

Chapter 09

Development

Key Issues

- Why does development vary among countries?
- Why does development vary by gender?
- Why is energy important for development?
- Why do countries face obstacles to development?

Chapter 09

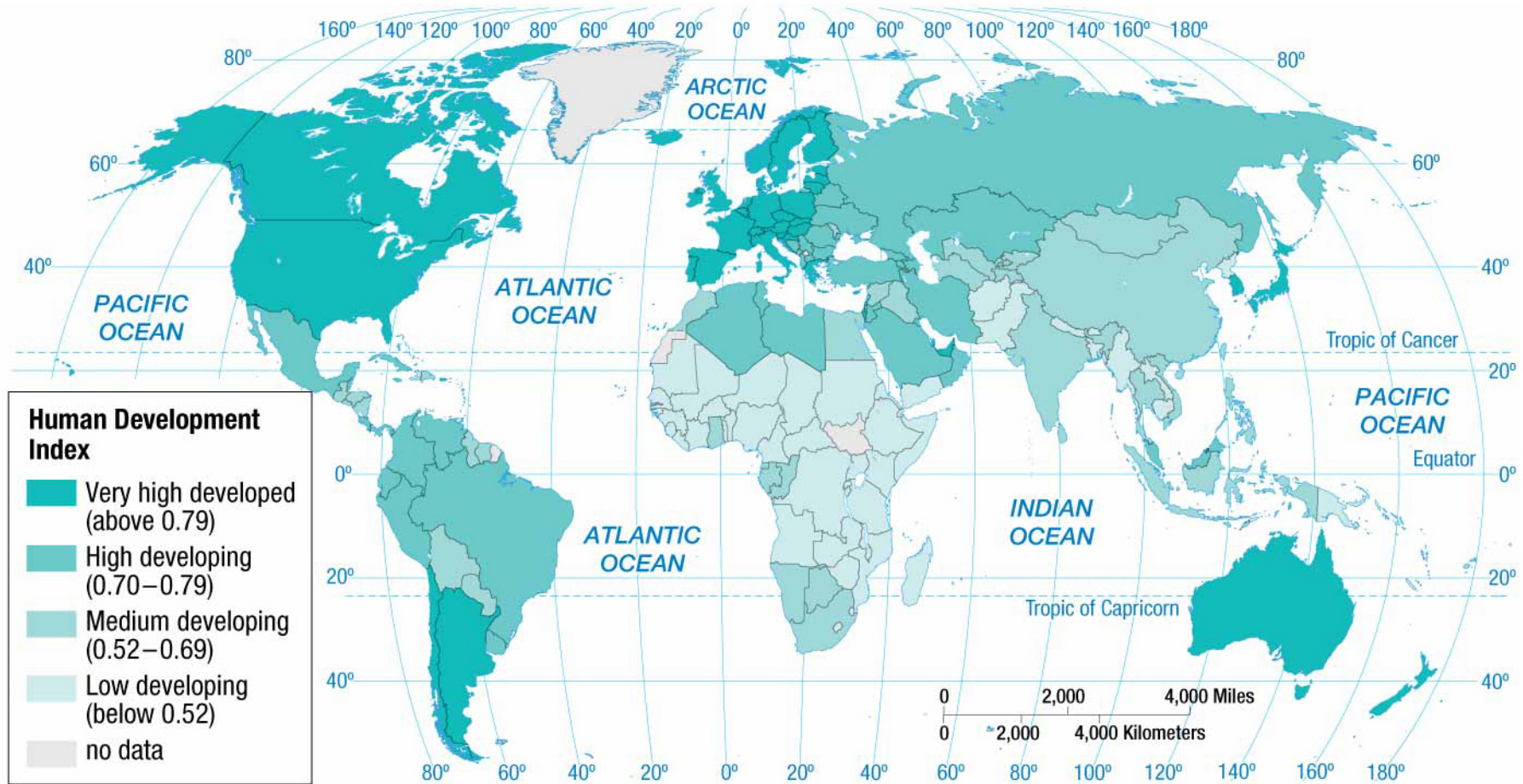
Key Issue 1:

Why Does Development Vary Among
Countries?

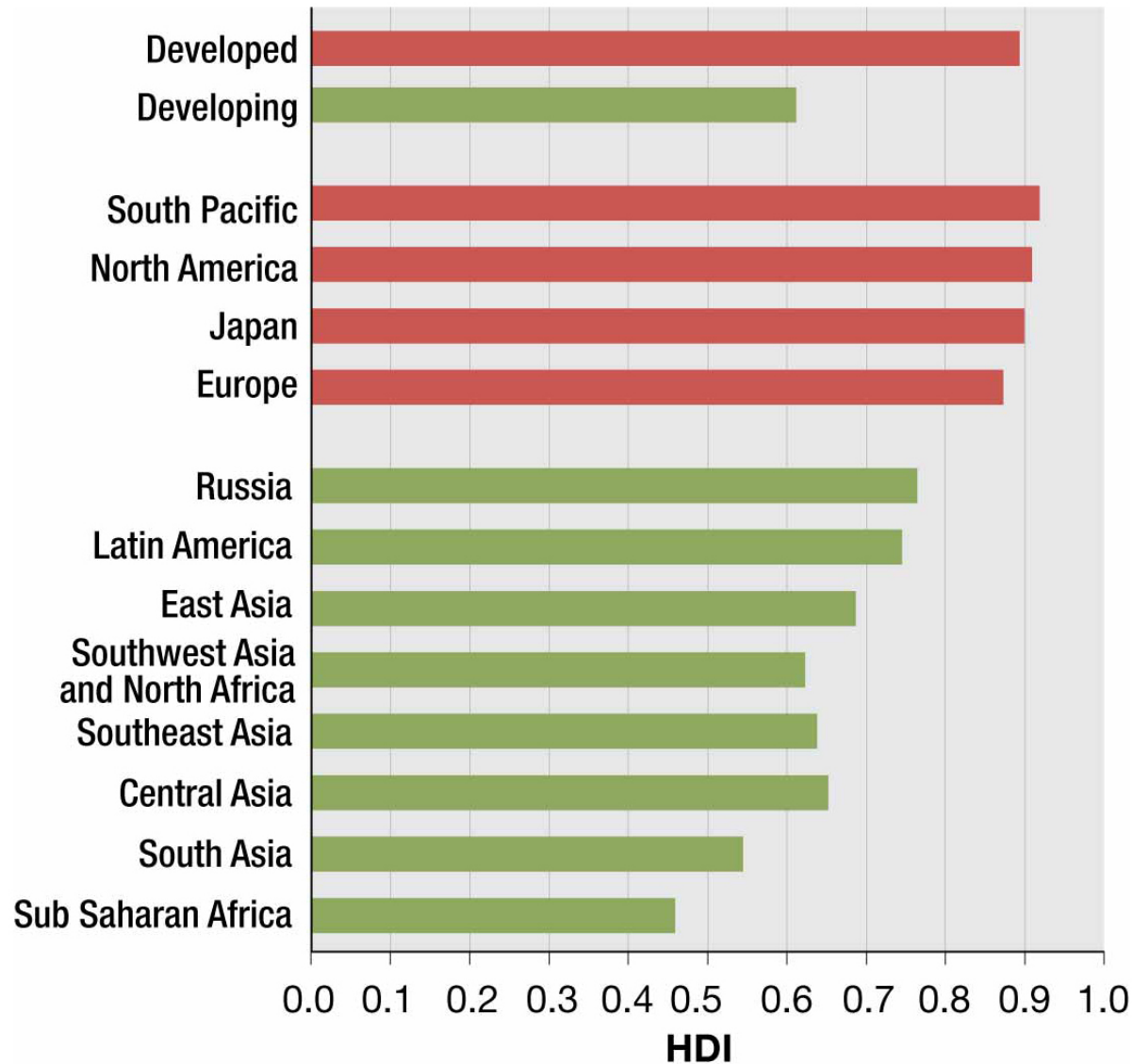
Why Does Development Vary among Countries?

- United Nations (UN) developed a metric to measure the level of development of every country called the *Human Development Index (HDI)*.
 - It is based on three factors:
 1. Decent standard of living
 2. Long and healthy life
 3. Access to knowledge
 - Countries group into 4 classes
 - Level of development ranging from developed (Very High) to developing (Low).

Human Development Index



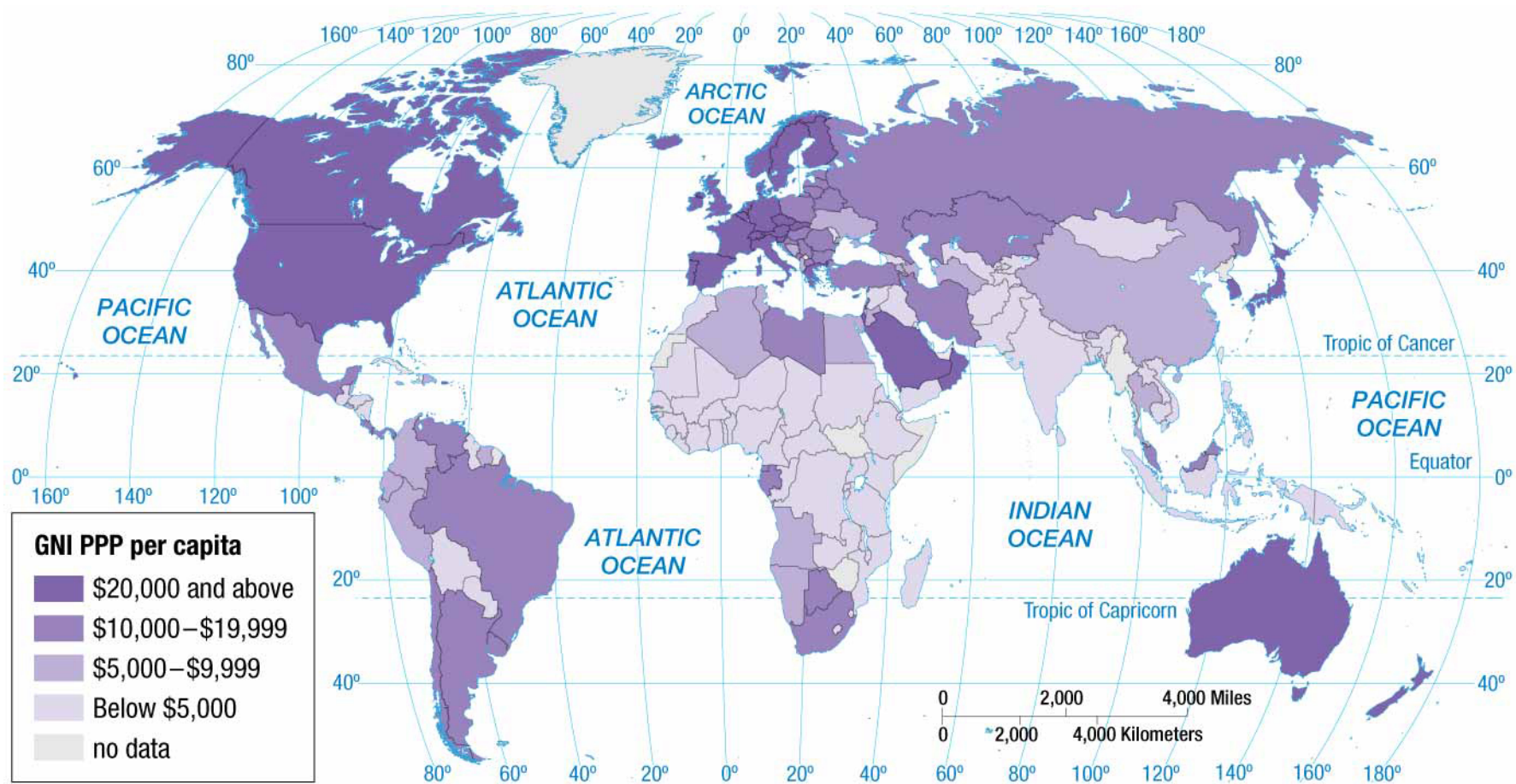
HDI by Region



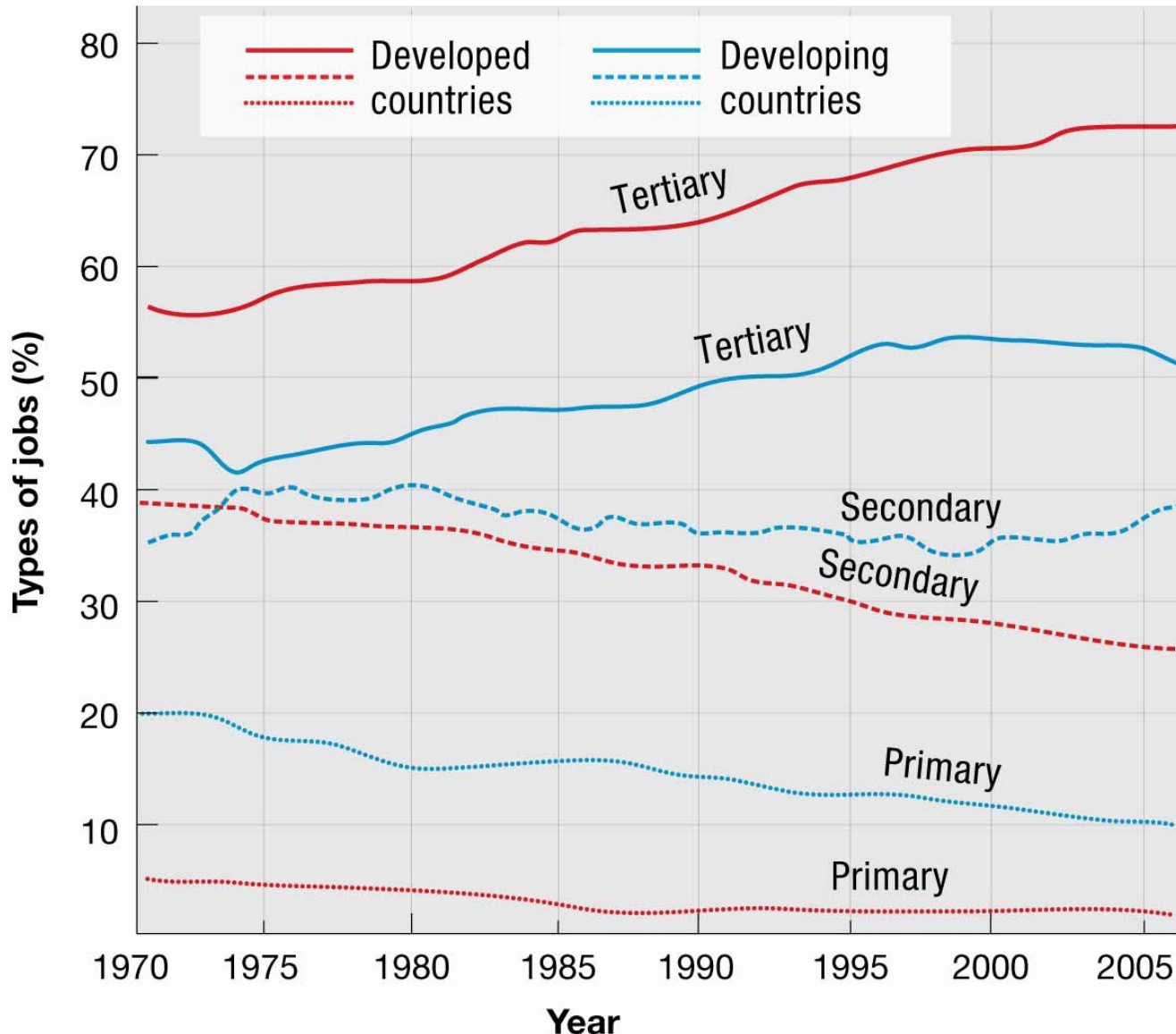
Why Does Development Vary among Countries?

- A Decent Standard of Living
 - UN measures standard of living based on two functions:
 1. Gross national income (**GNI**)
 - Value of the output of goods and services produced in a country annually, including money that leaves and enters the country.
 - » *Gross domestic product* (**GDP**) is similar except it doesn't account for money entering and leaving the country.
 - Per capita GNI measures average (mean) wealth, not its distribution among citizens.
 2. Purchasing power parity (**PPP**)
 - Cost of living adjustment made to the GNI.

Income



Percentage of GNI contributed, by type of Job

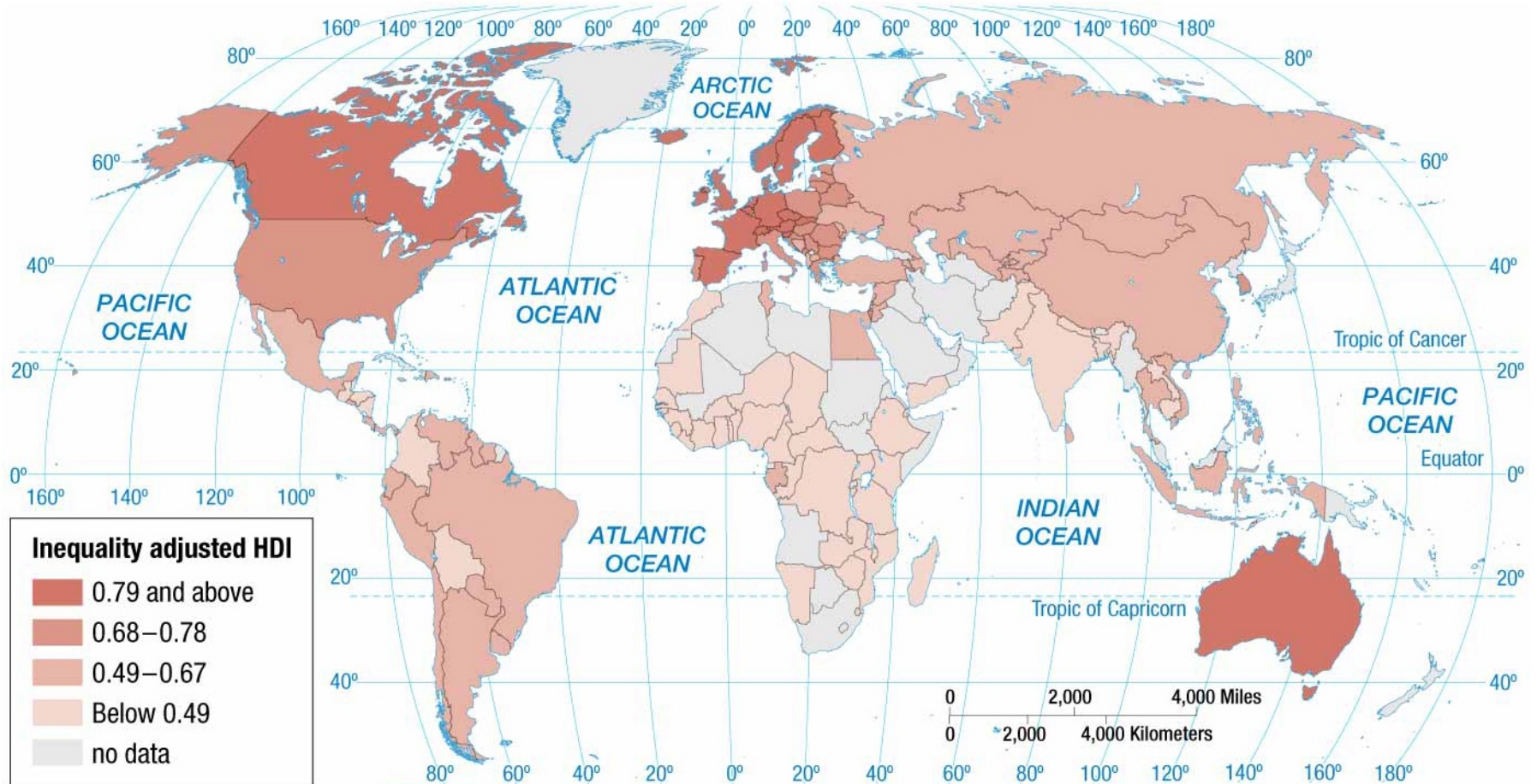


Primary Sector: activities that directly extract materials from the Earth

Secondary Sector: manufacturers that process, transform, and assemble raw materials

Tertiary Sector: the provision of goods and services to people in exchange for payment, such as retailing, banking, law, education, and government

Inequality-Adjusted HDI



The lower the score, the greater the inequality

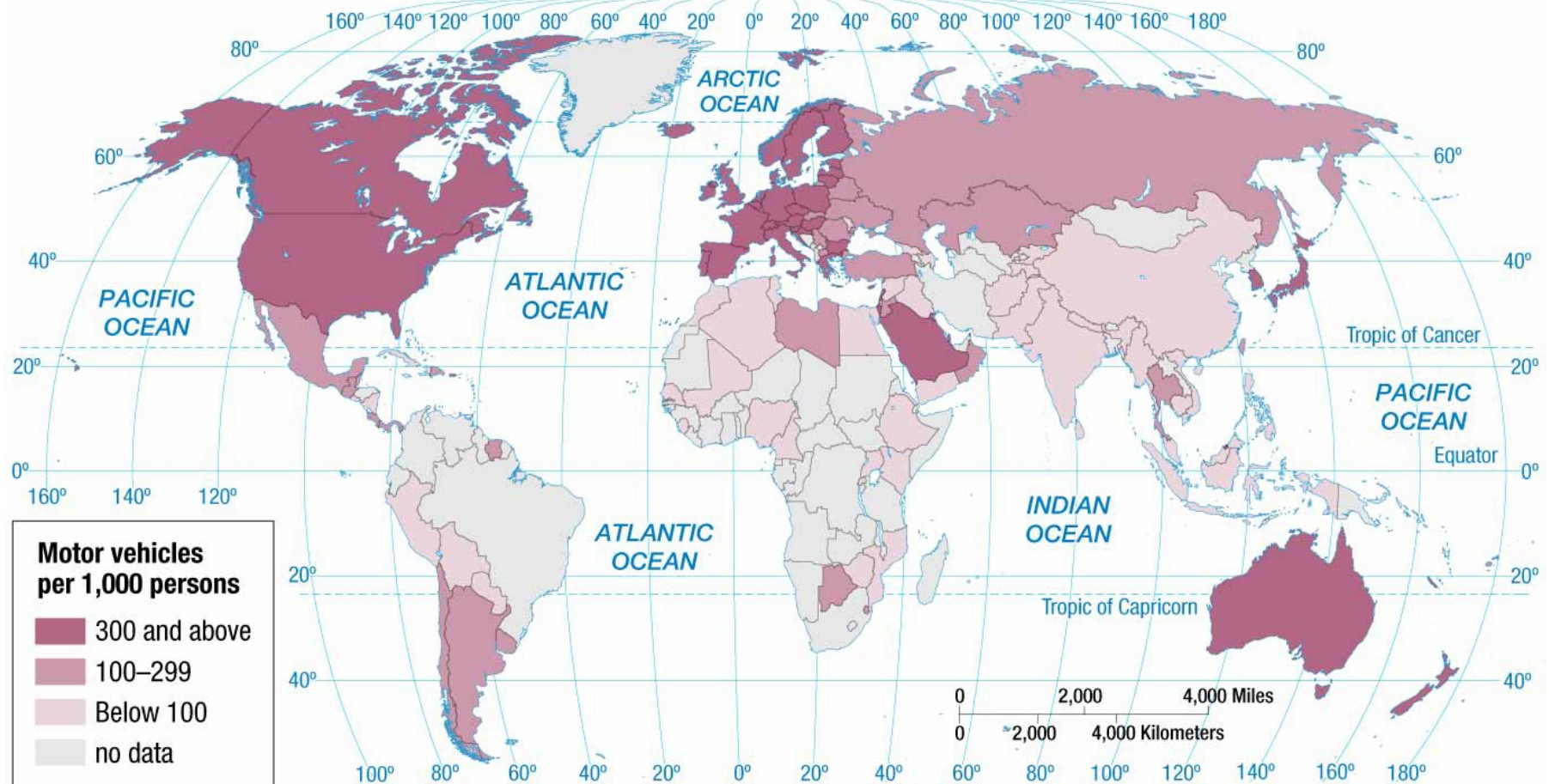
Why Does Development Vary among Countries?

- A Long and Healthy Life
 - UN considers good health to be an important measure of development:
 - Main health indicator contribution to the HDI is life expectancy at birth.
 - Average life expectancies of a baby
 - » Global average: 70 years
 - » Developed country: 80 years
 - » Developing country: 68 years

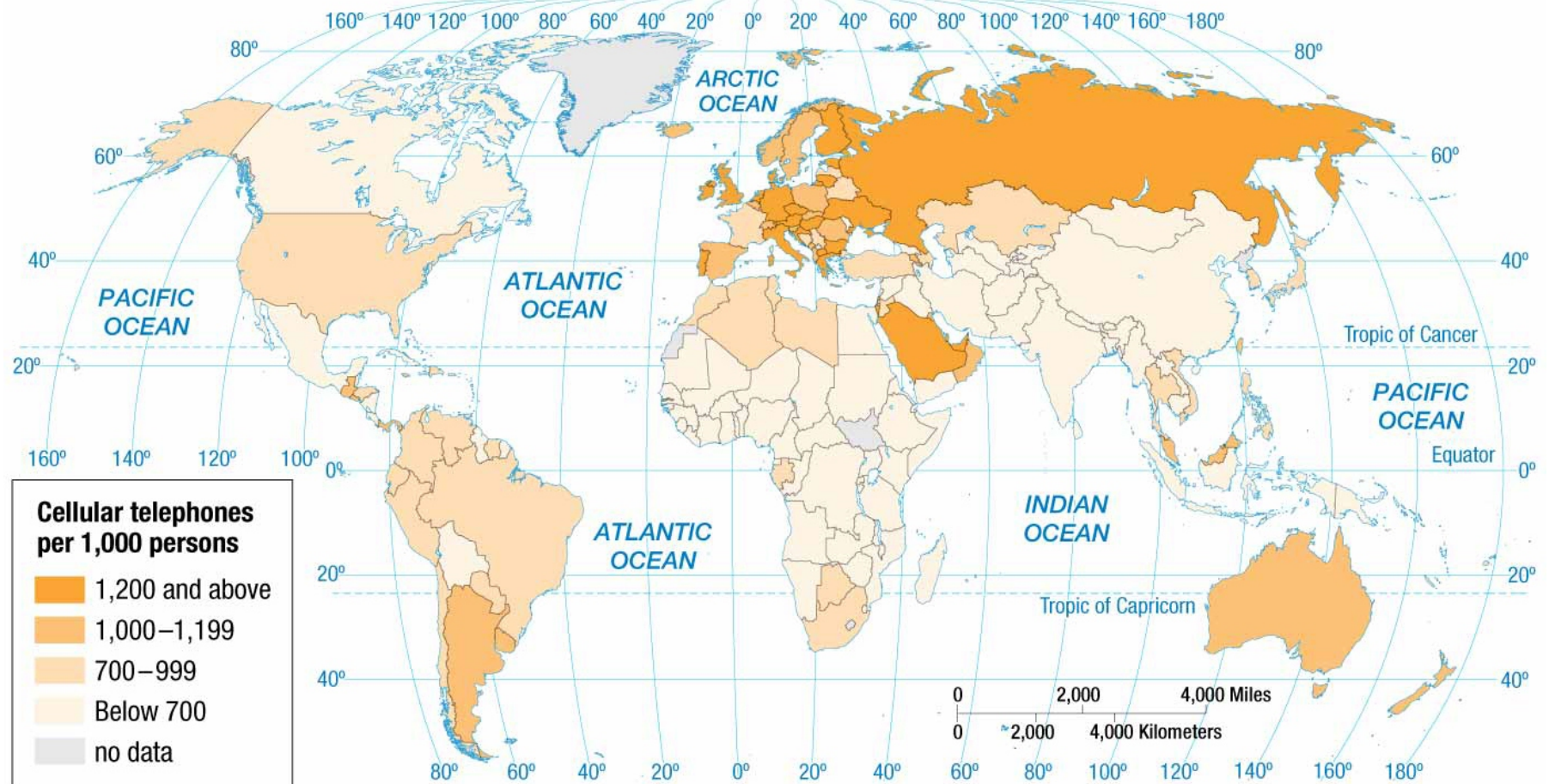
Why Does Development Vary among Countries?

- Consumer Goods
 - Part of the wealth created in developed countries is used to purchase goods and services, especially those related to transportation and communications:
 - Motor vehicles: provide access to jobs and services
 - Telephones: enhance interaction with providers of raw materials and with customers
 - Computers: facilitate sharing of information with buyers and suppliers

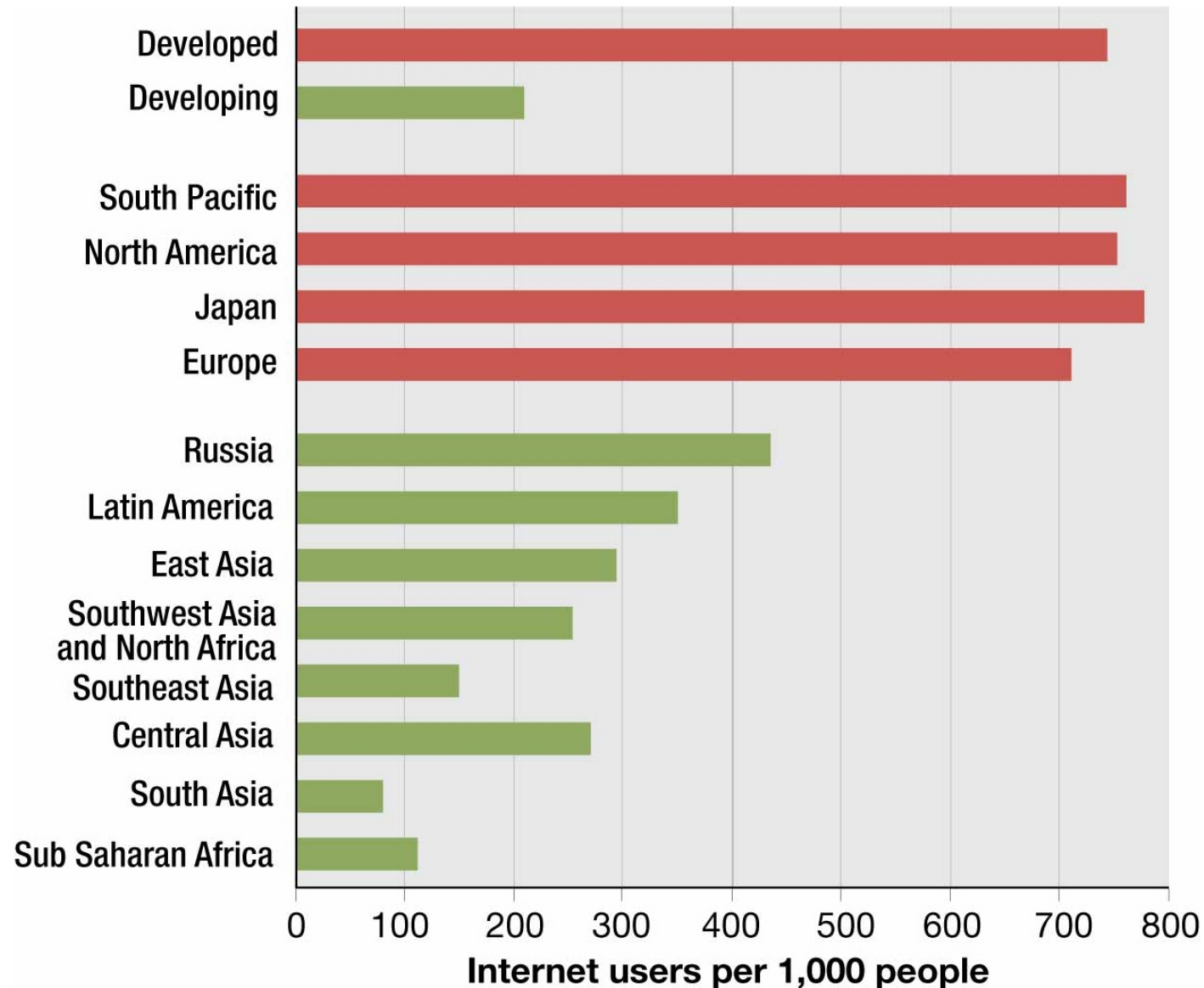
Consumer Goods – Motor Vehicles



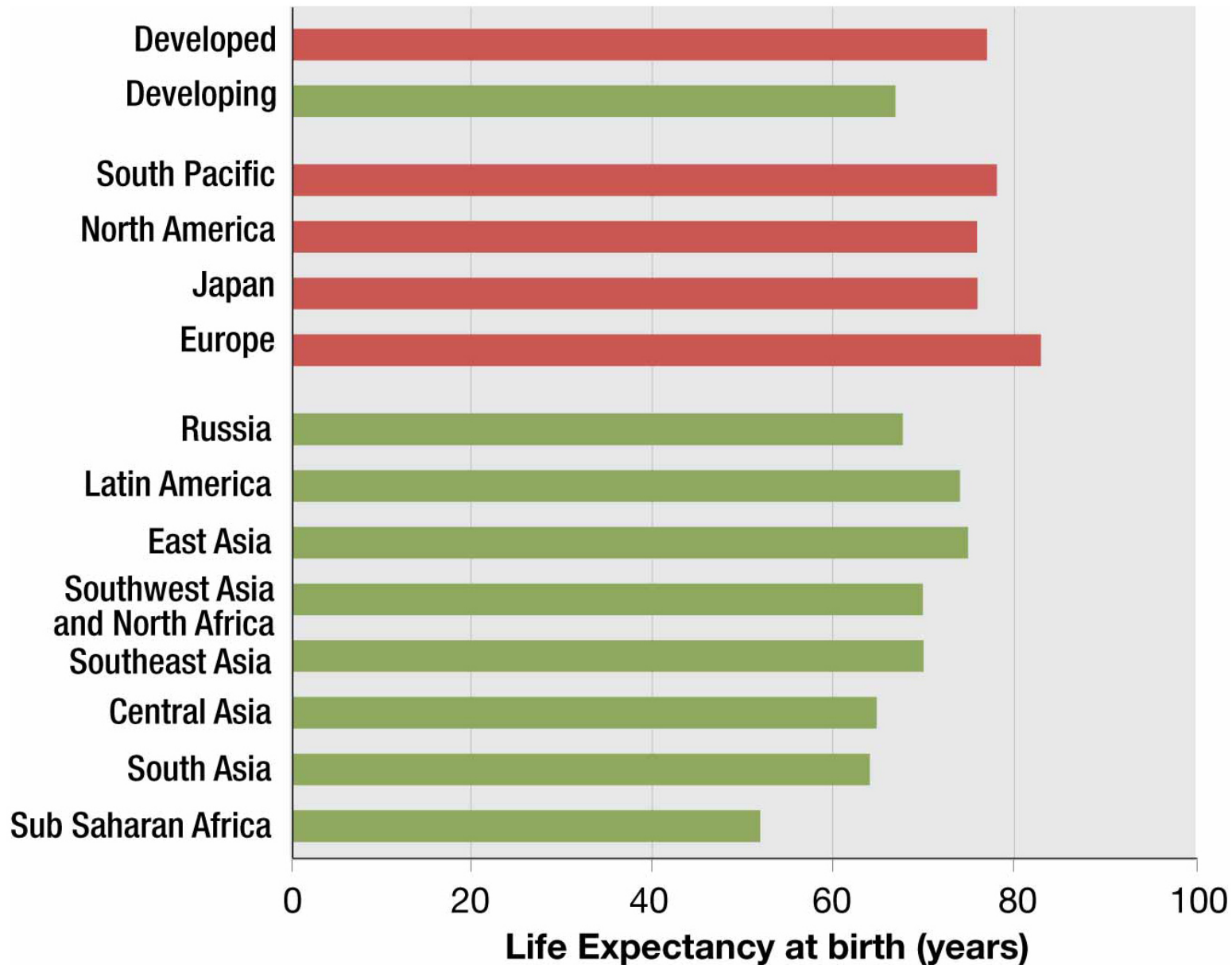
Consumer Goods – Cell Phones



Consumer Goods – Internet Users



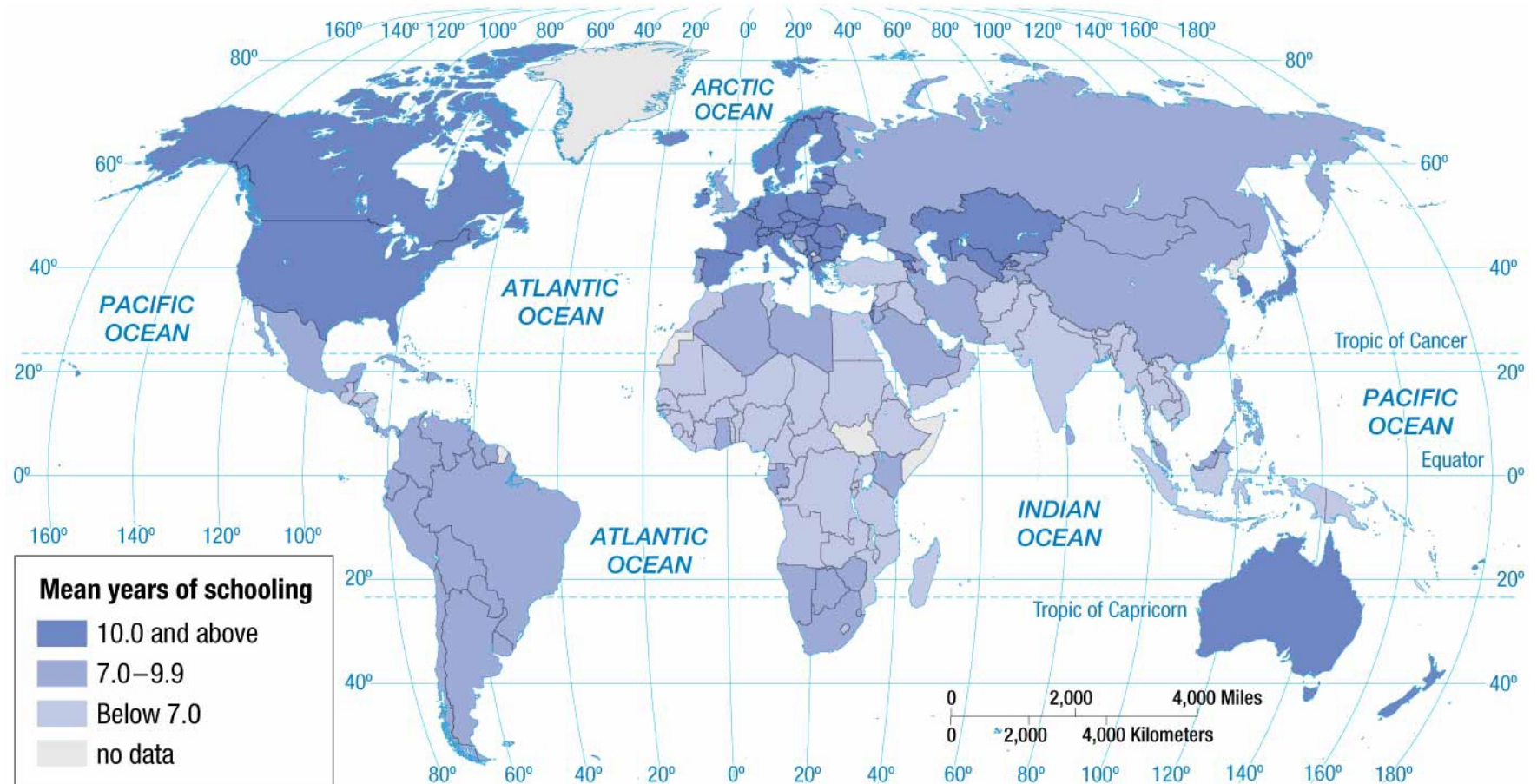
Life Expectancy at Birth



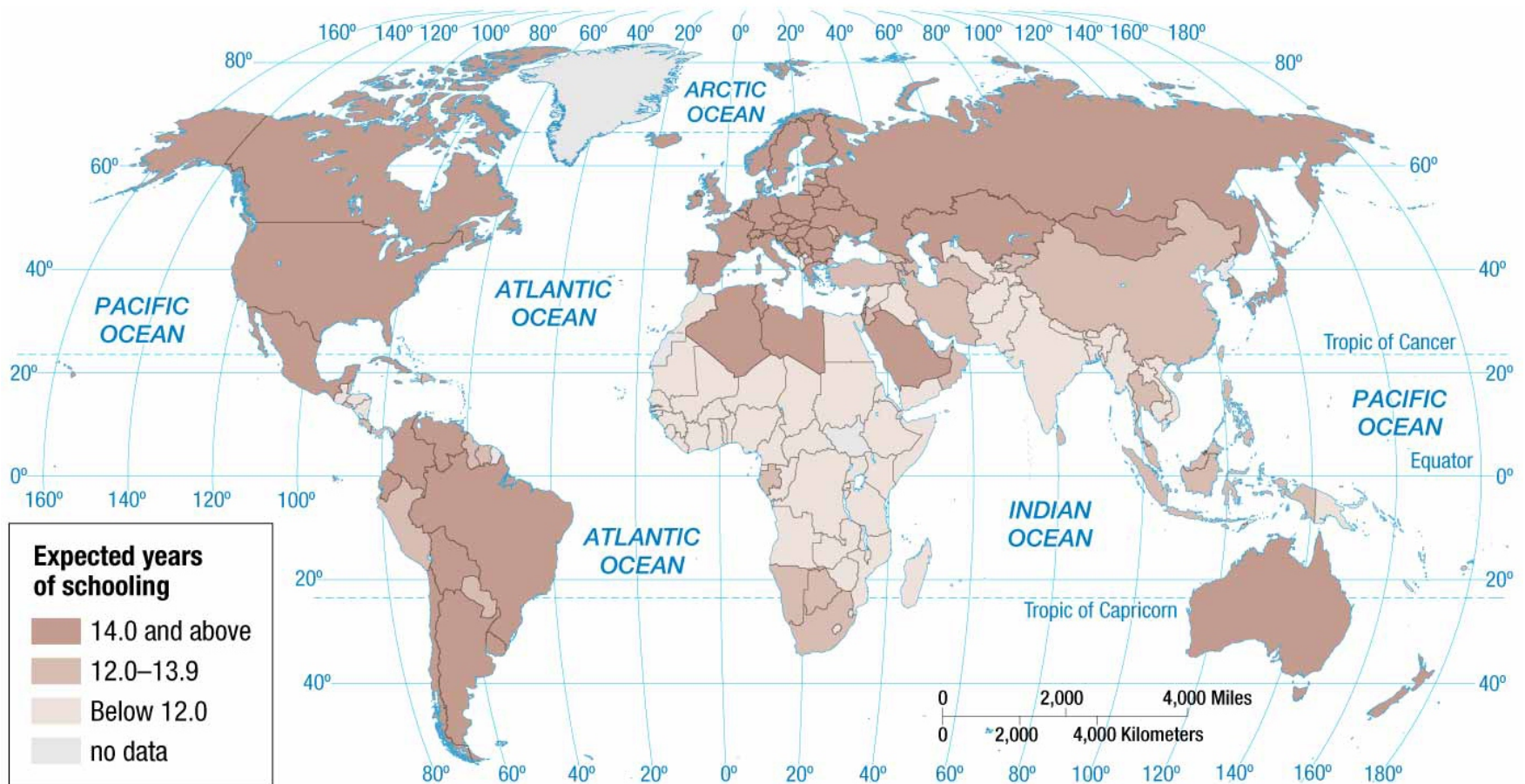
Why Does Development Vary among Countries?

- Access to Knowledge
 - UN considers years of schooling to be the most critical measure of the ability of an individual to gain access to knowledge needed for development.
 - Quantity of Schooling
 - Average Years of schooling
 - » Global: 7 years
 - » Developing: 6 years
 - » Developed: 11 years
 - Expected years of schooling
 - » Developed: 16 years
 - » Developing: 11 years

Mean years of schooling



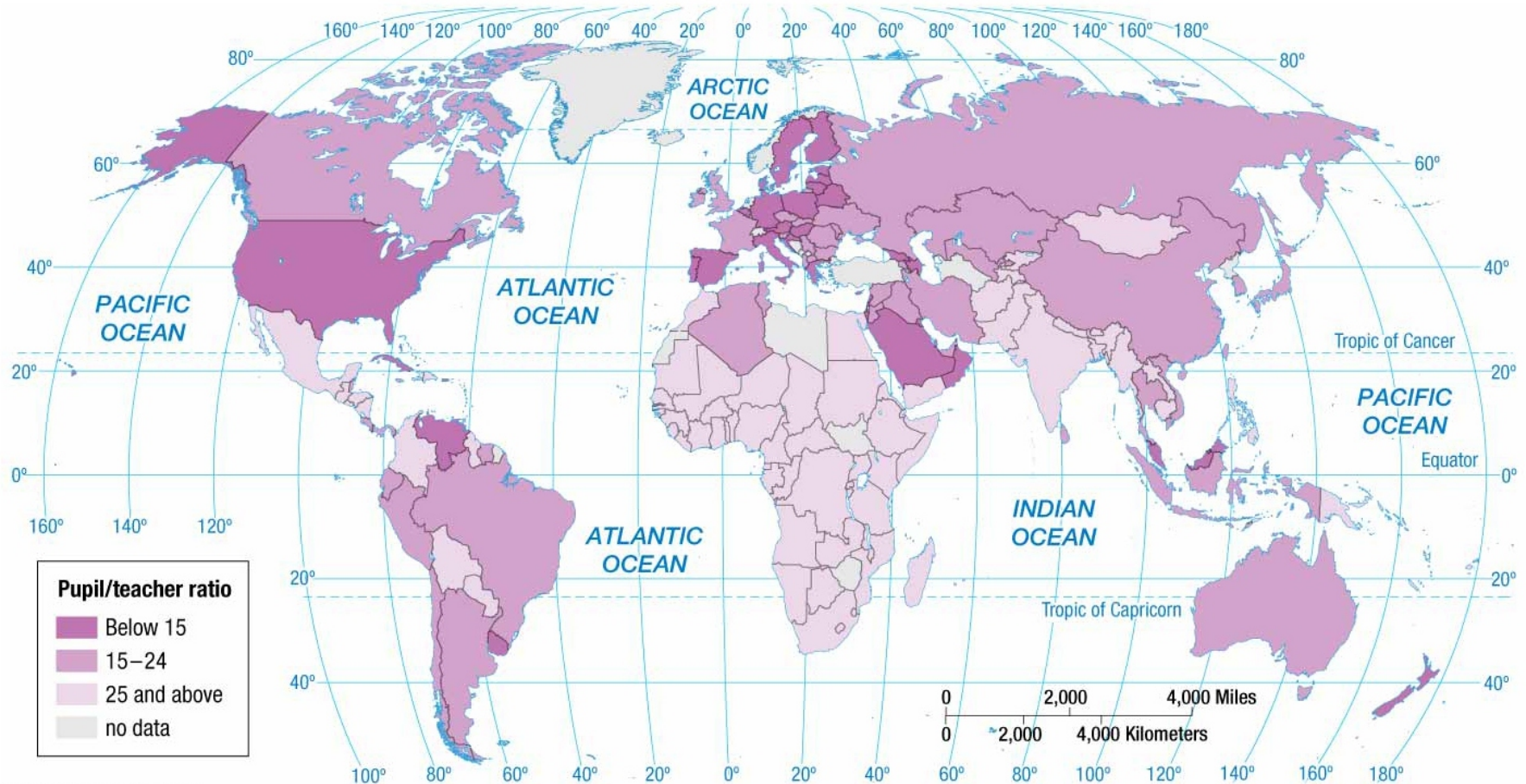
Expected years of schooling



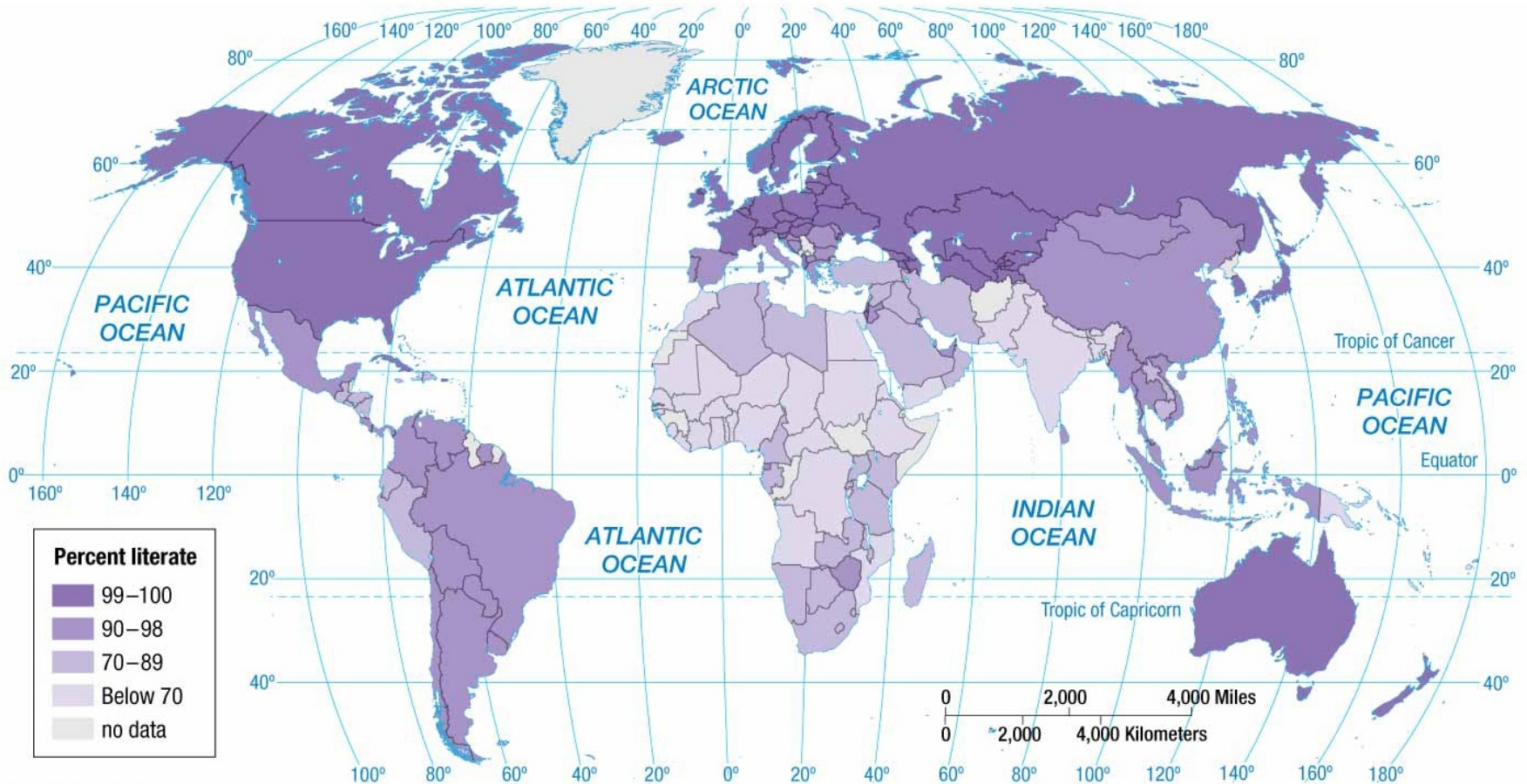
Why Does Development Vary among Countries?

- Access to Knowledge cont' d:
 - Quality of Schooling
 - Pupil/teacher ratio
 - » Global: 24 (primary school)
 - » Developing: 26 (primary school)
 - » Developed: 14 (primary school)
 - Literacy rate
 - » Developed: >99%
 - » Developing: 70-90%

Pupil/Teacher Ratio – Primary school



Literacy Rate



Why Does Development Vary among Countries?

- Variations within Countries and Regions
 - Indicators of development vary among countries and regions
 - Within regions: variations in level of development are high in SW Asia, North Africa and Central Asia
 - Within countries: variations in Brazil, China, and Mexico can be traced to features within each country

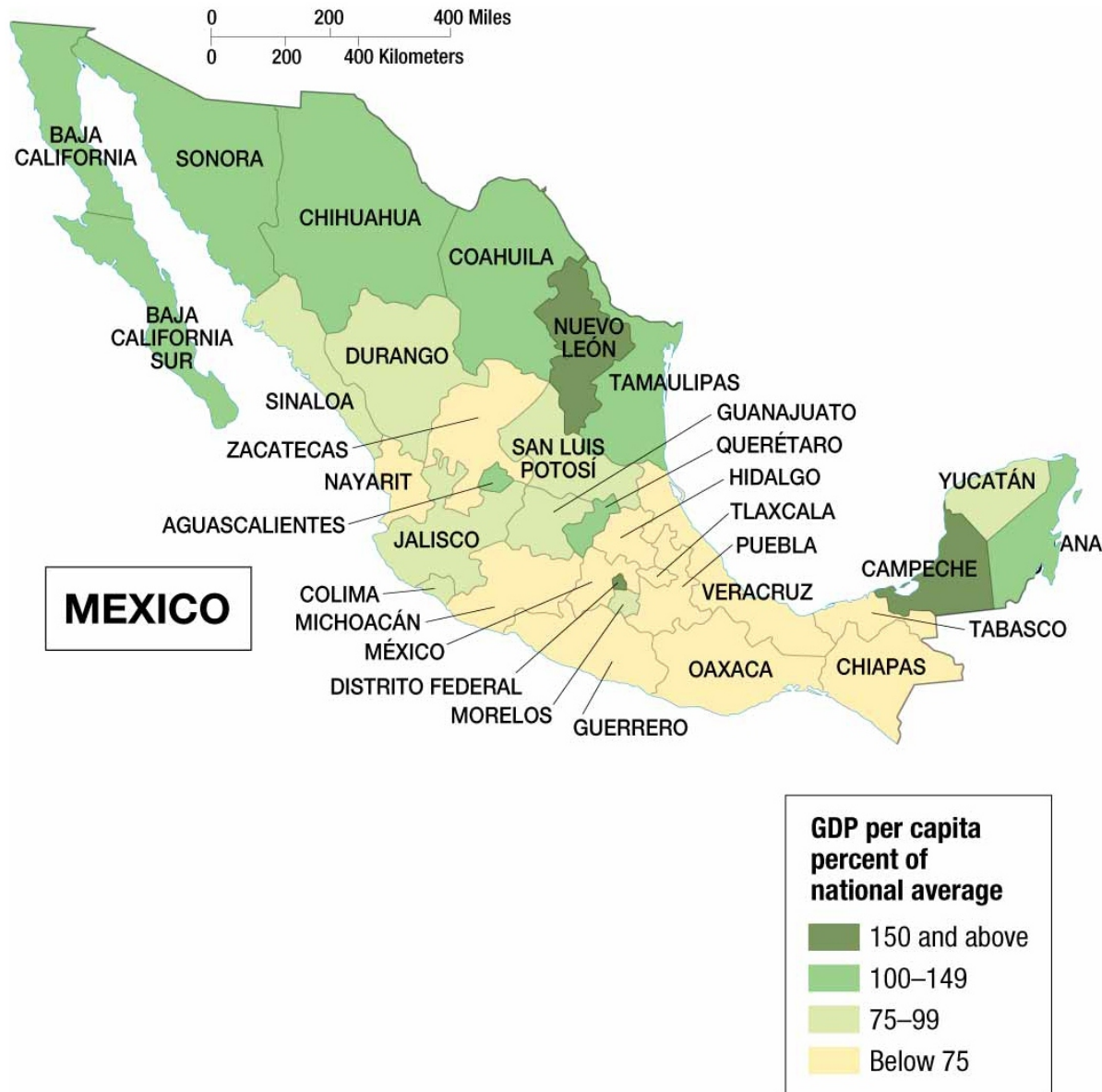
Brazil – GDP per capita as percent of national average



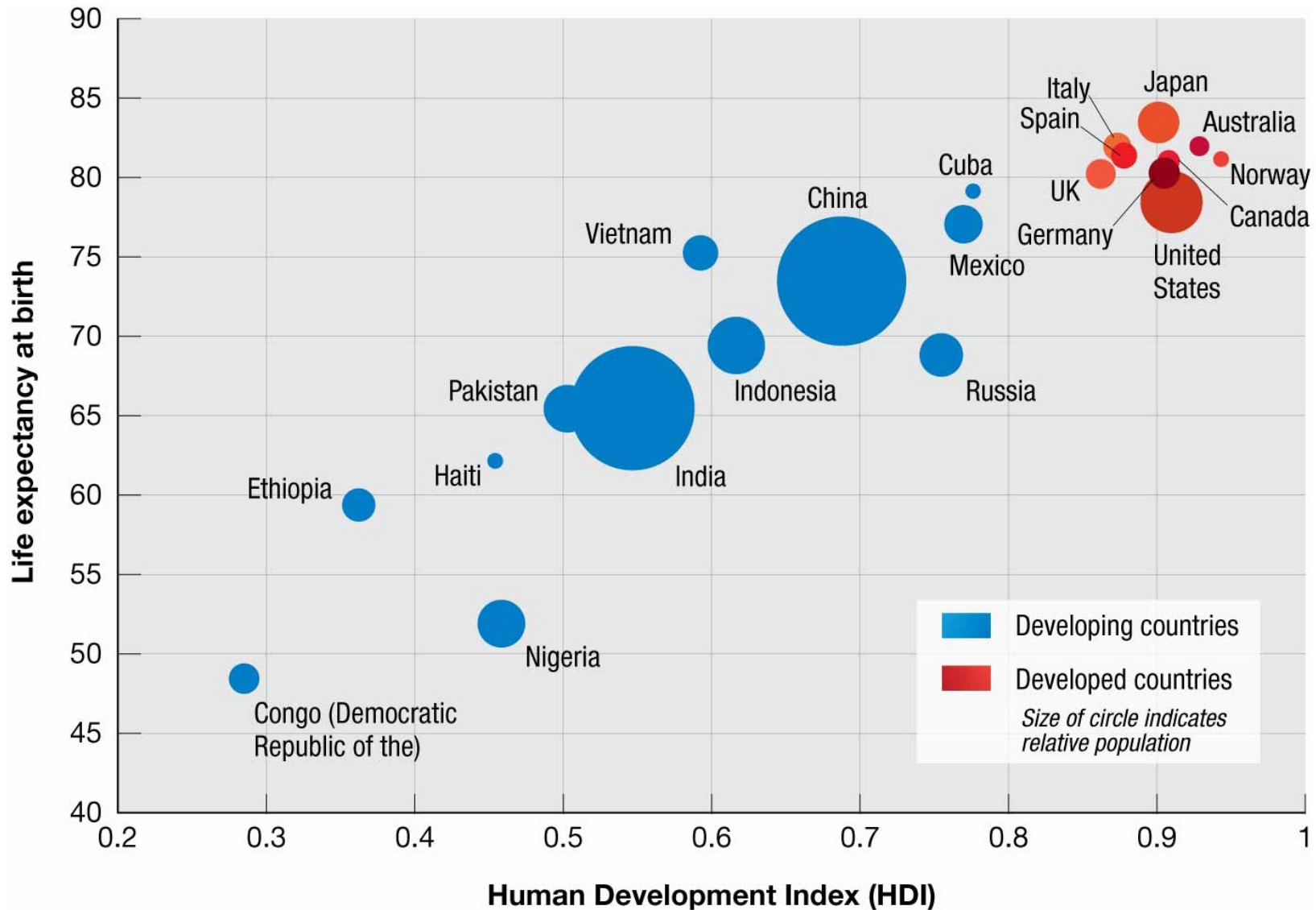
China – GDP per capita as percent of national average



Mexico – GDP per capita as percent of national average



Life Expectancy Graph – what does this tell us?



Chapter 09

Key Issue 2:

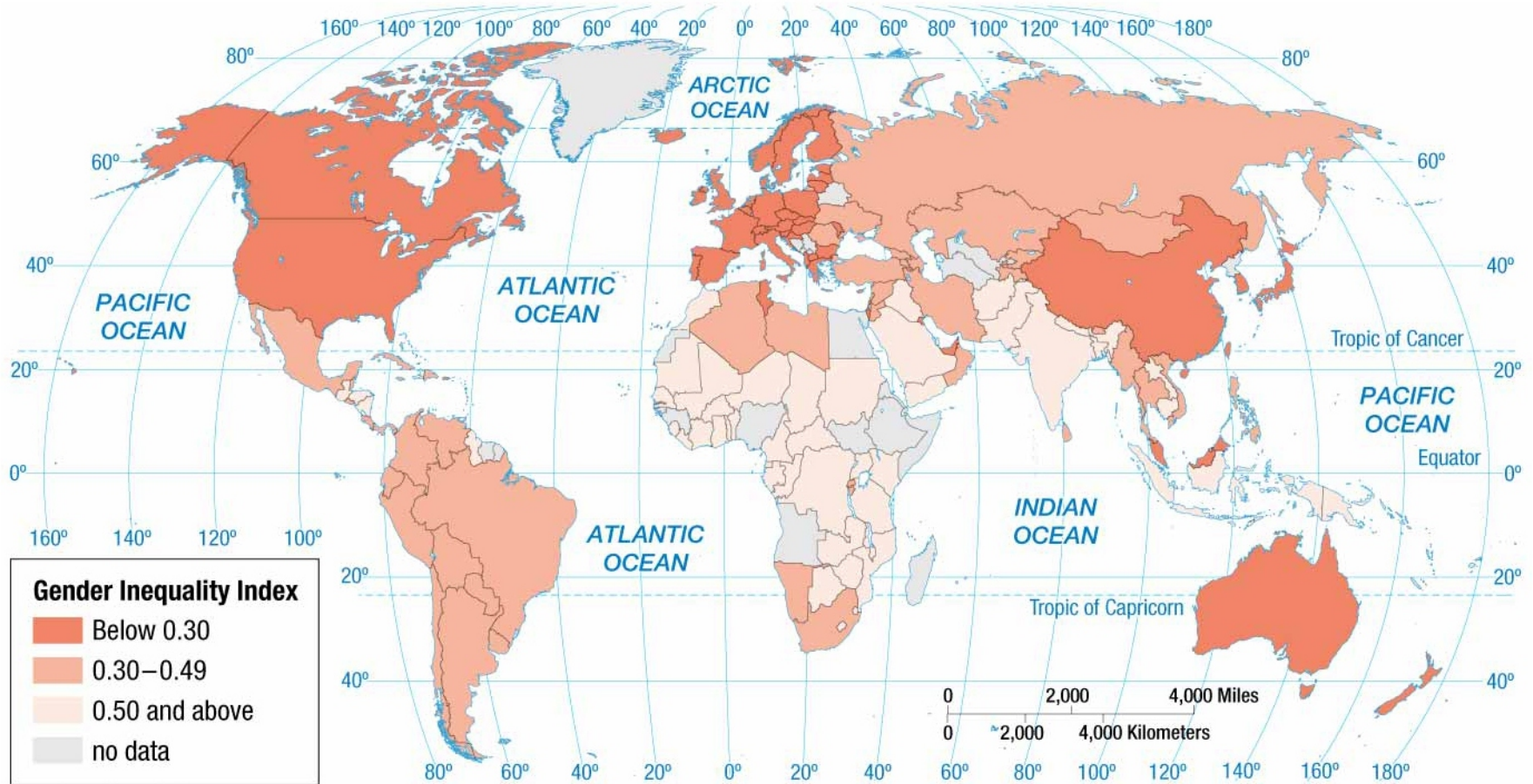
Why Does Development Vary by Gender?

Why Does Development Vary by Gender?

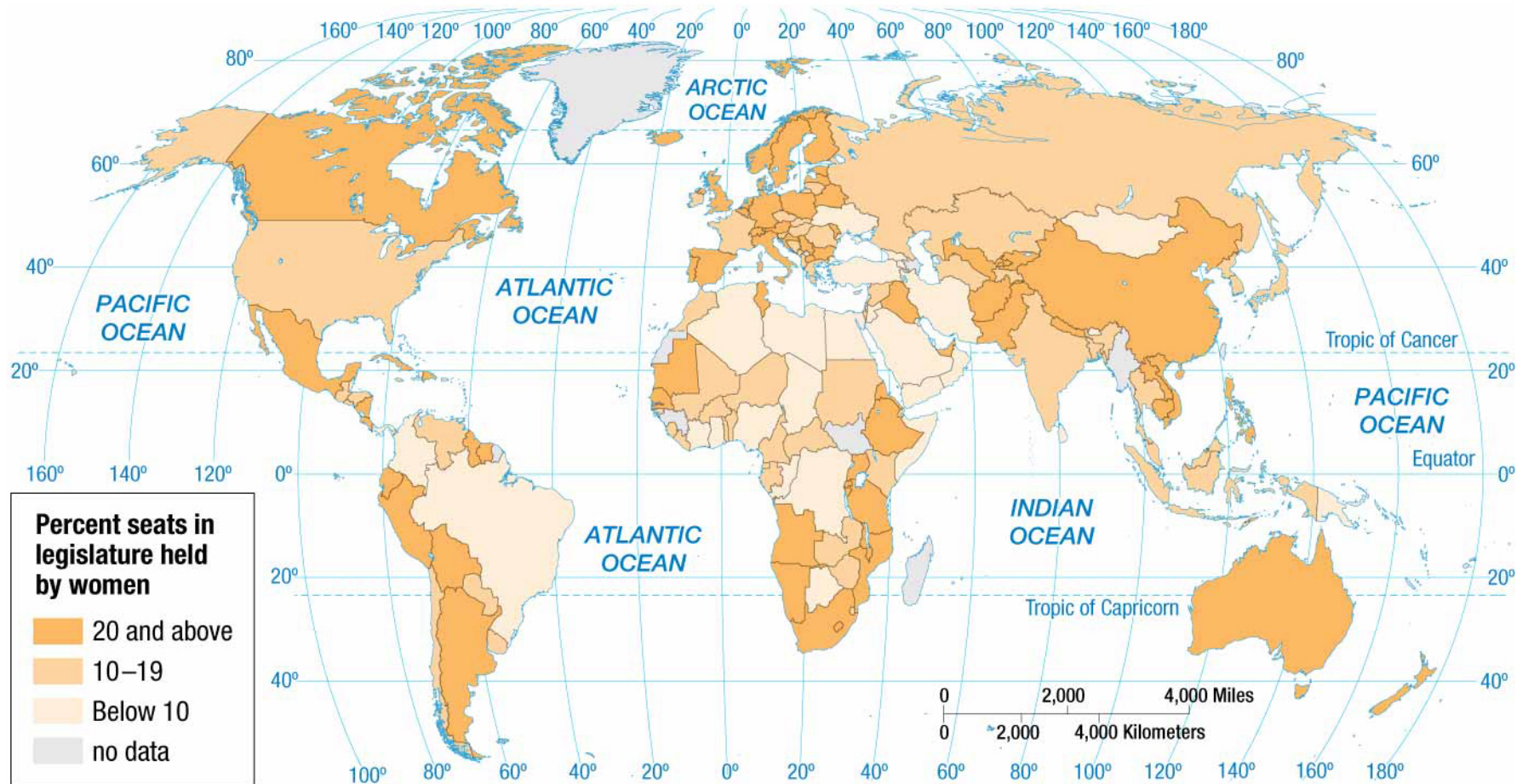
- Gender Inequality Measures

- UN created the *Gender Inequality Index (GII)* that is based on multiple metrics.
 - Empowerment
 - Defined: Ability of women to achieve improvements in status.
 - » Percentage of seats held by women in the national legislature.
 - » Percentage of women who have completed high school.
 - Labor Force
 - *Female labor force participation rate* defined as percentage of women holding full-time jobs outside the home.
 - » Highest in developed countries.
 - Reproductive Health
 - Maternal mortality ratio
 - Adolescent fertility rate

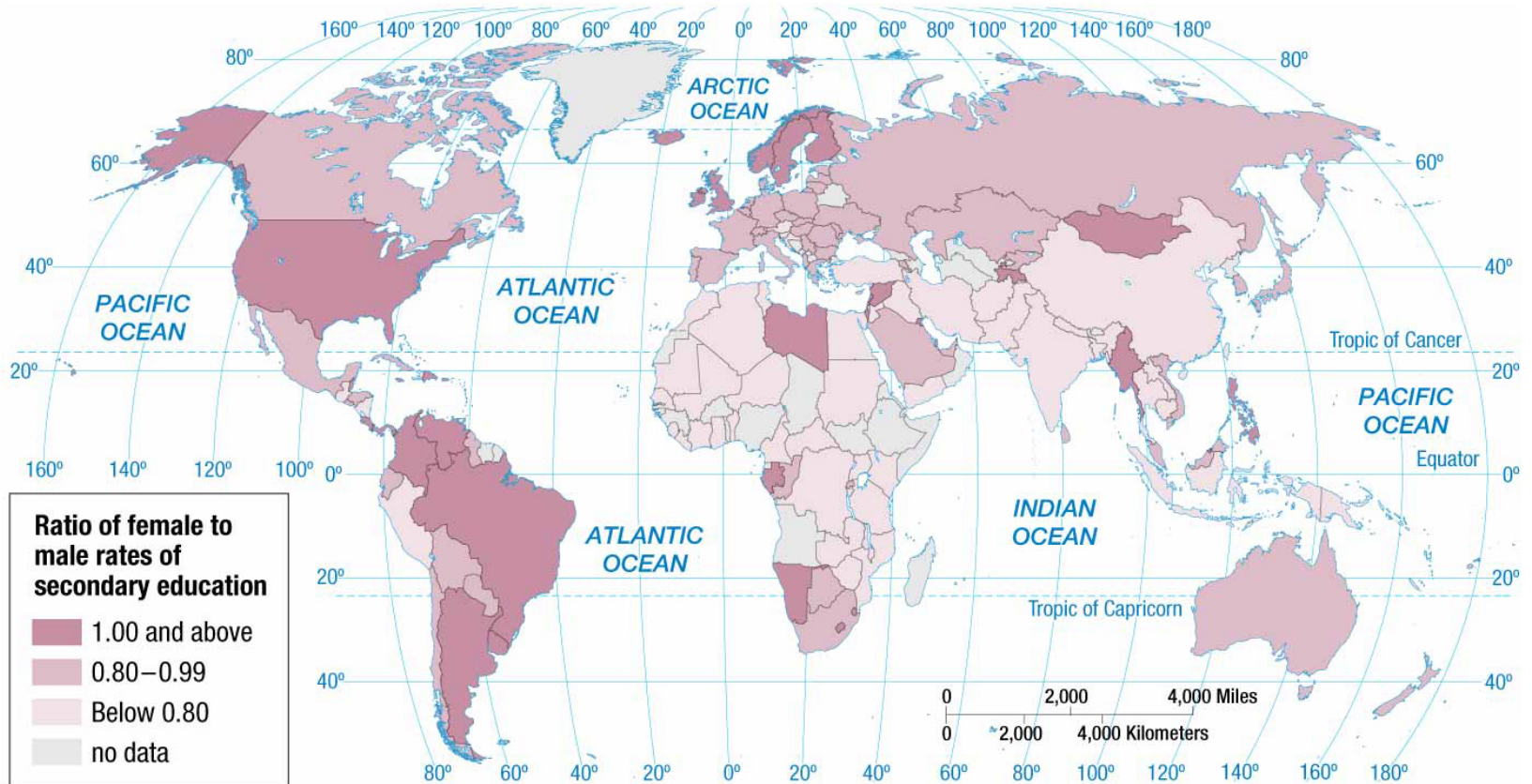
Gender Inequality Index



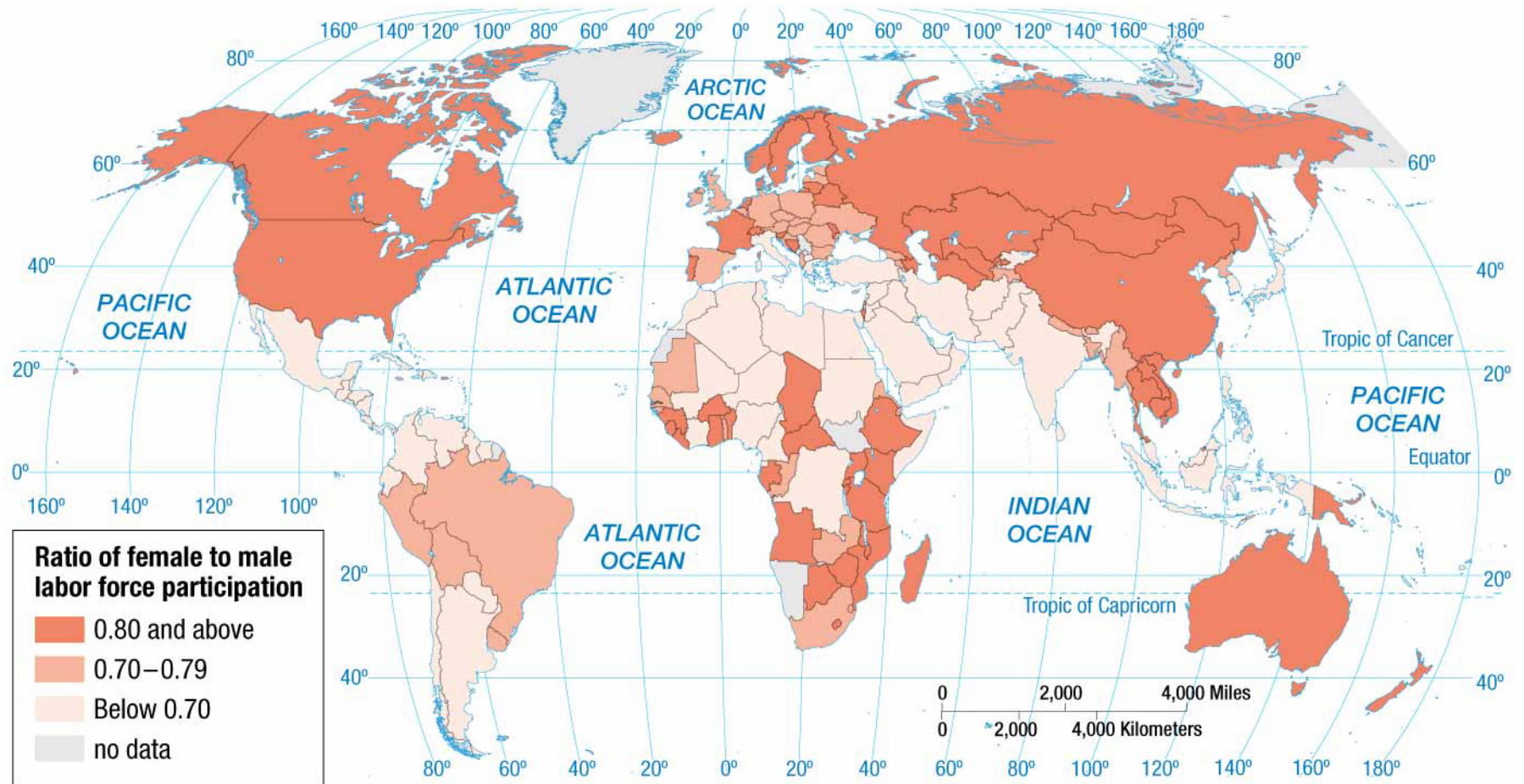
Women in the National Legislature



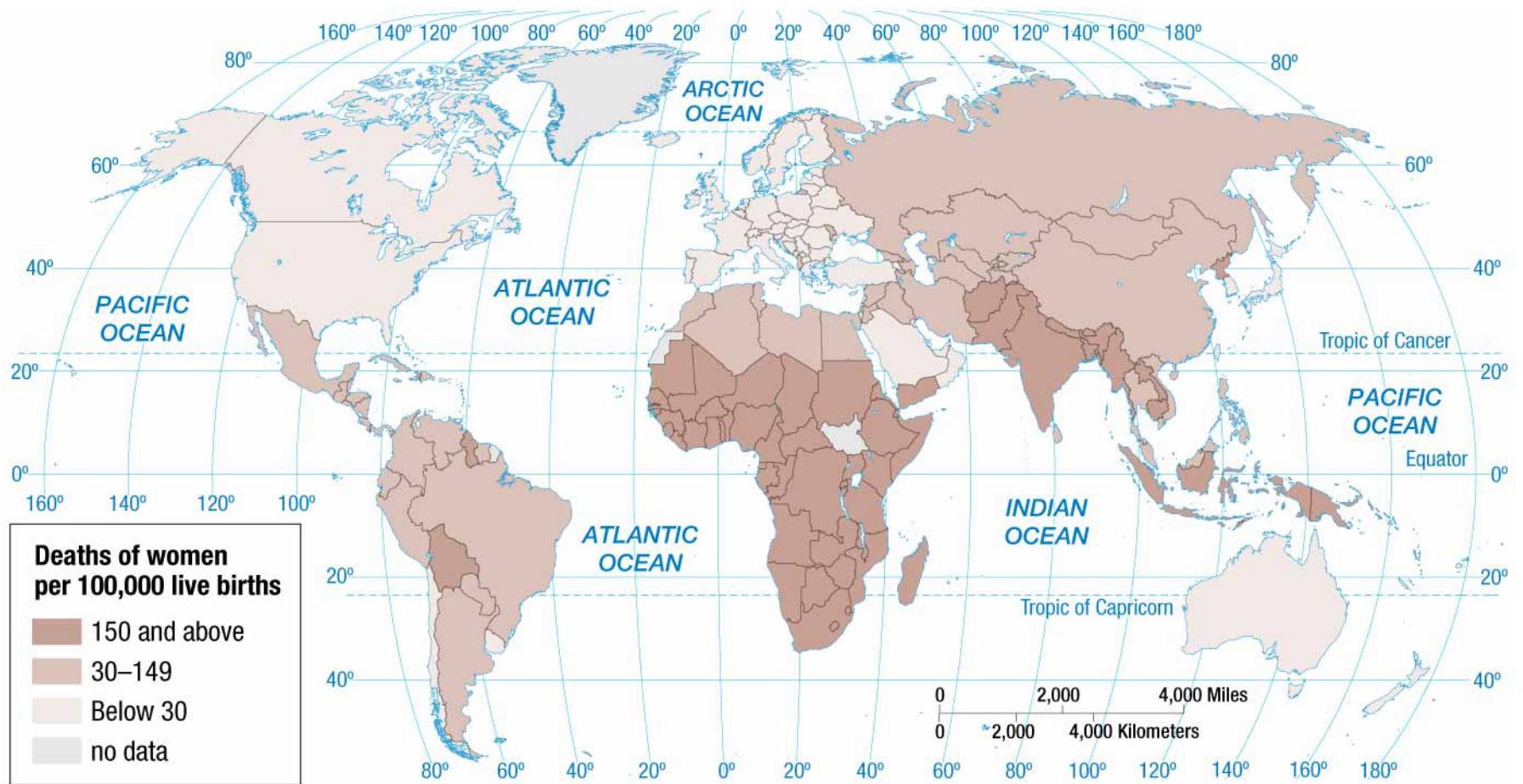
Women Graduating from High School



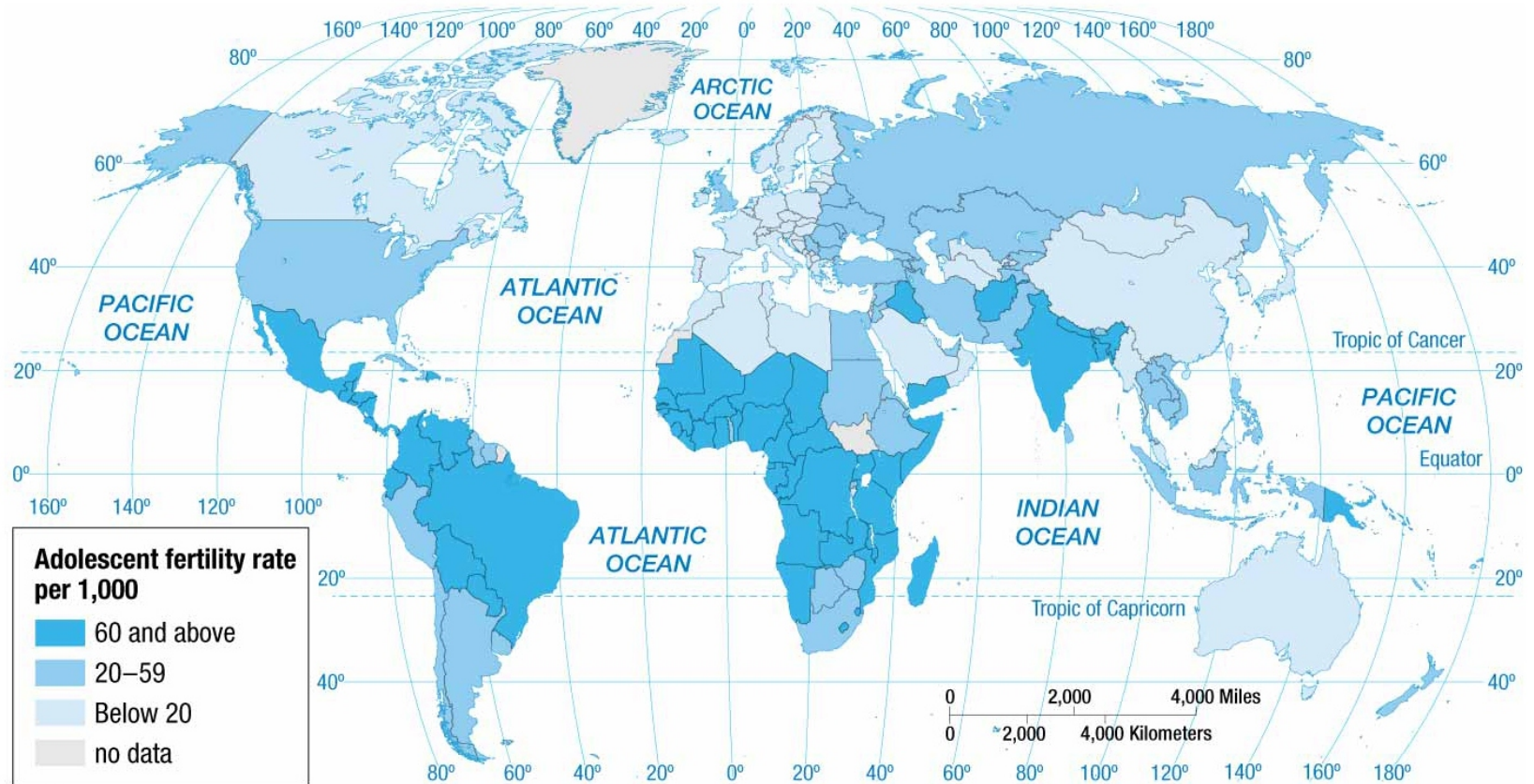
Female Labor Force Participation



Maternal Mortality Ratio



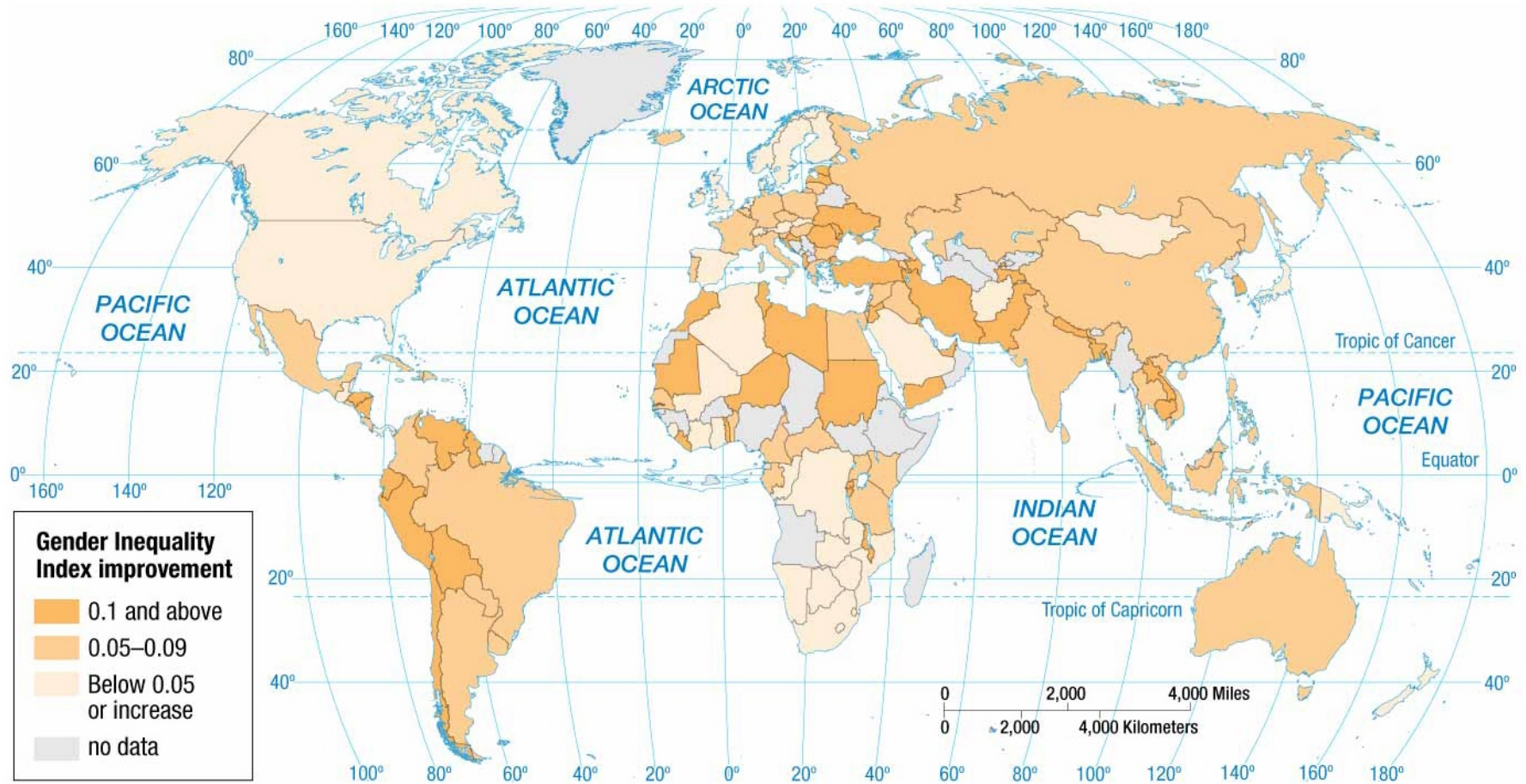
Adolescent Fertility Rate



Why Does Development Vary by Gender?

- Gender Inequality Trends
 - UN asserts gender inequality has declined in nearly every country since the 1990s.
 - Greatest improvements in Southwest Asia and North Africa.
 - U.S. is one of few developed countries where the GII has increased.
 - Reproductive rights much lower in U.S. compared to other very high HDI countries.
 - Percentage of women in the national legislature is relatively lower than other high HDI countries.

Trends in Gender Inequality



Chapter 09

Key Issue 3:

Why Are Energy Resources Important for Development?

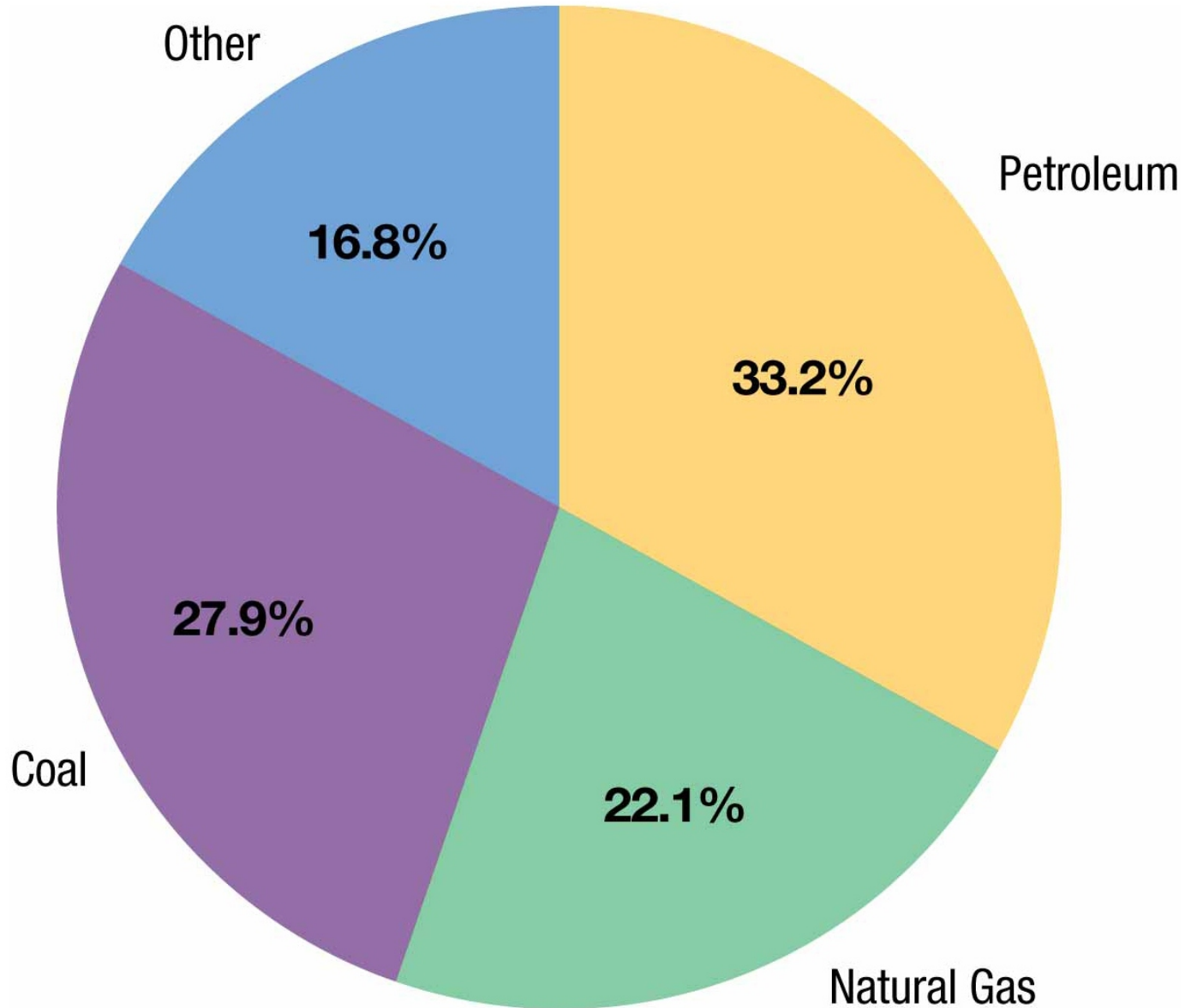
Why is Energy Important for Development?

- Energy Demand and Supply
 - *Supply* is the quantity of something that producers have available for sale.
 - *Demand* is the quantity that consumers are willing and able to buy.
 - 5/6 of the world's energy needs are supplied by *fossil fuels*, which is an energy source formed from the residue of plants and animals buried millions of years ago.
 - Coal (27.9%)
 - Petroleum (33.2%)
 - Natural Gas (22.1%)

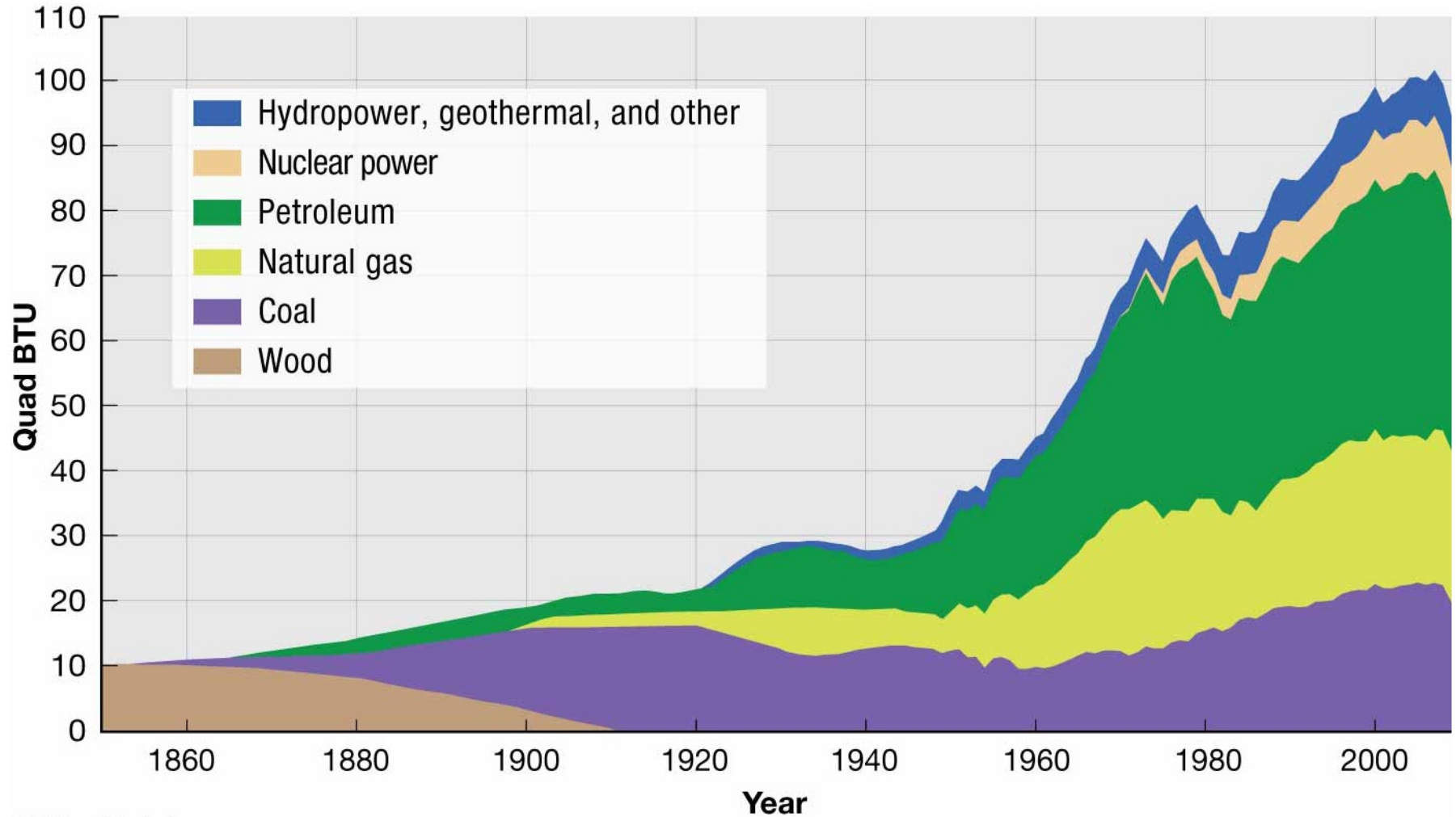
Why is Energy Important for Development?

- Energy Demand and Supply
 - Demand For Energy
 - Although fewer in number, developed countries consume about $\frac{1}{2}$ of the world's energy.
 - Percent of World Energy Consumed
 - » China: 20.4%
 - » U.S.: 18.3%
 - » Europe: 15.1%
 - Per capita consumption of energy is greatest in North America.
 - Contains $\frac{1}{20}$ of world's population and consumes $\frac{1}{4}$ of the world's energy.
 - Per capita consumption of energy is nearly three times greater in developed countries than in developing countries.

World Energy Demand

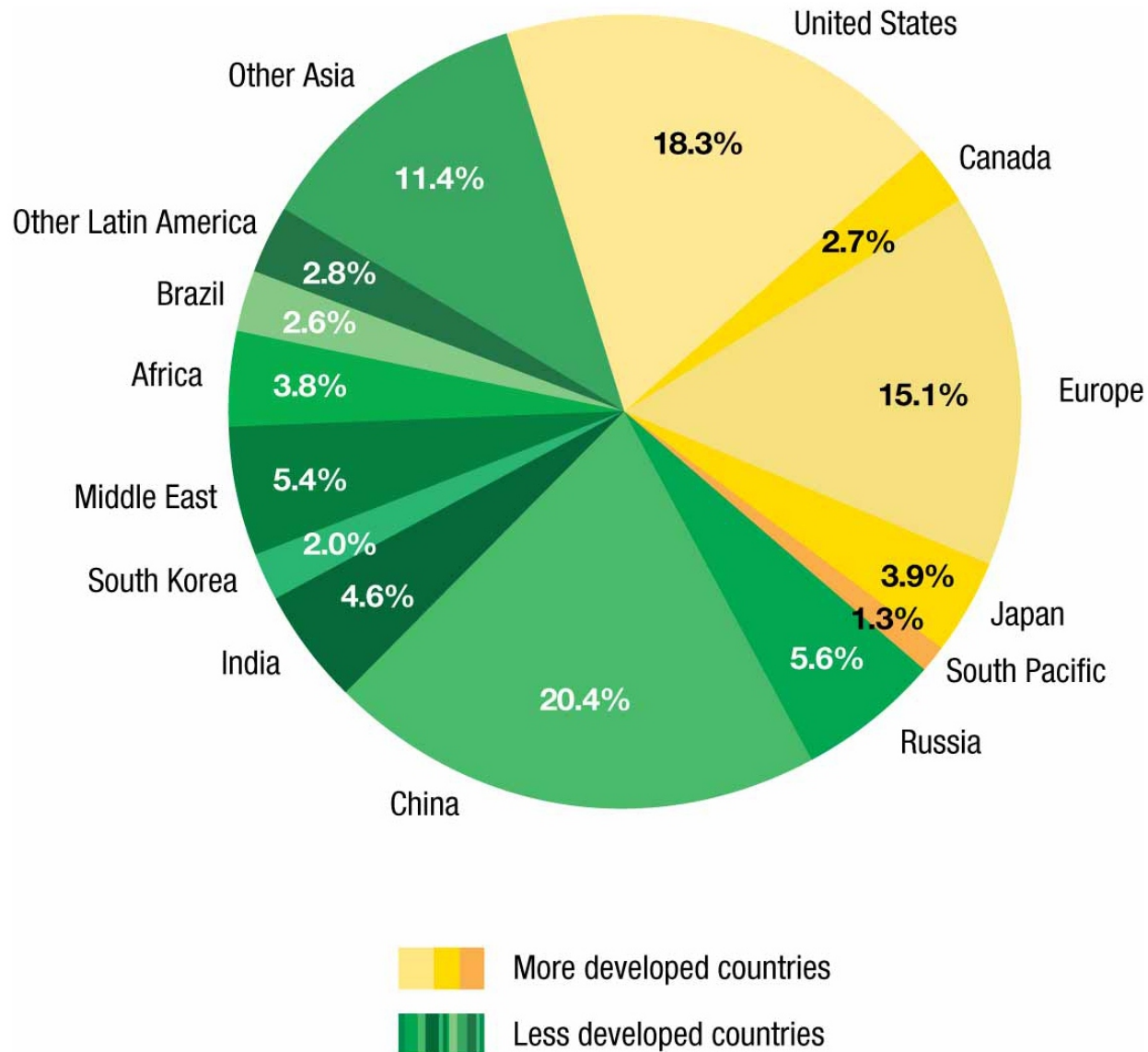


Change in US Energy Demand

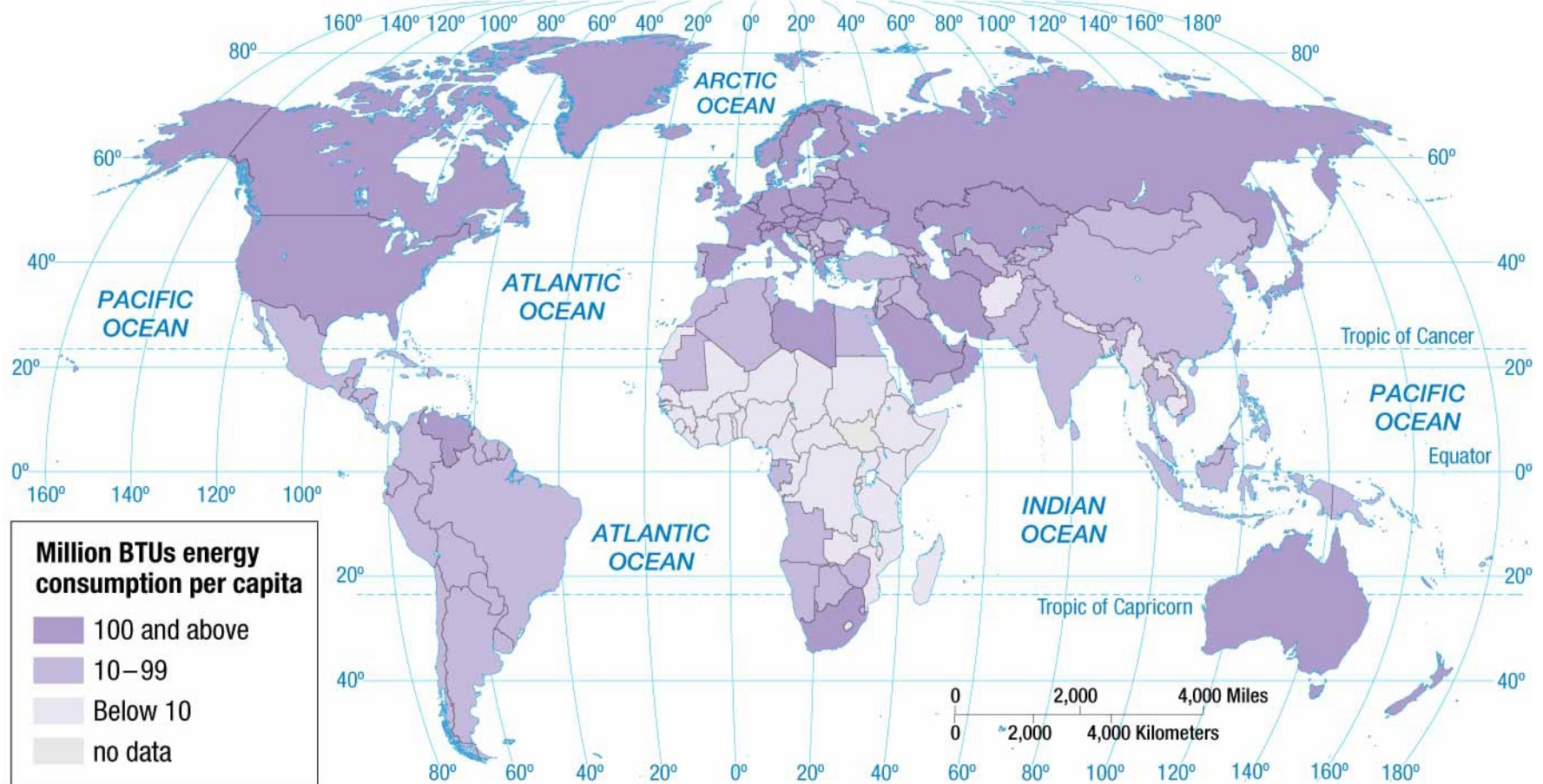


Source: U.S. Energy Information Administration

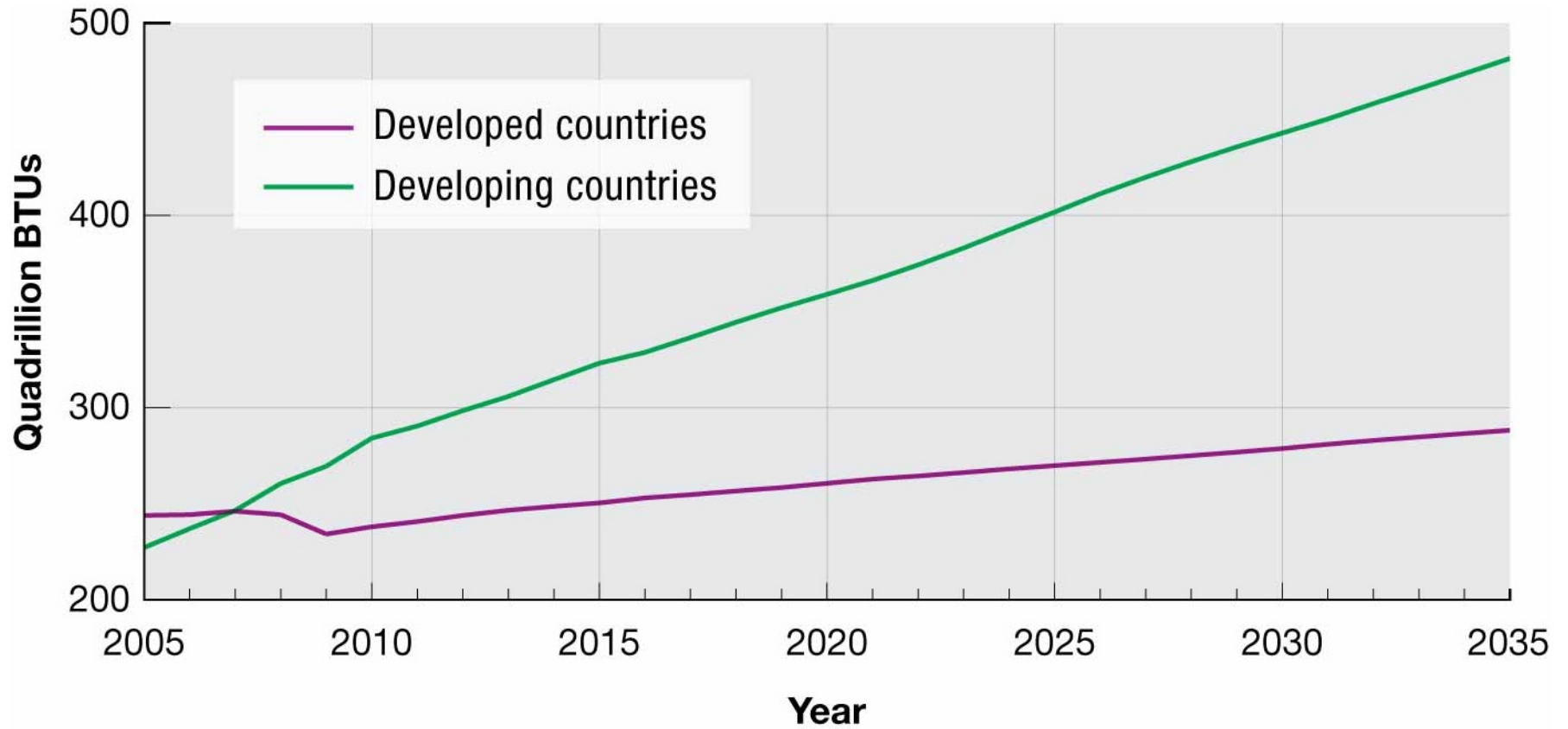
Share of World Energy Demand



Energy Demand Per Capita



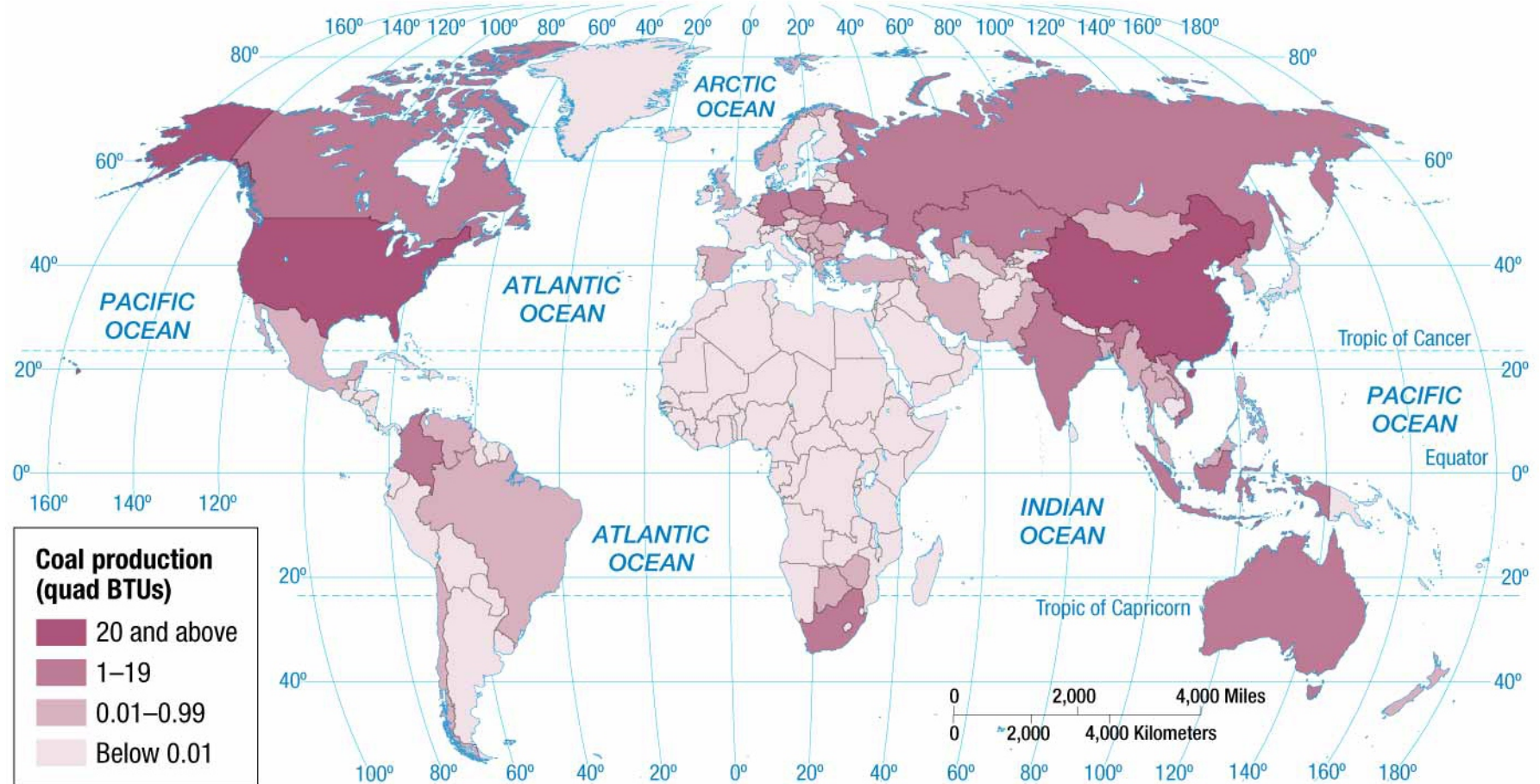
Future Energy Demand



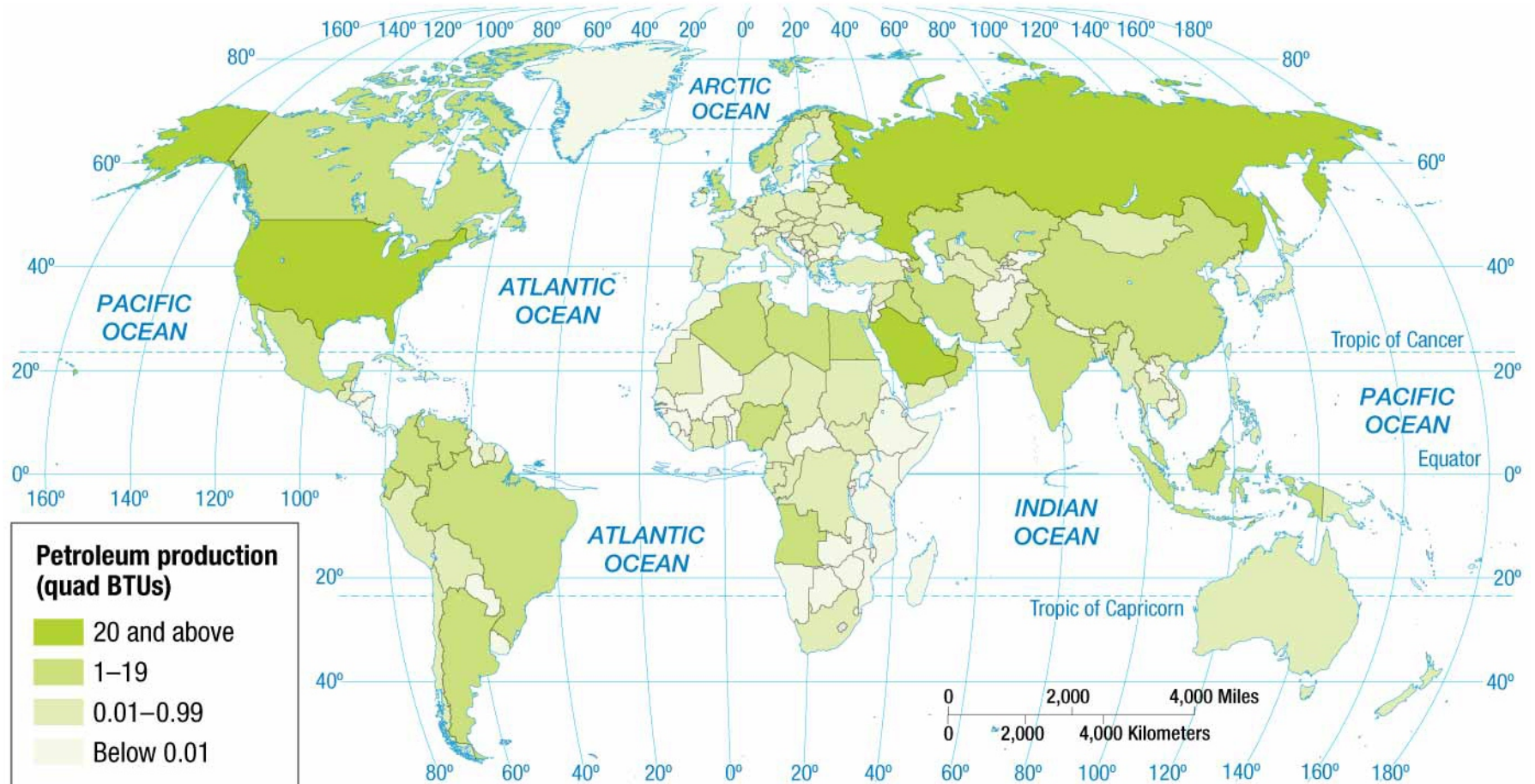
Why is Energy Important for Development?

- Energy Demand and Supply
 - Energy Supply
 - Earth's energy resources are not distributed evenly.
 - Global Coal Distribution
 - » Today's main reserves of coal are located in the mid-latitude countries.
 - » China and the U.S. supply nearly $\frac{1}{2}$ and $\frac{1}{4}$, respectively, of the world's coal.
 - Global Petroleum Distribution
 - » Today's main reserves are located on the seafloor and in areas once under water millions of years ago.
 - » Russia and Saudi Arabia together supply $\frac{1}{4}$ of the world's petroleum supply.
 - » U.S. supplies $\frac{1}{4}$ of the global supply
 - » Remaining $\frac{1}{2}$ of world supply of petroleum is supplied by developing countries (primarily in S.W. and Central Asia)

Coal Production



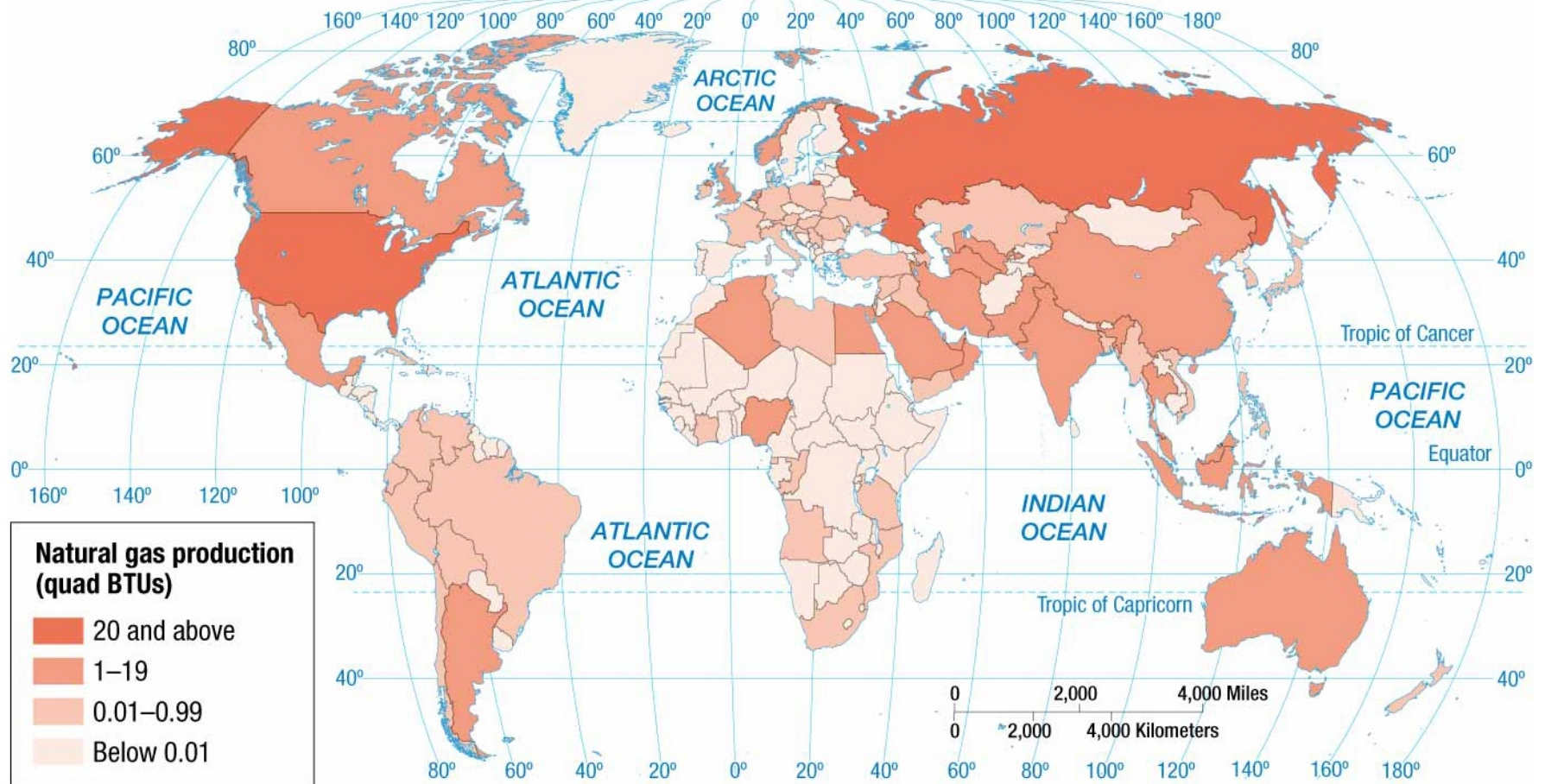
Petroleum Production



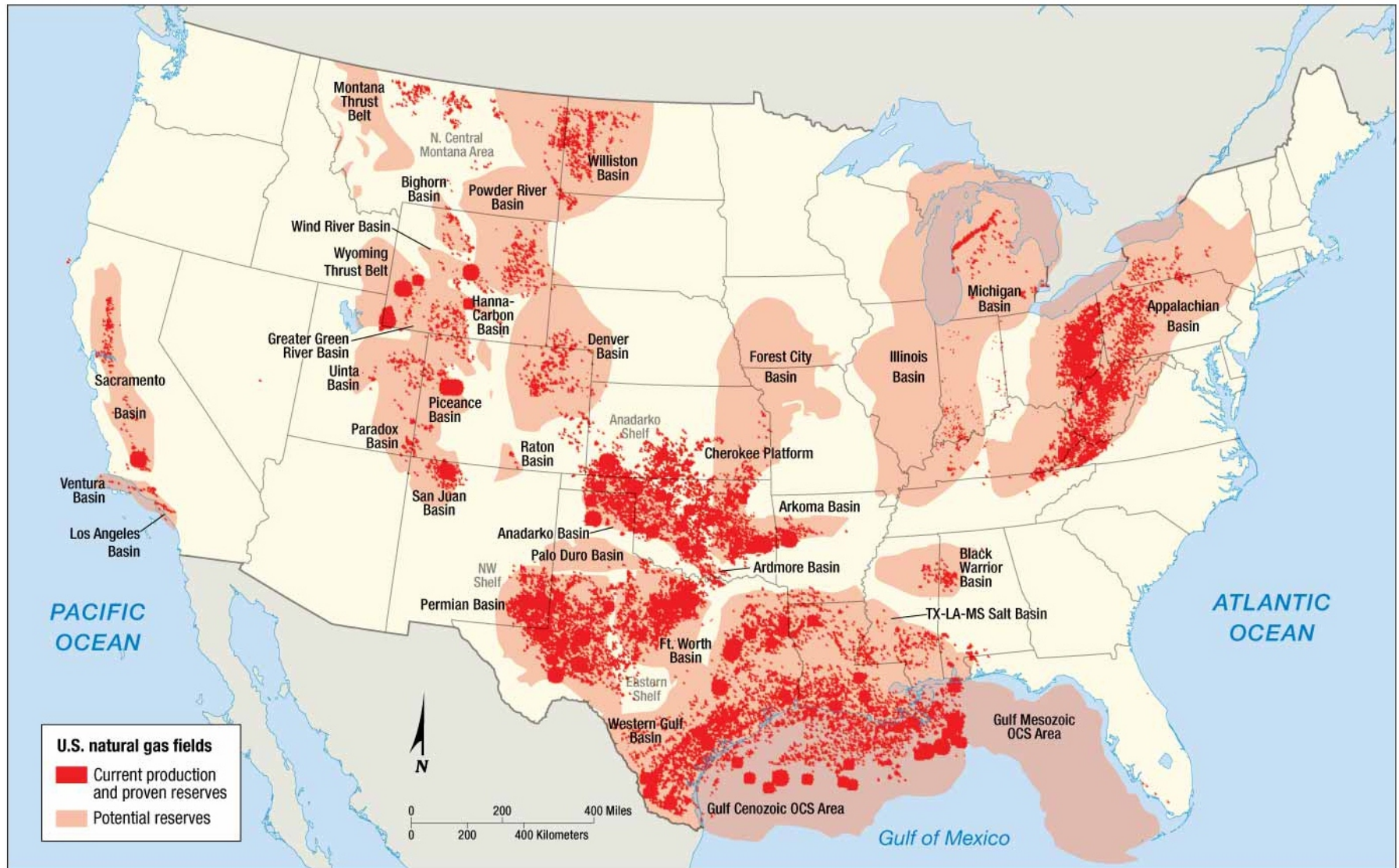
Why is Energy Important for Development?

- Energy Demand and Supply
 - Energy Supply
 - Global Natural Gas Distribution
 - » 1/3 of natural gas production is supplied by Russia and S.W. Asia
 - » 1/3 by developing regions
 - » 1/3 by developed countries (primarily the U.S.)

Natural Gas Production



Natural Gas Fields in the USA

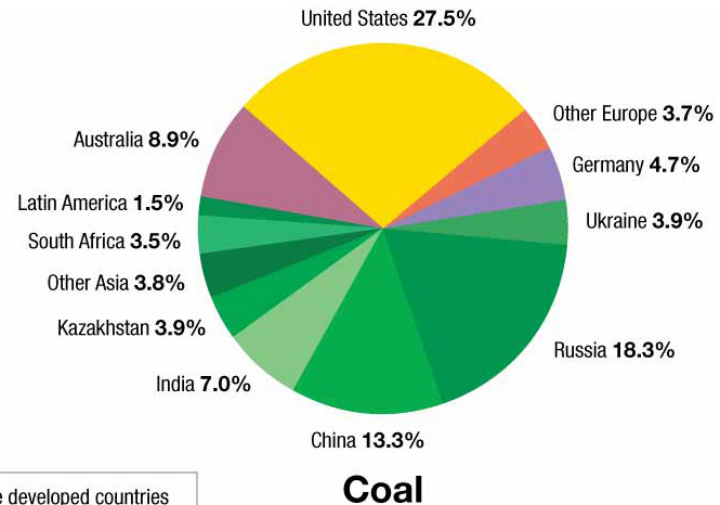


Why is Energy Important for Development?

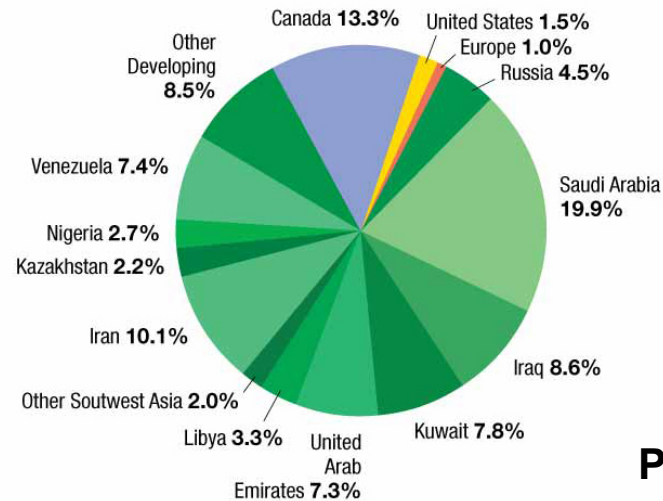
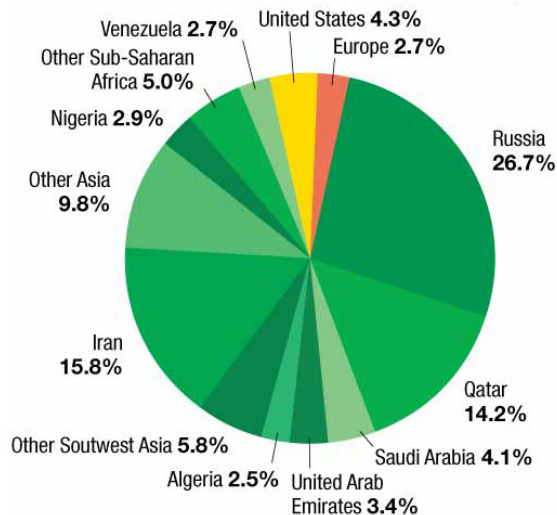
- Energy Demand and Supply
 - Energy Reserves
 - Two types of energy reserves exist.
 1. Proven Reserves
 - » Defined: A supply of energy remaining in deposits that have been discovered.
 2. Potential Reserves
 - » Defined: A supply of energy that is undiscovered but thought to exist.
 - Proven Reserves
 - Remaining supply of fossil fuels at current demand
 - » Coal: 131 years
 - » Natural Gas: 49 years
 - » Petroleum: 43 years

Proven Reserves of Fossil Fuels

Developing countries possess approximately one-half of coal reserves, two-thirds of natural gas reserves, and five-sixths of petroleum reserves.



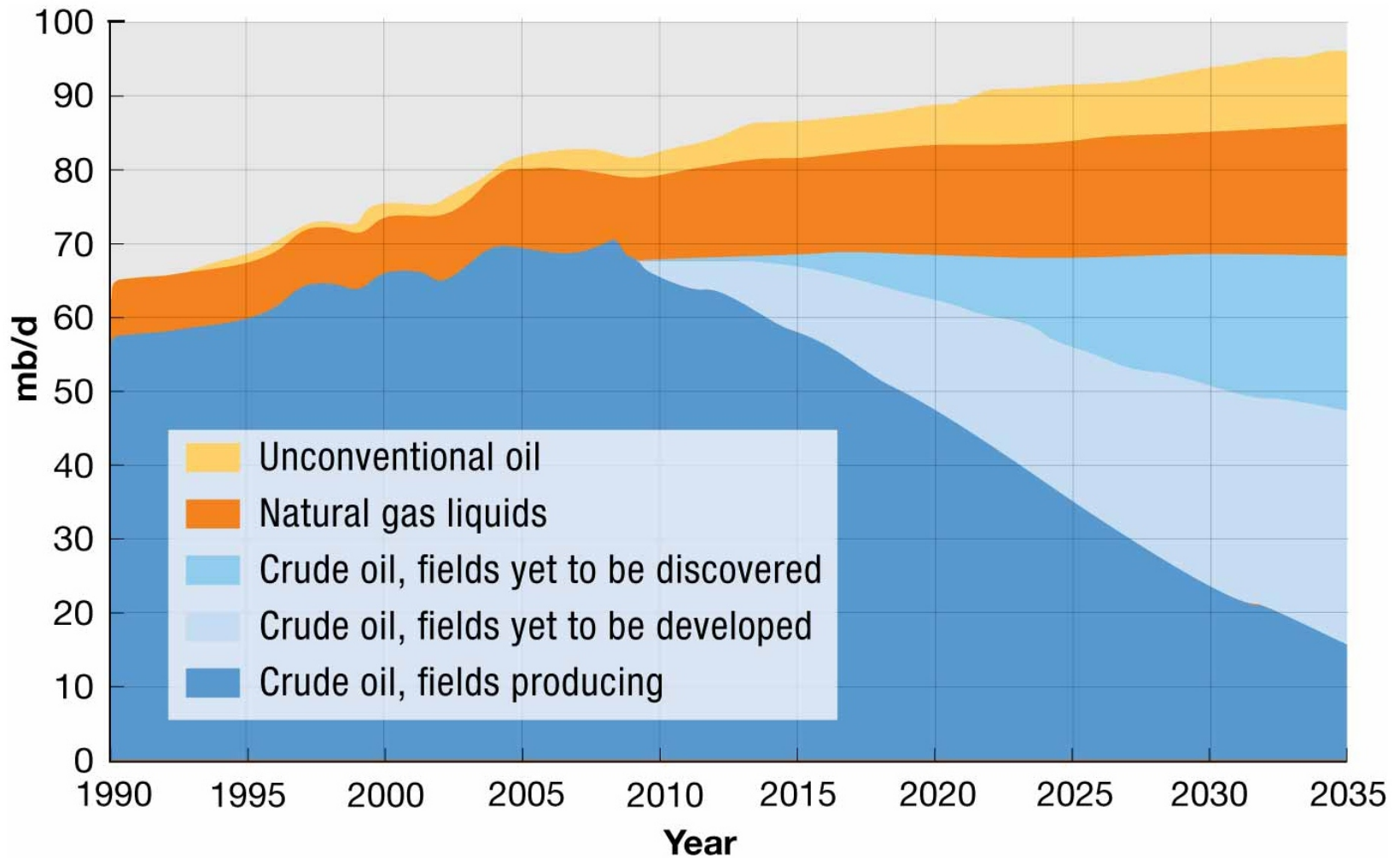
Natural Gas



Why is Energy Important for Development?

- Energy Demand and Supply
 - Energy Reserves
 - Potential Reserves
 - Potential reserves can be reclassified as a proven reserve.
 - » *Undiscovered Fields*: Newly discovered reserves are generally smaller and more remote, because the largest, most accessible fossil fuels deposits have already been exploited.
 - » *Enhanced Recovery From Already Discovered Fields*: Techniques used to remove the last supplies from a proven field.
 - » *Unconventional Sources*: Methods currently used to extract resources won't work because of insufficient technology, environmentally unsound, or not economically feasible.

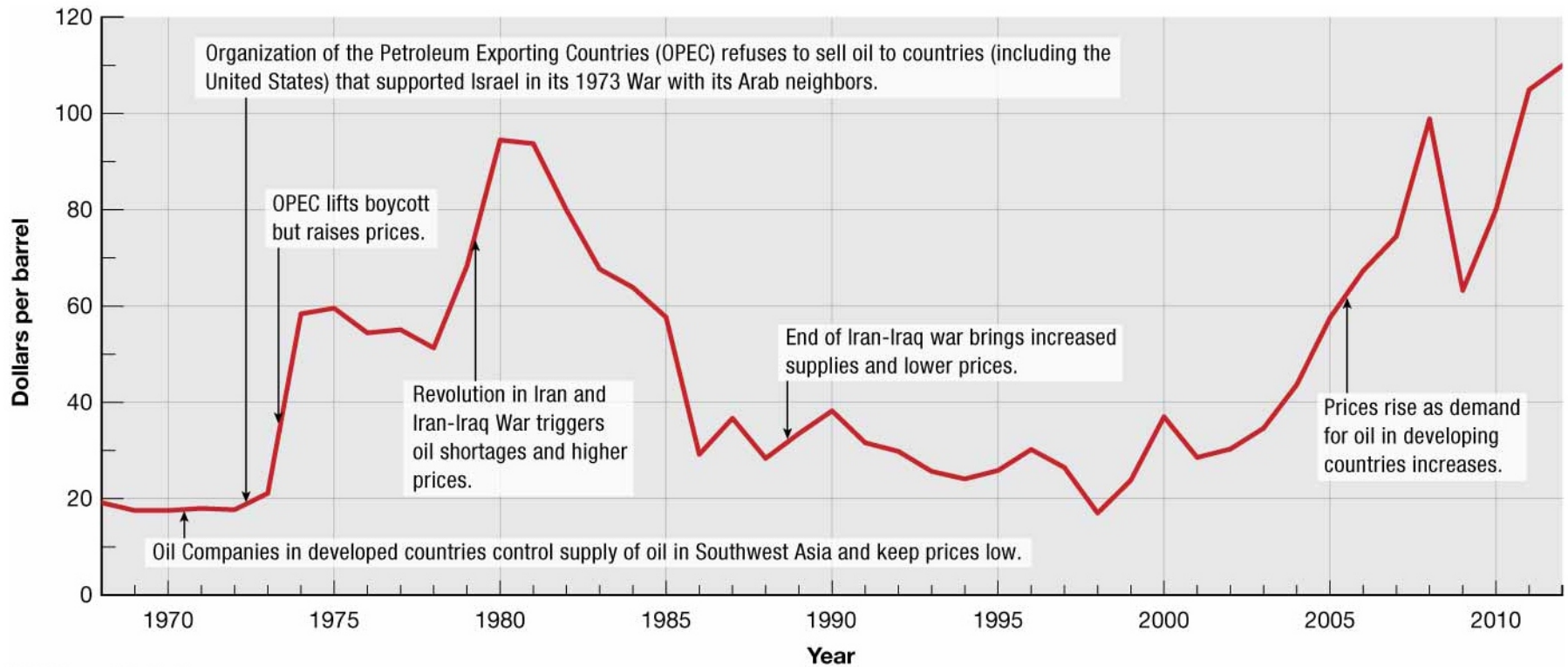
Petroleum Production Outlook



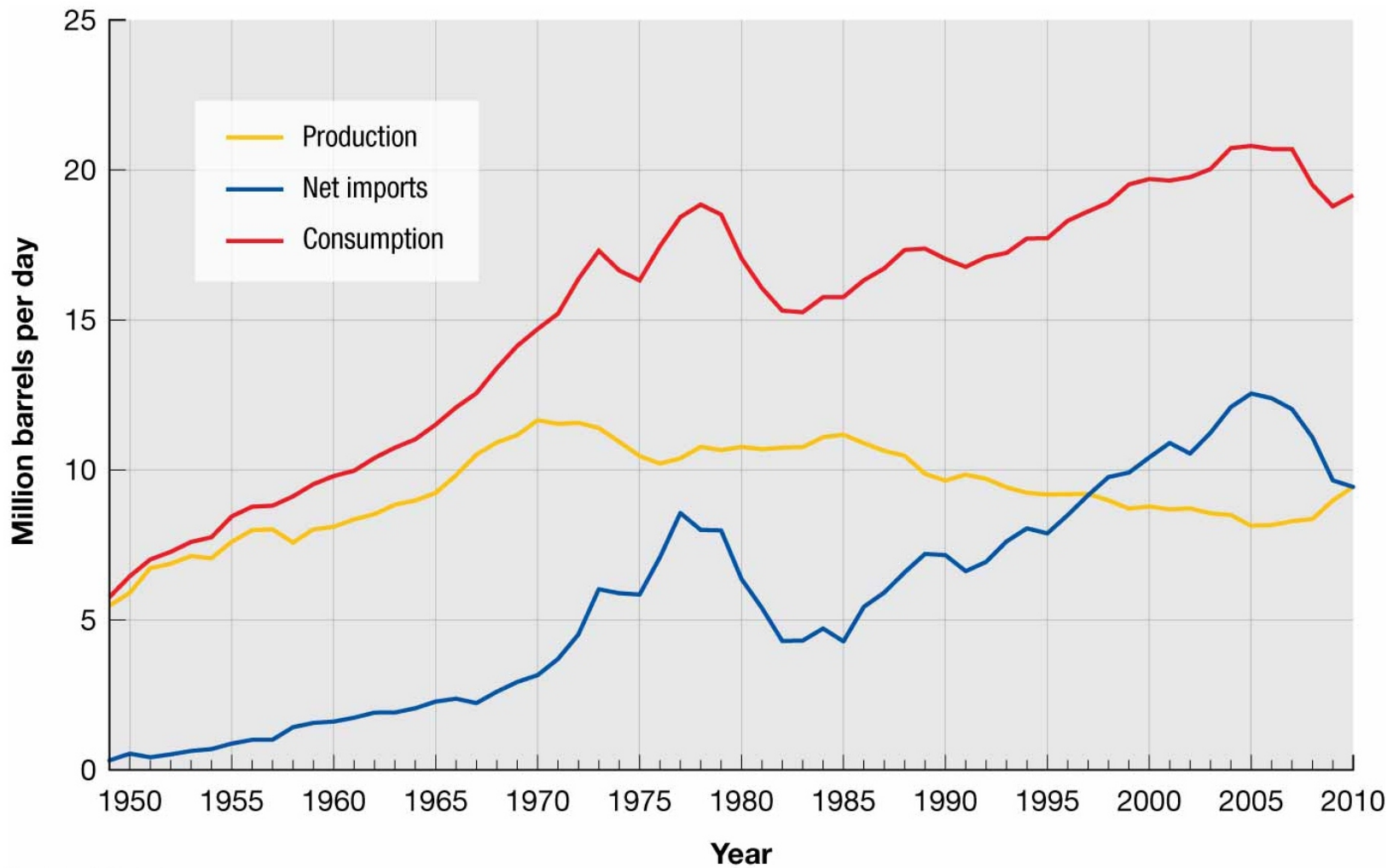
Why is Energy Important for Development?

- Energy Demand and Supply
 - Controlling Petroleum Reserves
 - Organization of the Petroleum Exporting Countries (OPEC) formed in 1960 to gain more control over their resource, as a result of U.S. and European transnational companies exploring and exploiting the oil fields of developing countries.
 - Members
 - Southwest Asia and North Africa
 - » Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and United Arab Emirates
 - Other Regions
 - » Angola, Ecuador, Iran, Nigeria, and Venezuela
 - Under OPEC, prices set by governments possessing the oil reserves rather than by petroleum companies.

Oil Price History



US Petroleum Consumption, Production, and Imports



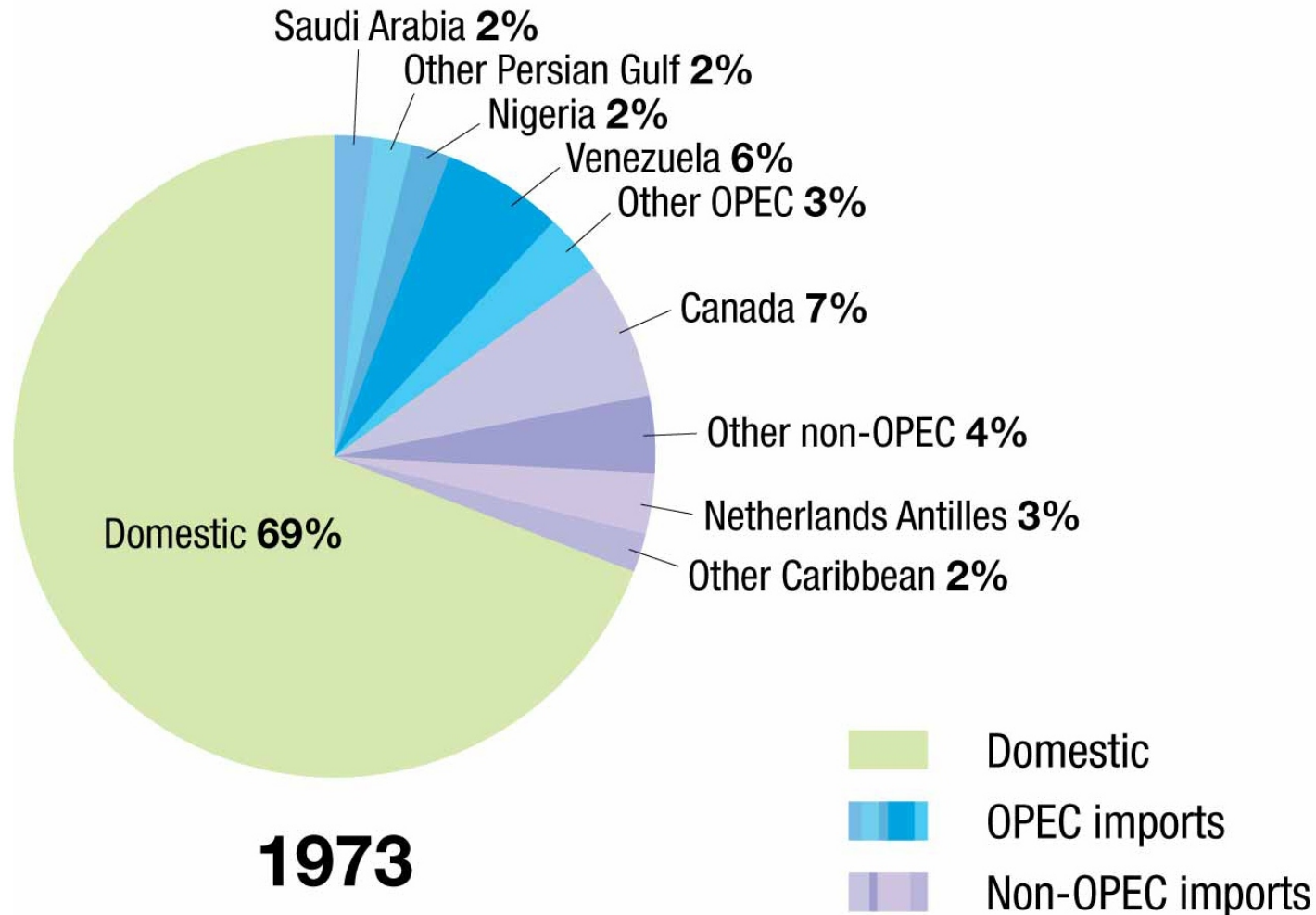
Source: U.S. Energy Information Administration

Why is Energy Important for Development?

- Energy Demand and Supply
 - Changing U.S. Petroleum Sources
 - Beginning in 1950s, extracting domestic petroleum became more expensive than importing it from S.W. and Central Asia.
 - U.S. imports increased from 14% (1954) to 58% (2009) of total consumption
 - Sharp price increases of oil set by OPEC countries during 1970s and 1980s contributed to U.S. decreasing its reliance on OPEC oil by $\frac{1}{2}$.
 - Share of imports from OPEC countries declined from $\frac{2}{3}$ in 1970s to $\frac{1}{3}$ in 1980s.
 - Price (adjusted for inflation) of petroleum plummeted to lowest level, during the 1990s.
 - Petroleum consumption significantly increased

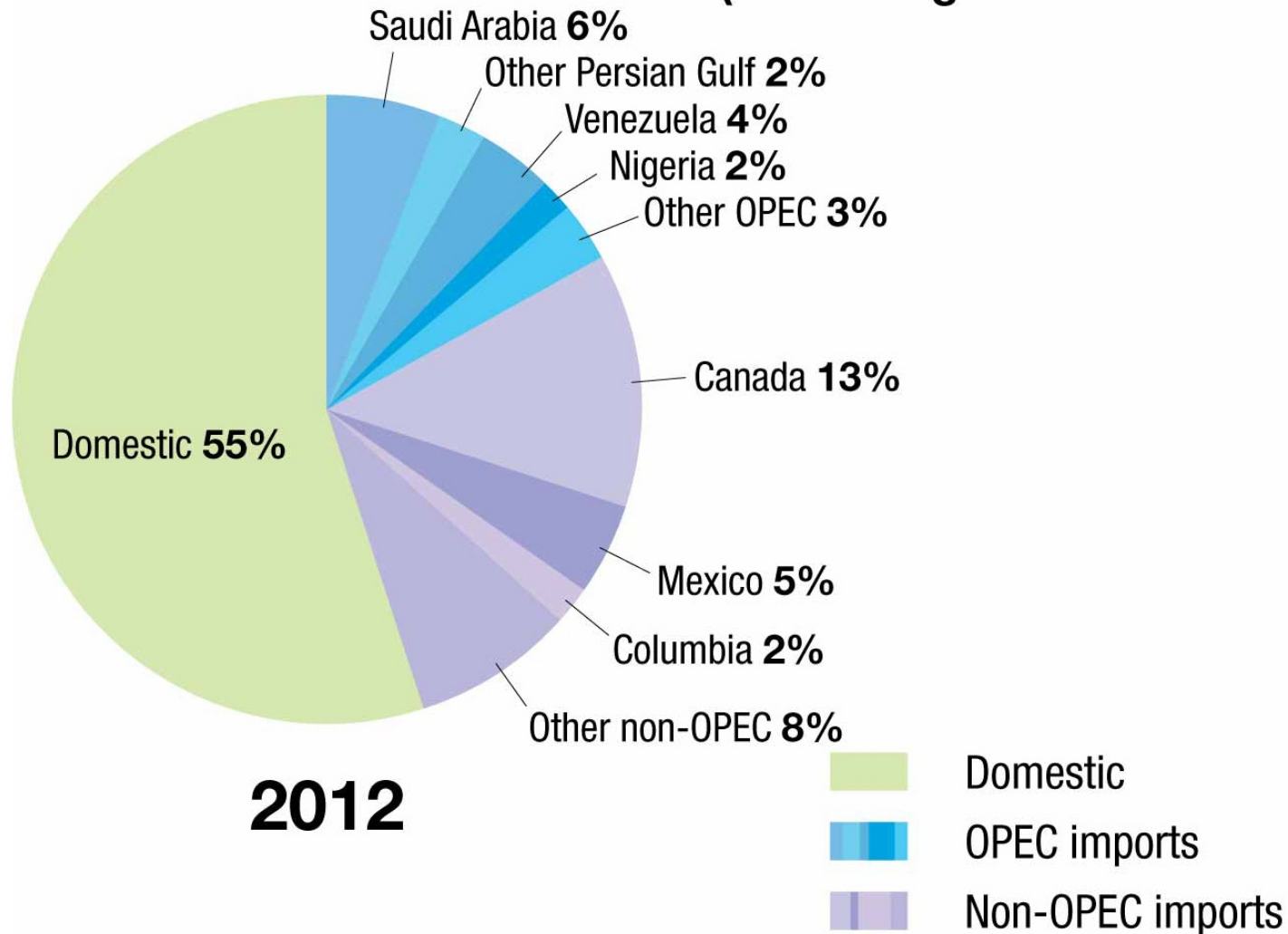
US Petroleum Sources - 1973

**U.S. petroleum sources
(Percentage of barrels a day)**

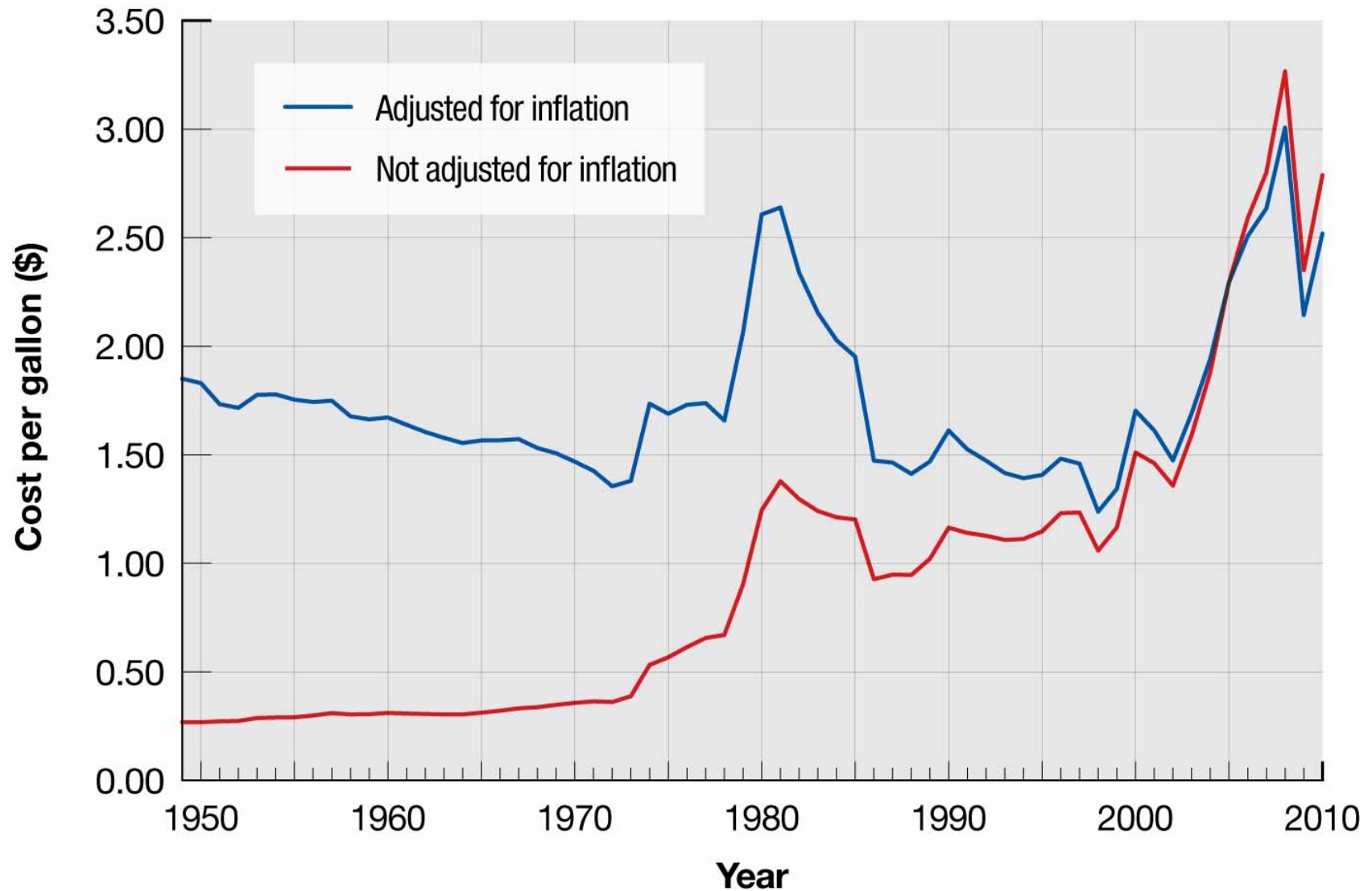


US Petroleum Sources - 2012

**U.S. petroleum sources
(Percentage of barrels a day)**



US Gasoline Prices – 2005 dollars adjusted for inflation



Why is Energy Important for Development?

- Alternative Energy Sources

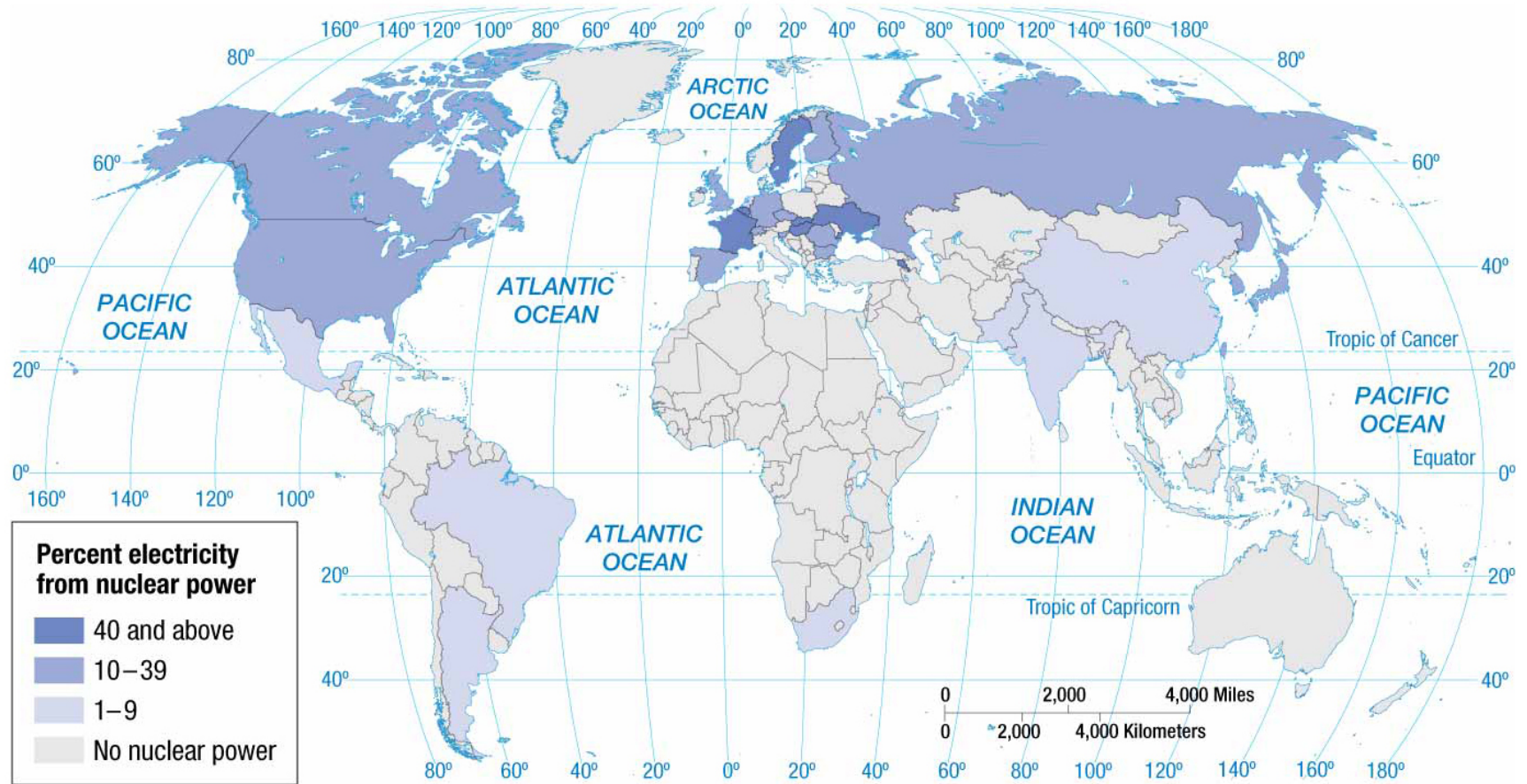
- Nuclear Energy

- Electricity produced by splitting uranium atoms in a controlled environment via a process called *fission*.
 - One product of nuclear reactions is *radioactive waste*.

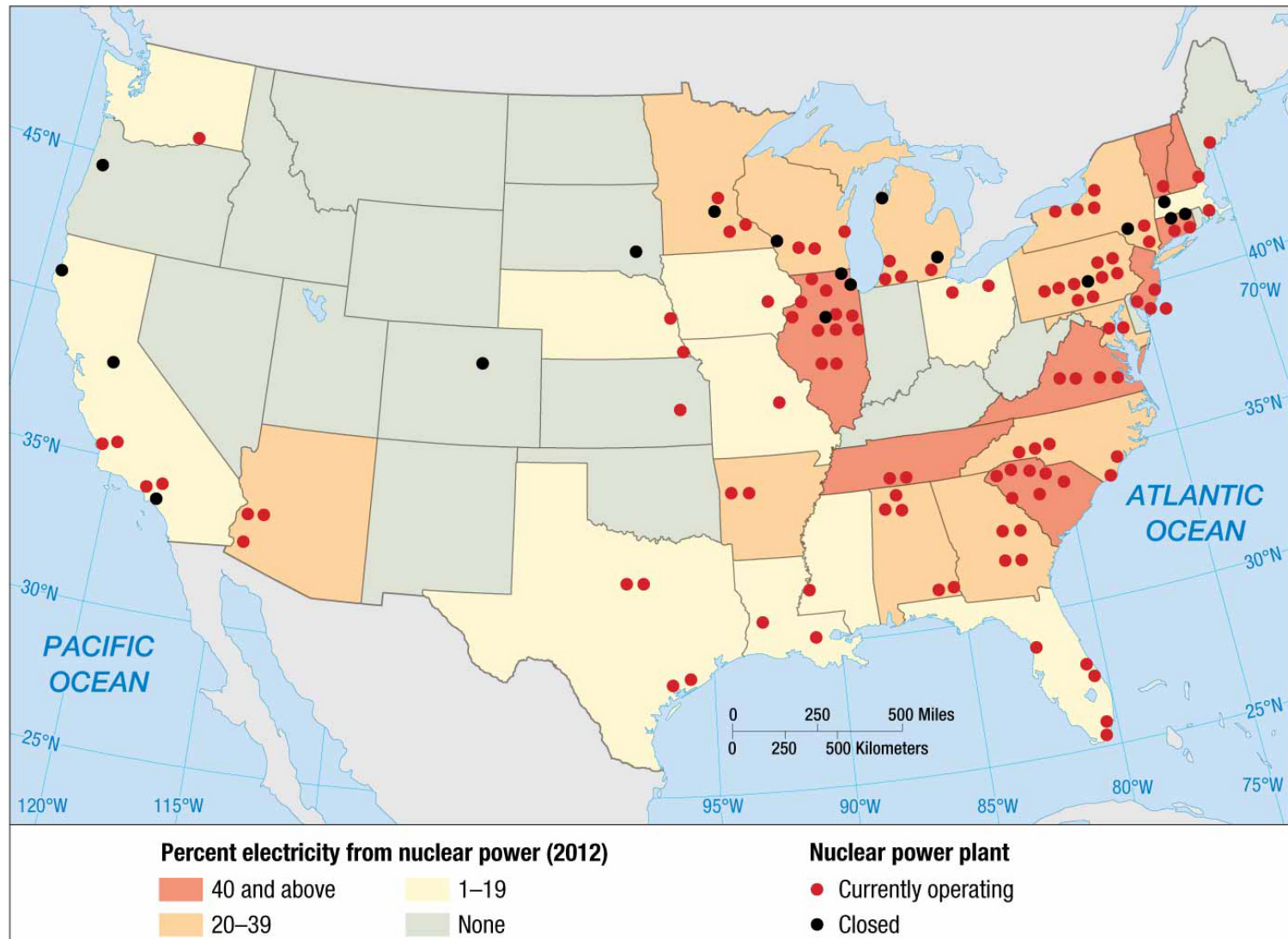
- Nuclear Energy Distribution

- Supplies 14% of world's electricity
 - Used by only 30 of world's nearly 200 countries
 - 19 developed countries; 11 developing countries
 - 2/3 of world's nuclear power generated in North America and Europe
 - Most highly dependent countries clustered in Europe
 - Relatively higher concentration of nuclear power plants in the Eastern half of the U.S.

Electricity from Nuclear Power

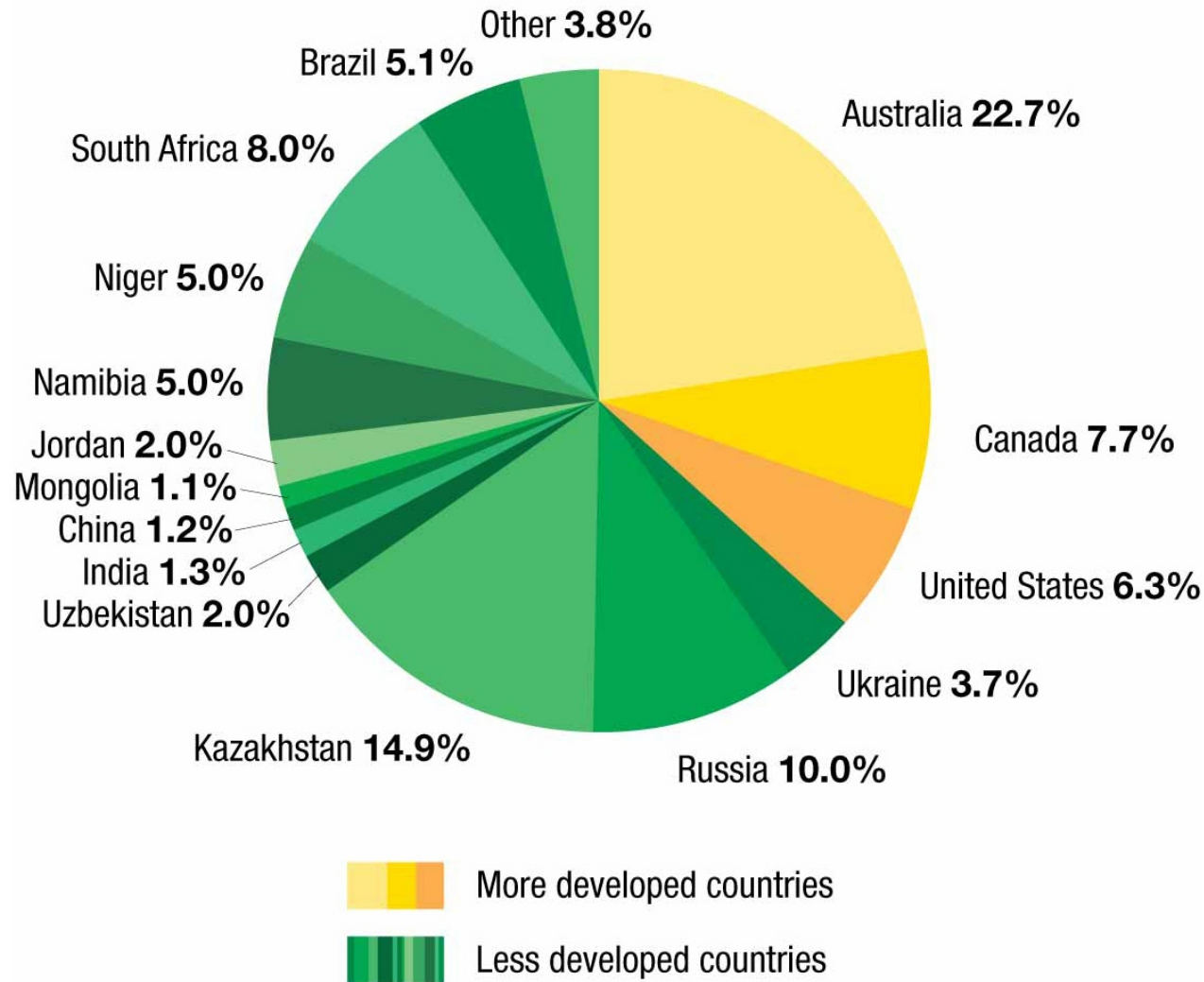


Nuclear Power by State



World Uranium Reserves

World uranium reserves (percentage)



Why is Energy Important for Development?

- Alternative Energy Sources
 - Nuclear Energy Challenges
 - Radioactive waste is highly lethal to humans.
 - Not possible to burn or chemically treat such waste to make it safe for human exposure.
 - » Waste must remain isolated from human contact for thousands of years, until it loses radioactivity.
 - Uranium is a nonrenewable resource
 - Proven reserves projected to last 124 years at current consumption rate.
 - High Cost
 - Nuclear power plants cost several billion dollars to build.
 - Complexities of safe transportation and storage of radioactive waste are costly.

Why is Energy Important for Development?

- Alternative Energy Sources
 - Renewable Energy
 - Hydroelectric Power
 - Harnesses the power of moving water to convert it to electricity.
 - Leading source of renewable energy in both developed and developing regions.
 - 2nd most popular source of electricity after coal
 - Lack of remaining acceptable sites to construct a hydroelectric dam poses a challenge to increasing reliance in U.S.
 - Biomass
 - Biomass energy sources include wood and crops that can be burned as fuel to generate electricity and heat.
 - » Ex.: Sugarcane, corn, and soybeans can be processed into motor-vehicle fuels.

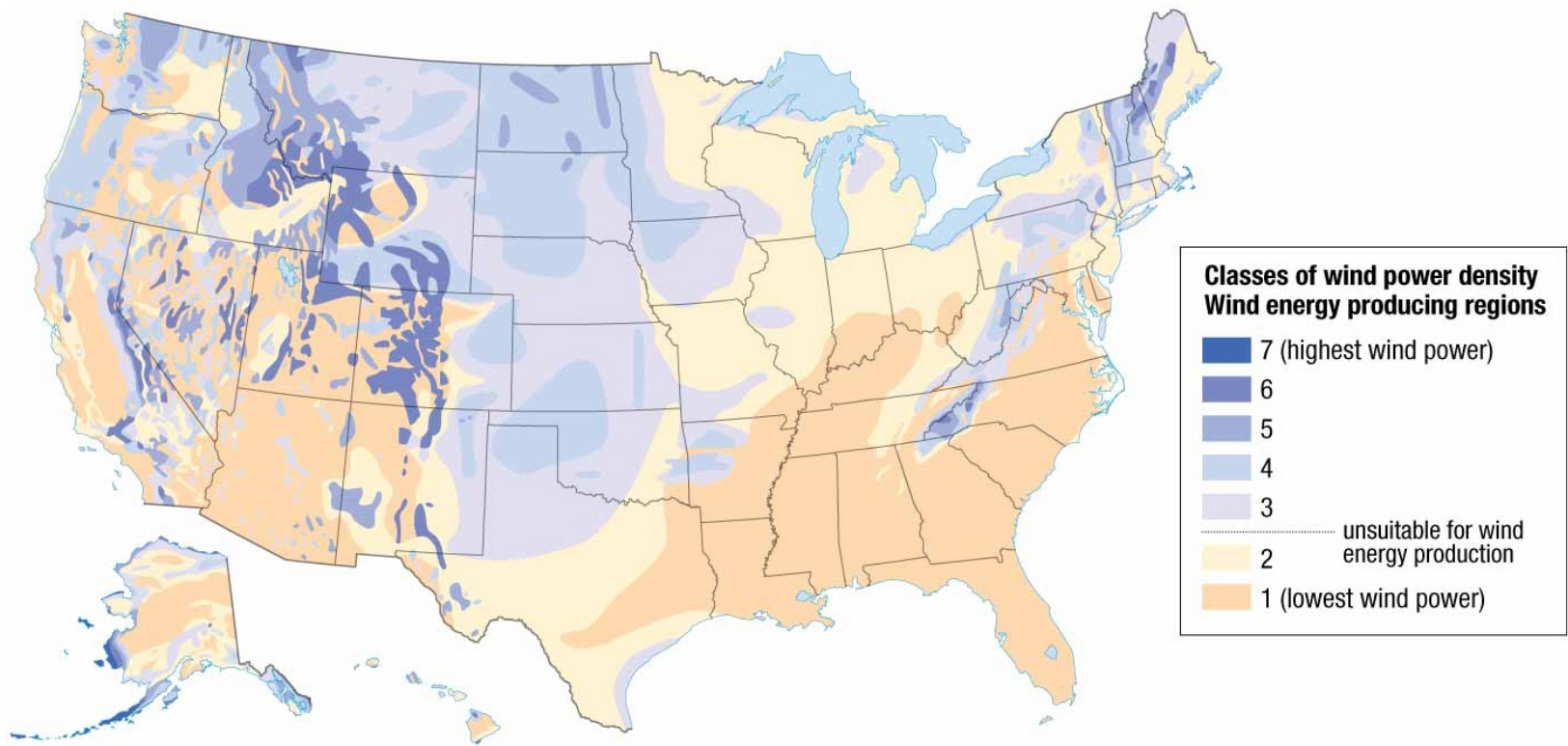
Why is Energy Important for Development?

- Alternative Energy Sources
 - Renewable Energy
 - Limiting Factors for Increasing Reliance on Biomass
 - Inefficiency
 - » Burning biomass may require as much energy to produce the crops as they supply.
 - “Putting Food” in the Gas Tank
 - » Biomass already serves essential purposes, such as providing much of Earth’s food, clothing, and shelter.
 - Environmental Concerns
 - » Logging trees for wood to be burned may reduce the fertility of the forest.

Why is Energy Important for Development?

- Alternative Energy Sources
 - Renewable Energy
 - Wind Energy
 - Relatively minimal impact on the environment
 - Greater potential for increased use, because only a small portion of the potential resource has been harnessed.
 - Greatest challenge for expanding reliance is opposition by environmentalists who voice their concerns about windmills being noisy, lethal for birds and bats, and a visual blight on the landscape.

Wind Power



Why is Energy Important for Development?

- Alternative Energy Sources
 - Renewable Energy
 - Solar Energy
 - Ultimate renewable resource supplied by the Sun.
 - U.S. receives 1% of its electricity from solar, but potential growth is limitless.
 - Solar energy is harness through one of two means.
 1. *Passive solar energy systems* capture energy without using special devices.
 2. *Active solar energy systems* collect solar energy and convert it either to heat energy or to electricity either directly or indirectly.

Solar Power Panels



Solar Energy Development in South Sudan



Chapter 09

Key Issue 4:

Why Do Countries Face Obstacles to
Development?

Why Do Countries Face Obstacles to Development?

- Two Paths to Development
 - Developing countries chose of of two models to promote development:
 1. *Self-sufficiency*
 - Countries encourage domestic production of goods, discourage foreign ownership of businesses and resources, and protect their businesses form international competition.
 - Most popular for most of 20th century
 2. International trade
 - Countries open themselves to foreign investment and international markets.
 - Became more popular beginning in the late 20th century

Why Do Countries Face Obstacles to Development?

- Two Paths to Development
 - Self-Sufficiency Path Key Elements
 - Barriers limit the import of goods from other places.
 - Businesses are not forced to compete with international corporations.
 - Investment spread almost equally across all economic sectors and in all regions of a country.
 - Minimalized discrepancies in wages among urban and rural dwellers with the intent to reduce poverty.

Why Do Countries Face Obstacles to Development?

- Two Paths to Development
 - International Trade Path
 - Rostow Model
 1. Traditional Society
 - » Marked by a very high percentage of people engaged in agriculture and a high percentage of national wealth allocated to “nonproductive” activities. e.g. military
 2. Preconditions for Takeoff
 - » Elite group initiates innovative economic activities that ultimately stimulate an increase in productivity.
 3. Takeoff
 - » Rapid growth is generated in a limited number of economic activities. e.g. textiles

Why Do Countries Face Obstacles to Development?

- Two Paths to Development
 - International Trade Path
 - Rostow Model
 4. Drive to Maturity
 - » Modern technology pervades from the few takeoff industries to other economic sectors, thus sparking rapid growth.
 5. Age of Mass Consumption
 - » Marked by a shift from heavy industry, such as steel, to consumer goods.

Why Do Countries Face Obstacles to Development?

- International Trade Examples
 - Two groups of countries following the International trade approach
 - Four Asian Dragons
 - ✓ South Korea, Singapore, Taiwan, and Hong Kong
 - » Development promoted by producing a handful of manufactured goods – clothing and electronics
 - Petroleum-rich Arabian Peninsula States
 - ✓ Saudi Arabia, Kuwait, Bahrain, UAE
 - » Rising oil prices beginning in the 1970s transformed these countries

Why Do Countries Face Obstacles to Development?

- Shortcomings of the Two Development Paths
 - Self-Sufficiency Challenges
 - Protection of inefficient businesses
 - Guaranteed high prices made possible by isolation from international competition creates little incentive for business to improve quality of product or become more efficient.
 - Companies protected from international competition aren't compelled to keep up with rapid technological changes.
 - Need for large bureaucracy
 - A complex administrative systems needed to administer the controls encourages inefficiency, abuse, and corruption.

Why Do Countries Face Obstacles to Development?

- Shortcomings of the Two Development Paths
 - International Trade Challenges
 - Uneven resource distribution
 - Commodity prices are not guaranteed to rise faster than the cost of products a developing country needs to purchase.
 - Increased dependence on developed countries
 - Developing countries may allocate all resources to few take off industries instead of spreading resources among the other companies that provide food, clothing, and other necessities for local residents.
 - Market decline
 - Developing countries have found increased difficulty selling their manufactured goods in a world market that has recently declined for many products.

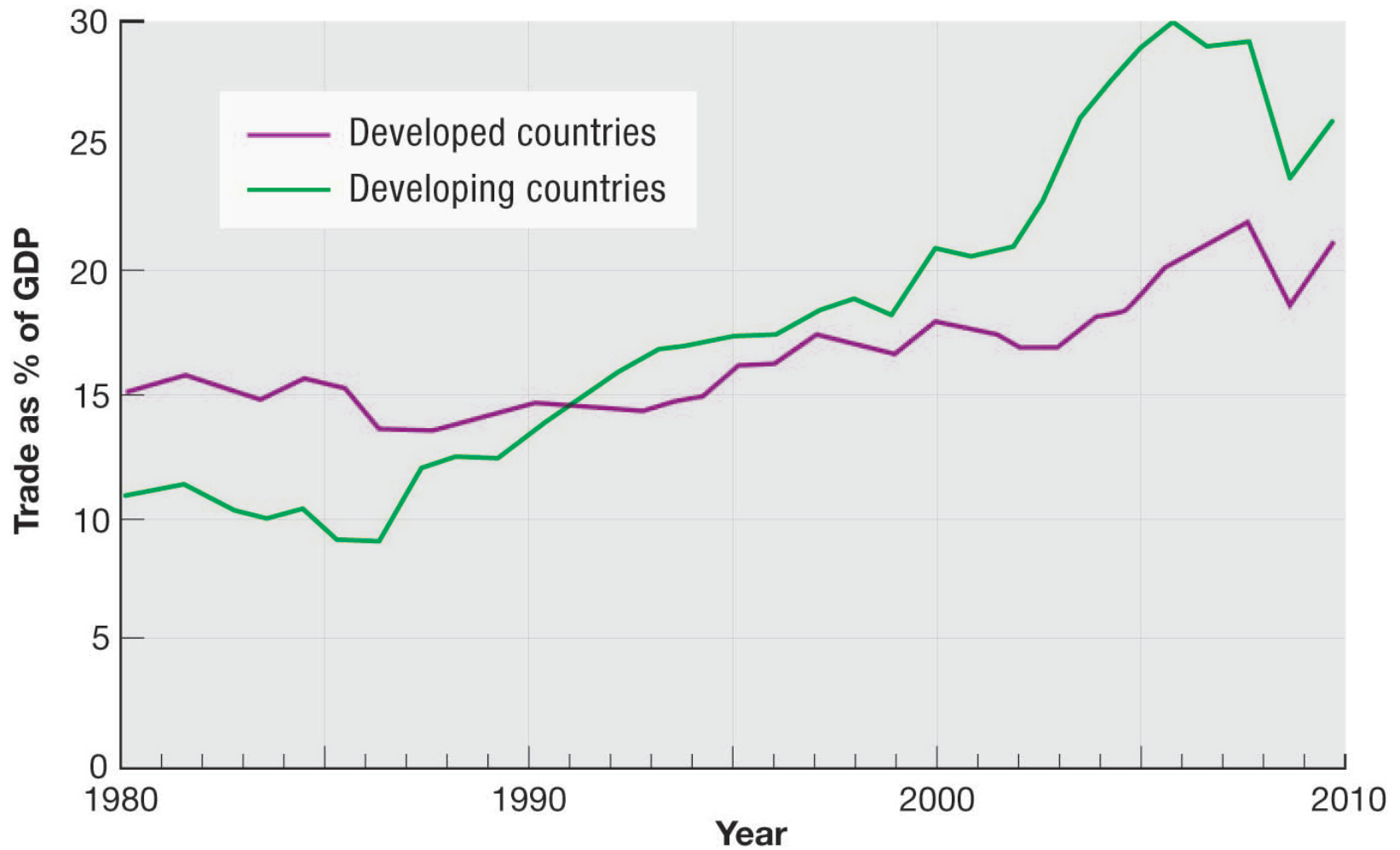
Why Do Countries Face Obstacles to Development?

- International Trade Approach Triumphs
 - Most countries have embraced the international trade approach since the late 20th century.
 - Trade has increased more rapidly than wealth as measured by GDP.
 - Optimism about the benefits of this development model based on three observations:
 - 1.If existing developed countries used this approach, then why couldn't others find similar success?
 - 2.Sales of raw materials could generate funds for developing countries that could promote development.

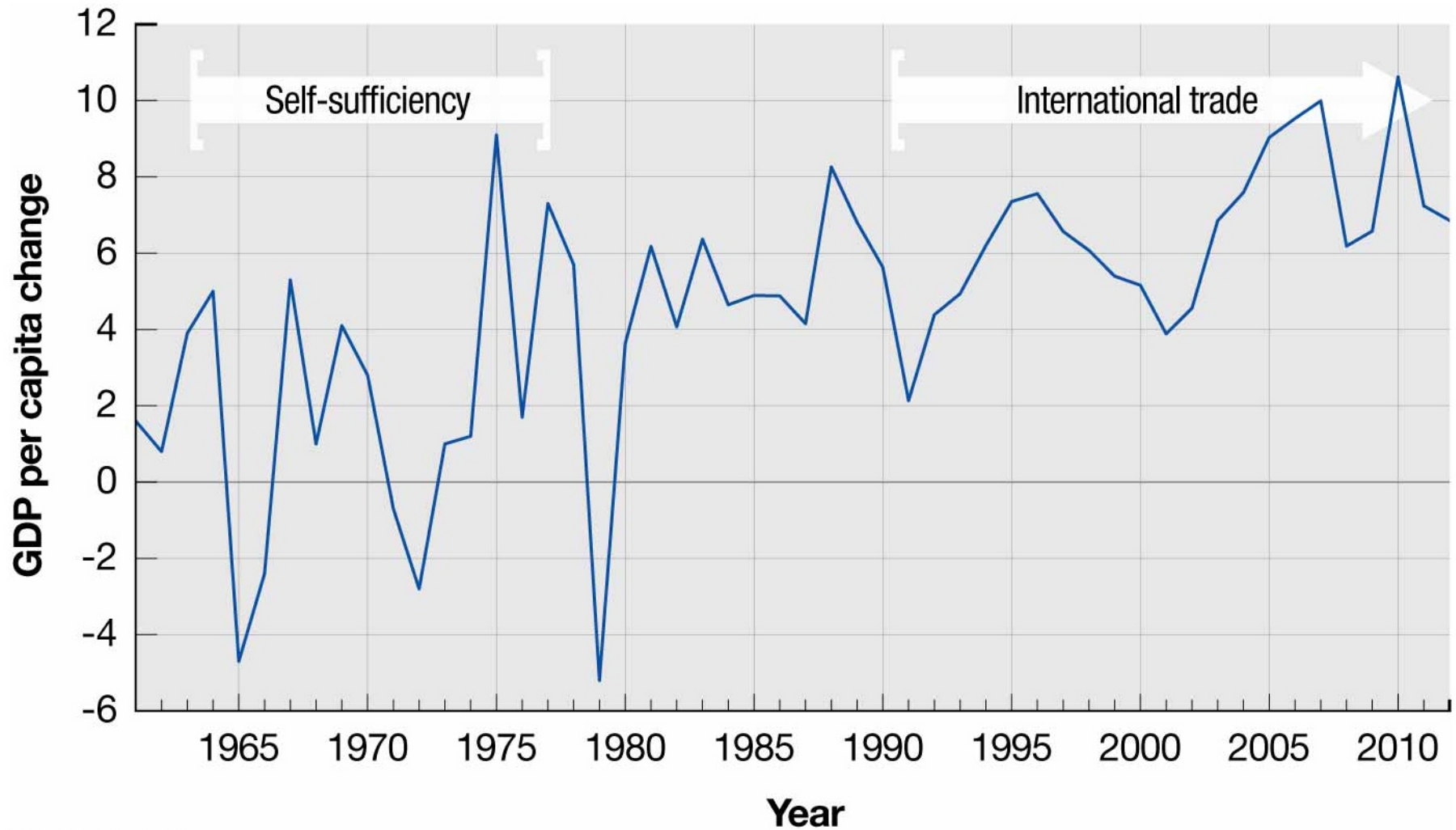
Why Do Countries Face Obstacles to Development?

- International Trade Approach Triumphs
 - Optimism about the benefits of this development model based on three observations:
 3. A country that concentrates on international trade benefits from exposure to the demands, needs, and preferences of consumers in other countries.

World Trade as a Percentage of Income



GDP per Capita Change in India



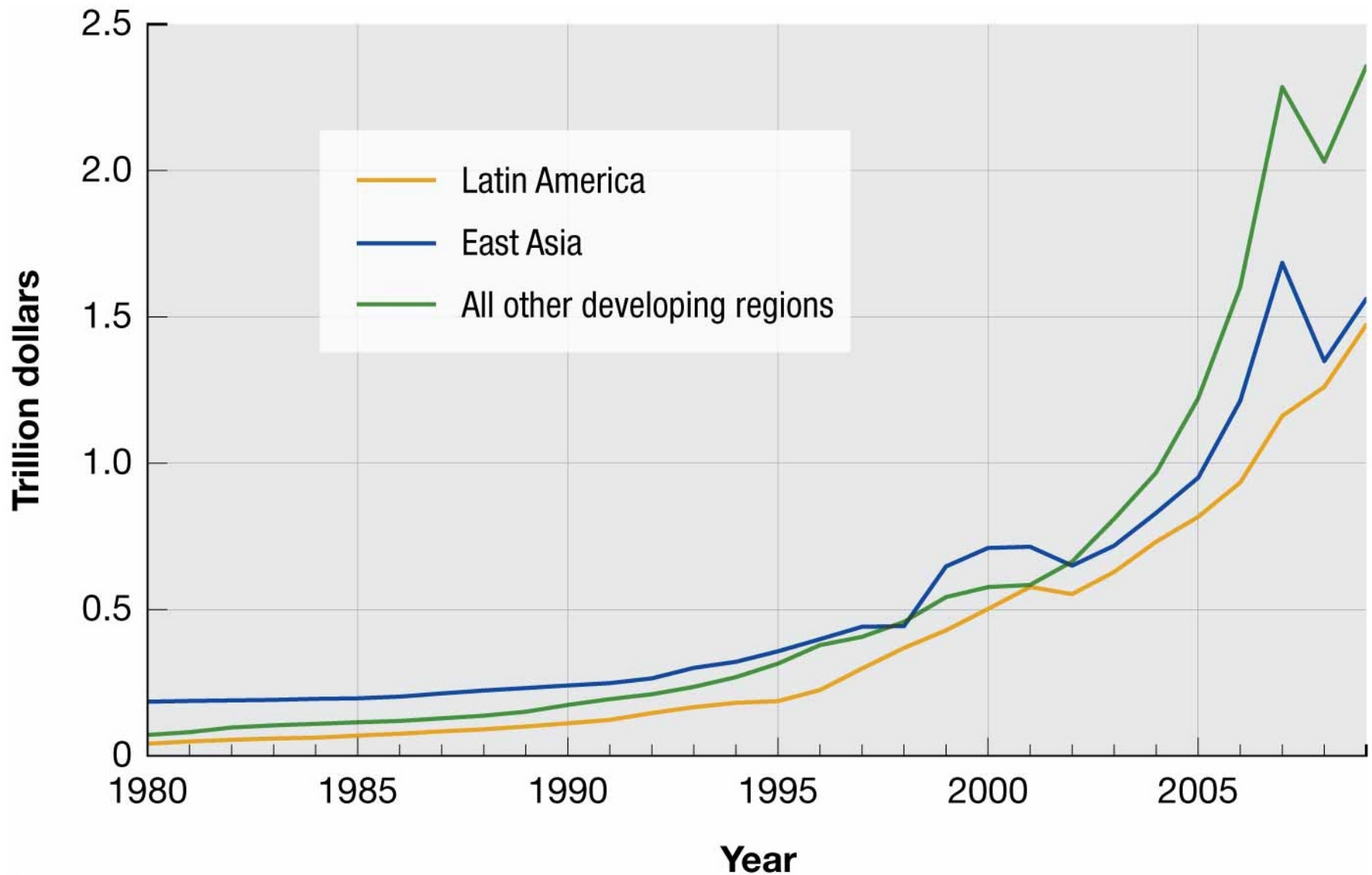
Why Do Countries Face Obstacles to Development?

- Financing Development
 - Finance comes from two primary sources:
 1. Direct investment by transnational corporations
 2. Loans from banks and international organizations
 - Foreign Direct Investment (FDI)
 - Defined: Investment made by a foreign company in the economy of another country.
 - FDI grew from \$130 billion in 1990s to \$1.5 in 2000 and 2010.
 - In 2010, only 2/5 went from developed to developing
 - Major source of FDI are transnational corporations

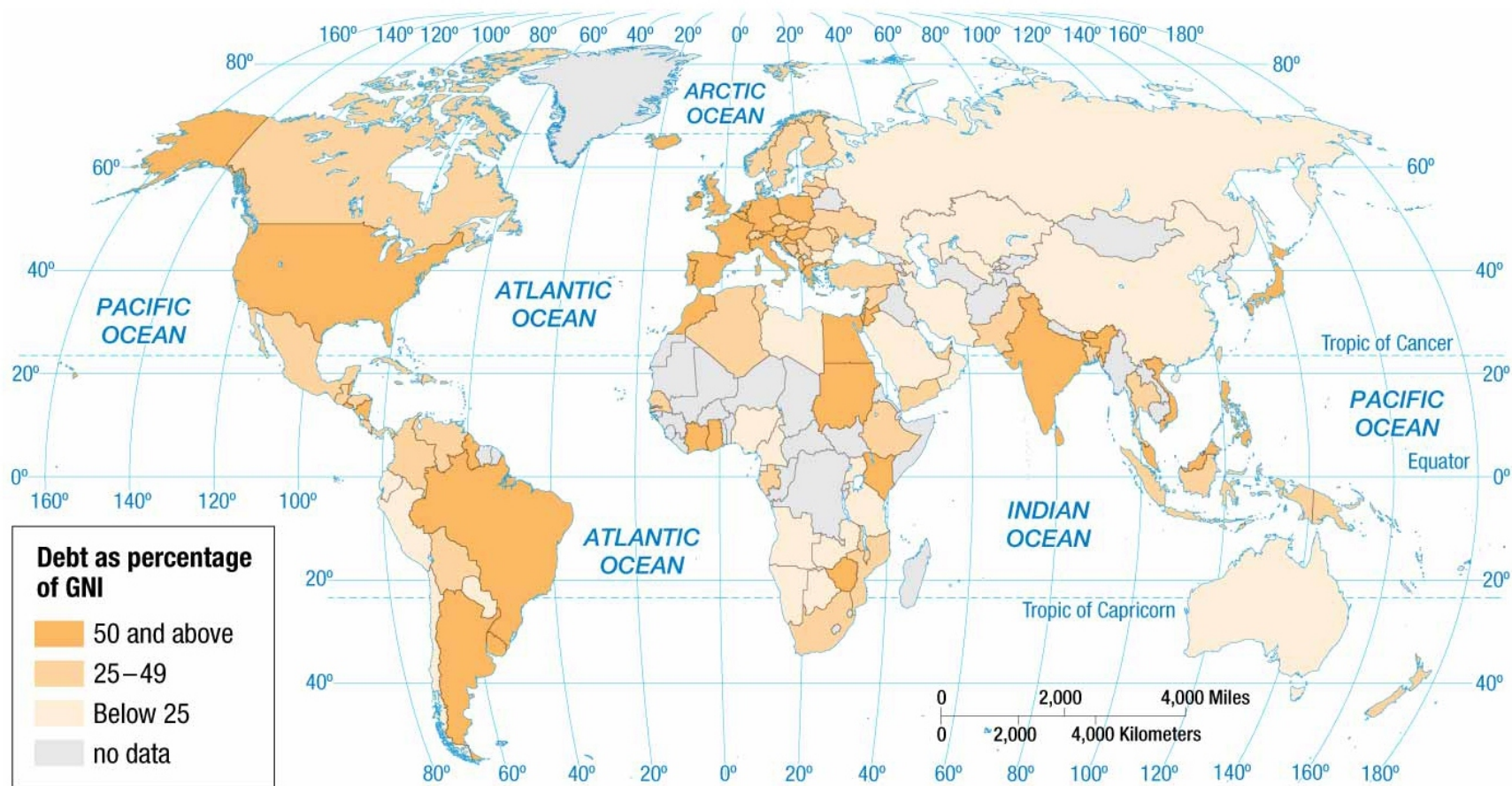
Why Do Countries Face Obstacles to Development?

- Financing Development
 - Loans
 - Two major lenders to developing countries:
 1. World Bank
 - » Includes the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA).
 - » IBRD provides loans to countries to reform public administration and legal institutions, develop and strengthen financial institutions, and implement transportation and social service projects.
 - » IDA provides support to countries considered too risky to receive loans from IBRD.

Growth in Foreign Direct Investment



Debt as a Percentage of GNI



Why Do Countries Face Obstacles to Development?

- Financing Development
 - Loans
 - Two major lenders to developing countries:
 2. International Monetary Fund (IMF)
 - » IMF provides loans to countries experiencing balance-of-payments problems that threaten expansion of international trade.
 - » IMF assistance designed to help a country rebuild international reserves, stabilize currency exchange rates, and pay for imports without the imposition of harsh trade restrictions or capital controls that could hamper the growth of world trade.

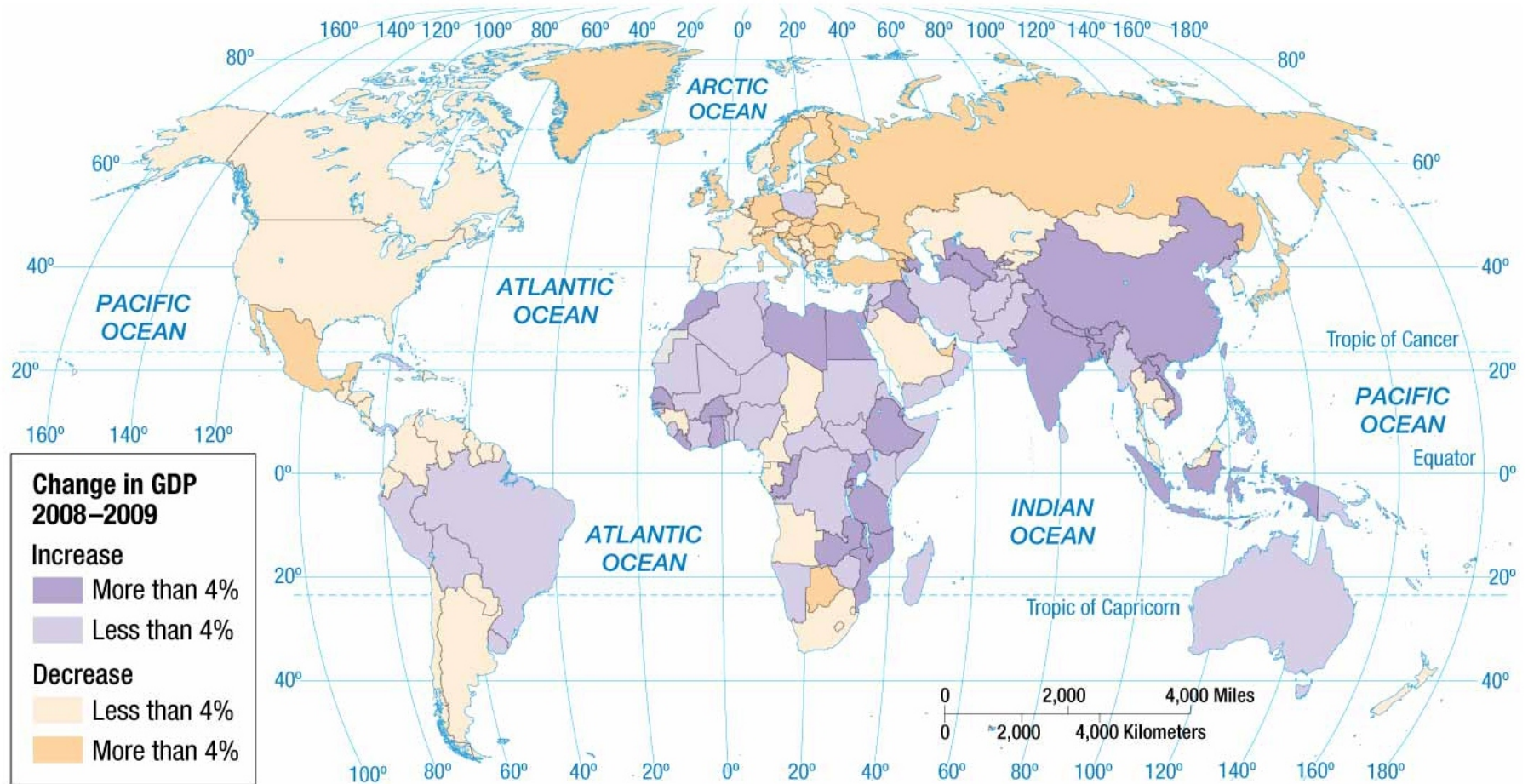
Why Do Countries Face Obstacles to Development?

- Financing Challenges in Developing and Developed Countries
 - Developing Countries
 - IMF, World Bank, and developed countries fear that granting, canceling, or refinancing debts without strings attached will perpetuate bad habits in developing countries.
 - Developing countries required to prepare a Policy Framework Paper outlining a *structural adjust program*, which includes economic goals, strategies for achieving the objectives, and external financing requirements.

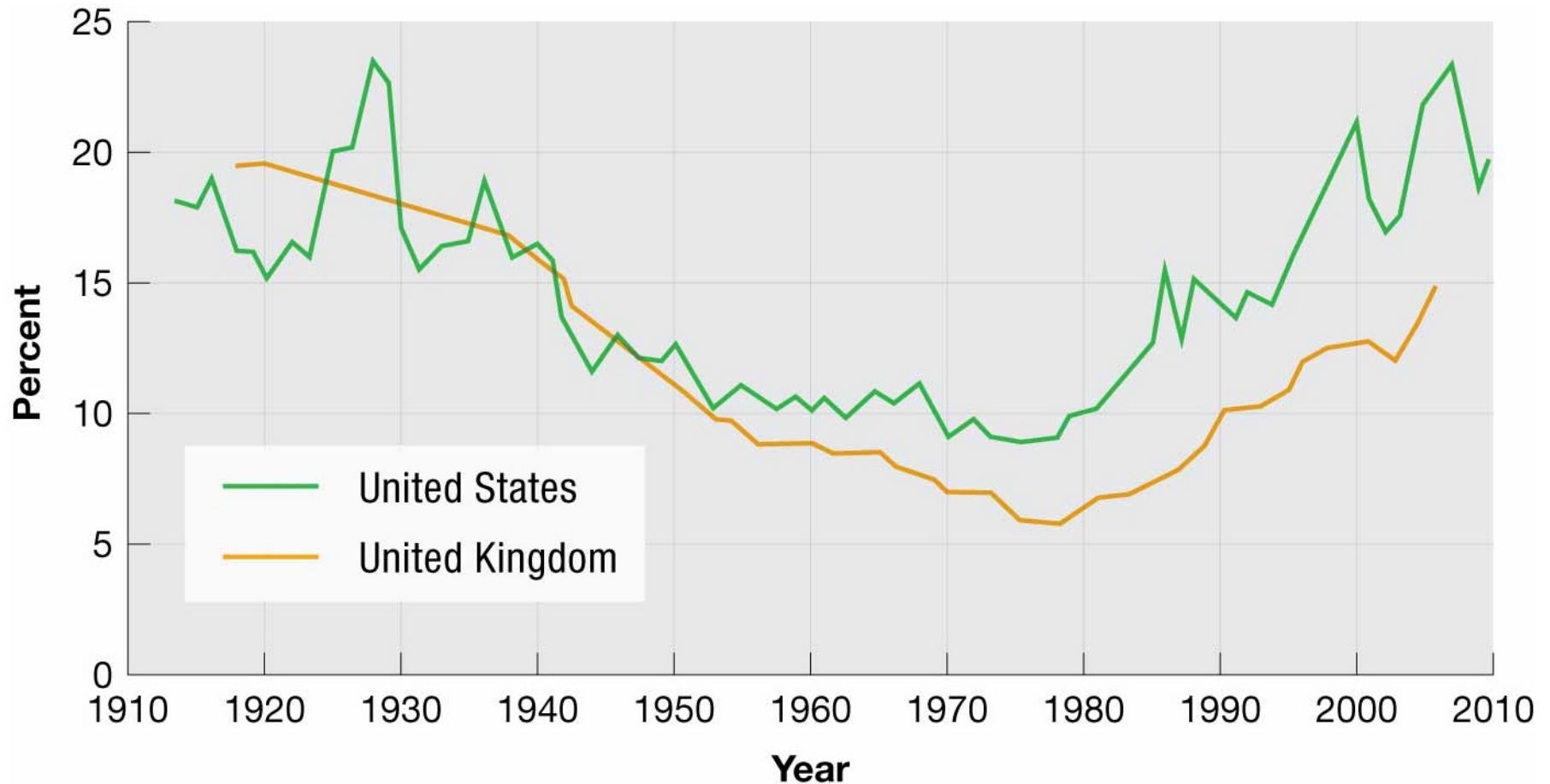
Why Do Countries Face Obstacles to Development?

- Financing Challenges in Developing and Developed Countries
 - Developed Countries
 - Heart of the global economic crisis in developed countries was the poor condition of many banks and other financial institutions.
 - Bad loans were especially widespread in housing, which led to the *housing bubble*- a rapid increase in the value of houses following by a sharp decline in their value.
 - Bubble burst because of relaxation of long-standing restrictions on the ability of individuals to purchase houses and higher-income people took advantage of low-interest loans to buy additional houses.

GDP Per Capita Change: 2008-2008

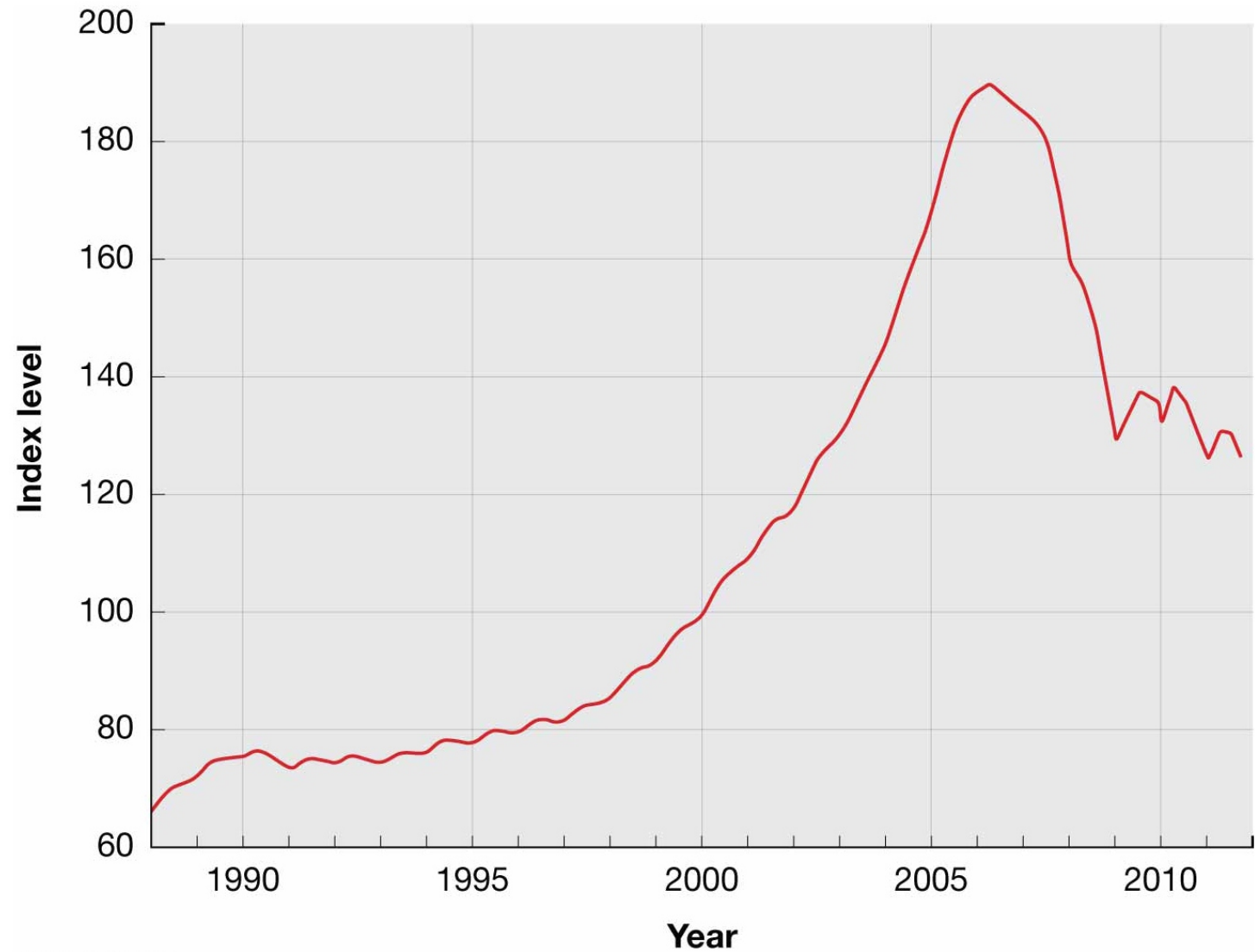


Top 1% Income Share



National wealth held by the richest 1% declined during much of the 20th Century, but has increased since 1980

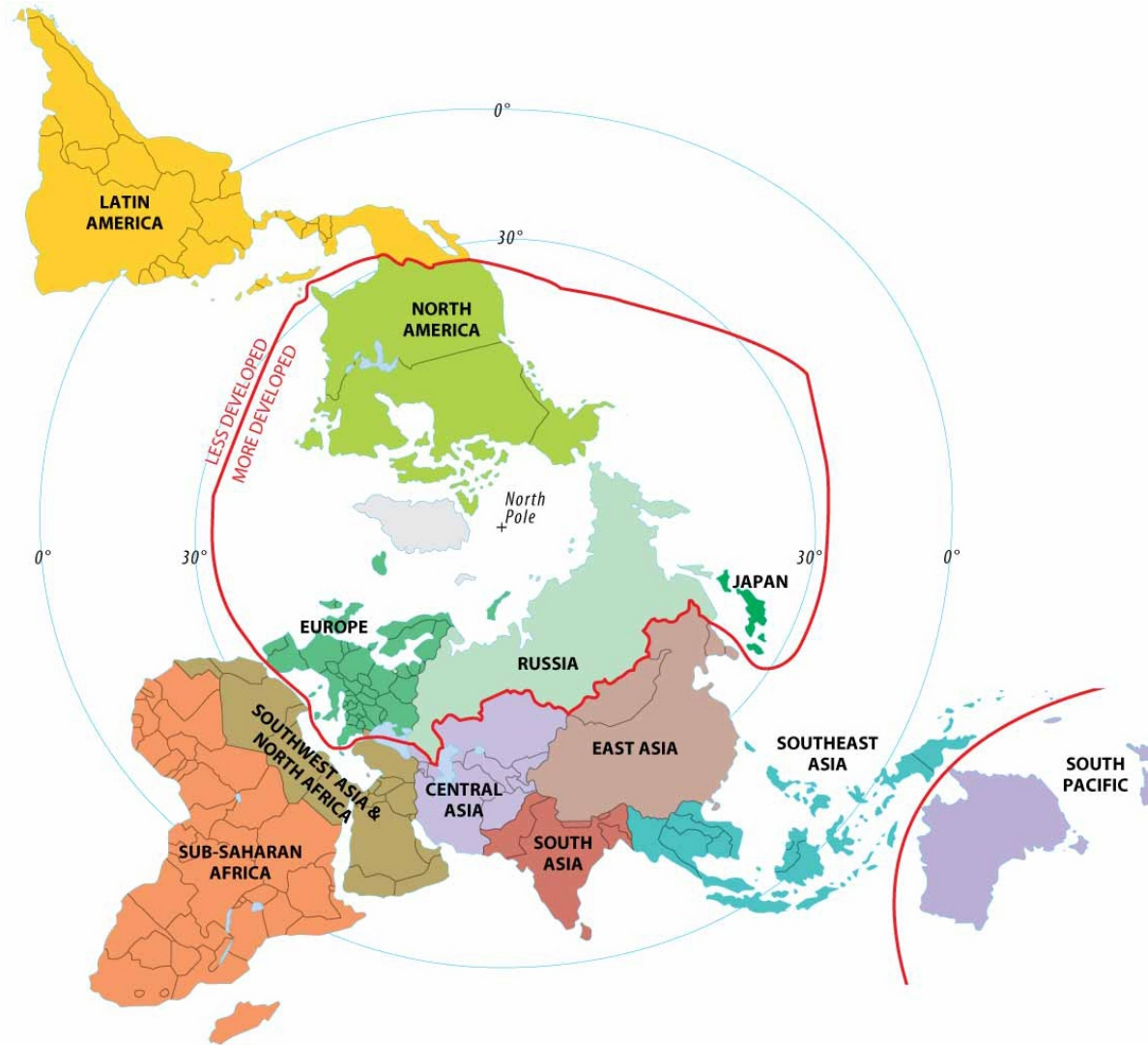
Housing “Bubble”



Why Do Countries Face Obstacles to Development?

- Making Progress in Development
 - Immanuel Wallerstein, a U.S. social scientist, posited a world-systems analysis that unified the world economy with developed countries forming an inner core area, whereas developing countries occupy peripheral locations.
 - Developing countries in the periphery have less access to the world center of consumption, communications, wealth, and power, which are clustered in the core.

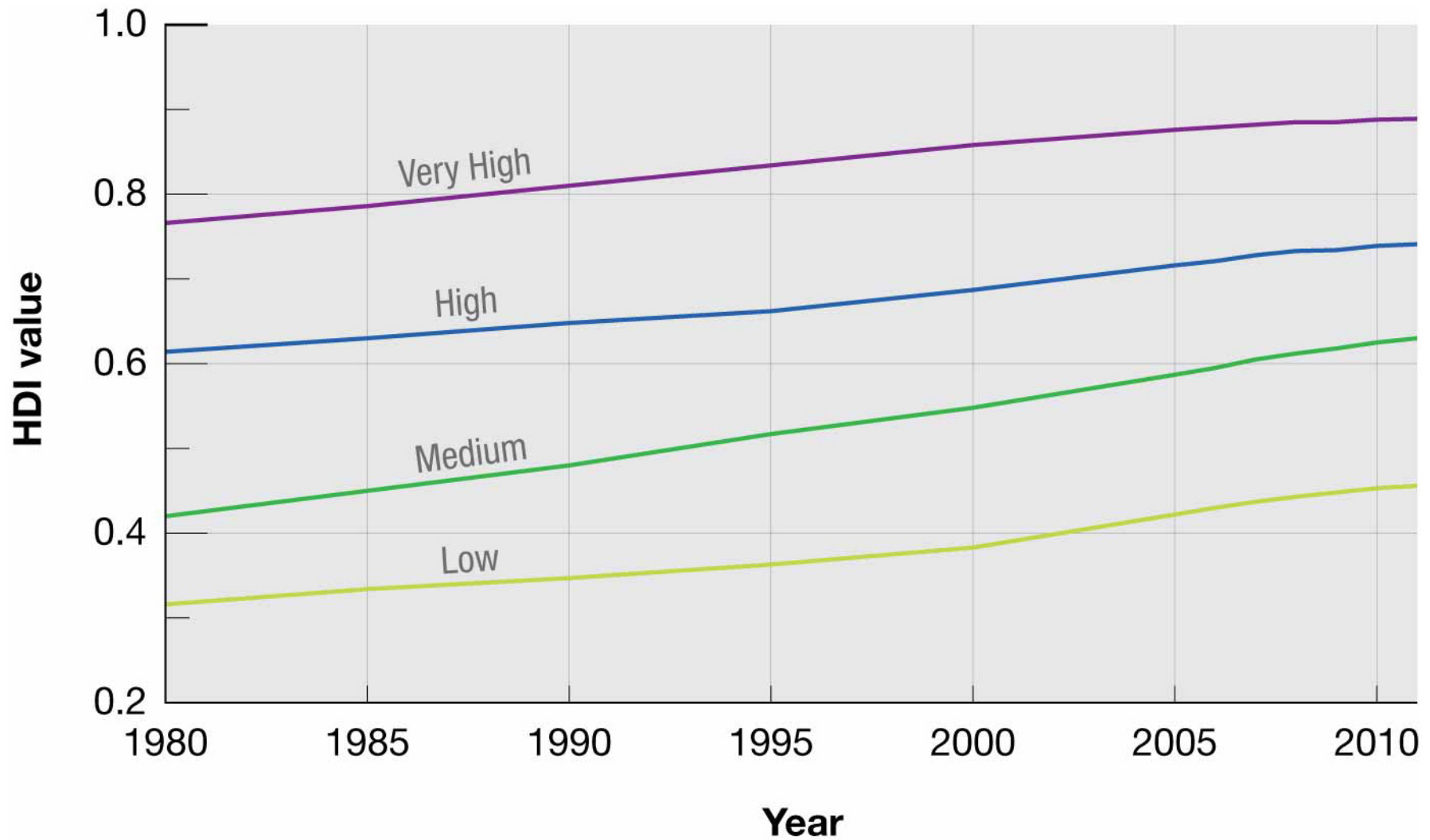
Core and Periphery



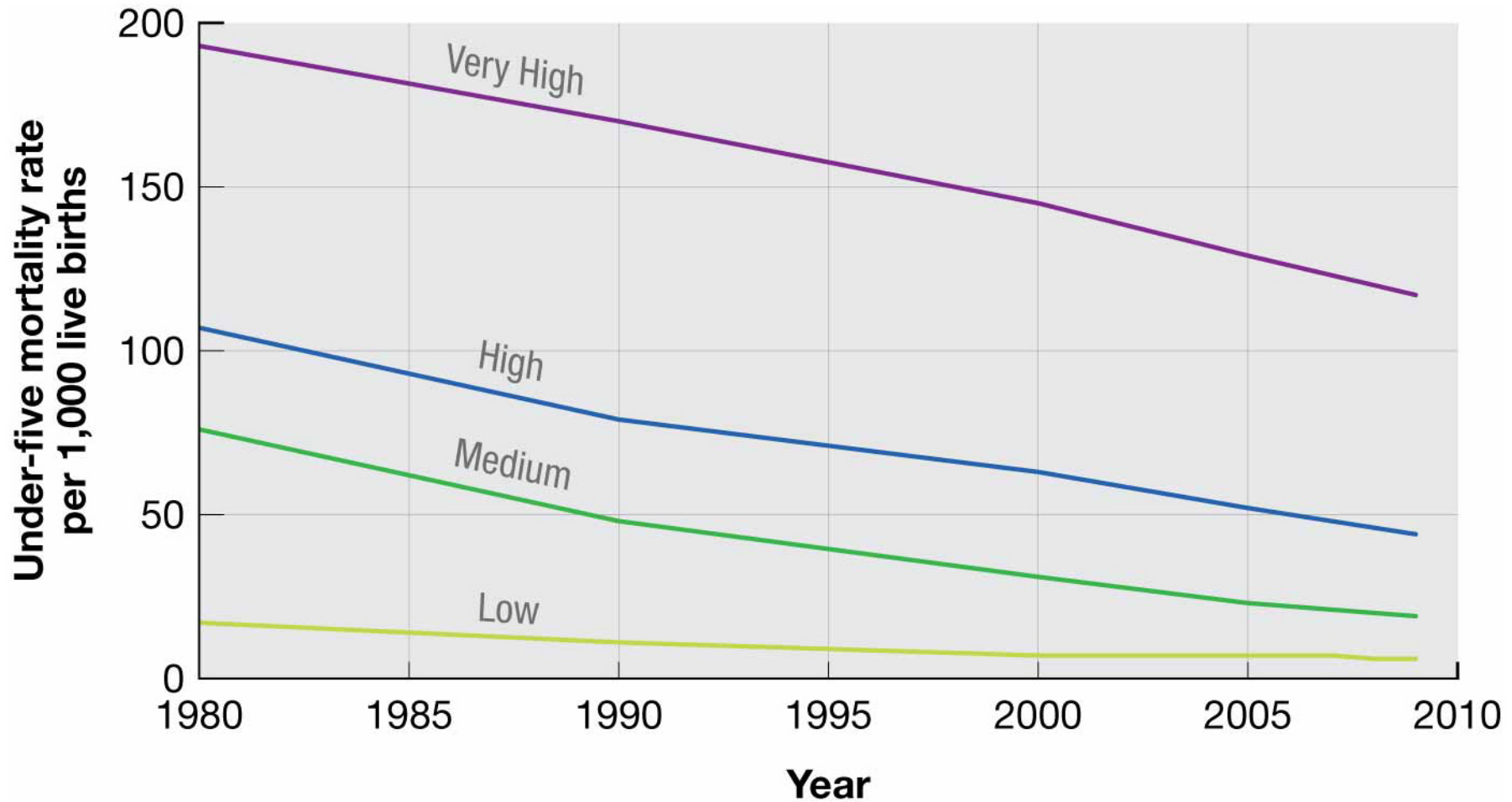
Why Do Countries Face Obstacles to Development?

- Making Progress in Development
 - Closing the Gap
 - Progress in reducing the gap in level of development between developed and developing countries varies depending on the variable:
 - Infant Mortality Rate
 - » Gap has narrowed from 17 to 6 (per 1,000) in developed countries and from 107 to 44 developing countries.
 - Life Expectancy
 - » Gas has not narrowed.
 - GNI Per Capita
 - » Gap in wealth between developed and developing countries has widened.

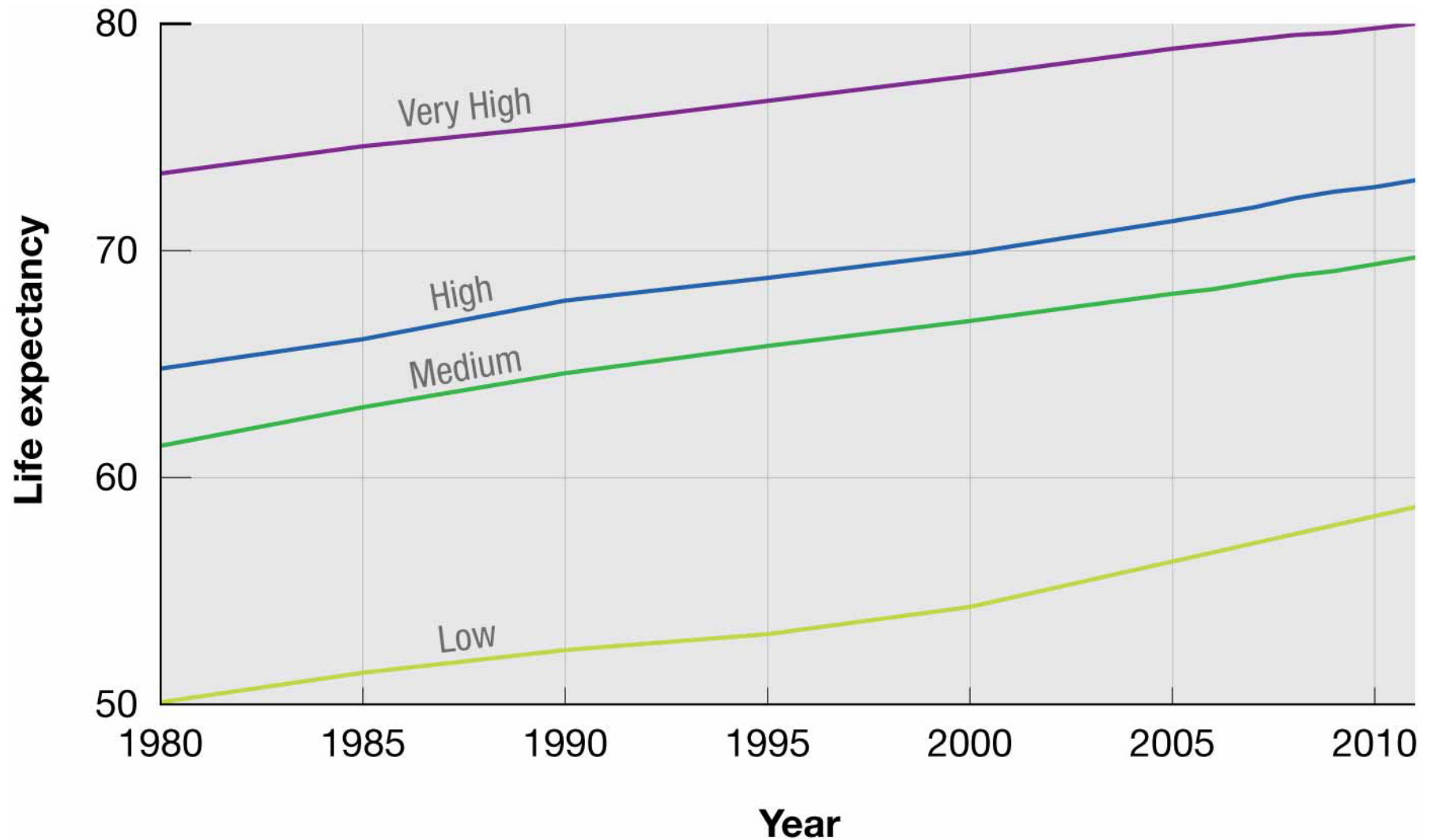
HDI Change by HDI Level, 1980 - 2011



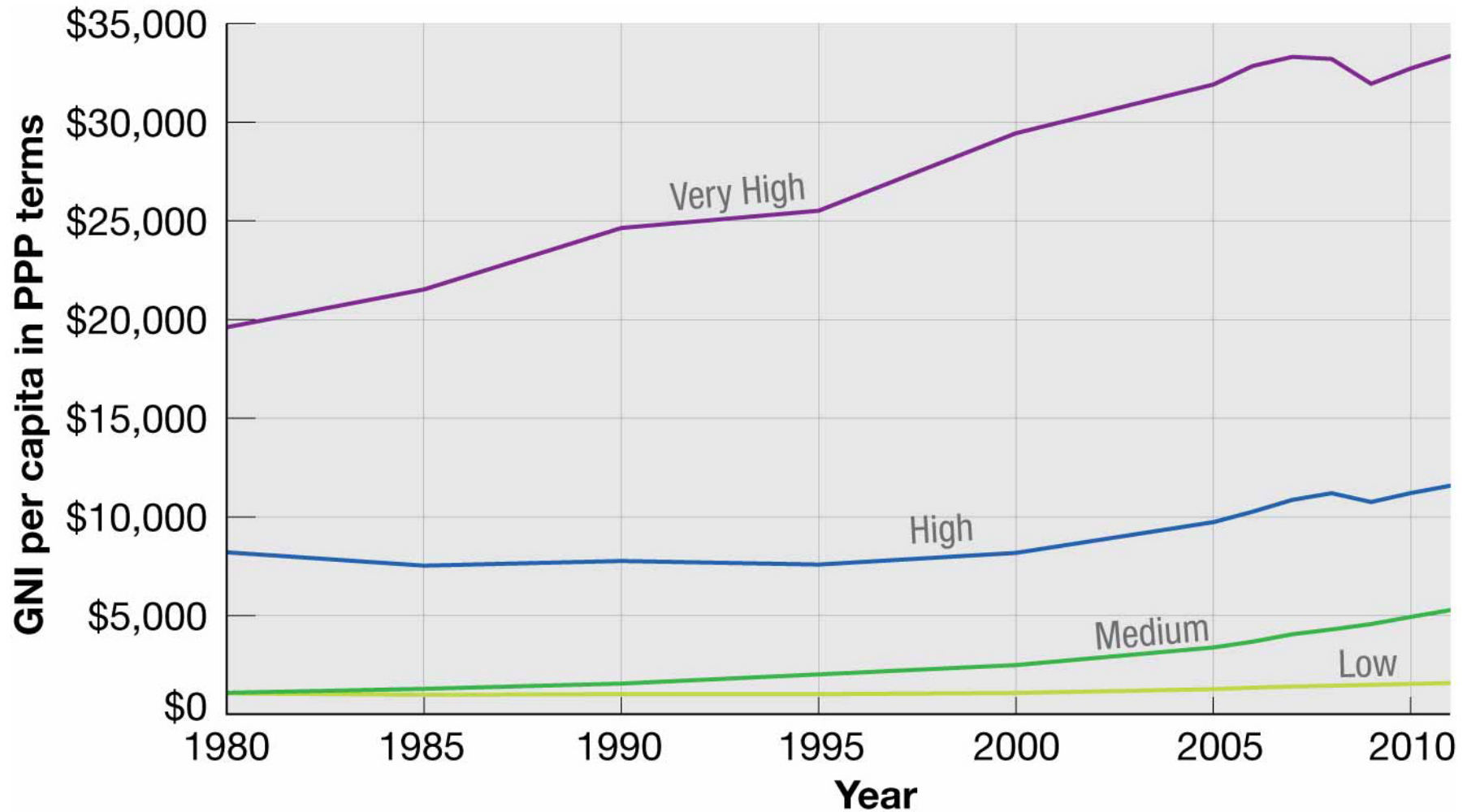
Infant Mortality Rate Change by HDI Level



Life Expectancy by HDI Level



GNI Per Capita Change by HDI Level



Why Do Countries Face Obstacles to Development?

- Making Progress in Development
 - Fair Trade
 - Defined: Commerce in which products are made and traded according to standards that protect workers and small businesses in developing countries.
 - Ex. In North America, Ten Thousand Villages is the largest fair trade organization in North America.
 - Because fair trade organizations bypass distributors, a greater percentage of the retail price makes it way back directly to the producers.
 - Fair Trade requires employers to pay workers fair wages, permit union organizing, and comply with minimum environmental and safety standards.

Fair Trade Coffee



Summary

- The HDI measures the level of development of each country. It is calculated by combining three measures: standard of living, a long and healthy life, and access to knowledge.
- The UN has not found a single country in the world where the women are treated as well as the men.
- Development depends on abundant low-cost energy.

Summary

- To develop more rapidly, developing countries must adopt policies that successfully promote development and find funds to pay for it.