

BILL & MELINDA
GATES *foundation*



GOALKEEPERS

The Stories
Behind
The Data
2018



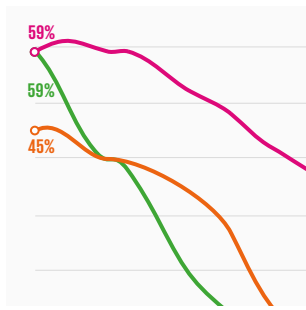
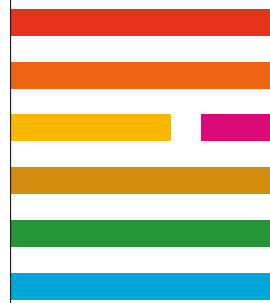


GOALKEEPERS

Goalkeepers are leaders who take a stand on the issues they care about and innovate in their communities to achieve the Global Goals.

THE GLOBAL GOALS For Sustainable Development





05

INTRODUCTION



24

EDUCATION



36

CONCLUSION

12

FAMILY
PLANNING

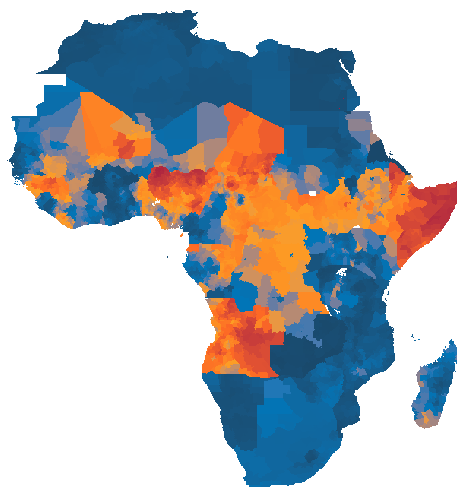


18

HIV

30

AGRICULTURE



37

GLOBAL
DATA

CONTENTS



In 2015, the United Nations agreed to 17 Sustainable Development Goals (SDGs) that together paint a picture of the world we hope to build by 2030. In 2017, our foundation published its first Goalkeepers Data Report, which tracks progress on 18 key SDG indicators and analyzes promising approaches to achieving the goals. We promised we would publish the report every year until 2030.

This is our second edition. In this year's version, we have included more future projections and a range of outside voices as we strive to make the content more helpful to readers. However, our purpose remains the same: Measuring progress and trying to spur more of it.

Bill Gates *Melinda Gates*

IS POVERTY INEVITABLE?



BILL AND MELINDA GATES

Co-chairs, Bill & Melinda Gates Foundation

We usually express our optimism by highlighting some of the recent mind-blowing improvements in the human condition—like the fact that advances in medicine have saved 50 million lives just since we started our foundation in 2000. We believe it's worth repeating that until we're blue in the face.

Sometimes, though, optimism requires being candid about the hard problems that still need to be solved. That's what this year's Goalkeepers Data Report aims to do: Confront a pressing yet neglected challenge, and identify some of the most promising strategies to meet it.

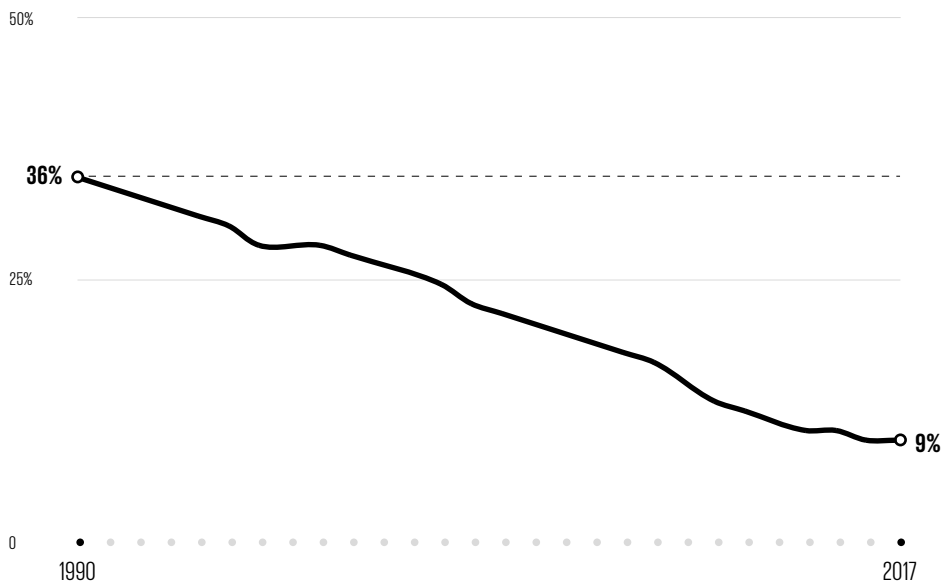
To put it bluntly, decades of stunning progress in the fight against poverty and disease may be on the verge of stalling. This is because the poorest parts of the world are growing faster than everywhere else; more babies are being born in the places where it's hardest to lead a healthy and productive life. If current trends continue, the number of poor people in the world will stop falling—and could even start to rise.

But the reason we started our foundation is that current trends don't have to continue. We believe—and history proves—that poor countries can chart a new course by investing in their young people.

Today's booming youth populations can be good news for the economy; if young people are healthy, educated, and productive, there are more people to do the kind of innovative work that stimulates rapid growth. This helps explain the amazing progress of the past generation in most of the world, and it is the key to spreading that progress everywhere.

Our late friend Hans Rosling brilliantly described people's different standards of living using the metaphor of how they travel: From sandals to bicycles to cars to airplanes.

PERCENTAGE OF PEOPLE LIVING BELOW THE EXTREME POVERTY LINE (US \$1.90/DAY)



Since 2000, more than a billion people have lifted themselves out of the extreme poverty represented by the sandal. The number is so huge that it's almost impossible to appreciate the scale of this achievement. Above the extreme poverty line of \$1.90 per day, people may still be poor, but they can begin to think beyond mere survival and look to the future.

This progress has come in waves. The first wave centered on China; the second wave centered on India. As a result of successes in Asia, the geography of poverty is changing: Extreme poverty is becoming heavily concentrated in sub-Saharan African countries. By 2050, that's where 86 percent of the extremely poor people in the world are projected to live. Therefore, the world's priority for the next three decades should be a third wave of poverty reduction in Africa.

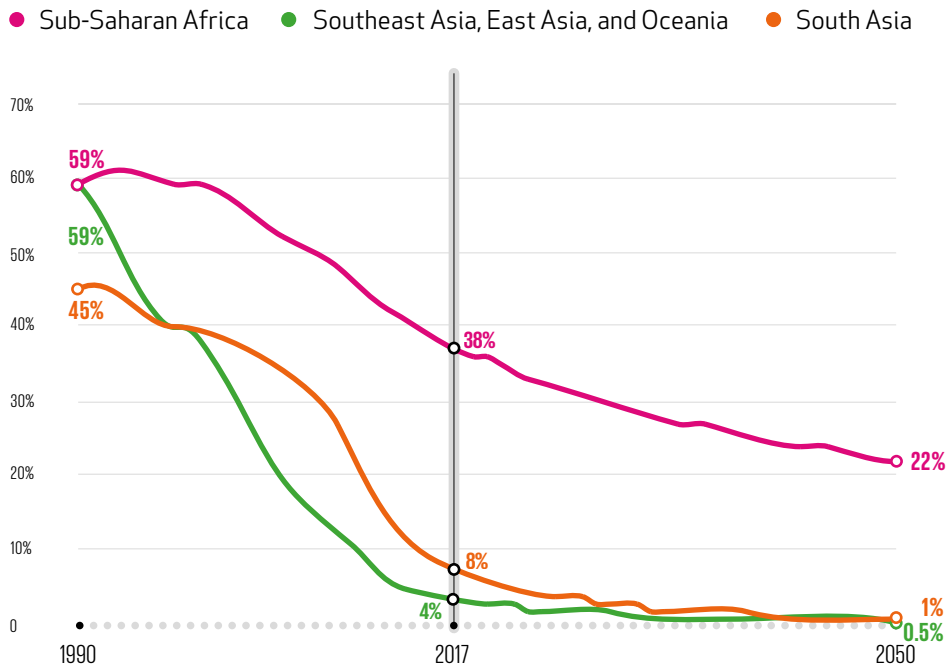
One of the obstacles the continent faces is rapid population growth. Africa as a whole is projected to nearly double in size by 2050, which means that even if the percentage of poor people on the continent

is cut in half, the number of poor people stays the same. Even so, for most African countries, the outlook is positive. For example, Ethiopia, once the global poster child for famine, is projected to almost eliminate extreme poverty by 2050.

The challenge is that within Africa, poverty is concentrating in just a handful of very fast-growing countries. By 2050, for example, more than 40 percent of the extremely poor people in the world will live in just two countries: Democratic Republic of the Congo and Nigeria. Even within these countries, poverty is concentrating in certain areas.

Poverty in these areas is unique. It's rooted in violence, political instability, gender inequality, severe climate change, and other deep-seated crises. It's also tied to other problems, including high rates of child mortality and malnutrition. As a result, today's poorest people have significantly fewer opportunities than most of the billion people who escaped poverty during the first two waves.

THREE WAVES OF POVERTY REDUCTION



“TO CONTINUE IMPROVING THE HUMAN CONDITION, OUR MOST IMPORTANT PRIORITY IS TO HELP CREATE OPPORTUNITIES IN AFRICA’S FASTEST-GROWING COUNTRIES. THIS MEANS INVESTING IN YOUNG PEOPLE.”

The conclusion is clear: To continue improving the human condition, our task now is to help create opportunities in Africa’s fastest-growing, poorest countries.

This means investing in young people. Specifically, it means investing in their health and education, or what economists call “human capital.”

Africa is a young continent. Nearly 60 percent of Africans are under the age of 25. Compare that to 27 percent of Europeans. The median age across Africa is 18. Compare that to 35 in North America (or 47 in Japan).

Recently, there’s been a lot of discussion about what happens if large numbers of young people in the poorest countries are denied opportunities to build better lives. People worry about insecurity, instability, and mass migration. We wish they would also recognize young people’s enormous potential to drive economic growth. They are the activists, innovators, leaders, and workers of the future.

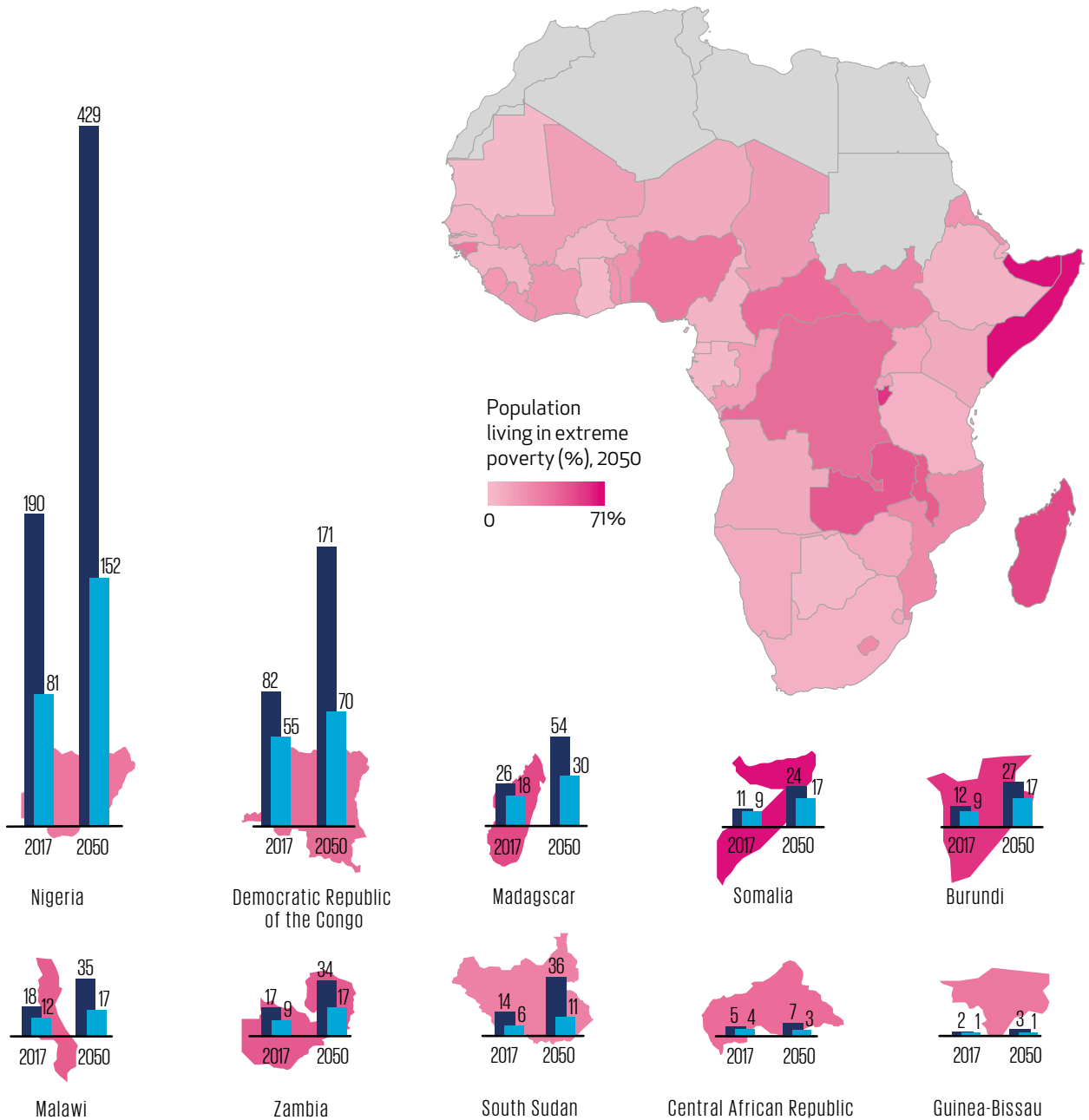
Investing in young people’s health and education is the best way for a country to unlock productivity and innovation, cut poverty, create opportunities, and generate prosperity. Human capital is not a magic bullet, but it has played a pivotal role in the

POPULATION AND POVERTY PROJECTIONS, 2050

THESE 10 COUNTRIES ARE PROJECTED TO:

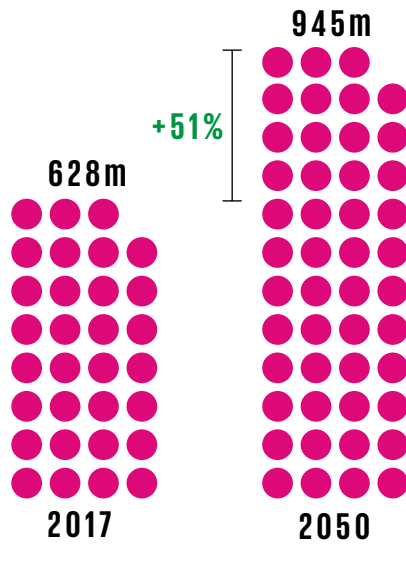
- Be the poorest in the world
- More than double in population
- Be where 65% of people in extreme poverty live

● Total population (in millions) ● Population in extreme poverty (in millions)

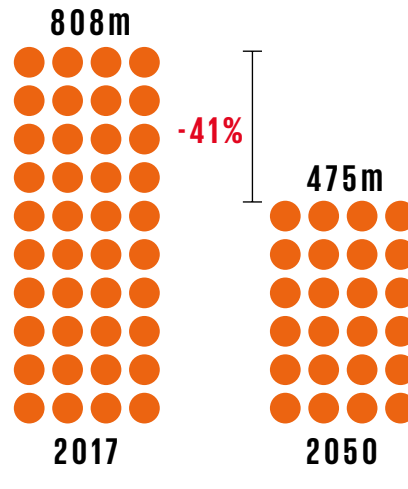


AFRICA'S YOUTH POPULATION IS BOOMING; THE REST OF THE WORLD'S IS SHRINKING

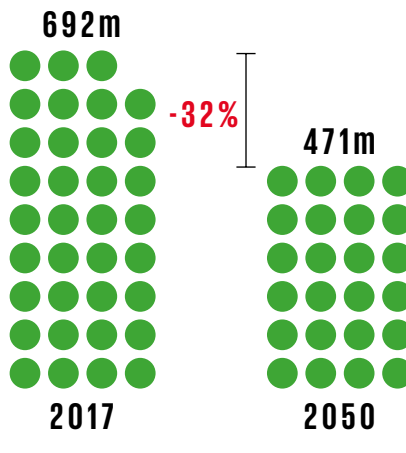
○ Equals 20 million people aged 0–24 years



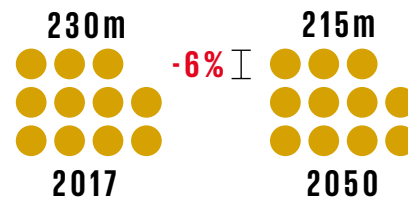
Sub-Saharan Africa



South Asia



Southeast Asia, East Asia and Oceania



Western Europe and North America

success of emerging economies around the world.

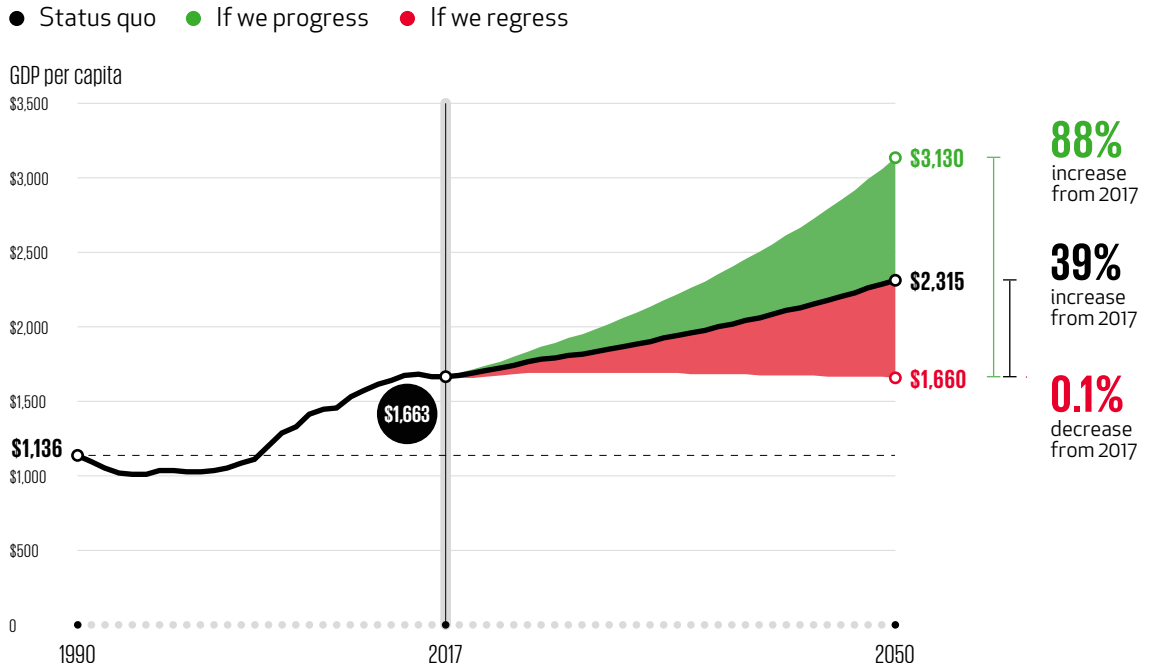
Projections show that human-capital investments can do the same for the poorest countries in Africa. Across sub-Saharan Africa, these investments could increase the size of the economy by nearly 90 percent by 2050, making it much more likely

that the poorest countries can break through their stagnation and follow the path of China and India.

There are blueprints for investing successfully in human capital.

First, health: Most African countries have participated in the global revolution in child survival.

THE MAGNITUDE OF SUB-SAHARAN AFRICA'S ECONOMIC GROWTH DEPENDS ON HUMAN-CAPITAL INVESTMENT



HUMAN CAPITAL: A BRIEF EXPLANATION

Economists generally think of three factors that contribute to economic growth:

- Physical capital: Roads, bridges, factories, etc.
- Human capital: The sum total of the health, knowledge, and skills of the population.
- Total factor productivity: A broad category that captures an economy's efficiency, innovation, and level of technology.

In general, political leaders have preferred to invest in physical capital. When they build a piece of infrastructure, the impact is immediate and tangible. On the other hand, when they vaccinate and educate children effectively, the impact from an economic point of view comes decades later, and it's harder to see.

But the evidence is crystal clear: Human capital is a prerequisite for economic development. The data shows that differences in health and education levels explain as much as 30 percent of the variance in per capita GDP between countries.

It may be easier to capture the importance of investments in human capital by analyzing the impact they have on individuals. Consider height, which is a proxy for better health. Studies suggest that every additional centimeter boosts a person's income by 3.4 percent. Similarly, every additional year of schooling boosts it by 8 percent. When these individual effects are added up across a population, they can propel rapid economic growth.

“YOUNG PEOPLE HAVE ENORMOUS POTENTIAL TO DRIVE GROWTH. THEY ARE THE ACTIVISTS, INNOVATORS, LEADERS, AND WORKERS OF THE FUTURE.”

Rwanda, just a few years removed from genocide, has built an effective health system from the ground up and seen the steepest drop in child mortality ever recorded. The next step is making sure children don't merely survive but also thrive. One-third of African children are stunted, which means their brains and their bodies aren't developing fully. But there are proven strategies for solving the stunting problem. In last year's Goalkeepers report, we wrote about Peru, where government interventions helped reduce stunting by more than half in just eight years.

Second, education: Since 2000, the number of African children enrolled in primary school has increased from 60 million to 150 million, and the number of girls in school is now virtually equal to the number of boys. The next step is improving the quality of the education all students receive. The world has ideas about how to do that, too. Later in this report, you will read about Vietnam's schools, whose students score among the best in the world despite the fact that Vietnam was a low-income country until 2010.

The basis of our optimism about the world has always been our belief in the power of innovation to redefine what's possible.

When we were children, experts predicted that famines would sweep across Asia. In fact, thanks to new seeds and other agricultural technologies, crop yields more than doubled.

When we started our foundation, no children in poor countries were protected from diarrhea, malaria, or pneumonia, the three leading causes of death among children. Now vaccines for diarrhea and pneumonia are widely available, as are bed nets that have prevented

well over 500 million cases of malaria.

Thanks to digital technology that didn't exist 10 years ago, 1.2 billion people now have bank accounts for the first time ever.

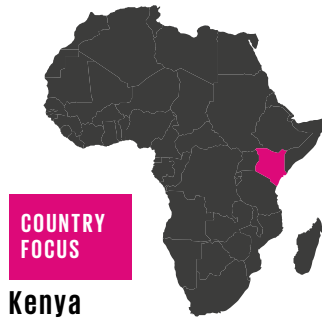
It may be difficult to imagine millions of young people in the world's most impoverished countries climbing rapidly up the ladder of success described by Hans Rosling. But the weakness is our imagination, not the young people.

If we invest in human capital today, young people wearing sandals in the poorest, fastest growing countries will be riding bicycles tomorrow—and inventing cheaper, cleaner, safer cars next week. That's good for everyone.

In this year's Goalkeepers report, we take an honest look at the challenges presented by the demographics of extreme poverty. We explore what it will take in the areas of health, education, and economic opportunity to position Africa's booming youth population to transform the continent. We examine the success of Zimbabwe's HIV programs and consider how to build on it. We analyze how a novel Kenyan family planning program is providing hard-to-reach young women with access to contraceptives. We also follow the journey of a tomato from a field in rural Burkina Faso to a plate in Accra, Ghana, watching along the way how many jobs it creates.

This is not an exhaustive agenda for ending extreme poverty on Earth, but we hope it starts a conversation about how to do so. ■

Region focus: Africa



**“There’s an elephant in the room.
Population issues are so difficult to talk
about that the development community
has been ignoring them for years.”**

ALEX EZEH

FAMILY PLANNING

THE DATA

HUMAN CAPITAL AND POPULATION GROWTH



ALEX EZEH

Visiting Fellow, Center for Global Development

Think about the future of my continent in terms of three questions: Are Africans healthy? Do they have access to a good education? And do they have opportunities to apply their skills?

Millions more Africans have been able to answer yes to these questions in recent years. But there's an elephant in the room. One of the keys to keeping this progress going is slowing down the rapid rates

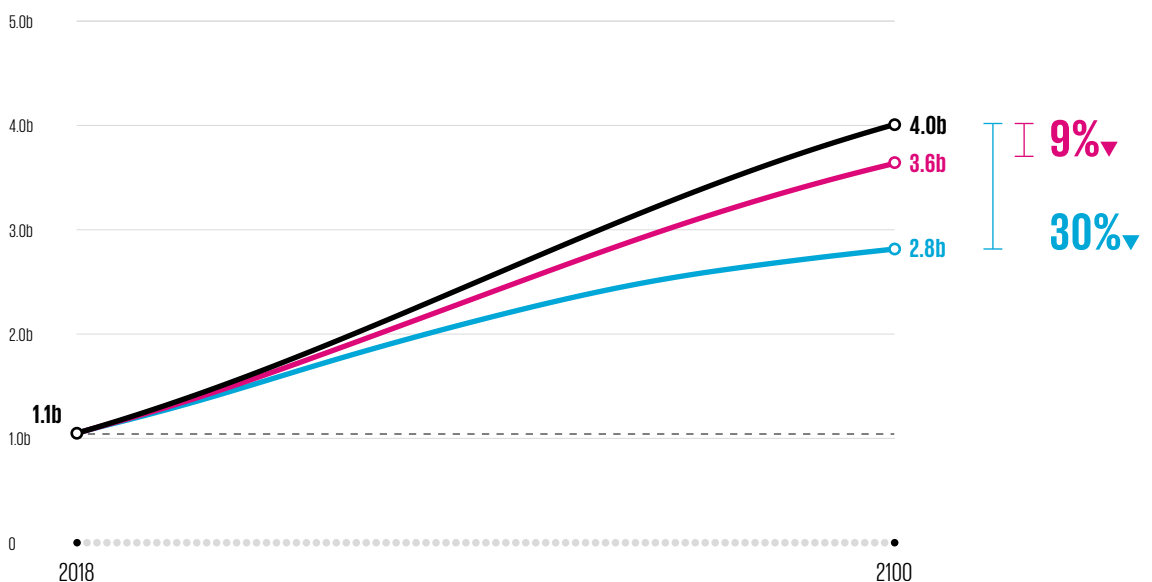
of population growth in parts of the continent. But population issues are so difficult to talk about that the development community has been ignoring them for years.

Population growth is a controversial topic because, in the not-too-distant past, some countries tried to control population growth with abusive, coercive policies, including forced sterilization. Now, human rights are again at the center of the discussion about family planning, where they belong. But as part of repairing the wounds created by this history, population was removed from the development vocabulary altogether.

For the sake of Africa's future, we should bring it back. Based on current trends, Africa as a whole is

PROJECTED POPULATION IN SUB-SAHARAN AFRICA

● U.N. projection ● If there's a shift away from early births ● If all unwanted fertility is addressed



“THE GOAL OF FAMILY PLANNING IS NOT TO HIT POPULATION TARGETS; IT IS TO EMPOWER WOMEN.”

projected to double in size by 2050. Between 2050 and 2100, according to the United Nations, it could almost double again. In that case, the continent would have to quadruple its efforts just to maintain the current level of investment in health and education, which is too low already. If the rate of population growth slows down, however, there will be more resources to invest in each African’s health, education, and opportunity—in other words, in a good life.

To be very clear: The goal of family planning programs is not to hit population targets; on the contrary, it is to empower women so that they can exercise their fundamental right to choose the number of children they will have, when, and with whom. Fortunately, empowering couples to make decisions about their lives also improves Africa’s future by changing the population growth scenario across the continent.

The Track20 Project modeled some relatively simple future scenarios for sub-Saharan Africa to consider how various family planning-related investments might affect population growth. Let’s examine the data.

Wanted fertility: The black line represents sub-Saharan Africa’s population to 2100 based on estimates by the United Nations Population Division. The blue line represents its population to 2100 if every woman had only the number of children she wanted. Currently, women in the region have an average of 0.7 more children than they want. If that number went down to zero over the next five years, the population in 2100 could change by 30 percent.

Education: Another link between empowerment and population growth is the transformative impact of secondary education for girls. Educated girls tend to

work more, earn more, expand their horizons, marry and start having children later, have fewer children, and invest more in each child. Their children, in turn, tend to follow similar patterns, so the effect of graduating one girl sustains itself for generations.

Though the impact of education is sweeping, our model looks at just one narrow aspect of it: A shift in the age at which women give birth to their first child.

The pink line represents sub-Saharan Africa’s population if every woman’s first birth were delayed by an average of approximately two years. The average age at first birth for women in Africa is significantly lower than in any other region. Currently, it is 20 or younger in half of African countries. This scenario doesn’t have anything to do with women having fewer children. It just has to do with when they start having them.

Consider this thought experiment. If every woman started having children at age 15, then in 60 years you’d have four generations ($60/15=4$). But if every woman started having children at age 20, then in 60 years you’d have three generations ($60/20=3$). Even if those women had the same number of children in each generation, the total population would be one-quarter smaller in the latter scenario. To be conservative, we assumed a less substantial delay in our model. Still, it changes the projected population by nearly 10 percent.

Everyone I know supports sending girls to school and giving them access to information about family planning and contraceptives when they ask for them. I hope we will stop shying away from also pointing out that empowered women make millions of individual decisions that add up to a better demographic situation for themselves, for their children, and for Africa. ■



Future Fab's teen connectors chat with clients about health. (Nairobi, Kenya)



ABIGAIL ARUNGA

*Kenyan writer
and blogger*

PUTTING HER IN CHARGE

**YOUNG GIRLS IN KENYA WEREN'T INTERESTED IN FAMILY PLANNING,
UNTIL ONE PROGRAM STARTED TO SPEAK THEIR LANGUAGE.**

I look up at the office building where my interview is about to take place. It is a tall gray tower that's a bit foreboding, if a welcome is what you're looking for. Inside, everything is swathed in more gray, with just

a few lonely plants that don't quite spruce things up.

What I see once I get to the office where I'm headed, though, is a complete contrast to what I've left behind. The walls are done up in bright colors. The receptionist doesn't stop smiling.

“ADOLESCENTS IN NAIROBI HAVE LITTLE TO NO INFORMATION ABOUT SEX, BECAUSE EVERYONE PRETENDS THEY’RE NOT HAVING IT.”

I’m here to talk about Future Fab, a three-year pilot program designed by Marie Stopes Kenya (MSK) to help teenagers—especially teenage girls—access contraceptives and other reproductive health care.

Being here takes me back to my own teenage years, when my friends and I thought we could get pregnant from just being around genitalia, and a period was something that we needed to hide like a shameful secret.

Not much has changed in that regard since I was a teenager, according to the staffers I interview. Adolescents in Nairobi have little to

no information about sex, because everyone pretends they’re not having it.

It was against this background that MSK began offering free contraception to adolescent girls in 2016. But very few adolescent girls showed up.

“We needed a new strategy,” says Elizabeth Ogott, youth lead of MSK, “because the services we had were not responsive to adolescents. We needed a human-centered design process that would fit into the life of a young girl!”

What they realized was that adolescent girls weren’t interested in talking about contraception; they were interested in talking about their futures. And so Future Fab, an “adolescent lifestyle brand,” was born. With support from the William and Flora Hewlett Foundation, MSK’s 22 privately owned clinics across Kenya began hosting events—dance contests, fashion shows—and publishing a magazine, all focusing on young people and their dreams. Along with all this comes discussions of how unplanned pregnancy can get in the way of achieving those dreams—and how to avoid it. Future Fab also works with healthcare providers, parents, and even clinic security guards, so they understand better how to work with teenage girls.

Future Fab is working: Since the pilot started, visits by adolescent girls have risen sevenfold.

Now I want to see how Future Fab works on the ground. We head for a health center in Kangemi, a slum not far away. I’m not sure what to expect, but I know it’ll be like nowhere in Nairobi I’ve ever seen.

I’m wrong. It’s exactly like everywhere in Nairobi I’ve seen, because there’s no parking.

Eventually, though, we make it into the center. Lydia, the lady in charge, bustles past us in her pristine white shirt, then past us again in the other direction.

Lydia has just finished seeing a mother and her baby when she finally has time for us. There is rarely a dull moment at the clinic, she says with a laugh. New clients come in every half hour. Adolescents get first priority so that they don’t have to deal with stares or comments. When they are ushered into



Future Fab leads with lifestyle messages. (Nairobi, Kenya)



A patient checks in at the Kangemi clinic. (Nairobi, Kenya)

Lydia's office, she asks them about what's going on and helps them figure out what they need—whether it's talking, medication, or counseling.

"Future Fab is wonderful," says Lydia, "because it is so easy. The health services are free if you're under 20. The provider and the products are . . . within the neighborhoods." In a society where no one else seems to be doing much, accessibility is a key advantage.

By all measures, the pilot has been a great success. According to Anne Parker, the global adolescents lead at Marie Stopes International, the program increased contraceptive use among participating girls by 50 percent. More important, as far as she's concerned, are the lessons Future Fab has taught. The organization has only begun to examine the data, but already several of its programs—in Zambia, Uganda, Ghana, Mali, and Tanzania—

have made changes based on what Future Fab revealed about how to reach teenagers effectively.

Meanwhile, Future Fab has made a real difference in the lives of teenage girls here. Lydia tells us about a girl whose parents found out she had received care at the health center. They came down to the center with their daughter, who admitted that she had come to have a procedure done. Though they were unhappy, they were also relieved that her life could continue as she had imagined. She's in her second year of university now.

Not all stories end this way. But for every one that does, Lydia is reassured that something is going right. "We're putting the power in their hands," she finishes, almost absent-mindedly, as another client walks into her office. ■



“61 percent of Zimbabweans are 25 years old or younger, which means that they are entering the age when they are most at risk of infection.”

GEOFF GARNETT

HIV

THE DATA

THREE FUTURE SCENARIOS FOR ZIMBABWE'S HIV EPIDEMIC



GEOFF GARNETT

*Deputy Director, HIV,
Bill & Melinda Gates Foundation*

Among the tragedies of HIV is that it strikes in the prime of life, when young people should be completing their education, starting businesses, raising families, and building strong communities. At the height of the HIV epidemic in Zimbabwe, in 1997, an estimated one in four adults was infected. HIV devastated Zimbabwe.

Since then, however, Zimbabwe's government and civil society, with the support of international donors,

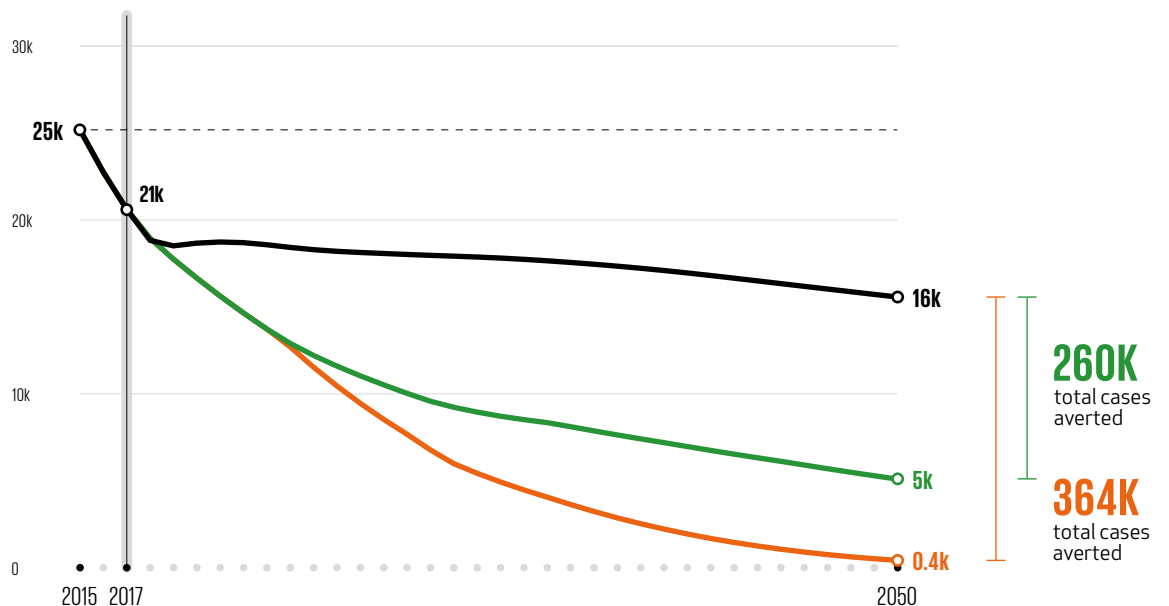
have demonstrated a remarkable commitment to preventing and treating the disease. Since 2010, new HIV infections are down by 49 percent, and AIDS-related deaths are down by 45 percent.

The challenge is to build on this success, because with 61 percent of Zimbabweans under 25 years old, more than half the population is entering the age when they are most at risk for infection. The youth boom has the potential to drive economic growth in Zimbabwe, but only if these young people are healthy, educated, and economically active. That will not happen if another generation is decimated by the HIV epidemic.

We asked a team from Imperial College London to consider what Zimbabwe's HIV epidemic, and therefore Zimbabwe's future, might look like in

UP TO 364K NEW CASES OF HIV COULD BE AVERTED AMONG 15-29-YEAR-OLDS

- Status quo
- Further scale-up of current prevention tools
- Scale-up plus new prevention tools



2050, by analyzing three alternative scenarios. The model includes three sets of interventions:

- **Treatment:** Antiretroviral therapy can be effective, but it depends on three key metrics that go together. Are people aware of their HIV status? If they are aware, are they on treatment? If they are on treatment, are they adhering to that treatment so that the virus is suppressed in their bodies?
- **Currently available prevention methods:** This includes condoms; voluntary medical male circumcision (VMMC), which decreases men's risk of acquiring HIV; and pre-exposure prophylaxis (PrEP), which involves drug treatment for people in high-risk populations, such as sex workers.
- **Prevention methods that may be available in the medium and long term:** This includes long-acting PrEP and a 70 percent effective vaccine.

SCENARIO #1: The black line

Status quo of treatment and prevention

Zimbabwe's current efforts are impressive. If they are sustained, the number of new infections will continue to decline. However, this decline will be gradual, and there will still be almost 16,000 new infections each year by 2050.

SCENARIO #2: The green line

Further scale-up of current prevention tools

The curve would bend sharply if Zimbabwe further scaled up currently available prevention tools over the next five years. New infections would drop by another third within a decade and to roughly 5,000 in 2050, a significant improvement over the status quo scenario. This scenario uses optimistic but reasonable assumptions for short-term scale-up, based on past trends and coverage levels in nearby countries.

There are two important caveats with this scenario. First, despite the rapid decline in new

infections, the virus would remain widely present in 2050, threatening resurgence. More importantly, it would be nearly impossible to sustain this combination of treatment and prevention at such high levels of coverage for 30 years.

SCENARIO #3: The orange line

Scale-up plus new prevention tools

This is where long-acting PrEP and a vaccine could come in. We're confident that long-acting PrEP, which is not only longer acting but more effective than current PrEP, will be introduced soon. The model assumes 2024. The model also assumes a vaccine by 2030. That's more optimistic, but it's why the world (and the Gates Foundation) are investing so much in R & D. If we succeed in introducing these tools, the number of infections would tumble. Long-acting PrEP and especially a vaccine would also be much easier for a stretched health system to deliver at scale.

In spite of political and economic disruptions, Zimbabwe has done an exemplary job of controlling HIV. However, this modeling exercise shows that redoubled efforts can make a big difference. It's reasonable to forecast an epidemic that would still sap the strength of Zimbabwean society. It's also reasonable to forecast an epidemic that is firmly under control.

It depends on Zimbabwe's continued commitment to ending its HIV crisis. In addition to continuing to invest, Zimbabwe must innovate to reach those most at risk with tools that work for them. Zimbabwe has just agreed to be one of the leaders of the Global HIV Prevention Coalition, so indications are positive.

Progress also depends on the world's continued commitment to R & D. A strong pipeline of new and better products, and eventually a vaccine, will ensure that countries like Zimbabwe can succeed. ■



Members of the Women Against All Discrimination performance group conduct an edutainment session. (Bulawayo, Zimbabwe)



BUSANI BAFANA

*Storyteller and
journalist based
in Zimbabwe*

STIGMA & THE SISTERHOOD

ACROSS AFRICA, FEMALE SEX WORKERS' ODDS OF HAVING HIV ARE ESTIMATED TO BE 11 TIMES HIGHER THAN THOSE OF WOMEN IN THE GENERAL POPULATION. IN ZIMBABWE, A GROWING NUMBER OF SEX WORKERS ARE LEARNING HOW TO PROTECT THEMSELVES.

The Sisters with a Voice Clinic is a neat, airy facility nestled at the bottom of a two-story red-brick building in an industrial area of Bulawayo. I'm there to meet 27-year-old Bathabile

Nyathi, a prim young woman in a white dress, her shiny locks neatly tied back. As she welcomes me into her office with a warm smile and firm handshake, she seems every inch an administrator,

a teacher, even a banker. As she begins to talk, I hide myself for my prejudice. What had I expected a sex worker to look like?

More than 30,000 people in Zimbabwe die of AIDS-related causes annually, and 1.3 million are living with HIV. Female sex workers' odds of having HIV are estimated to be 11 times higher than those of women in the general population, and modeling suggests that, across Africa, 40 percent of new infections are attributable to unsafe sex work. Despite these risks, sex work is a source of employment for more than 45,000 women in Zimbabwe. Many are adolescents and young women—a group already experiencing a rise in HIV prevalence—pushed into the trade by growing poverty and pulled by a ready market.

In 2009, the Centre for Sexual Health, HIV and Aids Research (CeSHHAR) piloted the Sisters with a Voice health clinics for young sex workers to try a new approach to HIV prevention.

As Bathabile explains, most health institutions in Zimbabwe do not welcome sex workers. Instead, she says, doctors and nurses judge them and accuse them of “spreading HIV and AIDS.”

Bathabile knows this firsthand. In 2006, at 16 years old, she rushed to the hospital in her home area of Gwanda, 126 kilometers southeast of Bulawayo, Zimbabwe's second major city. The reason: A debilitating sexually transmitted illness (STI).

“I was undressed and questioned as to where I got the illness and was told I would be treated once I brought along the person who had infected me,”

An outreach worker visits a sex worker at her home. (Mbare, Zimbabwe)





—
Bathabile relaxes at home. (Bulawayo, Zimbabwe)

“THE ATTITUDE AT SISTERS IS A SHIFT FROM THE NORM: HERE, SEX WORKERS ARE NUMBER-ONE CUSTOMERS.”

Nyathi tells me. “I could not explain that I was a sex worker; worse, when nurses found out I had a child, they had more questions but would not treat me.”

But then, she tells me, she found Sisters with a Voice. The attitude at the Sisters clinics is a shift from the norm: Here, sex workers are number-one customers. As Bathabile puts it, “they welcomed me like family.” She has not had an STI since then.

“Sex work is an option, a bridge, and an easy way to get by,” she says. “Sex work does not require an ID, birth certificate, or qualifications. Women are stigmatized for selling sex, but no one

understands why they have resorted to selling sex in the first place.”

Because of this stigma and misunderstanding, for a long time, people in Zimbabwe either did not want to—or did not know how to—address HIV among sex workers. But now the Sisters approach is being adopted by other programs, including the Determined, Resilient, Empowered, AIDS-free, Mentored and Safe (DREAMS) project, also run in partnership with CeSHHAR.

“Our mandate is ensuring sex workers are safe and healthy,” says Rumbidzai Mapfumo Makandwa, who runs Zimbabwe’s DREAMS project, “because if they are safe, everyone is safe. Who are their clients? Our sons, brothers, fathers, and husbands!”

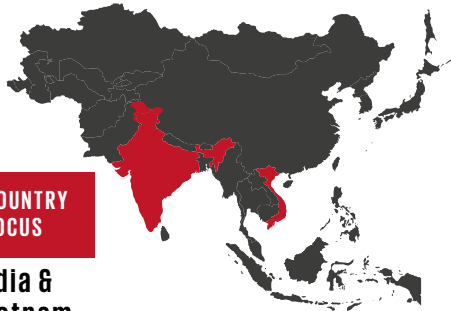
Negotiating safe sex has been a key weapon in the sex workers’ arsenal, according to Juliet Makondora, an outreach worker at CeSHHAR office in Gweru. “We have built the capacity of the women selling sex,” she says. “They know their rights: That they are people first, before they are sex workers.”

The sex workers I speak with at the Sisters clinic in Gweru agree. Fungai, 20, has been a sex worker since her teens. She came to the Sisters clinic to be treated for an STI. “I got more than treatment, because I learned to conduct sex work safely,” Fungai tells me.

Fungai is ambitious. She has a day job at a city company and is also running a business selling clothes. She hopes to expand the business to include high-value goods like cars. She will soon pay off a parcel of land where she plans to build a house.

Bathabile, Fungai, and their colleagues (and their clients and their families, too) will only stay healthy if they can visit any public-health center without fear or stigma. That’s what programs like DREAMS and Sisters with a Voice and organizations like CeSHHAR are working so hard to accomplish. It’s a break from the past, and it’s the future of HIV control in Zimbabwe. ■

Region focus: Asia



**COUNTRY
FOCUS**

**India &
Vietnam**

“Countries like India have almost completed the first part of the equation: Getting students in the door. Now they must turn to the second part.”

ASHISH DHAWAN

EDUCATION

THE DATA

MOVING FROM ENROLLMENT TO LEARNING



ASHISH DHAWAN

Chairman, Central Square Foundation

In 2000, when the Government of India launched its Education for All movement (Sarva Shiksha Abhiyan), almost one in five children in the country wasn't enrolled in primary school. It would be difficult to overstate the enormity of this challenge. If India's 6-14-year-olds made up their own country, it would be the seventh largest country in the world. But now, less than two decades later, virtually all of them (97 percent) are enrolled in school. Especially for the poorest families in the country, this is a revolution.

India's achievement is unique because of its size, but many countries in the world have made similar progress. The number of children out of school has decreased in every single region in the world. Sub-

Saharan Africa, which has the most children out of school of any region, has cut that number by almost one quarter since the turn of the millennium. Over the same span, the global gender gap in primary school has closed considerably, from 6 percentage points to 2 percentage points.

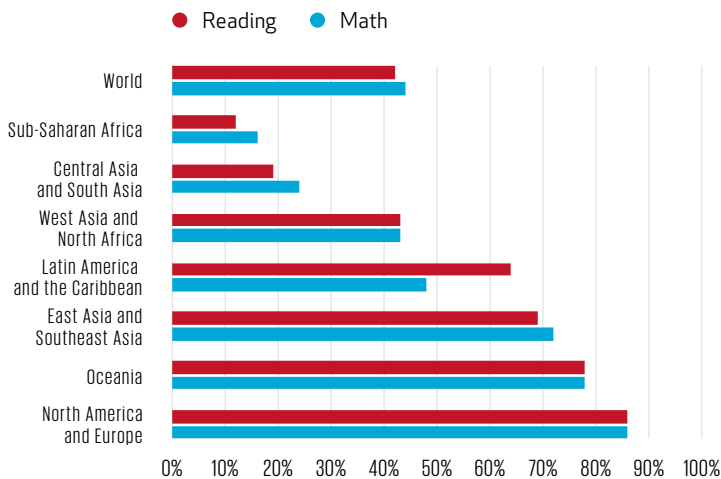
I celebrate these successes, but they are just the start of the work, not the end of it. Educated people are more prosperous, healthier, and even happier. Educated nations enjoy rapid economic growth, declining child mortality, and peace and security. However, these benefits accrue not when students enter the classroom but when they leave it having learned basic skills. Countries like India have almost completed the first part of this equation: Getting students in the door. Now they must turn to the second part.

In India, according to the Annual Status of Education Report, only one quarter of third grade students can read and understand a short story with a few simple sentences or subtract one two-digit number from another. The Indian government's own National Assessment Survey also shows that a high percentage of children have low learning levels. In Kenya, according to an assessment called Uwezo, only half of third grade students know that $20+2=22$.

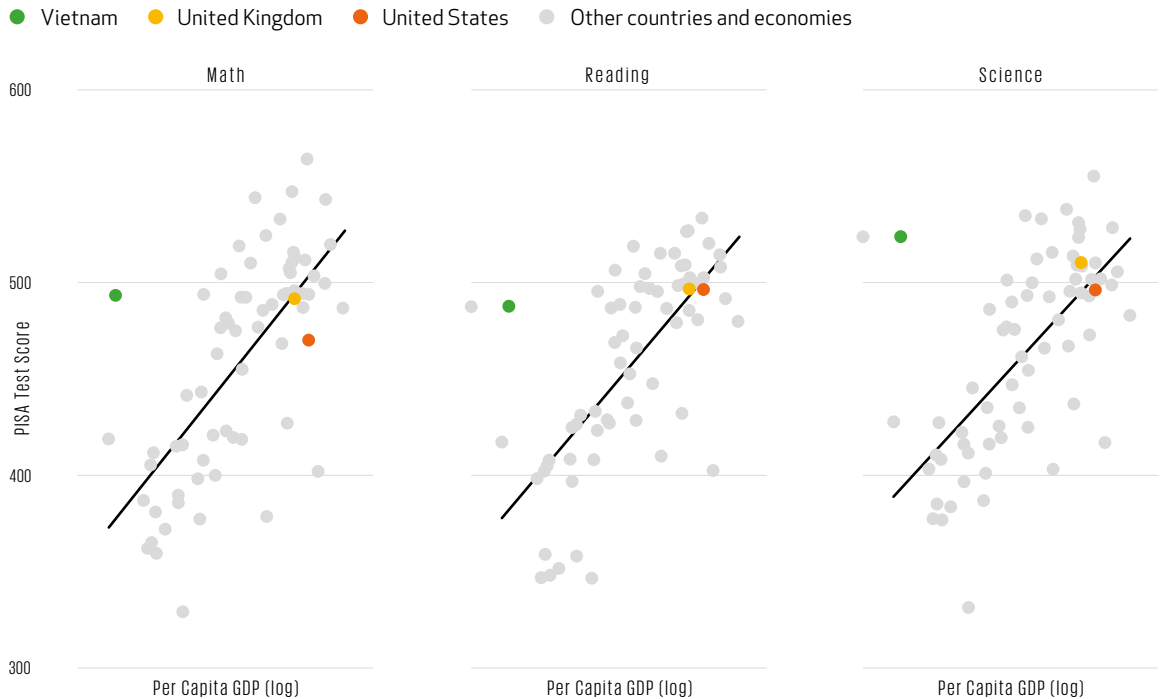
Fortunately, as the outlines of the crisis have become clearer, learning has started to get the attention it requires, both inside and outside of India. From Prime Minister Modi to the Ministry of Human Resource Development to pioneering state governments in Delhi and Rajasthan that are instituting reforms, Indian leaders are putting learning outcomes on the agenda. The World Bank's 2018 World Development Report focused entirely on the issue of educational quality.

Unfortunately, the pathway for improving school outcomes is not as clear-cut as the strategy for improving school access. We have seen many

PERCENTAGE OF CHILDREN AND ADOLESCENTS EXPECTED TO ACHIEVE MINIMUM PROFICIENCY LEVEL IN MATH AND READING



VIETNAM SCORED AS WELL AS HIGH-INCOME COUNTRIES ON INTERNATIONAL TESTS, 2015



individual innovations that work for students. For example, Teaching at the Right Level, a pedagogical method pioneered by the Pratham Education Foundation, groups students by what they know rather than by age or grade. The method has consistently improved students’ performance on tests. Another innovation that has had an impact is Mindspark, an adaptive learning program that helps teachers provide personalized instruction in an online environment. In a study, students who spent 20 weeks using Mindspark scored 200 percent higher in math and 250 percent higher in Hindi than students in a control group.

However, achieving system-wide improvements in learning is hard, and there are precious few examples of success at scale in low- and lower-middle income countries. Vietnam, however, stands out as an exemplar. Though the country’s GDP per capita is only slightly higher than India’s, Vietnam’s 15-year-

olds outperform students from wealthy countries like the United Kingdom and the United States on international tests (U.S. GDP per capita is 27 times greater than Vietnam’s). As you can see above, when test scores are plotted against GDP, Vietnam is an extreme outlier in math, reading, and science.

Research in Vietnam and other exemplar countries is ongoing, but it is possible to identify some key traits. In Vietnam, there are very clear expectations about the foundational skills in math and reading that every primary school student should master. Teachers believe that all children, no matter how poor, can and must learn, and they hold themselves accountable for results. Finally, schools analyze data routinely to track progress and change course when necessary. If countries in South Asia and sub-Saharan Africa make foundational learning by third grade their number-one priority, it will lead, ultimately, to a prosperous future. ■



A teacher offers classes in his home during summer vacation. (Hòa Lợi Commune, Vietnam)



CAT THAO
NGUYEN

*Writer and
philanthropist
based in Vietnam*

QUIET HOPE

VIETNAMESE STUDENTS ARE FAMOUS FOR THEIR EXCELLENT TEST SCORES. THE SECRET TO THEIR SUCCESS MAY BE THE DEDICATED, SKILLED TEACHERS THEY HAVE IN PRIMARY SCHOOL.

When I arrive in Hòa Lợi Commune in Tra Vinh province, I head past giant bags of recycled trash into a storage facility to meet 31-year-old Ni. She sits among bare-chested men, removing labels and caps from plastic bottles. A 1-kilogram bag of plastic bottles will fetch 2 cents; she can do about 100 bags a day.

Ni, who belongs to the Khmer ethnic minority, is classified by the government as “Ho Ngheo”: Poor. As

a result, she receives an allowance of \$4.40 a month if her children—ages 3, 6, and 9—are enrolled in primary school. The hamlet chief tells me that every child in the hamlet attends primary school. He meets with any families whose children aren’t enrolled to find out why; usually, it’s because their parents can’t afford the expenses. Then he shuffles through his personal network of business people, government officials, and friends to raise the necessary money.

“A COMMON VIETNAMESE SAYING—‘FOOD FROM FATHER, CLOTHING FROM MOTHER, KNOWLEDGE FROM TEACHER’—MARKS THE TEACHER AS THE THIRD MOST IMPORTANT PERSON IN A CHILD’S LIFE.”

Across Vietnam, the primary school enrollment rate is virtually 100 percent. Primary education is free, as mandated in the constitution, and extremely good: Vietnam’s literacy rate is 97 percent. In 2012, the country made international headlines because its performance in the Programme for International Student Assessment (PISA) was so impressive. In 2015, Vietnam was the poorest country to participate, but still its students ranked eighth in

science, 22nd in math, and 32nd in literacy out of 72 countries—higher than both the U.S. and the U.K. Vietnam also ranked first in the share of poor students who perform well in science.

Why?

For one thing, Vietnamese culture deeply respects teachers. There’s a dedicated national holiday in their honor, and a common Vietnamese saying—“food from father, clothing from mother, knowledge from teacher.” This marks the teacher as the third most important person in a child’s life. When I visit the Cau Ke district, I see that it’s true: When I tour the temple where children go to learn the Khmer language with Minh, a grade 5 teacher, we pass dozens of his students—and each one stops to fold their arms, bow in respect, and call out “Greetings, teacher!”

There have been times where Minh has personally tutored students for free at his home or on weekends (on top of working in the paddy fields after school and on weekends with his wife to earn extra money). But now, with assessments showing that 50 percent of his class underperformed last year, he has had to think of ideas that are more scalable than ad hoc extra help. He has arranged for underperformers to sit with better students. Each Friday, the better students teach the class, explaining concepts to their classmates under his supervision. He does minimal teaching of subjects where students don’t have issues, such as art and music, and focuses more attention on the problem areas.

I wonder aloud: If it’s not mandatory for teachers to do unpaid extra work, why do they do it? “It’s my responsibility as a teacher,” he says, “to my students and to society.” At the end of the school year, if teachers have achieved the targets that they set, including reducing the number of weak students, they get a small bonus—about \$15. But the bonus is not important to Minh. “It’s not about the money,” he says. “My greatest joy is when my students can complete grade 5 with strong learning outcomes and go into grade 6.”



Ni and her elder son Men stand in front of his primary school. (Hòa Lợi Commune, Vietnam)



Students receive extra help with their schoolwork. (Hòa Lợi Commune, Vietnam)

The efforts of Minh and the hamlet chief are a testament to Vietnam's approach to education for younger students. But after that, the story changes. Though primary school is free, fees are levied in secondary school. Poor households are exempt from these fees, but many children drop out anyway. In fact, on the PISA test, Vietnam had the lowest "coverage index" among all participating countries, indicating that a relatively low proportion of students take the test.

"The kids see that they can get work in factories," Minh says. "They know how poor they are, so they will work if they can to help their family and be less of a burden."

Back in Ni's kitchen, we chat as the light fades. Given that her sons are excellent students, I ask

whether she thinks they could get into one of the academically selective Khmer boarding schools where the government pays for everything, including fees and meals. "Maybe," she says. "If they want to drop out and go to work during high school, that's their choice. I'll keep them in school for as long as I can."

While Ni cooks rice for the family's dinner, I think back to my own childhood. I was born in a refugee camp and grew up in poverty in Australia. Despite this, I got a government scholarship to Australia's oldest university, eventually becoming a lawyer. It was a radical circuit breaker. Ni, just like my own mother, lives on quiet hope. With the efforts of a dedicated community, this may just be enough. ■

Region focus: Africa



**“A thriving agrifood system
could cut poverty in half, create
hundreds of thousands of new jobs,
and drive economic growth”**

JAMES THURLOW

AGRICULTURE

THE DATA

AGRICULTURE AND POVERTY REDUCTION IN GHANA



JAMES THURLOW

Senior Research Fellow,
International Food Policy
Research Institute

If you asked most Ghanaians where the opportunities of the future lie, they would point to Accra, Kumasi, and other big cities. The country's thousands of small farms symbolize the past—and they symbolize poverty.

But this dichotomy misses an important point. Agriculture is not going away; it is transforming. Subsistence farming may be gradually disappearing

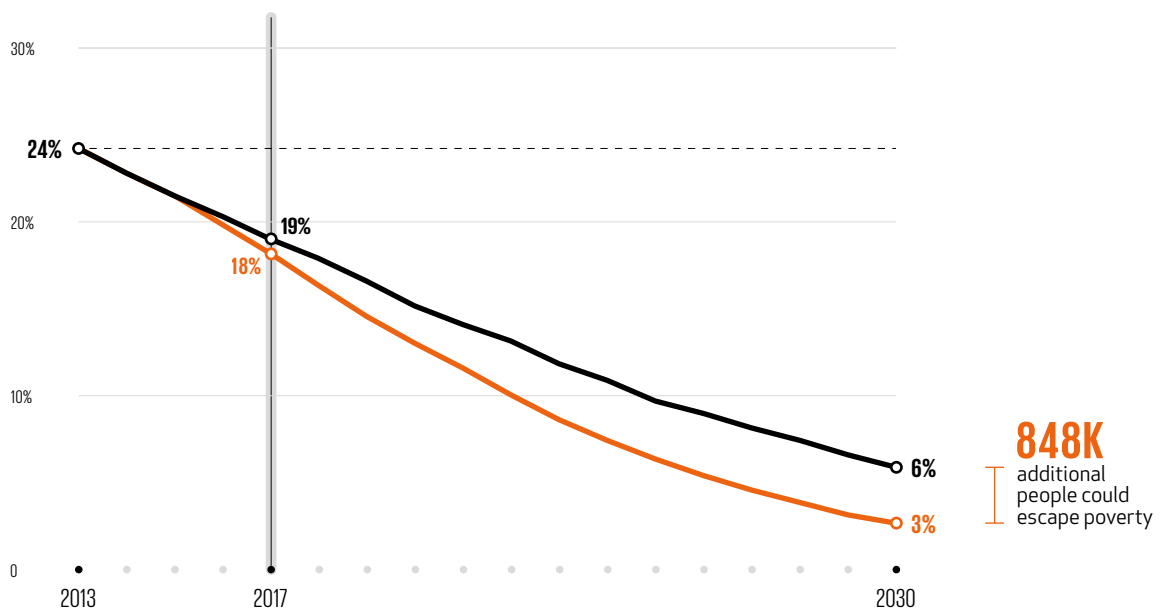
(the number of Ghanaians who say farming is their primary job fell from 57 to 44 percent between 2006 and 2016), but it is being replaced by a more dynamic, productive, market-oriented agriculture.

This new agriculture generates jobs off the farm for entrepreneurs who sell farm equipment and supplies, trade and transport food, and process crops into valuable commodities (tomatoes into tomato sauce, for example). We call this holistic view of agriculture the "agrifood system." The off-farm elements of this system already employ more than 10 percent of Ghanaians, and they will provide opportunities for millions of ambitious young people in the decades to come.

The International Food Policy Research Institute (IFPRI) constructed a model to project the impact of

PERCENTAGE OF POPULATION LIVING IN POVERTY

● Current projection ● If agricultural productivity doubles



“SUBSISTENCE FARMING MAY BE GRADUALLY DISAPPEARING, BUT IT IS BEING REPLACED BY A MORE DYNAMIC, PRODUCTIVE AGRICULTURE.”

agricultural development on Ghana’s future. What it shows is that a thriving agrifood system could cut poverty in half, create hundreds of thousands of new jobs, and drive economic growth.

Ghana is already on a good trajectory. Even with current trends, the poverty rate is projected to fall from 20 percent in 2016 to 6 percent in 2030.

But if Ghana achieves the Sustainable Development Goal for agriculture—a doubling of productivity by 2030—poverty will fall not to 6 percent but to 3 percent. That is another 848,000 people escaping poverty.

Productivity reduces poverty in three ways: It increases smallholder farmers’ income; boosts rural economies because farmers spend money locally; and lowers food prices, which especially helps the poorest consumers. A doubling of productivity would also create 671,000 new jobs, the vast majority involved in trading and transporting food to urban markets.

It is important to note that Ghana is not currently on pace to double its productivity. This is an ambitious goal, but not an impossible one.

Part of what is needed is innovation. Thanks in part to new, locally adapted varieties of maize released by Ghana’s Crops Research Institute, for example, average yields have increased from 1.2 tons to 2 tons per hectare since 1990. If farmers adopt new hybrid varieties, yields could go up to 4.5 tons or more. The key is to get these sorts of gains across all the crops grown in Ghana. The national government has made a good start, with agricultural research spending more than doubling since 2000. Ghana also needs to build

systems to deliver these innovations to farmers, and to link farmers to the markets generated by the rising demand for food in fast-growing cities.

There is ample room for Ghana’s agrifood system to keep developing. For example, the food processing sector is still projected to be very small by 2030. Currently, Ghana’s main export crop, cocoa, is sold raw and processed outside the country. Meanwhile, almost half of all processed foods consumed in Ghana are imported. If Ghanaians bought food that had been processed in Ghana, their money would stay in the country, generating more jobs for young Ghanaians.

Ghana’s future is indeed in Accra and Kumasi. But it is also in the fields and small towns that will supply food to the rest of the country, the region, and, perhaps, the world. ■



Tomato wholesalers from Duayaw Nkwanta sell to vendors at the Agbogbloshie market. (Accra, Ghana)



**SELASE KOVE-
SEYRAM**

*Ghanaian
storyteller
and journalist*

RIPE FOR REINVENTION

A VISIT WITH THE TOMATO SELLERS AT ACCRA'S TRADITIONAL MARKET POINTS THE WAY TOWARD GHANA'S FUTURE.

Growing up in Accra, I always had a casual relationship with tomatoes. I lacked any knowledge of how they ended up in my food. Unlike my sister and mother, who bought them to prepare family meals, I had no idea when they were

out of season, how they affected the family budget for groceries, or what relationships were forged between buyers and sellers.

Agriculture accounts for about a third of Ghana's GDP—and more than 40 percent of its jobs.



Wemombou Arridan farms tomatoes when they are in season. Off-season, he plants millet, groundnuts, peppers, and potatoes. (Sinsula, Burkina Faso)

“THIS INVESTMENT COULD PUT GHANA ON AN ACCELERATED PATH TO SEIZE THE OPPORTUNITIES IN THE TOMATO INDUSTRY—AND TO TRANSFORM AGRICULTURE NATIONWIDE.”

Tomatoes, meanwhile, are by far the most important vegetable crop in the country, well ahead of onions, chilies, and carrots.

But a 2013 survey on vegetable consumption piqued my interest: “Despite the importance of these vegetables in the local diet, much of the demand is met by imports, especially from neighboring countries. There is a widely held perception that Ghanaian farmers do not attain the productivity levels needed for the vegetables to compete in the regional market.” With its growing middle class, Ghana undeniably has the consumer base to support tomato farming and processing. I decided to look further.

I traveled the route that tomatoes travel, from Burkina Faso (Ghana’s neighbor and main tomato trading partner) and Ghana’s Upper East region (home of the country’s best tomatoes) to Tamale (Ghana’s fastest growing city and a major trading center) and Accra (the largest market for tomatoes in the country).

Outside of Tamale, I came across a cluster of tomato farms. The tomatoes were recently planted, but the fields looked more like gardens than farms. “We do not focus on tomatoes alone,” says Inusah Wumbei, 35, one of the farmers. “I plant maize, yam, and rice as well.” Inusah says that even though tomatoes are profitable, they require a lot of attention and resources. “We don’t have capital for fertilizers or other chemicals needed to grow them on a large scale.”

Later, I spent the morning at an Accra market with 53-year-old Victoria Amoah to learn what life in the tomato trade was really like.

“I’ve been doing this for 32 years,” Victoria told me with a smile. “We have had our share of struggles,

but this work is important.” She pointed to a trailer truck. “There are more than 300 of these trucks, belonging to the Tomato Drivers Union. We work with them as we travel to get tomatoes.”

To succeed in the tomato trade, one has to master the seasonal dynamics that require repeatedly crisscrossing the region. That is not always easy, or safe. “We get attacked by robbers sometimes,” Victoria tells me. “They know it’s a business, so we have money on us.” The attacks have happened in both Ghana and Burkina Faso, she added. “But in Burkina Faso, we get military protection when we travel through the night to the Ghana border.”

She laid out the value chain of the tomato industry, a list of jobs created by tomatoes. There

are the assistants to the drivers. Each trailer has a minimum of two. Then, there are carpenters who build the wooden boxes that house tomatoes from farm to market. To show the scale, she explained that each trailer can carry 120 boxes. On the farms, they have people who sort the tomatoes—from ripe to unripe, soft to hard, etc.—before placing them in the boxes. Then there are the loading boys, who help load the tomatoes into the trucks. “Whenever we travel to Burkina Faso, we take the loading boys along.” They don’t have loading boys in Burkina Faso, she said.

She invited her peers to join in the discussion. They shared memories about their favorite trade routes and the best tomatoes. These are stories that the final consumer, whose jollof rice hinges on the vegetable, may never know. These women appeared to love what they do, even though they bemoaned the lack of institutional and governmental support. “If we had processing factories, we could make use of the surplus tomatoes, which we end up throwing away during bounty harvests,” Victoria said. “If we got support, things would be far better in Ghana. We might not even have to go to Burkina Faso.”

On a recent visit to Shoprite, one of Accra’s shopping malls, I paid more attention to the fresh produce section, particularly the tomatoes. I wondered where they came from. “We source them from local farmers,” Harriet Brookman, a marketing executive at the mall, told me. “When they become scarce in Ghana, we import from South Africa.”

Ghana may soon be on track to replace these imports with homegrown tomatoes that meet the country’s demand. The government has launched a campaign, called Planting for Food and Jobs, to bolster agricultural supply chains. If done well, this investment could put Ghana on an accelerated path to seize the opportunities in the tomato industry—and to transform agriculture nationwide. ■



Asana Yakubu has a stall at the Dakurlini market. She is new to the tomato business. (Tamale, Ghana)



CONCLUSION

We have highlighted a formidable challenge that lies ahead for the poorest countries in the world. We have also emphasized examples of how many countries have met—and are meeting—similar challenges.

Our money is on the solutions being more powerful than the problem.

Literally.

So far, our foundation has invested more than \$15 billion in projects relevant to Africa. In the future, we will spend even more.

There are two reasons for this.

First, we believe Africa is the world's most important priority for the foreseeable future. What happens to the large number of young people there

will be the single biggest determinant of whether the world makes progress toward the Sustainable Development Goals—that is, whether life on this planet keeps getting better.

Second, we will continue to invest because it yields results. The history of the past 30 years is the history of countries once considered hopeless cutting poverty and achieving historic growth: First China, then India, now Ethiopia.

Today's poorest places can follow the same trajectory. What it will take is governments committed to helping their young people build a better future by investing in their health and education. ■



GLOBAL DATA

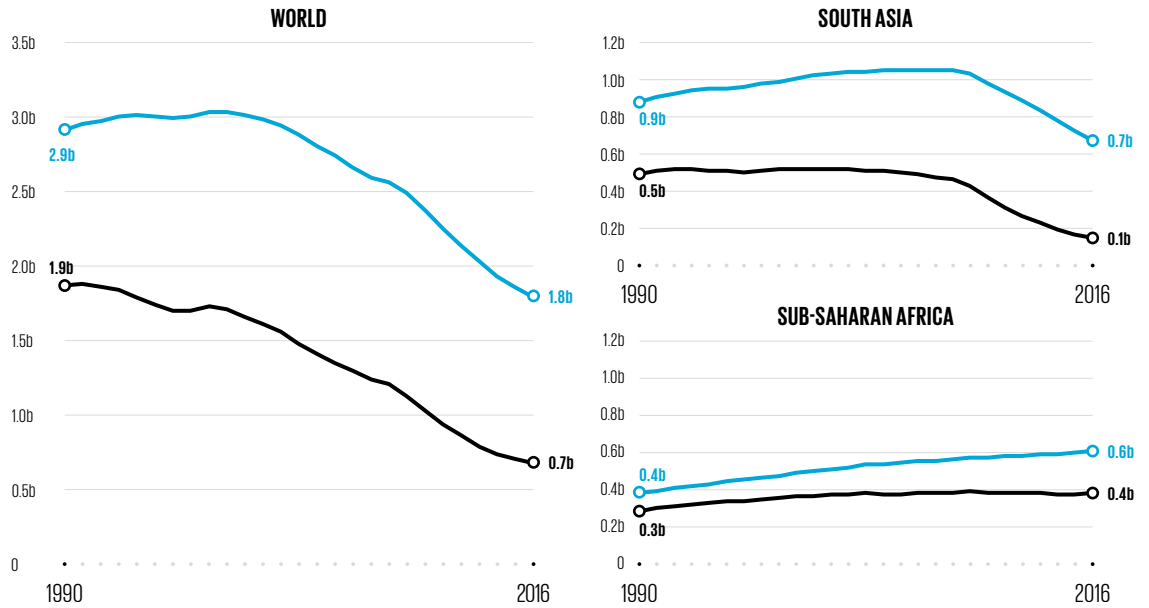


THE DATA

POVERTY

NUMBER OF PEOPLE LIVING AT DIFFERENT POVERTY THRESHOLDS

● \$1.90 a day ● \$3.20 a day



SDG Target: Eradicate extreme poverty for all people everywhere.

The massive drop in extreme poverty (those living on less than \$1.90 a day) is perhaps the best story of the past generation. However, for a more nuanced picture of global poverty, we must look at more than just extreme poverty. We must also consider regional variation and think about different conceptions of poverty altogether.

The World Bank now has a second poverty threshold set at \$3.20 a day to account for the fact that, as countries get richer, the cost of a minimum quality of life increases. The good news is that the number of people earning between \$1.90 and \$3.20 is also decreasing. However, different regions are

on different trajectories. South Asia only recently saw the number of people making between \$1.90 and \$3.20 begin to decline. Sub-Saharan Africa has yet to reach this turning point. These trends underscore the dynamic nature of poverty; despite progress, there are still many who are close enough to the extreme poverty line that they risk falling below it again.

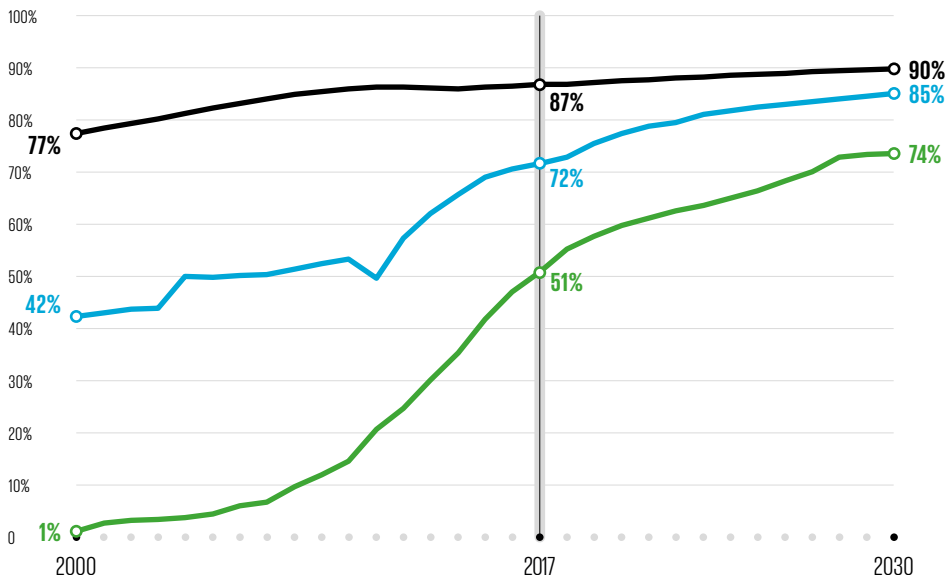
Finally, it is important to recognize that income is not the only way to think about a good life. We look at other indicators such as health, nutrition, education, and financial services in the following pages.

THE DATA

VACCINES

GLOBAL COVERAGE OF SELECTED VACCINES

● DTP (3rd dose) ● Measles (2nd dose) ● Pneumococcal (3rd dose)



SDG Target: Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.

Last year, we showed the percentage of people globally who receive basic vaccines, which are among the best investments in health. That single data point, however, did not tell the whole story. For example, new vaccines are added to national immunization schedules frequently, including the vaccine seen here to protect children from the main cause of pneumonia. In short, immunization systems are consistently delivering more and different vaccines to more people, even though population growth

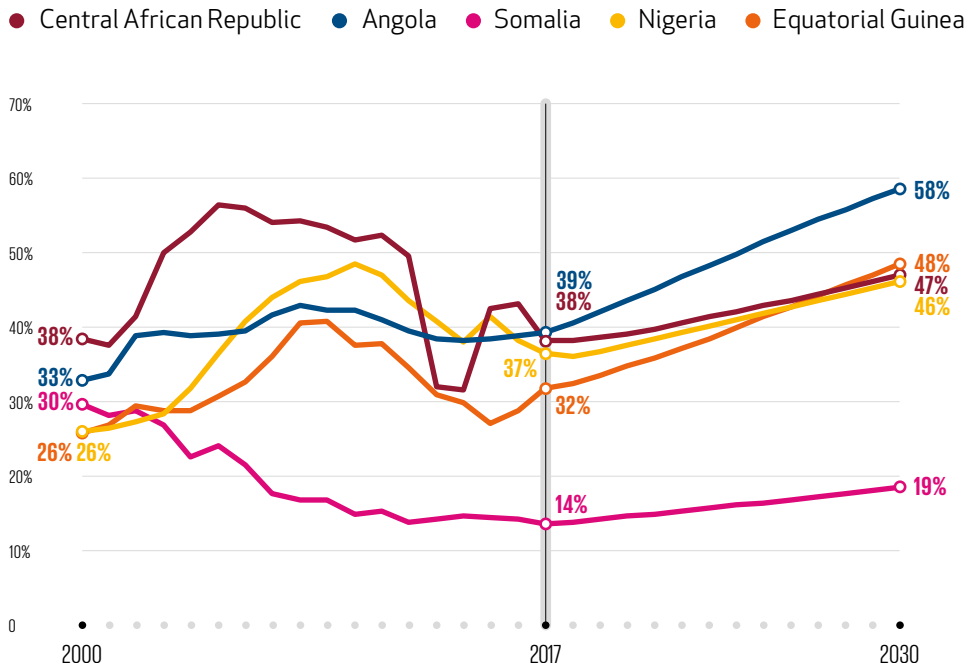
means it takes more work just to maintain coverage levels with existing vaccines.

The global coverage level averages also obscure key gaps. Coverage with the diphtheria, tetanus, and pertussis vaccine (DTP3) is considered the gold standard for measuring an immunization system. Though global DTP3 coverage is almost 90 percent, there are a handful of countries where coverage is and has been hovering well below 50 percent. In the five countries shown above, coverage is currently projected to remain below

THE DATA

VACCINES

NATIONAL DTP3 COVERAGE

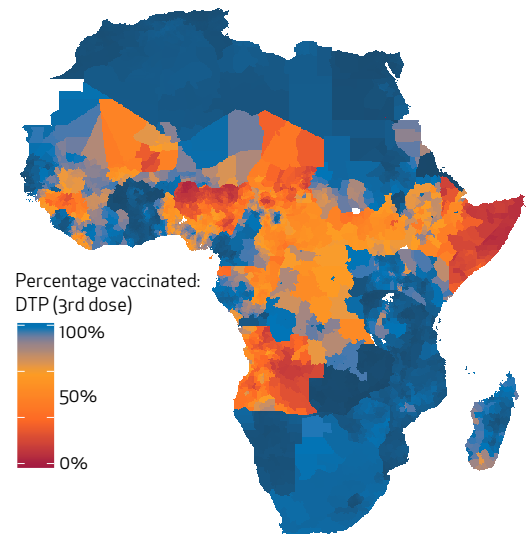


SUB-NATIONAL DTP3 COVERAGE 2016

60 percent through 2030. Dramatic improvements are needed to increase coverage and avoid leaving children behind in these settings.

The heatmap shows that even within countries that may be doing well, certain areas can be neglected. More than half of children haven't received the necessary three doses of DTP in 26 percent of districts in sub-Saharan Africa.

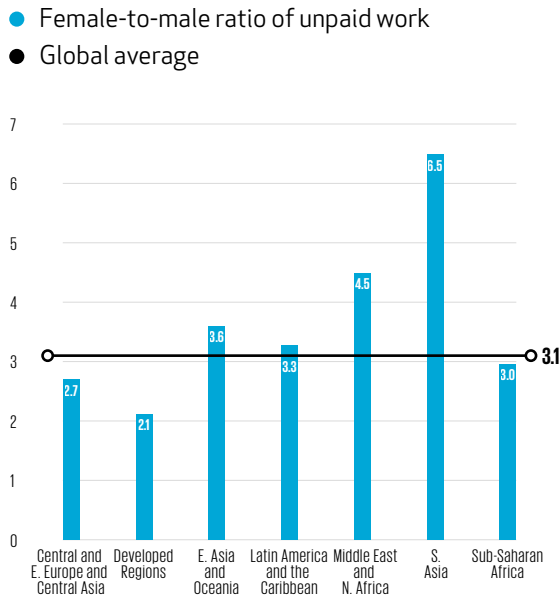
The priority now is replicating successful strategies in the most challenging places so that all people everywhere receive lifesaving vaccines.



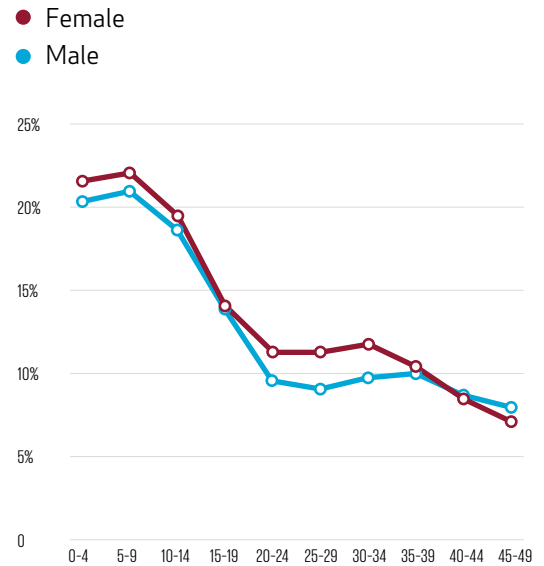
THE DATA

GENDER EQUALITY

FEMALE-TO-MALE RATIO OF TIME SPENT ON UNPAID WORK IN HOURS PER DAY



PERCENTAGE OF PEOPLE LIVING IN EXTREME POVERTY, BY SEX AND AGE, 2009-2013



SDG Target: Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.

Last year, our gender indicator was the percentage of women and men with secure land rights (although the data was insufficient). This year we have shifted to unpaid care and domestic work, which clearly demonstrates the consequences of gender inequality.

Unpaid care work includes the gathering of wood and water, cooking and cleaning tasks, and taking care of children and sick relatives—work that all families require to function. As you can see, this work, some of which is drudgery and some of which is deeply rewarding, is disproportionately shouldered by women and girls.

The burden of unpaid care work is one reason why women are poorer than men, especially

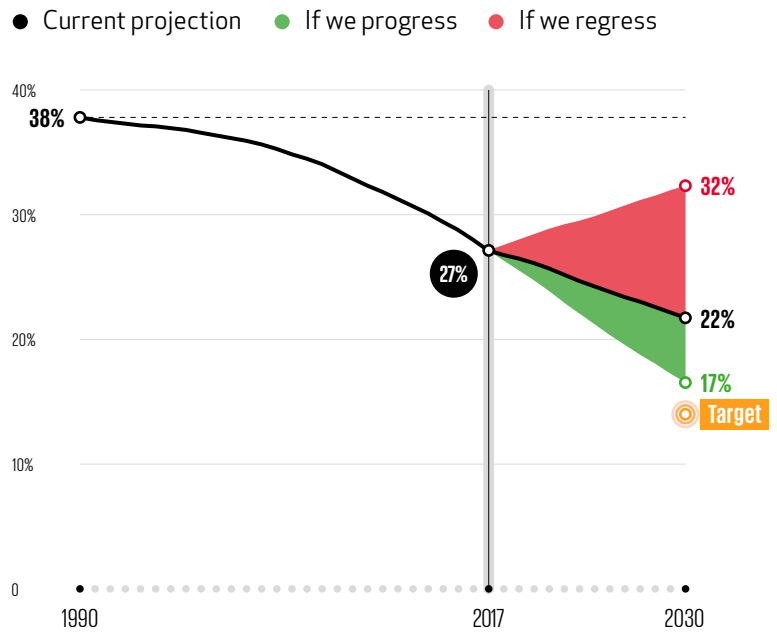
during the years when they devote the most time to child rearing. Across 28 countries, 88 percent of women saw their earnings decline when they had children. Globally, women aged 25–34 are 22 percent more likely than men of the same age to be extremely poor.

If the responsibility of unpaid care work were shared equally and reduced overall, women and girls would be freed to attend school, start businesses, and make their own decisions about how to participate in society and the economy. This would be beneficial not just for an individual woman, but for their families, their communities, and broader economic growth.

STUNTING

Prevalence of stunting among children under age 5

Last year, public and private donors pledged \$3.6 billion in new commitments to nutrition at a summit in Italy. This followed on the heels of the first global nutrition summit in 2013, which put the issue high on the global agenda after years of neglect. These financial commitments have been complemented by new political commitments. For example, the government of India, where one-third of stunted children live, launched the National Nutrition Mission in 2018.

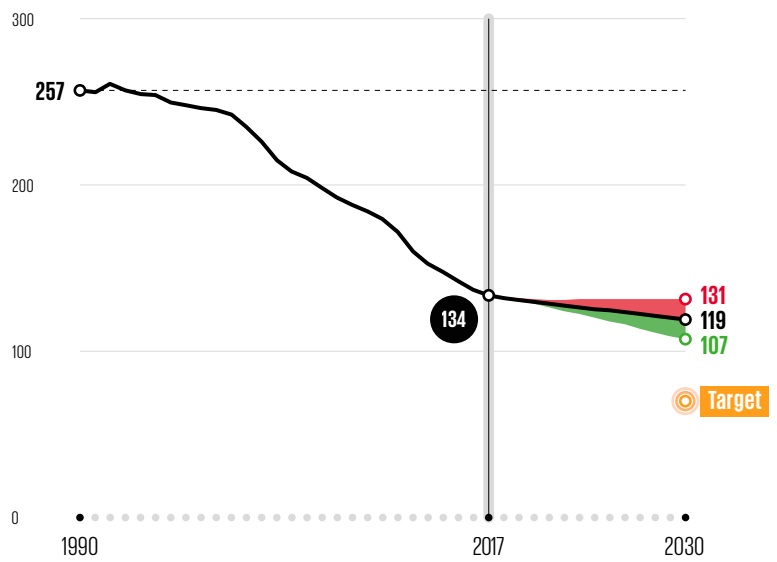


SDG Target: End all forms of malnutrition, including achieving, by 2025, the internationally agreed-upon targets on stunting and wasting in children under 5. Target shown on chart is provisional and has been extrapolated based on existing 2025 target.

MATERNAL MORTALITY

Maternal deaths per 100,000 live births

Postpartum hemorrhage is the leading cause of maternal death. It is treatable in virtually every case, but making sure mothers in low-income countries receive treatment requires innovation. Current guidelines include more than a dozen interventions—too many for health workers in emergency situations to sort through. By simplifying interventions into standardized packages, however, health systems can guarantee that workers have the equipment and the skills to deliver the highest priority treatments when every second counts.

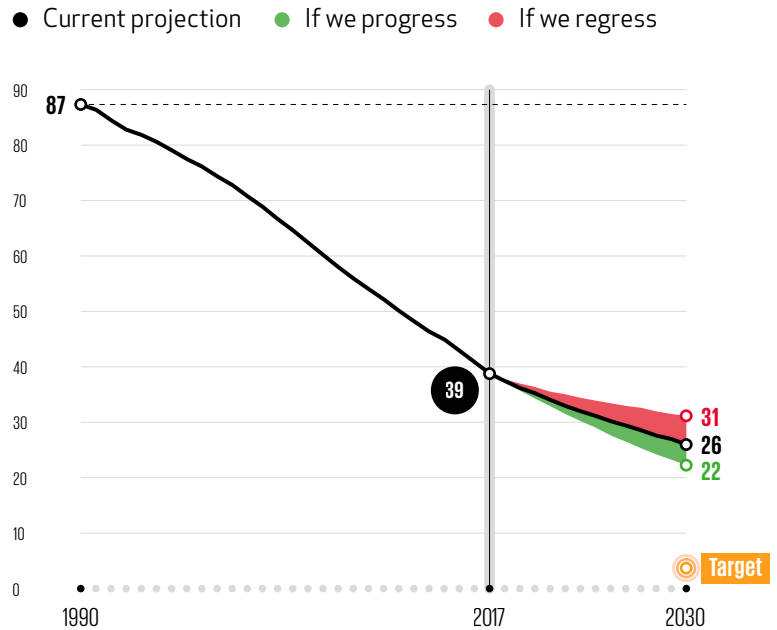


SDG Target: Reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

UNDER-5 MORTALITY

Under-5 deaths per 1,000 live births

Moonshot innovations get attention, but incremental improvements to existing solutions also quietly save lives. The WHO recently approved the first typhoid vaccine for infants; a lower-cost vaccine to protect children from diarrhea caused by rotavirus; and lighter, smaller cholera vaccine packaging (so health workers can carry more doses). Meanwhile, India introduced a key vaccine to protect children from pneumonia, the leading cause of child death. Driving up coverage with solutions that are continually being improved will help the world meet its child mortality target.

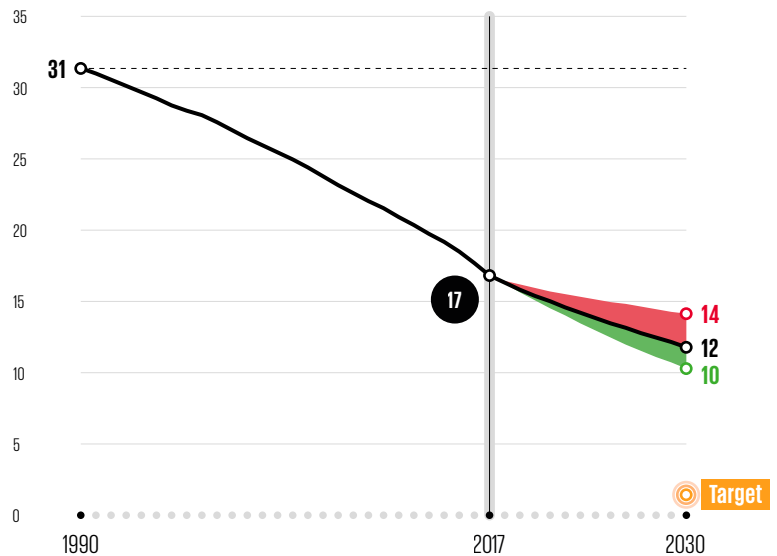


SDG Target: End preventable deaths of newborns and children under age 5, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births. Target shown on chart has been extrapolated from country level to global level.

NEONATAL MORTALITY

Neonatal deaths per 1,000 live births

As the number of newborn deaths continues to drop, we need to focus on the babies who are still dying, understand why, and design interventions that reach them in the right place and at the right time. This requires taking a closer look at the most vulnerable newborns—those whose parents are especially poor, uneducated, or cut off from effective health care by civil unrest, geographic distance, or weak governance.

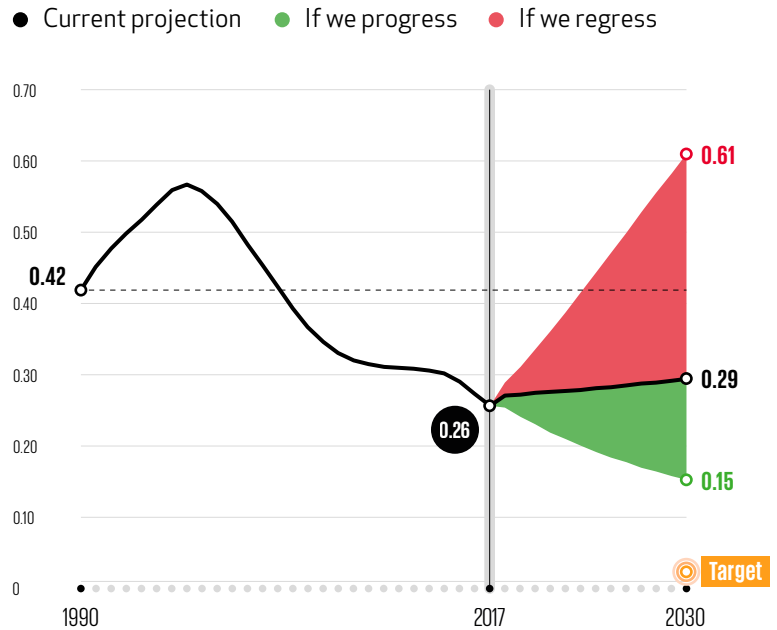


SDG Target: End preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births. Target shown on chart has been extrapolated from country level to global level.

HIV

New cases of HIV per 1,000 people

HIV treatment helps prevent new infections. An important step toward universal treatment is making sure that people living with HIV know their status. Currently, only 70 percent do. Studies from around the world demonstrate that people, especially those who are hard to reach and at risk, prefer self-testing to clinic-based testing. So far, approximately 40 countries have self-testing policies. If that number goes up, the number of new infections will go down.

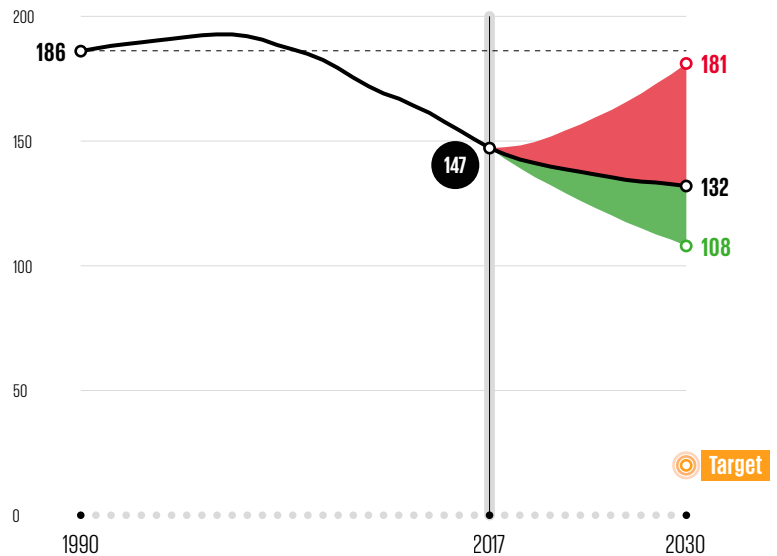


SDG Target: End the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases. Target shown on chart has been extrapolated from UNAIDS target of 200,000 new infections among adults in 2030.

TUBERCULOSIS

New cases of tuberculosis per 100,000 people

India has more TB cases than any other country in the world. The Government of India has responded by tripling its domestic funding to fight the disease and launching a plan to eliminate it by 2025, five years ahead of the Global Goals schedule. India's national plan includes commitments to dramatically increase the number of people tested and successfully treated, especially by focusing on patients who seek care in the private sector.

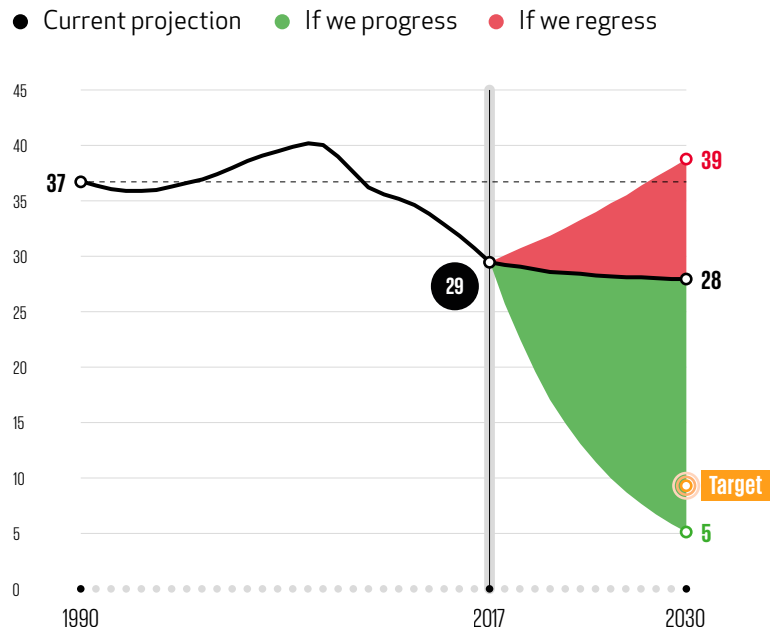


SDG Target: End the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases. Target shown on chart has been extrapolated from Stop TB Partnership target of <20 cases per 100,000 in 2030.

MALARIA

New cases of malaria per 1,000 people

Malaria is at a crossroads. Newly available data has revised estimates of past prevalence higher, but the trendline is the same: More than a decade of progress with an uncertain future ahead. Advances in disease surveillance are helping us forge a path forward. As we work toward reducing the number of cases and eventually toward elimination, we need to increase funding, optimize the use of current tools, and take advantage of emerging surveillance, modeling, and next-generation bed nets.

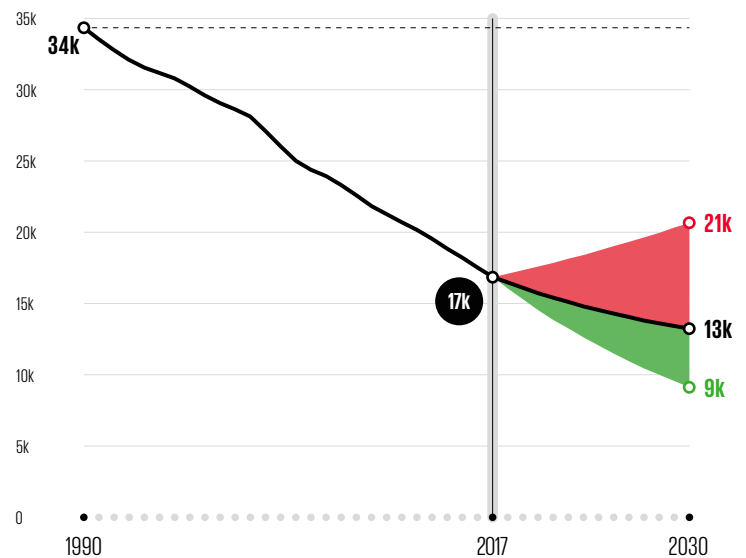


SDG Target: End the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases. Target shown on chart has been extrapolated from the WHO Global Technical Strategy target of reducing incidence by 90 percent.

NEGLECTED TROPICAL DISEASES (NTDs)

Prevalence rate of 15 NTDs per 100,000 people

Recent progress against neglected tropical diseases (NTDs) is due largely to better delivery of existing drugs. To eliminate NTDs, the world needs to continue improving coverage while inventing new solutions. This year, we expect two such innovations to become available: A radically simplified treatment for African sleeping sickness (pills instead of a lumbar puncture followed by in-patient treatment) and a new drug combination for lymphatic filariasis that significantly reduces the time it takes to clear the parasite from a community.

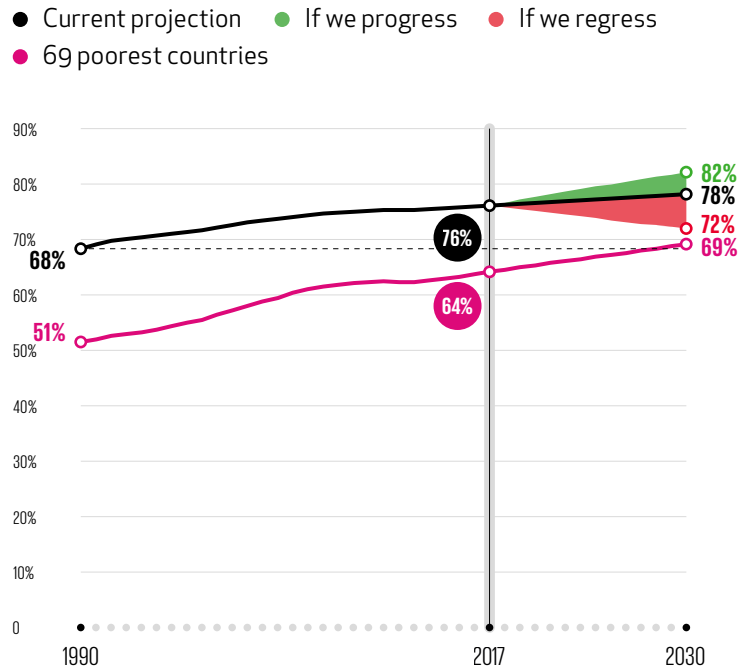


SDG Target: End the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases.

FAMILY PLANNING

Percentage of women of reproductive age (15-49) who have their need for family planning satisfied with modern methods

Providing access to a wider range of contraceptive options is critical to meeting women’s family planning needs, particularly in poorer countries. Studies from sub-Saharan Africa show that gains in implants, now more readily available, are driving increases in overall contraceptive use. Research to develop new methods—and to make contraceptives and high-quality family planning services more available—will significantly improve the wellbeing of women and countries.

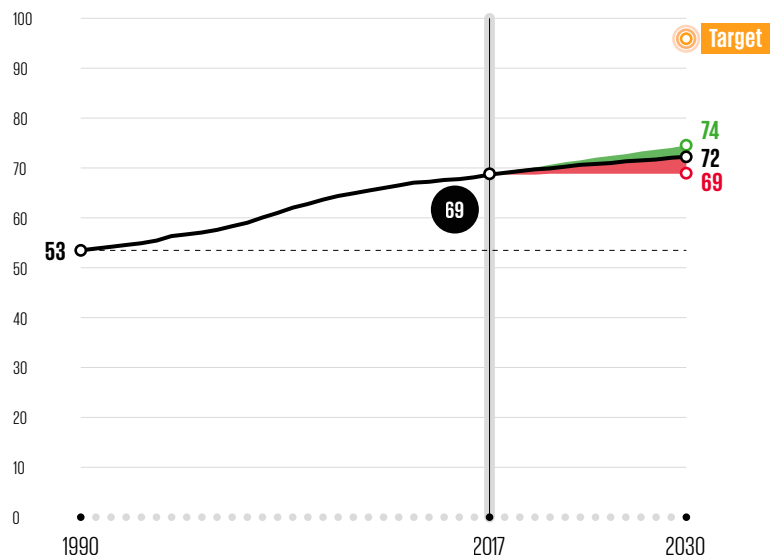


SDG Target: Ensure universal access to sexual and reproductive health care services, including those for family planning.

UNIVERSAL HEALTH COVERAGE

Performance score for coverage of essential health services

Last year, WHO made universal health coverage its top priority. Investing in primary health care, which can meet 90 percent of people’s health needs, is the place to start. In fact, countries’ performance on most indicators in this report depends on strong primary health care systems. The WHO director-general called it “the responsibility of every country ... to pursue universal coverage.” The shape of this curve over time will reveal how governments responded to this challenge.

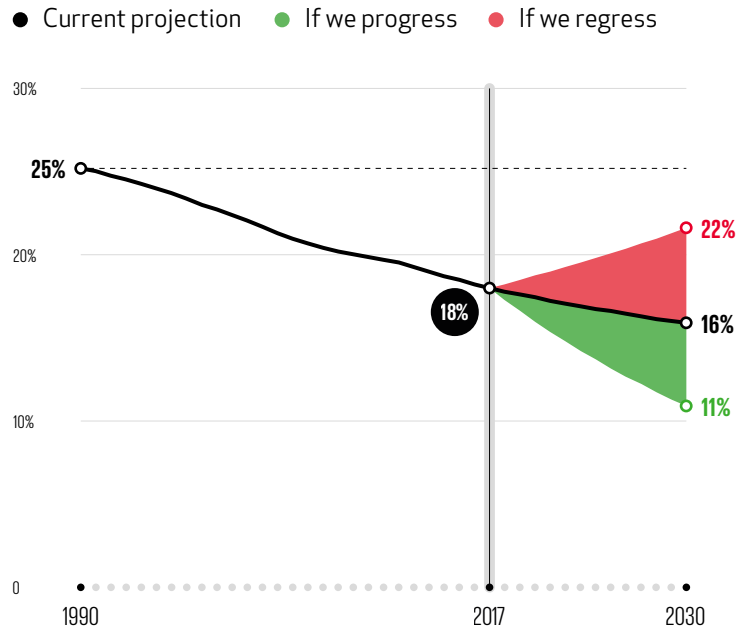


SDG Target: Achieve universal health coverage for all.

SMOKING

Prevalence of current smoking in populations age 10 years and older

Smoking rates are dropping, thanks to price increases associated with tobacco taxes, smoking bans, and other evidence-based practices outlined in the WHO Framework Convention on Tobacco Control. Even if these practices are scaled up, however, millions of smokers will still suffer death, disease, and disability. Alternative tobacco products, including e-cigarettes, aren't harmless, but they may be less harmful. We need to understand whether they could change the course of the smoking epidemic without addicting youth.



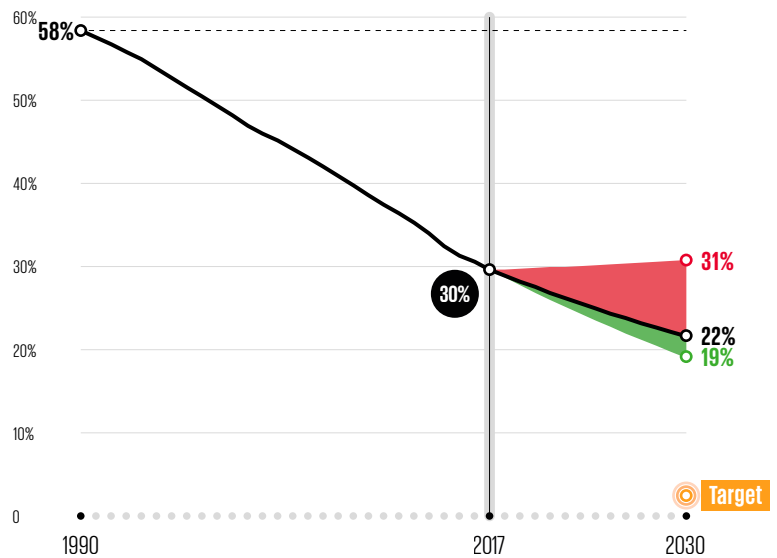
SDG Target: Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries.

SANITATION

Prevalence of populations using unsafe or unimproved sanitation

This chart is based on data that suggests that improvements will come from more sewer connections and wastewater treatment plants, which are expensive and impractical in many places.

We believe we'll see even greater progress by safely collecting and treating more of the human waste currently gathering in pit latrines and septic tanks, and by introducing innovative toilets that kill pathogens but don't rely on sewers.

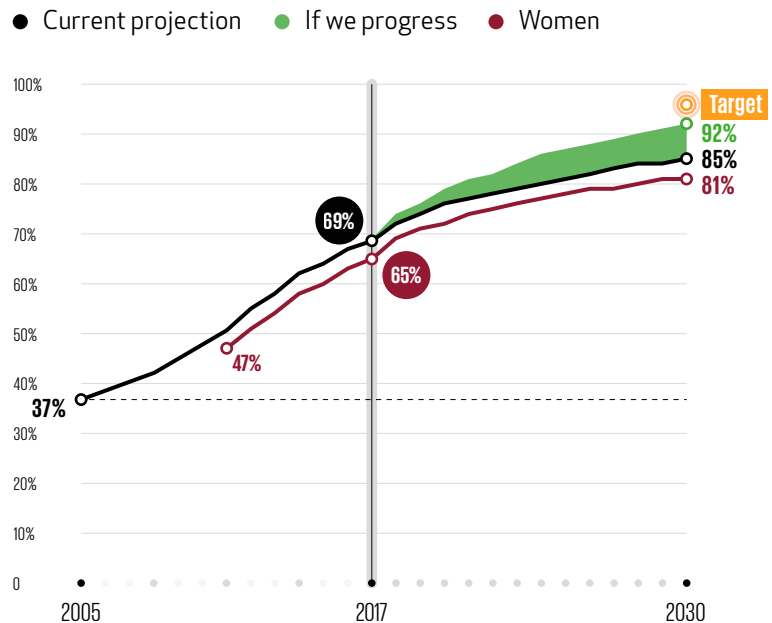


SDG Target: Achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

FINANCIAL SERVICES FOR THE POOR

Percentage of adults (age 15 and older) with an account at a bank or other financial institution or with a mobile-money service provider

According to the World Bank’s Global Findex, since 2014, the share of adults with a bank or mobile-money account has risen from 62 to 69 percent. However, the gap between men and women globally has stayed the same, at 7 percent. This gap is considerably larger in some countries. For example, in Bangladesh, 65 percent of men but 36 percent of women have an account. Financial inclusion can empower the poor. If women and men aren’t included equally, however, inequality will grow instead of shrinking, and countries will fall short of their economic potential.

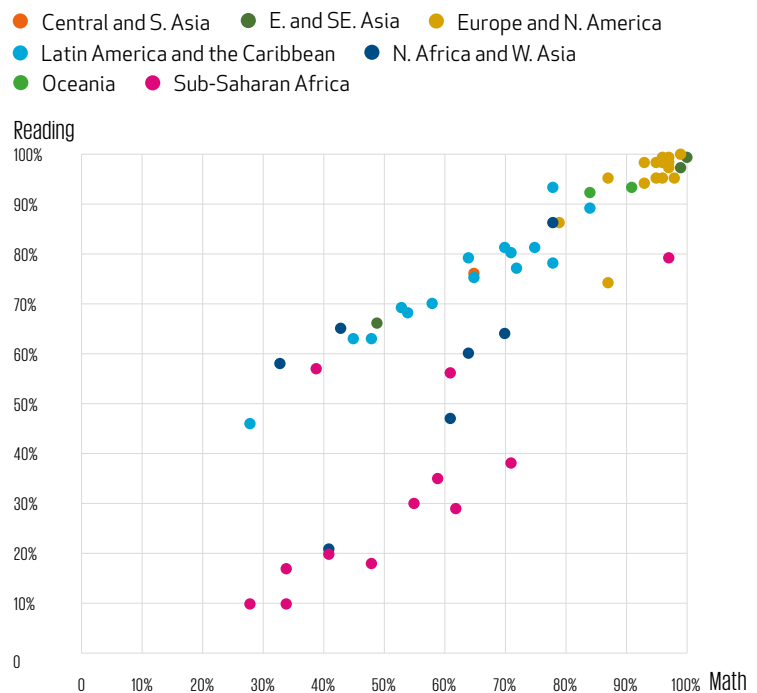


SDG Target: Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance, and financial services for all.

EDUCATION

Percentage of children and young people: in grades 2 and 3; at the end of primary; at the end of lower secondary achieving at least a minimum level in reading and mathematics, by sex

While only 28 percent of countries have data for all three points in time, UNESCO estimates that over 600 million students are not minimally proficient. More countries need to gather data (especially on foundational learning in the early grades) so they can create evidence-based strategies for solving the learning crisis. Encouragingly, at least seven multi-country initiatives now measure literacy and numeracy in grades 2 and 3, including citizen-led assessments in sub-Saharan Africa and a regional assessment in West Africa.



SDG Target: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

INSUFFICIENT DATA: AGRICULTURE

Volume of production per labor unit by classes of farming/pastoral/forestry enterprise size

Most low-income countries in sub-Saharan Africa still aren't collecting data on agricultural productivity and income, because doing so is unusually expensive and labor intensive. Working with a group of donors, U.N. agencies, and countries, our foundation is helping to ramp up efficient agricultural surveys in the countries where there are gaps, with the goal that all countries are regularly funding high-quality surveys in the next decade. This will enable them to continually adjust investments and policies based on evidence about what works.

SOURCES AND NOTES

The data sources for facts and figures featured in the report are listed below by section. Brief methodological notes are included for unpublished analyses. Please visit the websites of our data partners for a detailed description of the methodologies used.

IS POVERTY INEVITABLE?

All data is provided by the Institute for Health Metrics and Evaluation (IHME), 2018. Brief methodological notes are provided below. For more information, please visit www.healthdata.org. All regional classifications follow IHME super-regions, which are regions grouped on the basis of cause of death patterns.

Poverty estimates

Extreme poverty rates measure the fraction of a country's population estimated to live below \$1.90 per day, measured in purchasing power parity (PPP) adjusted dollars. National estimates were extracted for 1980 and 2016 from the World Bank. Spatio-temporal Gaussian process regression was used to estimate a complete time series for all countries using three covariates (GDP per capita, education, and fertility) predictive of poverty. National poverty estimates were estimated for 2017 to 2050 by estimating the year-over-year change in the poverty rate using an ensemble model.

Population estimates

Population estimates are based on a systematic analysis of data on population, mortality, fertility, and migration using a Bayesian statistical model. Projections of mortality and fertility contain a causal component that reflects key drivers and a component that captures residual variation that is correlated in time. For mortality, the causal component includes risks and interventions as well as more distal drivers such as income. For fertility, women's educational attainment and the fraction of women who have their need for family planning met with modern contraception methods are included.

Human capital estimates

Estimates of human capital stock incorporate three components: Educational attainment measured as the average years of schooling; learning or education quality as measured by standardized tests; and functional health status measured as the weighted prevalence of seven health conditions shown to be related to productivity, including stunting. The effect of changes in human capital stock on changes in GDP per capita were estimated using a growth regression and used to model the effect of different future scenarios.

The World Bank's Human Capital Project will release a Human Capital Index later this year.

FAMILY PLANNING

Human Capital and Population Growth data chart "Projected Population in Sub-Saharan Africa" from Track20 Project, 2018. See www.track20.org.

The "U.N. projection" is aligned with the World Population Prospects 2017 revision, medium variant for sub-Saharan Africa. The projected impact of addressing unwanted fertility is estimated by assuming the total fertility rate (TFR) declines rapidly in a 5-year period by overall level of excess fertility based upon the weighted average from 39 Demographic and Health Surveys. The "shift away from early births" scenario keeps the TFR decline consistent with the U.N. medium variant but adjusts age distribution of births over a 5-year period to mimic current age distribution of births for Asia, where there are few adolescent births and most births are concentrated in age groups above the age of 25.

HIV

Three Future Scenarios for Zimbabwe's HIV Epidemic data chart "Up to 364K New Cases of HIV Could be Averted Among 15-29-year-olds" by Leo Beacroft and Professor Tim Hallett of Imperial College using the model from *Smith et al., The Lancet HIV*, July 2016, 3(7) e289-e296, transferring the analysis from South Africa to Zimbabwe.

EDUCATION

Moving from Enrolment to Learning data chart "Percentage of children and adolescents expected to achieve minimum proficiency level in math and reading" adapted from UNESCO Institute for Statistics, "More than One-Half of Children and Adolescents Are Not Learning Worldwide," Fact Sheet No. 46, September 2017. The figure represents the combined proportion of children and adolescents of primary and lower-secondary age who are expected to achieve minimum proficiency level in reading and math by the time they finish primary or lower-secondary school, respectively.

"Vietnam scores as well as high-income countries on international tests, 2015" data chart adapted from Dang, H.H., and Glewwe, P.W., "Well Begun, but Aiming Higher: A Review of Vietnam's Education Trends in the Past 20 Years and Emerging Challenges," *The Journal of Development Studies*, 2018, 54(7): 1171-1195. Data shared by the authors.

AGRICULTURE

Agriculture and Poverty Reduction in Ghana data chart "Percentage of Population Living in Poverty" by International Food Policy Research

Institute (IFPRI), 2018, using IFPRI's Rural Investment and Policy Analysis (RIAPA) model. The Ghana RIAPA model uses a 2013 social accounting matrix to align with the 2012/13 Ghana Living Standards Survey. Ghana's national poverty threshold is used, which defines poverty as an individual considered unable to meet all their food and nonfood needs, which was set at 1,314 Ghanaian cedi per adult per year for 2013. The "current projection" scenario assumes 2006–2013 agricultural and national trends continue until 2030. The "doubling of productivity" scenario increases total factor productivity growth across all crops, livestock, and fisheries until labor productivity level doubles by 2030. Poverty impacts are measured using survey-based microsimulation analysis.

GLOBAL DATA

In last year's inaugural report, we selected 18 out of the 232 SDG indicators to track on an annual basis. This year, we present deep dives on three of the 18 indicators tracked: Poverty, vaccines, and gender equality. We also present data for education and gender equality, which had insufficient data last year. The data is not sufficient to provide a comprehensive global snapshot but nevertheless suggests progress in making more data available.

For the health indicators, estimates are from the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. Methodologies for scenarios: "If we progress" scenarios are derived from setting the rates of change to the 85th percentile of historical annual rates of change across countries. "If we regress" scenarios are derived from setting rates of change to the 15th percentile of historical annual rates of change across countries. Current projections are based on past trends.

For further information on IHME data, read the forthcoming article by Global Burden of Disease (GBD) 2017 collaborators in *The Lancet*.

Poverty

All data is provided by the IHME, 2018. Moderate poverty rates measure the fraction of a country's population estimated to live below \$3.20 per day, measured in purchasing power parity (PPP) adjusted dollars. For more information, please see description above under "Poverty estimates."

Vaccines

IHME's measurement of immunization coverage reports on the coverage of the following vaccines separately: Three-dose diphtheria-tetanus-pertussis (DTP3), measles second dose (MCV2), and three-dose pneumococcal conjugate vaccine (PCV3).

Gender Equality

Munoz Boudet, A., Buitrago, P., Leroy De La Briere, B., Newhouse, D., Rubiano Matulevich, E., Scott, K., Suarez-Becerra, P., *Gender differences in poverty and household composition through the life-cycle: A global perspective (English)*. Policy Research Working Paper No. WPS 8360. World Bank Group, 2018.

UN Women, *Progress of the World's Women 2015–2016: Transforming Economies, Realizing Rights*, 2015. Additional data analysis by Dalberg Advisors, 2018.

Neglected Tropical Diseases (NTDs)

IHME measures the sum of the prevalence of 15 NTDs per 100,000, currently measured in the Global Burden of Disease study: human African trypanosomiasis, Chagas disease, cystic echinococcosis, cysticercosis, dengue, food-borne trematodiases, Guinea worm, soil-transmitted helminths, leishmaniasis, leprosy, lymphatic filariasis, onchocerciasis, rabies, schistosomiasis, hookworm, trichuriasis, ascariasis, and trachoma.

Universal Health Coverage

All data is provided by IHME. Defined by a UHC index of the coverage of nine tracer interventions and risk-standardized death rates from

32 causes amenable to personal healthcare. Tracer interventions include vaccination coverage (coverage of three doses of DPT, measles vaccine, and three doses of the oral polio vaccine or inactivated polio vaccine); met need for modern contraception; antenatal care coverage (one and four visits); skilled birth attendant coverage; in facility delivery rates; and coverage of antiretroviral therapy among people living with HIV. The 32 causes amenable to personal healthcare include tuberculosis, diarrheal diseases, lower respiratory infections, upper respiratory infections, diphtheria, whooping cough, tetanus, measles, maternal disorders, neonatal disorders, colon and rectal cancer, non-melanoma cancer, breast cancer, cervical cancer, uterine cancer, testicular cancer, Hodgkin's lymphoma, leukemia, rheumatic heart disease, ischemic heart disease, cerebrovascular disease, hypertensive heart disease, peptic ulcer disease, appendicitis, hernia, gallbladder and biliary diseases, epilepsy, diabetes, chronic kidney disease, congenital heart anomalies, and adverse effects of medical treatment.

IHME then scaled 41 inputs on a scale of 0 to 100, with 0 reflecting the worst levels observed between 1990 to 2016 and 100 reflecting the best observed. They took the arithmetic mean of these 41 scaled indicators to capture a wide range of essential health services pertaining to reproductive, maternal, newborn, and child health; infectious diseases; noncommunicable diseases; and service capacity and access.

Sanitation

IHME measured households with piped sanitation (with a sewer connection); households with improved sanitation without a sewer connection (pit latrine, ventilated improved latrine, pit latrine with slab, composting toilet); and households without improved sanitation (flush toilet that is not piped to sewer or septic tank, pit latrine without a slab or open pit, bucket, hanging toilet or hanging latrine, shared facilities, no facilities), as defined by the Joint Monitoring Programme for Water Supply and Sanitation.

Financial Services for the Poor

2005 and 2008: International Monetary Fund, *Financial Access Survey*. 2011–2017: World Bank, Global Financial Inclusion (Global Findex) Database. <https://globalfindex.worldbank.org/>

2018–2030: World Bank. An annualized average conversion rate of non-included adults was calculated based upon existing data for 2011, 2014, and 2017 and then applied to each country from 2018 to 2030. Weighted values were used for each country. The projections do not consider growth before 2011 and only use demand-side financial inclusion data. The gender gap remains flat because the available data from 2011, 2014, and 2017 does not show any change in the gender gap.

The "if we progress" scenario is based upon Manyika, J., Lund, S., Singer, M., White, O., and Berry, C., "Digital finance for all: Powering inclusive growth in emerging economies," McKinsey Global Institute, September 2016.

Education

UNESCO Institute for Statistics, *SDG 4 Data Book: Global Education Indicators 2018*, 2018.

PHOTOGRAPHY

Images provided by Gates Archive, with the following additions: Front Cover: A schoolgirl in Nairobi, Kenya. (photo courtesy Alamy Photography) Back Cover/Fold: A classroom in Cibitoke Province, Burundi. (photo courtesy Alamy Photography) Page 5 (photo courtesy National Geographic Creative) Pages 18 and 20 (photos courtesy Ideo.org)

THE DATA

GLOBAL DATA

At-a-glance view of the 18 indicators tracked in the report

- Current projection
- If we progress
- If we regress
- 2030 target

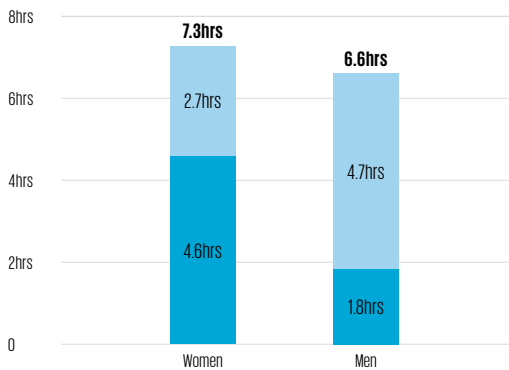
Insufficient Data: Agriculture

Volume of production per labor unit by classes of farming/pastoral/forestry enterprise size

GENDER EQUALITY

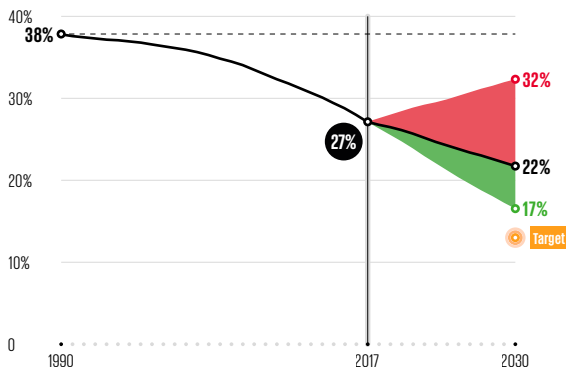
● Unpaid work ● Paid work

Gender distribution of paid and unpaid work, global average



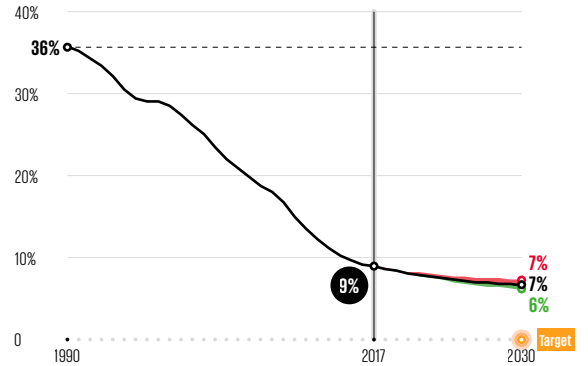
STUNTING

Prevalence of stunting among children under age 5



POVERTY

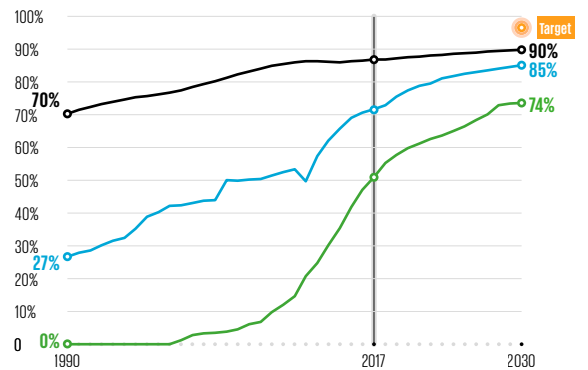
Percentage of population below the international poverty line (US \$1.90/day)



VACCINES

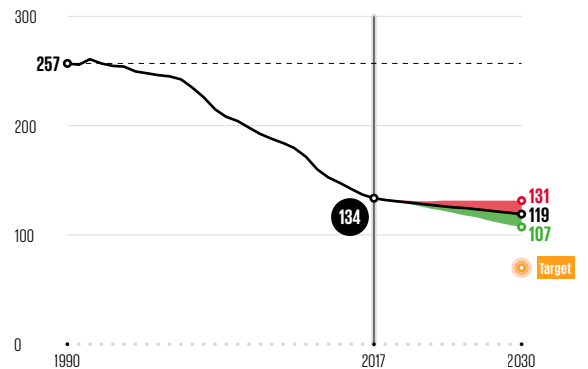
● DTP (3rd dose) ● Measles (2nd dose) ● Pneumococcal (3rd dose)

Global coverage of select vaccines



MATERNAL MORTALITY

Maternal deaths per 100,000 live births



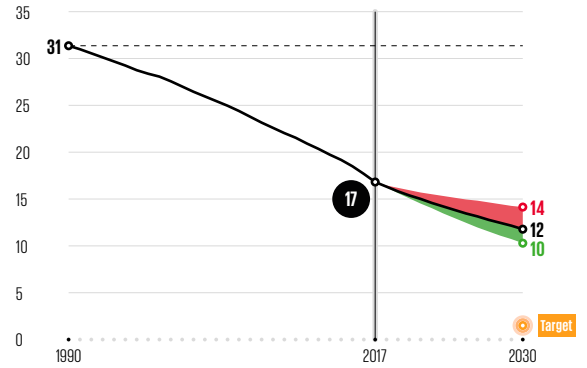
UNDER-5 MORTALITY

Under-5 deaths per 1,000 live births



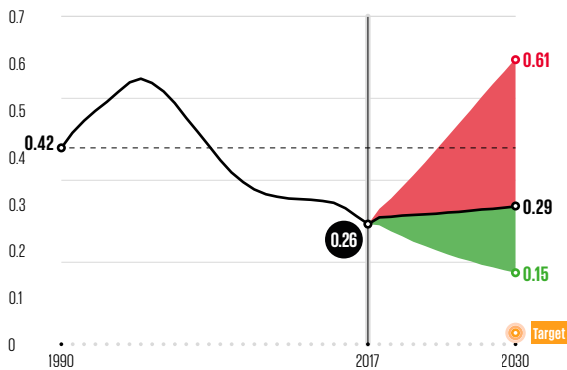
NEONATAL MORTALITY

Neonatal deaths per 1,000 live births



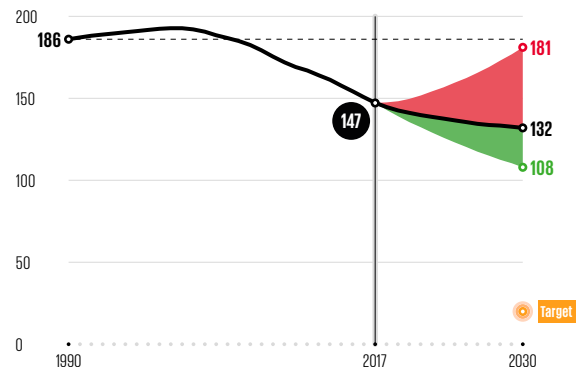
HIV

New cases of HIV per 1,000 people



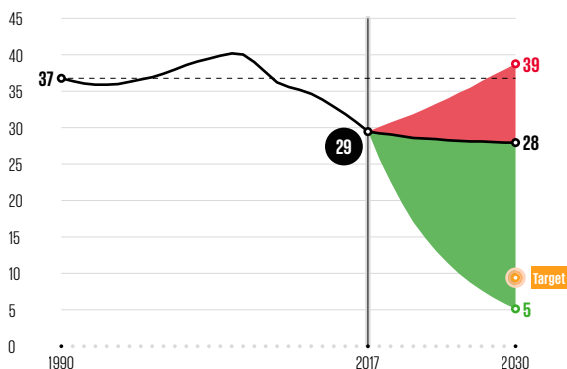
TUBERCULOSIS

New cases of tuberculosis per 100,000 people



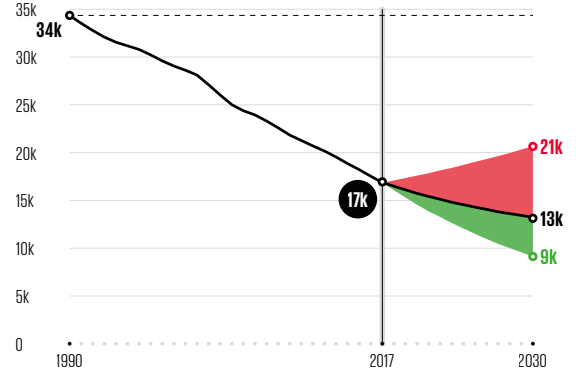
MALARIA

New cases of malaria per 1,000 people



NEGLECTED TROPICAL DISEASES (NTDs)

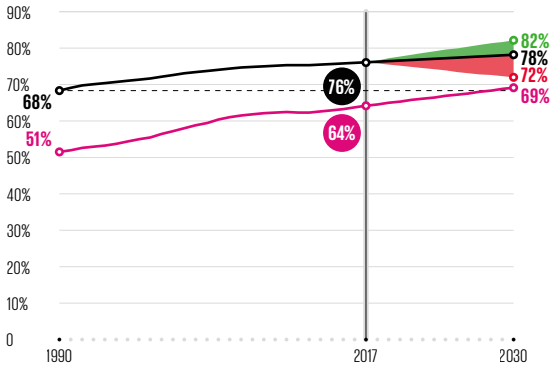
Prevalence rate of 15 NTDs per 100,000 people



FAMILY PLANNING

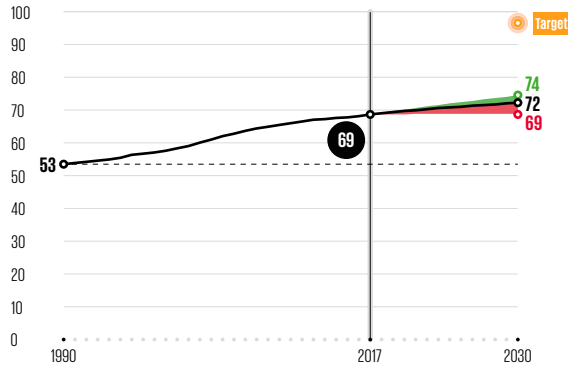
● 69 poorest countries

Percentage of women of reproductive age (15-49) who have their need for family planning satisfied with modern methods



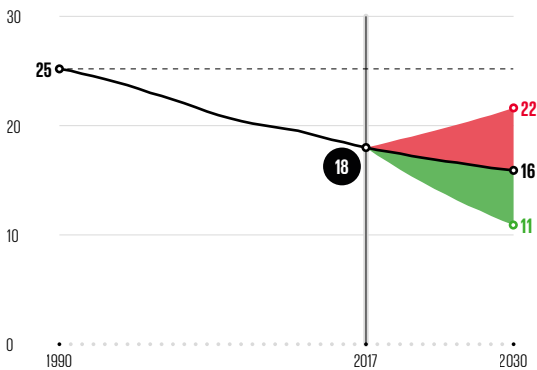
UNIVERSAL HEALTH COVERAGE

Performance score for coverage of essential health services



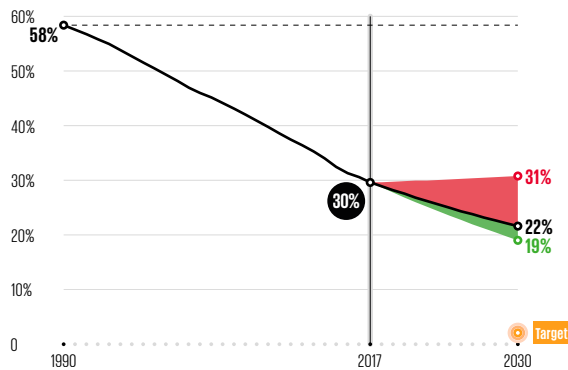
SMOKING

Prevalence of current smoking (vs. daily smoking) in populations age 10 years and older



SANITATION

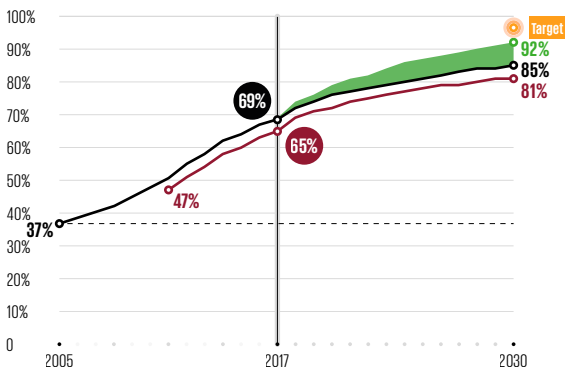
Prevalence of populations using unsafe or unimproved sanitation



FINANCIAL SERVICES FOR THE POOR

Percentage of adults (age 15 and older) with an account at a bank or other financial institution or with a mobile-money service provider

● Women



EDUCATION

Percentage of students in grade 2 or 3 achieving at least a minimum proficiency level in reading and math, both sexes

