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Population and Development

Theories on Interrelations

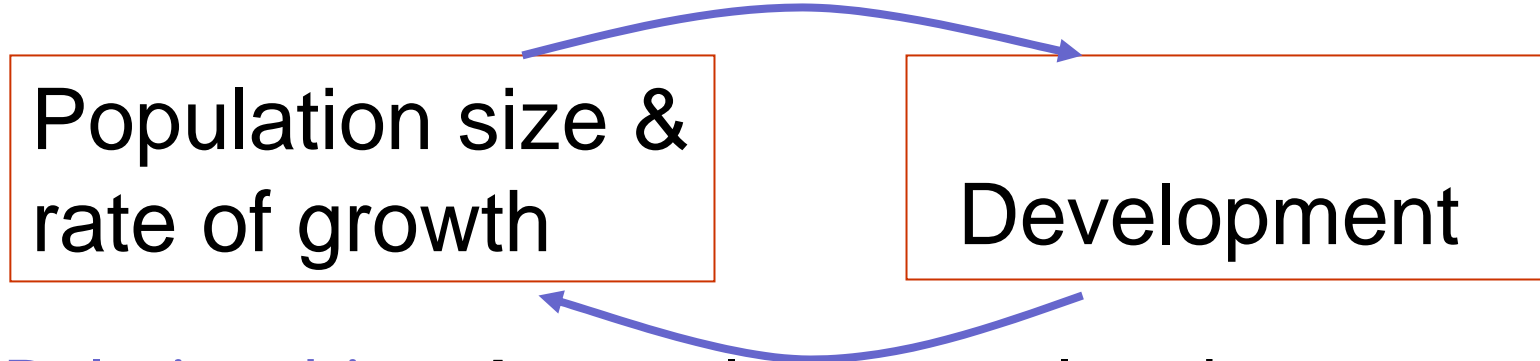
Module 3a

Learning Objectives

- ◆ Evaluate the existing evidence for economic, social and environmental consequences of population growth
- ◆ Identify and analyze other exogenous factors perpetuating /mitigating the effects of population growth.

Population Growth and Economic Development

- ◆ Main Question: Causation ?



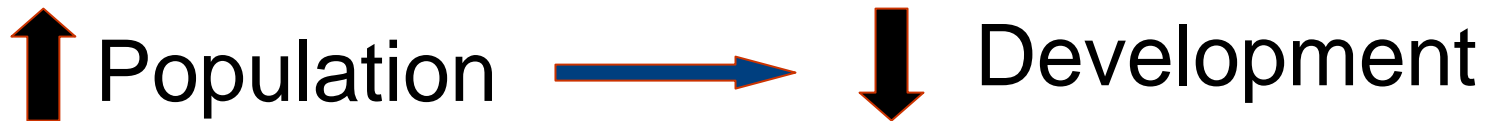
- ◆ **Relationship** : A complex interrelated system, many variables are associated with both birth rates and rates of economic growth
- ◆ **Evidence**: Sparse, inconsistent and inconclusive, suggesting that both arrows are working in the system

Theories of Population and Development Interrelations

The Pessimistic Theories (orthodox view)

Thesis:

- ◆ Supply of some natural resources (non-renewable) and capital is fixed
- ◆ Supply would grow more slowly than the population



Theories of Population and Development interrelations

Malthusian theory

- ◆ Population tends to increase at a geometric rate
- ◆ Food can only increase arithmetically
- ◆ Population expands to eat up any surplus
- ◆ Subsistence wages forever unless moral checks
- ◆ Choose moral checks or positive checks

NeoMalthusian Theory (Coale- Hoover, 1958)

- ◆ 1940s-1960s: An era of unprecedented growth of population in the developing world
- ◆ Coale and Hoover: Alternative projections of GNP for India and Mexico under assumptions of constant fertility and declining fertility
- ◆ Social expenditure on school and health due to young age structure diverted funds from capital investment.

Coale-Hoover Theory

- ◆ **Conclusion of the theory:** High population growth causes poor socio-economic development
- ◆ **Policy Implications:** Government should intervene to control population

continued

Coale-Hoover Theory: Limitations

- ◆ Assumed economic growth as a function of only capital growth
- ◆ Does not take into account the changes in technology and labor quality (through better health and schooling of new generation)
- ◆ Empirical evidence: Relationship not consistently negative (Blanchet)

Population growth and economic development interrelationship

The Optimistic Theories

- ◆ Population growth exerts a positive influence on economic development
- ◆ Human ingenuity would create the technology to overcome any environmental constraints to development (Boserup, Julion Simon).

Marxism and Population

- ◆ A “Surplus population” is a creation of capitalism, and a necessary condition for its continuance
- ◆ Capitalism requires a surplus of readily exploitable manpower” which it creates by expropriating land, and by displacing workers with machines

Theories of Population and Development interrelations

Revisionist Theory- 1



- ◆ International Population Conference, 1974: Development is the best contraceptive
- ◆ Theory: Underdevelopment produces rapid population growth.
- ◆ Policy Implications:
 - Invest resources in development activities
 - Set the world economic order right

Revisionist Theory- 2

POPOULATION \neq DEVELOPMENT

- ◆ International Population Conference, 1984, Mexico: USA position
- ◆ Theory: Population is a 'neutral' phenomenon in the process of economic development
- ◆ Policy Implications: Other issues must take priority, e.g. economic reforms, free markets, democracy etc.

Theories of Population and Development interrelations

Current Thinking(NAS,1986)

- ◆ The scientific evidence : still inconclusive, links more clear at individual/household level rather than at national/regional level
- ◆ Implication of rapid population growth vary considerably depending on economic, cultural, institutional and demographic differences among LDC.

continued

Current thinking (NAS, 1986)

- ◆ Population growth is not necessarily the principle cause of problems in LDC, but it does multiply the damage caused by other world problems (unequal population distribution).
- ◆ Just slowing population growth can not solve such problems, but can contribute to their solution.

Theories of Population and Development interrelations

ICPD, 1994, Cairo

- ◆ Affirmation of Revisionist-2 with a new paradigm shift
- ◆ ↑ HUMAN RIGHTS → POPULATION DEVELOPMENT
- ◆ **Theory**: Human rights are at the center of concerns for sustainable development
- ◆ **Policy implications**: Advancing gender equality, equity, and empowerment of women are key to population and development related programs

Summary Slide

- ◆ This concludes this session. The key concepts introduced in this session include:
- ◆ Theories on inter-relationships between population growth and development
 - Malthusian and Neo-Malthusian theories
 - The consensus emerged from previous three International Conferences on Population

Population and Development

Interrelations

Module 3b

Part II: Population growth and specific aspects of development

- ◆ Population and deforestation, and agriculture development
- ◆ Population and employment
- ◆ Population growth and education
- ◆ Population, food and nutrition
- ◆ Population and water resources
- ◆ Population and urbanization

Population growth, Agricultural Stagnation and Environmental Degradation: The Nexus

- ◆ Multiple and synergistic links between rapid population growth, poor agricultural performance and environmental degradation
- ◆ Relationships are difficult to analyze, as multiple factors affect rate of population growth, environmental degradation, and pace and direction of agricultural development

Continued

Population growth, Agricultural stagnation and environmental degradation: The nexus

- ◆ **Boserup hypothesis:** Agriculture intensification occurs as population density on agricultural land increases.
- ◆ **Sub-Saharan Africa:** Agriculture *expansion* rather than *intensification*.

Continued

Population Growth, Agricultural Stagnation and Environmental Degradation: The Nexus

- ◆ Expansive agriculture involved conversion of large areas of forest, wetlands, river valley bottoms, and grassland savanna to crop land.
- ◆ Agriculture expansion + rapid population growth = accelerated degradation of natural resources = agricultural stagnation.

Factors Perpetuating the Nexus

- ◆ Deficiencies in economic policy environment (e.g. agricultural pricing, excessive control of agricultural marketing, lack of empowerment of farmers): Slowed the evolution of ancestral systems into systems more sustainable with higher population density
- ◆ Lack of rapid and widespread technological change

Traditional Tenure Systems And The Nexus

- ◆ Rapidly rising population pressure makes effective common ownership regulation increasingly more difficult
- ◆ Rapid population growth led to an erosion and breakdown in customary laws and rules governing sustainable use and management of land and other common property resources

Deforestation ,Fuelwood, and The Nexus

- ◆ 90% of households in Sub-Saharan Africa use wood-fuel as the staple source of energy.
- ◆ Slow economic growth will impede the switch to non-wood fuels.
- ◆ Hence the demand for wood-fuel would increase with population growth

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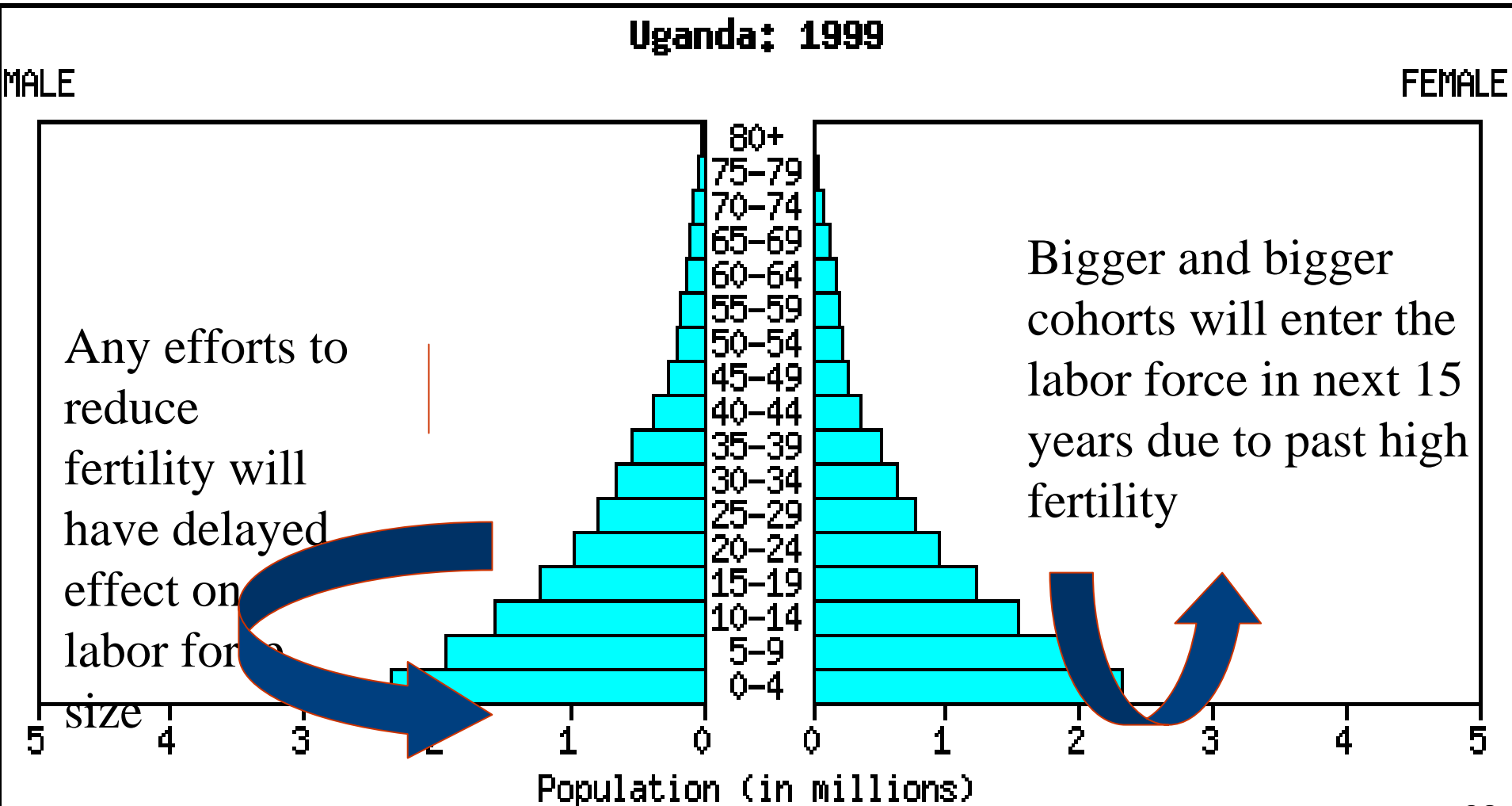
Deforestation ,Fuelwood, and The Nexus

- ◆ In 1980s, eleven countries including Uganda, faced negative fuel-wood supply-demand balances.
- ◆ Has important negative effects on rural women, health, nutritional patterns and soil conservation

Labor Force and Population Growth

- ◆ Labor force: population 15-65, who is actively seeking jobs
- ◆ Growth of the labor force in future will depend upon:
 - Age structure of the population: younger the population-faster will be growth
 - Current fertility levels
 - Economic activity rates by age and sex

Labor force growth and age structure



Jobs and Population Growth

- ◆ May boost labor demand, but definitely boosts labor supply-35 million people will enter global labor force/year
- ◆ Interaction between population growth and unemployment more acute among nations with younger population- SSA has 45% population under 15 years
- ◆ Measures to reduce population growth have a delayed effect on labor force size

World Labor Force ,1995,With Projection to 2050

Region	Year		Additional Jobs required 1955- 2050	% Change in labor force (1955- 2050)
	1995	2050		
	(in millions)			
World	2,735	4,455	1,720	76
MDC	598	513	-(84)	-(17)
Developing countries	2,127	3,928	1,806	85
Least developed countries	258	866	607	235

Source: United Nations, 1999

World Labor Force

- ◆ Almost doubled since 1950s (1.2 billion to 2.7 billion)
- ◆ Currently One-third labor force is un/underemployed (ILO)
- ◆ Creation of 1.7 billion jobs is required to maintain current levels of employment in next 50 years
- ◆ Almost all future growth will be in developing countries

Jobs and Population Growth: Aggravating Factors

- ◆ Increasing acceptance of women's labor force participation (may be offset by its effect on fertility?)
- ◆ Declining global per capita grain-land (traditional source of employment): declined by 50% in certain nations since 1950s
- ◆ Slow pace of industrialization
- ◆ Effect of HIV/AIDS epidemic

Jobs, Population Growth and SSA

- ◆ SSA- already facing double digit unemployment rate
- ◆ The size of labor force will more than triple by 2050
- ◆ Will have to absorb twice as many new entrants as in year 1998, each year in next 20 years
- ◆ However, HIV/AIDS epidemic in SSA may change the projections

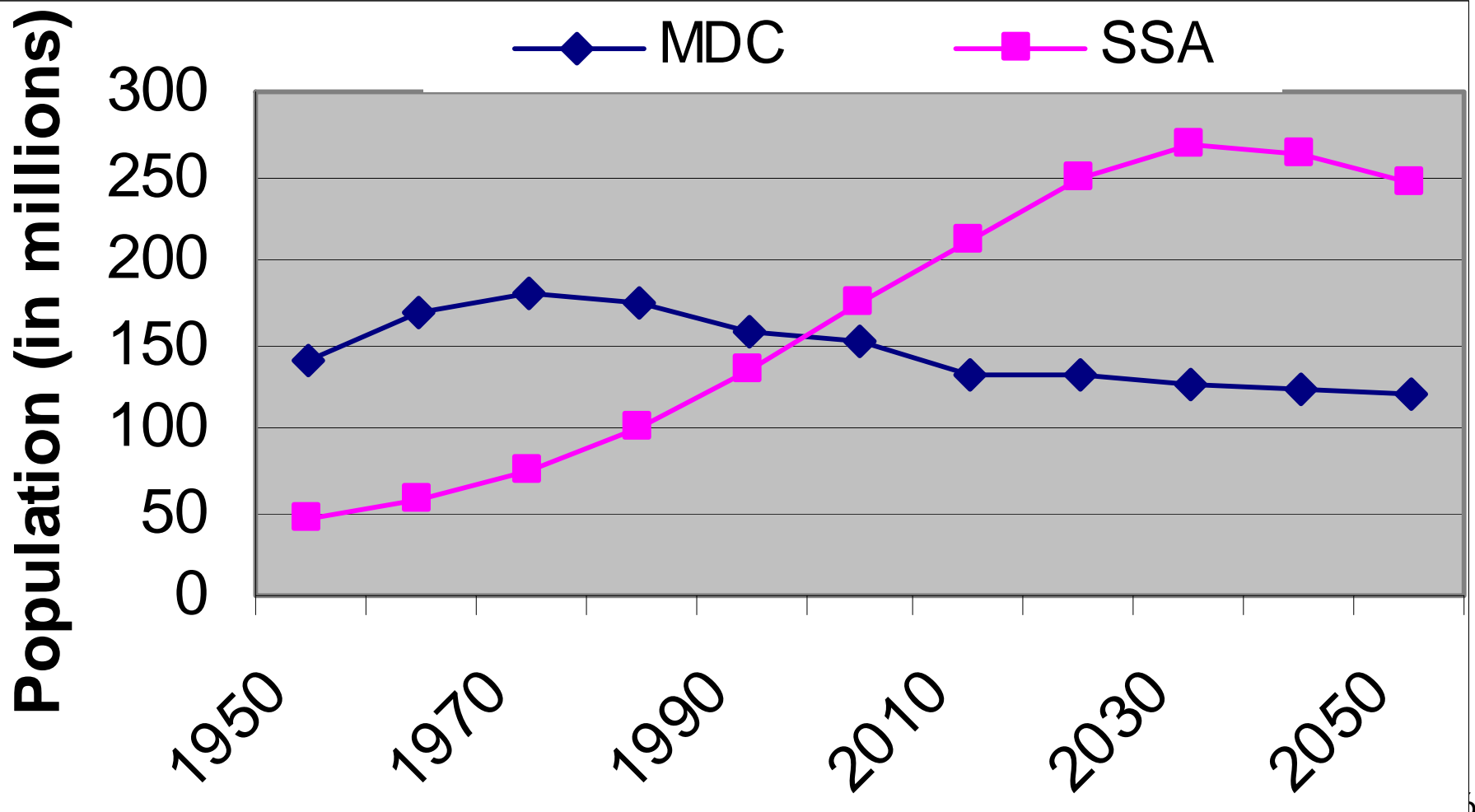
Education and Population Growth: Global Situation

- ◆ Between 2000-2050, the total population will increase by 47%, but population less than 15 years will decline by 3% (UN) due to overall slowing population growth rate
- ◆ Need for education infrastructure will rise very slowly in next 25 years, decline thereafter

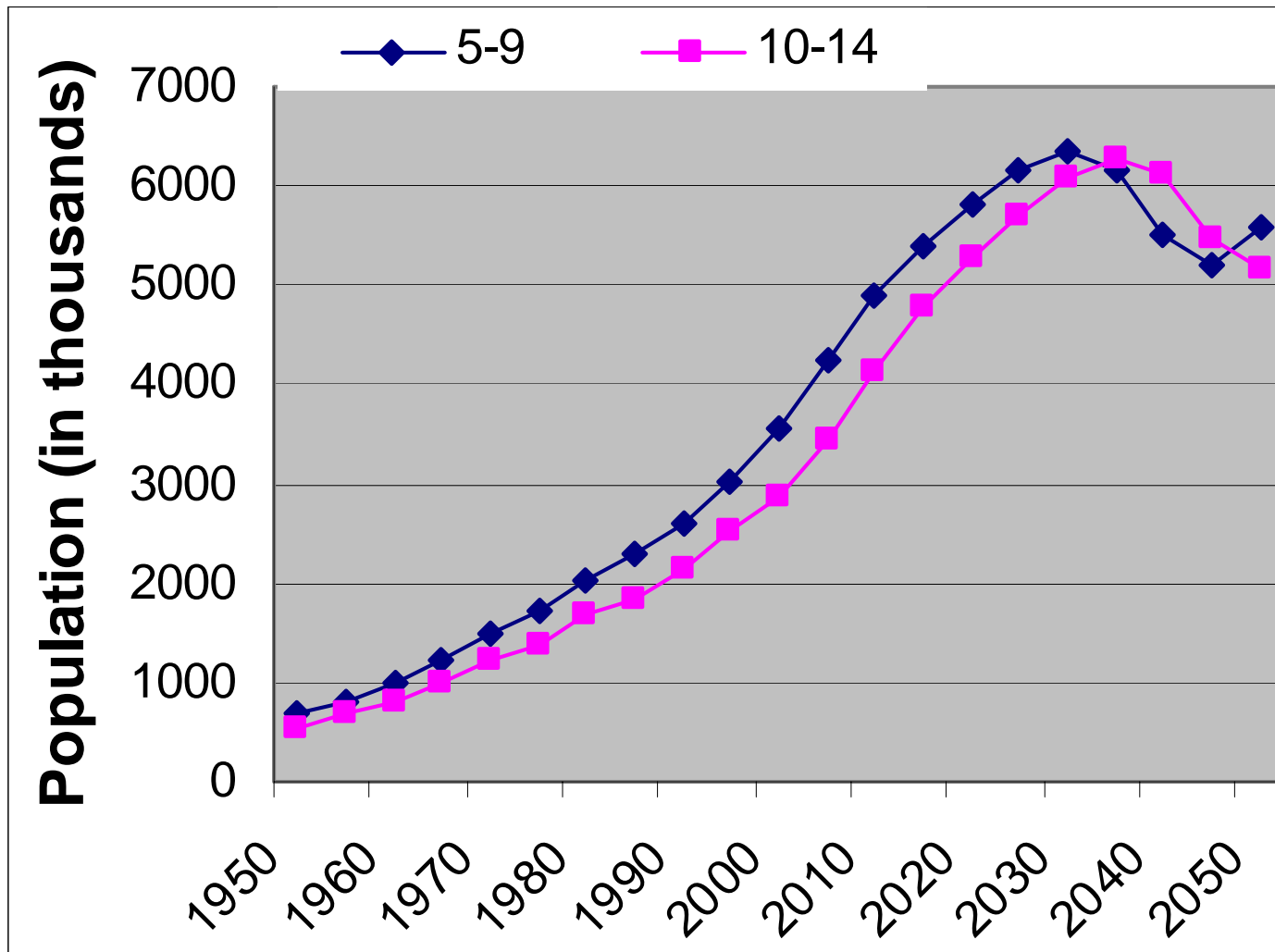
Education and Population Growth: African Situation

- ◆ Very young population coupled with persistent high levels of fertility
- ◆ Child-age population will grow by 36% through 2030, before it begins to fall
- ◆ For some countries, e.g. Uganda, Niger, Oman, the child age population will grow more than 50% by 2050

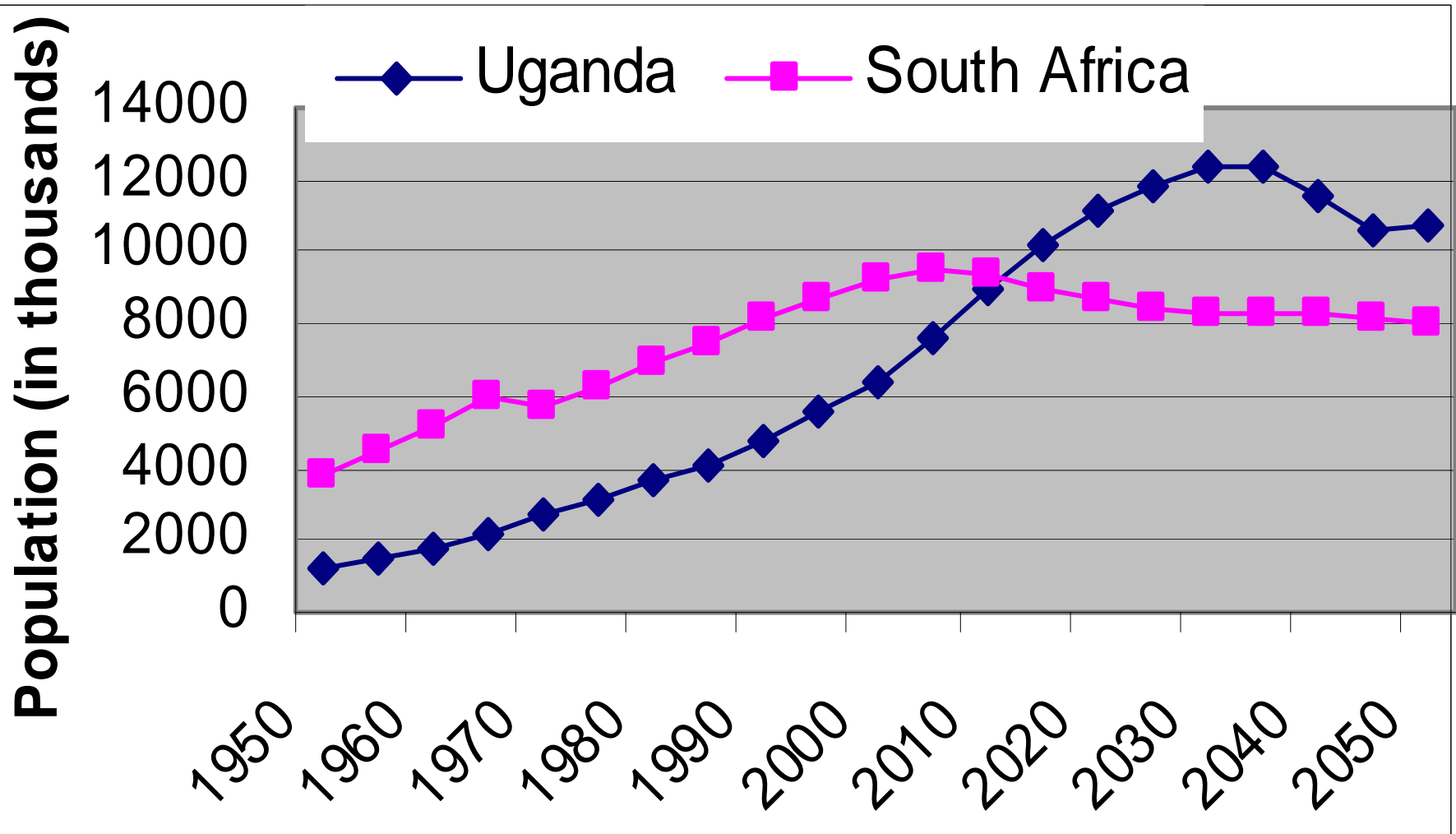
Growth of School-Age Population in MDC and SSA, 1950-2050



Growth of School-Age Population in Uganda, 1950-2050



Growth of School-Age Population in Uganda and South Africa, 1950-2050



SSA, Population Growth, and Education: Consequences

- ◆ Africa: already lagging behind in education
- ◆ Addition of another student for every three in context of SSA will require heroic investments in education
- ◆ With other competing demands: increasing investments on education will remain challenging

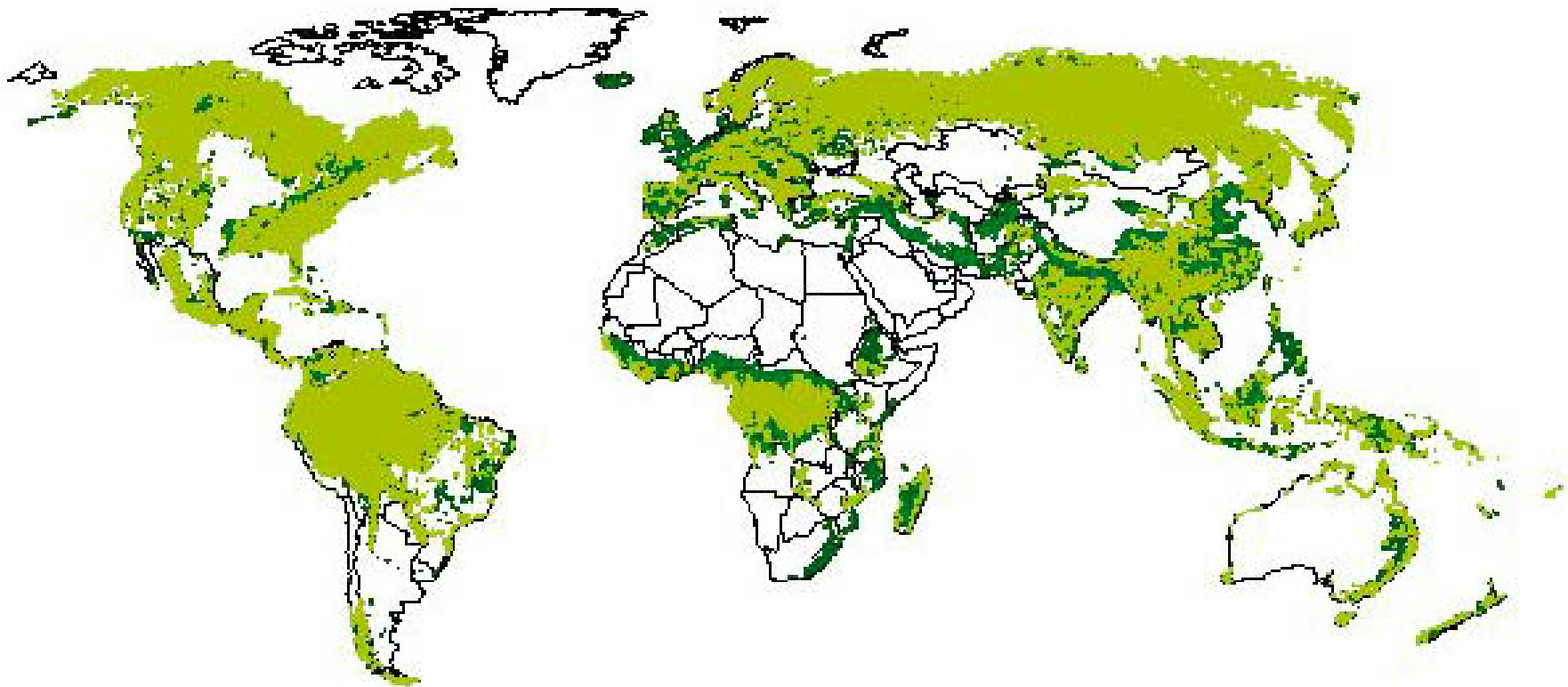
Population and Forest Cover

- ◆ Population growth *and* urbanization: Contributed to forest loss all over the world
- ◆ Between 1960 and 1990: loss of one-fifth of all natural tropical forest cover in LDC
 - Asia lost one-third
 - Africa and Latin America lost one-sixth

Forested Area Per Capita, 1995, With Projections to 2050		
Region	Forested Area Per Capita	
	1995	2050
Africa	0.32	0.13
Asia	0.12	0.08
Europe and Russia	1.10	1.28
North and central America	2.07	1.54
South America	2.14	1.27
World	0.59	0.37
<p><i>Source: Table 10-1, Beyond Malthus, Nineteen dimensions of population challenge</i></p>		

Forest Cover

■ Existing forest cover ■ Original forest cover



Source: World Resources Institute.

Policies Aggravating Environmental Consequences of Population

- ◆ Resource subsidies
- ◆ Use of inefficient technologies for extraction of natural resources
- ◆ Policies affecting population redistribution
- ◆ Consumption patterns

Population, Food, and Nutrition

- ◆ An estimated 40% of the population was classified as food-energy deficient in early 1990s. (PRB)
- ◆ Shrinking crop land per capita in many rapidly growing countries

Population, Food, and Nutrition

- ◆ World grain area per person reduced by 50% since 1950 due to rising population
- ◆ Stagnant global per capita grain output for more than a decade- diminishing world grain carryover stocks (SWP)

Population, Food and Nutrition: SSA

- ◆ Agricultural production is lagging behind population growth in Africa
- ◆ SSA has abundance of land with lowest agricultural yields
- ◆ Low agricultural productivity is also a result of specific social, political, economic and institutional problems also, not a result of just rapid population growth

Continued

Population, Food and Nutrition

- ◆ Per capita consumption has declined in some countries in Africa (PRB)
- ◆ Regions with the highest prevalence of malnourishment today, are likely to experience the greatest increase in numbers in 21st century

Population and Water Resources: A Precarious Balance

- ◆ Water is *not* an infinite renewable resource.
- ◆ In both MDC and LDC, water supply exceeds sustainable supply
- ◆ The increase in global demand for water for irrigation, household, and industrial use is predicted to be faster than the population growth

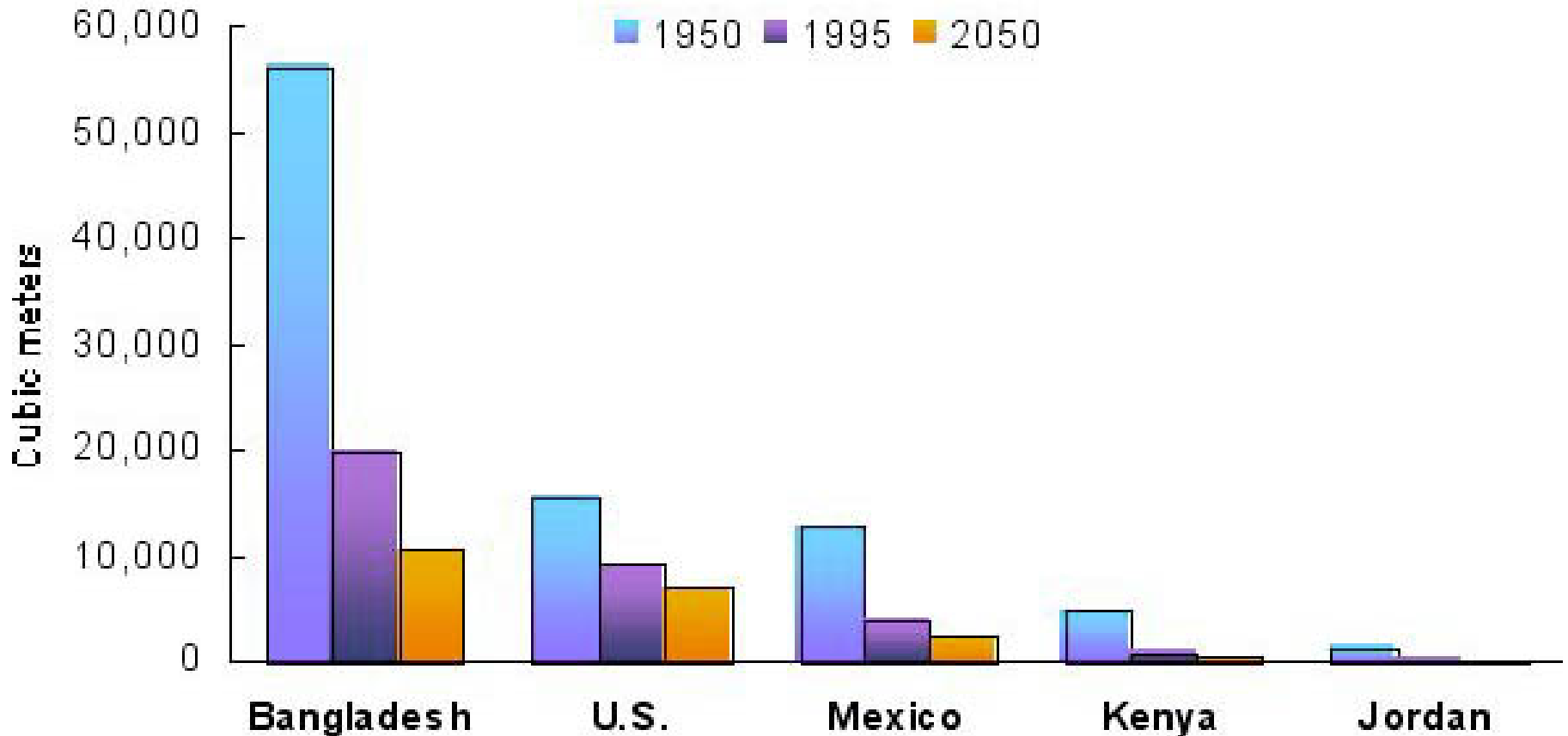
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Population and Water Resources: A Precarious Balance

- ◆ Increase in population affect both quality and quantity of water
- ◆ Function of both population growth and consumption patterns

Renewable Fresh Water Availability

Per capita annual renewable fresh water



Climate change, Natural resource degradation and Biodiversity

- ◆ Collapsing fisheries
- ◆ Loss of animal and plant species due to shrinking forests

Climate Change and Green House Emissions

- ◆ Global warming → rising oceans → increased flooding → coastal erosion → salinalization of aquifers and coastal crop land
- ◆ Pattern of precipitation also likely to change with global warming → reduced agricultural productivity
- ◆ Linked to both population increases , development and consumption patterns

Demographic and societal consequences

- ◆ International and internal migration from rural to urban areas
- ◆ Emergence of gigantic cities and shanty towns
- ◆ Pressures on government social institutions e.g. schools and hospitals
- ◆ Disruption of traditional family support systems, increase in crime rate?

Population : How Many People Can Earth Support?

- ◆ Trade off between the number of the people earth can support and the quality of life

Summary Slide

- ◆ This concludes this part. The key concepts introduced in this module are:
 - Relationship between population growth and agriculture
 - Relationship between population growth, employment and education
 - Relationship between population growth and environment