HOW IS DEVELOPMENT DEFINED AND MEASURED?

The economic and social geography of the contemporary world is a patchwork of almost inconceivable contrasts. On the simple fields of shifting cultivators in equatorial American and African forests, farmers grow root crops using ancient methods and rudimentary tools. On the Great Plains of North America, in Ukraine, and in eastern Australia, farmers use expensive, modern machines to plow the land, plant seeds, and harvest grains. Toolmakers in the villages of Papua New Guinea still fashion their implements by hand, as they did many centuries ago; whereas, factory workers in Japan or South Korea produce automobiles by the shipload for distribution to markets thousands of miles away. Between these extremes, the range and variety of productive activities are virtually endless.

These contrasts point to a major issue in understanding development: wealth does not depend solely on *what is produced*; it depends in large part on *how and where it is produced*. People can grow agricultural commodities with rudimentary tools or with expensive combines. Is one or the other necessary for development to occur? The idea of development is everywhere, but rarely do we pause to ask exactly what development means or how we can measure it (Fig. 10.2).

Development implies progress, and in the modern world progress usually means improvements in technology and production, as well as improvements in the social and economic welfare of people. To say a country is **developing**, then, is to say progress is being made in technology, production, and socioeconomic well- being. Our modern notion of development is related to the Industrial Revolution and the idea that technology can improve the lot of humans. Through advances in technology, people can produce more food, create new products, and accrue material wealth. But these things do not necessarily bring happiness (see chapter 14), social stability, or environmental sustainability, which makes development a narrow, and sometimes controversial, indicator of the human condition.

Gross National Income

Ways of measuring development fit into three major areas of concern: development in economic welfare, development in technology and production, and development in social welfare. Beginning with the 1960s, the most common way of comparing development in economic welfare was to use the index economists created to compare countries, the gross national product. **Gross national product (GNP)** is a measure of the total value of the officially recorded goods and services produced by the citizens and corporations of a country in a given year. It includes things produced both inside and outside the country's territory, and it is therefore broader than **gross domestic product (GDP)**, which encompasses only goods and services produced within a country during a given year.

In recent years, economists have increasingly turned to **gross national income (GNI)**, which calculates the monetary worth of what is produced within a country plus income received from investments outside the country minus income payments to other countries around the world. GNI is seen as a more accurate way of measuring a country's wealth in the context of a global economy. In order to compare GNI across countries, economists must standardize the data. The most common way to standardize GNI data is to divide it by the population of the country, yielding the **per capita GNI**. In Japan the per capita gross national income in U.S. dollars in 2008 was $34,600. In the United States it was $45,850. In Luxembourg it was $64,400. But in India it was $2740, in Nigeria it was $1770, and in Indonesia, the world's fourth most populous country, it was $3580. This enormous range across the globe in per capita GNI reflects the often-searing contrasts between rich and poor.

Although the map of per capita GNI clearly shows the startling contrasts between rich and poor in the world, the statistic has several shortcomings. GNI is a limited measure because it only includes transactions in the **formal economy**, the legal economy that governments tax and monitor. Quite a few countries have per capita GNI of less than $1000 per year—a figure so low it seems impossible that people could survive. A key component of survival in these countries is the **informal economy**, the uncounted or illegal economy that governments do not tax and keep track of, including everything from a garden plot in a yard to the black market to the illegal drug trade. The informal economy is a significant element in the economies of many countries, but GNI statistics omit the informal economy entirely.

Guest Field Note Sukabumi, West Java

My own research is based on fieldwork in Indonesia as well as ongoing engagement with students in the United States. The women pictured here collaborated with me on a research/activism project for migrant women workers in Indonesia. The woman on the left ("Rina") had returned from working in Saudi Arabia as a domestic worker for two years. She wanted to return to Saudi Arabia for another contract to earn more money for herself and her family, but she was concerned about her rights and her safety. She had been employed by a person she considered fair and reasonable, but she had heard from friends and neighbors that many migrants had experienced serious abuses while abroad. The woman pictured on the right ("Sorani") is an Indonesian activist who works in support of migrant rights. She discussed with Rina and me her strategies for mobilizing political change, and she helped us to see possibilities for building transnational alliances among American and Indonesian workers, students, and activists. Based on these interviews, as well as many years of working with migrant women working in factories in Indonesia, my own research has increasingly sought to understand the ways in which we in the United States, as scholars, students, workers, and consumers, can better serve global justice.

Figure 10.2

Credit: Rachel Silvey, University of Toronto

GNI per capita also masks extremes in the distribution of wealth within a country. The Middle Eastern oil countries of Kuwait and the United Arab Emirates (UAE) have per capita GNIs over $24,000, a level higher than that of several European countries. These figures give us no hint of the degree of overall participation in the country's economy, the average citizen's material standard of living, or gaps between genders or among regions. Economic production and the wealth it generates are not distributed evenly across the seven emirates that make up the United Arab Emirates. Abu Dhabi, the emirate that dominates the petroleum industry, generated over half of the country's GDP in 2010. Dubai, the next largest emirate, generated about a quarter of the GDP, and the Qaywayn emirate generated less than 1 percent of the country's gross GDP.

Another limitation of GNI per capita is that it measures only outputs (i.e., production). It does not take into account the nonmonetary costs of production, which take a toll on the environment through resource depletion and pollution of air and water. Per capita GNI may even treat such externalities as a plus. For example, the sale of cigarettes augments GNI. If cigarette use causes sickness and hospitalization is required, the GNI figure is boosted further. Conversely, the use of energy-efficient devices can actually lower GNI.

The limitations of GNI have prompted some analysts to look for alternative measures of economic development, ways of measuring the roles technology, production, transportation, and communications play in an economy.

To gain a sense of the role of technology in the economy, the occupational structure of the labor force can be measured using the percentage of workers employed in various sectors of the economy. A high percentage of laborers engaged in the production of food staples signals a low overall level of development, as conventionally defined, and a high percentage of workers involved in high-tech industries and services signals a high level of development. Productivity per worker is examined by summing production over the course of a year and dividing it by the total number of persons

in the labor force. A more productive workforce points to a higher level of mechanization in production. To measure access to technology, some analysts use transportation and communications facilities per person, which reduces railway, road, airline connections, telephone, radio, television, and so forth to a per capita index and reflects the amount of infrastructure that exists to facilitate economic activity. Figure 10.3 highlights some of the extraordinary disparities in communications access around the world.

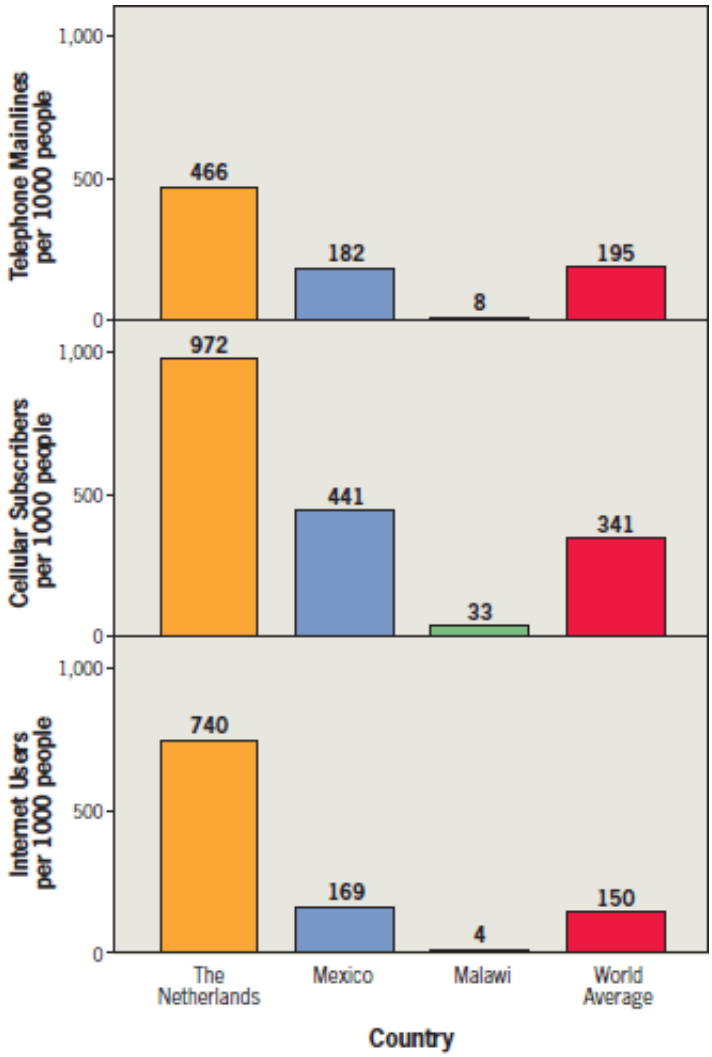

Figure 10.3 Differences in Communications Connectivity, 2005.

Data from: Earthtrends, World Resources Institute.

Other analysts focus on social welfare to measure development. One way to measure social welfare is the *dependency ratio*, a measure of the number of dependents, young and old, that each 100 employed people must support (Fig. 10.4). A high dependency ratio can result in significant economic and social strain. Yet, as we saw in Chapter 2, the aging countries of Europe have high dependency ratios and also very high per capita GNIs. We can employ countless other statistics to measure social welfare, including literacy rates, infant mortality, life expectancy, caloric intake per person, percentage of family income spent on food, and amount of savings per capita.

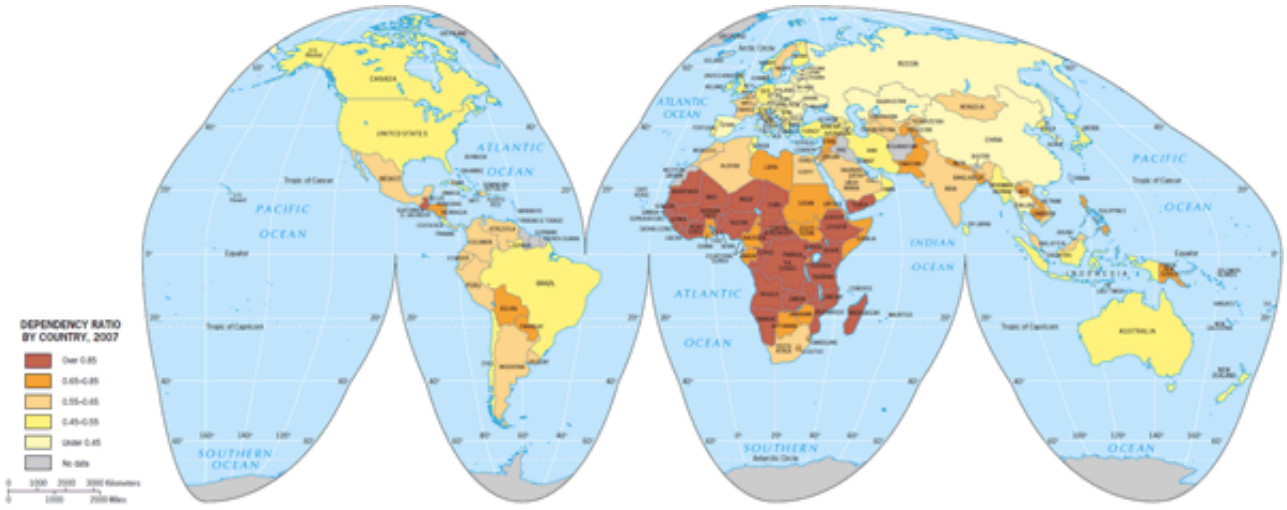

Figure 10.4 **Dependency Ratio.**

The dependency ratio is a measure of the number of people under the age of 15 and over the age of 65 that depends on each working-age adult. The working-age adults in the formal economy contribute to a country's tax base, thereby supporting the young and old in the country. The higher the number, the more "dependents" (under 15 or over 65) each working age adult supports through taxes. *Data from:* World Health Organization, 2006.

Looking through all of the maps that measure development, we gain a sense that many countries come out in approximately the same position no matter which of these measures is used. Each map and each statistic shares one limit with per capita GNI: they do not capture differences in development *within* countries, a question we consider at the end of this chapter.

Development Models

This discussion of ways of measuring development takes us back to another problem with terminology. The word *developing* suggests that all countries are improving their place in each of these indicators, increasing literacy, improving communications, or increasing productivity per worker. Beyond the problem of terminology, the very effort to classify countries in terms of levels of development has come under increasing attack. The central concern is that development suggests a single trajectory through which all countries move. The development model, then, does not take geographical differences very seriously. Just because Japan moved from a rural, agrarian state to an urbanized, industrial one does not mean that Mali will, or that it will do so in the same way. Another criticism of the development model is that the conceptualization of development has a Western bias. Critics argue that some of the measures taken in poorer countries that the West views as progress, such as attracting industry and mechanizing agriculture, can lead to worsened social and environmental conditions for many people in the poorer countries. Still others criticize the development model because it does not consider the ability of some countries to influence what happens in other countries, or the different positions countries occupy in the world economy. Instead, the development model treats countries as autonomous units moving through a process of development at different speeds.

The classic development model, one that is subject to each of these criticisms, is economist Walt Rostow's **modernization model**. Many theories of development grew out of the major decolonization movements of the 1960s. Concerned with how the dozens of newly independent countries in Africa and Asia would survive economically, Rostow looked to how the economically powerful countries had gotten where they were.

Rostow's model assumes that all countries follow a similar path to development or modernization, advancing through five stages of development. In the first stage, the society is *traditional*, and the dominant activity is subsistence farming. The social structure is rigid, and technology is slow to change. The second stage brings the *preconditions of takeoff*. New leadership moves the country toward greater flexibility, openness, and diversification. These changes, in turn, will lead to the third stage, *takeoff*. Now the country experiences something akin to an industrial revolution, and sustained growth takes hold. Urbanization increases, industrialization proceeds, and technological and mass-production breakthroughs occur. Next, the economy enters the fourth stage, the *drive to maturity*. Technologies diffuse, industrial specialization occurs, and international trade expands. Modernization is evident in key areas of the country, and population growth slows. In Rostow's model, some countries reach the final stage, *high mass consumption*, which is marked by high incomes and widespread production of many goods and services. During this stage, a majority of

workers enter the service sector of the economy.

Another name for Rostow's model (and other models derived from it) is the *ladder of development*. Visually, we can see his five stages of development as rungs on a ladder (Fig. 10.5), with each country climbing the ladder one rung at a time. In addition to the general criticisms of development models, the major problem with Rostow's model is that it provides no larger context to development. Is a climb up the ladder truly dependent on what happens within one country? Or do we need to take into account all of the other countries, their places on the ladder, and how their actions as well as global forces affect an individual country's movement on the ladder? The theory also misses the forces that can influence development decisions within an individual country, leaving us to wonder where cultural and political differences fit into the picture.

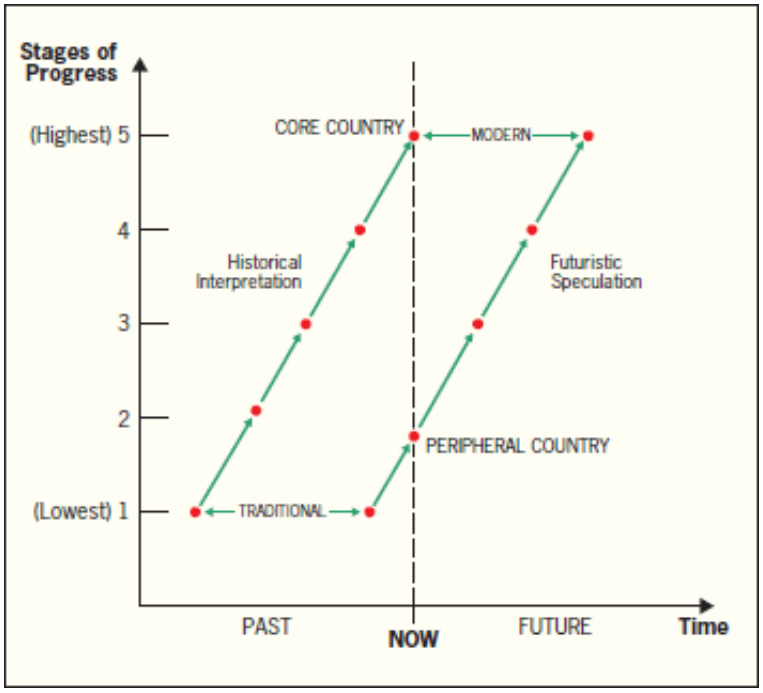

Figure 10.5 **Rostow's Ladder of Development.**

This ladder assumes that all countries can reach the same level of development and that all will follow a similar path. *Adapted with permission from:* P. J. Taylor. "Understanding Global Inequalities: A World-Systems Approach," *Geography*, 77 (1992): 10–21.

Because it is descriptive of the experiences of some countries, Rostow's model is still influential, despite all of these criticisms. Even the notion of calling wealthy countries "industrialized" and saying poor countries need to "industrialize" implies that economic development can be achieved only by climbing the same ladder of development wealthier countries have already climbed. Yet if a poor country quickly industrialized today through foreign investment, it might not reap much economic benefit, but it could experience severe environmental consequences. It is also interesting to note that the "industrial" countries of today are really "postindustrial," in that industrial production has now shifted away from some of the wealthiest parts of the planet (Chapter 12).

thinking geographically

Is the idea of economic development inherently Western? If the West (North America and Europe) were not encouraging the "developing world" to "develop," how would people in the regions of the "developing world" think about their own economies?