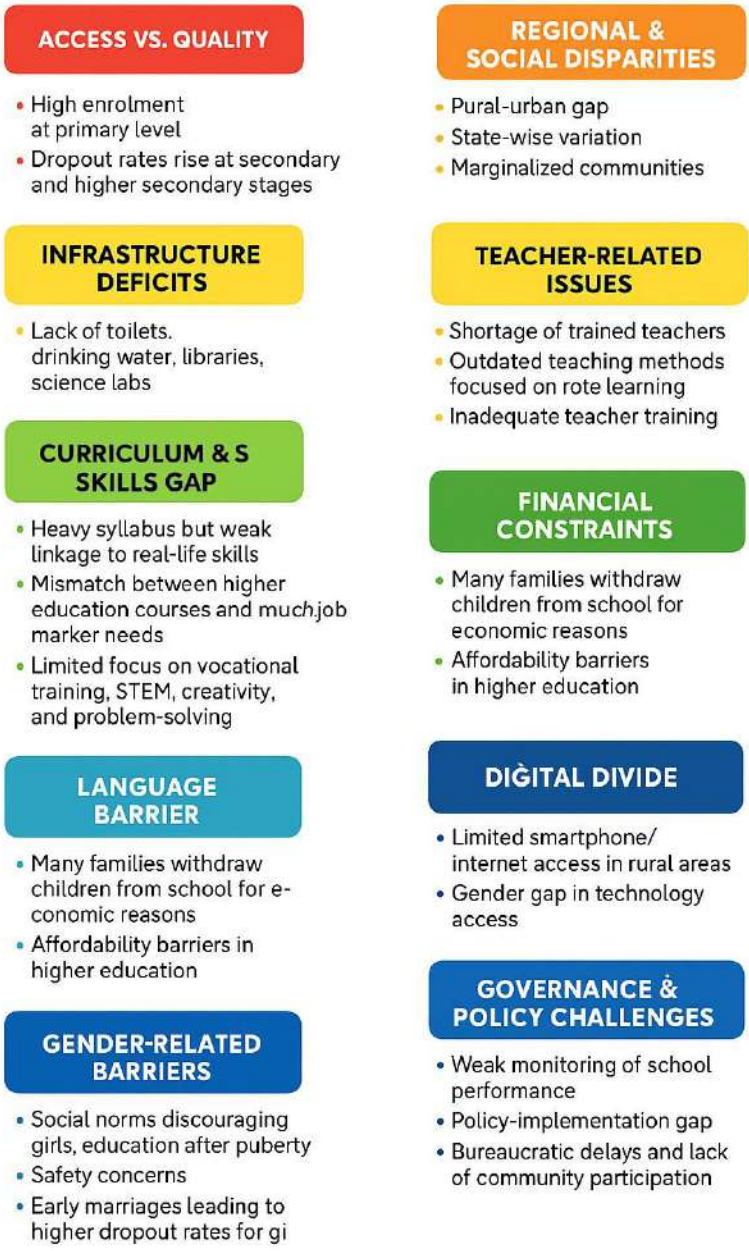
- Educational infrastructure – School availability, teacher-student ratio.
- Economic factors– Poverty often forces children into work.
- Social attitudes – Gender bias, early marriage for girls.
- Government initiatives – Sarva Shiksha Abhiyan, Mid-Day Meal Scheme, Beti Bachao Beti Padhao.
- Urbanization – Better access to education in towns and cities.



Implications of Literacy Patterns

- Economic growth – Higher literacy → better employability.
- Social development – Educated women improve family health and children's education.
- Regional inequality – Literacy gap reinforces economic disparities.

Education Challenges in India Though India has made huge strides in expanding access to education, but quality, equity, and employability remain big hurdles.



Way Forward

- Increase public investment in education
- Strengthen early childhood education and foundational literacy.

- Improve teacher quality through training and performance-linked incentives.
- Focus on skill-based learning and industry-academia linkages.
- Bridge digital gaps via affordable devices and rural internet access.
- Make education inclusive for marginalized groups.
- Promote mother-tongue-based multilingual education in early years.

Working Population Composition refers to the share of a country's population that is engaged in, or available for, productive work. It is usually measured in terms of economically active population. It is important as-

- Determines productive capacity of a nation.
- Affects GDP growth potential.
- Influences dependency ratio — higher working-age share reduces dependency.
- Key factor in demographic dividend.

In India, the occupational categories are broadly classified based on the type of work people do, as defined by the Census of India and National Sample Survey.

1. Primary Occupations (Agriculture & Allied Activities) These involve extraction and production of natural resources. A large proportion of the workforce is still in agriculture, though the share is gradually declining.

- Cultivators – people who own or lease land and are engaged in cultivation.
- Agricultural labourers – work on another's land for wages (cash or kind).
- Allied activities– forestry, fishing, animal husbandry, mining, etc.

2. Secondary Occupations (Manufacturing & Industry) These involve processing of raw materials into finished goods. Growing but still smaller than agriculture; concentrated in urban and semi-urban areas.

- Household industry workers – operate small-scale industries within households (weaving, pottery, handloom).
- Other manufacturing workers– factory-based production (textiles, steel, food processing).
- Construction workers – involved in building infrastructure.

3. Tertiary Occupations (Services) These involve providing services rather than goods. Fastest growing sector, especially IT and finance, contributing the largest share to GDP.

- Trade & commerce – shopkeepers, traders, wholesale, retail.
- Transport & communication – drivers, railway workers, postal services.
- Public administration & defence – government jobs, police, army.
- Education & health services – teachers, doctors, nurses.
- Financial & professional services – banking, IT, consultancy.

Issues related to youth in India

Youth (15–29 years) form about 27% of India's population (Census 2011) — a major demographic advantage, but with unique challenges:

1. Education & Skill Development

- Access gap – Unequal access to quality education, especially in rural and marginalized areas.
- Dropout rates – High at secondary and higher secondary levels.
- Skill mismatch – Education often does not match industry needs; vocational training remains low.
- Digital divide – Limited access to technology in rural/low-income groups.

2. Employment & Economic Participation

- Youth unemployment – Higher than the national average; informal employment dominates.
- Underemployment – Many in jobs below their skill level.
- Gig & platform work vulnerability – Lack of job security, benefits, and regulations.

3. Health & Well-being

- Physical health – Issues like malnutrition, substance abuse, and non-communicable diseases.
- Mental health – Rising depression, anxiety, and suicide rates; limited counseling services.
- Reproductive health – Inadequate awareness and services, especially for young women.

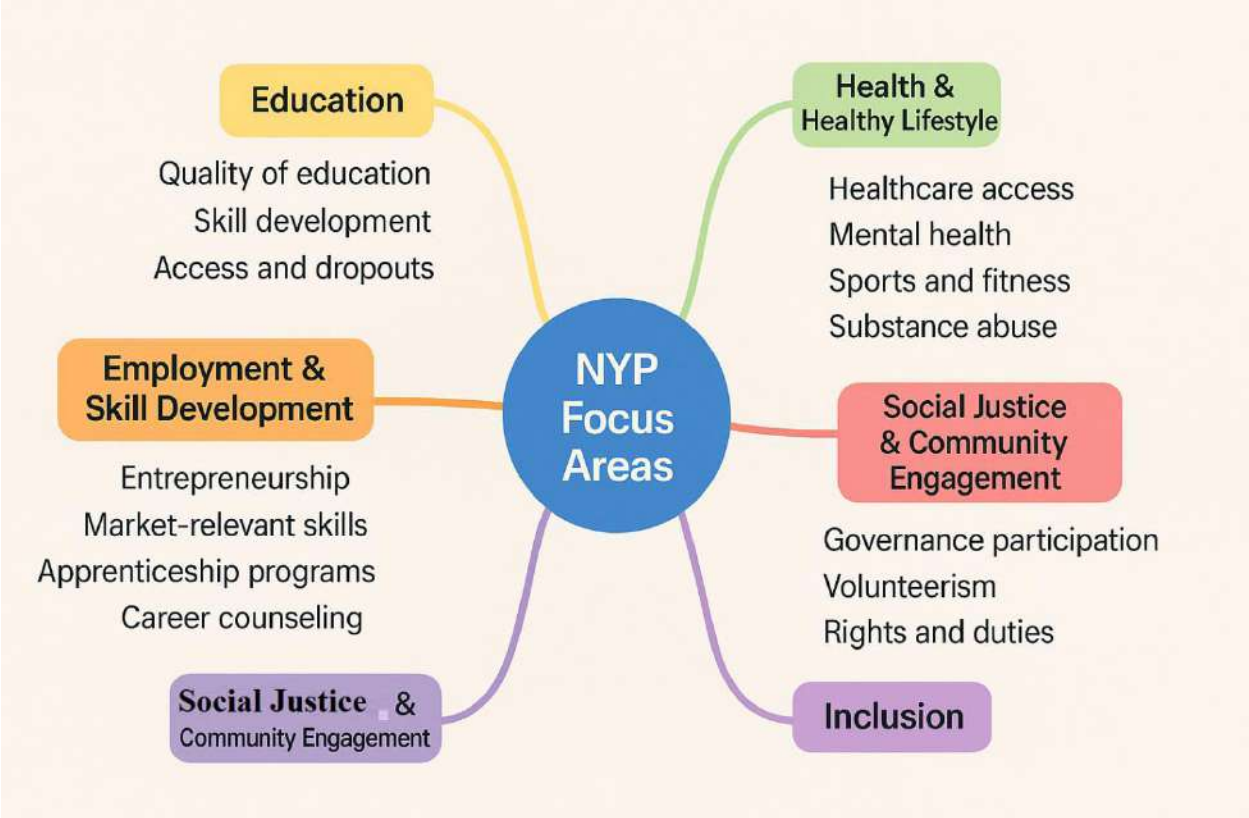
4. Social Issues

- Gender inequality – Low female labour force participation, early marriage, safety concerns.
- Crime & radicalization risk – Lack of opportunities can lead to antisocial behaviour.
- Urban migration challenges – Housing shortages, unsafe working/living conditions.

5. Political & Civic Participation

- Low political engagement beyond voting.
- Limited platforms for youth to influence policy.
- Lack of awareness about rights and responsibilities.

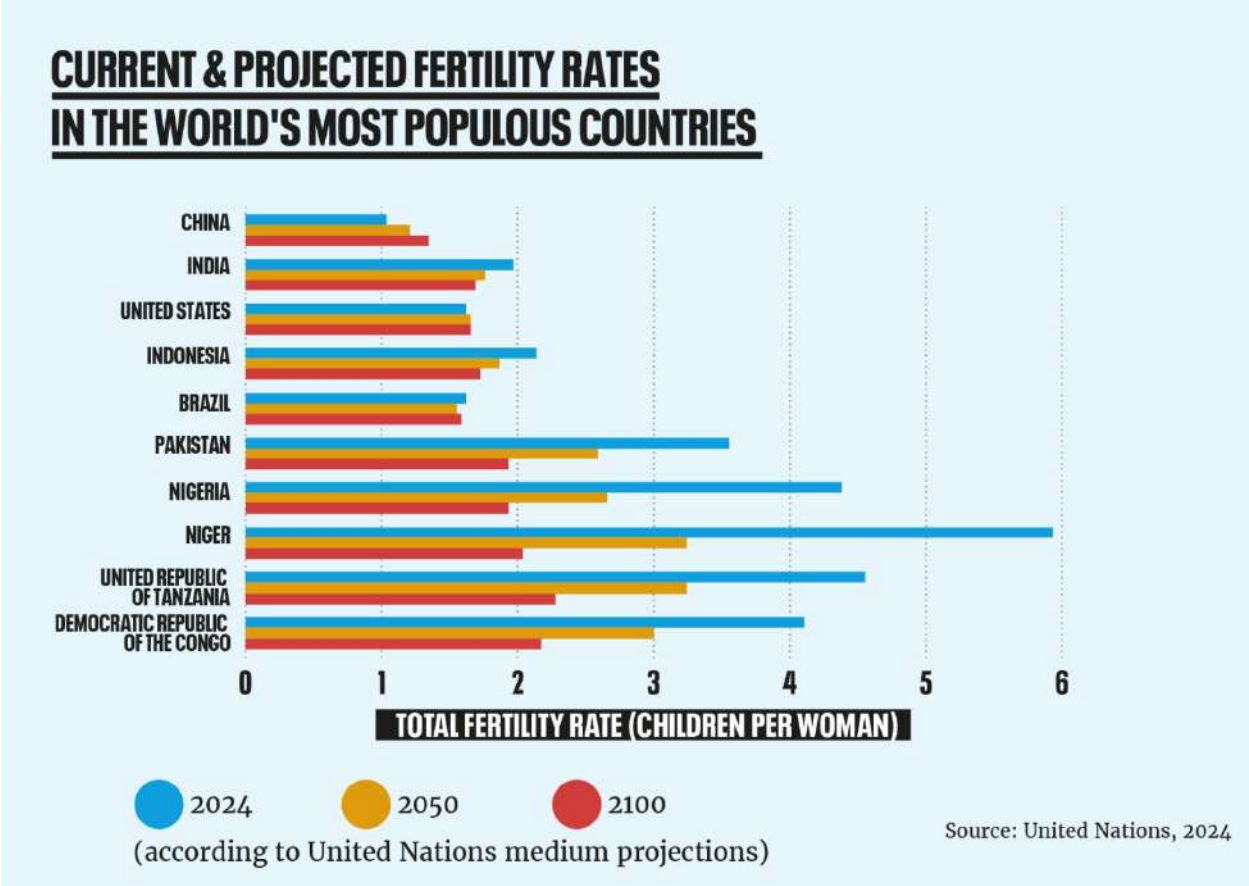
National Youth Policy (NYP) 2014



Population Projection world

The momentum of past growth that is embedded in the youthful age structure of today's global population is projected to contribute 80% of the total increase through 2054, or around 1.7 billion people.

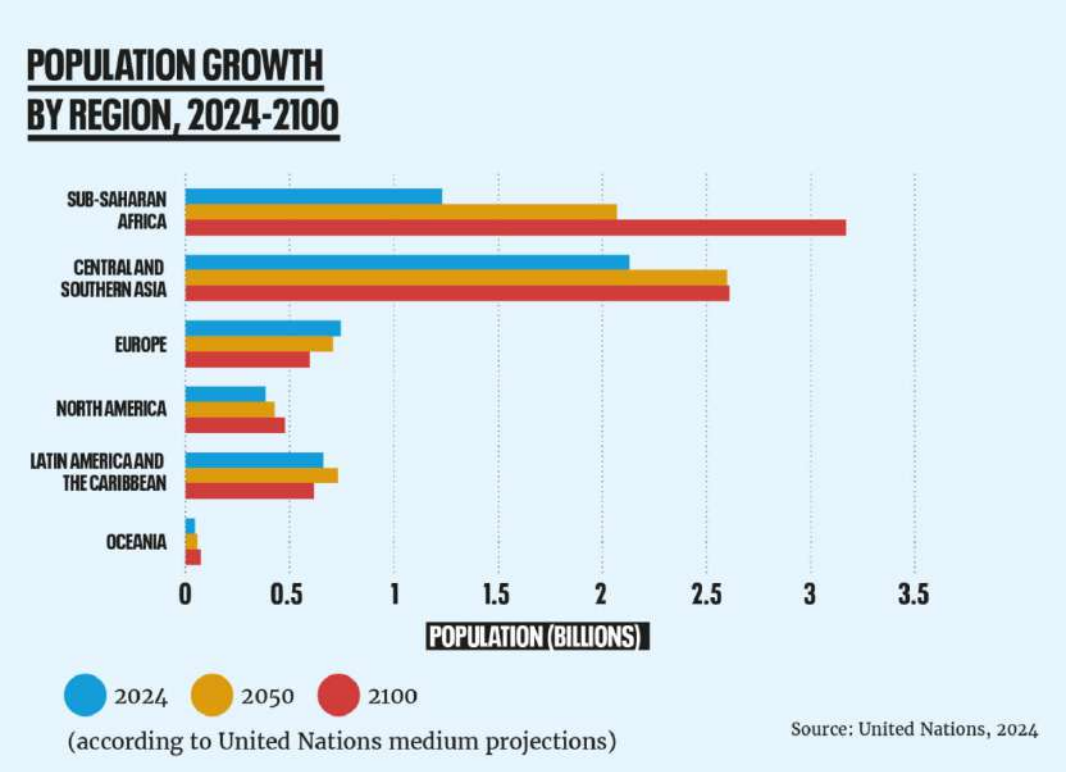
Future population growth will also be driven by **high fertility rates in the Global South**. Over one in ten countries – mostly in sub-Saharan Africa – have fertility levels of four births or more per woman.



Population growth entrenches poverty

In countries including Angola, the Central African Republic, the Democratic Republic of Congo, Niger and Somalia, high population growth will continue, with populations doubling between 2024 and 2054.

High population growth is an **accelerator of environmental destruction** from both direct and indirect drivers. In some regions, high population growth increases deforestation and puts areas at a higher risk of drought, whilst agricultural expansion to meet rising demand for food clears natural habitat, causing biodiversity loss, and the decay of arable land into degraded 'dead soil'.



With 257 million women worldwide with an unmet need for contraception, we must close sexual and reproductive health and rights (SRHR) funding gaps. Ensuring that people everywhere have the full freedom to choose how many children they have is vital, to ensure sustainable development and ease pressure on the environment.

The world will be older

Life expectancy is once again on the rise. Globally, life expectancy at birth reached 73.3 years in 2024 and is predicted to reach an average longevity of 77.4 years globally in 2054.

By 2080, persons aged 65 or older will outnumber children under 18.

This demographic transition will mean many countries will face ageing populations, but as Population Matters' 2021 report Silver Linings, Not Silver Burdens made clear, concerns about ageing populations tend to exaggerate the extent of the problem and underestimate the availability of practical solutions.

Countries, especially those with populations that have already peaked or will peak in the next decades, should consider leveraging technology, including automation, to improve productivity at all ages, design more opportunities for life-long learning and re-training, support multigenerational workforces and create opportunities to extend working lives for those who can and want.

Growth from immigration

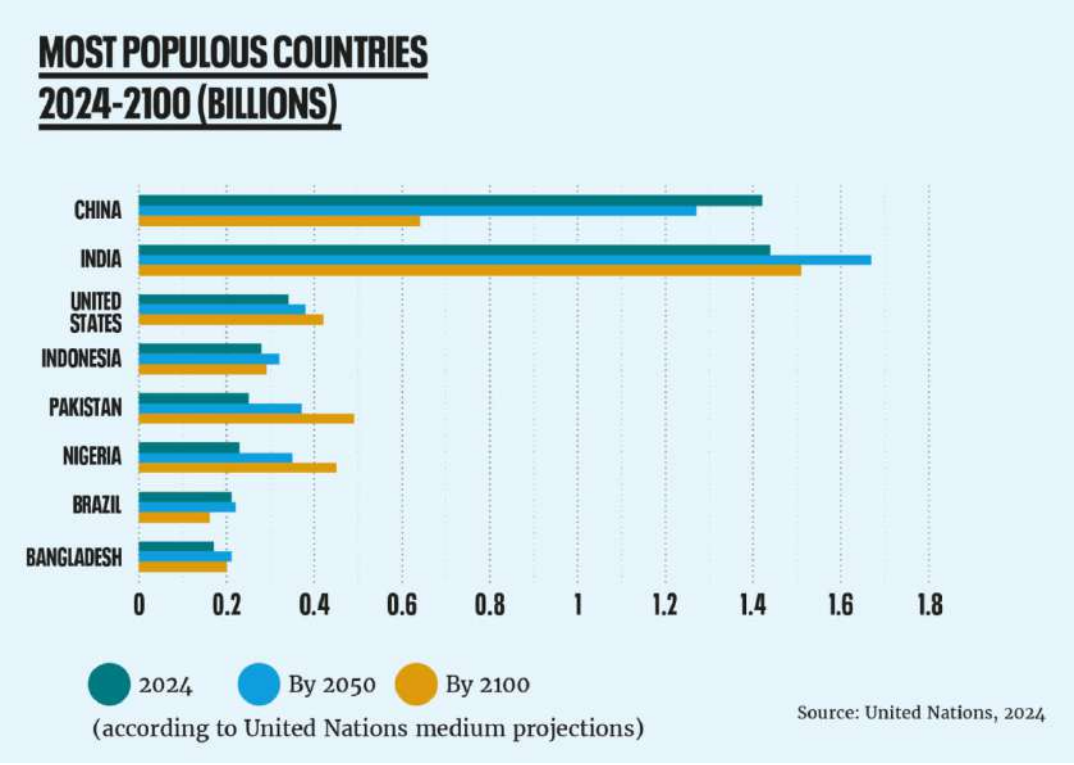
The fertility rate is a measure of the average number of children a woman may have over her lifetime. Currently, the global fertility rate stands at 2.25 births per woman.

More than half of all countries and areas globally have a fertility rate below the replacement rate of 2.1 births per woman. The replacement rate is the level required for a population to maintain a constant size in the long run (excluding migration).

Immigration is projected to be the main driver of population growth in 52 countries and areas, including the UK, Australia, Canada and the US, through to 2054.

Guard against pronatalism

The UN's 2024 population prospects state that across the globe, 63 countries' populations peaked before 2024. This group includes China, Germany, and Japan.



In countries with populations that have already peaked, the number of women in the reproductive age range is projected to shrink by 33 per cent between 2024 and 2054.

This demographic change is important as it will undermine the effectiveness of any pronatalist policies aimed at raising the birth rate.

By the late 2030s, half of the women in countries with populations that have already peaked will be too old to have children by natural means. Because the share of women in the reproductive age range (roughly, between 15 and 49 years) is projected to decline rapidly in such countries, the impact on population size of policies aimed at raising fertility levels is likely to diminish over time."

Gender inequalities persist

In 2024, 4.7 million babies, 3.5 per cent of the total worldwide, were born to mothers under age 18. Of these some 340,000 babies were born to girls under age 15, with adverse health effects for both the young mothers and their children.

This is reflective of the crisis in SRHR funding, with 257 million women worldwide having an unmet need for contraception.

Social and legal barriers often prevent women and young girls from making autonomous decisions about their sexual and reproductive health, including limiting their access to safe, modern contraception, resulting in areas with populations that are growing rapidly.

Girls are also more likely to be denied schooling so they can work, get married young and have large families, rather than learning, working and earning a decent income. Education is the key to higher incomes and to breaking the cycle of poverty.

Ending births among girls under age 18 would significantly slow population growth for countries in sub-Saharan Africa, resulting in a population that is 4.3 per cent smaller by 2054 than it would have been otherwise.

"Increasing the age at first childbearing contributes to slowing population growth, reducing the scale of future investments needed to cater for a growing population and minimising the corresponding environmental impacts of a large population.

Continued high fertility rates are a sign of all the young girls and women that are being left behind, due to gaps in sexual and reproductive healthcare (SRHR) funding, and lack of progress in breaking down barriers to girls pursuing higher education and careers.