

Regional Snapshots

BY GRETCHEN VOGEL

Science consulted with demographers and regional experts to explore the demographic challenges facing people in different parts of the world. These “snapshots,” descriptions of composite characters, try to capture some of those trends that set countries and regions apart. The characters are fictional, but statistics and descriptions of the places in which they live are based on fact.

The pull of the city. Wei is 45 and lives in Shenzhen, a city on the Pearl River delta just north of Hong Kong. During his lifetime, the city has grown from around 30,000 people in 1979 to 350,000 in 1985 to an estimated 14 million today, making it China’s fastest growing city. In 1980, the Chinese government established the Shenzhen Special Economic Zone, with tax breaks for foreign investors and liberal trade rules. The plan took off, transforming the small fishing town into a metropolis in just over a decade.



Wei grew up in a small town in Hubei Province, an 18-hour train ride from Shenzhen. His parents still live there, but he sees them only a few times a year. After completing secondary school at age 17, Wei went to Nanjing to study, ultimately earning a Ph.D. in genetics. He now works at one of the city’s many high-tech companies.

Wei lives in a two-bedroom apartment in one of the city’s high-rise apartment buildings, for which he pays \$600 a month. He earns roughly \$3000 per month, which puts him firmly in the upper middle class, allowing his family to buy luxuries such as a car and a flat-screen TV.

On his way to work, however, he passes housing for the city’s underclass—several million people who work in factories for 80 hours a week at the minimum wage of roughly \$200 per month. An estimated 8% of the city’s residents are thought to live on \$3 a day or less.

Wei married at age 32; he and his wife have one 10-year-old son. That’s consistent with China’s one-child policy, but it is also what the couple says they would have chosen even without state encouragement. A growing share of Wei’s younger female colleagues say they don’t want any children. According to the 2000 census, the total fertility rate for urban China is 0.8, dropping as low as 0.4 in some cities. That means more than half the women of childbearing age are expected to have no children at all.



Growing pains. Like many rural Ugandan women, Anita wants a large family. She was 18 when she had her first child; now, at 29, she is expecting her sixth. The country average is 6.67 children born per woman, one of the highest in the world. (Her second-born died in infancy from diarrhea, not unusual in a country where more than 6% of babies do not survive their first year.)

In a good year, the maize, millet, cassava, beans, and other vegetables Anita and her husband grow on their hectare of land provide most of their family’s food. Although the family, which also keeps a few chickens and a goat, generally has enough to eat, Anita’s two youngest children are both anemic, as are 70% of Uganda’s children age 5 and younger. Like the vast majority of rural Ugandans, the family uses a crude pit latrine, and their water comes from the village well nearly a kilometer away.



Part of the year, Anita’s husband goes to Kampala to work at a construction job; the family needs the money, but his city job increases Anita’s risk of eventually acquiring HIV and developing AIDS. (6.5% of Ugandans are infected, and the rate is higher—and rising—in urban areas and among migrant workers.)

Anita completed fourth grade and is able to read and write. Her two oldest children are now attending primary school. The government eliminated fees for primary schools in 1997, which more than doubled enrollment within 5 years. However, in fast-growing countries like Uganda, where there are 117 children for every 100 working adults, even the best-intentioned governments don’t have the resources to provide adequate schooling. The average primary school teacher in rural Uganda is responsible for more than 50 students. Three or more students share each desk, and six or more students share each textbook. In a few years, Anita’s oldest child will have to walk 5 km to reach secondary school, if she qualifies and if the family can afford to send her.



language barriers or national borders.

Under the East German government, the town hosted a sugar factory, a dairy, a mill, and a brewery. A refrigeration valve factory employed as many as 1000 workers in the 1980s. The total fertility rate was an average of close to two children per woman. But shortly after reunification, many of the factories closed or shrank drastically—for instance, the valve factory employs just 100 people today. The unemployment rate in Prenzlau is 17%. Jens is fortunate: After finishing secondary school, he found a job in a factory that makes solar panels, a plant that opened in 2002. And one advantage of the declining population is that rent is relatively cheap. Jens pays just €270 (\$395) per month

Shrinking pains. Jens, 25, lives in Prenzlau, a rural town of 20,000 people 100 kilometers northeast of Berlin. He is single and, statistically at least, is likely to stay that way: He faces a sex ratio worse than a young man in China. Since German reunification, the former east has lost hundreds of thousands of residents between the ages of 18 and 29, and migration of young women has consistently outpaced that of young men. On average, girls do better in school, so they have more opportunities to study and work elsewhere.

That lack of young women has led to very low birth rates. Fewer than 300 babies per year were born in Prenzlau in recent years—so few that the local hospital closed its obstetrics ward in December. The town has shrunk by 20% in Jens' lifetime. Sharp population declines are common across former Soviet-bloc regions, but the trends are more pronounced in the former East Germany, in part because migration from east to west doesn't involve

for a roomy two-bedroom apartment near the center of town. Some city planners and demographers say that Prenzlau and other cities in eastern Germany can be a model of smart shrinking. Some towns and cities have already demolished entire apartment blocks, converting the land into parks.



The high unemployment rate and declining population leave plenty of residents frustrated and frightened, however. A few of Jens' friends have begun attending events organized by right-wing political groups. A member of the far-right NPD party was elected to the county council in 2008.

There are some bright spots: In addition to the factory where Jens works, several other "green energy" companies have set up shop in or near Prenzlau. One employs several dozen people to make environmentally friendly insulation and other construction materials from industrial-grade hemp grown in the region. Another plans and operates wind-energy farms across Europe.



Two sides of a border. During the harvest season, José, 19, lives in the southern Mexican state of Chiapas, where he works on a coffee plantation 12 hours a day, 6 days a week, for roughly \$4 a day. He grew up in the Guatemalan state of San Marcos, just across the border. He and his four siblings attended primary school, but none of them completed secondary school. This is José's third year working in Mexico.

The first year, he sneaked across the border undocumented. But last year and this one, he received one of the more than 120,000 permits issued by the Mexican immigration authorities for temporary workers in Chiapas's mango, papaya, sugar cane, coffee, and banana plantations. In 2010, Guatemalans working in Mexico sent an estimated \$104 million home in remittances. The country received an estimated \$4.3 billion in total remittances, close to 10% of GDP, mostly from the United States.



While working at the plantation, José receives two light meals a day and sleeps on a wooden bunk crammed in with dozens of other migrant workers.

At home in Guatemala, José helps out on his parents' farm, where they grow fruits and vegetables on 1.5 hectares. There aren't many other options. Although a Canadian company opened a gold mine nearby in 2005, it employs only a handful of local workers.

While birthrates in most of Latin America have fallen to close to replacement level—Mexico's is just above two children per woman—Guatemala's has stayed relatively high, at around four children per woman. José has an uncle and a cousin who have made it to the United States. He has considered trying to join them, but the stories he hears from his fellow workers of the treacherous journey across Mexico have discouraged him—at least for now.



Suchin completed just a few years of primary school. Only 6% of Thai women over the age of 60 attended any secondary school. Since her husband died several years ago, Suchin has relied on her children for support, as the government's typical "elderly allowance" is 500 baht, or about \$16 per month.



Suchin is fortunate: She lives with her son, a teacher, and his family. A daughter in Bangkok and a son working in Taiwan also send money. Suchin keeps in touch with her far-flung children by telephone. Telephone access was a rarity among older Thais 15 years ago, but more than three-quarters report having telephone access today. Her son's family has a refrigerator, a television, and a motorcycle—all are common in Thai homes, both rural and urban.

In 2000, 9% of Thailand's population was 60 or older. That percentage is expected to double by 2020. During that transition, the ratio of working-age people to retirees will fall from seven to about four. In 2002, 62% of Thai women over 60 had four or more living children. In 2020, 60% will have two or fewer. Suchin's children, who range in age from 35 to 50, each have two children; they may not be able to depend on their offspring as their primary source of food and shelter.

In the coming decades, however, older Thais will also be more educated, which correlates with better cognitive and physical health, higher incomes, and the ability to work longer. By 2045, nearly half of Thais over 60 will have completed primary school, and more than a quarter will have had some secondary education.

Growing older—quickly. Retiring in Thailand may sound like an attractive option for sun seekers from Europe or North America—but only if you bring your pension with you. Thanks to a rapidly falling birthrate and rapidly increasing life expectancy, Thailand's population is aging faster than almost anywhere else. That is worrisome in a place where older citizens have traditionally relied on family ties.

Suchin, for example, is 68 and lives in Chiang Rai, a city of about 100,000 people near the Burmese border. She has four children, eight grandchildren, and one great-grandchild. Like most women her age,

Young mothers, small families. Chandni lives in Hyderabad, a city of 4 million people in the southern state of Andhra Pradesh in India. Like one-third of the city's residents, she lives in an area that city officials categorize as "slums or other poor settlements." She attended school through sixth grade but dropped out when she married at age 16. She is now 24 and has two children, ages 6 and 4. Two years ago, she had a tubal ligation. Female sterilization is the birth control method of choice for 75% of couples who use what demographers and health officials call "modern contraceptive methods." In Andhra Pradesh, a mostly rural state, more than 60% of married women are sterilized, and the median age of sterilization is 23.



Although Andhra Pradesh, along with the rest of southern India, has an overall fertility rate slightly below replacement level—the average is 1.8 children per woman—the fact that women have their children so young means that population growth isn't falling as quickly as in other regions with similar birthrates. In the neighboring state of Maharashtra, a government program pays cash bonuses to persuade couples to wait a few years before having their first child. Chandni is anemic, like 70% of women of reproductive age in India. It is a condition that is correlated with early motherhood and closely spaced pregnancies. Siblings who are more than 2 years apart tend to be healthier as well. Like half of India's children under the age of 4, Chandni's children are malnourished.

Chandni lives with her husband, her children, and her mother-in-law in a two-room dwelling with walls of concrete bricks, a dirt floor, and a corrugated metal roof. She usually fetches water from a pump house just a few minutes away, but the supply is available for only a few hours a day. It is sometimes turned off for days at a time. Water-borne diseases are common in Chandni's neighborhood, where very few homes have modern toilet facilities. Community toilets are available, but they are so poorly maintained that many people simply use the open sewers.

Chandni's husband has a mechanic shop, where he works with his brother. He earns roughly \$70 per month, half of which the family spends on food.

