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CHAPTER 6

The last frontier: Development where it is needed most

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PROGRESS

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of health and income

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Editor: Stephanie Strom | Data visualization: Chuck Burke

The number of people in microregions with low health and income fell by three quarters over the past 20 years. Most of the remaining microregions were in sub-Saharan Africa, but progress was substantial there, too.

In **2000**, about 1.1 billion people lived in 10,600 microregions where life spans were short and GDP per capita low—both variables in the bottom 30 percent of the world. How did those places, which appear in orange on our maps, evolve over the last 20 years? Which ones transitioned to greater prosperity and well-being and which ones did not? And where did microregions slip into orange? In this chapter, we examine progress at the bottom of the development spectrum—the last frontier.

Low living standards, significant progress

Let's begin our journey through the last frontier of human development in 2000, with 1.1 billion people living in 10,600 orange microregions. Forty-three percent of them were in India and 36 percent in sub-Saharan Africa. Life expectancy in these microregions was less than 65.6 years and GDP per capita below \$2,400.

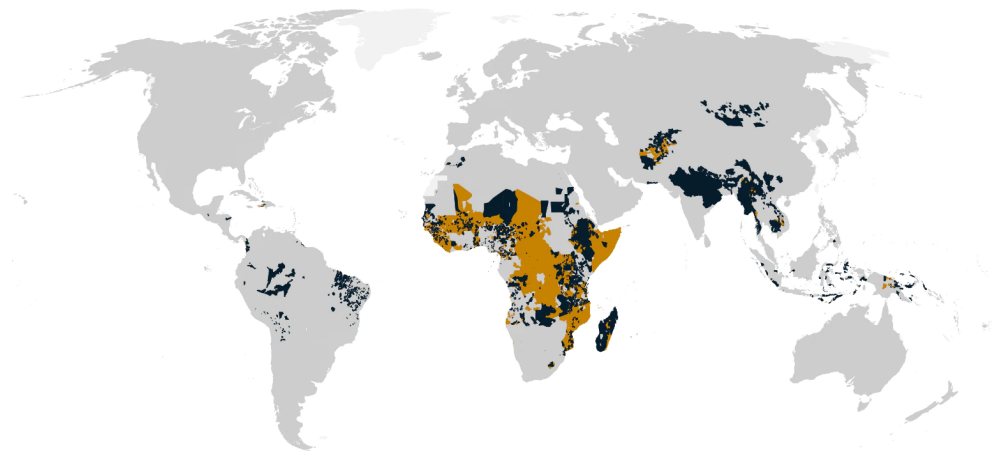
By 2019, the population in these same 10,600 microregions had risen to more than 1.6 billion.

Had there been no progress, that would be the number of people living in orange microregions.

However, over 20 years some 6,000 microregions with a total population of 1.3 billion left the orange zone. Almost 77 percent of the population living in microregions that were orange in 2000 were no longer living in an orange microregion in 2019.

Evolution of the orange landscape

■ Orange throughout 2000–19
 ■ Emerged from orange since 2000
 ■ Others
 No data



Population in 2019



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On the other hand, while well-being improved in most orange microregions, about 200 microregions where 25 million people lived had trekked into the orange zone by 2019 due to declining incomes.

All microregions in China and India that began in the orange zone in 2000 had exited by 2019.

Similarly, at the end of the 20-year period, just 1 percent of people in Emerging Asia and 0.2 percent of people in Latin America and the Caribbean lived in orange

microregions. The remaining orange microregions were mostly in sub-Saharan Africa, although progress there was also impressive, as we will see.

Most microregions in India, Bangladesh, Cambodia, Laos, and Myanmar, as well as in northeastern Brazil and parts of Bolivia,

among other countries, emerged from orange.

Let's look at two Indian states that exited the orange zone over the 20-year period.

In 2000, GDP per capita in Uttar Pradesh, the most populous Indian state, was lower than \$1,500 and life expectancy was 61.6

years. Over the next two decades, income there grew by 5.6 percent annually, possibly spurred by significant public investment in infrastructure. By 2019, it had increased to more than \$4,000 while life expectancy had risen by 7.5 years.

Odisha, on the Bay of Bengal, was recovering from a major cyclone in 2000 when our research begins. Its GDP per capita was \$2,000, and life spans there

averaged 60.9 years. The state government developed policies to support industrialization. Over the next 20 years, GDP per capita climbed to \$5,600—5.7 percent growth a year on average—and life expectancy increased to 68.8 years.

Still orange

Where were the 405 million people who lived in the remaining 4,800 orange microregions in 2019? In Emerging Asia, they predominantly lived in Afghanistan, Cambodia, Myanmar, and Papua New

Progress in orange microregions

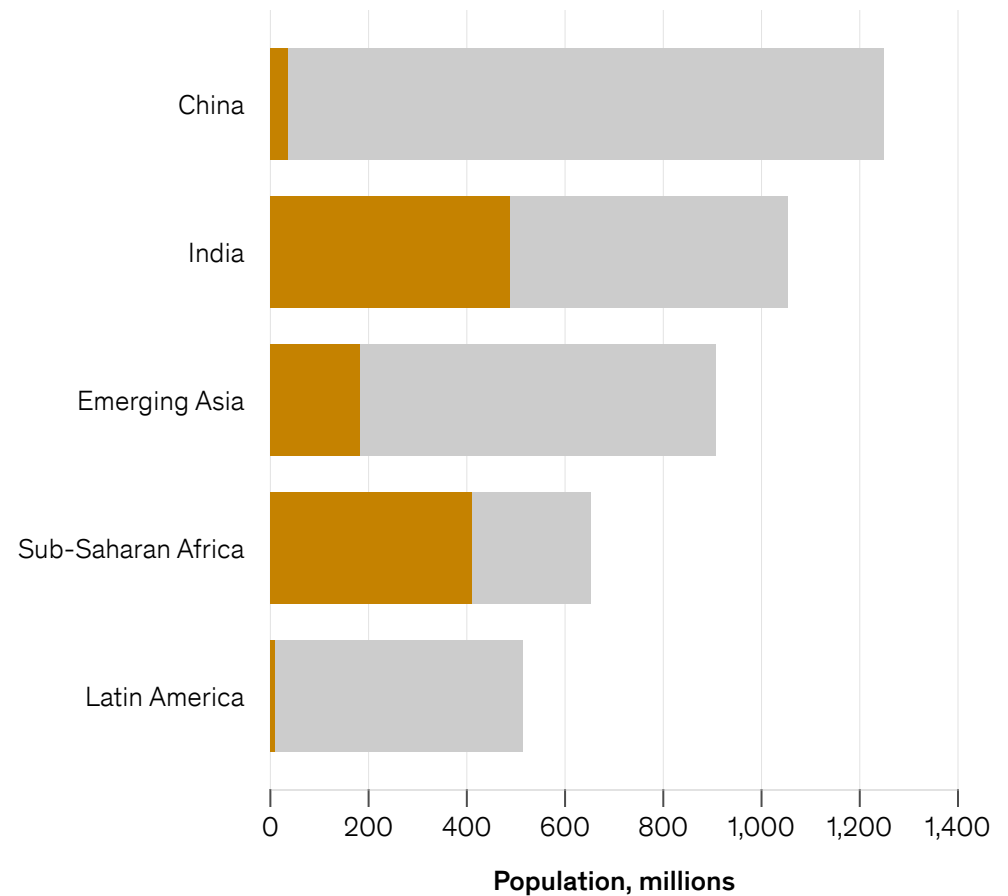
Orange throughout 2000–19 Lapsed into orange since 2000 2000
 Emerged from orange since 2000 Others

Guinea. In Latin America and the Caribbean, Haiti was the only country with microregions that remained orange.

In 2019, sub-Saharan Africa was home to 95 percent of the remaining population living in orange microregions. There, 52 percent of microregions that were orange in 2000 remained so in 2019.

Let's look at sub-Saharan Africa in more detail.

Replay animation



Sub-Saharan Africa through a microregional lens

In 2000, 412 million people out of a total population of 663 million lived in orange microregions in sub-Saharan Africa. While the subcontinent continued to face challenges in 2019, the story of its orange microregions was largely one of progress in economic prosperity and, to an even greater extent, life expectancy.

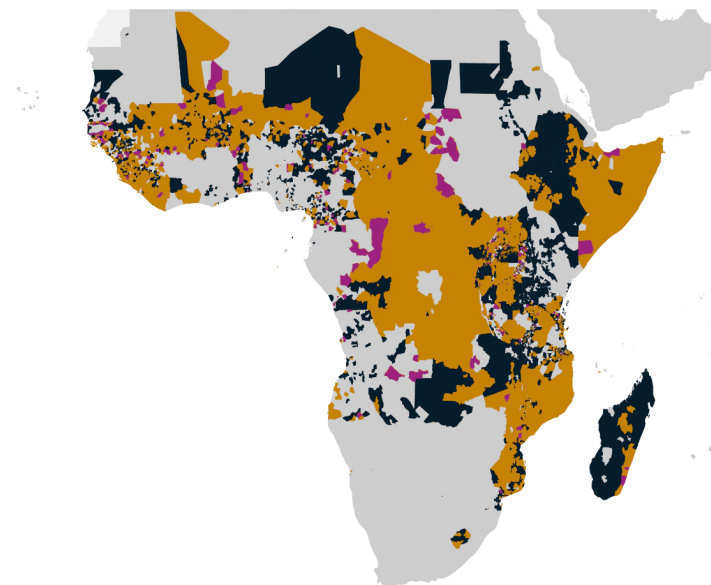
By 2019, the overall population of sub-Saharan Africa had increased to 1.1 billion people, some 702 million of whom lived in microregions that had been orange 20 years earlier.

Yet thanks to progress in health and income, the number of people living in orange microregions declined—by 46 percent to 386 million. Some 364 million of them lived in microregions that remained orange from 2000 to 2019, while 22 million lived in microregions that lapsed into orange over that period.

Zooming in on sub-Saharan Africa

■ Orange throughout 2000–19
 ■ Emerged from orange since 2000
 ■ Others
 No data

■ Lapsed into orange since 2000



Population in 2019



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The different paths to emerging from the orange zone

During that time, 4,000 sub-Saharan African microregions that were home to 338 million people left the orange zone.

These microregions followed different development paths.

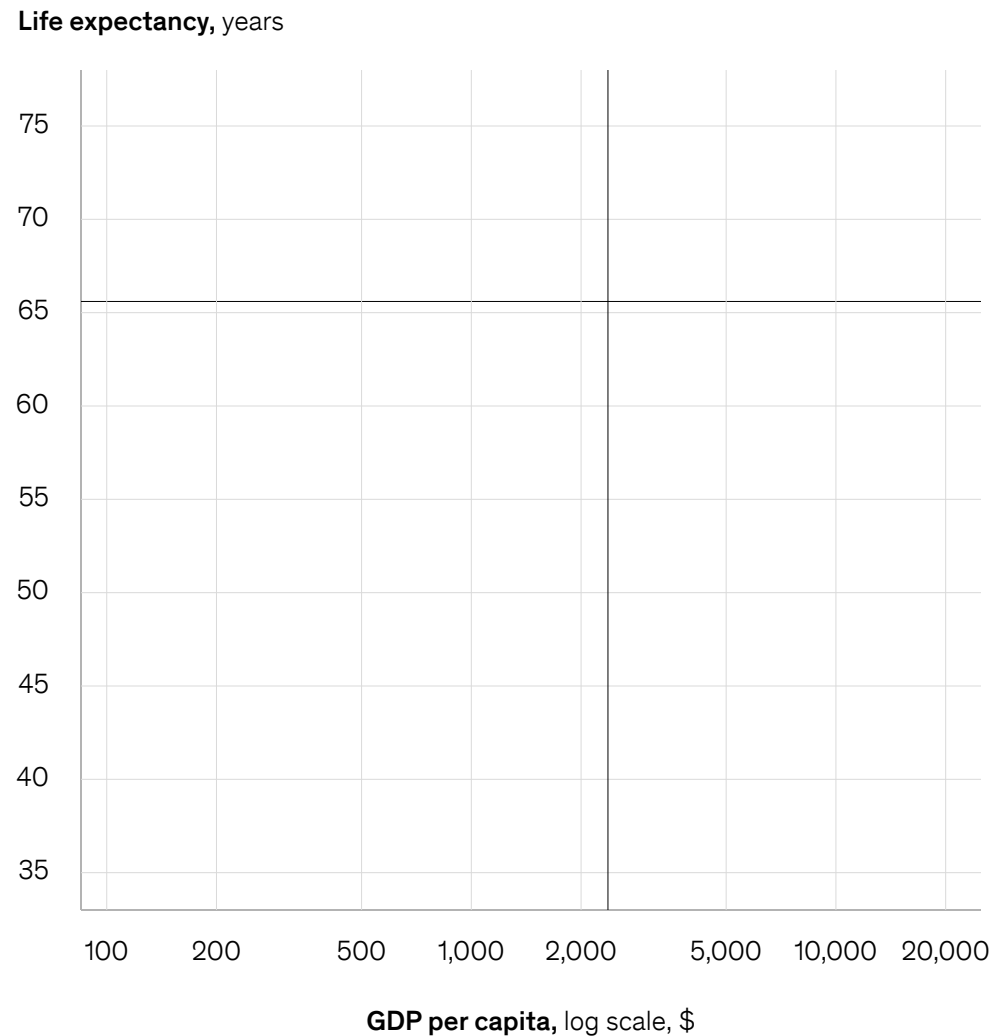
Pathways out of the orange zone

Orange throughout 2000–19 Lapsed into orange since 2000
Emerged from orange since 2000 Others
○ Circle size = microregion population

2019

Some 41 percent emerged from the orange zone because they crossed the life expectancy threshold—but not the GDP per capita one. Another 40 percent did the opposite: income grew enough to leave the orange zone but not life expectancy. The remaining 19 percent made enough progress on both variables to leave the orange zone on both fronts.

Replay animation



The first group, shown in the left upper quadrant of the chart, added 14 years of life expectancy at the median over 20 years. Take Ouagadougou, the capital of Burkina Faso and the only microregion in the country among this group. It added 11 years to the average life span of its population but achieved only modest economic gains.

Among the second group of microregions, shown in the right bottom quadrant of the chart, income increased enough to cross the orange threshold but longevity did not. Median GDP per capita growth in these microregions was 3.5 percent per year, and they added ten years of life expectancy.

But such progress still wasn't enough to cross the 65.6-year threshold out of the orange zone. Some 64 percent of Lesotho's total population is among this group, as well as about a third of Tanzania's population. Kaduna North in Nigeria experienced income growth of 9.1 percent annually, while life expectancy increased by less than five years between 2000 and 2019.

Moving to the right upper quadrant of the chart, we find the almost 700 microregions in sub-Saharan Africa that crossed both the GDP per capita and life expectancy thresholds. Over 20 years, they added 14 years of life at the median and grew their incomes at a rate exceeding 5 percent a year. Microregions in this group were home to 31 percent of Rwanda's population, 29 percent of Senegal's, 25 percent of Ethiopia's, 19 percent of Kenya's, and 12 percent of Madagascar's.

For example, in 2000 Kiomboi, Tanzania, had life expectancy below 55 and GDP per capita of less than \$1,000. By 2019, they were 67.8 and \$3,000, respectively, putting Kiomboi out of the orange zone.

Progress at the last frontier

What about the 4,700 sub-Saharan African microregions where 386 million people lived that remained in or fell into the orange zone by 2019?

In almost all cases, these microregions did make progress over the previous 20 years. The main reason they remained in the orange zone was that their GDP per capita and life expectancy was very low in 2000, so their progress was not enough to move them out.

This is a hopeful message: if they continue to make progress, these microregions and their people may soon leave the orange zone.

Virtually none of the sub-Saharan microregions that remained orange over the 20-year period experienced declining life expectancy during that time. All increased longevity—and by more than 11 years at the median. In fact, more than 20 percent of people living in orange microregions increased life expectancy by more than 15 years, while only 3 percent living in these microregions gained less than five years.

On this set of maps, we show those same orange microregions but colored here based on whether GDP per capita in them grew or declined. As the chart shows, economic prosperity increased for 70 percent of the people living in microregions that remained or lapsed into orange by 2019.

Among these microregions, the median rate of annual GDP per capita growth was 1.5 percent overall—2.7 percent if the microregions home to 22

million people that lapsed
For instance, Lobito, on
into orange are excluded.
the coast of Angola, is a
microregion that
remained orange despite
marked income growth
over the 20-year period.

Public investments in
infrastructure projects,
such as the expansion of
the commercial port, the
renovation of the
Benguela railway, and the
construction of basic
infrastructure for an oil
refinery, may have
contributed to Lobito's
economic growth. Private
investment supported
development of new

industries and logistics
networks.

Even though population
expanded in Lobito, GDP
per capita increased by
an average 4.5 percent a
year from 2000 to 2019.
Yet it remained an orange
microregion.

The challenge ahead

One of humanity's biggest challenges is helping improve the lives of the people from microregions that remained orange in 2019 and experienced declining economic prosperity over the 20-year period.

There were 116 million people in 1,100 sub-Saharan microregions in that situation. Their median GDP per capita growth rate was negative 1.6 percent a year.

In some cases, this was a country-wide phenomenon. In Somalia, for example, 68 of its 74 microregions experienced declining incomes.

Similarly, among the 49 microregions that started and ended the 20-year period in the orange zone in the Central African Republic, 34 experienced declining GDP per capita.

In the overwhelming majority of cases, however, declining economic prosperity was a microregional story.

For instance, only a fifth of microregions in Malawi, home to 4.7 million people out of a total of 19 million in 2019, saw their incomes decline.

Furthermore, in most cases declining GDP per capita was explained not by overall declining

economic activity or negative GDP growth, but rather by population growing faster than GDP. Some 90 percent of people living in microregions that experienced falling GDP per capita actually experienced GDP growth—but population grew faster.

This was the case, for example, in parts of Luanda, Angola, as well as in Abuja, Nigeria's capital, and areas within the Tete province in western Mozambique.

Among microregions that were orange in 2019, only 10 percent of people who experienced declining incomes inhabited places where the overall economy declined. Much of this pattern can likely be explained by a combination of armed conflict, governance challenges, volatility in commodity prices, and natural disasters.

The Commune of Hoque in Angola is one such microregion. Very little

public and private investment was made there over the 20-year period, and it was insufficient to propel notable increases in core industries like agricultural and livestock production. Economic activity declined over the period.

At the same time, Commune of Hoque's proximity to the provincial capital, Lubango, drove population increases in the microregion as people immigrated from even more rural areas to live near a big city. As a result, from 2000 to

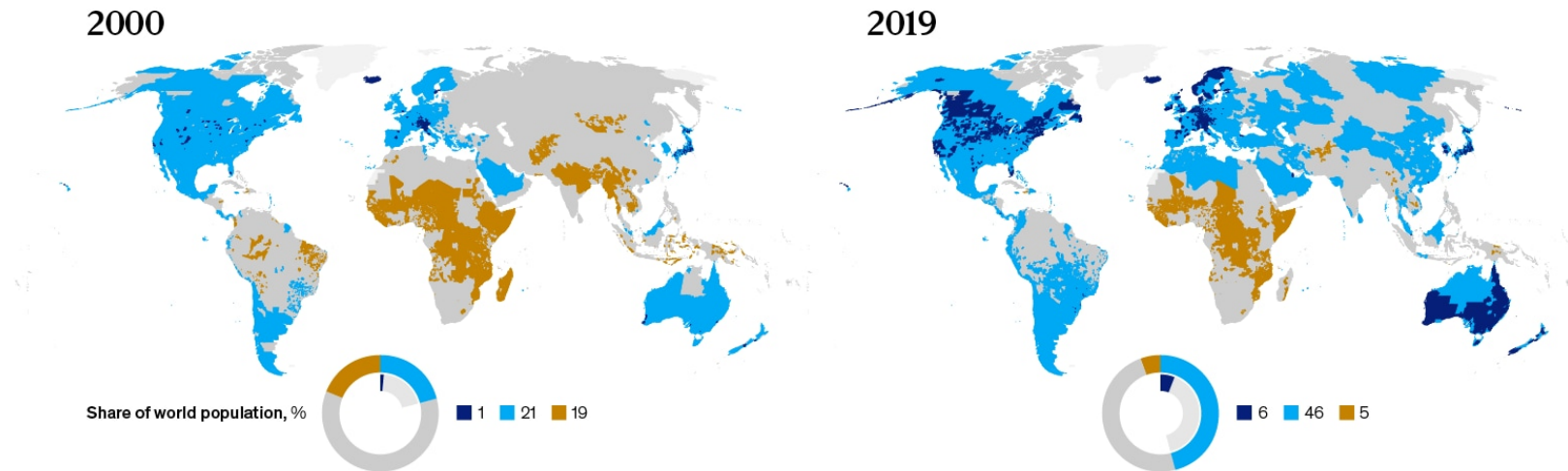
2019, GDP per capita in

Hoque declined by 0.5

percent a year.
Our hope is that the insights about human progress that emerge from this new pixelated view of the world will be used by business leaders and policy makers to make decisions that advance prosperity and well-being and enable the Commune de Hoque and other less fortunate microregions to become blue, and those already blue to become bluer.

The worldwide spread of progress

- Life expectancy > 79.5 years and GDP per capita > \$45,000
- Life expectancy > 72.5 years and GDP per capita > \$8,300
- Life expectancy < 65.6 years and GDP per capita < \$2,400
- Others
- No data



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In future research, we'll include data from years beyond 2019 as it becomes available and reliable. We also may add more variables, such as education, carbon emissions, and migration, to provide an even more comprehensive view of human development at a microregional level. We'll delve deeper to better understand what drives the outcomes the database reveals with a goal of explaining regional outcomes obscured by country-level views. Some future research will also emerge from case studies of specific microregions and clusters of microregions.

Seeing the world in 230 times greater detail uncovers its vast variety and complexity, telling a story of global development that surprises, amazes, and occasionally simply confounds us. As companies look for new business, reconsider supply chains, and deploy new technologies, the microregional view uncovers potential new opportunities to deliver products, possible locations for operations, and new pools of prospective consumers and employees in places hidden in a country-level view.

Our pixels of progress can also help policy makers more precisely identify areas of need, better design solutions, and increase the return on their investments. Understanding in more detail where economies have grown and life expectancies extended and studying lessons learned in those places can advance the world further toward achieving sustainable, inclusive growth.

We hope this research will spark interesting conversations, so please weigh in—we want to hear from you.

Chapter 5

China times two: The worldwide spread of progress

Introduction

Pixels of Progress: A granular look at human development around the world

