

# Module IV

## Environment and Development



*Lecture 4 (15 July 2024)*  
*Dr. Asib Ahmed*



**Department of Social Relations  
EAST WEST UNIVERSITY**

How to measure development?

# Gross Domestic Product

Gross domestic product (GDP) is the most commonly used measure for the size of an economy. GDP can be compiled for a country, a region (such as Tuscany in Italy or Burgundy in France), or for several countries combined, as in the case of the European Union (EU).

The GDP is the total of all value added/ created in an economy. The value added means the value of goods and services that have been produced minus the value of the goods and services needed to produce them, the so called intermediate consumption.

# What's covered by GDP?

No distinction is made whether the goods or services that are produced have a positive or negative impact from a social or environmental perspective.

For example if there is an oil spill in the ocean, the transport of the oil as well as the cleaning work related to this is included in GDP.

# What GDP does not reflect?

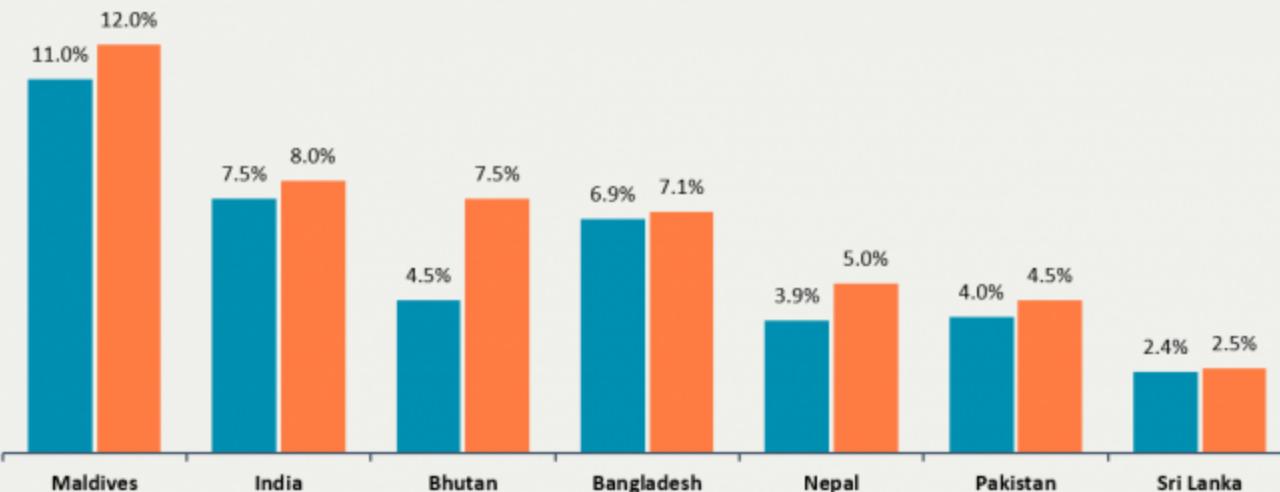
- When considering how big an economy is, or how it compares over time or with other economies, it should be remembered that there is no 'right' amount of GDP or of GDP growth.
- GDP growth does not necessarily go hand in hand with positive social or environmental development in an economy. **However, it does not measure the social or environmental situation of a society.**



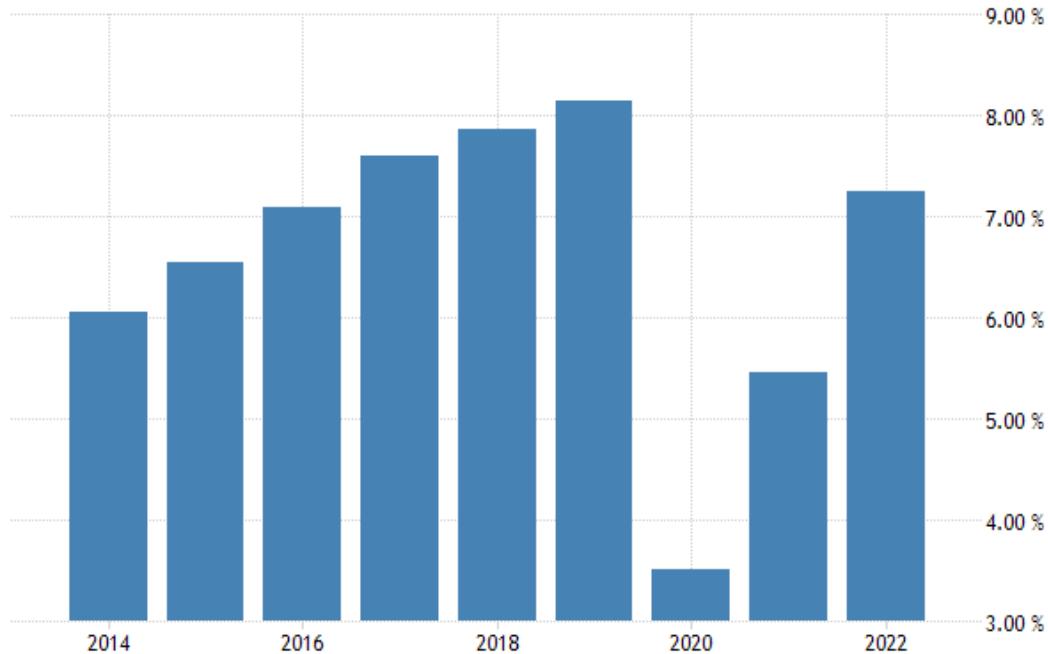
## How ADB sees South Asian economies' growth

Real GDP growth rate

■ 2022 ■ 2023



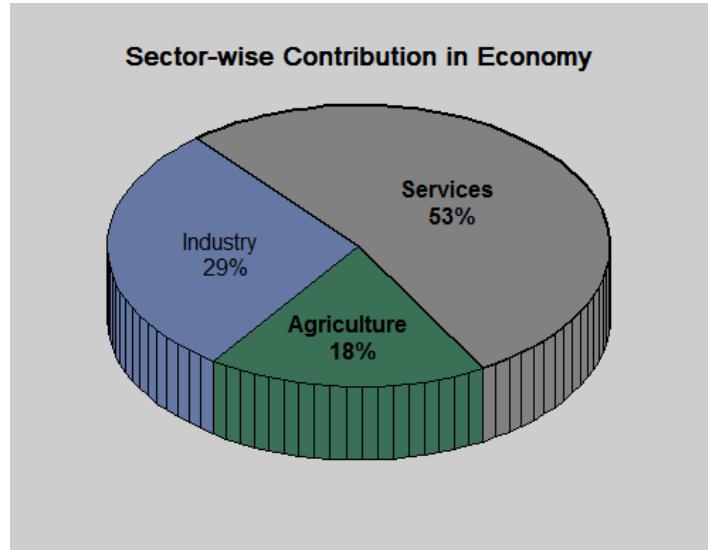
*Note: Years represent fiscal years of respective countries*



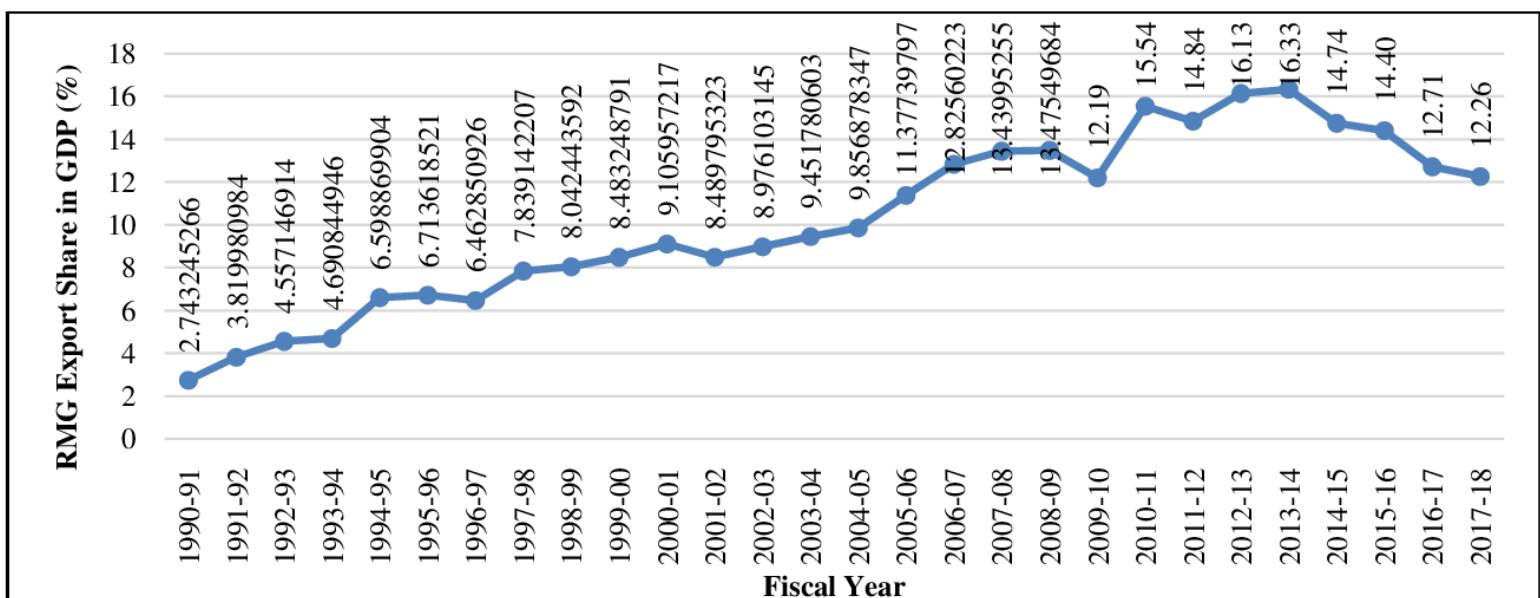
## Bangladesh GDP Growth Rate

According to the provisional data of BBS, GDP at current market prices is US\$ 454 Billion in FY 2022-23, up by 11.77 percent of the previous fiscal year.

Bangladesh had a GDP per capita of USD 2,528 in 2023, compared to USD 1,119 a decade earlier.



Contribution of different sectors in GDP of Bangladesh



RMG sector's contribution to GDP in Bangladesh



BANGLADESH is  
2<sup>nd</sup>  
largest apparel exporting  
country in the world

81%  
of the country's  
total export  
earnings come  
from RMG

4.4  
Million workers earn  
their livelihood from  
the industry

16%

Of GDP of  
Bangladesh is  
contributed  
by the RMG

The industry indirectly  
supports livelihood of

40  
Million people of the  
country



## What is Gross National Income (GNI)

The **gross national income (GNI)**, previously known as **gross national product (GNP)**, is the total domestic and foreign output claimed by residents of a country, consisting of gross domestic product (GDP), plus incomes earned by foreign residents, minus income earned in the domestic economy by nonresidents

GNI = GDP + Money flowing in from foreign countries - Money flowing out to foreign countries

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# **Module IV**

## **Environment and Development\_III**



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**Department of Social Relations  
EAST WEST UNIVERSITY**

## **Topic covers:**

1. Nexus between environment and development

## Nexus between environment and development

Economic growth is considered to be a powerful tool to create employment, reduce poverty and improve the living standards.

Therefore, economic growth has been a major policy agenda of developing countries where the poverty level is high and widespread. For instance, South Asian region, in particular, is experienced with a high poverty level that varies among the countries.

More specifically, India has shown the highest rate of poverty, followed by other countries in South Asia.

The 17 Sustainable Development Goals (SDGs) of the 2030 Agenda has a broad scope of action covering the three dimensions of sustainable development i.e. societal, economic and environmental.

The SDGs address many issues including – eradication of poverty and inequality, creation of inclusive economic growth and ensuring the preservation of the planet. The issues addressed by SDGs are not only linked but are also interdependent.

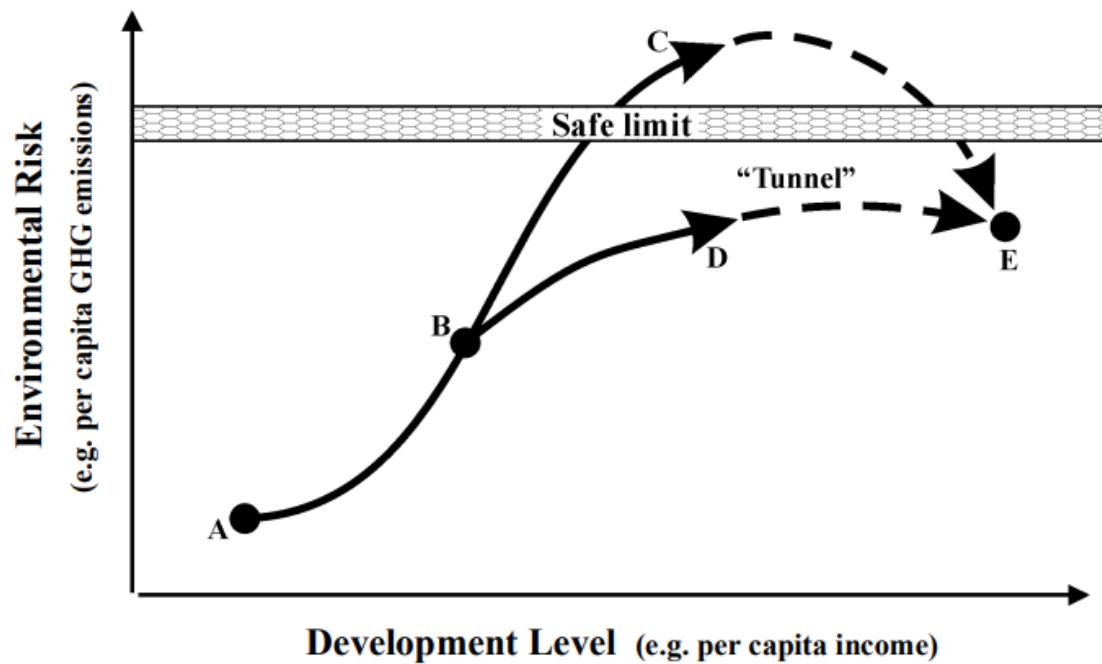
Sustainable development calls for balancing societal (SDG 3, 4, 10), economic (SDG 8, 9, 12 and 17) and environmental (SDG 6, 7, 13 and 15) factors.

Therefore, the governments at all levels i.e. regional, country and global levels **need to minimize trade-offs** between goals while implementing them.

For example, a country that intends to improve energy access to achieve **SDG 7**, may end-up accelerating the climate change or acidifying the oceans, disrupting **SDG 13** or **SDG 14**.

Hence, actions that are mutually reinforcing should be taken without ignoring the overlaps among the goals. Quality education for girls (SDG 4) shall help achieve poverty eradication (SDG 1), gender equality (SDG 5) and economic growth (SDG 8) in the long-run.

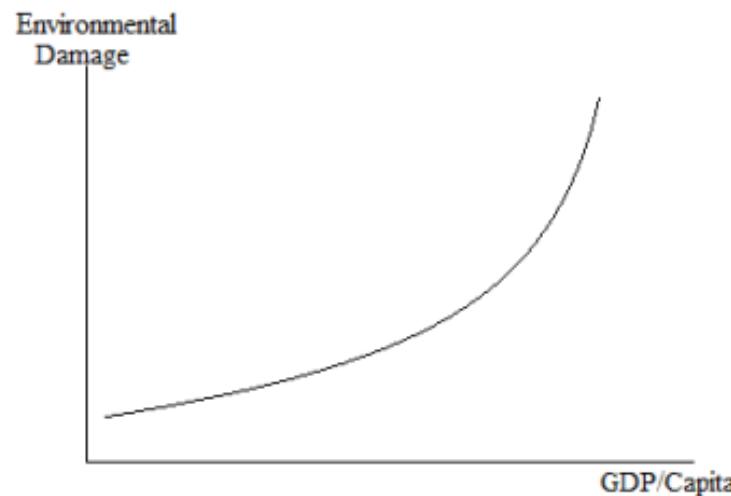
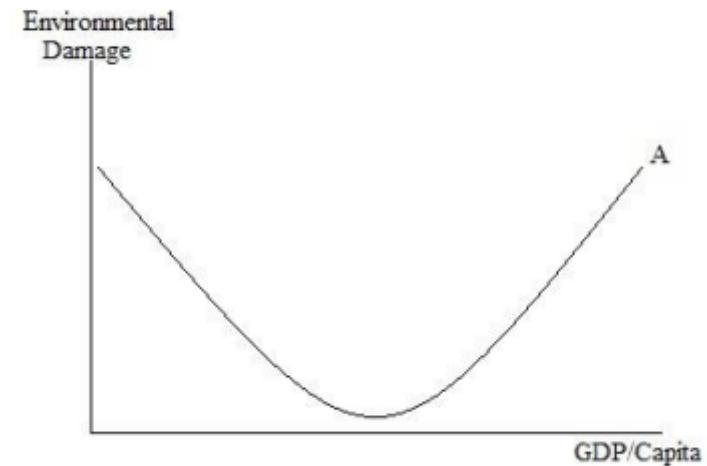
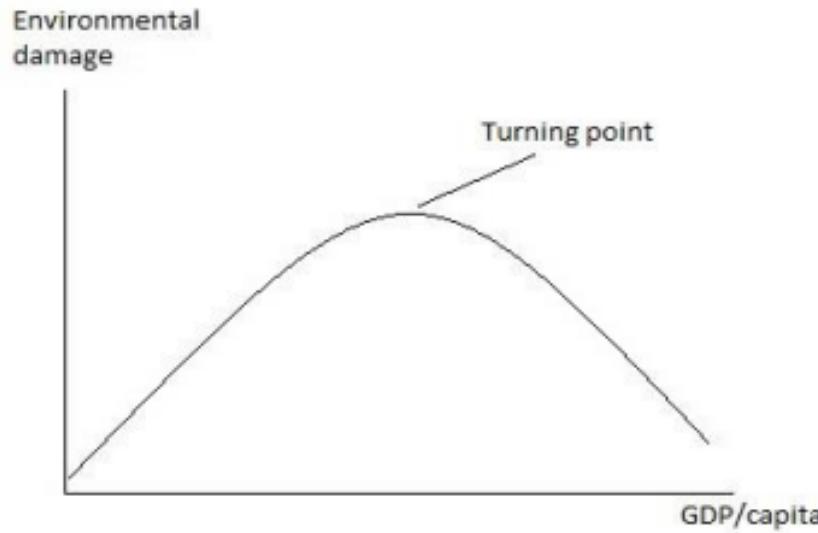
Therefore, there is need to think systematically about these interactions and how these goals affect each other.



Source: Adapted from Munasinghe (1998).

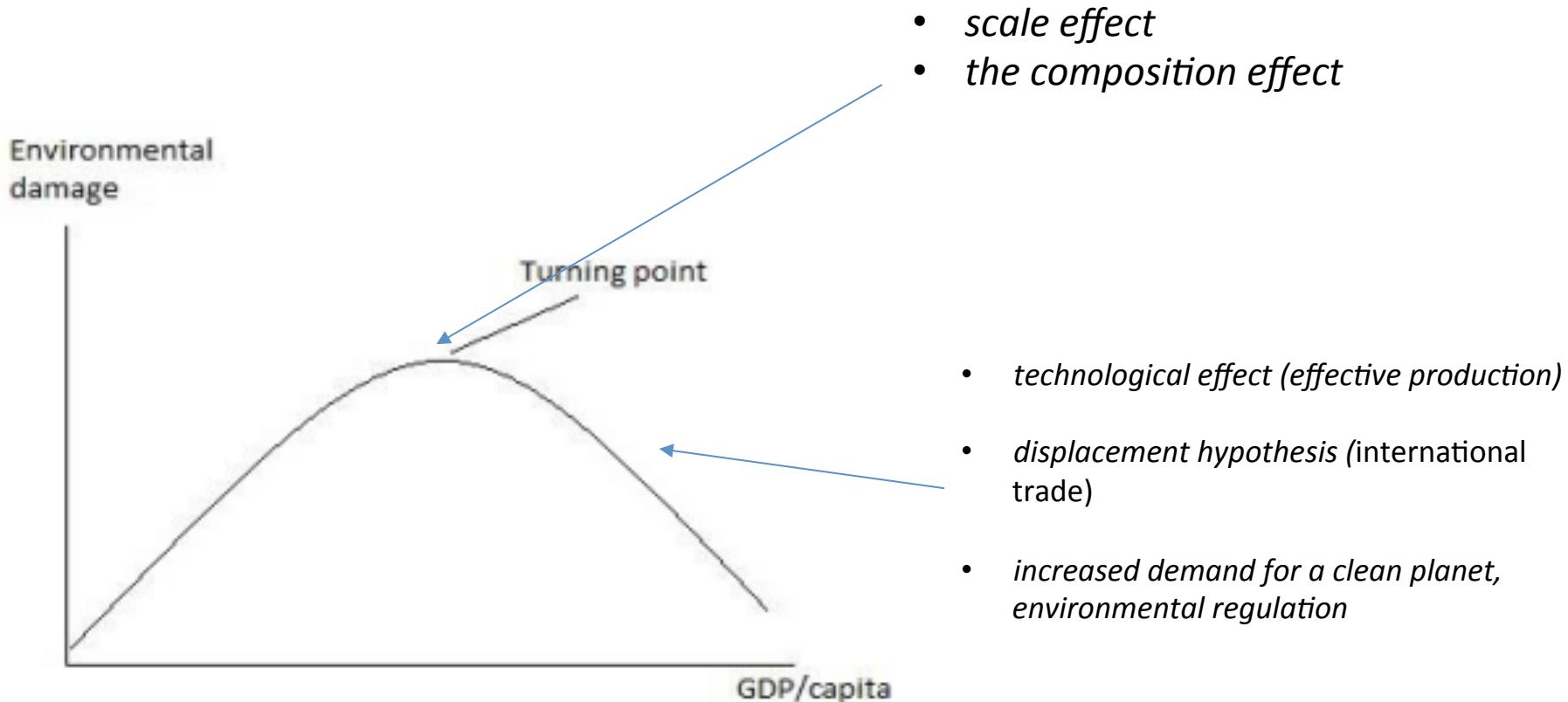
Figure: Environmental Risk versus Development Level

## Relationship between environmental degradation and economic growth

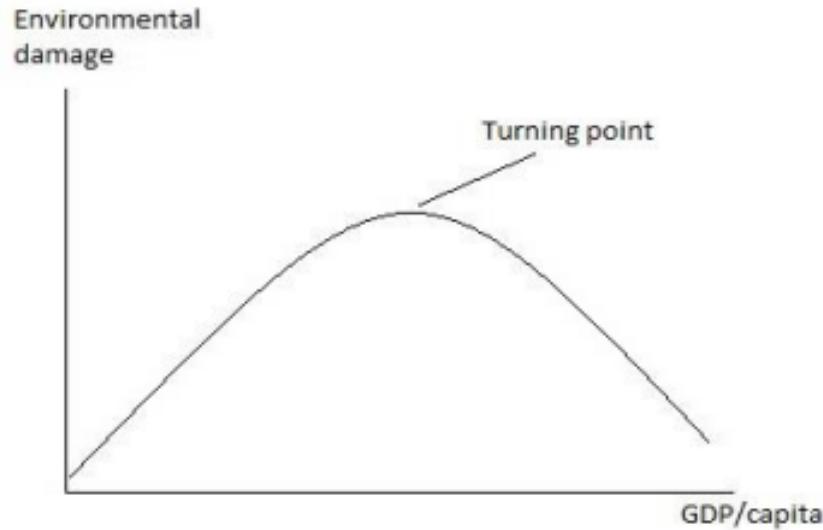


# Relationship between environmental degradation and economic growth

## 1. The Environmental Kuznets Curve (EKC)



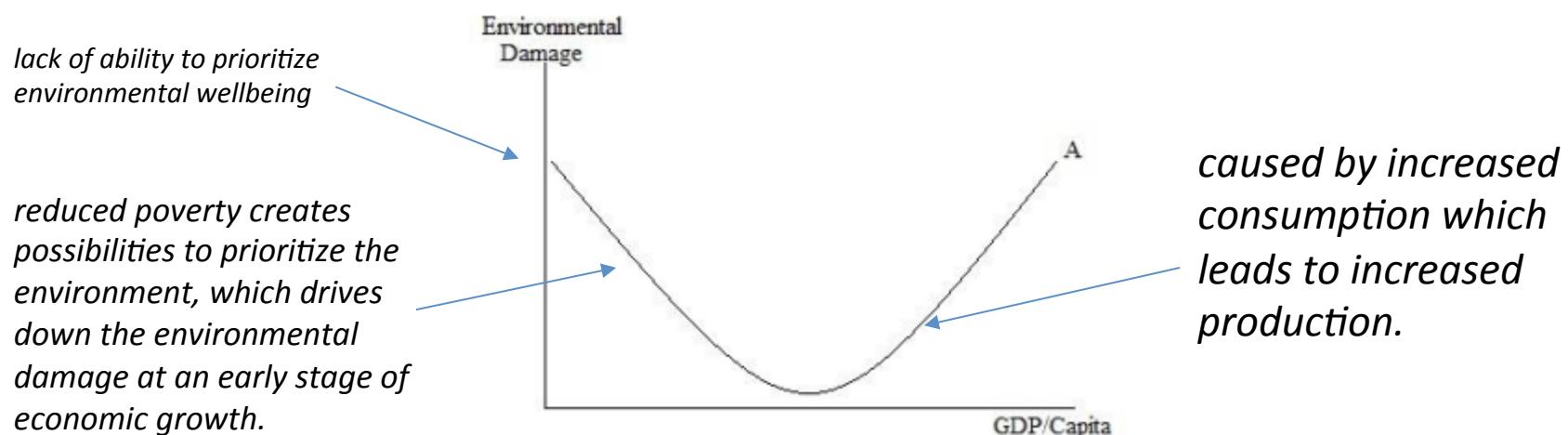
## 1. The Environmental Kuznets Curve (EKC)



The theory of the EKC is based on the effects of the transition from agricultural production in rural areas to industrial production in urban areas. As the industrial production becomes more intensive, pollution increases. With time, and higher income levels, the industrial-heavy production is phased out in favour of a more high-technological and service-centralized production. This development is thought to counteract the increase in pollution and eventually cause the pollution levels to drop. The effects of a high-technological and production effective economy is thought to contribute to the decrease in pollution, as well as a higher demand for a clean climate from consumers and higher political interests in the wellbeing of the environment.

# Relationship between environmental degradation and economic growth

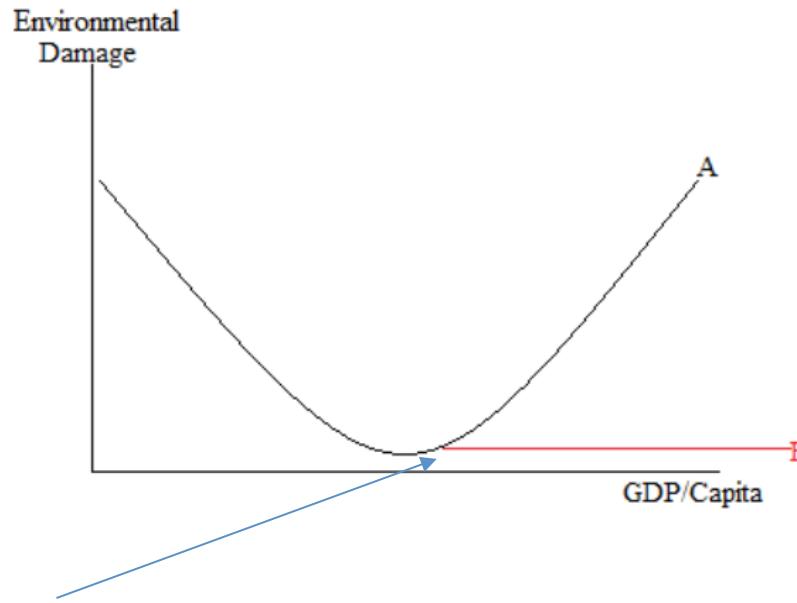
## 2. Brundtland curve



The WCED report (World Commission on Environment and Development) from 1978 named “Our future”, also known as the Brundtland report, presents another view of the relationship between GDP and environmental damage. The authors of the report argue that poor countries cause high levels of environmental degradation initially, followed by a decrease in environmental degradation when the economies grow until a turning point is reached, at which environmental degradation increases.

# Relationship between environmental degradation and economic growth

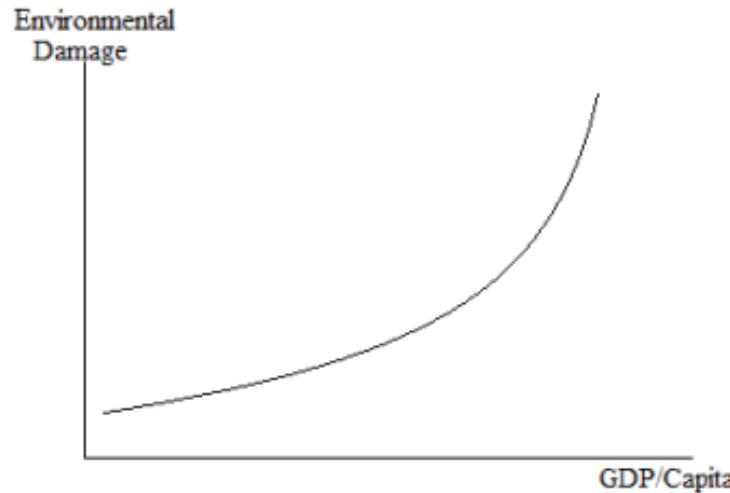
## 2. Brundtland curve



Sustaining low levels of environmental damage, is only possible if green technology and development is of high priority. Wealthy countries could invest in green, innovative production in order to counteract the increasing pollution levels.

# Relationship between environmental degradation and economic growth

## 3. The environmental Daly curve hypothesis



In 1973 the ecological economist Daly describes the relationship between economic growth and environmental damage. He argues that today's economy driven by increased production is doomed and a steady-state type of economy could be the alternative.

The environmental Daly curve hypothesis suggests that an increase in per capita GDP will lead to higher environmental damage.

# Relationship between environmental degradation and economic growth

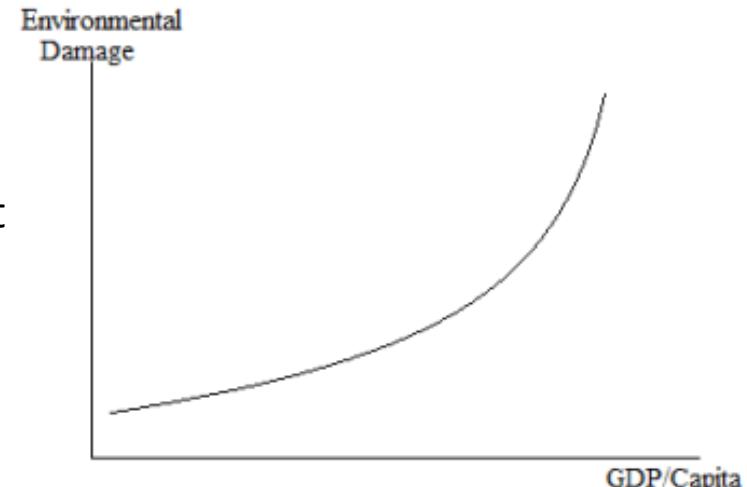
## 3. The environmental Daly curve hypothesis

Green development is not enough to offset the usage of scarce natural resources and the overall environmental damage.

Incentives for a better, high-quality environment might occur when a country reaches a particular point of wealth, the damage will already be too severe.

The environmental damage will increase as the economic status grows in a country, no matter the willingness of the citizens and policymakers.

The environmental damage increases with economic growth unless the very principles of the modern world economy changes.



## Challenges and Complexity of Development From Environmental Perspective

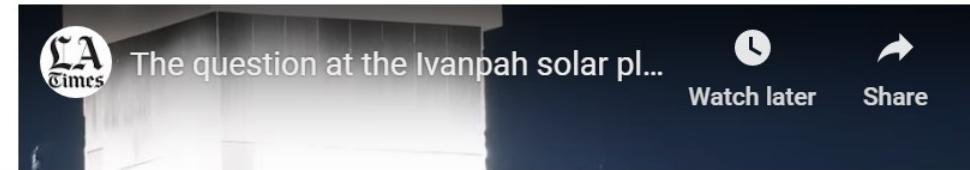
Inadequate scientific understanding of how the dynamic environment works and how different human choices affect the environment

Multifaceted interactions between ecological, social, cultural and economic factors

# Los Angeles Times

CALIFORNIA

## This Mojave Desert solar plant kills 6,000 birds a year. Here's why that won't change any time soon



CORONAVIRUS AND PANDEMIC >

Plaschke: I had COVID-19, and these are the things nobody tells you

<https://www.latimes.com/local/california/la-me-solar-bird-deaths-20160831-snap-story.html#>

[https://www.youtube.com/watch?v=gs79Xu\\_N3pg](https://www.youtube.com/watch?v=gs79Xu_N3pg)

## Example: The Nexus between Rampal Power plant and Development in Bangladesh

In tandem with Bangladesh's steadfast development, the demand for energy and electricity has grown.

Besides, Bangladesh's residential and industrial fields seem to be crucial to the country's economy. These two industries account for 50.3% of Bangladesh's GDP, which is an important sign of progress. Both sectors utilized almost 66 percent of total power in the year 2018.

Being evidence of a rapidly growing energy requirement, Bangladesh's main energy use increased by 6.4% between 2007 and 2017. Whereas GDP climbed by 7.9% in 2018, utilization of electricity enhanced by 8.6% over 2017.

According to the Bangladesh Power Development Board, 90 percent of Bangladesh's population had access to electricity in 2018, and this number is increasing at a rate of 10% every year.

Rampal Power Plant is a “1,320-megawatt imported coal-fired power plant promoted by the Bangladesh-India Friendship Power Company Limited” (BIFPCL).

The Sundarbans’ buffer zone is designated as an Ecologically Critical Area (ECA).

The coal plant poses a danger to the Sundarbans’ ecosystem and its surrounding communities. Furthermore, in terms of pollution, the Rampal facility moves 12,000 tons of coal through the forest every day, equivalent to 500 ships, for a total of 47 lakh tons annually.

Then there is the matter of coal burning, which produces 47 lakh tons per year. The plant is about 4 kilometers away from the ECA.

Therefore, 47 lakh tons of coal burnt there would produce more than nine lakh tons of ash, with dry fly ash accounting for 80% and bottom ash accounting for 20%.

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# Module V

## Urbanization and Environment



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EAST WEST UNIVERSITY**

## **Topic covers:**

1. Concepts on urbanization
2. Trends of urbanization

# **Urban**

**Urban** is a locational setting in which (1) the density of settlement is considerably higher than that of general population, (2) the people in that setting are engaged in nonagricultural activities, not in primary economic sector, (3) serves as a cultural, administrative, and economic center for a region.

Urban means belonging to, or relating to, a town or city. Most of the population is an urban population. Most urban areas are close to a park.

**City:**....a discrete area with a discrete population that has legal status and margins of this discrete area, the “city limits” have legal definition and recognition.

## Urbanism

The meaning of URBANISM is the characteristic way of life of city dwellers.

Urbanism is the study of how inhabitants of urban areas, such as towns and cities, interact with the built environment.

## Urban Area

An urban area can be defined as a geographical space characterized by a continuous urban settlement.

It has a population density higher than the surrounding space, even though the values of the density significantly vary in different countries and according to various types of urbanization.

Urban areas are composed of a central part, consisting of a more or less large city or town, and by surrounding suburbs.

# What is Urbanization?

A trend in the increasing proportion of the national population living in urban centers (towns and cities) or an increase in the number of urban centers over a period of time (Rasheed, 2008).

Different regions are urbanizing at different rates. A few decades ago, most of the world's city dwellers lived in Europe and North America.

But by 2030, most urbanites will live in Asia and Africa. Just three nations—China, India and Nigeria—are expected to add 1 billion city residents in coming decades.

## Urbanization

The process by which large numbers of people become permanently concentrated in relatively small areas, forming cities.

The definition of what constitutes a city changes from time to time and place to place, but it is most usual to explain the term as a matter of demographics.

**Urbanization** is the population shift from rural to urban areas, the corresponding decrease in the proportion of people living in rural areas, and the ways in which societies adapt to this change.

It can also mean population growth in urban areas instead of rural ones.

It is predominantly the process by which towns and cities are formed and become larger as more people begin living and working in central areas.

## Urbanization

Urbanization is the process through which cities grow, and higher and higher percentages of the population come to live in the city.

The world population has grown significantly and our economies have become more industrialized over the past few hundred years. As a result, many more people have moved into cities. This process is known as urbanization.

Even after cities emerged, however, a large majority of people lived and worked in rural areas. It was not until large scale industrialization began in the eighteenth century that cities really began to boom. Nearly half of all people now live in urban areas.

They are attracted by jobs in manufacturing and the professions, as well as by increased opportunities for education and entertainment.

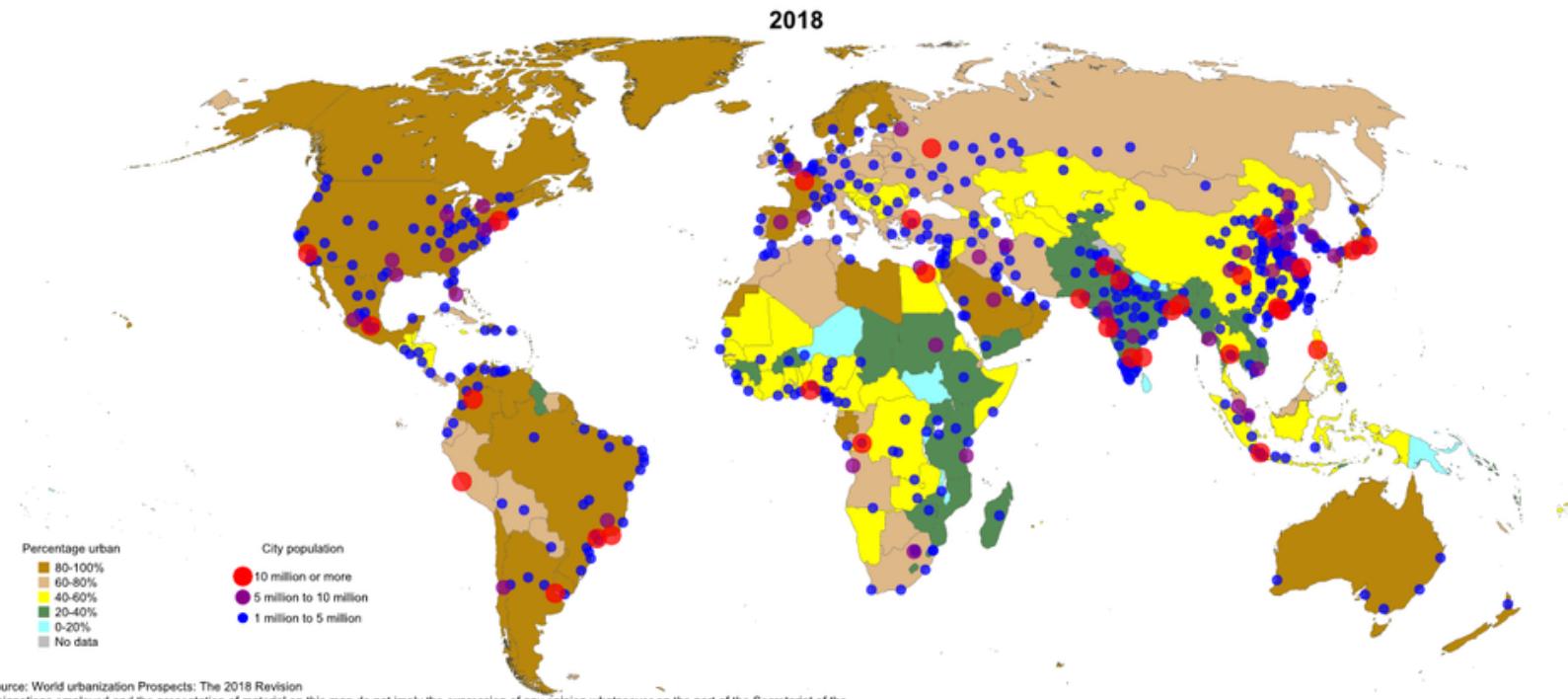
## Urbanization

One effect of this huge increase in people living in urban areas is the rise of the megacity, which is a city that has more than 10 million inhabitants. There are now cities with even more than that.

Tokyo, Japan, for example, has nearly 40 million residents. Another effect of urbanization is urban sprawl. Urban sprawl is when the population of a city becomes dispersed over an increasingly large geographical area.

As we move forward in the 21st century, the global population is likely to continue growing. Urban areas will continue to grow with the population. This continual growth presents complex challenges as we prepare for the cities of the future.

In 2023, urban population for **Bangladesh** was 40.5 %. Urban population of Bangladesh increased from 9 % in 1974 to 40.5 % in 2023 growing at an average annual rate of 3.13%.



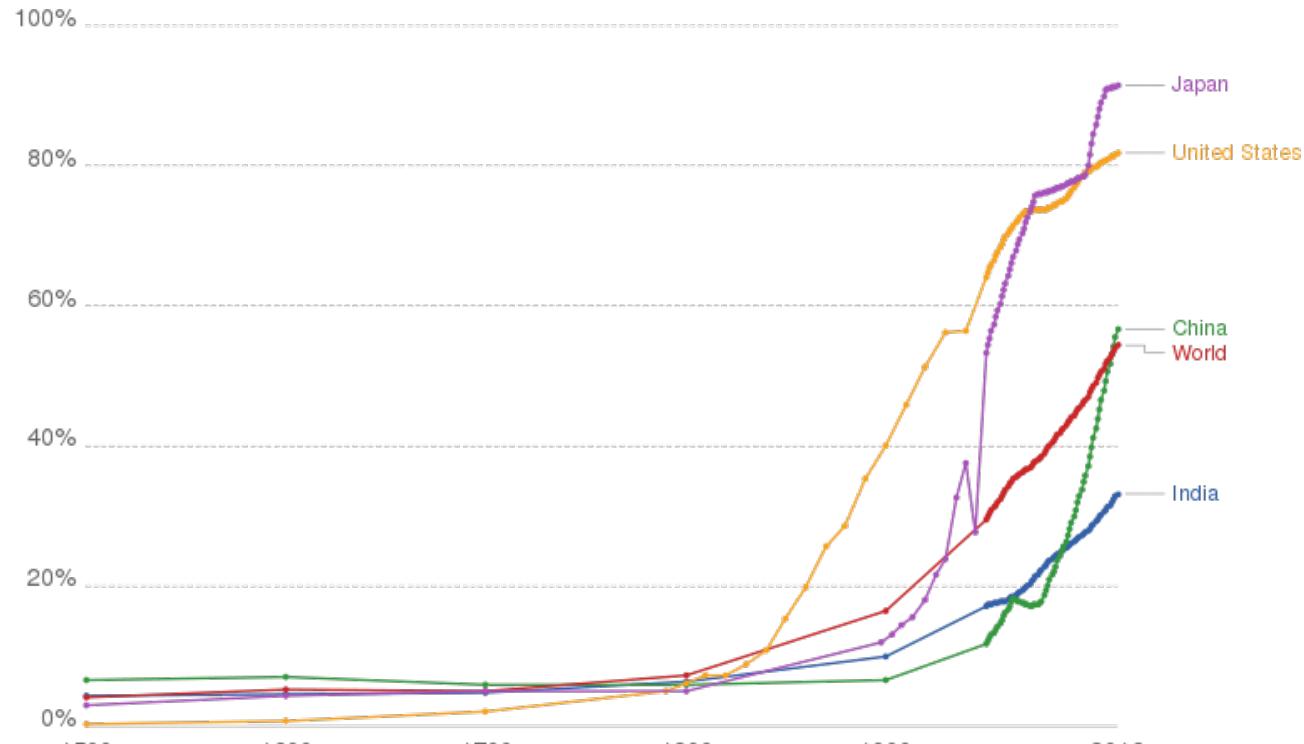
Data source: World urbanization Prospects: The 2018 Revision  
The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

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Global urbanization map showing the percentage of urbanization and the biggest global population centres per country in 2018, based on UN estimates.

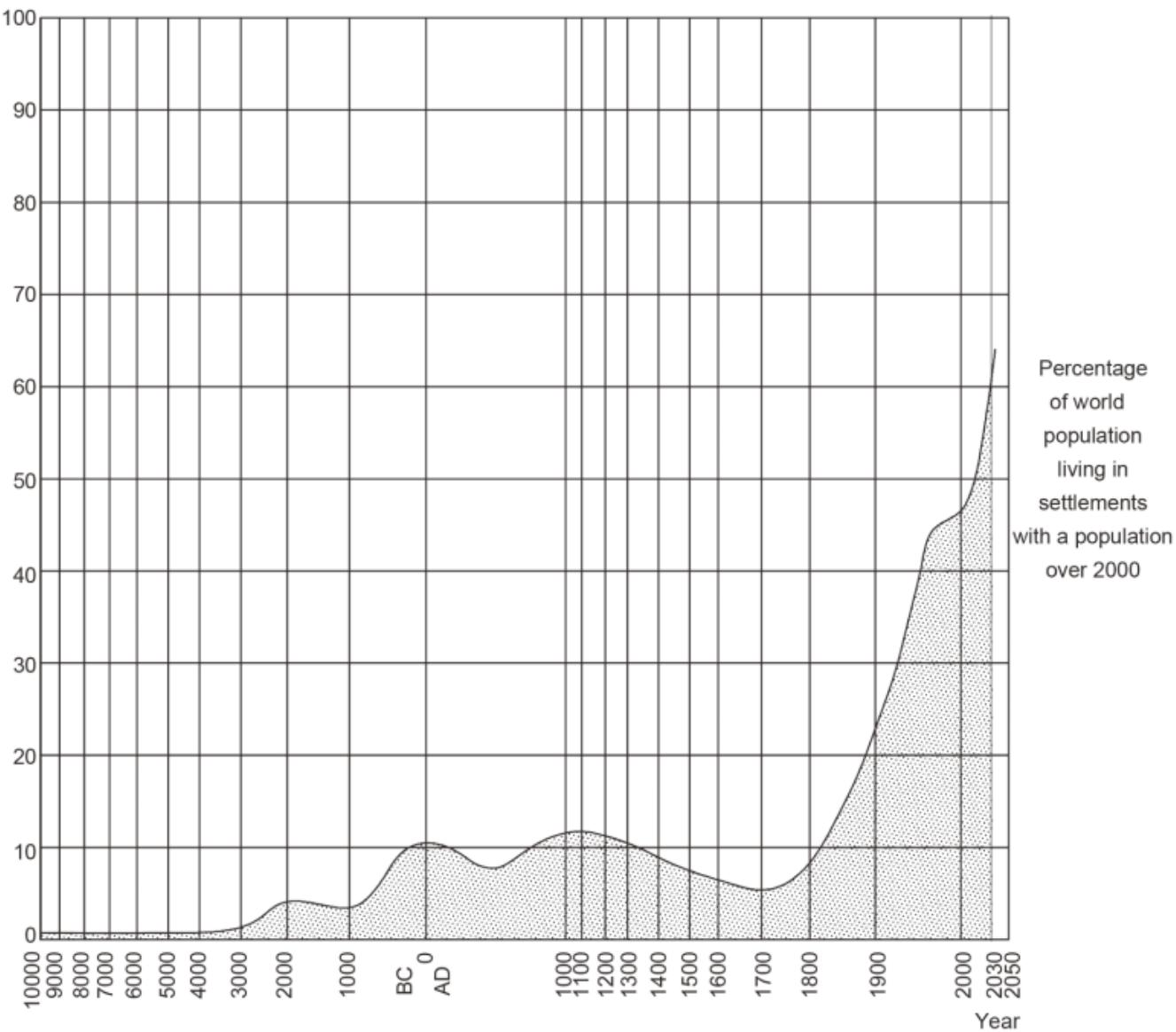
## Urbanization over the past 500 years

Share of the total population living in urban areas. Urban areas are based on national definitions and may vary by country.



Source: OWID based on UN World Urbanization Prospects 2018 and historical sources (see Sources)

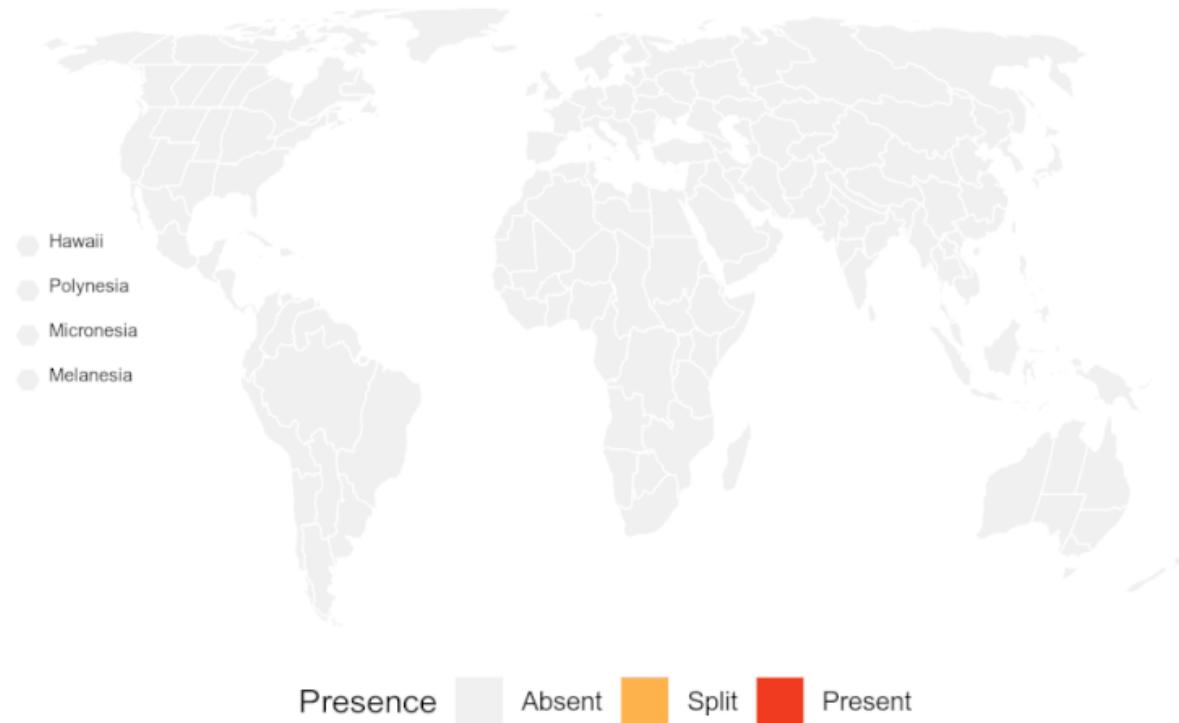
## Urbanization over the past 500 years



**Figure 1** Urbanization level in the world (1000 BC–AD 2050).

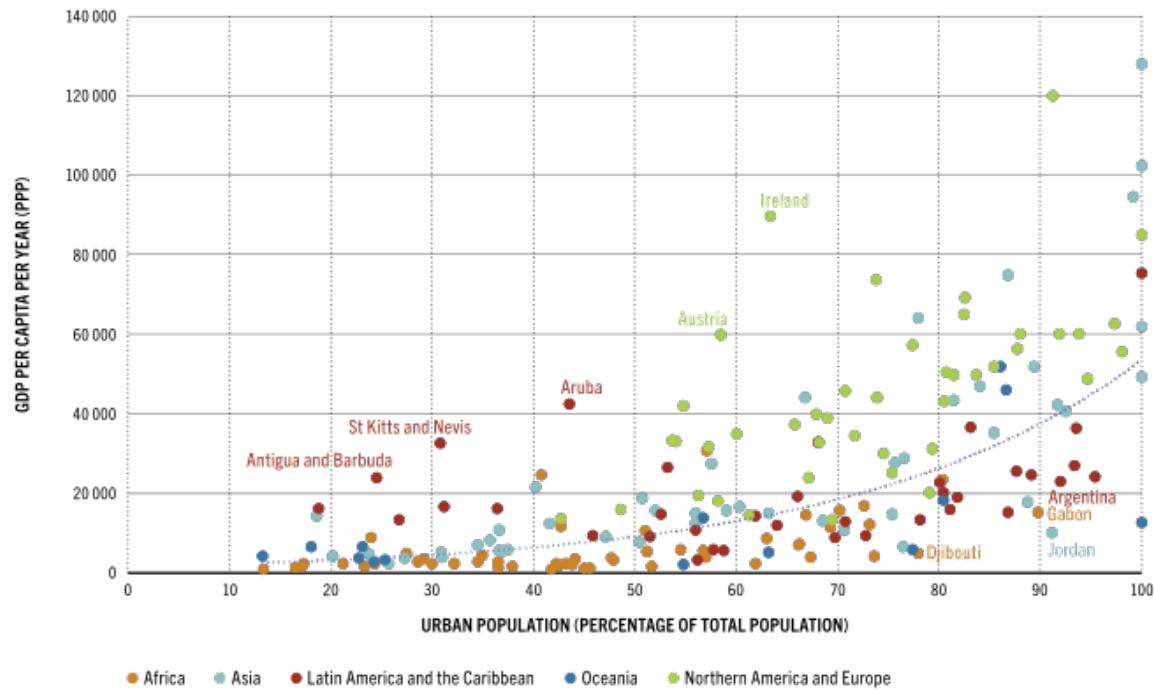
## Urban Centers

10000 years ago



A global map illustrating the first onset and spread of urban centers around the world, based on.

## GROSS DOMESTIC PRODUCT PER CAPITA AND LEVEL OF URBANIZATION



NOTES: GDP = gross domestic product; PPP = purchasing power parity. Each dot represents a country/territory.  
SOURCE: World Bank. 2023. DataBank. In: *World Bank*. [Cited 23 May 2023]. <https://databank.worldbank.org>

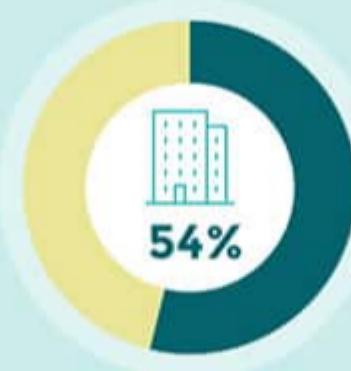
Gross domestic product per capita and level of urbanization

## Share of the Urban Population Worldwide

1980



2015



2050

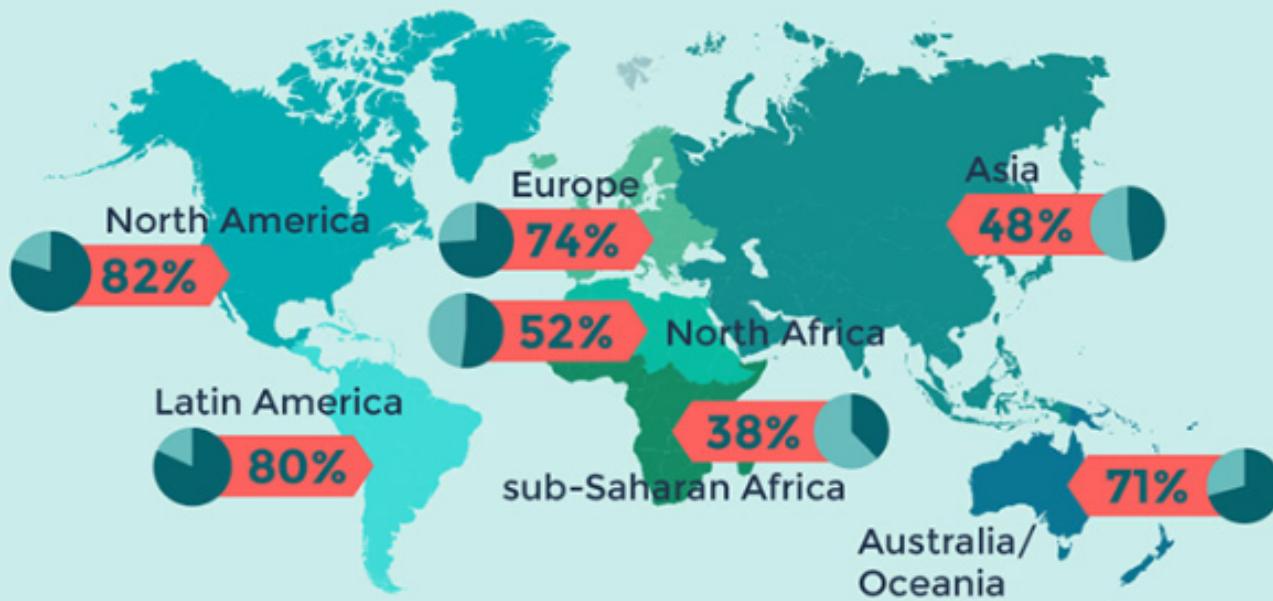


Source: United Nations, Department of Economic and Social Affairs, Population Division (2014),  
World Urbanization Prospects: The 2014 Revision, custom data acquired via website

In 1800, less than 2 percent of the world's population lived in cities; by 1900 the share was still only about 5 percent. By 1950 it had reached 30 percent, and 2007 became the first year when more than half of humanity lived in cities.

Today, some 56% of the world's population – 4.4 billion inhabitants – live in cities. This trend is expected to continue. By 2050, nearly two out of three of us will live in a city.

# Share of Urban Population on all Continents

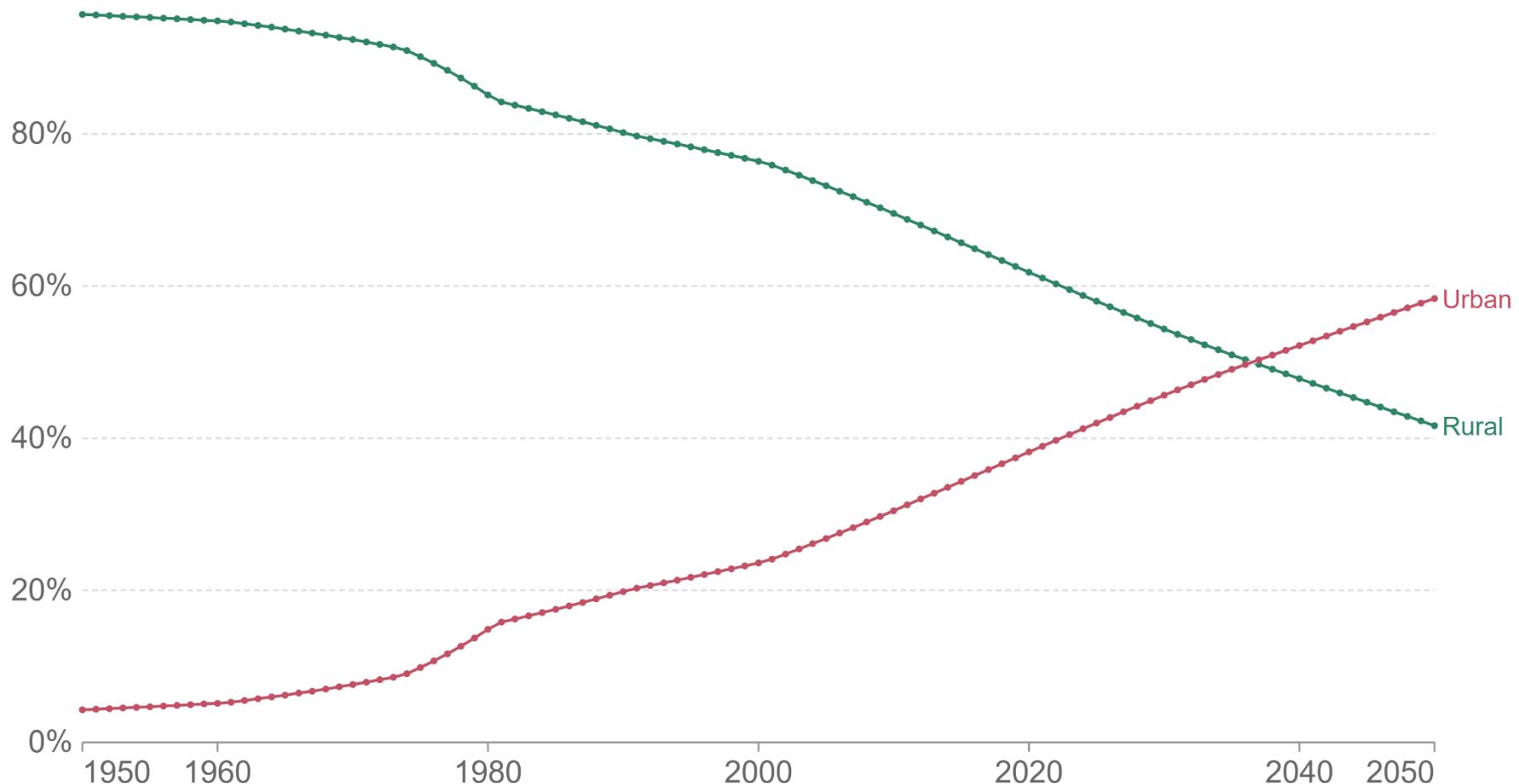


Source: United Nations Department of Economic and Social Affairs (UNDESA) 2016, online database

The graphic compares the respective shares of the urban population by continent. While 82% of the North American population lives in cities, the same is true of only 38% of the population in sub-Saharan Africa. In between these two extremes are Latin America (80%), Europe (74%), Australia/Oceania (71%) and Asia with an urban share of 48% of their population.

# Do more people live in urban or rural areas?, Bangladesh, 1950 to 2050

Share of the population which live in urban versus rural areas. Here, 'majority urban' indicates more than 50 percent of the population live in urban centres; 'majority rural' indicates less than 50 percent. Urban populations are defined based on the definition of urban areas by national statistical offices. This is based on estimates to 2016, combined with UN projections to 2050.



Source: OWID based on UN World Urbanization Prospects (2018) & Historical Sources (see Sources tab)  
OurWorldInData.org/urbanization • CC BY

