AFRICA TRANSFORMING

Scaled up financing for scaled up ambition

VOLUME 2

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Africa

Cover: Using the World Bank Group's Scaling Solar Program, Zambia has been able to procure privately financed solar power and enable its rapid rollout. Construction of Zambia's first grid-connected solar PV power plant is underway at Bangweulu. © *NEOEN*

AFRICA TRANSFORMING

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CATALYZING AFRICA'S TRANSFORMATION

There are countries across Africa driving ambitious development agendas, including pioneering mobile money, adopting renewable energy on a large scale, and investing in human capital.

Development partners are strongly supporting the World Bank in matching this ambition. The 18th replenishment of the International Development Association (IDA), our fund for the world's poorest countries, is the largest in history: targeting $45 billion to 39 IDA-eligible countries in sub-Saharan Africa.

This makes IDA a preeminent provider of development assistance at scale. More importantly, it marks our firm commitment to our client countries and development partners to catalyze transformation and accelerate progress.

We have hit the ground running. In the first year of the IDA18 cycle, we have invested $15.4 billion in new projects and programs across Africa. This is our largest ever single-year commitment of resources and more than 50 percent greater than the annual average during IDA17.

We have injected new IDA financing to help countries like Madagascar raise healthcare and education standards to ensure the very youngest members of society get a good start in life. We are supporting countries across the Sahel in their efforts to curb child marriage and empower girls and women through education and reproductive healthcare. And across the region, we are helping boost the skills and employability of Africa's youth for in-demand jobs that can fuel economic diversification and the fast-growing digital economy.

Andela, a company based in Nigeria and Kenya, is helping to shape Africa's growing digital economy by training software developers and placing them in salaried positions in companies worldwide.

© Dominic Chavez / International Finance Corporation

Under IDA18, we are providing dedicated support to refugees and their host communities in many countries, including Cameroon and Uganda, and helping other countries scarred by conflict and violence rebuild essential infrastructure and social services to increase productivity and economic opportunities for their citizens.

We are helping countries mitigate and adapt to climate change with increased investments in climate-smart agriculture, coastal erosion, and hydro-meteorological services. Indeed, last year our record new commitments generated a 25 percent rate of climate co-benefits, in excess of our target. Examples include the West Africa Coastal Areas program as a globally-significant effort to tackle climate change impacts.

We are also expanding renewable energy markets to address critical energy shortages sustainably. Zambia and the Central African Republic are launching their first-ever large scale solar power plants, and Kenya now has more than half of its energy from climate-friendly sources.

Progress is encouraging, but we must make more and faster. Although Africa's poverty rate is falling, rapid population growth of 2.6 percent per year has led to an increase in the absolute number of people living in poverty. The region continues to face daunting challenges and demand for IDA resources is stronger than ever. By working upstream and de-risking countries through the Maximizing Finance for Development approach, we are empowering the private sector to invest more in Africa's development.

This volume presents these and many other activities that IDA18 is supporting—scaling up successful approaches and backing ambitious new ones that hold tremendous promise. It is an exciting moment for Africa and, with continued IDA support, we are making a difference and building a better future for Africa, together.

HAFEZ GHANEM

Vice President for Africa
World Bank

A surveyor takes the GPS altitude of a water-control canal in Mozambique as part of efforts to mitigate flood and drought damage near the provincial capital of Xai Xai and surrounding areas.


HiPer

BUILDING HUMAN CAPITAL

IDA investments across sub-Saharan Africa are helping to keep girls in school and expand their social and economic prospects.

© Arne Hoel / World Bank

More and more girls are entering vocational training to learn in-demand trades such as plumbing.

© Stephane Brabant / World Bank

BENIN

Encouraging girls to embrace skilled trades

The demand for skilled labor is high in male-dominated fields like construction and car repair. Girls are looking past gender stereotypes to seize opportunities through vocational and technical training.

On the roof of a building under construction in the Camp Guézo district of Cotonou, Jaëlle Hounkanrin and fellow apprentices deftly install pipes between the rods of a slab. She is training to be a plumber and is proud of it.

"I am the only girl on the construction site, but I do the jobs assigned to me just like the boys. I love what I do," she affirms, brimming with confidence.

Hounkanrin is a school dropout who now boards at the Training and Apprenticeship Center in the commune of Pahou (Centre de formation et d'apprentissage de Pahou). She and some 30 other girls at the center are training for so-called men's jobs, braving the social norms.

The center is one of 73 vocational training institutions across Benin supported by the Youth Employment Project financed by the World Bank. With a funding package of $35 million, the project has already helped some 3,500 young people, half of them girls, obtain their professional qualification certificate.

Training for job opportunities

Chantal Médégnon, who holds a certificate in electricity, construction, and industry, saw vocational training as a path toward better employment opportunities. When she left school at the 8th grade, she determined hairdressing and dressmaking were oversubscribed and not to her liking.

"But in construction you are always in demand and can go from site to site," she explains.

While their numbers are small compared to boys, Benin's girls are gaining ground and performing well in vocational training in fields like automobile repair, electricity, cooling and air conditioning, welding, and building construction.

"We want to end the social norms that combine to discourage girls from pursuing these occupations traditionally exercised by men. The model offered by those who are already trained encourages us to urge women to have confidence in themselves and to make the most of their potential," explains Maxime Sogbossi, Project Coordinator.

> **"I am the only girl on the construction site, but I do the jobs assigned to me just like the boys. I love what I do."**
>
> Jaëlle Hounkanrin, plumbing apprentice in Cotonou

Building business skills and more

Besides apprenticeships, the project provides small grants to help young people strengthen their business skills and enter the job market. Already 7,500 young people, half of them girls, have each received CFAF 200,000 (around $370) for this purpose. Many are girls trained in traditionally male occupations.

To further expand their ranks, the project is offering technical and micro-entrepreneurship training in non-traditional trades for 500 girls. It also is providing start-up grants to help them launch and expand their activities.

Momentum continues with three new projects to be financed under IDA18. The Education for Employment Project will build on activities by supporting more young people, including girls, in acquiring the skills needed in priority economic sectors where there is ever-increasing demand for skilled labor. The Youth Inclusion Project will focus on services to promote the social and economic inclusion of young people in various communities. Benin will also join the Sahel Women Empowerment and Demographic Dividend Project, which, among other support, helps girls gain access to scientific and technological subjects and priority economic sectors.

Hadjidjatou Djibrilla, here with six of her 10 children, feels safe in the poor but peaceful commune of Kouba, East Region.

© Odilia Hebga / World Bank

CAMEROON

Linking humanitarian aid to local development

To help poor countries respond to the needs of both refugee and host communities, the World Bank has created the $2 billion IDA18 regional sub-window for refugees and host communities. In May 2018, Cameroon became the first country to benefit.

Hadjidjatou Djibrilla lives in poverty, as do most residents in the commune of Kouba in the East Region of Cameroon. At 38, she has been a refugee for 12 years. She fled her country when fighting between the government and rebel forces intensified.

Cameroon ranks 13th in the world for hosting refugees—seventh in Africa. Almost 350,000 refugees were counted as registered in Cameroon by February 2018, with Central African refugees accounting for 20 percent of the population of the country's East Region and 6 percent of its Adamawa Region. Most may never return home.

"I no longer want to leave," says an emotional Djibrilla. "I feel safe here and my children are growing up in a peaceful environment. The war in my country has not ended, so why should I go back?"

More than half the world's refugees have been displaced for over four years. Their situation can no longer be handled as a temporary humanitarian crisis. A more permanent solution must be found—one that offers a new beginning for refugee men, women, and children, while easing pressure on the communities that host them, which are already very poor.

A new financing mechanism

To help poor countries respond to the needs of both refugee and host communities, the World Bank has created the $2 billion IDA18 regional sub-window for refugees and host communities.

In May 2018, Cameroon became the first country to benefit from this mechanism, with $274 million in additional financing for four current projects in the development and social protection, education, and health sectors. Cameroon is one of the eight countries selected to pilot this new form of integrated assistance, along with Chad, Democratic Republic of the Congo, Djibouti, Ethiopia, Niger, Pakistan, and Uganda.

> **"I feel safe here and my children are growing up in a peaceful environment. The war in my country has not ended, so why should I go back?"**
>
> Hadjidjatou Djibrilla, refugee living in Kouba

Elisabeth Huybens, World Bank Country Director for Angola, Cameroon, Equatorial Guinea, Gabon, and São Tomé & Príncipe, said additional IDA18 resources specially earmarked for refugees and host communes "will allow us to directly target these persons in existing projects, and to provide support to the State, which can very often be overwhelmed with managing the influx of refugees at the regional level."

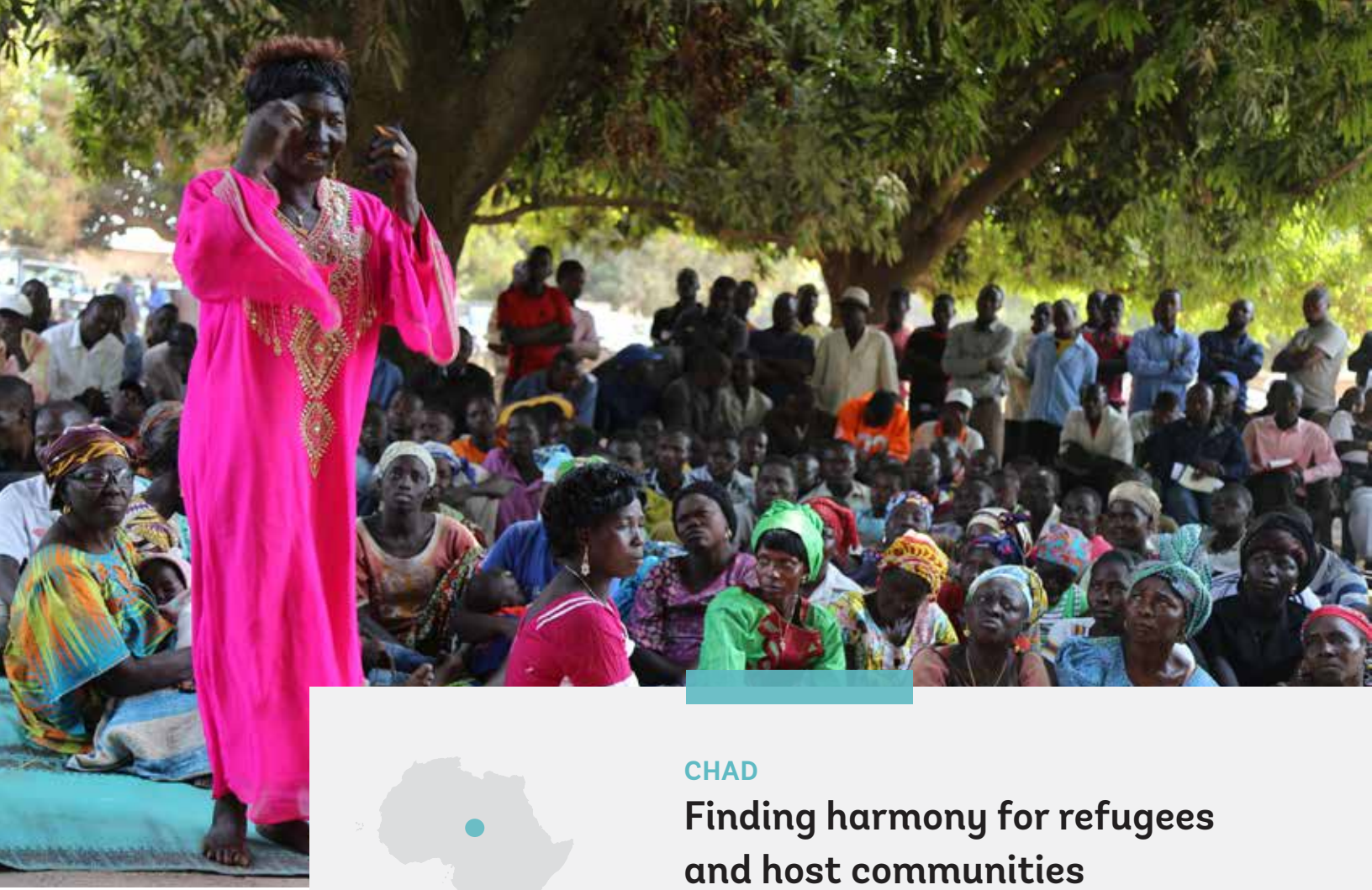
Kouassi Lazare Etien, who represents the UN Refugee Agency in Cameroon, believes "this new approach demonstrates that the presence of refugees can also contribute to the development of host communities."

Benefiting refugees and hosts alike

For example, the third phase of the Community Development Program Support Project will facilitate community development activities and build local government capacity in management and host services. It aims to address the concerns of refugees at the local level, intervening in such sensitive issues as gender-related violence or land tenure.

Activities under the Social Safety Net Project will be stepped up in host regions, with refugees receiving identification documents to help them access Cameroon's national social protection system, employment assistance, and other citizen services.

The Cameroon Education Reform Support Project will assist schools in host regions to integrate children in a normal curriculum and special education programs, as well as bring in more state-paid teachers and textbooks.



Elise Morembaye of the Mekoulom Women's Group in Goré calls for support from partners on behalf of the host community.

© Edmond Dingamhoudou / World Bank

CHAD

Finding harmony for refugees and host communities

The number of people seeking refuge in Chad continues to grow, with over 634,000 refugees, asylum seekers, and internally displaced people identified by the UN Refugee Agency in April 2018. IDA18 funding will improve conditions for refugees and host communities alike.

Some 8,000 people are desperately trying to rebuild their lives in the Dar es Salaam refugee camp located along the banks of Lake Chad in the town of Baga Sola, Chad. Dispersed over several kilometers in endless canvas tents bearing the colors of the United Nations, they are struggling to recover from the trauma inflicted by Boko Haram.

Further away in the far south of the country, the Goré prefecture is also buckling under the weight of refugees. "Here, all the returnees and refugees who fled the war in the Central African Republic (CAR) account for half of the local population," explains Augustin Gongtar, Goré's former prefect.

The Dar Sila region, which straddles the border with Sudan, has sheltered refugees from Darfur for over a decade, and more recently, from CAR. Here, too, the region's former governor, General Moussa Haroun Tirgo, paints a bleak picture, "We are hosting roughly 54,000 refugees in terrible living conditions, with no access to water or basic social services. We are also cut off for five months of the year because of floods."

Improve access to social services

In September 2018, the World Bank approved $60 million in IDA grant funding to help Chad improve access to basic social services and livelihoods for refugees and host communities and to help strengthen national refugee management systems through the Refugees and Host Communities Support Project (PARCA).

There are an estimated 1.1 million direct and indirect project beneficiaries, 30 to 50 percent of whom are refugees located in the refugee hosting areas of the East and South regions and around Lake Chad.

"This grant complements the aid already provided to some 450,000 refugees by local communities, the Government of Chad, and international agencies. This project aims to create the conditions that will enable the gradual integration of refugees into the social and economic landscape of the country and strengthen the national refugee management system," states Soukeyna Kane, World Bank Country Director for Chad, Guinea, Mali, and Niger.

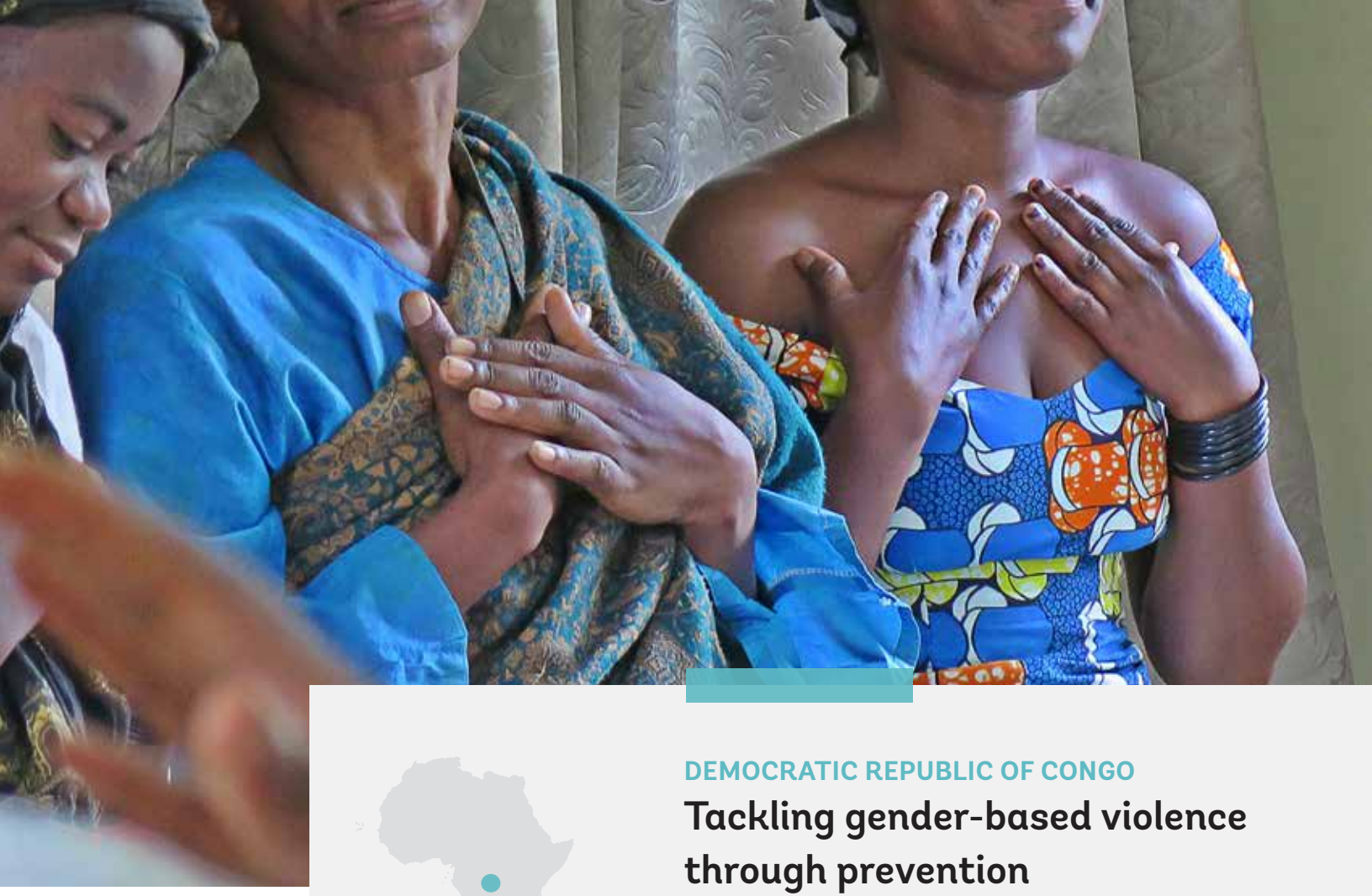
> **This project aims to create the conditions that will enable the gradual integration of refugees.**
>
> Soukeyna Kane, World Bank Country Director for Chad, Guinea, Mali, and Niger

The PARCA will improve access to health and education services with investments to rehabilitate or build new public service infrastructure in refugee hosting areas. It will contribute to the expansion of Chad's social protection system to include vulnerable households in Chadian and refugee communities through cash transfer programs or support for productive activities. Support also will go to the National Commission for Refugee and Returnee Assistance and national mechanisms for refugee protection, registration, and monitoring.

New partnership for comprehensive response

The project was developed by a technical inter-ministerial committee chaired by the Ministry of Economy and Development Planning in collaboration with the UN Refugee Agency (UNHCR), the World Food Programme, European Civil Protection and Humanitarian Aid Operations, and other relevant agencies.

"The UNHCR welcomes this World Bank financing for the Government of Chad, which is part of the new Comprehensive Refugee Response Framework and the humanitarian-development continuum. We stand ready to make a success of this new, inclusive partnership model and replicate it in other projects," affirms UNHCR Representative, Mbili Ambaoumba.



Women practice rhythm exercises during music therapy at Maison Dorcas, a community center set up by the Panzi Hospital.

© Naama Haviv / Panzi Hospital and Foundation

DEMOCRATIC REPUBLIC OF CONGO

Tackling gender-based violence through prevention

In Africa's Great Lakes Region, the World Bank is scaling up its support to help victims of gender-based violence and to stop it from happening in the first place. New focus on prevention and community involvement will help shift social norms.

Pervasive conflict has taken its toll on women in the Great Lakes Region of East Africa. Security remains fragile and public services are weak in the Democratic Republic of Congo (DRC). Burundi has made progress in securing peace, but poverty levels remain high and sexual and gender-based violence is widespread. Rwanda has made dramatic strides since the mid-1990s and plans to redouble its efforts to confront violence against women and children.

In 2014, the Great Lakes Emergency Sexual and Gender-Based Violence and Women's Health Project launched as the first World Bank project in Africa offering integrated services to survivors of gender-based violence. IDA grants totaling $107 million have since made their way to DRC, Burundi, and Rwanda to support health and counseling services, legal aid, and economic opportunities for survivors, as well as to strengthen health services for poor and vulnerable women in the region.

Not just a "private matter"

In DRC alone, 40,000 people, including 29,000 women, have benefitted from these services and support, but more can be done to stop gender-based violence in the first place. In August 2018, the World Bank committed another $100 million in IDA financing to prevent gender-based violence in the DRC.

The new Gender-Based Violence Prevention and Response Project will consolidate gains made under the Great Lakes regional project and take aim at shifting social norms by promoting gender equality and behavioral change through strong partnerships with civil society organizations. In a country where 75 percent of women and 60 percent of men believe that wife beating is justified, involving men and boys in the process will demonstrate that violence is an issue that must be tackled at the community level and is not just a "private matter."

According to Jean-Christophe Carret, the World Bank Country Director for Central African Republic, the DRC, and the Republic of Congo, "Empowering community-based organizations and mobilizing them in the fight against gender-based violence is of crucial importance. As the lack of economic autonomy can be a driver of gender-based violence, the project will also build livelihoods and provide economic opportunities through savings and income-generating activities at the community level."

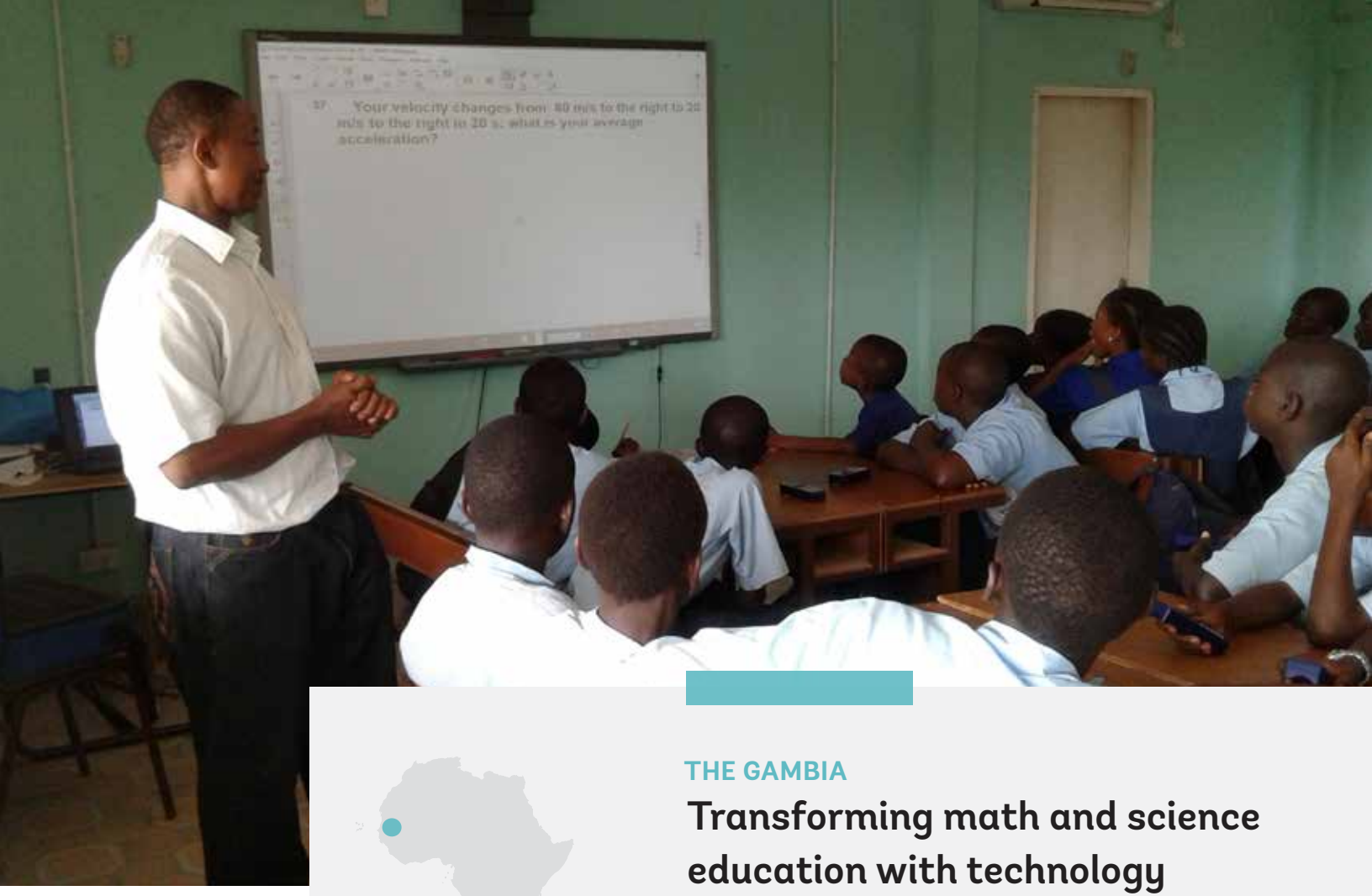
> **Empowering community-based organizations and mobilizing them in the fight against gender-based violence is of crucial importance.**
>
> Jean-Christophe Carret, World Bank Country Director for Central African Republic, the DRC, and the Republic of Congo

Services for survivors, support for all

The new project will reach 795,000 direct beneficiaries over the next four years, 400,000 of whom are women and girls.

A critical mass of qualified and reputable community activists (both women and men), including paralegals, health and social workers, teachers, and religious leaders, will be deployed to implement prevention activities in communities across targeted zones in four eastern provinces. Safe spaces will be established for women and girls at the community level where survivors will have access to psycho-social support and other specialized health services.

In addition, the project will rely on the expertise of existing centers of excellence—the Panzi Hospital and Foundation in South Kivu and Heal Africa in North Kivu—with demonstrated experience in responding to gender-based violence in emergency settings. Both operate mobile clinics in remote areas where insecurity and sexual violence are endemic.



Technology like smart boards and handheld smart responders, combined with teacher training, make math and science classes more engaging and improve learning.

© New Jersey Center for Teaching and Learning

THE GAMBIA

Transforming math and science education with technology

Classrooms in The Gambia are piloting an innovative program that combines technology tools, course materials, and teaching methods to enhance math and science education in secondary school. Test scores prove it works and IDA18 is expanding the program.

To produce the scientists and engineers it needs to solve development challenges and advance socio-economic ambitions, The Gambia has partnered with the World Bank and others to raise the quality of its math and science education. In 2012, a pilot program introduced the Progressive Science Initiative and Progressive Math Initiative (PSI-PMI) in 24 upper basic and senior secondary schools. Developed by the New Jersey Center for Teaching and Learning, this adaptive approach facilitates classroom engagement and student learning through technology.

Dusty chalkboards were replaced with interactive smart boards and classrooms were outfitted with solar panels to overcome the intermittent supply of electricity. Teachers received training and online course materials to standardize the curriculum and make it more student-centered. Students received handheld smart responders to use in class to answer problems in an engaging, game-like manner—and to allow teachers to gauge student understanding in real-time.

Profound effect on learning

According to Samuel Koidia, a physics and math teacher at Nursat Senior Secondary School in Serrekunda, The Gambia's largest urban area, PSI-PMI's methods and use of technology have had a profound effect.

"There is a shift in the whole delivery of the subject matter—a shift in the pedagogy, a shift in the understanding, a shift in the time," he explains. "In the conventional mode of teaching, the teacher must do 80 percent of the work and the student is only given 20 percent of the time to interact. Now, it is the reverse and it is helping students to understand concepts."

Usman Kuraisy, a science teacher at nearby Charles Jow Memorial Academy, says the use of smart responders improves class dynamics and learning by "making it very easy for me to assess my children. As we go along, I see how they are moving—the weak ones, the strong ones—and I know when to go back over my lesson and when to continue."

> **There is a shift in the whole delivery of the subject matter—a shift in the pedagogy, a shift in the understanding, a shift in the time.**
>
> Samuel Koidia, physics and math teacher at Nursat Senior Secondary School in Serrekunda

Both Koidia and Kuraisy see a jump in their students' academic performance and their enthusiasm for math and science. Ansumana Jobarteh, an 11th grader at Nursat Secondary School agrees, "Before PSI-PMI, I was doing fine, but now that I can compare the results, I can say that I love the subject of physics more than before."

Preliminary independent evaluations of the pilot indicate that PSI-PMI students scored 21 percent higher on a math test relative to a comparable group of non-PSI-PMI students from non-PSI-PMI matched schools.

Expanding PSI-PMI

The Gambian government aims to expand PSI-PMI supported by the new Education Sector Support Program. With grant funding of $30 million from IDA18 and $5 million from the Global Partnership for Education, the program expects to benefit over 400,000 school-aged children, including those enrolled in Majalis (religious schools).

In addition to scaling up PSI-PMI in upper grades, it will support systemwide improvements in teacher training and expanded early childhood education initiatives. The curriculum of all core subjects in lower and upper basic schools will also be reviewed, and revised textbooks will be printed and distributed to every school in the country.

Justin is happy to be back in school after two years away. He had to drop out when his parents could not afford fees.

MADAGASCAR

Paving the way for national education reform

In 2009, public spending on education fell as foreign funding plunged following a political crisis. Thousands of children were at risk of being taken out of school. Emergency support has led to scaled up funding that is overhauling basic education.

Justin is 14 years old. He is in 5th grade, but his friends are already in lower secondary school. He had to drop out of school in 2014 when his parents could no longer afford to pay for his education. After the political crisis that shook Madagascar in 2009, his parents were unable to make ends meet.

Justin's mother explains: "My husband is a builder and work was very scarce. I'm a seamstress and it's even worse in a crisis when people don't buy clothes. I have five children and food is our priority. I had to take Justin out of school."

In 2016, his school was able to access funds so Justin could return to class free of charge, but he had been away for two years.

"I have a lot of catching up to do. All my old friends are already in 8th grade, but that's okay. I'm happy to be back at school. I dream of being a teacher," smiles Justin.

Keeping kids in school

Justin's school, Ankadindambo public primary in the Analamanga region, is one of many that benefited from the Madagascar Emergency Support to Education for All Project (MESEA). Launched in 2013 by the World Bank with a Global Partnership for Education grant, it worked to shore up a crumbling education system.

With a sharp drop in foreign financing, public spending on education had fallen since 2010. This meant that nationwide, very few schools were built, teacher and student materials were not supplied, and hardly any schools received government funding.

MESEA aimed to keep as many children in primary school as possible by reducing costs borne by families, paying subsidies to teachers, and providing school kits to students. It supported student learning by providing training for teachers and principals, textbooks, classrooms, school cafeterias, and school grants.

> **"I have a lot of catching up to do… but that's okay. I'm happy to be back at school."**
>
> Justin, 14-year-old student at Ankadindambo public primary

By the end of the four-year project, MESEA was deployed in 12 Malagasy regions, reaching over 2 million direct recipients. Nearly 1.9 million children were enrolled in school, some 20,000 teachers got paid, and over 5 million school kits were distributed. In Madagascar's three drought-stricken regions in the south, MESEA enabled over 100,000 children to have meals in school cafeterias. More than 260 classrooms were built, and over 50,000 teachers trained.

New funding, largest ever for education

MESEA also paved the way for the newly launched Basic Education Support Project funded by the World Bank and the Global Partnership for Education. The $100 million project is designed to improve learning outcomes in the first two years of basic education in Madagascar.

This funding, which includes $55 million from IDA18, is the highest ever granted to assist education in Madagascar. It will support the implementation of reforms outlined in the country's 2018–2022 Education Sector Plan.

The project aims to reach over 4.7 million beneficiaries. That includes enrolling 4.6 million children in primary school and 80,000 children in early learning centers, as well as training 35,000 primary school teachers, 6,500 pre-primary community educators, 4,000 community-school board members, and 20,000 principals and local supervisors.

Health service professionals work in a health center in Nampula Province, rural Mozambique.

© Gustavo Mahoque / World Bank

MOZAMBIQUE

Keeping medicines stocked and students learning

Weak public financial management was hurting the medicines supply chain and school performance in Mozambique. By pioneering an IDA results-based financing approach, health and education systems improved—and financing flowed—as targets were met.

Mozambique's medical sector was in trouble: inadequate planning, procurement, warehousing, and distribution of medicines had led to recurrent stock outs. Reports of stolen or damaged medicines were frequent. Lack of medicines at service delivery points impacted care and treatment outcomes.

The education system was also in crisis. Weak school governance, limited community participation, ineffective supervision, high absenteeism, and delays or the diversion of school funds contributed to low student retention, low completion rates, and poor learning outcomes.

In 2014, Mozambique launched its Public Financial Management for Results Program for Health and Education to bring more transparency and efficiency to spending and management in these two key sectors. It featured the World Bank's new Program for Results instrument.

Untested at the time, this IDA instrument disburses funding in a phased manner and based on the achievement of pre-agreed targets. This pioneering project paved the way for sectors to create specific incentives to drive behavior change at the sub-national level and across stakeholder groups.

Progress is significant

"Medicines only have value when they reach the right patient at the right time," says João Grachane, a senior officer at Mozambique's Ministry of Health. He has seen the project shift practitioners' attention from inputs to results, decisively improving the medicines supply chain.

Key progress includes a substantial increase in the availability of essential maternal health medicines at the facility level, from 79 percent in 2013 to 86 percent in 2015, as well as a sharp decrease in the number of treatment sites with stock outs of antiretroviral drugs, from 27 percent in 2013 to 5 percent in 2015.

The education system is also faring better under the project. Matilde Xilume, primary school director at EP1.2 of 3 de Fevereiro, explains that before the project, the school's functioning was constantly disrupted by delays in grant allocations meant to procure basic learning materials and support the most vulnerable children.

> **Medicines only have value when they reach the right patient at the right time.**
>
> João Grachane, senior officer at Mozambique's Ministry of Health

"We now receive our grant allocations at the beginning of the school year, a major improvement as it allows us to plan better at the beginning of the year," says Xilume.

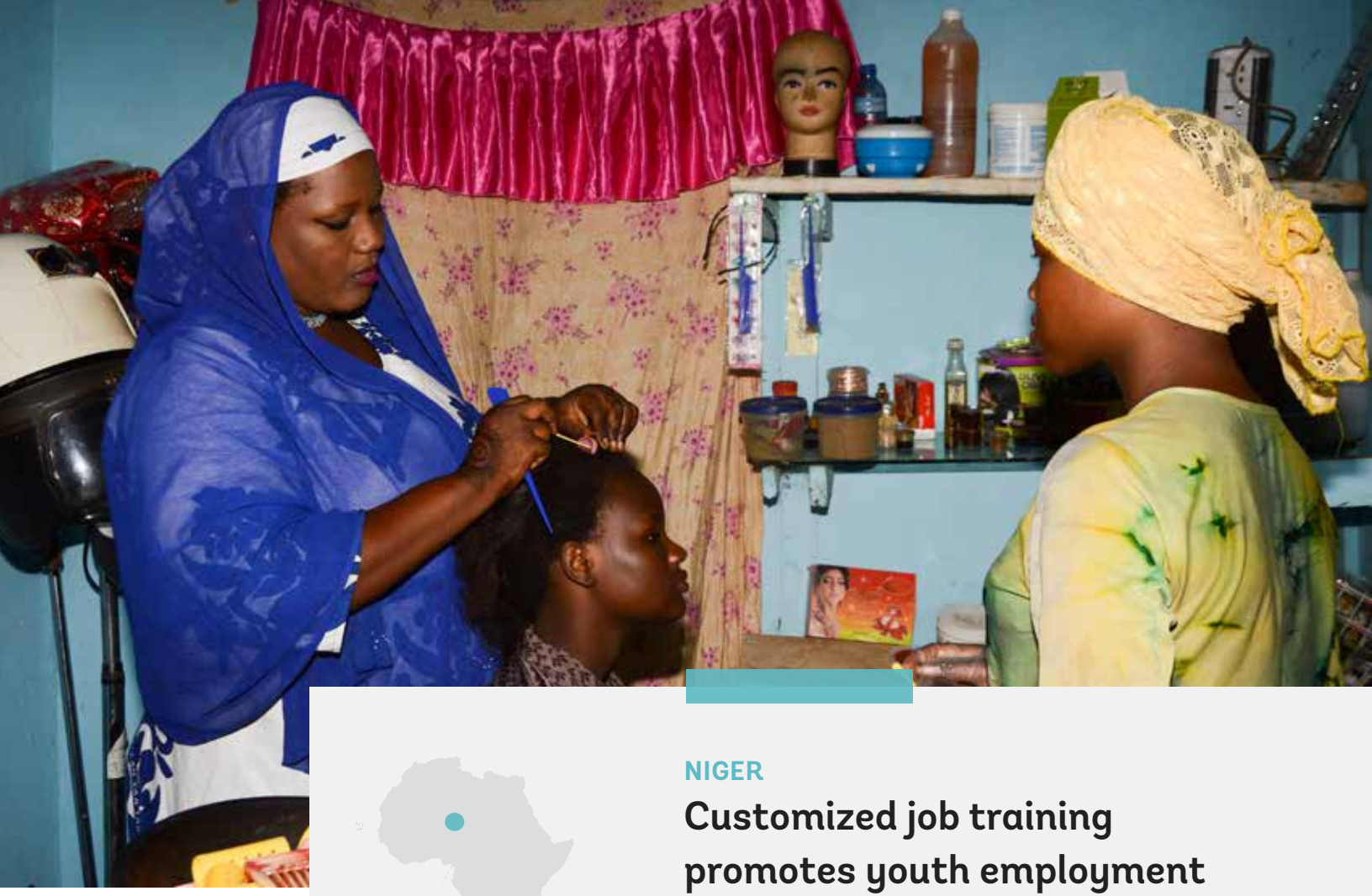
All 1,300 primary schools under the project are benefiting from more reliably delivered funding.

Working together to find solutions

The project, which is in its final stages of implementation, has provided a unique support structure to create a network of reinforcing incentives. A capacity building window has ensured that sector stakeholders collaborate more with public financial management agencies to get the resources they need to deliver services and improve institutional know-how.

"The project adopted an innovative problem-driven and iterative approach," says Humberto Cossa, World Bank senior health specialist. "Frontline implementers focused on identifying bottlenecks to the achievement of results in their sectors, bringing people out of their silos to craft integrated solutions."

Building on this successful approach, Mozambique has launched a new Primary Health Care Strengthening Program for Results. It is benefiting from additional results-based grant financing of $105 million, including $80 million from IDA18, to improve reproductive, maternal, child, and adolescent health and nutrition services in underserved areas.



Roumanatou Kailou (left) attended a free two-year training course to become a hairdresser.

© Djamilou Oumarou / World Bank

NIGER

Customized job training promotes youth employment

Every year, some 350,000 young Nigeriens enter the job market, but most (90 percent) do not have the right qualifications for available positions. Niger is focused on equipping its youth with the skills they need to find work and build careers.

Twenty-five-year-old Roumanatou Kailou lives and works in Niger's capital of Niamey where she earns her living as a hairdresser. Like many young Nigeriens, she was forced to abandon her studies after secondary school due to financial constraints. As she got older and began looking for work, Kailou realized her job options were limited. She felt like a burden on her family.

"My life was reduced to sleeping and eating. I had no job, and I could not help my family," she recalls.

It was at this time that she heard about free training courses for dropouts and out-of-school youth to learn skilled trades, such as cosmetology, carpentry, and masonry. Kailou signed up.

"I took a two-year course in women's hair styling. We alternated between theoretical coursework and practical internships. We also received funding for transportation so that we could travel to our work placements," Kailou explains.

Today, with a comb and hair dryer in hand, Kailou happily uses the knowledge she gained and hopes to open her own hair salon one day.

Skills development for growth

Kailou is among 13,000 young Nigeriens (43 percent female) who have benefited from the World Bank's Skills Development for Growth Project (PRODEC). Launched in 2014 with $30 million from IDA, it is working to improve the effectiveness of formal technical and vocational training, short-term skills development, and apprenticeship programs in priority sectors, such as civil engineering and construction, food processing, hospitality, agriculture, and telecommunications.

PRODEC addresses the deficit between jobs and skills that block youth employability and development. Of the 350,000 young people entering the job market every year, 90 percent lack the necessary qualifications for available jobs.

> **I was hired by a large food processing company because I interned there and proved myself to them.**
>
> Hamsatou Idi Moussa, former intern of PRODEC-supported program

This skills shortage is compounded by the fact many in the young workforce have not completed school beyond the primary cycle. According UNESCO, over 197,000 Nigerien children left primary school prematurely in 2013, a leap from 55,000 recorded in 1999. The National Statistical Institute put school enrollment at 76 percent in 2016 (70 percent for girls and 82 percent for boys).

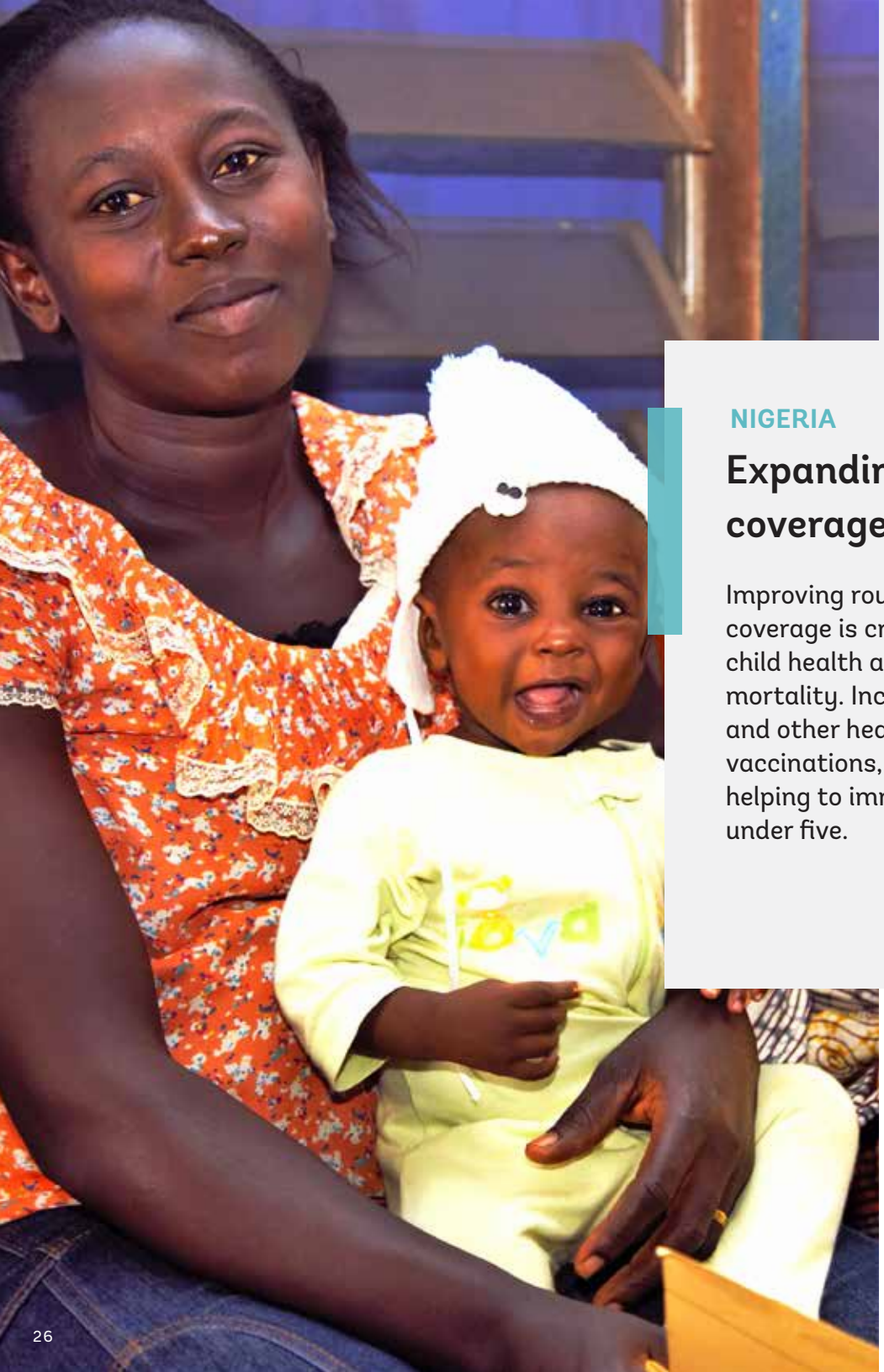
From school to work

In addition to supporting programs for out-of-school youth like the one Kailou attended, PRODEC also helps to improve the school-to-work transition. Some 3,500 young graduates of technical secondary education programs and higher (half of whom are female) have benefited from PRODEC-backed internship programs that connect graduates with potential employers. According to a 2017 National Employment Agency study, 70 percent of interns were able to use their experience as a springboard to full time employment.

After completing her bachelor's degree in logistics, 25-year-old Hamsatou Idi Moussa, struggled to find work. An internship opportunity made all the difference.

"I was hired by a large food processing company because I interned there and proved myself to them," she says.

To continue PRODEC's momentum and expand training support to the agriculture and livestock production sectors, the Government of Niger and the World Bank signed an agreement for $50 million in additional IDA financing in June 2018.



NIGERIA

Expanding immunization coverage to eradicate polio

Improving routine immunization coverage is critical to improving child health and reducing infant mortality. Incorporating vaccines and other health incentives, like polio vaccinations, into primary care is helping to immunize more children under five.

Blessing Sunday and her son awaiting treatment at the Karu Health Center in Nasarawa.

© Chuka Agu / World Bank

"My friend said positive things about the care she received at the facility, so I came for my prenatal, which was very good," says Blessing Sunday, a patient at the Karu Health Center in Nasarawa, Nigeria. She now brings her son to the center for his immunizations.

Like Sunday, millions of women across Nigeria are benefiting from improving maternal and infant health care. Since 2012, the World Bank has partnered with the Government of Nigeria to support its mandate to increase the delivery and use of high impact maternal and child health services. Over $900 million in IDA funding has facilitated projects like the Nigeria Program to Support Saving One Million Lives, the performance-based financed Nigeria State Health Investment Project, and the Nigeria Polio Eradication Support Project.

Recent approval of $150 million in additional financing from IDA18 is giving the Polio Eradication Support Project the push it needs to staunch a recent recurrence of polio cases and further improve routine immunization coverage with oral polio vaccines to achieve a national target of 85 percent coverage in 18 months.

Getting to zero on polio

The road to ending polio in Nigeria has been difficult. In 2006, the country had 1,222 confirmed cases, the most in the world. Through concerted national efforts, cases were reduced to just one in 2014, and by 2015, the World Health Organization certified that Nigeria had halted transmission. But hope vanished in 2016 when four new polio cases were confirmed in the northeastern state of Borno, itself beset with violent conflict.

While no new cases have been reported since, Nigeria is using the additional IDA financing to improve immunization coverage and accessibility to children in conflict and insecure areas and to strengthen the management of its polio immunization program.

It is calling on joint military and civilian task forces to provide updates on the situation in inaccessible areas and to serve as security escorts, and even vaccinators, in partially accessible areas. These are also being used to support mobile outreach teams, deployed to vaccinate underserved children in internally displaced populations and settlements.

> **"My daughter's vaccinations are all current because I know how important they are in keeping her healthy."**
>
> New mother Bilkisu Awal

Vaccines part of primary care

Nationwide, routine oral polio immunization coverage is at 80 percent, a benchmark that has been met even in 98 percent of the country's high-risk areas, despite persistent insecurity. Nearly 50 million children have been immunized against polio under the project. Nigeria has been able to achieve this—overcoming deeply-rooted beliefs and misconceptions held by many—by incorporating vaccines and health incentives, such as the polio vaccination, into primary health care.

The goal is to vaccinate all children under five and reduce the risk of child mortality.

New mother Bilkisu Awal chose to give birth at home rather than the hospital, despite the quality of prenatal care she received. Yet, she returned to her primary health care center with her baby.

"I received prenatal care at a health care center; however, due to our family's belief, I delivered my daughter at home. But her vaccinations are all current because I know how important they are in keeping her healthy," says Awal.

Thanks to VUP employment, small business loans, and training, Gaudance Mukagasana has been able to build a house and a better life for her family.

© Rogers Kayihura / World Bank

RWANDA

Working her way out of poverty through social protection

Rwanda is putting its people to work to get out—and stay out—of extreme poverty through its robust public works and social protection program. It has employed 800,000 households nationwide and has plans for more.

Gaudance Mukagasana felt completely lost when her husband left, leaving her to raise their three children alone. Young and unemployed, she moved in with her mother and desperately tried to eke out a living on the small family plot in Nduba in central Rwanda.

"He was our sole bread earner. It was like the world had crumbled right before me," remembers the now 40-year-old Mukagasana.

A lifesaver came in 2013 when she was accepted in the Vision 2020 Umurenge Program (VUP), the Government of Rwanda's flagship social protection program. Supported by the World Bank through the Social Protection Project, VUP aims to eradicate extreme poverty and malnutrition, as well as strengthen household resilience and promote socio-economic transformation, by accelerating graduation from extreme poverty.

Public works program

Mukagasana joined the VUP's public works program, which provides paid employment to able-bodied adults from extremely poor households. With the salary she earned participating in the construction of agricultural terraces, she was able to cover her family's basic needs and even save a little. She eventually got basic business training and a VUP micro-credit of RWF 60,000 (about $70) to invest in vegetable farming to supplement her income.

"To me, the training is the most important asset I received," Mukagasana says. "It instilled in me a sense of confidence, opened my eyes to the many available services and opportunities, and taught me how to use them to improve my life."

That she has. Mukagasana has since led her community in launching a hybrid goat farming cooperative, a venture that is paying off. She has been able to build a comfortable house of her own and send her children to college. Mukagasana has graduated from the program with financial independence and a true sense of security.

> **"To me, the training is the most important asset I received… It opened my eyes to the many available services and opportunities."**
>
> Gaudance Mukagasana, resident of Nduba and VUP graduate

Strengthening social protection system

Since the VUP's inception in 2008, its public works component has employed more than 800,000 households and generated more than 40 million paid working days for some 2,200 projects. Expanded public works were launched in 2016 to offer flexible year-round work schedules to moderately labor-constrained households caring for children. Some 13,000 households, most headed by women, are participating across 80 sectors. The VUP's direct support (cash transfer) component now covers the entire country, with over 96,000 households as of 2017.

According to Yasser El Gammal, the World Bank's Country Manager in Rwanda, "The World Bank partnership with the Government of Rwanda has played a key role in positioning Rwanda among global leaders in building an integrated social protection system."

As the Social Protection Project ended in 2017, the World Bank reaffirmed its support with $80 million in IDA18 financing for a new Strengthening Social Protection Project. Another $23 million in additional financing from other sources was approved in April 2018. The project is supporting the government in further improving the coverage, quality, and delivery of social protection. Its focus is on scaling up the VUP and introducing innovations, such as home-based childcare and direct support, to meet child and nutrition goals—particularly to help overcome childhood stunting.

Uganda is committed to maintaining a progressive approach to refugee management and improving the resilience and coping ability of refugees and their host communities.

© Dorte Verner / World Bank

UGANDA

Renewing support and hope in refugee host communities

With a refugee population of 1.5 million, Uganda is the biggest refugee hosting nation in Africa and third in the world. Often overlooked by humanitarian aid, poor host communities are receiving new attention and support to improve their lives.

Edith Kwarisima is a resident of Kyarugaju, a poor village near the Nakivale Refugee Settlement Camp in the Isingiro district of southern Uganda. Refugees have been coming to this camp since the 1960s, and 52-year-old Kwarisima has grown up around them.

Uganda's refugee policy is considered one of the most progressive and generous in the world, providing free healthcare and education in refugee settlements and permitting refugees to move and work freely. Refugees are allocated plots of land to settle and farm, which has enabled more self-reliance and integration into local communities.

This has brought benefits to the local communities through increased demand for goods and services, creating employment and income spill-over. But the continued swell in refugee numbers since 2016, due to conflicts in neighboring countries, has increasingly strained social services and the environment as well as the coping abilities of local host communities.

Efforts by the government and humanitarian organizations have largely concentrated on refugees, but more can be done for the communities that have given them a new home.

"The refugees have good health facilities within an easily accessible range and have drugs all the time. We don't have such privileges," explains Kwarisima. "Getting health services here is a nightmare. You can't even make a phone call during an emergency because we don't have network."

Scaling up support for all

The Government of Uganda hopes to turn the tide by improving service delivery, expanding economic opportunities, upgrading municipal infrastructure, and improving access to water, health, and education in refugee hosting districts. Additional financing of $283 million from the IDA18 regional sub-window for refugees and host communities will help make it possible by scaling up support to World Bank-financed projects already underway.

> **This project has given us a lot of hope that things will be better for all of us.**
>
> Robert Kyomuhendo, resident of host community Kyarugaju

So far, Uganda has accessed financing under the IDA sub-window for two operations: $50 million for the Support to Municipal Infrastructure Development Program to improve physical planning, land tenure security, and small-scale infrastructure; and $58 million for the Integrated Water Management and Development Project to improve access to water and sanitation services for several rural and urban refugee hosting communities in Uganda.

Two other operations are still under preparation: The Secondary Education Improvement Project and the Development Response to Displacement Impacts Project (DRDIP), a regional program in the Horn of Africa to expand existing social and economic infrastructure and boost income-generating activities for both refugees and host communities.

Addressing needs of hosts

DRDIP in Uganda, supported by a $50 million IDA grant, is working to protect the interests of host communities in 11 districts, including Kwarisima's. She and fellow residents of Kyarugaju are pleased to see construction begin on a new local health clinic, and they look forward to new school classrooms to ease overcrowding and other improved amenities.

Neighbor Robert Kyomuhendo says, "this project has given us a lot of hope that things will be better for all of us."

Robert Limlim, Director of DRDIP, agrees: "With more support, we believe the lives of the locals who are hosting refugees will improve."

African governments aim to empower girls to harness their countries' greatest asset: their youth.

© Dorte Verner / World Bank

WEST AFRICA AND THE SAHEL

Empowering women and girls to unleash their potential

Women constitute a well of untapped potential in Africa's Sahel region. With continued schooling, spaced pregnancies, skilled labor, and better gender dynamics, women can contribute much more to household income and national economic growth.

Across the Sahel, it is difficult for a girl to continue her schooling. After several years of primary education, she might not be able to read and write because of the poor quality of the education she has received. As she moves into adolescence, her parents might see early marriage as a way of protecting her from the social exclusion that pregnancy outside of marriage would cause.

Settling their daughter into a new home is considered a parent's moral duty, and marriage a primary avenue toward securing a daughter's future. As a result, the Sahel has the some of the world's most alarming rates of child marriage. In Niger, 77 percent of women aged 25 to 49 years old were married before their 18th birthday.

Child marriage is haram

In May 2018, in the context of the Sahel Women Empowerment and Demographic Dividend (SWEDD), influential Muslim scholars and religious and traditional leaders from seven countries gathered in Nouakchott, Mauritania, to develop action plans for leading community-based dialogue on the challenges faced by adolescent girls in order to promote healthier, more productive families.

The event was hosted by the Ministry of Islamic Affairs and Original Education and the Oulémas (theologians) of Mauritania. It was preceded by a theological debate, led by the University of Al-Azhar, on the position Islam takes on issues related to child marriage, maternal and child health, family planning, girls' education, gender-based violence, and women's economic and social empowerment.

Engaging with the Muslim scholars, the message from the Grand Imam of Al-Azhar was clear: Child marriage in the eyes of Islam is haram (forbidden by Allah).

Participants agreed to establish a network that runs from a nation's top scholars to religious leaders at community level to focus on enabling girls' social and economic empowerment in rural areas of the Sahel. The second phase of this effort will see a more comprehensive inclusion of Christian and traditional leaders as agents of positive change.

> **A major problem for girls is the non-application of the precepts of religion, which grants the same priority to the teaching of boys and girls.**
>
> Saadani Marakchi, former Minister of Islamic Affairs and Original Education, Mauritania

Championing the rights of women and girls

This is just one of the many interventions that the countries involved in the SWEDD are undertaking to champion the rights of women and girls. Initiated by the presidents of Burkina Faso, Chad, Côte d'Ivoire, Mali, Mauritania, Niger, and Chad, SWEDD encourages ministries to work across sectors and borders to help more than 100,000 vulnerable girls stay in school, develop life skills, and access economic empowerment opportunities.

World Bank financing for the SWEDD includes $205 million from IDA, with additional IDA18 resources planned to assist Benin and other neighboring countries.

The SWEDD is having an impact. For example, four countries have used SWEDD-produced analyses to revise national development plans with a stronger focus on socio-economic policies and gender equity measures that foster an enabling environment for the demographic dividend.

Six countries have adopted a standard, coordinated curricula tailored to low literacy learners and adolescent girls in poor areas. Tens of thousands of young boys and men across the region also are being engaged to develop understanding and support of female autonomy as involved brothers, husbands and fathers.

WEST AND CENTRAL AFRICA

Training African scientists for Africa's challenges

African centers of excellence are giving a boost to African economies, creating jobs, and supporting essential research by training young graduates in highly sought-after fields, such as engineering, agronomy, science, and technology.

Participants of the first-ever Higher Education Student Fair crowd in to learn more about ACE students' innovations that address Africa's most pressing development challenges.

© Manivelle

In spring 2018, the campus of the Institute of Water and Environmental Engineering (2iE) in Ouagadougou, the capital of Burkina Faso, hosted an event unprecedented in Africa. The very first Higher Education Student Fair brought together academics from 22 centers of excellence—located in universities in nine West and Central African countries—to celebrate academic achievement and present their students' research and innovations to the public.

Organized by the World Bank's African Centers of Excellence (ACE) Project, the event was an important platform to share knowledge and inspire people, according to Stéphane Olivier Yaméogo, an electrical engineering student whose research project on solar pumping could improve water supply systems in poor areas.

"I had always thought you had to go to Europe or elsewhere for cutting-edge scientific training. But with what we are doing at the 2iE Center of Excellence, there is no need to be envious of those who go abroad," he remarked.

The ACE Project

The ACE Project was launched in 2014 with IDA funding of $165 million to help Benin, Burkina Faso, Cameroon, Côte d'Ivoire, the Gambia, Ghana, Nigeria, Senegal, and Togo establish 22 centers of excellence to develop the skills needed to accelerate Africa's development.

Every ACE is unique and, together, they are at the forefront of applied research to produce a critical mass of high-level specialists in scientific and technical fields as varied as genomics and infectious diseases, water and sanitation, biotechnology, reproductive health, agriculture and environmental sustainability, and engineering.

With well-established partnerships with universities and manufacturers in Africa and beyond, ACE students learn from the best professors from the continent and the diaspora, using state-of-the-art equipment.

> **Upon completion of their training, our students are innovative, competitive at the national, regional and international levels, and rapidly enter the labor market.**
>
> Harouna Karambiri, 2iE Professor and ACE Coordinator

Eighteen programs across seven centers have undergone the rigorous process to receive international accreditation. This certifies that the programs, curricula, competence goals, and teaching methods meet international standards, including those of the German Agency for Quality Assurance through Accreditation of Study (AQAS), the Royal Society of Biology in the UK, and the Quality Assurance Agency in France (HCRES).

Since being established, centers have expanded their offerings, with 35 new programs attracting over 6,500 students pursuing master's degrees and 1,600 pursuing doctorates. Almost 17,000 national and regional students have taken specialized short courses. A dedicated effort to attract more women and girls to the sciences has resulted in over 4,000 female students enrolled in master's, doctoral, and short courses.

The next phase

These results are encouraging, and the World Bank will expand its support to establish new centers of excellence and provide additional funding to particularly effective ACEs at the regional and international levels.

A new project, called ACE Impact, is under preparation and will be financed from IDA18 resources. The emphasis will be on impact and productivity. Universities will be able to strengthen their activities and envision other opportunities in the continued effort to build the human resources Africa needs to speed its development.

Many patients were screened at Redemption Hospital in Monrovia, Liberia, where Ebola hit hard in 2014–2015.

SUB-SAHARAN AFRICA

Preparing for pandemics to prevent them

After the Ebola outbreak in the Mano River region of West Africa, the international community saw the need to develop a coordinated approach to anticipating and addressing public health emergencies of global concern. IDA18 is helping to strengthen pandemic preparedness.

The 2014/15 Ebola outbreak in Sierra Leone, Guinea, and Liberia led to the deaths of over 11,000 people and cost the region $2.2 billion, prompting the World Bank and African countries to swear to never let it happen again. The World Bank has been making good on that commitment to help build national and regional pandemic preparedness and response systems, with IDA18 as an essential vehicle for urgently addressing gaps.

National Action Plans for Health Security

While most sub-Saharan African countries have some form of emergency preparedness plan, these plans are often obsolete or incomplete and may provide little practical value during a major outbreak of disease. Implementing a preparedness plan also requires coordinated planning, surveillance, and detection, as well as a response across multiple sectors (health and non-health, public and private), many levels of government (national, provincial, and community), and regional and global partners.

To bring more cohesion to the process, IDA18 funding is supporting 17 African countries in developing evidence-based pandemic preparedness plans—National Action Plans for Health Security—and the governance and institutional frameworks to enact them.

Countries like Liberia, Senegal, and Uganda have already developed their plans, which draw on the findings of an external evaluation of their national capacities to prevent, detect, and respond to outbreaks of disease. World Bank technical assistance helps countries craft their plans, estimate costs, and develop a financing strategy to implement them.

The national action plan serves as a coordination platform to ensure interplay between multiple sectors and other existing plans at all administrative levels. To support countries in establishing institutional arrangements for multi-sectoral health emergency preparedness, the World Bank helps to review and strengthen existing coordinating mechanisms and create new ones as needed.

> **The DRC's recent experience with Ebola reinforces the importance of continued focus on pandemic preparedness.**
>
> *John Paul Clark, Senior Health Specialist, World Bank*

Investing in regional preparedness

IDA18 lending is also assisting countries and regional institutions to more effectively prevent, detect, and respond to public health emergencies. For example, the West Africa Regional Disease Surveillance Systems Enhancement Program, initiated under IDA17, continues to expand under IDA18. Additional financing of $120 million will take the program to Benin, Mali, Mauritania, and Niger, bringing the total IDA commitment to $377 million for 11 West African countries.

The World Bank is preparing a similar regional disease surveillance project under IDA18 for parts of the Central African region, including the Democratic Republic of Congo (DRC), Chad, and Angola. It comes at a critical time for the DRC, which has battled to contain recent outbreaks of Ebola.

Benefiting from lessons learned during the West Africa outbreak, the DRC and its key partners moved quickly to issue a $57 million, three-month joint Ebola response plan, which the government and donors funded fully in two days. The World Bank contributed by releasing $15 million from an ongoing healthcare project for immediate Ebola response and $12 million from the new multi-donor Pandemic Emergency Financing Facility, marking the facility's first-ever financial commitment.

According to John Paul Clark, World Bank Senior Health Specialist, "The DRC's recent experience with Ebola reinforces the importance of continued focus on pandemic preparedness and reminds us that outbreaks can and do occur in very challenging environments where fragility, conflict, and violence can undermine prevention and complicate outbreak response."

STRENGTHENING MARKETS

Rwanda's conducive investment climate is attracting manufacturers, creating jobs, and helping to increase foreign direct investment, including this Volkswagen assembly plant in Kigali.

© Urugwiro Village

IDA18 will help restore 90,000 hectares, benefiting 80,000 households and increasing land productivity by 20 percent.

© Dave Proffer / Wikimedia Commons

BURUNDI

Restoring vital landscapes for sustainable growth

In a country where 90 percent of the population relies on natural resources for food, income, and jobs—especially the coffee sector—efforts to restore degraded landscapes are also restoring hope for a better future.

In Burundi, coffee is a way of life. Over 600,000 families—half of the country's households—rely on the coffee sector for their livelihoods. It accounts for 90 percent of the country's foreign exchange. Yet, severe land degradation has led to a decrease in coffee production from 40,000 tons in the mid-1990s to as low as 5,700 tons in 2003. The World Bank estimates that land degradation costs Burundi 4 percent of its GDP annually. This has deeply affected people already made vulnerable by natural disasters, pollution, and sociopolitical tensions.

Managing natural assets, together

Land and lives are being transformed by innovative approaches piloted by the $4.2 million Sustainable Coffee Landscapes Project. Financed by the Global Environment Facility and implemented by Burundi's Ministry of Environment, Agriculture and Livestock, the project has benefited from interagency collaboration on coffee certification, parks management, production of shade-grown coffee, sector regulation, research, and training. Together, agencies have empowered communities who are now changing how Burundi's natural assets are managed.

"Communities have been totally involved in the management and preservation of the nature that surrounds them, and now understand that it is for their own benefit," explains Leonidas Nzigiyimpa, Chief Warden of the Burundi Office for the Protection of the Environment and Recipient of the 2018 National Geographic Buffett Awards for Leadership in Conservation. "The future of Burundi rests on the preservation of its nature."

Since 2013, the project has reached more than 18,700 beneficiaries and has placed over 4,400 hectares (ha) under sustainable land management practices. More than 9,600 households, nearly half headed by women, have adopted shade-grown coffee. This form of polyculture brings multiple wins for the environment, improves soil fertility, diversifies farm products, and boosts income and food security.

> **We were enemies of the forest reserve of Bururi, but now, we are its best protectors.**
>
> Odette Nkurikiye, local Batwa community member

The project has also piloted a community-based agritourism program on sustainable coffee and a nascent ecotourism initiative. The Bururi Forest Reserve in Southern Burundi has hired members of the indigenous Batwa community living nearby to help protect chimpanzees and guide tourists, as well as legally harvest food and medicinal plants from the forest. With these earnings, the community has been able to save enough to purchase land, marking the first time in Burundi's history that Batwas have been able to do so independently.

"We were enemies of the forest reserve of Bururi, but now, we are its best protectors," says community member Odette Nkurikiye. "We now have jobs and have even bought land. We want to tap into the opportunities offered by our restored landscapes and stay out of poverty."

Scaling up resilience with IDA18

As this project ends in 2018, Burundi and the World Bank aim to build on its successes. Under IDA18, the $30 million Landscape Restoration and Resilience Project will scale up the restoration of degraded landscapes and support the sustainable management of the Bururi Forest Reserve and the Kibira and Ruvubu National Parks. It is expected to restore 90,000 ha, benefit 80,000 households, and increase land productivity in targeted landscapes by 20 percent.

Improved digital connectivity will help rural farmers get the information they need when they need it to increase productivity.

© Dasan Bobo / World Bank

CÔTE D'IVOIRE

eAgriculture solutions for the digital age

As its digital environment continues to boom, Côte d'Ivoire aims to expand services to farmers in rural communities. Wider, more affordable coverage and dedicated communication on agricultural markets and the weather can boost productivity and climate resilience.

The Côte d'Ivoire is the world's top producer and exporter of cocoa beans and raw cashew nuts. Its agriculture sector accounts for 22 percent of GDP and more than 75 percent of exports, but a multitude of challenges hinder growth—from low agricultural productivity, high cost of inputs, and huge post-harvest losses to inadequate use and lack of modern farming techniques. Accurate and up-to-date agricultural data is also in short supply. The latest available National Agricultural Census dates back to 2001.

To help close these gaps, the Ivorian government has launched a national eAgriculture strategy. It seeks to modernize the country's agricultural sector, reduce food imports, and boost exports of cocoa, coffee, and other produce through the integrated use of information, communication, and technology (ICT) and its burgeoning digital environment.

A digital revolution for agriculture

Côte d'Ivoire has gone from one of the world's weakest ICT countries—placing 130 out of 142 countries in the World Economic Forum's 2012 Global Information Technology Report—to one of Africa's rising stars. In 2016, it ranked 72 out of 139 countries thanks to strengthened legislation and regulations that support the dissemination of information and communication technologies within the economy. The mobile connection penetration (number of total SIM cards divided by total population) reached 126 percent at the end of 2017, compared to 89 percent for the West Africa region and 77 percent for sub-Saharan Africa.

While many Ivorians have two or even three phone numbers, some rural populations are still offline. The eAgriculture strategy aims to build on the country's robust digital growth to extend mobile services and data sharing to rural smallholder farmers. By increasing their connectivity to the real-time market and weather information they need to make critical planting and selling decisions, farmers will be able to improve their productivity, climate resilience, and income.

> **This project will ensure farmers have timely information on key aspects of the agriculture value chain.**
>
> Pierre Laporte, World Bank Country Director for Benin, Burkina Faso, Côte d'Ivoire, and Togo

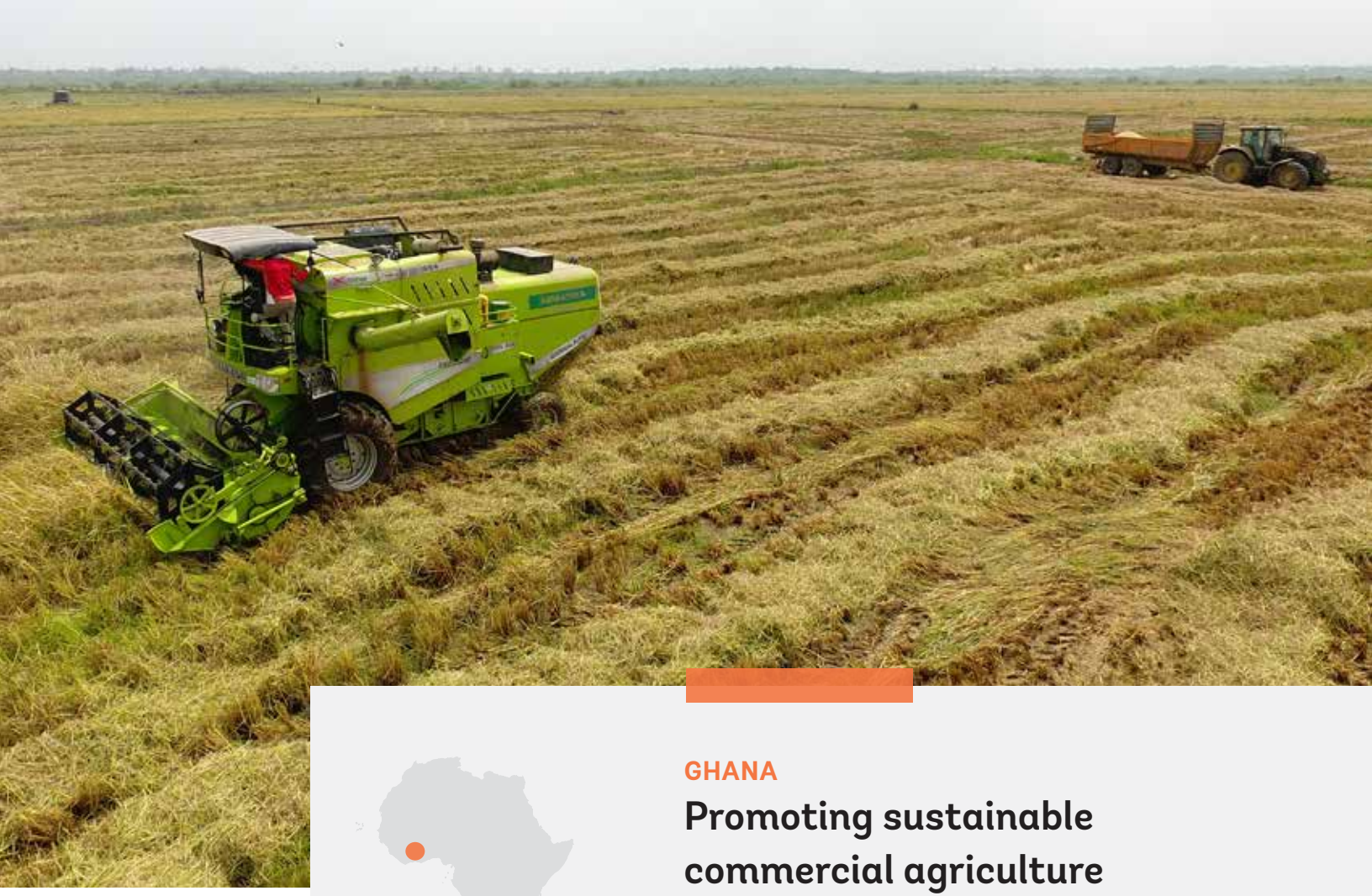
Connecting farmers and services

The World Bank approved $70 million in IDA funding in May 2018 for the eAgriculture Project. It seeks to upgrade digital infrastructure and equipment, modernize agricultural information systems, and develop digital applications for agriculture, among other activities. It expects to benefit over six million smallholder farmers—nearly a quarter of Côte d'Ivoire's total population of 24 million people.

According to Pierre Laporte, World Bank Country Director for Benin, Burkina Faso, Côte d'Ivoire, and Togo, the agriculture sector is an important driver of Côte d'Ivoire's economy, but it has had only a modest impact on income growth and poverty reduction in rural areas due to its sensitivity to fluctuations in international prices.

"This project will ensure farmers have timely information on key aspects of the agriculture value chain, such as the seed market, and public institutions can collect agricultural and rural statistics for more efficient sector polices and strategies," explains Laporte.

Improved connectivity will also enable farmers to access weather reports and other hydro-meteorological services to adapt their agricultural practices, while public services and communities vulnerable to the impacts of climate change will be able to monitor water supply systems in real time.



Mechanized rice harvesting at GADCO Farms is part of efficient local processing and packaging of Aduanehene and COPA-brand rice products.

© Geoff Anno / GCAP

GHANA

Promoting sustainable commercial agriculture

To reduce reliance on food imports and satisfy increasing food demands with domestic production, Ghana is focusing on its agribusiness sector. Domestic and international agribusinesses—and the smallholder farmers they contract—are benefiting from investments to improve irrigated land and yields.

In food markets and stores across Ghana, it is easy to find Aduanehene and COPA rice products. From farm to market, this local brand is homegrown and a shining example of how Ghana is working to build the productive capacity of agribusinesses and smallholder farmers.

The Global Agri-Development Company Ghana Ltd. (GADCO) is the producer, processor, and distributor of Aduanehene and COPA rice. It contracts smallholder farmers (outgrowers) to produce rice to feed its processing plants. The arrangement provides outgrowers a ready market for their produce and removes the headache of marketing and the risk of post-harvest losses.

Better irrigation, better yields

In the South Tongu District of the Volta Region, GADCO has 1,500 hectares (ha) of farmland, of which 300 ha is under cultivation through an outgrower arrangement with the nearby Fieve community. In 2014, GADCO acquired financial assistance from the World Bank-financed Ghana Commercial Agriculture Project (GCAP) to further develop its operations in the area.

Funding was provided through the CGAP's Matching Grants Scheme, which provides grants to eligible agribusinesses working with outgrowers for land preparation and operating capital. One of GCAP's key missions is to encourage both domestic and international agribusinesses to invest in irrigation schemes rehabilitated under the project. This will help boost productivity and production of key staples—such as rice, maize, and soybeans—and other high value commodities for the domestic and export market.

With IDA funding totaling $150 million, including an injection of $50 million in additional financing under IDA18, the project is expected to increase irrigated area by over 8,000 ha and benefit some 30 medium and large scale agribusinesses and 14,000 smallholder farmers in target areas.

> **Project support has helped me increase my income from farming activities, and now I have been able to build a house.**
>
> Bernice Atakli, five-hectare rice outgrower in Fieve

To date, over 6,000 ha of farmland have been developed where crop yields have jumped: rice has gone from a baseline of 1.5 metric tons per ha to 3.8 metric tons per ha in 2017. New irrigation systems and post-harvest warehouses have been built and over 9,300 smallholder farmers (40 percent of whom are women) have been directly supported through nucleus farms to improve their agronomic practices.

Benefits for farmers and agribusinesses alike

In Fieve, both the community and GADCO have benefitted from GCAP grant financing. GADCO was able to develop 120 ha of land, erect storage facilities, connect electricity to its local processing plant, install a pumping station for rice field irrigation, and build the capacity of 90 outgrowers.

Bernice Atakli, a five-hectare rice outgrower who also grows maize, peppers, and cassava, says the support "has helped me increase my income from farming activities, and now I have been able to build a house."

Two-hectare rice outgrower, Gabriel Djamesi, says, "Through the GCAP support with GADCO, I have been able to buy two milking cows, which serves as another source of income."

Tensions between GADCO and the community have also diminished thanks to the investments and social safeguards support provided by GCAP. For GADCO, the injection of capital into the company's operations has motivated it to expand and bring more outgrowers on board.

Through revenue obtained in agriculture, Diallo diversified his activities and now owns a water packaging and distribution operation.

© Vincent Tremeau / World Bank

GUINEA

Investing in agricultural productivity yields shared prosperity

Rice is a staple food in Guinea, but low yields make the country dependent on rice imports it can ill afford. The nation as a whole, and farmers in particular, are benefiting from better seeds and innovations in crop management.

Ousmane Diallo is a 35-year-old university graduate with a degree in sociology. He owns an eight-hectare farm in Mandiana, one of the most remote locations in Guinea (over 700 kilometers east of the capital Conakry) and better known for mining than farming. Over 80 percent of the local population works in the mining industry. But not Diallo.

Facing limited job prospects after university, he decided to invest in agriculture because he "understood the agricultural potential of the region."

He started in 2014 with rice, maize, and vegetables to meet high demand, but poor seed quality led to poor harvests. He was able to turn to the World Bank-financed West Africa Agricultural Productivity Program (WAAPP) for support, and today, Diallo can produce two tons of rice per hectare, compared to less than half of that (800 kilograms) four years ago.

Improving rice seeds

Guinea is among 13 West African countries participating in WAAPP, a regional project that aims to generate and disseminate improved agricultural technologies and intensify their adoption in sectors considered a priority. For Guinea, that is rice.

Since 2011, WAAPP has helped Guineans adopt new crop varieties, improve crop management practices, and modernize small-scale food processing technologies. It has also strengthened national seed production and distribution systems to ensure the availability and use of good quality, certified seeds.

Through an initial IDA grant of $9 million, the program in Guinea has contributed to improving the living conditions of seed producers, who have been able to realize an additional GNF 4 million ($440) in income per hectare of rice each season. This represents a significant amount given the fact that the minimum monthly wage is GNF 440,000 ($45).

> **People thought I was crazy for getting involved in agriculture, but now I am proving them wrong.**
>
> Ousmane Diallo, agriculture entrepreneur in Mandiana

Over 120,000 direct beneficiaries (40 percent women) have seen their incomes rise by 30 percent, and laborers and local artisans beyond Guinea's borders have benefitted from increased employment opportunities.

Rice marketing operations are estimated to have generated about GNF 10 billion ($1.1 million). The use of improved seeds has created a surplus of more than 85,000 tons of unhusked paddy rice worth $14 million, equivalent to 10 percent of Guinea's annual rice imports.

Cultivating wealth

With the revenue he has gained from agriculture, Diallo has diversified. He obtained a loan for GNF 26 million ($2,800) to buy a water packaging machine and, now, supplies drinking water to several mining companies. He employs dozens of people full time and seasonally.

"People thought I was crazy for getting involved in agriculture, but now I am proving them wrong. My objective is to inspire and train other young people," says Diallo, who plans to industrialize his operations and expand into livestock breeding.

Guinea is consolidating its gains in the rice sector and is now turning its attention to other agricultural sectors. The World Bank has provided additional funding of $23 million from IDA18 to support innovations in cassava, soybeans, and other vegetable crops, as well as goat and poultry breeding and fish farming.

Malisema Masheane is the proud owner of Serumula Pig Farm, which she launched with a grant from the Smallholder Agriculture Development Project.

© Elita Banda / World Bank

LESOTHO

Championing agricultural entrepreneurs

More than half of Lesotho's citizens live in rural areas, and the majority engage in subsistence agriculture. Because the urban economy has limited ability to absorb new entrants to its labor market, expanding agricultural productivity and profitability is essential.

Ntuba Masena is the owner of a thriving vegetable and fruit drying company in the market town of Hlotse in northern Lesotho. Faced with retirement from nursing, and looking for additional sources of income, she learned about produce drying at a farming workshop she attended. The idea of starting a value-added business appealed to her, so she bought a few bags of apples, a fruit slicer, and began her journey into entrepreneurship.

At first, Masena was sun drying her produce, but adverse weather patterns hindered her work and business suffered. She applied for and received a grant from the World Bank-supported Smallholder Agriculture Development Project (SADP), which she used to buy a dehydrator. With the new equipment, drying times are down—apples take just four hours to dry rather than a day and half—and profits are up.

Improving productivity, marketability

Since 2012, SADP has provided a combination of competitive grants and technical assistance to help smallholder farmers and agricultural entrepreneurs like Masena increase productivity and market opportunities. Over 55,000 people across four of Lesotho's ten districts have benefitted from the project. This includes over 16,800 grant recipients, half of whom are women who have ventured into pig and poultry breeding, climate-smart vegetable production, and other smallholder agricultural activities.

Malisema Masheane is one of them. A long-held love for pig farming was always thwarted by a lack of funds and time as she juggled two jobs to make ends meet. In 2016, she heard about SADP and successfully applied for grant support. With the $21,000 she received from the project, she bought 10 sows and one boar, built a barn, and installed a water system linked to a borehole. With her dream realized, Masheane plans to expand and encourages others to follow her lead.

> **A lot of people—men and women—are very impressed by this work... I always encourage them to find opportunities along the value chain.**
>
> Malisema Masheane, owner and operator of Serumula Pig Farm

"A lot of people—men and women—are very impressed by this work and would like to own pig farms of their own. I always encourage them to find opportunities along the value chain so we can all benefit from the industry," she says.

Expanding support to more districts

Agriculture is an important source of employment and food in Lesotho. More than half of Lesotho's citizens live in rural areas, and the majority engages in smallholder subsistence agriculture. Because the urban economy has a limited ability to absorb new entrants to its labor market, agriculture plays a major role in Lesotho's development strategy.

SADP has shown that opportunities exist for developing commercially viable smallholder agriculture, especially as urbanization, climate change vulnerability, and changes in consumption patterns force the agricultural sector to adapt. In 2018, the $24.5 million project received an additional $10 million in IDA financing to expand its support to three more districts and add new focuses on climate-smart production and agribusiness initiatives.

Molapo Mahala, Lesotho's Minister of Agriculture and Food Security, agrees that promoting the commercialization of smallholder agriculture has gained a great deal of traction, and "these added funds will focus on continuing to increase the capacity of farmers in Lesotho to build more productive, climate resilient, commercial agriculture systems."

MALAWI

Investing in irrigation to realize farming potential

The largest IDA investment ever made in Malawi is helping to transform agricultural productivity through irrigation, lay the foundations for commercialization, and improve the management of natural resources in the Shire Valley.

Over 48,000 households comprising around 220,000 people in Malawi's Shire Valley are expected to benefit from new and improved irrigation and agricultural services.

© ILRI / Mann

Malawi is home to 17.6 million people, 85 percent of whom live in rural areas and mostly engage in low productivity, rain-fed subsistence agriculture. Smallholder farmers produce 75 percent of Malawi's agricultural output—a sector that represents 30 percent of GDP.

Lives and livelihoods are hinged on the short rainy season from November to March. When the rains come late, fall too hard, or stop early, agricultural output and food security suffer nationwide. Even with its rivers and Lake Malawi, the second largest lake in Africa, the availability and reliability of surface water in Malawi varies both between wet and dry seasons and from year to year. Infrastructure for water storage is low even by regional standards.

Overcoming the economic impacts of climate and water shocks is especially important in the disaster-prone districts of the Shire Valley in southern Malawi, where over 80 percent of the population lives below the national poverty line, and frequent floods and droughts pose the threat of famine.

Unlocking the Shire Valley's development

Yet, the Shire Valley's fertile soils have potential—one that large scale commercial sugar estates are realizing thanks to commercial irrigation. The Government of Malawi seeks to unlock development in the area and take better advantage of the private sector's presence and the area's proximity to Malawi's commercial hubs of Blantyre and Tete, and the Nacala railroad in Mozambique.

The Shire Valley Transformation Program aims to boost Malawi's agricultural productivity through irrigation, lay the foundations for commercialization, and improve the management of natural resources in the Chikwawa and Nsanje districts of the Shire Valley. IDA18 funding of $160 million plus $5.6 million from the Global Environment Facility Trust Fund are supporting the first phase of the three-phase, 14-year program, estimated at a total cost of $560 million.

The overall program will provide irrigation to over 40,000 hectares by gravity-fed water delivery, eliminating the need for electricity for pumping water from the Shire River. It will increase agricultural production, provide drinking water services, and improve the sustainable management of natural resources, including wetlands and protected areas, while enhancing tourism potential.

> **The valley can finally be transformed into the most productive agricultural region of the country.**
>
> Paramount Chief Lundu of Chikwawa

"We have waited all our lives for this project… the valley can finally be transformed into the most productive agricultural region of the country and provide better livelihoods to the 48,000 benefitting households," says Paramount Chief Lundu of Chikwawa.

Beyond subsistence farming

With more reliable access to water and support, Malawi hopes to take agriculture beyond the food security agenda to commercial agricultural investments that will sustainably pull people out of poverty.

"The beauty of the whole program is that it will engage the smallholder farmers to modernize and commercialize agriculture. We ultimately anticipate a half billion-dollar benefit to the economy," says Joseph Mwanamvekha, Malawi's Minister of Agriculture, Irrigation, and Water Development.

The program's first phase will deliver modern, sustainable irrigation services and support services in agriculture, aquaculture, and livestock production. It will help farmers secure land and water tenure and assist them in various aspects of developing commercial farming. Crop diversification away from sugarcane is expected to create more opportunities for agro-processing enterprises and traders.

Rusty Guembo and partner Gervais Kondo have been able to transform their small poultry venture into a flourishing agro-industrial enterprise.

© Franck Bitemo / World Bank

REPUBLIC OF CONGO

Building an agribusiness: One farmer's journey from mortar to mixer

Over 360,000 Congolese farmers and livestock producers have benefited from investments in agricultural productivity and improved market access. New IDA funding targets 500,000 more farmers, promoting agribusinesses and agricultural entrepreneurs.

"I've always dreamed of being my own boss," states Rusty Guembo, who is pursuing his ambition in a society in which a career in the civil service is deemed prestigious. At 45 years old, this Congolese engineer, a graduate of the Institut de développement rural in Brazzaville, runs a cooperative of market gardeners and poultry farmers, Agro 4, with his business partner.

Guembo and three friends launched the venture in 2000 with a makeshift chicken coop in one room of his house. The early days were tough.

"To be able to feed our chickens every day, we used a mortar to grind the grains then filter them through a sieve, before using a shovel to mix them with other ingredients. For four years we worked without making the slightest profit," he explains. Two of his business partners gave up.

Guembo and remaining friend, Gervais Kondo, persevered and, between 2004 and 2006, they formalized their cooperative and received small amounts of funding to increase their stock and build capacity in small-scale poultry feed production.

A decisive boost

The turning point came in 2010 in the form of a grant from the World Bank-financed Agricultural Development and Rural Roads Rehabilitation Project (ADRRP). It allowed the entrepreneurs to purchase a tilting mixer worth CFAF 5 million (about $9,000), with a capacity of 1,250 kilograms per hour.

"This machine revolutionized our work!" Guembo explains. "In four months, we had tripled our poultry feed production to 60 metric tons per month."

Livestock feed production became Agro 4's core activity and, in 2012, they purchased a second machine to meet growing demand. Today, the cooperative has 10 livestock producers, employs dozens of day laborers, and owns a fleet of vehicles for pick-ups and deliveries. Headquartered in one of the largest markets in Brazzaville, it has branches in Pointe-Noire and the departments of Bouenza and Plateaux and plans to expand operations.

> **Our greatest pride is in developing a vision and staying true to values that we hold dear.**
>
> Rusty Guembo, co-founder of Agro 4 in Brazzaville

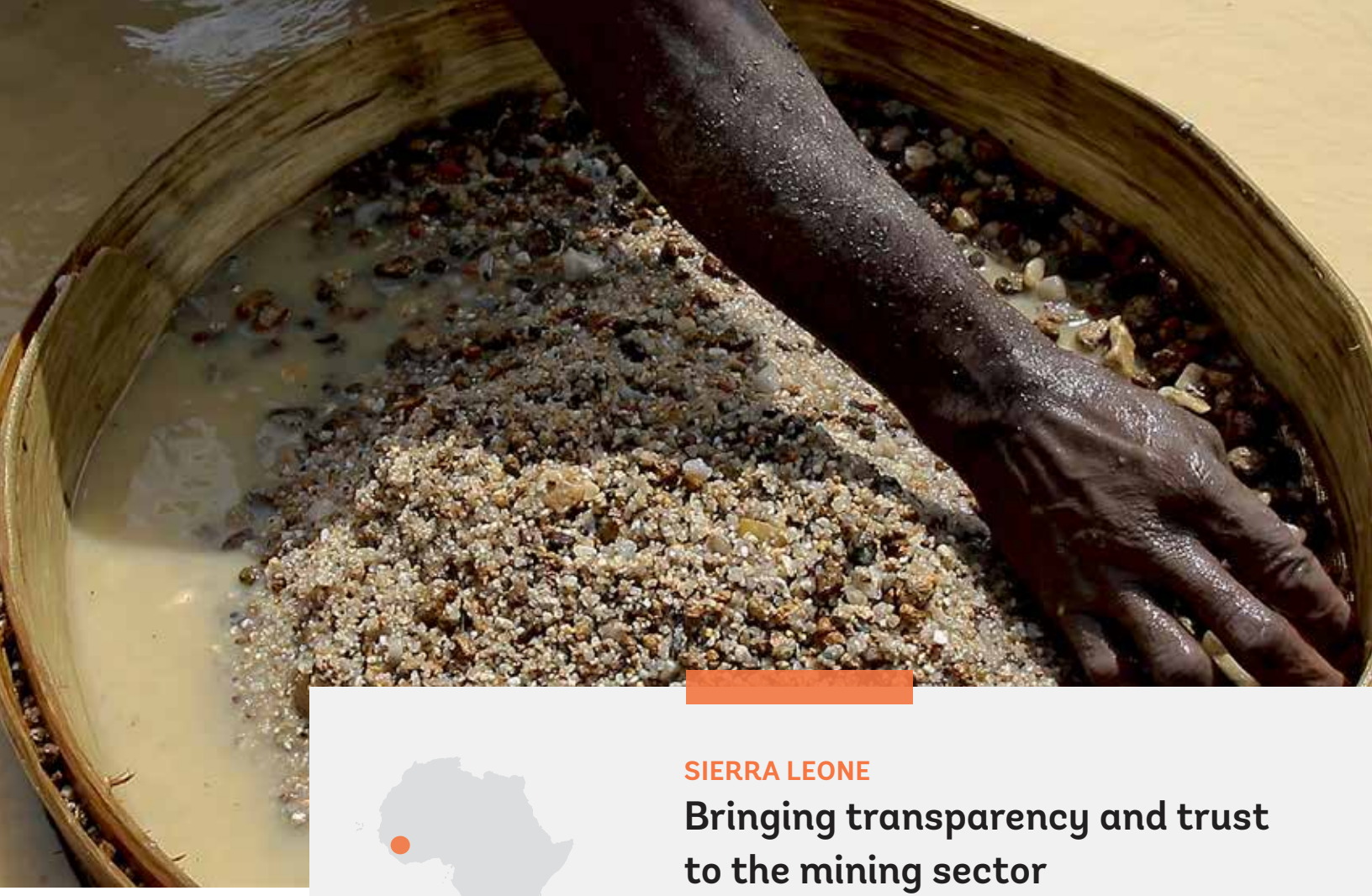
In 2017, Agro 4's livestock feed production posted revenue of approximately CFAF 700 million (around $1.2 million). But Guembo and Kondo say their greatest pride is in "developing a vision and staying true to values that we hold dear, particularly by promoting high-quality, affordable local production."

Increasing productivity responsibly

Along with Guembo and Kondo, over 360,000 people (51 percent of them women) benefited from ADRRP, which helped double the yield of several food crops. It ran from 2008 to 2017 with $22.5 million in IDA financing and $28 million from the Government of the Republic of Congo (ROC).

The new Commercial Agriculture Development Support Project will build on these successful outcomes. Entirely financed by IDA18 for a total of $100 million over five years, the project aims to improve the productivity of agricultural sectors and market access for producer groups and agro-industrial micro, small, and medium enterprises. It targets 500,000 farmers and livestock producers nationwide.

Guembo recognizes the project's potential in changing the way Congolese citizens view agriculture "so that they no longer only see it as a subsistence activity, but as a promising entrepreneurial undertaking."



An artisanal miner carefully sifts through gravel and rocks to find that illusive diamond.

© Roy Maconachie / University of Bath

SIERRA LEONE

Bringing transparency and trust to the mining sector

Sierra Leone has the mineral and potential oil reserves to underpin much higher GDP growth. New policies and regulations have brought more transparency to the mining industry so the government can track activities and small-scale miners can build capacity.

Ishmael Sesay leads Youth in Mining, a group of young artisanal miners in the diamond-rich district of Kono in eastern Sierra Leone. He entered the trade with friends after completing secondary school.

"Eight of us came together and started mining for diamonds. The field was crowded but we were determined to make a difference because mining was our only source of livelihood," Sesay explains.

Like many other artisanal miners in Kono District, Sesay and his team lacked the skills needed to evaluate the true worth of their finds. In 2017, they participated in a Skills for Development workshop organized by the World Bank, in collaboration with Sierra Leone's Ministry of Mines and Mineral Resources, to learn about sustainable mining technologies and operations.

"We learned how to value our diamonds before we sell them," Sesay says. "You can find a big stone but if you don't know its value, it is like giving your wealth to another person."

Building the foundation for improved governance

The workshop was part of World Bank-financed Extractive Industries Technical Assistance Project. During the first phase of the project (2009-2016), Sierra Leone laid the foundation for improved governance in the mining sector.

The most notable achievement was the creation of the National Minerals Agency, the sector's regulatory and geological survey institution. New policies and regulatory instruments were also enacted to address issues of transfer pricing, revenue management, dispute resolution, harmonization of land policies, skills development, and improved environmental management in the sector.

The second phase of the project now is underway, with a $20 million IDA18 grant to further strengthen legal and regulatory frameworks, increase geological knowledge, and support artisanal mining.

> **"You can find a big stone but if you don't know its value, it is like giving your wealth to another person."**
>
> Ishmael Sesay, artisanal miner in Kono District

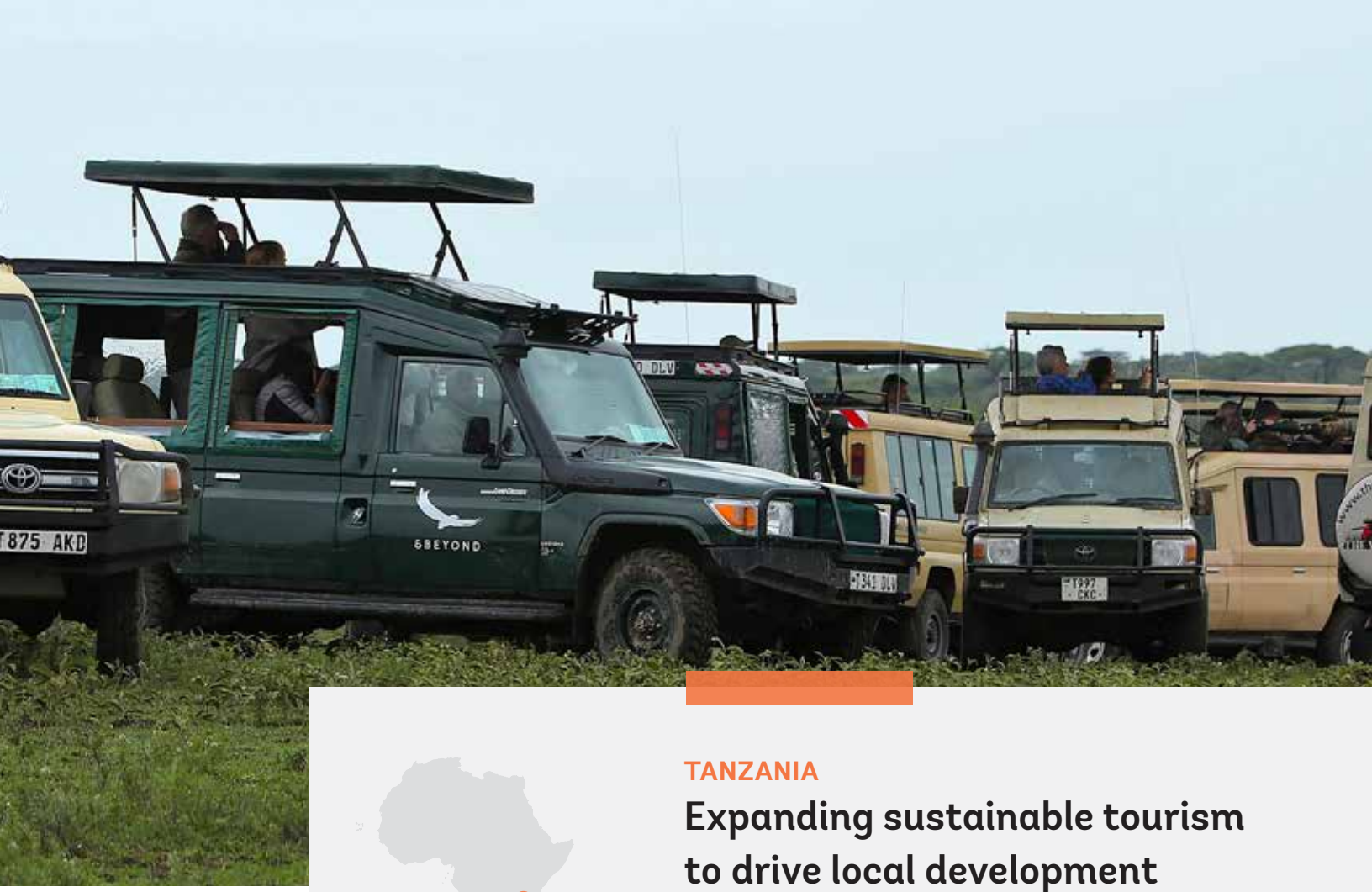
Formalizing artisanal mining

The majority of the artisanal mining activities in Kono and other districts are still being carried out on an illegal basis, which is why organizations like the Diamond Development Initiative (DDI) Sierra Leone are coming onboard to ensure the formalization of the artisanal mining sector. It is teaching miners how to comply with international standards governing the production and marketing of diamonds.

"We want the mining sector to be regulated so that the government can receive the requisite taxes from operations to support public administration," explains Joseph S. Mboka, DDI Program Manager. "We also want the diamonds to be legally mined so that people do not use them to fuel conflicts. Once they are regulated and the government can take note of the diamonds that are being extracted, we know that these will be responsibly channeled to the external market."

The project is also supporting a baseline study on artisanal mining and miners and an airborne geophysical survey of the entire country. The goal is to develop modern geological maps of Sierra Leone to aide a more strategic approach to mineral exploration.

The people of Sierra Leone, and especially artisanal mining communities, will benefit from improved environmental management and social protection in the sector, as well as more equitable distribution of wealth from mining operations, including increased access to employment.



Tanzania has one of the highest revenue-to-tourist ratios in sub-Saharan Africa.

© Daniel Mira-Salama / World Bank

TANZANIA

Expanding sustainable tourism to drive local development and conservation

Tanzania is one of the most popular tourist destinations for experiencing Africa's unique wildlife. It is developing its Southern Circuit to diversify its tourism sector, enhance conservation, and bring new economic growth to the area.

Tanzania has built a thriving tourism industry around its wildlife and other natural resources. The country is home to world-renowned reserves, such as the Serengeti, and other national parks and reserves for game, marine life, and forests. In 2015, it received nearly 1.2 million international visitors, more than double the number recorded in 2000. As a main contributor to foreign currency, tourism generated $4.8 billion in revenue, roughly 10 percent of GDP.

But its wildlife tourism sector is concentrated around what is known as the Northern Circuit in northwest Tanzania, most notably the Serengeti and Mount Kilimanjaro national parks and the Ngorongoro conservation area. These destinations are showing signs of stress and limitations to their carrying-capacity, placing the government's strategy of low-volume, high-value tourism in jeopardy.

Developing the Southern Circuit

The government has embarked on developing tourism in the Southern Circuit to attract visitors to the area and expand its contribution to the economy. The Circuit is richly endowed with national parks, including the Ruaha National Park, the largest park in East Africa, and the Selous Game Reserve, which is a UNESCO World Heritage Site.

The area has much to offer but is challenged by limited infrastructure and underdeveloped roads, poaching, the mismanagement of water resources upstream of the Ruaha park, and few links between tourism and local livelihoods.

Like much of the country, Tanzania's southern region is seeing conflict erupt over natural resources, with an expanding population highly dependent on agriculture for its livelihood. Climate change and scarce water resources also intensify pressure on precious ecosystems.

A project called REGROW

The government is addressing this through the Resilient Natural Resource Management for Tourism and Growth Project (REGROW). In June 2018, the World Bank approved $150 million in IDA funding to support it, involving the World Bank's transport, ICT, agriculture, and urban sectors.

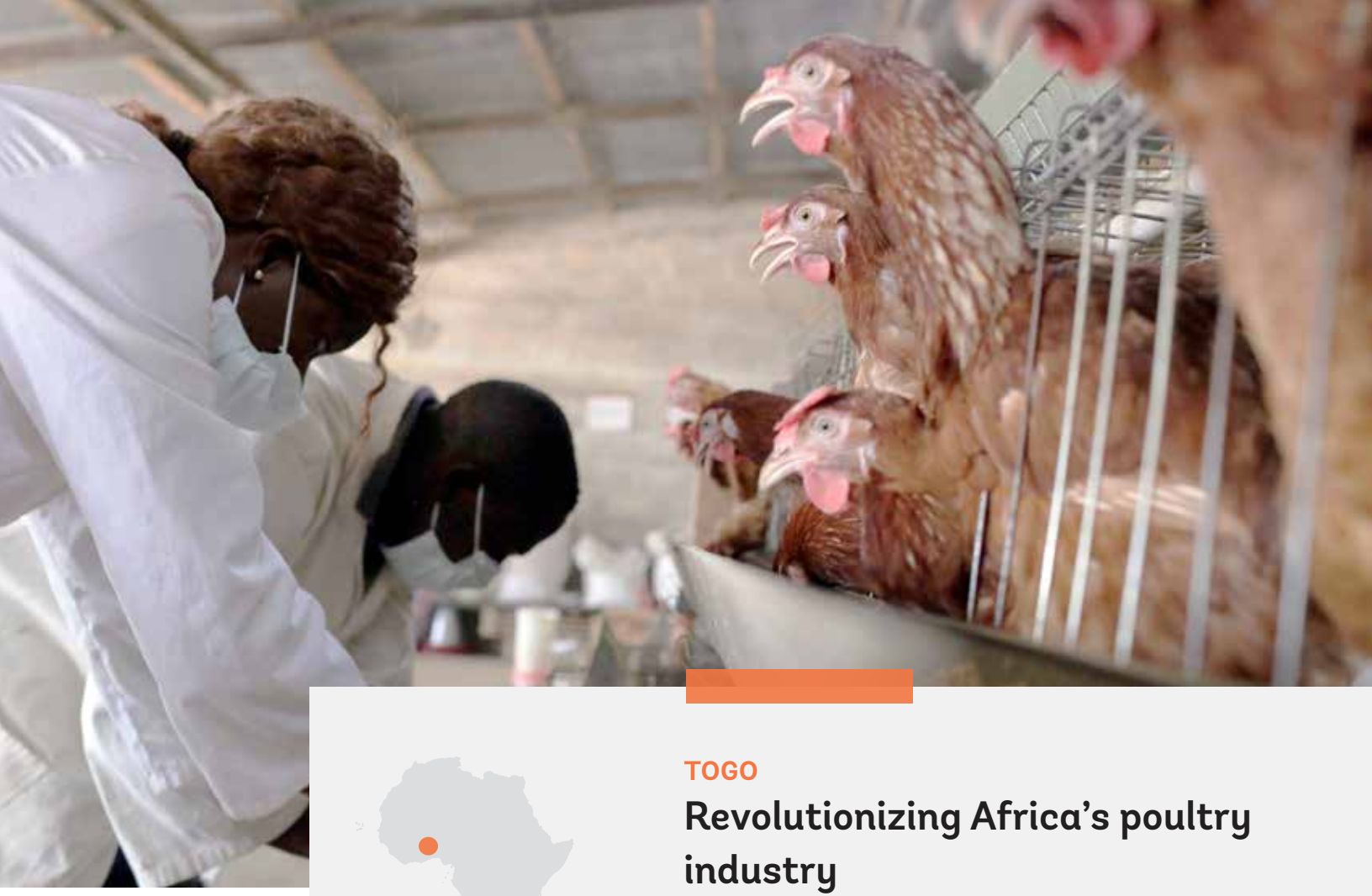
> **Among the tasks we shall undertake is to educate communities on the importance of conservation and the roles they must play.**
>
> Hamisi Kigwangalla, Minister for Natural Resources and Tourism of Tanzania

REGROW aims to improve the management of natural resources and tourism assets in southern Tanzania and help communities there gain access to alternative livelihoods. Some 20,000 households located near protected wildlife areas are expected to benefit. More efficient irrigation and agricultural production methods will help another 20,000 farming households in the Great Ruaha River sub-basin.

Capacity building will also support government agencies and officials working on water, agriculture, and land management, wildlife, tourism, and protected area management. Tourism operators and related businesses will benefit from increased revenue, with an emphasis on providing opportunities for women and youth.

Hamisi Kigwangalla, Minister for Natural Resources and Tourism, believes REGROW will not only help make Tanzania's tourism industry more diversified and robust, it will heighten community awareness and involvement in conversation efforts.

"Iringa is one of the southern regions where we are facing many conservation challenges, including poaching and the poisoning of wild animals. Among the tasks we shall undertake under this project is to educate communities on the importance of conservation and the roles they must play," he explains.



Students at the Regional Center of Excellence in Avian Sciences (CERSA) hope their research obtains practical results that poultry breeders and producers can apply daily.

© Eric Kaglan / World Bank

TOGO

Revolutionizing Africa's poultry industry

While egg and poultry meat production has experienced explosive growth worldwide over the past two decades, Africa provides just 4 percent of global poultry products and consumption rates are low. Advanced research in avian science seeks to to strengthen the poultry sector.

Africa is home to 15 percent of the world's population, yet it has some of the lowest poultry product production and consumption rates. The average African eats 45 eggs and 3 kilograms of poultry meat each year, compared to 145 eggs and 14 kilograms throughout the rest of the world. The African poultry sector suffers from inadequate financing, a lack of high-level technical expertise, and input-related issues.

The Regional Center of Excellence in Avian Sciences (CERSA, *Centre d'Excellence Regional sur les Sciences Aviaires*) at the University of Lomé in Togo aims to reverse that trend. Established in 2014 under the World Bank-financed African Centers of Excellence Project, CERSA seeks to strengthen and promote the poultry sector—and boost food security in West and Central Africa—through investments in research and training and by forging partnerships with manufacturers.

Only research institute for avian science

CERSA is the only institution in the region engaged in the development of high-level expertise (master's and doctoral degrees) and applied and basic research in avian sciences. As of June 2018, 25 doctoral students, including six women, and 76 master's students, including 15 women, from 11 West and Central African countries were enrolled at CERSA.

"We have a specialized program that covers the entire poultry farming value chain at the scientific, technical, and technological levels, including production, processing, biotechnology, genetics, and marketing. We plan to introduce a new sector soon to integrate the sociological aspects," says Professor Kokou Tona, CERSA's Director.

In a bid to dispel the misconception that poultry products are a luxury in Africa, Tekando Komlan and Agblékpé Agbessi, two students from Togo, have focused their research on egg and poultry meat processing.

"We found that a micronutrient-poor diet was the cause of malnutrition among many children. We focused on processing eggs into powder to help address protein-energy deficiencies," explains Komlan.

> **"We have a specialized program that covers the entire poultry farming value chain at the scientific, technical, and technological levels."**
>
> Kokou Tona, Director of CERSA

Poultry farmer Georges Sanvee believes this type of innovation can revolutionize the sector and that producers like him "are relying heavily on CERSA's research to improve our practices to help secure better outcomes."

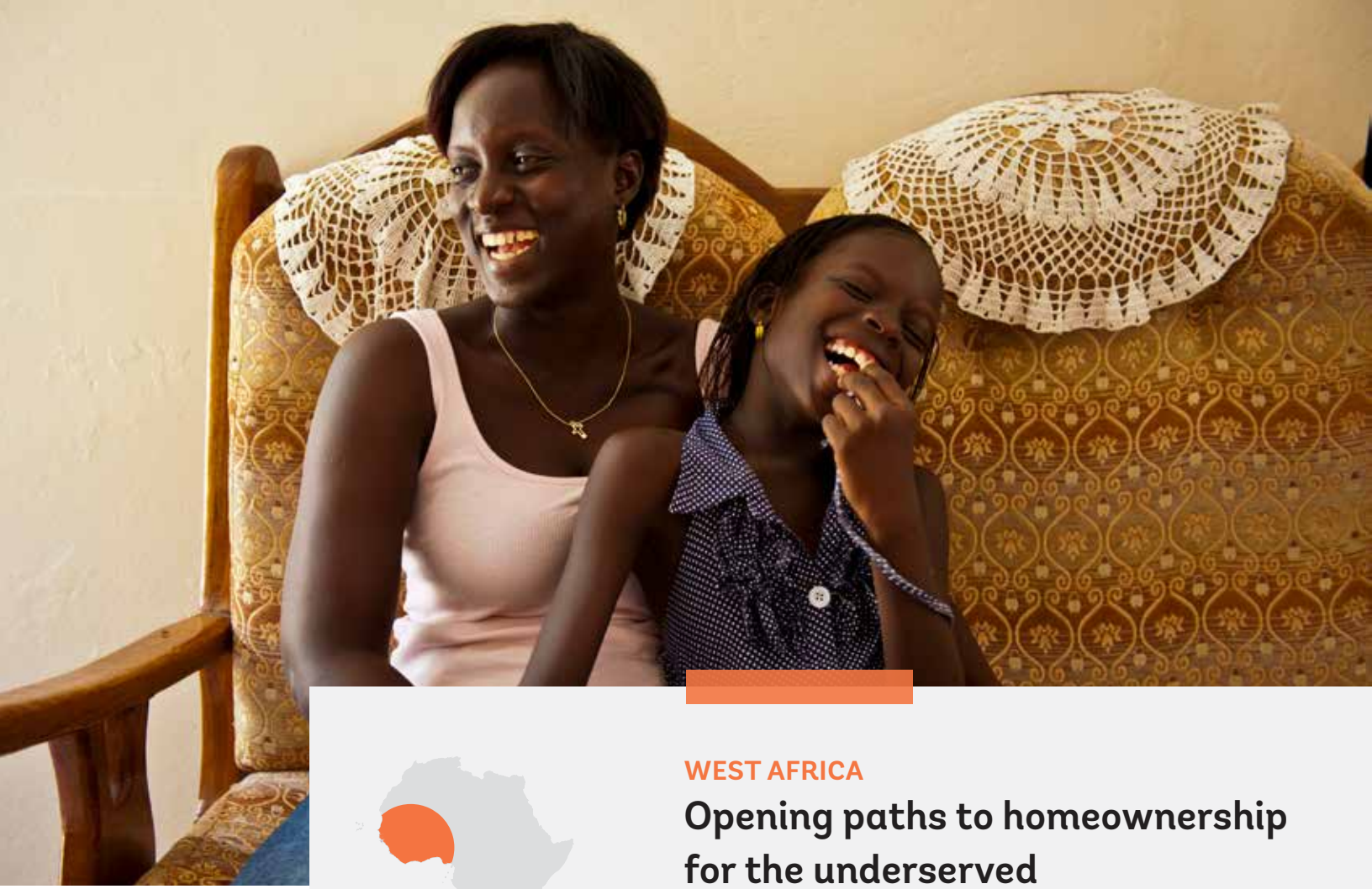
Sanvee has benefited from CERSA short-term practical training sessions that showed him how to improve his chicken feed and increase his hens' egg production.

In March 2018, CERSA's influence and quality of work were further validated when it obtained its five-year, unconditional international accreditation from the *Haut conseil de l'évaluation de la recherche et de l'enseignement supérieur* (HCERES), an independent body tasked with assessing higher education and research institutions.

Beyond academics

CERSA is also focused on modernizing and industrializing Africa's poultry sector through strategic partnerships with major European manufacturers. Together, they aim to identify poultry strains best suited to the region, improve feed quality, and boost production systems. CERSA is also planning collaboration with SEDIMA, a Senegalese industrial poultry processor, to promote South-South learning and knowledge sharing.

This all points to potential increases in poultry productivity, availability, and accessibility by the poor. Additional IDA18 financing of $4 million will help CERSA enhance its impact on the sector's development across Africa.



As populations grow in West Africa, so too does the need for more housing at affordable rates.

© Arne Hoel / World Bank

WEST AFRICA

Opening paths to homeownership for the underserved

In the eight francophone countries that make up the West African Economic and Monetary Union (WAEMU), housing is scarce, demand is skyrocketing, and costs are high. The World Bank Group is helping to expand access to housing finance for lower-income groups.

Over the next two decades, WAEMU's population will nearly double, mostly in urban areas. This trend is aggravating a large housing deficit, which mostly affects lower-income groups in a region of widespread poverty. Some 800,000 new housing units are needed every year, yet WAEMU banks only issue about 15,000 new mortgages annually.

Building up regional mortgage company

To expand housing finance in the region, the World Bank is providing a suite of services and investments to support the *Caisse Régionale de Refinancement Hypothécaire* (CRRH). Founded in 2012, CRRH is a majority-private regional mortgage financing company. It issues long-term bonds in capital markets and lends these funds to financial institutions that, in turn, provide long-term housing loans to consumers. Its member shareholders are 54 commercial banks, as well as development finance institutions like the West African Development Bank (BOAD), its largest shareholder.

In 2017, IDA approved a scale-up credit of $130 million to BOAD on-lent to CRRH, marking the first use of IDA's Scale-up Facility for a regional organization. The credit will enable CRRH to refinance mortgage loans below $26,000 and allow banks to obtain long-term funding at below-market rates, providing incentive to serve the low-income segment.

IDA's assistance is also enabling CRRH to refinance small housing loans (of less than $17,000) issued by micro-finance institutions that previously did not have access to CRRH funding and do not have long-term funds. Microfinance institutions serve informally employed households, who now will be able to borrow for homeownership.

Another $25 million IDA grant will support housing policy reform to expand housing supply in WAEMU countries. IDA technical assistance will help accelerate the pace of affordable housing production and address key constraints for private developers.

> **"IDA financing along with the recent IFC investment into CRRH will strengthen our business model and our ability to mobilize long-term resources to expand affordable housing finance."**
>
> Christian Agossa, General Manager of Caisse Régionale de Refinancement Hypothécaire (CRRH)

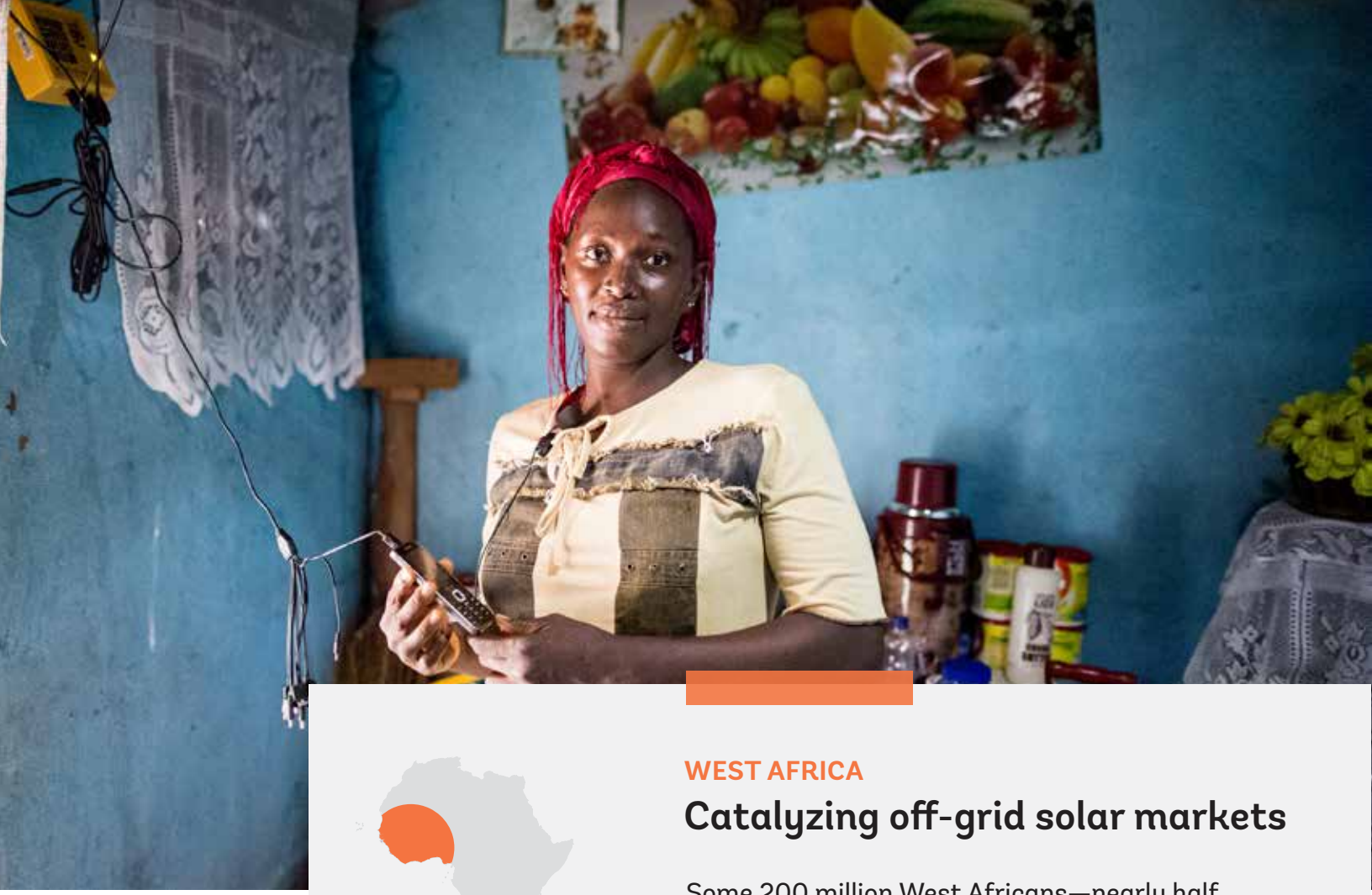
The IDA intervention is coupled with investments by the World Bank's International Finance Corporation (IFC). In 2017, with the support of the IDA18 Private Sector Window, IFC invested CFAF 5 billion ($9 million) in CRRH's CFAF 25 billion ($45 million) local currency 12-year bond. Through it, CRRH was able to lengthen the term of its loans to financial institutions, which in turn, lengthened the maturity of mortgages and improved affordability.

IFC now plans to anchor a 15-year bond to support CRRH's efforts to progressively extend its bond maturity terms to 20 years by 2020. IFC advisory services will also support CRRH member institutions in improving mortgage lending and underwriting processes.

Improving housing affordability

As of January 2018, CRRH had issued seven local currency bonds of 10- or 12-year maturity in regional capital markets and refinanced about 8,000 bank mortgages since inception. A model shows that extending housing loan tenors from the current 8 to 15 years reduces monthly mortgage payments by 46 percent; a 20-year loan tenor reduces payments by 72 percent.

The World Bank expects for every $1 it invests in strengthening CRRH, $5 of private financing will come through the bond market. Some 50,000 businesses and families are expected to obtain new mortgage loans, 200,000 people to get better shelter, and 250,000 housing sector jobs to be created.



Charging a cell phone is easy with solar home systems that bring electricity into off-grid homes.

WEST AFRICA

Catalyzing off-grid solar markets

Some 200 million West Africans—nearly half of the region's population—do not have access to electricity. Electrification rates of public institutions like schools and health centers are also low. Off-grid solar technology can transform this bleak reality into one of access.

For those living without access to a modern energy source, educational and economic opportunities are constrained by the number of hours of natural light. Day-to-day quality of life and health are negatively impacted. Low-quality, polluting lighting sources, such as the kerosene lamps, emit hazardous fumes that can cause serious health problems, while reoccurring fuel costs cut deeply into scarce funds.

In West Africa, about 75 percent of the rural population is living without access to grid electricity in areas to which the grid would be slow and expensive to arrive, if at all. But thanks to modern, high-quality off-grid lighting and energy products, people no longer need to wait in darkness, or by the fumes of a kerosene lamp. A typical solar home system can now power the same services that are used by grid-connected neighbors, while larger standalone systems can power public institutions, like schools and health centers, and even be put to productive use for activities like water pumping.

Lighting Africa goes west

Since 2009, the joint International Finance Corporation–World Bank Lighting Africa program has been enabling access to off-grid solar lighting and energy products in sub-Saharan Africa by catalyzing the markets that deliver them. Today, nearly 29 million people, mostly in East Africa, are meeting their basic electricity needs through products that meet the program's quality standards. By using these products rather than fuel-based lighting and energy sources, 3.7 million metric tons of greenhouse gas emissions have been avoided—the CO_2 equivalent of taking nearly 800,000 cars off the road for a year.

IDA18 is contributing to this success with about $150 million going to projects supporting electricity access through standalone solar across five countries, primarily in East Africa. It is also helping to take Lighting Africa to the western part of the continent. IDA18 is preparing a program that seeks to create a unified regional market in West Africa across 19 countries.

> **Before we started using quality verified solar, we used kerosene lamps for light. We walked two hours to the city and paid 3 or 4 birr to charge our phones. Now we are charging our phones at home.**
>
> Tafete Belete, resident of Werota, South Gondar, Ethiopia, East Africa

The Regional Off-Grid Electrification Project (ROGEP) will work along several streams to kick-start the market, including support for an enabling economic environment for quality-verified products, market research, educating consumers, and support for access to finance, among other activities. Preparations include developing pilot initiatives to electrify schools, health centers, water pumps, and street lights in Niger and Nigeria.

Keeping pace with technology

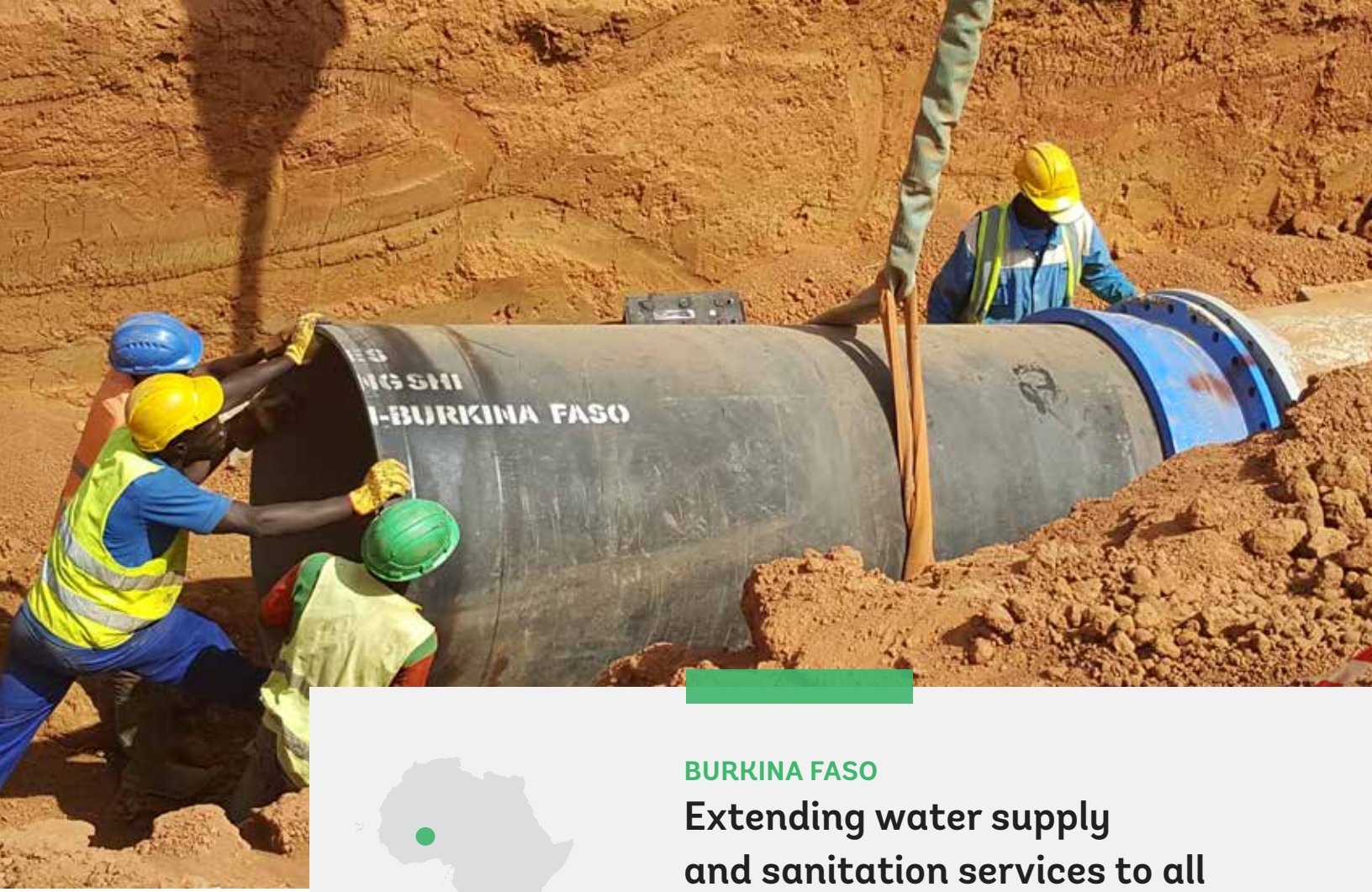
ROGEP seeks to replicate what worked in East Africa and improve upon it. Emphasis will be on supporting local entrepreneurs to allow them to capture the benefits of this vibrant market. Dedicated support for underrepresented categories of entrepreneurs, such as women, will also be offered.

As advancements in technology push past the boundaries of what once was impossible, Lighting Africa is keeping pace. Alongside simple, affordable solar lanterns that already have the power to transform lives by replacing hazardous kerosene fumes, ROGEP will support larger standalone solar systems that can light up schools or run life-saving medical equipment in clinics.

By enabling access to these technologies, ROGEP seeks to transform the lives of those currently living without the grid.

EXPANDING INFRASTRUCTURE

To reduce risks of flooding and landslides brought on by extreme weather, Burundi is putting its people to work climate-proofing key transport and drainage infrastructure, including these canal works at the Nyabagere River.



Access to clean water in urban areas is now at 90 percent but keeping up with rapid urbanization is challenging and rural areas lag behind.

© Dominic Chavez / World Bank

BURKINA FASO

Extending water supply and sanitation services to all

Burkina Faso is working toward achieving universal and equitable access to improved water supply and sanitation services. A major injection of IDA18 financing—$300 million—will boost ongoing efforts to improve service delivery and ensure efficient water resources management.

For 40 years, Rasmané Compaoré has lived in the same mud-brick house on the outskirts of Ouagadougou. His family had long been obliged to pay a daily fee to collect water from the communal standpipe a kilometer away.

"At the height of the drought, my children waited in line for water all day in vain, sometimes with several hundred others," he says. But now in his yard, near the kitchen, stands a shiny brass faucet. At 82 years of age, Compaoré is finally living in a home with running water.

He is one of 50,000 customers who have signed up for a household water connection with Burkina Faso's National Water and Sanitation Agency. It is part of an ambitious national plan to expand the water distribution network and improve management in urban areas—and it is one of many water and sanitation sector projects supported by the World Bank. Over the past two decades, the World Bank has worked with other development partners and mobilized more than $260 million in IDA and trust fund financing to bring improved water supply and sanitation services to over 1.7 million people in Burkina Faso.

Largest donor-financed operation

In June 2018, the World Bank boosted its support with the largest donor-financed operation in Burkina Faso's history: the $300 million IDA-funded Water Supply and Sanitation Program for Results. It will benefit 1.1 million people with improved water supply and 1.3 million people with improved sanitation services.

To support more effective management and service delivery, the program will help strengthen the sector's human capital. It will promote partnerships between government agencies, municipalities, universities, and research centers and support applied research and technical and vocational training, with special focus on opportunities for women.

"This innovative program will leverage finance for the water supply and sanitation sector through the built-in incentives it plans to provide for improved sustainability of service delivery, including operation and maintenance, cost recovery, and human capital strengthening," explains Cheick Kanté, World Bank Country Manager for Burkina Faso.

> **"This innovative program will leverage finance for the water supply and sanitation sector through the built-in incentives it plans to provide for improved service delivery."**
>
> Cheick Kanté, World Bank Country Manager for Burkina Faso

Universal and equitable access

The program will contribute to fostering inclusion and shared prosperity in Burkina Faso by bringing water supply and sanitation services to urban and rural areas that are particularly lagging behind in terms of access.

Despite progress, only one in five people nationwide has access to an improved sanitation facility, and three out of four people defecate in the open. Public latrines in rural and urban areas are few and poorly maintained (if at all), leaving students at school, patients in health centers, and public market goers with no designated, sanitary place to relieve themselves.

Over a third of the rural population does not have access to an improved water source—one protected from outside contamination, particularly fecal matter. While the rate improves to over 90 percent in Burkina Faso's cities, keeping up with rapid urbanization is difficult.

Achieving universal access to improved water supply and sanitation services is a national priority to support Burkina Faso's continued economy growth—averaging 5.5 percent GDP growth annually—and that of its population—estimated to reach 29 million people by 2030 from the current 18 million.

While informal and personal use of solar energy has gained traction in CAR, the 25 MW Danzy solar power plant will be the country's first large-scale application of solar PV technology.

© Eskinder Debebe / UN Photo

CENTRAL AFRICAN REPUBLIC

Powering up the energy sector with solar

With one of the lowest energy access rates in Africa and a weak transmission network, Central African Republic is investing in its energy sector to stimulate growth. Its first utility-scale solar power plant holds the promise of a brighter future.

In May 2018, the highest authorities in the Central African Republic (CAR), along with development partners and economic operators, attended a ceremony in the town of Danzy about 20 kilometers outside the capital Bangui. There, the first stone was laid for a new 25-megawatt (MW) grid-connected photovoltaic (PV) solar power plant with 25 megawatt hours of battery storage.

Central African president, Faustin Archange Touadera, attended the launch ceremony.

"The main concern for Central African economic operators is the lack of electricity, which prevents businesses from being able to store and process their products," he noted. "One of the solutions recommended to mitigate this lack of electricity is solar energy. I would like to thank the World Bank for agreeing to finance the establishment of a 70-hectare solar farm."

A first for CAR, a first for Africa

Under IDA18, the World Bank is preparing to finance the first phase of the project, which consists of building a 25 MW solar PV plant with battery storage of a similar capacity, strengthening transmission and distribution networks, and supporting sector reforms.

The project also will prepare the site for the second phase targeting an additional 15 MW and will help improve the financial health of the state-owned company, *Énergie Centrafricaine* (ENERCA). Technical assistance will promote the development of solar solutions for secondary cities and rural areas, notably by assessing the use of solar panels for homes and public buildings.

"It's a 40 MW project with an equivalent storage capacity—the first project on the African continent to install battery capacity that matches the capacity of the solar panels. In addition, the project will strengthen the transmission network that originates in Boali and the distribution network in Bangui," explained Jean-Christophe Carret, World Bank Country Director for CAR, the Democratic Republic of Congo, and the Republic of Congo.

> **It's the first project on the African continent to install battery capacity that matches the capacity of the solar panels.**
>
> Jean-Christophe Carret, World Bank Country Director for CAR, the Democratic Republic of Congo, and the Republic of Congo

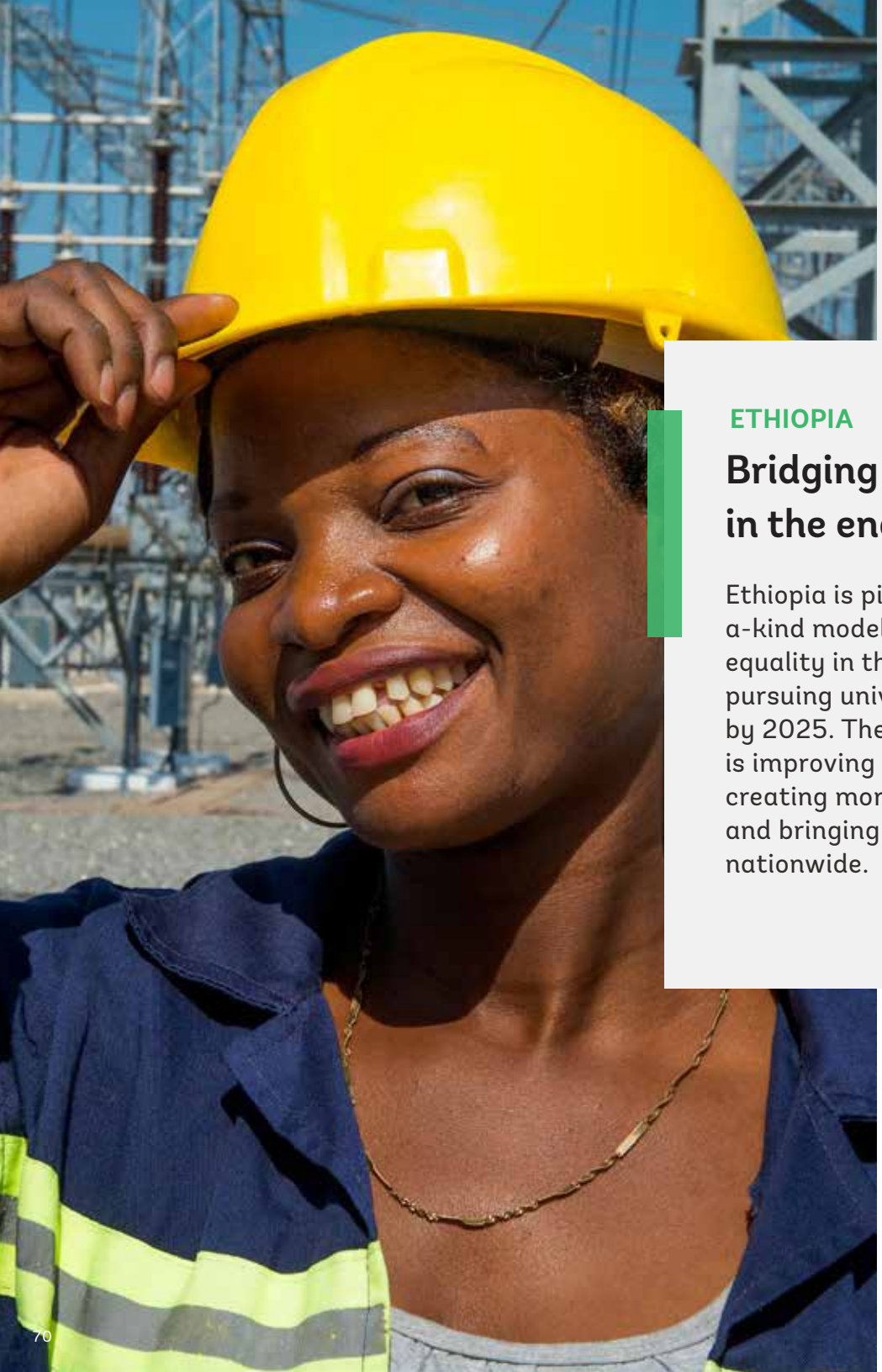
Strengthening the energy sector

The Danzy solar project is a critical investment in CAR's stunted energy sector. According to Gontran Djono Ahaba, Minister of Development of Energy and Hydraulic Resources, "The recurrent politico-military crises that have peppered the history of the Central African Republic have substantially derailed all efforts undertaken to promote economic and social development, resulting in 40 years of delayed investment in electricity production and distribution infrastructure."

Only 8 percent of CAR's population has access to electricity, mainly in the capital. Access rates are 2 percent in rural areas and 35 percent in Bangui, home to a million people. The current installed generation capacity is just 23 MW, with 19 MW coming from the Boali 1 and 2 hydroelectric plants.

In addition, over a third of all electricity produced is lost along transmission lines, and bill collection stands at 65 percent for the 30,000 subscribed households in Bangui. Clients pay a low rate for electricity, $0.14 (CFAF 65) per kilowatt hour, which does not allow ENERCA to recover its costs and forces the government to subsidize the company.

With the construction of the Danzy solar plant, CAR hopes to open up the solar energy market and attract private investors for future expansion.



ETHIOPIA

Bridging gender gaps in the energy sector

Ethiopia is pioneering a first-of-a-kind model for achieving gender equality in the energy sector while pursuing universal energy access by 2025. The IDA18-backed program is improving the lives of women, creating more equitable institutions, and bringing more power to citizens nationwide.

ELEAP is helping Ethiopian women enter the energy sector, gain better services, and have a brighter future.

© Arne Hoel / World Bank

"I love going to school and learning but we don't have any electricity at my house or neighborhood," says 12-year-old Melkam Tamiru, a third grader from Keya Gebriel in Ethiopia's Amhara region.

Tamiru, who dreams of being a doctor, rushes to finish her after-school chores so she can do her homework before dark. She says the weak light of her mother's cooking fire "hurts my eyes when I try to read."

Despite being the fastest growing economy in Africa over the past decade, Ethiopia is hampered by an inadequate and unreliable energy supply that costs 2 percent of GDP annually. With over 70 million people living in the dark (about 70 percent of the population), Ethiopia is among the top three countries worldwide facing profound energy access deficits. Ethiopia's numbers are also weak in another area: gender equality. It ranked 109 out of 143 countries in the 2016 Global Gender Gap Report.

Ambitious energy goals

To address these challenges and support the Government of Ethiopia's goal of achieving universal energy access by 2025, the World Bank supported the launch of the National Electrification Program in 2017. It is the first electrification program in Africa to adopt a holistic approach to universal access, establishing targets and timetables for integrated grid and off-grid solutions, an investment financing prospectus, actions to close the gender gap in the energy sector, and a comprehensive menu of sector reform activities.

To support the program's implementation, the World Bank approved $375 million in IDA funding for the Ethiopia Electrification Program for Results (ELEAP) in March 2018.

"ELEAP is financing over one million connections. It is the largest electrification-focused operation for the World Bank and has set a benchmark for Africa," says Rahul Kitchlu, who leads the World Bank ELEAP team.

> **ELEAP is financing over one million connections. It is the largest electrification-focused operation for the World Bank.**
>
> Rahul Kitchlu, World Bank ELEAP team leader

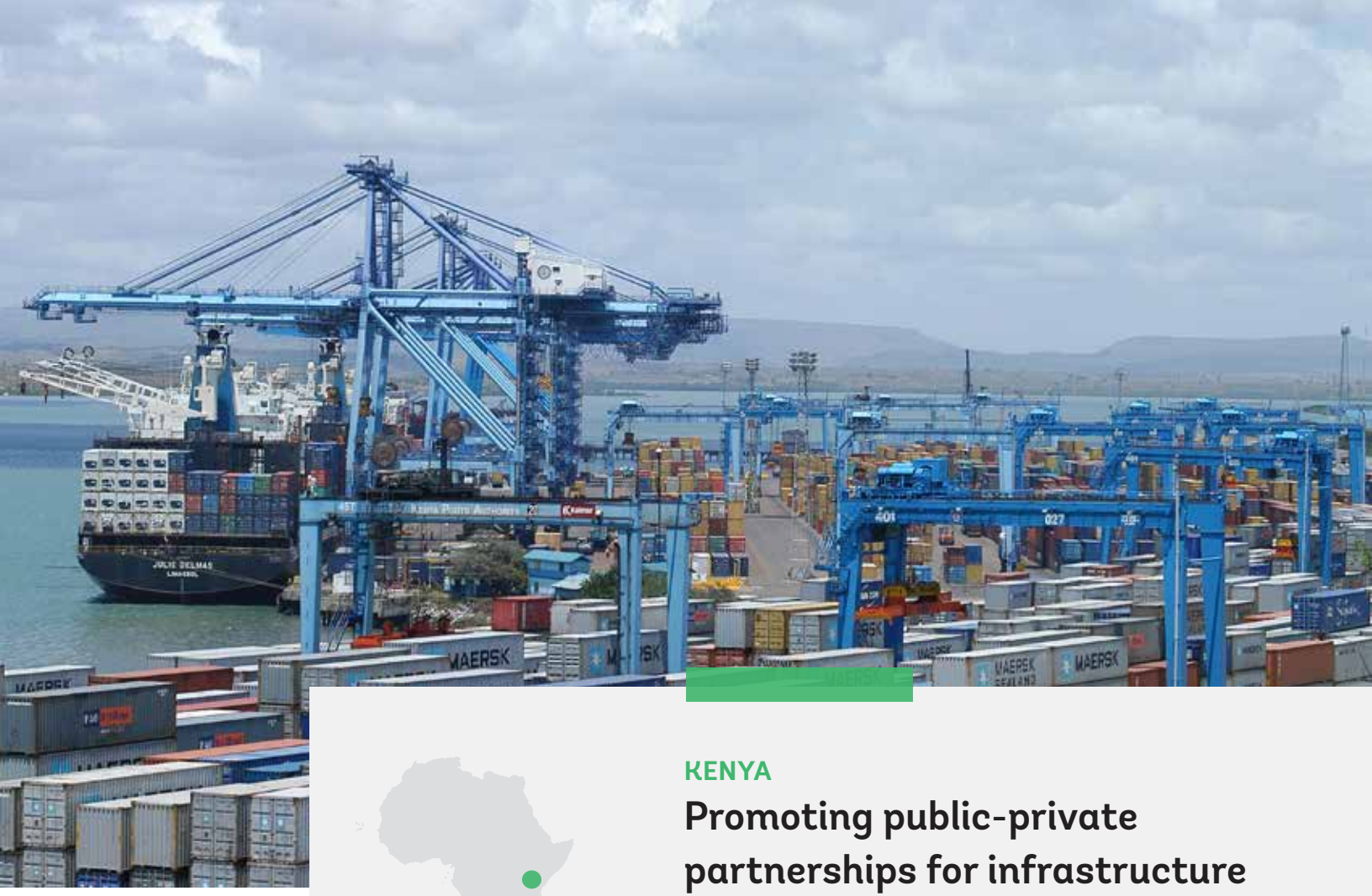
Championing gender equality

ELEAP is also unique for its focus on promoting gender equality as part of overall energy sector engagements. Through a sector-wide approach that included analysis of fundamental gender gaps, stakeholder consultations, high-level policy advice, and mobilization of significant financial resources from the World Bank, a first-of-a-kind model has been shaped to support gender equality in the energy sector.

Gender actions being implemented through ELEAP include addressing occupational sex-segregation across energy utilities with over 14,000 employees and supporting career development of female candidates. Female entrepreneurship in the off-grid market is also being promoted.

To overcome a major impediment to female participation in the work force, childcare facilities are being put in place in utility offices across all 11 regions of Ethiopia. Prevention and response to gender-based violence at the workplace and project sites are also receiving more resources.

ELEAP will ensure energy service provision to female-headed households, as well as investigating affordability of those services. Given that the burden of energy poverty falls disproportionately on women and girls in Ethiopia, they are most likely to benefit from modern energy services. Girls like Tamiru will find it easier to study with reliable light, and she will be one step closer to realizing her dream of becoming a doctor.



Kilindini Harbor Port currently handles cargo for Kenya and neighboring countries. The Kenyan government's PPP Unit has a pipeline of over 70 projects, including the planned development of the Shimoni Port to support enhanced trade and tourism.

© Kenya Ports Authority

KENYA

Promoting public-private partnerships for infrastructure development

Rapid economic and population growth has pushed Kenya to modernize and expand its infrastructure to improve the flow of people, goods, and opportunities. Private sector investment is key to meeting the potential of infrastructure-driven growth by 2030.

Over 25 years ago, the Government of Kenya began a process of reducing its involvement in the national economy, opening it up to the private sector. A combination of market liberalization, initial public offers, and concessionary contracts introduced public-private partnerships (PPPs) to the country's telecommunication, transport, aviation, and retail sectors.

Policy makers recognized the benefits of letting the private sector assume the costs and risks in big corporations and projects so that public resources could be channeled into social spending. As Kenya continued to enact legislative and regulatory reforms to encourage private investment and business ownership, its ranking in the World Bank's Ease of Doing Business Index rose from 136 out of 189 countries in 2014 to 80 in 2017.

Easing private investment

In 2018, Kenya unveiled its Big Four economic plan, calling on development partners and the private sector to help realize $70 billion worth of development projects and capacity building initiatives in affordable housing, manufacturing, education, and healthcare.

The World Bank responded with $50 million in additional financing from IDA18 to the Kenya Infrastructure Finance Public-Private Partnership Project (IFPPP). Originally launched in 2012, the project is channeling the new funding toward technical assistance to build PPP frameworks and methodologies and advisory services to support project preparation and procurement. A related project will work in parallel to assess and potentially provide World Bank-backed guarantees for private investment in projects prepared under IDA lending.

Under IFPPP, government and World Bank technicians have built on Kenya's 2013 PPP Act and fledging PPP Unit to establish a sound legal, regulatory, and institutional framework that is beginning to deliver.

"Now we have a world class PPP framework and methodologies, a high level of skills within government, and a robust pipeline of projects," says World Bank Senior PPP Specialist, Shyamala Shukla.

> **"The potential for an infrastructure PPP is both exciting and innovative and would position Kenya to be a role model for Africa."**
>
> Rachel Muthoga, deputy head of Public-Private Dialogue at the Kenya Private Sector Alliance

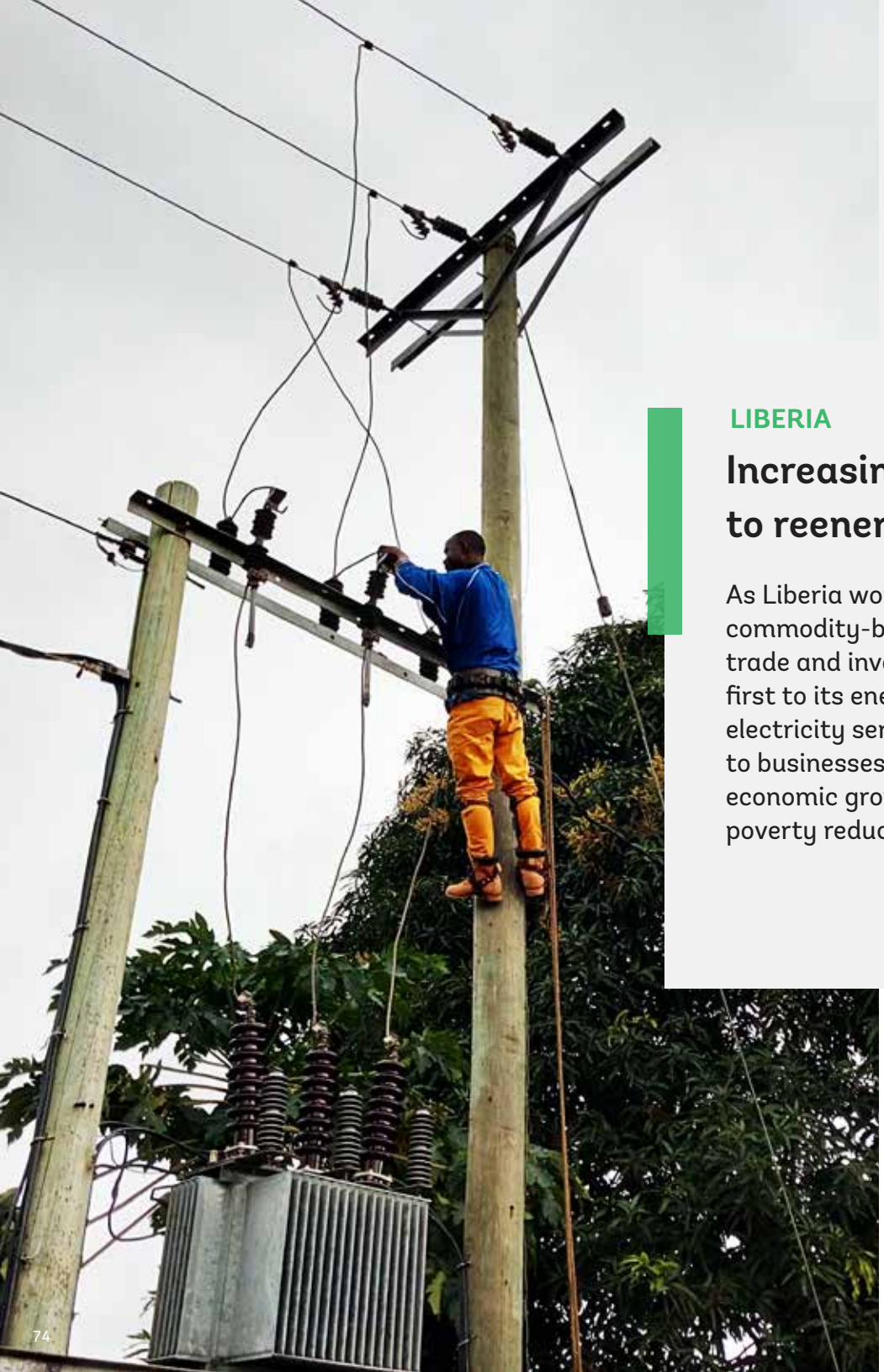
The expansion of the Nairobi–Nakuru highway is one of 70 projects being prepared and brought to market by the strengthened PPP Unit, as is the development of the Shimoni Port, 80 kilometers south of Mombasa. The role of the private sector will be to inject additional funds to improve port facilities, support associated infrastructure, and oversee port operations.

Rachel Muthoga, deputy head of Public-Private Dialogue at the Kenya Private Sector Alliance says that "the potential for an infrastructure PPP is both exciting and innovative and would position Kenya to be a role model for Africa."

Connecting innovators with industry

To compliment IFPPP, Kenya is also working to build much-needed skills within its private sector. An additional $50 million in IDA18 funding is supporting the Kenya Industry and Entrepreneurship Project, which aims to bridge the gulf between industry, enterprise innovators, and academia.

Efforts are underway to reach out to intermediaries, such as incubation hubs and co-working spaces, and evaluate how best to strengthen their operational base. The goal is to enhance the soft skills of innovators, entrepreneurs, and start-ups so they are more proficient in formulating business plans, pitching to investors, and building strong teams. Some 33,000 individuals and nearly 2,400 firms are expected to benefit.



LIBERIA

Increasing access to electricity to reenergize the economy

As Liberia works to diversify its commodity-based economy and boost trade and investment, it is looking first to its energy sector. Expanding electricity services and reducing costs to businesses and households can spur economic growth, job creation, and poverty reduction.

Liberia Electricity Corporation technicians are working overtime to get more customers connected to the national power grid.

© Ben Fomba, Jr.

Yassah Kpassakoi owns the Kpassakoi Trading Corporation (KTC), which operates a 15-bedroom hotel and entertainment and shopping center in bustling mid-town Monrovia, Liberia's capital. Once dependent on expensive generators to keep the lights on and her business open, Kpassakoi is thrilled with her new connection to the national power grid.

"I am happy that I do not have to pay so much money to operate generators. Our profit margin has increased, which will help us expand our business," she says.

Kpassakoi is among thousands of Monrovians who have gained access to cheaper, more reliable electricity thanks to ongoing efforts to expand electricity services and make them more affordable for businesses and households.

Increasing supply of affordable electricity

The Government of Liberia is committed to increasing the supply of reliable electricity while shifting away from expensive diesel-powered generation toward cheaper thermal sources, such as heavy fuel oil, and increasing the share of renewable sources of electricity, mostly hydropower. Investments in generation capacity have dropped the electricity tariff from $0.54 to $0.39 per kilowatt hour—a significant reduction but still high by regional standards.

Liberia aims to lower costs further by importing cheaper electricity from the regional market through the Côte d'Ivoire, Liberia, Sierra Leone, and Guinea (CLSG) Power Interconnection Project. The World Bank is supporting the project, most recently with $45 million in additional financing from IDA18, as a key component of the West Africa Power Pool (WAPP) program. It is working to establish a cooperative power pooling mechanism for West Africa to bring more stable and reliable electricity at affordable costs to the citizens of the Economic Community of West African States (ECOWAS).

> **"I do not have to pay so much money to operate generators. Our profit margin has increased, which will help us expand our business."**
>
> Yassah Kpassakoi, owner of Kpassakoi Trading Corporation in Monrovia

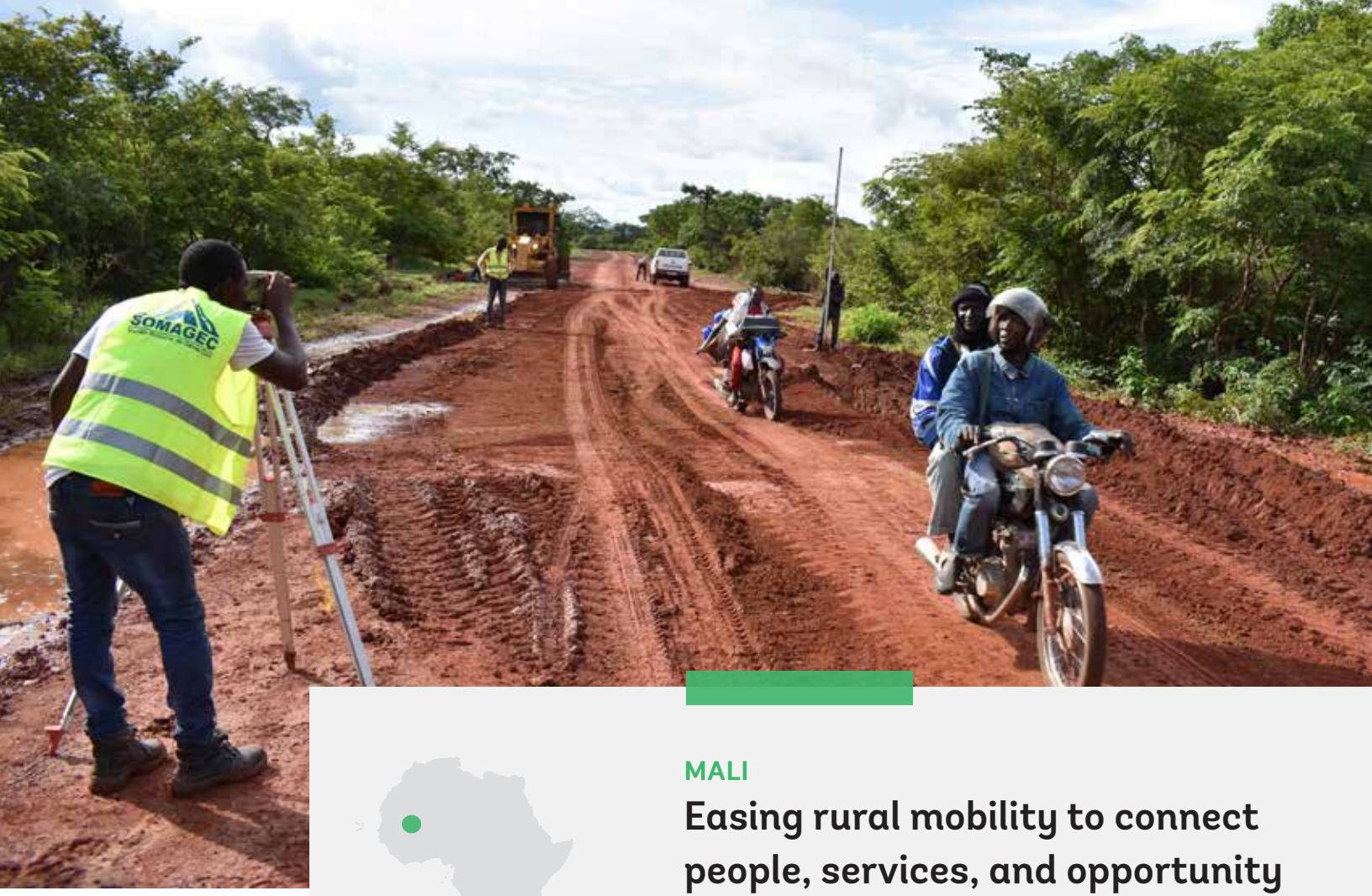
The CLSG project will support the construction of 225-kilovolt transmission lines to interconnect the four participating countries into the WAPP regional energy market. This will allow Liberia to sell surplus electricity from the Mount Coffee hydropower plant on the Saint Paul River. It also will help bring future generations into the regional market and enable commercial users, such as large plantations and mining firms that currently generate their own electricity, to buy power directly from the market. The transmission lines would also provide electricity to communities located within a kilometer of it.

Expanding the grid

Liberia is also investing in its national transmission infrastructure to bring grid-connected power to more urban and rural communities. Despite progress, Liberia still has one of the lowest access rates in Africa: 4.9 percent nationally and 20 percent in Monrovia.

The ongoing Liberia Accelerated Electricity Expansion Project, supported by $95 million in IDA financing, aims to expand grid connections to over 47,000 households and small businesses and 400 larger scale customers. So far, more than 17,200 customers have been connected, mainly in Monrovia.

It is also financing the construction of 110 kilometers of 66-kilovolt transmission lines and 2,000 kilometers of distribution lines in Monrovia and outlying counties. Five new substations will be constructed and one rehabilitated.



Construction crews are already working on upgrades to the Blendio-Kounia road and bridge to ensure safety and year-round accessiblity.

© Ahmadou Bissan / World Bank

MALI

Easing rural mobility to connect people, services, and opportunity

Isolation from markets and services is, quite literally, a roadblock impeding the development of Mali's rural agricultural areas, where the majority of the poor lives. A rural mobility project under IDA18 aims to boost productivity by rehabilitating 1,700 kilometers of vital roads.

The inhabitants of Zanina, a rural commune in southern Mali some 350 kilometers (km) from the capital Bamako, rejoice in the construction of not one, not two, but three concrete bridges connecting their communities to each other and regions beyond. The wide, sturdy bridges now bring vehicles, motorcyclists, pedestrians, shepherds with their herds, and a new level of liveliness to farming villages like Débéla. Located six km from the main road, Débéla used to be difficult to enter or exit after heavy rains. Now it is accessible year-round.

For Chata Diarra, a member of the Débéla village women's association, the new bridges mean greater financial security and peace of mind.

"We welcome these works that allow us to transport our products on time to neighboring markets in any season. We also no longer worry about the children going into the field or taking the animals to graze. With these bridges, they can easily return home," she says.

Reliable access to markets

These and other bridges are part of the Mali Rural Mobility and Connectivity Project, funded by $70 million from IDA18. It aims to rehabilitate 1,700 km of rural roads in the Koulikoro (dryland zone) and Sikasso (southern zone) regions of Mali and benefit some 650,000 people, mostly farming communities.

"The engine of the Malian economy is agriculture, and road access is part of an integrated approach to addressing the low productivity of rural farmers," says Soukeyna Kane, World Bank Country Director for Chad, Guinea, Mali, and Niger.

Alou Diallo from the small commune of Blendio knows first-hand how critical roads are to the flow of people, goods, and services across this rural landscape. He recalls a recent event when pouring rain made their narrow, dilapidated bridge impassable, blocking market vendors.

> **"We welcome these works that allow us to transport our products on time to neighboring markets in any season."**
>
> Chata Diarra, member of the Débéla village women's association

"They had to remain on the other side until the water receded, and they arrived late to sell their products. The farmers lost their perishable foodstuffs and the livestock producers had to wait for the next weekly market," he explains.

Fortunately, the Blendio-Kounia access road, an 84-km stretch that includes this unsafe bridge, is already undergoing reconstruction along with portions of National Highway 7 in the southern Sikasso region.

Better access to services, jobs

In addition to boosting agricultural productivity, improving road access will increase community connections to basic services like schools, health centers, and government offices. The project will also finance small common facilities, such as water wells, small warehouses, and vegetable gardens for women, to foster social cohesion and empowerment.

Moreover, the rehabilitation of these roads offers employment to the local workforce. Some 144,000 jobs will be created in five years, helping to reduce poverty in target areas. Community-level teams also will be formed to ensure ongoing maintenance of improved roads. By engaging its citizens, Mali is paving the way to more collaborative and responsible management of its vital infrastructure.

Borehole testing was a major success in the village of Ndour Ndour.

© Idrissa Sane / World Bank

SENEGAL

Increasing access to water brings a flow of benefits

More urban areas outside of Dakar—and soon parts of rural Senegal—are gaining access to modernized water and sanitation services. New boreholes dot the landscape, bringing fresh water and hope for better lives and livelihoods in affected communities.

Near to the entrance of Ndour-Ndour, a village some 70 kilometers south of Senegal's capital of Dakar, stands a new borehole. Just opposite is the Gning family compound where Astou Ggning is busy with children and chores. For her, the borehole is a welcome sight that holds the promise of reprieve.

Women and girls are the first victims of water deficits as the duty of water collection most often falls to them. According to a study by the World Bank and the French Cooperation, water is fetched with 18 to 20-liter plastic containers (some as large as 35 liters) several times a day. With an average distance of 200 meters between home and water source, a woman or girl may carry 200 kilograms daily.

Astou Ggning says that women were "freed from their chains" during the borehole testing period. "We had time to do other things. We didn't have to rise before daybreak to draw water. We had water all the time. Our daughters had more time to go to school," she explains.

Targeting urban and rural areas

Astou Ggning and the entire community look forward to the permanent operation of the borehole, which is being completed as part of the World Bank-financed Urban Water and Sanitation Project. It recently received additional financing of $30 million from IDA18 to advance work on reducing the water shortage in Dakar and neighboring Petite Côte area.

Another $130 million in IDA18 funding was approved in June 2018 for the Rural Water Supply and Sanitation Project, which aims to provide 1.5 million Senegalese with access to piped water and improved sanitation facilities in the Groundnut Basin area in the center west of the country and home to one third of Senegal's rural population.

> **"Women were freed from their chains during the borehole testing period. We had time to do other things."**
>
> Astou Ggning, resident of Ndour-Ndour village

More than water

For Senegal, improving water and sanitation infrastructure is key to shared prosperity as it leads to reductions in water-borne diseases and associated absenteeism from work and school as well as reductions in costs associated with medical expenses and loss of income. Keeping pace with population expansion has been a challenge for Senegal's water and sanitation services.

In the commune of Nguékhokh where water infrastructure has been expanded, the mayor Pape Songhé Diouf explains they had only one borehole built in 1984 when the population was less than 1,000 people. It has since grown to 60,000 people, with 80 percent lacking access to water until recently.

"The World Bank gave us life, because water is life… the availability of this resource is impacting other sectors of the economy," he says.

Communities east of Dakar also feel the impact of improved water access even though a drop has yet to flow. A gravel road leading to the village of Kissane ends at the newly installed borehole after crossing the neighboring villages of Birbirame and Ndiass-Palam where standpipes are now part of the landscape.

Ndiass-Palam village leader, Diama Ndoye, is looking forward to the standpipes being functional, but recognizes, "we are already benefiting from enhanced mobility among the villages."

Construction of Zambia's first grid-connected solar PV power plant at Bangweulu is underway.

© NEOEN

ZAMBIA

Unlocking low cost, large scale solar power

Adding power capacity is urgent in Zambia, where less than a third of the population has access to electricity and drought has limited hydropower. The World Bank Group's Scaling Solar Program is helping to procure privately financed solar power and enable rapid rollout.

In recent years, droughts in southern Africa have significantly reduced the electrical output of Zambia's hydropower plants, leaving many Zambians in the dark. Power shortages and forced rationing have impacted the national economy and pushed the government to mandate the procurement of 600 megawatts (MW) of solar photovoltaic (PV) power and to target an overall increase in installed generation capacity to 6,000 MW by 2030.

With its year-round sunshine and geographical location, Zambia is well positioned to integrate solar power into an energy mix dominated by climate-vulnerable hydropower. The Government of Zambia partnered with the World Bank in 2015 through its newly launched Scaling Solar Program to initiate the first phase of Zambia's national solar plan. It aims to attract independent power producers to develop up to six 50 MW solar PV power plants for a total of 300 MW of new power capacity.

Scaling Solar Program

"Zambia is the first country to implement the Scaling Solar program, which brings together World Bank Group services and instruments under a single engagement aimed at creating viable markets for grid-connected solar energy," says Ina Ruthenberg, World Bank Country Manager for Zambia.

Scaling Solar is an open and competitive approach that facilitates the rapid development of privately-owned, utility-scale solar PV projects in sub-Saharan Africa. It enables governments and utilities to procure solar power transparently and at the lowest possible cost. Through competitive auctions organized by the program, Zambia was able to attract world class developers to its first two projects and obtain some of the lowest tariffs in Africa at that time ($.06 and $.078 per kilowatt hour fixed for 25 years).

Scaling Solar is also quick. Zambia has been able to assess projects and manage competitive tenders in short order. The first plants are now being built with commissioning set to occur within a fraction of the time it would have taken Zambia to do so following a business-as-usual procurement process.

> **Scaling Solar is a step change for Zambia and other countries facing electricity shortages.**
>
> Madalo Minofu, IFC Resident Representative for Zambia

"Scaling Solar is a step change for Zambia and other countries facing electricity shortages," says Madalo Minofu, IFC Resident Representative for Zambia.

More power, less expense

The first projects at Bangweulu (sponsored by French company NEOEN) and Ngonye (sponsored by the multinational Enel) are now under construction with IFC financing and letters of credit backed by IDA partial risk guarantees. Zambia is planning a second round with Scaling Solar to develop additional solar plants, which also envision IDA18 payment and loan guarantees to back-stop the plants, coupled with IFC financing.

Zambia's Minister of Energy, Mathew Nkhuwa, says the projects will not only curb power shortages and provide a source of energy that complements Zambia's hydro-based system, they "will allow the Government of Zambia to reduce its electricity purchase from expensive diesel power plants."

Based on initial assumptions, Zambia's savings over the first 25 years would be about $163 million per 50 MW power plant. The first two plants will increase the country's available generation capacity by 5 percent and will help restore water levels in its hydropower dams.

Fishing is a way of life in Saint-Louis, Senegal, but coastal erosion is costing fishermen their livelihoods and homes.

© Ibrahima BA Sané / World Bank

WEST AFRICA

Fighting coastal erosion and waves of change

Coastal communities in West Africa are losing ground to the ocean each year. Families are losing their homes and way of life to coastal erosion, flooding, and even breaking waves. Countries are working together to create new solutions to protect the most vulnerable.

The city of Saint-Louis, once Senegal's shining jewel and a United Nation's World Heritage Site, is fast losing land, livelihoods, homes, and infrastructure due to coastal erosion. Five meters of the Saint-Louis coastline are lost each year and 200 families have had to abandon their homes and assets. Another 1,000 families are at risk.

Climate change and related sea level rise contribute to this emergency, but coastal erosion is also the result of poor planning, with houses, hotels, and infrastructure built in now precarious coastal zones.

Amadou Mansour Faye, Mayor of Saint-Louis and Minster of Hydraulics and Sanitation warns that if the sea level rises and the Langue de Barbarie disappears, "entire territories inside the country will be threatened.

The situation in Saint-Louis is alarming, but it is not unique. About 40 percent of West Africa's GDP is generated in coastal provinces, where almost one-third of the population resides. Communities are vulnerable to the effects of poor coastal development and climate change, particularly severe coastal erosion and frequent flooding.

Regional solution to regional problem

West African countries from Mauritania to Gabon are working together to manage threats along their joint coastline in a more collaborative, integrated way. Led by West African governments and supported by the World Bank and other partners, the newly launched West Africa Coastal Areas Management Program (WACA) aims to incite greater cooperation among countries and regional institutions.

In April 2018, the World Bank approved $190 million in IDA funding for the first WACA resilience investment project to support six countries—Benin, Côte d'Ivoire, Mauritania, São Tomé & Príncipe, Senegal, and Togo—and the West Africa Economic and Monetary Union (WAEMU). Potentially, WACA could grow to include all 17 countries along the West African coastline.

> **"Our concern is to preserve our territory and ensure that the population of Saint-Louis, especially fishermen in the Langue de Barbarie, can live and do their jobs safely."**
>
> Amadou Mansour Faye, Mayor of Saint-Louis and Minster of Hydraulics and Sanitation, Senegal

"This project is a collective response to the urgent need to address coastal degradation in a regional, integrated manner. It is an opportunity to strengthen the resilience of West Africa's communities and transform their livelihoods," says Makhtar Diop, the World Bank's Vice President for Infrastructure.

Going grey and green

Across the region, WACA will protect against coastal erosion through traditional "grey" infrastructure, such as building seawalls, dikes, and coastal groins. It will also restore and preserve "green" infrastructure, such as fixing dunes, restoring wetlands and mangroves, and replenishing beaches—all of which play a critical role in preserving the coastline.

Flooding will be reduced by rehabilitating lagoons and drainage systems and by improving watershed management. Interventions will also support pollution control through better treatment of marine litter, oil spills, and industrial and municipal waste.

WACA will also work with WAEMU and three other regional entities to ensure information is shared and recurring trends are monitored and addressed at the regional level. More partners are expected to join WACA as it expands efforts to boost knowledge transfer, mobilize additional finance, and foster political dialogue among countries.

IDA18 funding will increase support for hydromet research and development in Burkina Faso, where shifting weather patterns are being studied by the Burkina Faso Meteorological Service.

© Dominic Chavez / International Finance Corporation

SUB-SAHARAN AFRICA

Investing in hydromet for climate-smart development

Africa accounts for just 4 percent of global greenhouse gas emissions, but it is highly vulnerable to the impacts of climate change. The Africa Hydromet Program provides real-time weather, water, and climate information and services to support communities, industries, and countries continentwide.

Tesfaye, a grain and legume farmer in rural Ethiopia, takes a break from guiding his grazing cattle to analyze the skies in Chanco, north of the capital Addis Ababa. The weather is critical to his livelihood, and it is not always reliable. "This year, the weather was good, but last year, there was less rain to grow teff, barley, and lentils on my farm," he says. "It will be very helpful if I know about dangerous storms ahead of time, so I can plan for planting and harvesting."

Farmers like Tesfaye could benefit from dependable weather, water, and climate information—collectively known as hydromet services.

Essential information for all

A combination of hydrology and meteorology, hydromet services offer real-time weather, water, and climate updates; early warnings; and climate outlooks that can help communities predict and prepare for impending disasters. Hydromet services also provide the data needed for weather forecasting and offer additional climate and weather-related services. Everyday people, from students to farmers, and entire industries, including aviation and energy, benefit from hydromet services.

Less than 20 percent of sub-Saharan African countries provide reliable hydromet services to their people and economies. African governments often juggle competing priorities for investment: without adequate funding, national meteorological and hydrological services are limited in their ability to contribute to climate-resilient development and adaptation planning.

Africa Hydromet Program

Improved hydromet services can save African countries from avoidable damage and loss, ensuring that past and current investments in infrastructure, education, and development are not lost to disasters. Hydromet services can break the vicious cycle of damage and recovery.

> **Hydromet services provide us with data, predictions, and information so we can prepare for disasters and effectively design our long- and short-term climate resilience strategies.**
>
> Jerry Lengoasa, CEO of the South African Weather Service

To respond to this development priority, the World Bank, the Global Facility for Disaster Reduction and Recovery, and other partners created the Africa Hydromet Program in 2015 to support collaborative efforts to modernize hydromet services across Africa. The program holistically addresses modernization needs at the national, sub-regional, and regional levels. This includes upgrading observation infrastructure, interpreting data, and delivering services to offer timely and reliable weather and climate forecasts, especially on impending disaster risks. In the first phase, 15 African countries and four regional climate centers are being supported.

Looking ahead with IDA18 funding, the World Bank aims to expand support to Burkina Faso as well as launch a new multi-phase regional program in West Africa and the Sahel. Starting with Mali, Chad, Togo, and regional meteorological entities, the program will strengthen hydromet services, information sharing, and coordination for improved early warning, disaster response and safety nets systems, and agricultural services.

Jerry Lengoasa, CEO of the South African Weather Service, says citizens directly benefit from hydromet services.

"Hydromet services are essential to everyday life," Lengoasa explains. "These services provide us with data, predictions, and information so we can prepare for disasters and effectively design our long- and short-term climate resilience strategies, which are essential to achieving our development goals."

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