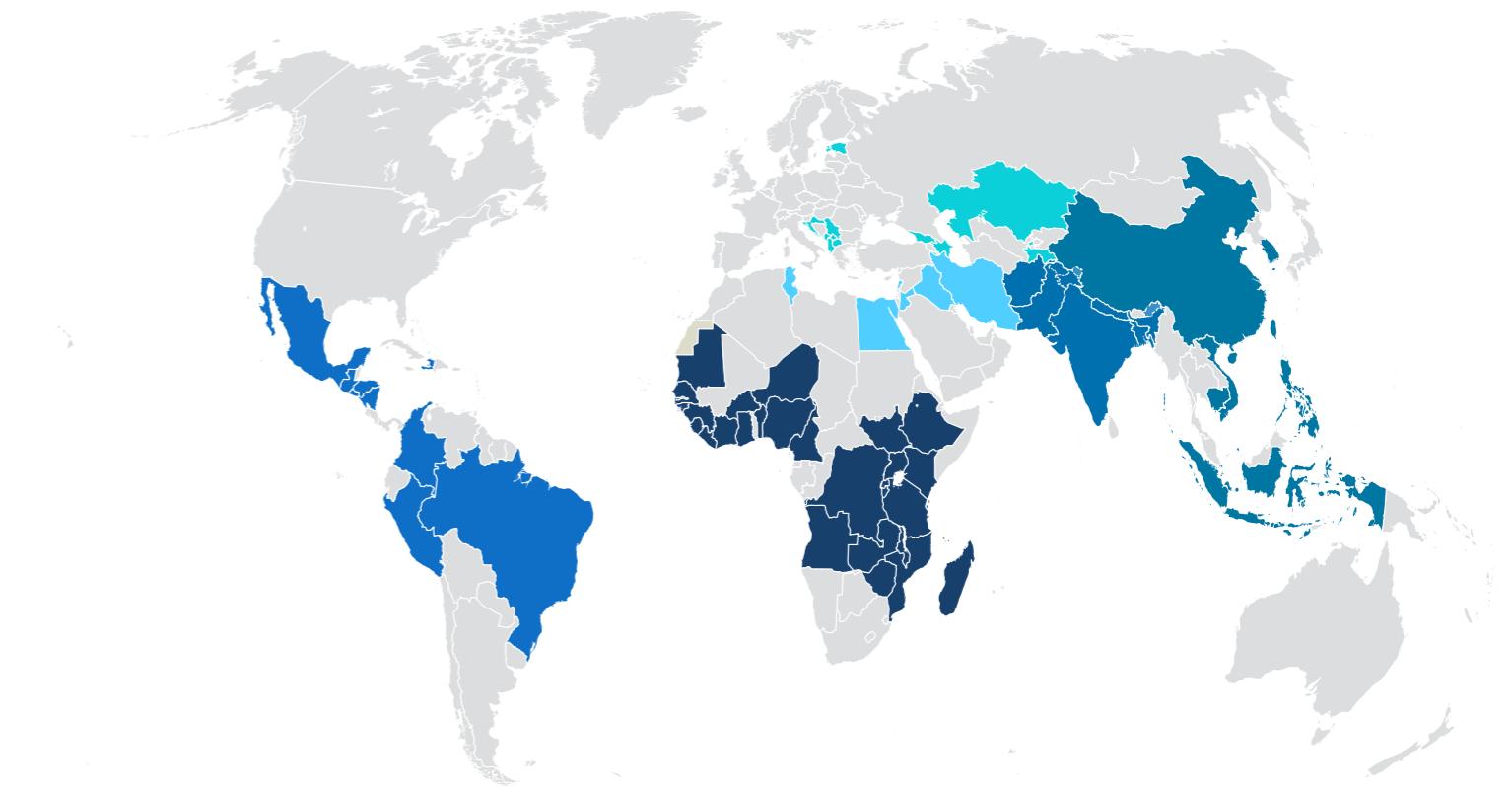


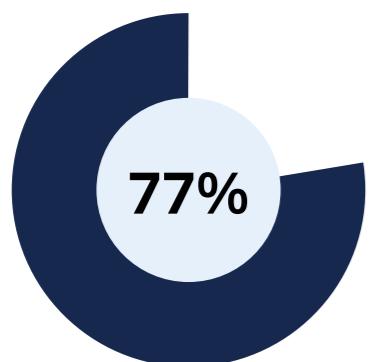
Portfolio at a Glance

The Development Impact Fund (DIF) portfolio includes



Map O.1 The Worldwide DIF Portfolio

Focus on Development Needs



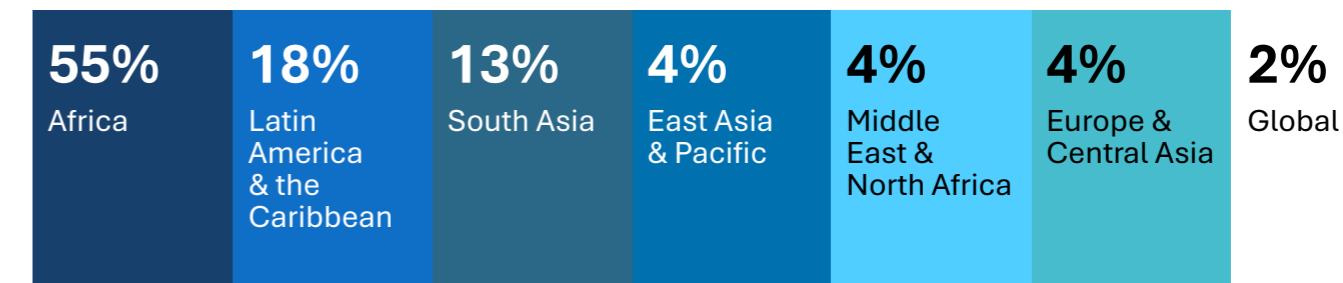
77 percent of projects support lower-middle- and low-income countries.

Project Status



- 55% Completed
- 22% Ongoing
- 17% In design
- 6% Under final analysis

Across 67 countries



Through the **LEADS initiative**, we are also shaping a pipeline of early-stage operations in the World Bank and IFC representing an additional \$18.8 billion in prospective financing. While not yet supported by DIF, these investments are already advancing through the trial-and-adopt approach. As we grow DIF, we aim to align resources to prioritize support for some of these projects to maximize their impact through implementation.

Highlights

The Development Impact Fund (DIF) is reshaping how scientific evidence is integrated into development operations by embedding rigorous research into policy making at an unprecedented scale:



With DIF's support, we are leveraging the **trial-and-adopt** technology to generate a rich body of evidence across strategic development sectors, and we are scaling up regional and global approaches to ensure that this evidence is put to use where it matters most.



By launching the **LEADS (Learn. Adapt. Scale.)** initiative, we are accelerating the adoption of existing evidence and embedding it into World Bank Group operations across the entire Regional project pipeline.



By integrating **behavioral science** insights, we are strengthening the impact and scalability of our evidence.



Finally, by developing **artificial intelligence** (AI) solutions, we are making evidence globally accessible to transform development decision-making worldwide.

Why do these initiatives matter? The trial-and-adopt technology generates evidence about how to reduce poverty by 20 percentage points, increase the effectiveness of agricultural input subsidies by 50 percent, teach a child to read in record time and at low cost, and ensure that employment programs turn into high-quality jobs—among many other critical issues. LEADS allows us to work with governments to help them adopt and scale up evidence that works. And AI promotes access to that evidence for all, creating accountability in the adoption of better ways to use public resources.



Generating Evidence from Strategic Projects

The **trial-and-adopt** technology is an innovative approach to generating scientific evidence from projects within strategic research programs, helping government agencies foster curiosity and build their capacities to test and adopt more impactful solutions. The goal of this approach is to improve development effectiveness by systematically testing solutions in a select number of real contexts before adopting and scaling up those that work best.

We work in two phases:

1. **Trial:** We evaluate new development solutions through randomized controlled trials or other experimental methods. These solutions range from new technologies to policy reforms, financial mechanisms, and service delivery models. We test solutions on a small scale (in about 5 percent of projects) before considering wider implementation.
2. **Adopt:** Once we have proven that a solution is effective through rigorous evaluation, the World Bank helps scale it up by integrating it into broader policy frameworks or encouraging governments and partners to adopt it. The “adopt” phase is crucial to ensuring that effective solutions have a lasting impact on development outcomes.

The trial-and-adopt model has led to a vast body of evidence on how to shape development interventions for greater impact. We now have a mandate to scale up the adoption of this evidence across all of the World Bank’s Global Challenge Programs and Regions.

Central to our approach is a process of co-production with partners and local agencies that transfers know-how and builds data capabilities and skills for continuous learning and progress. By participating in DIF, **partner research institutions** collaborate on an exciting knowledge-generation agenda—one that is rooted in large-scale programmatic strategies aimed at producing impactful insights to solve global challenges.

Scaling Up the Adoption of Evidence Across the World Bank

The **LEADS (Learn. Adapt. Scale.)** initiative is a collaboration between the World Bank's Development Impact group and the Bank's Regions to embed trial-and-adopt evidence directly into project design and implementation across the entire Regional project pipeline, bridging the gap between research and operations.

Through LEADS, we ensure that global evidence and real-time learning are systematically integrated into operations to enhance the impact of International Development Association (IDA), International Bank for Reconstruction and Development (IBRD), and International Finance Corporation (IFC) investments. We achieve this through structured collaboration among researchers, operational teams, and governments during one-week project design workshops and country visits to support operations during project implementation.

The [Africa LEADS workshop](#), held in May 2024 in Cape Town, South Africa, marked a key milestone in this initiative. Africa LEADS brought together 250 participants from 16 countries to incorporate proven solutions into 30 projects managing over \$12.8 billion in prospective investments. The workshop targeted projects in the preparation phase across key sectors—including jobs, education, water, energy, and agriculture—and established an evidence-based learning agenda to enhance project outcomes across Eastern and Southern Africa. Africa LEADS delivered substantial benefits by significantly improving the quality of these new projects and increasing their expected impact—generating an estimated \$238 million in added value.

Building on this success, we will expand LEADS to Western and Central Africa in 2025, starting with a regional workshop in Lomé, Togo. The next phase of LEADS will focus on agriculture, food security, domestic revenue mobilization, education, energy, and water, with IFC playing a critical role. We will then expand LEADS to East Asia and Pacific through a collaboration with the Japanese government, and later to the Middle East and North Africa. From there, we aim to roll out LEADS across all World Bank Regions to scale up high-impact interventions globally.

Participation in LEADS workshops provides partners and development agencies with critical opportunities to engage directly with projects that align with their strategic priorities. These engagements can be leveraged to structure co-financing—for instance, with multiphase programmatic approach (MPA) projects—and to deepen participation in our knowledge generation through collaboratives, funding, secondments, or pilot initiatives. These efforts support and enhance the effectiveness of donors' contributions to IDA and their stakes in IBRD.

By embedding evidence-based solutions into World Bank Group operations and scaling up the trial-and-adopt technology across its Regional portfolios, **LEADS is answering the call for a “Better Bank”** within the World Bank's Evolution Process and Knowledge Compact for Action. It is also reinforcing the One World Bank approach by strengthening collaboration across IBRD, IDA, and IFC, ensuring that evidence-based decision-making shapes the future of development finance at scale.



Strengthening the Impact of Evidence Through Behavioral Science

Maximizing the impact of evidence-based solutions also requires placing human behavior at the center of decision-making. To leverage behavioral science insights, we have integrated the World Bank's Mind, Behavior, and Development Unit (eMBeD) into the Development Impact group. Through eMBeD, we will apply behavioral science insights across our portfolio and in every stage of project design and implementation. You can read a fuller description of eMBeD's work in chapter 5.

eMBeD was created in 2017 to integrate behavioral science into World Bank projects and operations. The team works by identifying behavioral barriers in policy implementation, designing evidence-based interventions, and systematically measuring their impact. Since its inception, it has supported more than 150 operations across all World Bank verticals, produced 180 publications, and streamlined behavioral insights to inform large-scale development strategies.

Among other projects, eMBeD has supported tax administrations in 14 countries with behavioral science interventions that have reached over 600,000 taxpayers, improving tax compliance and supporting broader tax policy reforms. It has also designed interventions to boost students' motivation that reached 340,000 students in Peru and Indonesia, raising test scores at low cost. These interventions have since been scaled up to national education curricula and other countries. The team has also led workshops, designed tool kits, and written policy notes to help integrate behavioral science into program design and implementation, reaching over 10,000 policy makers and World Bank staff.

Initially a small initiative, eMBeD has rapidly evolved into a global resource with a demand-driven model for providing targeted support across regions and sectors. As part of Development Impact, eMBeD will leverage the trial-and-adopt technology and AI capabilities to push the boundaries of behavioral science and support the DIF projects, transforming insights into scalable solutions that drive meaningful policy change.



Harnessing Artificial Intelligence for Global Impact

While the LEADS initiative targets all World Bank Regional projects and shares scientific evidence directly with government partners, this evidence remains largely unknown to the wider world. To change this, we are developing **advanced AI-powered tools** to provide universal access to our evidence so others can also put it into action. With the support of DIF and Google.org, we have launched a new, AI-focused team to organize this work. You can read a fuller description of this team's work in chapter 5.

In partnership with Google.org, our AI team is developing **ImpactAI**, an AI-powered assistant designed to provide policy makers with precise, real-time evidence on the effectiveness of policy interventions. ImpactAI was selected for Google.org's inaugural Generative AI Accelerator program and received critical support and mentorship, culminating in a showcase at the Google Impact Summit. We will officially launch ImpactAI in 2025, marking a major step toward making evidence for policy making more accessible and actionable.

Building on this momentum, our AI team extended its collaboration with Google.org to a second project focused on forecasting food insecurity. This research pilot uses natural language processing to analyze nontraditional data sources (such as news articles) to detect early signs of food crises. Our approach has correctly predicted 91 percent of food crises up to a year in advance, compared with the 62 percent success rate of traditional forecasting methods. By better forecasting food crises, we can prevent them rather than respond to them, saving lives. With enthusiastic support from Google.org's funding arm and its AI research team in Accra, Ghana, the AI team secured a new grant to advance this work.

We are now integrating AI across our entire research portfolio. Our AI team is producing new AI-driven products and services, strengthening existing analytical and operational work, and using the trial-and-adopt technology to test AI's effectiveness for addressing development challenges. By harnessing AI's potential, we are widening the reach of evidence-based solutions across sectors and geographies—bringing rigorous research to every stage of the development process at an unprecedented scale.

About This Report

The 2025 annual report for the Development Impact Fund (DIF) provides an overview of DIF-supported trial-and-adopt research programs, which generate the knowledge that fuels our LEADS (Learn. Adapt. Scale.) initiative and artificial intelligence (AI) innovations. The following chapters explore the impact of these research programs across key development themes that align with the World Bank's verticals: people, planet, prosperity, and infrastructure. A fifth chapter describes cross-cutting solutions, including behavioral science and AI, that enhance the innovation, reliability, and accessibility of our evidence for decision-makers. The final chapter outlines future directions, and the appendixes describe the status of all projects in DIF's portfolio as well as the fund's financial status.





Chapter 1

People

People are at the heart of development investments. The World Bank's vision of ending poverty begins with investing in people: in their education, their health, their livelihoods, and their ability to realize their full potential. This chapter presents our work to support investments in human capital and better lives for all people through **education and skills development, health, social protection, and women's economic empowerment**. Our work also aims to mitigate **fragility, conflict, and violence**, major obstacles to realizing the potential of these investments.

The trial-and-adopt technology has enabled practitioners to test cutting-edge solutions and delivery modalities to enhance the efficacy of programs in these key areas. This evidence supports better-designed programs with greater impact on people's lives and creates ripple effects across our entire portfolio, with an impact on prosperity, climate mitigation and resilience, infrastructure investment, and more.

Education and Skills Development

Education is a powerful instrument for reducing poverty and improving health, stability, and economic prosperity, while skills are critical for jobs and livelihoods. Access to quality education, skills development, and lifelong learning—from early childhood to tertiary education and beyond—allows people to thrive in school, at work, and throughout their lives.



How can we strengthen education and skills development for all?

Our education and skills research program focuses on cost-effective solutions to achieve the following goals:

- Expanding opportunities for learning at all levels
- Improving the quality of education
- Building youth skills to improve job opportunities.

These themes align with the World Bank's Education Strategy (World Bank 2020) and the *World Development Report 2018: Learning to Realize Education's Promise* (World Bank 2018), and they represent the key ingredients that drive the learning process.

We also develop customized data and provide evidence on program design and implementation through diagnostic reports, systematic reviews, policy dashboards, and just-in-time technical assistance. For instance, with the World Bank's Education Global Practice (GP), we developed the [Global Education Policy Dashboard](#), a digital tool that helps governments collect and evaluate information on learning outcomes and their drivers more efficiently and effectively. With learning stagnating and budgets constrained in many parts of the world, identifying these drivers is more important than ever.

Why Does Our Work Matter?

Education is available to increasingly many people. But its impact on well-being and economic growth is limited by systemic factors, including ineffective learning environments, inadequate teaching support, poor school management, and weak alignment between education systems and labor markets. It is not enough to make temporary improvements to education—we must identify and scale up interventions that address these systemic gaps.

The trial-and-adopt technology allows us to identify systemic solutions that are cost-effective and scalable:



By adopting **flexible learning models** in Nigeria, we can help children learn to read five times faster than in traditional school settings, at 36 percent of the cost.



By improving the quality of **academic mentoring** in Lebanon, we can increase the likelihood that students graduate with a STEM degree by 4 percentage points—an effect comparable to that of an \$8,000 grant in the US, but at much lower cost.



By integrating work experience into education through **dual apprenticeships** in Côte d'Ivoire, we can boost young people's earnings by 15 percent after five years.

We are integrating this evidence into project design to drive systemic improvements in education and ensure that all learners can reach their full potential.



Expanding Opportunities for Learning at All Levels

Our education and skills research program identifies and scales up solutions to expand opportunities for learning and access to education at all levels. We are generating evidence about early childhood development programs, which serve as foundational learning opportunities, school feeding programs, which encourage school attendance and support learning, educational technology (edtech) interventions, which can provide learning to hard-to-reach populations, and girls' education, which can help break the cycle of poverty and drive economic progress.

Early childhood development programs have proven to be highly effective in laying the foundation for lifelong learning and development. Our research explores the most cost-effective strategies for enhancing the quality of early childhood education and ensuring people can access it.



In collaboration with the Education GP and the Development Research Group, we conducted a global meta-analysis of preprimary education programs to estimate the effects of expanding access to preprimary education or improving its quality, and to weigh costs and benefits for low- and middle-income countries (Holla et al. 2021). Our results show that programs that focus on children from lower socioeconomic backgrounds have a great return on investment, significantly increase school participation (particularly among disadvantaged children), and boost cognitive and socioemotional skills. Our cost-benefit analysis suggests that an increase in spending on preprimary education coverage and quality may improve the overall efficiency of education spending.

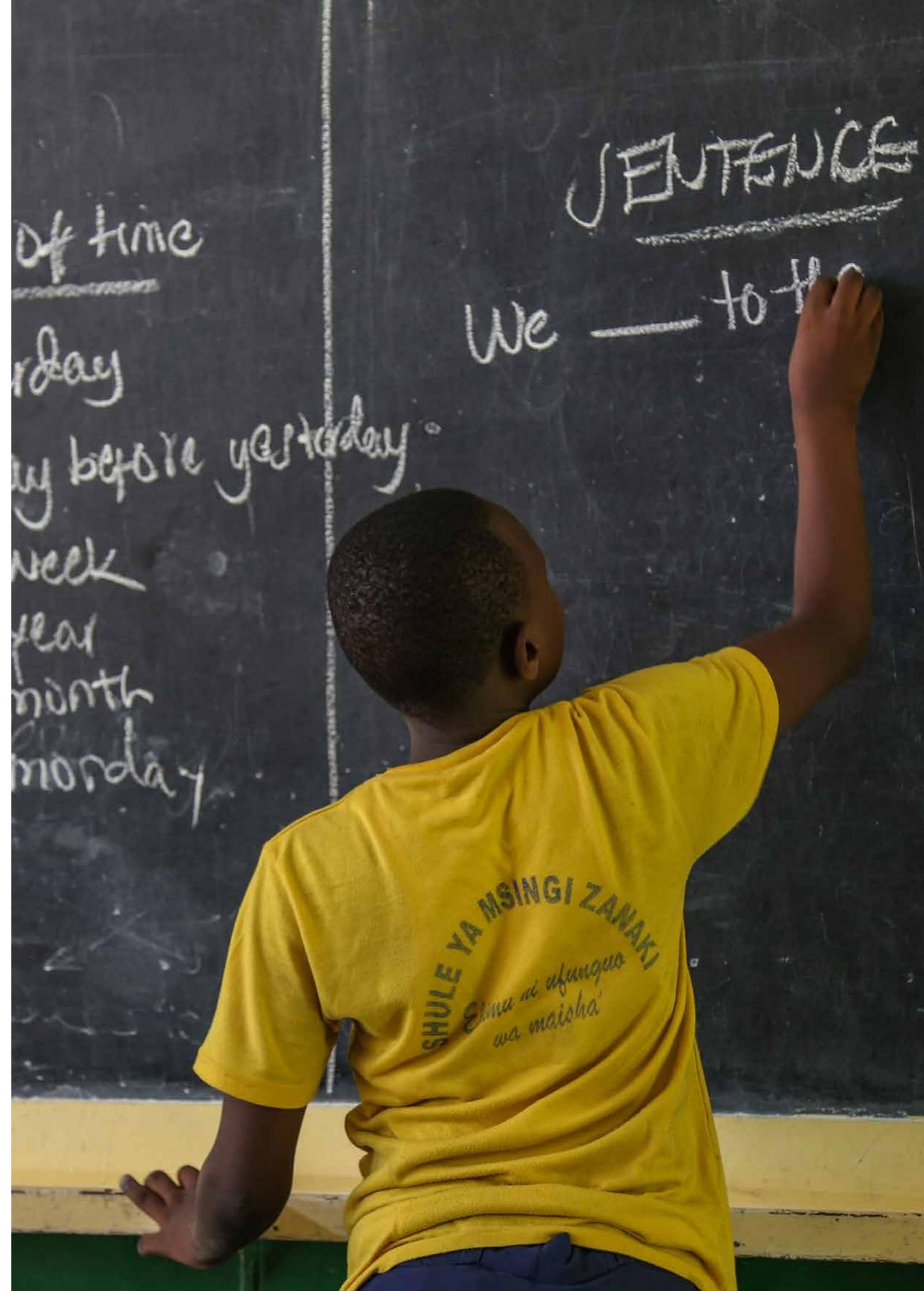
Around 407.8 million children worldwide are currently reached by **school feeding programs** (GCNF 2024). These programs give parents a reason to send their children to school, and they can also provide students with the nutrition they need to be healthy and ready to learn. Given the wide reach of these programs, they must be well designed and implemented. We are generating essential evidence about how school feeding programs can effectively enhance student nutrition and support better learning outcomes.

We are working with the World Food Programme (WFP) across many countries to generate novel evidence on the role of school feeding programs in improving children's

educational outcomes, and on the key factors—such as meal quality, delivery mechanisms, and community involvement—that determine their effectiveness. Emerging findings show that these programs improve school attendance. In The Gambia, for instance, providing healthier school meals with locally sourced fruits and vegetables increased attendance, especially for vulnerable children, and combining school meals with small cash incentives for teachers improved children's reading skills and memory. In Jordan, healthier meals reduced absenteeism by one day per child (Development Impact 2024).

We are also exploring the effectiveness and scalability of **edtech interventions** for overcoming infrastructure limitations, low internet access, and geographical isolation—all key barriers to accessing education. Our evidence shows the most cost-effective ways to provide flexible, home-based learning that ensures continuity and student engagement—an urgent need in low-resource and remote areas.

With support from the Norwegian Agency for Development Cooperation (Norad), we studied two interventions in northern Nigeria: screening videos designed to increase families' educational aspirations and providing families with smartphones preloaded with literacy applications. Together, these interventions reduced the number of out-of-school children by 42 percent and improved learning by 35 percent in just one year, making this a highly cost-effective approach. The intervention also had lasting spillover effects, benefiting older siblings by improving learning outcomes and reducing teenage marriage and pregnancy, with many effects persisting after three years (Orozco-Olvera and Rascón-Ramírez 2023). Further examples of our work in edtech and education entertainment (edutainment) can be found in the sections on health and women's empowerment later in this chapter.



Call to Action

Combining Educational Technology and Entertainment to Accelerate Learning

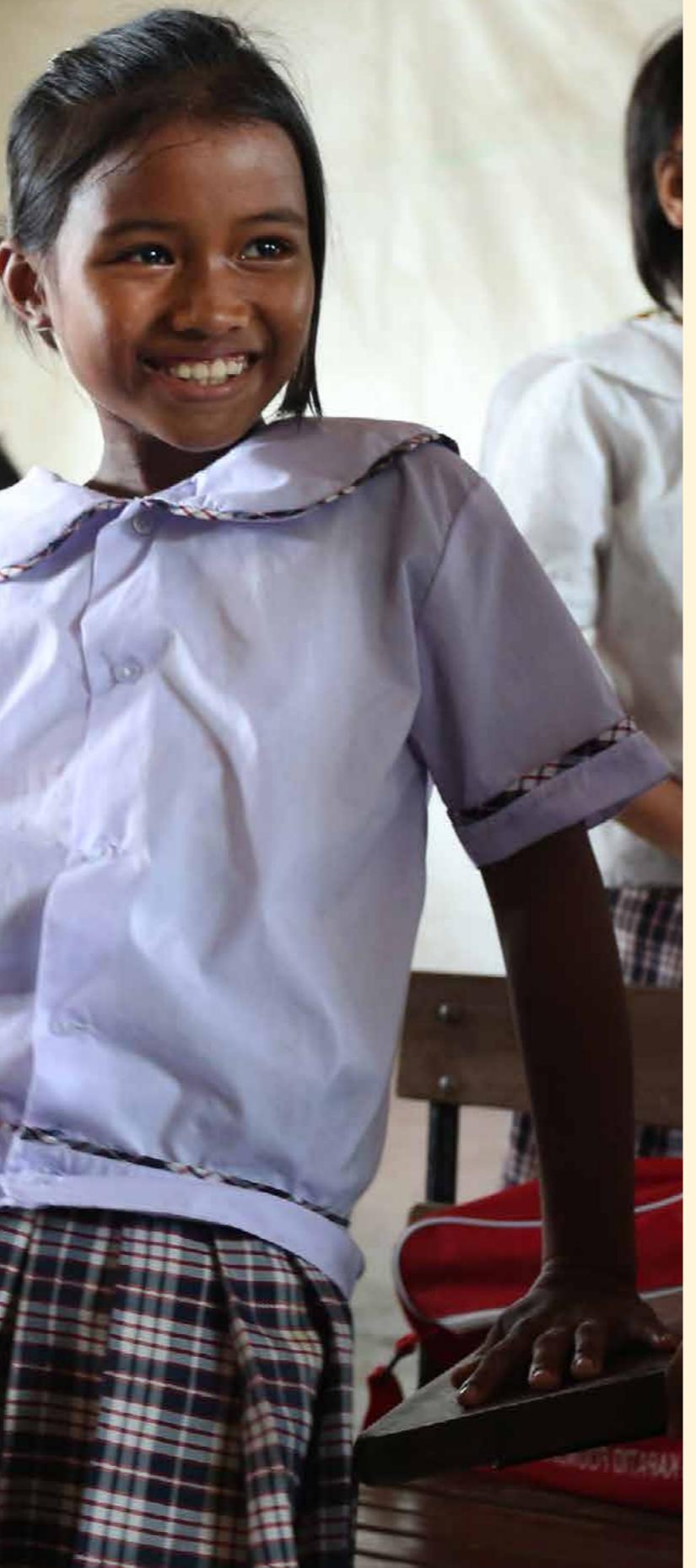
~70%

Approximately 70 percent of children in low- and middle-income countries are unable to read and understand a simple text by age 10 (World Bank et al. 2022).

Illiteracy rates are higher across Africa and India, where 1.1 billion people are unable to read. Without this foundational skill, young people's learning suffers, keeping them in poverty.

We can reduce these massive levels of illiteracy in as little as one year by leveraging a tool that almost half of adults already own: smartphones. Our work in northern Nigeria shows that smartphone-based educational technology (edtech) and education entertainment (edutainment) interventions are highly effective at teaching reading and transforming attitudes toward education—in as little as one year. Because rates of smartphone ownership are growing quickly in developing countries, this is an unprecedented opportunity to provide people with learning materials at very low cost (Orozco 2021).

Our proven approach to leveraging edtech and edutainment for learning can be scaled up to address the illiteracy crisis quickly—and we have no time to waste.



Learn

We developed our edtech and edutainment approach in northern Nigeria, a context where almost nine out of ten children are learning poor at age 10. Investments in school buildings and skilled teachers can't address all sides of this crisis. Children's experience at home—including the learning materials available to them, the support their parents can provide, and the family's overall educational aspirations—also impact their learning.

With the support of a World Bank education project and the Norwegian Agency for Development Cooperation (Norad), we launched the Movies and Mobiles program, which was implemented in just five days. We invited over 4,000 households to community screenings of an edutainment program designed to reshape parents' attitudes toward their children's education. We also provided some families with smartphones loaded with two gamified mobile applications designed to teach reading.

Our pilot program was transformative—not just for the targeted children but also for their older siblings and parents.



One year after the screenings, children were 42 percent less likely to be out of school.

35%

In communities where families had received smartphones, children's literacy and numeracy skills had also increased by 35 percent, in just one year.

Older siblings showed learning gains, too, and were less likely to become pregnant as teenagers, while parents were less likely to want their daughters to marry early. Three years later, most effects remained significant.

Our combination of edtech and edutainment is also a smart investment. Compared to 72 other educational interventions with cost data, it ranked in the top decile for learning gains and in the top quartile for cost-effectiveness (Orozco-Olvera and Rascón-Ramírez 2023).

Adapt

We are scaling up our partnership with the European Union to extend this proven approach to community, school, and online learning delivery in northern Nigeria. Our work will offer a model for the rest of the world, demonstrating that edtech and edutainment are scalable in low-resource settings. We will document the impact of our approach on literacy, teenage marriage and parenthood, access to financial services, and agricultural knowledge.

We are also working to translate this approach into actionable knowledge that can be immediately adopted by World Bank projects. Through edutainment and edtech workshops, we offer hands-on support to help education projects in fragile and conflict-affected situations incorporate edutainment and edtech innovations.

Scale

Our work shows that edtech and edutainment can be leveraged to reverse the illiteracy crisis and transform learning across subjects and settings. We also plan to study how edutainment and edtech can enhance teacher training, the integration of light-tech mobile learning tools in classrooms, and community-based interventions and learning workshops aimed at empowering adolescents to become educators in their households and neighborhoods.

We must act now to scale up this proven solution globally, across all illiterate populations. As Victoria Kwakwa, Regional Vice President for Eastern and Southern Africa, said after the Africa LEADS workshop,

"Business as usual just isn't enough if we want to see a brighter future for Africa."



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Finally, investing in **girls' education** is key to breaking the cycle of poverty and driving social and economic progress. Educated girls are healthier, earn higher incomes, and contribute more to their families and communities, creating a ripple effect that benefits entire societies. Our evidence identifies the barriers that prevent girls from accessing education and the mechanisms that can help promote their socioeconomic empowerment and enhance their learning.

In collaboration with the Education GP, we have conducted diagnostic reports on girls' education in the Democratic Republic of Congo and Pakistan that examine gaps in education access and quality, identify supply- and demand-side constraints, and provide policy recommendations for keeping girls in school and learning (Adelman et al. 2021a, 2021b, 2021c; Barón et al. 2024). To support girls' education, we are also conducting studies focusing on social norms and behavioral change campaigns, girls' empowerment and skills development, and safe schools and violence prevention. Together with the Development Research Group and Africa Gender Innovation Lab, we have partnered with an education project in the Democratic Republic of Congo to explore the impact of socioemotional and life skills training, as well as a whole-school approach that promotes behavioral change for a safe school climate, on adolescent girls' empowerment, education, and labor outcomes.

In Tanzania, we are collaborating with Arusha Girls' High School, E3empower, the Korea International Cooperation Agency (KOICA), and the European Union to test how combining coding skills training with socioemotional learning affects reasoning skills, socioemotional outlook, and metacognition among young women, who are traditionally underrepresented in engineering fields.

Improving the Quality of Education

In addition to studying educational access and opportunities, our education and skills research program generates evidence to improve the teaching and learning process itself by improving teaching quality, strengthening school management, and applying edtech for foundational learning.

Improving **teaching quality** is one of the most powerful ways to improve education outcomes. We study how teachers are recruited and deployed, how teacher training and professional development programs are designed, and how teaching practices are measured to assess teacher effectiveness and identify areas for improvement. Our evidence reveals what works to support high-quality teaching.

In Brazil, we found that a combination of two interventions to support teachers—in-service training that emphasized teacher autonomy and a small grant to develop innovative ways of engaging with students—significantly improved students' learning and socioemotional skills, and they also reduced teacher turnover (Piza et al. 2020). In Lebanon, we generated evidence that investing in high-quality academic advisers can promote students' success at university. Effective advisers improve their students' grades, increase the likelihood that their students graduate on time, and shift their students toward selective and high-earning

fields. Our evidence has helped justify the continuation of a program to improve advising, and it provides guidance to other countries that aim to improve tertiary education outcomes (Canaan et al. 2022). Finally, in Tanzania, we are partnering with the UK Foreign, Commonwealth and Development Office (FCDO) to explore the effectiveness of low-cost delivery modalities for teacher professional development, such as virtual communities of practice.

We are also part of a pioneering effort to achieve education goals while addressing the drivers of fragility, conflict, and violence. In Chad, we have partnered with an education project to enhance the effectiveness of a remedial education program targeting vulnerable groups (such as internally displaced people and refugees), with a focus on the Teaching at the Right Level approach. For more information on this research, see the section on fragility, conflict, and violence in this chapter.

School management interventions can be a very cost-effective way to improve learning outcomes because they impact many students at once. These interventions may target professional development opportunities for school leaders to ensure the effective use of resources, community and parental engagement to promote local accountability, and bureaucratic capacity to manage schools with autonomy. Our evidence shows how to effectively support the learning process through effective leadership and management structures at the school level and beyond.

In Pakistan, we have explored the impact of providing better information and accountability to civil servants about school performance on the quality of school management practices. As part of our partnership with the FCDO in Tanzania, we have conducted a diagnostic report on the quality of school management practices (Bedoya et al. 2024). During this ongoing project, we will generate evidence about what school administrators and teachers need to learn and how to deliver impactful training.

Finally, **edtech** can be leveraged to facilitate both teaching and learning. We are deepening our work to understand how to use adaptive learning systems and AI to make education systems more efficient and how to leverage digital technologies to complement teachers. Our evidence shows how edtech tools can be used to strengthen foundational learning.

In northern Nigeria, we have partnered with the European Union (EU) to explore the effectiveness of offline interventions, including the use of edutainment and edtech interventions in teacher training programs and light-tech mobile learning tools in classrooms. Through a multicountry trial in Sub-Saharan Africa and South Asia, we are also testing the efficacy of social media campaigns to encourage the sustained use of online foundational learning applications. This represents a highly scalable approach, given the rapid growth of smartphone use in low- and middle-income countries.

In addition, we have partnered with an education multiphase programmatic approach (MPA) project in East Africa to develop a learning agenda on how to increase equitable access to basic education and improve learning outcomes. A special focus of this partnership is the use of edtech and AI-powered tools—such as e-learning platforms and AI virtual coaches—by teachers and school leaders.

Building Youth Skills to Improve Job Opportunities

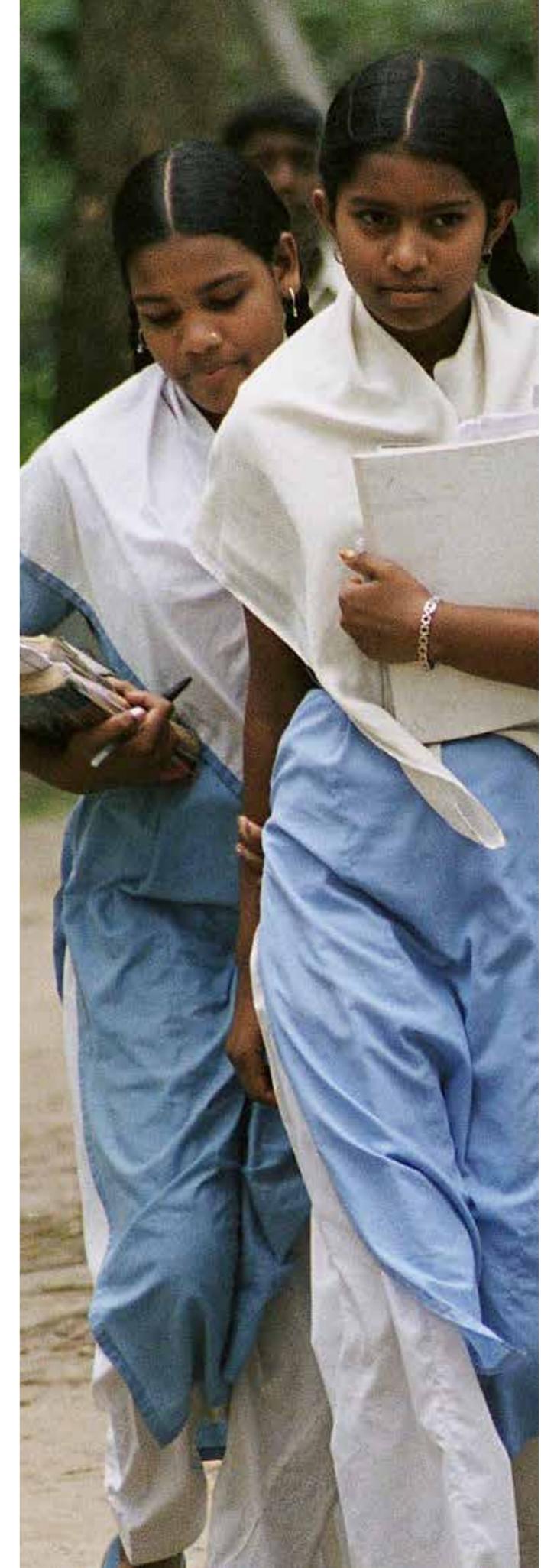
Finally, our education and skills research program generates evidence about training programs that help young people develop job skills, including technical skills and apprenticeship programs and socioemotional and interpersonal skills programs. We also generate evidence about how to address constraints to participation in and demand for these training programs.

Technical skills training programs and apprenticeships help young people acquire the knowledge and abilities required to perform specific jobs or tasks, such as machine operation or computer programming. Young people typically learn these skills on the job or through vocational training centers. Our evidence can be used to design and scale up apprenticeship programs to meet the needs of both young people and firms.

Apprenticeships are one of the main sources of skills training in low- and middle-income countries, particularly in the informal sector and for youth who have dropped out of school. Dual apprenticeship programs, which combine on-the-job training with classroom-based vocational training, have been shown to improve youth productivity, increase their earnings, and benefit firms (Premand and Pela 2023). In Côte d'Ivoire, for example, we have found that youth who participated in a dual apprenticeship program had 15 percent higher earnings after five years (Crépon and Premand 2024). In Nigeria, a classroom-based training program also improved attitudes toward women's economic empowerment for both male and female trainees (Crawford et al. 2021).

Formal apprenticeships or intermediation interventions can also help tackle hiring constraints on the side of firms and improve firm outcomes. We have partnered with projects in Nigeria, Benin, and Côte d'Ivoire to test the effectiveness of apprenticeship and vocational training programs by studying the value added of center-based training and certification, the relative effectiveness of dual training for youths and improvements in training quality in firms, and how to effectively move to scale (including by using AI tools to identify more firms willing to host apprentices).

Socioemotional and interpersonal skills training programs help young people acquire the additional nontechnical skills (also called socioemotional, soft, or behavioral skills) necessary for job success. These training programs target attitudes (or mental models), communication skills, and interpersonal skills. With cross-cutting support from the Mind, Behavior, and Development Unit (eMBeD), we are generating evidence to enhance the impact of these programs on young people's employability and productivity.



Our evidence shows that **socioemotional training programs** that target attitudes and mindsets—such as personal aspirations, a growth mindset, and resilience—can help improve young people's employability and productivity. In Togo, for example, a personal initiative training program led to sustained profit increases for small businesses after seven years (a larger impact than was observed after two years). In Niger, we found that psychosocial interventions boosted the profits of women-led microenterprises. Similarly, in Senegal, conscientiousness training made low-skilled workers more likely to stay in their jobs and increased their earnings.

Interventions informed by behavioral science have also proven effective. In Turkey, we have implemented behavioral diagnostics and interventions in job centers, which have helped improve job search quality and signaling, particularly for women. Behavioral interventions also improved the mental health of entrepreneurs in small and medium enterprises in Pakistan, and behavioral approaches informed goal setting and aspirations for improved economic outcomes in Argentina, Sudan, and Nicaragua. Finally, in Honduras, a training program for at-risk youth that integrated group-based cognitive behavioral therapy improved their employment outcomes and mental health while reducing out-migration and intimate partner violence.

Effective **interpersonal skills**—both verbal and nonverbal—are likewise essential for workplace collaboration. To help young people better understand these skills and signal them to employers, eMBeD supported the development of a behaviorally informed tool called SkillCraft, which uses gamified assessments that boost young people's engagement and motivation during the job search process. Initially developed in South Africa, SkillCraft is now being assessed in seven countries.

Both socioemotional and interpersonal skills are shaped by social norms, so understanding these norms is essential for designing effective training programs. We use behavioral insights to unpack these norms—for instance, by measuring the binding constraints to women's participation in employment and related opportunities. In Jordan, we measured the social norms regarding women's labor force participation and generated new evidence of the importance of targeting male family members, whose beliefs and expectations about women's labor force participation are often more conservative. Our measurement framework has been widely adapted and replicated, including in Egypt, Iraq, the Kurdistan Region of Iraq, and Nepal, and it has also informed the adaptation of skills training programs.

Of course, in addition to optimizing the design of training programs, we must also **address constraints to participation in and demand for these programs**.

Policy makers around the world, from Eastern Europe to Africa, are eager to understand the drivers of demand for training programs and how they vary among youth, women, and marginalized groups. Our evidence is meeting this crucial need.

Low demand and uptake for training programs is a pervasive issue. Potential contributing factors include financial constraints, gender norms, and information

failures. Behavioral diagnostics can reveal additional bottlenecks in aspiration, mental models, and beliefs. Identifying these behavioral barriers can highlight the scope for better communication to strengthen trust and interest in training programs. In Kenya, for instance, we are partnering with the EU to test whether online social media campaigns can increase enrollment and retention in technical and vocational training programs.

Demand for training programs is also sensitive to improvements in quality and returns. In Côte d'Ivoire, for instance, we have found that offering dual training makes apprenticeship more attractive for youth. An ongoing study in Benin also assesses the effectiveness of intermediation and financial subsidies for promoting women's participation in male-dominated sectors. Our work in these areas is helping to develop strategies for promoting access to livelihoods and resolving job crises, a priority policy challenge across much of the world.

Going Forward

Our education and skills research program will emphasize two overarching focus areas to achieve our immediate objectives and create the conditions for lasting impact. First, we will scale up cost-effective solutions to meet education and skills targets. Second, we will leverage technology to transform the delivery of education and skills interventions with the potential to address long-standing challenges related to resource scarcity and service continuity.

We will continue to collaborate closely with the World Bank Education and Social Protection GPs, countries and regions, and governments and external partners including WFP, the European Commission, the FCDO, Norad, and the International Finance Corporation (IFC). We will also continue leveraging cross-sectoral synergies with our other research programs, including programs on women's economic empowerment, health, fragility (including crime, conflict, and violence), social protection, digital development, and private sector development.

Health

High-quality, affordable health care contributes significantly to quality of life, poverty reduction, and increased economic productivity. These outcomes place a high value on ensuring that health care is safe, efficient, and widely accessible.



How can we build safe, effective, and accessible health care systems?

We work across our research programs to generate evidence on low-cost or budget-neutral interventions that can substantially improve cost-effectiveness in the provision and continuity of health care. Among other projects, we have designed cost-effective solutions to achieve the following goals:

- Addressing human resources constraints through task shifting
- Reforming regulation
- Optimizing health care delivery models
- Promoting healthy behaviors and increasing demand for health services.

Why Does Our Work Matter?

Increased access to health care is insufficient to deliver better outcomes if health care is not safe, effective, and high in quality. The trial-and-adopt technology allows us to identify low-cost or budget-neutral solutions that make health care systems work better and improve the quality of the care they provide:



By combining **monitoring** with high-stakes **regulatory enforcement**, we can improve the safety of health facilities in Kenya by 15 percent in just one year.



By **optimizing the contractual arrangements** between caregivers and patients in Estonia, we can reduce mortality rates for chronically ill patients by half.



By **assigning highly skilled doctors** to local health facilities in Colombia, we can decrease the proportion of unhealthy newborns by 9 percent.

By scaling budget-neutral interventions like these, we can radically transform the ability of health care systems to deliver actual health.

Our work to improve the cost-effectiveness of health care leverages strengths, insights, and technical innovations from across our portfolio. Our edutainment team has developed scalable tools to promote healthy behaviors cheaply and effectively. Our governance and institutions research program has studied ways to improve primary care for patients with chronic conditions at a national scale and to improve the delivery of basic health services in fragile and conflict-affected situations (FCS). And our health team has developed a new accountability system that combines high-stakes regulation with monitoring and enforcement to increase patients' safety in Kenya's health facilities. These innovative solutions help decision-makers make the most of health care investments to drive essential development outcomes.



Addressing Human Resources Constraints Through Task Shifting

In rural areas—where the number of doctors is limited and stigma often prevents women from visiting health clinics—empowering community health workers (CHWs) to deliver essential services can be a cost-effective game changer. In Burundi, we studied the impact of empowering CHWs to deliver new contraceptive injections and observed a 70 percent increase in coverage of the new contraceptive technology. However, overall contraceptive coverage did not change because women shifted away from other contraceptive methods, including longer-lasting ones (Andreottola et al. 2025). Our evidence underscores the importance of addressing patient behavior alongside improvements in service delivery.

Leveraging local capacity can be another cost-effective approach to addressing resource constraints. In Burkina Faso, we found that community-based organizations can be incentivized to effectively lobby their local governments to improve the delivery of essential services, including primary health care. This evidence demonstrates that latent capacity can be harnessed to improve health care at low cost—even in very low-resource settings.

Reforming Regulation

According to the World Health Organization (WHO), hundreds of millions of patients contract health care-associated infections (HAIs) during their visits to health care facilities each year. Although many countries have adopted regulations in line with WHO guidance on patient safety and quality of care, the rigor, enforcement, and scope of these regulations can vary widely.

Our evidence shows that government regulation can significantly improve the quality of health care in low- and lower-middle-income countries at very low cost and without hurting the most vulnerable. In Kenya, we took a systemwide approach to understanding the potential of regulation, monitoring, and high-stakes inspection and enforcement to substantially reduce HAIs. Beginning in 2013, we worked with the Inspectorate and the Ministry of Health of Kenya to conduct the largest-ever randomized controlled trial of a new set of minimum quality standards for patient safety in a low- and middle-income setting.

At baseline, only 3 percent of health care facilities met minimum safety standards. One year later, patient safety scores in facilities that had been subject to the new inspection regime, with the threat of closure, were 15 percent higher than in other facilities. Crucially, these improvements did not come at the cost of making the health care system less accessible to poor patients. In fact, our evidence shows that the reform improved patient safety without increasing the cost of health care for the average patient or decreasing their use of health services (Bedoya et al. 2020, 2023).

Optimizing Health Care Delivery Models

Can we extend people's lives by reforming primary health care in a cost-neutral way? Effective health service delivery depends on a well-designed model of care that enhances the interactions between doctors and patients. In Estonia, we supported the single-payer national insurance fund in experimenting with different models of primary care. By demonstrating which model was most effective, we helped optimize the delivery of primary care services and rapidly scale up new solutions.

For example, we helped the fund evaluate a model of care for citizens whose chronic conditions (like hypertension and diabetes) require consistent, high-quality primary care. Our evidence shows that a program to improve care for these patients through sustained coaching and performance incentives to doctors reduced the mortality risk of mild-risk patients by 1.6 percentage points (World Bank 2022).

Our work in Estonia leveraged 10 years of insurance claims data from the Estonia Health Insurance Fund to evaluate and improve patient care. Analyzing data like these to improve public services is the goal of the Bureaucracy Lab, a joint initiative of our governance and institutions research program and the Governance GP (see chapter 3 of this report for further information about this partnership).



Promoting Healthy Behaviors and Increasing Demand for Health Services

Millions of dollars are invested each year in behavioral change campaigns to address public health issues like handwashing and risky sexual practices. However, these campaigns have little or no effect on long-term behavior (Safieh et al. 2019). We are generating evidence to design public health campaigns that really do change behavior.

Entertainment media can transform the social norms and behaviors of vast audiences (Orozco-Olvera and Malhotra 2023). Unlike traditional behavioral change campaigns, edutainment programs focus on narratives that map events and their consequences and on role models who change viewers' understanding through empathy.

We launched our edutainment research program in 2016 to produce evidence on the effectiveness of edutainment and mass media as a development tool, building on the *World Development Report 2015: Mind, Society, and Behavior* (World Bank 2015) and the *World Development Report 2016: Digital Dividends* (World Bank 2016). You can read more about this research in the sections on education and skills development and women's economic empowerment in this chapter.

Social media advertising can be an effective strategy for public health campaigns—but matching campaigns to their target audience is key. In India, we tested a nationwide social media advertising campaign to boost malaria prevention behaviors that featured humorous memes targeting youth and more serious advertisements targeting adults. Using chatbot surveys and health facility data, we found that the campaign was highly effective in promoting prevention practices and reducing malaria cases among urban residents, but not among rural ones (Donati et al. 2024). Our evidence underscores the need for greater investment in professional social media campaigns targeting rural populations, who are more vulnerable to malaria.

In Nigeria, we found that community screenings of a soap opera called *MTV Shuga*, whose plots treat issues like HIV and risky sexual behavior, led to a substantial increase in HIV testing, halved the number of chlamydia infections, and reduced violence against women after one year among urban viewers. Given the popularity of soap operas, our evidence shows that they can be used to positively alter the attitudes and behaviors of millions of individuals at very low cost (Banerjee et al. 2019).

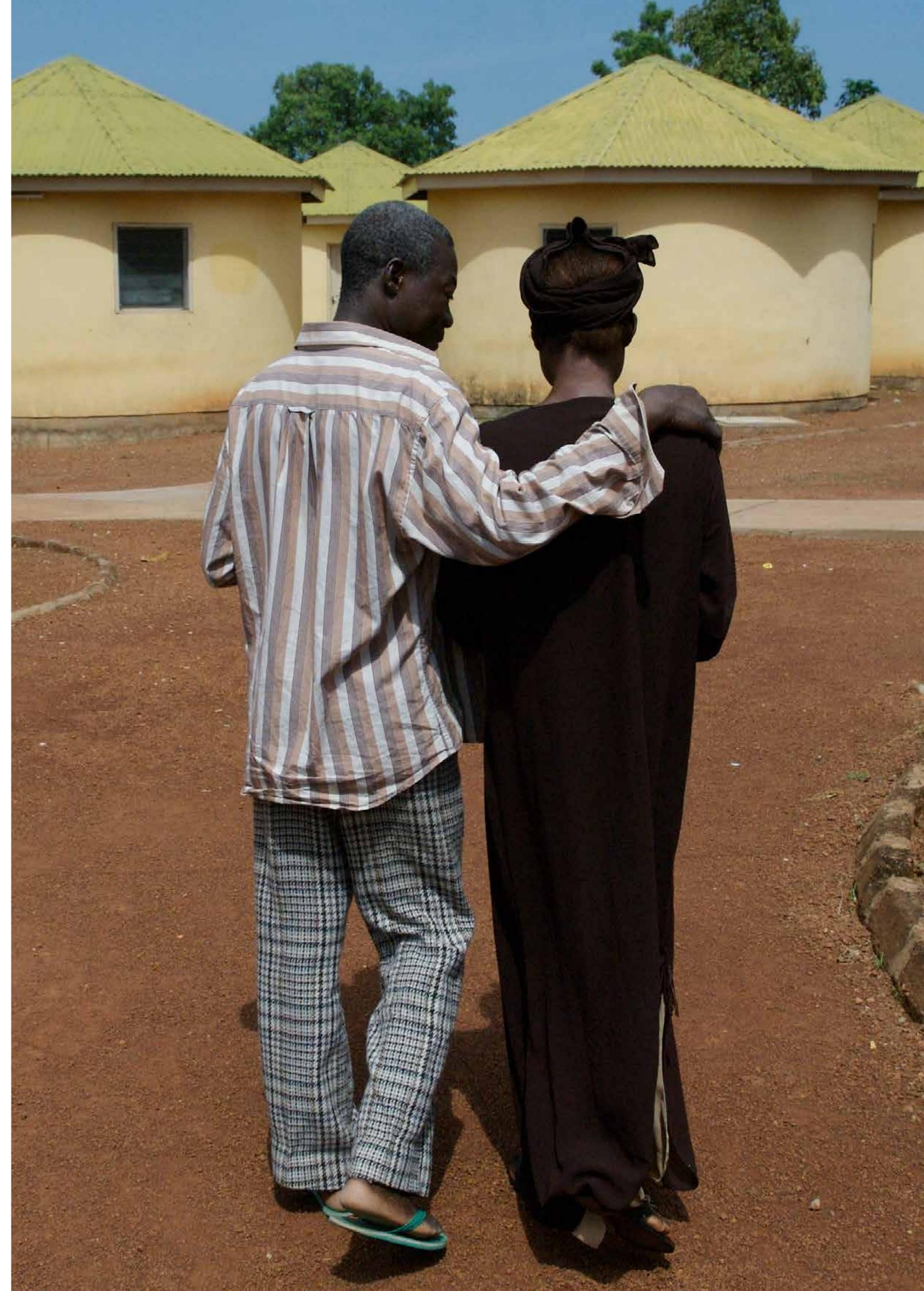
Our evidence has informed renewed investments in *MTV Shuga*. Multiple new seasons of the show have been produced in new settings, like India. With support from the Gates Foundation, we are preparing to conduct a 10-year follow-up study of the *MTV Shuga* trial to assess whether its impacts have altered participants' life trajectories as they enter new life stages, such as parenthood.

Going Forward

Our vision for future health research is to scale low-cost and effective solutions at the system, national, and international levels. Our solutions will aim to strengthen essential health services by increasing demand, access, and quality.

As part of this vision, we will invest in strengthening data ecosystems and deploying AI tools to relieve capacity constraints—for instance, by supporting medical staff in the diagnosis, treatment, and prevention of disease. We are currently focusing on identifying existing solutions and determining how they can be adapted to low-resource environments, where high-quality medical resources—even for basic health and mental health care—are limited. Recent advances in AI can also support the monitoring of public health emergencies at scale through prediction models. See the section on AI in chapter 5 of this report for a deeper discussion of this work.

Finally, we continue to work to promote food security and nutrition, essential components of health. We discuss this work in more detail in the section on agriculture and food security in chapter 2 of this report.



Social Protection

Social protection programs help the most vulnerable weather crises, but they also do much more: these programs reduce poverty and food insecurity, boost productive employment, and contribute to economic growth. Well-designed social protection programs can be highly cost-effective (World Bank 2024b).



How can we design effective social protection programs and scale them up to meet global challenges?

Our social protection research program identifies the most impactful social protection policies and studies effective ways to scale them up to address poverty and resilience, jobs, climate change, and fragility—among other urgent issues. The program spans some of the most common social protection policies and instruments:

- Cash transfer and public works programs
- Multifaceted economic inclusion programs
- Adaptive social protection for climate resilience
- Job skills training.

This section will describe our research into cash transfer and public works programs, economic inclusion programs, and adaptive social protection. The education and skills development section of this chapter describes our evidence on job skills training.

Why Does Our Work Matter?



Social protection programs don't simply distribute public resources—they invest in people, who, in turn, generate greater value. Economic inclusion programs, for instance, have consistently documented large and lasting returns, with benefits several times larger than costs.



The trial-and-adopt technology allows us to identify cost-effective ways to reduce poverty sustainably, while equipping people with the assets, skills, and behaviors to start or expand productive activities and contribute to the economy.

To better understand what works in social protection, we work closely with the World Bank's Social Protection GP on key initiatives, including the Partnership for Economic Inclusion (PEI) and the Sahel Adaptive Social Protection Program. We also partner with governments in more than 20 countries and a wide variety of technical partners, such as WFP. Finally, we create synergies across our research programs on women's economic empowerment; fragility, conflict, and violence; education and skills development; private sector development; and agriculture, in collaboration with partner GPs.



Cash Transfer and Public Works Programs

Cash transfer and public works programs are among the most widely used social protection programs in low- and middle-income countries. We have produced summaries of the evidence on these programs (Kondylis and Loeser 2021) as well as a series of influential studies.

Cash transfer programs are investments, not handouts, and they have persistent effects. Households use temporary cash transfers to make productive investments, leading to cumulative impacts on household consumption that are larger than the amounts transferred.

Public works programs, on the other hand, improve participants' employment and earnings in the short term, but these effects fade in the medium run. Our recent meta-analysis, which covers studies from Comoros, Côte d'Ivoire, Tunisia, and elsewhere, shows that many participants in public works programs forgo other activities to participate in them, indicating that these programs can be better targeted. We have also found that public works programs can improve psychological well-being, women's economic empowerment, and (in some contexts) market wages. But complementary interventions, like microentrepreneurship training and job search assistance, have not shown strong value added (Bagga et al. 2024).

Economic Inclusion Programs

Economic inclusion programs are multifaceted interventions designed to address the multiple constraints poor households face in improving their incomes, livelihoods, and assets. These programs are usually layered on existing safety net programs and include a package of services, including cash or in-kind transfers, skills training, coaching, access to finance, and linkages to market support. Economic inclusion programs contribute to poverty reduction and economic development, with transformational impacts on livelihoods, food security, women's economic empowerment, and resilience to climatic shocks.

Economic inclusion and other "cash+" programs can help poor households diversify their livelihoods and reduce income shocks. Our evidence from Afghanistan (Bedoya et al. 2023) and Niger (Bossuroy et al. 2022) demonstrates that economic inclusion programs are high-return investments that induce sustained impacts. These programs can also work for different groups living alongside one another, such as refugees living in host communities, and they can induce positive spillovers in the local economy (Fernandez et al. 2024; Premand and Schnitzer 2019). They are versatile and can be delivered through different modalities in various settings—for example, through government systems and across rural, urban, and fragile areas.

Governments are increasingly adopting and scaling up economic inclusion programs to reach larger groups. Together with the PEI, we have established an [impact](#)

collaborative that will produce the next generation of evidence about how to scale up economic inclusion programs to promote poverty reduction, resilience, jobs, and growth.



Adaptive Social Protection for Climate Resilience

As extreme climate events become more frequent, shock responses are needed to promote faster recovery and avert long-term economic losses. Advances in predictive climate tools open new spaces for intervention: relief can be dispatched as soon as a trigger is activated. Our evidence suggests that acting early has distinct advantages over traditional disaster relief, which households only receive after a shock has occurred.

Acting early can reduce implementation costs and ensure that households have the tools they need to engage in more effective coping strategies. For instance, if households know ahead of time that a flood is about to hit, they can protect their assets, such as cattle. Likewise, delivering cash transfers early improves households' ability to maintain their food security and safety during shock-induced migration episodes.

Our social protection and rural transformation research programs are working with our partners to test and replicate early shock response strategies. In flood-prone areas of Nepal, we partnered with WFP to test the impact of acting early relative to traditional post-flood disaster responses. In this context, cash transfers were issued to households early, based on forecasts predicting that a flood was likely, rather than after the flood had already happened (Christian et al. 2022).

Our evidence shows that delivering cash transfers early improves households' food security in the immediate aftermath of a flood and boosts household members' mental health, compared with traditional disaster responses. Over time, however, these initial improvements tend to fade. To sustain them, we need to identify complementary interventions to support livelihoods and boost longer-term resilience. We discuss some of these interventions in the agriculture and food security section of chapter 2.

Going Forward

Our social protection research program will continue to prioritize innovations in adaptive social protection, economic empowerment, and skills development, with a focus on identifying the most cost-effective solutions to scale up through government systems.

To strengthen cash transfer and public works programs, we will study how to enhance their impact on a broader set of outcomes, including nutrition and women's economic empowerment, how to implement them in FCS, and how to design public works to address environmental externalities. To build climate resilience, we will explore programs that complement adaptive social protection programs to support livelihoods in the long term.

To boost economic inclusion, we will study how to optimize interventions to be delivered at scale and cost-effectively—for instance, by testing digital and group-based delivery options or documenting local economy or general equilibrium effects. We will also explore how to achieve impacts in different contexts and how to tailor support to vulnerable populations, such as refugees.

Finally, to improve households' resilience to climate shocks, we will continue to leverage current evidence to guide program design and implementation decisions. We will focus on combining anticipatory crisis responses with technology trials and multifaceted livelihoods approaches to help households cope with shocks and bolster their long-term incomes, preparing them to face other potential shocks in the future. Scaling up anticipatory action systems will require a systemwide approach linking climate and environmental monitoring and forecasting agencies with social protection systems. We will support these agencies to implement and test these solutions at scale by leveraging strong country partnerships with a range of ministries and development actors.

By building on our strong partnership with the Social Protection GP and established policy collaborations, such as with the PEI and WFP, we will continue to scale up impactful social protection policies.



Women's Economic Empowerment

Women have the potential to shape economies today and in the future. To realize the positive effects of women's economic participation, policies must be designed and investments must be made based on rigorous evidence to reduce the barriers women face at every step of the life cycle. These barriers manifest as gender gaps in education, skills, labor force participation, wages, wealth, and agency, and they have a direct impact on almost every facet of economic development and growth.



How can we remove barriers that prevent women from achieving their potential?

Our women's economic empowerment research program has generated key evidence about how to address the complex and multifaceted challenges women face. Our work has tested scalable solutions to achieve the following goals:

- Increasing women's socioeconomic participation
- Promoting women's leadership
- Reducing violence against women
- Shifting harmful social norms.

By addressing these barriers, we can drive meaningful change to strengthen economic development.

Why Does Our Work Matter?

Despite a narrowing gender gap in education, health, legal rights, and financial inclusion, women still face barriers to accessing economic opportunities, participating in the labor market, making independent decisions, and contributing to economic growth. By removing these barriers, we can fully realize the potential of women's economic participation.

The trial-and-adopt technology enables us to identify effective solutions to these barriers—while avoiding those that only provide short-term relief or that inadvertently reinforce them:



Our evidence helps design solutions to **avoid unintended negative effects**. Our work in Rio de Janeiro, Brazil, reveals that women-only train cars can restrict women's mobility by reinforcing a social norm that women should not use public spaces.



We also conduct rigorous research to **uncover hidden barriers** that traditional data systems can miss. In Dar es Salaam, Tanzania, our evidence shows that young women are harassed once every two weeks, on average, although official numbers record almost no harassment.



Finally, our evidence reveals the **nuances of effective solutions**. In Hyderabad, India, we have found that undercover policing does not help improve women's safety in public spaces, while uniformed policing reduces only severe forms of harassment.

Our evidence supports more effective programs and projects that foster greater socioeconomic participation, supporting better lives for all.

Increasing Women’s Socioeconomic Participation

Increasing women’s socioeconomic participation is recognized as a crucial outcome for economic development—but we know little about how to achieve it. Our women’s economic empowerment research program studies how to effectively increase women’s socioeconomic participation and enhance its broader development impacts.

We have identified small, low-cost changes in program design that can prove essential to achieving these goals. In a multicountry partnership with WFP, we have found that simply “gender tagging” public works programs by explicitly targeting women can increase women’s participation by as much as 190 percent (Balantrapu et al., forthcoming). Our findings suggest that women who participated in a one-off paid work opportunity experienced a persistent increase in control over household resources, despite temporary backlash from men during the program. Three months after the work ended, women retained increased control over household resources, while the initial backlash from men had given way to greater appreciation of women’s autonomy. By contrast, in households where men participated in the work opportunity, women’s control over resources decreased and men’s and women’s attitudes toward women’s autonomy regressed (Christian et al. 2021).

We have also generated evidence to refine economic inclusion programs to increase women’s socioeconomic participation. In the Sahel, we have found that multicomponent economic inclusion programs can significantly transform women’s status while simultaneously increasing household consumption and income. Economic inclusion programs are often built on national safety net programs and include savings promotion, training, coaching, and a grant or asset transfer. In Niger, an economic inclusion package with psychosocial interventions to address norms around women’s productive activities delivered exceptional value—substantial consumption benefits relative to low implementation costs yielded an internal rate of return of over 20 percent.

Small program refinements can yield even greater impacts: in a related study examining polygamous households that



received the program, we found that targeting junior wives rather than senior wives created more equal productive engagement across wives and improved child outcomes. Analysis across experiments in Mauritania, Senegal, Burkina Faso, and Niger confirms that economic inclusion programs have strong positive effects on women’s social standing, perceived financial support, and control over earnings throughout the Sahel. By addressing both economic and psychosocial constraints, these programs can significantly improve women’s socioeconomic participation, often with meaningful effects for other household members.

Understanding why women do not participate in the economy is also crucial to designing effective programs. In Tanzania, we studied a national program that provided women with a cash-for-work and livelihoods support package. Women reported that they did not participate in income-generating activities because of the heavy burden of household chores and the physical intensity of manual labor—not because of social norms or safety concerns. Our evidence can inform the design of social protection programs—for example, women may derive greater benefits from the business training and grant component of these programs than the physically intensive public works component.

Women’s access to economic opportunities can also be undermined by lower levels of access to economic assets and services. Female farmers, for instance, have less access to information because agricultural extension networks are dominated by men. In Malawi and Mozambique, we have shown that women can make effective extension partners: they are at least as good as men at encouraging the adoption of climate-smart technologies (BenYishay et al. 2020; Kondylis et al. 2016). Likewise, enabling services like childcare and public transportation can transform women’s economic participation. For example, in Kampala, Uganda, we are exploring the potential impacts of childcare services on women’s socioeconomic participation and personal lives (Aliga et al. 2023).

Finally, in northern Nigeria, we have found that investing in skills acquisition for extremely vulnerable and at-risk young women increases economic outcomes and improves attitudes toward female empowerment among participants and their caregivers (Crawford et al. 2021). This evidence demonstrates that even in traditionally conservative settings, investing in women’s socioeconomic participation can contribute to economic productivity and improved living standards.

Promoting Women’s Leadership

Women’s leadership within their communities, in the political sphere, and in the private sector has been shown to improve both economic growth and noneconomic outcomes such as education and health (Baskaran et al. 2024; Bhalotra and Clots-Figueras 2014; Clots-Figueras 2012). Nevertheless, women continue to be underrepresented at nearly all levels of decision-making. Our women’s economic empowerment research program therefore focuses on identifying cost-effective interventions to promote women’s leadership and on understanding how it can be harnessed to address globally relevant challenges like jobs and climate change. This aligns with the third strategic objective of the World Bank’s Gender Strategy 2024–30.

Our evidence demonstrates the wide-ranging effects of encouraging women’s career progression. In Bangladesh’s garment industry, we collaborated with IFC and Better Work to study a structured promotion program for women with a focus on soft skills. We found that the program tripled participants’ chances of becoming supervisors. It also increased the participants’ household expenditures on female goods and improved agency in the household for both the women who participated and the female staff who were exposed to them as role models (Uckat 2023). Based on our evidence, this program has been rolled out nationwide in Bangladesh and is being tested in other contexts. We are now working to extend this approach to the technology sector.

Women’s leadership is also a powerful force for driving resilience and transformative action on climate. Our work challenges portrayals of women as passive victims of environmental crises, instead highlighting how women’s strengths—across leadership, principles, skills, knowledge, and networks—can make them particularly effective leaders in climate action. However, systemic barriers—such as limited financial access, structural biases, and underrepresentation in decision-making—continue to hinder women’s full participation. Moving forward, we aim to test strategies to overcome these barriers and to harness women’s leadership for improved climate adaptation.

Reducing Violence Against Women

Violence against women (VAW) both inside and outside the home impedes women’s full participation in society, limits their access to education and their economic participation, and reduces their physical mobility. Our women’s economic empowerment research program studies how to measure, reduce, and remedy VAW, providing valuable evidence for policy makers.

Our innovative solutions for measuring VAW reveal insights that traditional data collection approaches miss. For instance, in Dar es Salaam, Tanzania, we used a crowdsourcing app to collect real-time data on VAW in public spaces. Our evidence shows that women face at least one incident of harassment every two weeks while

traveling in public spaces, although official numbers record very little harassment. This kind of harassment affects women’s mobility and long-term human capital accumulation. Our evidence from Delhi, India—a city with one of the highest rates of sexual harassment in public spaces—shows that women will choose to attend lower-quality colleges if it makes their commute feel safer, showing how VAW potentially constrains women’s long-term productivity and earnings (Borker 2021).

Our evidence also enables decision-makers to evaluate solutions for preventing and responding to VAW. In Hyderabad, India, we found that uniformed police patrols reduced severe forms of harassment by 27 percent but did not impact overall levels of street harassment (Amaral et al. 2023). In Rio de Janeiro, Brazil, adding “women-only” train cars to the public transportation system also helped reduce harassment, but at a cost: women were increasingly stigmatized if they chose to travel in a mixed-gender car (Cardoso de Andrade et al. 2022).

In Peru, improving women’s access to women’s justice centers—specialized institutions that employ mostly female officers to provide legal, medical, and social support to victims of domestic violence—reduced the incidence of VAW by 10 percent and increased the reporting and prosecution of gender-specific crimes by 40 percent (Sviatschi and Trako 2024). Another potential solution is edutainment delivered via television, movies, radio, and social media. We evaluated a social media campaign across seven cities in India, generating evidence that the campaign reduced the acceptability of VAW (Donati et al. 2022).

Reducing VAW is also key to strengthening access to education for girls. Violence at school can have a wide range of adverse consequences on children’s well-being, but evidence about how to support safe schools is still emerging. As discussed in the education and skills development section of this chapter, we have partnered with an education project in the Democratic Republic of Congo to explore how a whole-school approach that promotes behavioral change for a safe school climate affects adolescent girls’ empowerment and their experiences of violence at school. This work is critical to understanding how to create learning environments in which all children can thrive, laying the foundation for their future economic participation and contribution to economic growth.

Shifting Harmful Social Norms

Challenging social norms and expectations about female and male roles is one of the most difficult parts of the women's economic empowerment agenda. Entertainment media hold immense potential to positively shape gender norms and outcomes for adolescent girls, young women, and their communities worldwide. Unfortunately, negative messaging tends to dominate the content of entertainment media. Our women's economic empowerment research program studies how edutainment programs can be used to influence social norms surrounding sexual behavior, parents' and girls' aspirations, adolescent pregnancy, and other topics.

Our evidence shows that edutainment can be a powerful and cost-effective tool for reshaping harmful social norms. For instance, the health section of this chapter describes the power of community screenings of an edutainment program to reduce VAW at very low cost.

We are now leveraging AI-powered tools to conduct the most comprehensive analysis of entertainment media content to date in Nigeria, Kenya, and India. With support from the Gates Foundation, we are using AI to assess the prevalence of positive and negative gender norms in popular entertainment media consumed by adolescent girls and young women in these countries. We are also generating insights on gender biases in the content produced by large language models. Through this project, we aim to understand how AI-driven gender stereotypes may contribute to real-world harms and explore strategies for bias mitigation. Drawing on our AI expertise, this project will deliver scalable, cost-efficient, and comprehensive evidence about how on-screen content translates to real-world consequences.

Going Forward

The work of our women's economic empowerment research program shows that targeted interventions hold immense potential to encourage greater socioeconomic participation and support better lives and livelihoods for women, their families, and their communities. But we need more evidence on multifaceted and sustainable solutions—like the economic inclusion programs described earlier—that can foster women's economic agency and meaningful job opportunities.

The **Women@Center** program will mark the next phase of our work on women's economic empowerment. Women@Center will take a comprehensive, multisectoral, and multiregional approach to understanding how integrated interventions can drive systemic change for women and girls. To achieve its goals, the program will tap into the World Bank's multimillion-dollar cross-sectoral investments and collaborate with experts from relevant sectors and GPs. It will leverage the trial-and-adopt technology to embed key evidence into project design and develop learning strategies to further strengthen its impact.

In its first phase, Women@Center will focus on enhancing women's economic participation; in its second phase, it will focus on addressing gender-based violence at home, in the workplace, and on the streets; and in its third phase, it will focus on promoting women's leadership on climate action. The program will be delivered through collaboration with the World Bank's GPs, governments, and partners including WFP, the European Commission, the FCDO, and the Gates Foundation. Women@Center will work with countries to design, implement, and test innovative solutions that address the multiple barriers that women face so that they can realize their full potential as engines of progress and economic activity, for the good of all.



Fragility, Conflict, and Violence

By 2030, almost two-thirds of the world's extreme poor will live in countries affected by fragility, conflict, and violence (FCV). Conflict is also a major driver of forced displacement: 120 million people worldwide were forcibly displaced by persecution, conflict, violence, and human rights violations as of mid-2024. Conflicts spill across borders, disrupting lives and livelihoods in neighboring countries and diverting resources from productive investments. FCV thus pose a major threat not only to peace but also to productivity, prosperity, and growth across the world (Corral et al. 2020; World Bank 2024a).

How can we address the challenges to prosperity posed by fragility, conflict, and violence?

Our FCV research program generates evidence to address the multifaceted challenges that vulnerable populations face at different stages of fragility: building resilience to shocks and reducing the risks of conflict, enhancing human capital and sustainable livelihoods, and improving physical and social connectivity. Within these broader domains, we focus on three overlapping areas where significant evidence gaps and critical operational knowledge needs persist:

- Understanding the links among development programs, social unrest, climate, and conflict
- Designing and implementing social protection, livelihoods, and resilience programs in these contexts
- Ensuring the continuity and quality of service delivery in FCV settings, with a particular focus on harnessing the potential of digital technologies to expand access and efficiency.

Why Does Our Work Matter?

In FCV settings, disrupted livelihoods, weakened institutions, and pervasive insecurity often undermine the effectiveness of standard development programs. These overlapping challenges demand context-specific, evidence-based strategies that go beyond conventional approaches. However, we know very little about how development assistance can be designed and targeted to address the root causes of FCV (Bagga et al. 2024; Guarin et al. 2023; Trako and Jeong 2022).

We aim to shift the thinking behind development investments from how to operate in FCV settings to how to actively solve FCV-related challenges. We focus on addressing the structural drivers of fragility through evidence-based strategies that improve socioeconomic resilience, social protection, and service delivery in conflict-affected areas.

The trial-and-adopt technology helps us develop and scale up these strategies: around one-fourth of our engagements focus on FCV settings. Building on past initiatives, such as the Evidence 4Peace Program, and ongoing partnerships, such as those with the PEI and WFP, we have established a strong track record of producing high-quality research and translating it into actionable recommendations for FCV settings.



Understanding the Links Between Development Programs and Conflict

Development programs can either contribute to stability or exacerbate fragility in conflict-affected areas. While the interactions between development programs and conflict often begin at the community level, their effects can influence broader regional security.

We have generated evidence that social protection programs can reduce conflict risk by addressing economic grievances, strengthening government legitimacy, and improving resilience to shocks. However, in FCV settings, these programs can also face resistance from armed groups that perceive them as a threat to their influence.

Our evidence demonstrates that program design and implementation matter in mitigating conflict risks. Studies from Niger, Afghanistan, the Philippines, and Pakistan suggest that while social protection programs can alleviate grievances and reduce recruitment into insurgent groups, they can also be sabotaged by those seeking to undermine state authority (Crost et al. 2014; Premand and Rohner 2024; Sexton 2016). Ensuring the successful delivery of services, particularly in insecure areas, requires a deeper understanding of how different actors respond to government-led interventions and how program benefits are perceived by communities.

Our evidence is already shaping development strategies in FCV settings. By integrating conflict-sensitive indicators into impact evaluation projects, we enable policy makers to track program effects on social cohesion, trust in governance, and violence reduction. We also aim to bridge data gaps by leveraging satellite imagery, digital surveys, and phone data to track displacement patterns and identify emerging conflict risks. By strengthening the evidence base, our efforts will help design more effective interventions that promote stability and resilience in FCV settings.

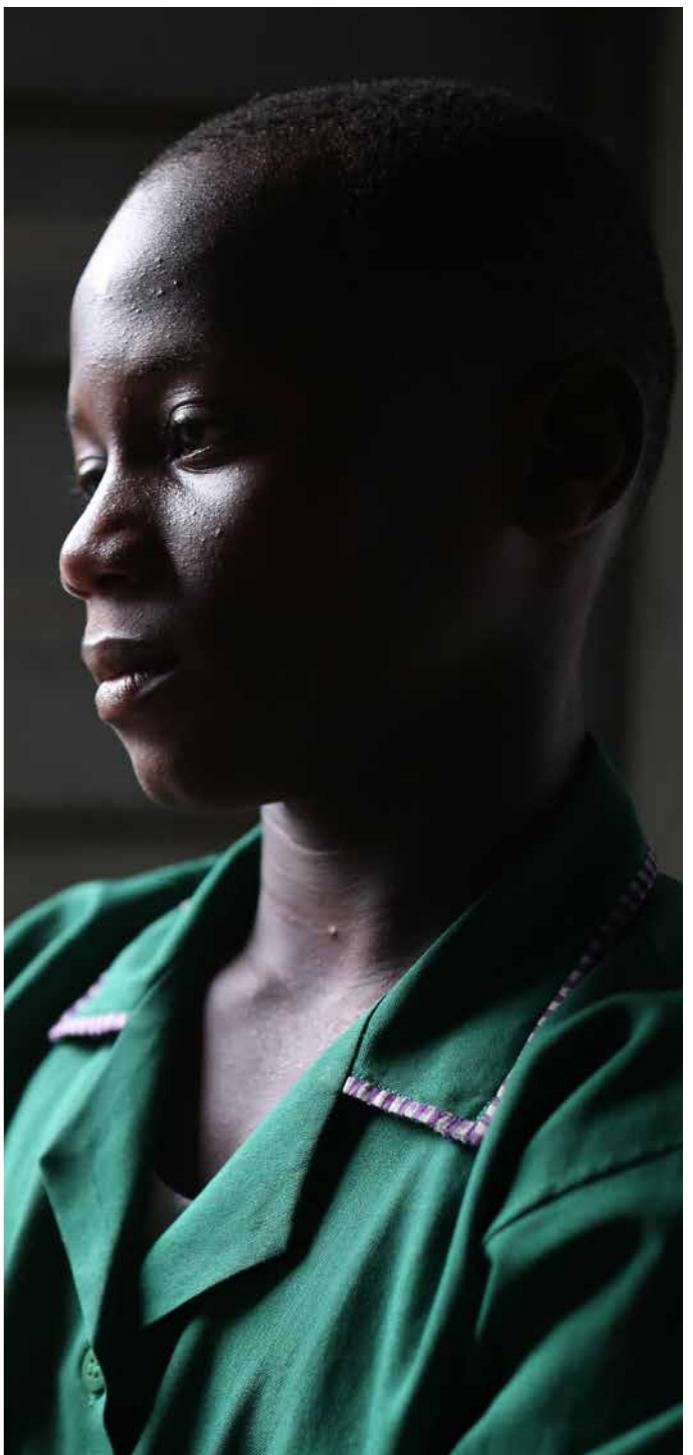
Social Protection, Livelihoods, and Resilience in Fragile and Conflict-Affected Settings

Social protection programs are critical tools for reducing poverty and vulnerability, but their effectiveness in FCV settings is shaped by instability, displacement, and weakened institutions. While cash transfers and public works programs can provide immediate relief, they are limited in addressing the broader economic and social challenges that conflict-affected populations face. The reach and sustainability of these interventions can also be limited by disrupted markets and security risks, reducing their long-term impact on resilience and recovery.

Our evidence shows that adapting social protection programs to FCV settings requires a more nuanced approach. Studies show that shock-responsive cash transfers can improve food security and consumption in crisis settings (see, for instance, Gupta et al. 2024; Maffioli

et al. 2023; Marguerie and Premand 2023), while economic inclusion programs that combine financial support with training have the potential to strengthen women's livelihoods and resilience (Bandiera et al. 2017; Banerjee et al. 2015; Bossuroy et al. 2022). However, many social protection programs fail to fully address the distinct needs of conflict victims, such as trauma recovery and social reintegration, and the long-term sustainability of their impacts remains uncertain.

Our research is informing policy and program design in FCV settings. Our evidence shows how different social protection interventions—such as cash transfers, public works, and integrated livelihood programs—can be tailored to address multidimensional vulnerabilities. A key focus of our work is testing complementary measures, such as psychological support and targeted inclusion programs for displaced populations.



Service Delivery Continuity and Quality in Fragile and Conflict-Affected Settings

Delivering essential services in FCV settings presents significant challenges. Security threats, including attacks on infrastructure, personnel, and participants, frequently disrupt development programs, making it difficult to ensure the continuity and safety of operations. These risks are further compounded by bureaucratic hurdles, logistic constraints, and the potential for resource diversion to hostile actors. As a result, service providers often face difficult trade-offs between maintaining operations and mitigating risks.

Beyond security concerns, FCV settings often lack the infrastructure and reliable local partners needed for effective implementation. Service demand can fluctuate dramatically due to forced displacement and migration, requiring programs to be flexible and responsive to sudden population shifts. In combination, these factors make it particularly difficult to sustain both the quality and continuity of service delivery in fragile contexts.

Several innovative solutions show promise for addressing these challenges. Digital platforms, such as mobile payments, have improved aid distribution in high-risk settings like Afghanistan by reducing diversion risks and improving targeting (Callen et al., forthcoming). However, these approaches require existing digital and energy infrastructure, which may be weak or unreliable in conflict-affected areas. Our evidence has shown that edutainment and digital learning can be effective tools for reaching mobile and marginalized populations. As described in the education section of this chapter, an edutainment program in northern Nigeria reduced the number of children out of school by 42 percent and improved literacy and numeracy by 43 percent within a year—equivalent to five years of schooling at a fraction of the cost (Orozco-Olvera and Rascón-Ramírez 2023).

Our evidence is already informing efforts to improve service delivery in FCV settings. Our ongoing work focuses on evaluating the effectiveness of digital service delivery, including the use of digital identification systems and remote targeting mechanisms for social protection programs. In the education sector, we are also assessing the scalability of digital learning and teacher training models in conflict-affected areas. Through this work, we aim to generate actionable evidence on how development programs can be adapted to ensure the continuity, accessibility, and quality of essential services in fragile environments.

Going Forward

Our FCV research program will continue to deepen its multisector focus on addressing FCV drivers while continuing to deliver sector-specific results in FCV settings. We will move forward with a regional program in the Sahel to build evidence in areas that are relevant across the World Bank's Regional operations portfolio: forced displacement; service delivery continuity and capacity; social cohesion, government legitimacy, and trust; and livelihoods and markets.

A cross-cutting theme of our work will be understanding the relationship between development assistance and conflict. We will study how the need and demand for services change with the level of exposure to FCV, how exposure affects the delivery of development programs, and the role of potential solutions, such as digital technologies, for program delivery and FCV-responsive program design. In this way, our evidence will enhance the World Bank's overall effectiveness in tackling FCV.



Chapter 2

Planet

The planet is the foundation of shared prosperity and human well-being. It provides the natural resources that support prosperity, and when combined with technological change, these resources can drive increased agricultural yields, leading to structural transformation. This chapter highlights our efforts to manage the **environment and natural resources** sustainably, promote **agriculture and food security** within sustainable food systems, and ensure access to safe, clean **water** for all.

To preserve livelihoods on a livable planet and bolster prosperity for future generations, we must confront interconnected crises. Extreme climate events and poor management of natural resources threaten economic development. For instance, tidal floods rapidly devastate livelihoods and leave behind saline soil, damaging agricultural productivity in the medium term. Likewise,

deforestation may yield short-term income growth—but at the cost of irreparable long-term damage to soil, biodiversity, and our climate, creating a vicious cycle of resource depletion and economic harm. What policies can address these challenges and put local populations back on the road to prosperity?

We support the World Bank's sustainable development operations by empowering practitioners to identify and test solutions that are beneficial for both people and the planet. To meet these challenges and seize new opportunities, we use the trial-and-adopt technology to identify impactful strategies that build climate resilience, enhance environmental sustainability, and improve livelihoods—often simultaneously. In this way, our evidence helps build a better future—for people and the planet they inhabit.

Environment and Natural Resources

Natural resources and an unpolluted environment provide immense value, not only for a livable planet but also for sustained and equitable growth. For instance, forests sustain biodiversity and regulate climate and water flows while also providing livelihoods for millions in the forest sector and improving air and soil quality. Likewise, clean oceans preserve biodiversity and support fishing communities by improving catches and encouraging tourism, strengthening both ecosystems and economies.

Unchecked environmental degradation, on the other hand, not only threatens development progress but also exacerbates climate change. For example, deforestation is responsible for 8 to 20 percent of all anthropogenic greenhouse gas emissions. Moreover, the mismanagement of natural resources can aggravate inequalities—for instance, by widening gaps in energy access. Effectively managing natural resources is thus essential to protecting food security, safeguarding livelihoods, ensuring future productivity, and mitigating climate change.



How can we protect natural resources while securing economic development?

We work across our research programs to identify and support innovative approaches to managing natural resources that improve human well-being and build climate resilience. For example, our rural transformation research program studies climate-sensitive approaches to land management, which can simultaneously promote climate adaptation, mitigate the effects of climate change, and support short-term food security.

Why Does Our Work Matter?

The consequences of environmental degradation and natural resource mismanagement directly impact livelihoods, fragility, and human mortality, amounting to trillions of dollars in costs.

The trial-and-adopt technology enables us to help clients and development partners design policies that mitigate these costs, strengthen resilience across contexts, and simultaneously generate environmental and economic benefits:



Our evidence helps design policies to **avoid unintended negative effects**. In the Brazilian Amazon, we show that increases in land use due to improvements in agricultural productivity for one crop displaced other agricultural activities, increasing deforestation at the frontier.



Our evidence helps **optimize incentives** for programs aiming to improve the management of natural resources and livelihoods. In Ghana, we show that adding financial incentives to a program that provided free tree seedlings and training tripled tree planting after a year.



We also **measure the costs of environmental degradation** in developing countries to inform operational strategies. For instance, our innovative approach to measuring greenhouse gas emissions from municipal landfills in Dakar, Senegal, indicates that the effective mitigation of these emissions could be worth hundreds of millions of Euros (based on the EU carbon permit price).



Investing in Climate-Sensitive Land Management

Our rural transformation research program studies approaches to managing natural resources that improve livelihoods, environmental sustainability, and food security—what we call a “triple-win” scenario. The value proposition is simple: by investing in effective natural resource management strategies that integrate local communities, we can enhance local livelihoods while generating positive global externalities. The trial-and-adopt technology enables us to flexibly test alternative program designs to identify scalable solutions for conservation efforts.

For example, one innovative approach to engaging local communities in forest conservation are payments for environmental services (PES). PES programs compensate landowners for conservation activities, such as reforestation and forest and biodiversity protection. However, key questions remain about their effectiveness and optimal design. Do PES programs displace other conservation efforts? What payment level maximizes beneficiaries and tree planting cost-effectively? Does payment timing influence conservation outcomes and food security? We are generating valuable new evidence in response to these critical questions.

Our evidence demonstrates that PES programs can be effective at protecting natural resources. In Mexico, we found that a PES program increased land cover management activities by about 50 percent. Crucially, paying landowners in this way did not cause them to stop doing conservation work they had already been doing, and it instead improved prosocial attitudes within the community (Alix-Garcia et al. 2018).

Our evidence also helps make investments in PES programs as efficient as possible, maximizing the potential for a triple-win scenario. In Ghana, for example, we studied farmers’ willingness to plant trees on their land in exchange for compensation. We found that optimizing the payment amounts could increase participation by more than 60 percent—without increasing the PES program’s budget (Legovini 2018). Our evidence motivated the scale-up of this program, which targeted 10,000 additional hectares of land for PES.

The timing of PES programs also matters. In Burkina Faso, for instance, we found that monetary incentives for forest conservation can improve food security by generating employment opportunities in the agricultural off-season. These findings suggest that rural public works can be a tool both for protecting natural resources and for enhancing climate resilience (Adjognon et al. 2021). Like in Ghana, 135,000 additional hectares of land in Burkina Faso were targeted for sustainable forest management because of our evidence.

Finally, our evidence helps decision-makers consider not only the direct effects of agricultural or land-use policies but also potential indirect effects that could undermine their climate benefits. For example, we found that the expansion of genetically modified soy cultivation in the

Brazilian Amazon did not directly drive deforestation: it expanded onto land previously used by cattle farmers and even reduced deforestation in those areas. However, our evidence shows that it did lead to indirect deforestation: as cattle farmers were displaced, they moved to nearby forested areas, leading to further land clearance (Décamps 2024).

Managing Waste Safely and Effectively

Waste management is another key area where addressing environmental degradation supports both climate mitigation and human well-being. In Senegal, we have partnered with the World Bank-financed Project for the Promotion of Integrated Management and Economy of Solid Waste (PROMOGED) to evaluate the management of Mbeubeuss, the municipal landfill in Dakar. This landfill receives 1,300 tons of waste each day, making it one of the largest dump sites in West Africa, and it is a significant source of methane emissions (Ehui 2020).

We have developed an innovative approach to measuring greenhouse gas emissions from Mbeubeuss that combines satellite, drone, and ground measurements. These measurements will inform PROMOGED’s efforts to rehabilitate the landfill and improve the efficiency of waste collection and transport to it. We are pioneering the use of these methods in a developing country—most previous emissions data come from developed countries and may not be useful for informing operational strategies.

According to our estimates, emissions from Mbeubeuss alone amount to 12 percent of Senegal’s inventoried methane emissions. Effective mitigation of these emissions could be worth hundreds of millions of Euros (based on the EU carbon permit price). This means that if mitigation is well informed, it could pay for itself within a few years. Most importantly, our evidence indicates that mitigation could save hundreds of lives over the coming decades by reducing pollutants and climate risks. DIF will continue to fund impact evaluation projects to improve the design and maximize the impact of mitigation efforts at Mbeubeuss in the years to come (Development Impact 2024b).

We are also generating evidence to improve the management of food and plastic waste. Food waste is estimated to account for 8 to 10 percent of anthropogenic greenhouse gas emissions (IPCC 2019). Plastic waste, meanwhile, imposes a societal cost of around \$9,000 per metric ton on maritime industries alone, and emerging evidence points to its serious health impacts, including growth restrictions and low birth weight in infants (Dalberg Advisors 2021; Du et al. 2024). We are building an evidence base on how real-time monitoring and fee-for-service systems can reduce food waste emissions, how education can improve plastic-recycling practices, and how innovative, context-adapted filtration technologies at recycling plants can mitigate plastic pollution in waterways.

Going Forward

We will continue to expand our research into the environment and natural resources by partnering with World Bank operations in the world’s two largest rainforests—the Amazon and the Congo Basin—as well as other critical ecosystems, like Brazil’s Cerrado. Our approach aims to maximize knowledge spillovers and enhance the impact of the trial-and-adopt technology.

Significant evidence gaps remain in balancing economic development with natural resource conservation. In the Amazon, we will study incentives for reforestation and rehabilitating degraded agricultural land, and the role of growing demand for “green supply chains” in shaping these incentives. In East and West Africa, we will study how to leverage the forest sector for job creation, design effective community-led natural resource management programs, and integrate agroforestry into agricultural practices. Across all regions, we will focus on integrating smallholder farmers into carbon markets and the impacts these markets can have on their livelihoods.



Agriculture and Food Security

Agriculture is the largest source of income and jobs for the world's rural poor, making agricultural productivity a crucial element of shared prosperity. At the same time, agricultural productivity is directly threatened by climate change, and food systems contribute to ecological degradation, including biodiversity loss, water table depletion and contamination, and soil degradation. Rural development policies and programs thus face the challenge of promoting productivity while also ensuring sustainability.



How can we help farmers bolster their agricultural productivity while ensuring food systems' sustainability and resilience?

Our rural transformation research program works with development partners to generate urgently needed evidence on what works to help farmers meet both these challenges. Launched in 2009, this research program takes an iterative approach to knowledge accumulation across a range of interventions. We focus on the six most represented policy areas in the World Bank's operational portfolio:

- Extension systems
- Input subsidies
- Rural infrastructure
- Markets and value chains
- Climate resilience
- Climate-sensitive land management.

This section discusses the first five of these policy areas. You can learn more about our evidence on climate-sensitive land management in the environment and natural resources section of this chapter.

To scale up what works in each of these policy areas, we recently launched the Planet Lab Evidence Tool Kit, which offers practitioners and policy makers evidence-based strategies to design rural development programs and policies that drive greater impact and higher returns on investment. The tool kit distills evidence on these key policy areas into targeted recommendations to optimize the design of programs and policies. New trial-and-adopt evidence will continuously feed into the tool kit, ensuring that the latest insights to transform rural development are immediately shared at scale and leveraged in the operational pipeline.

Why Does Our Work Matter?

Agriculture is the primary source of income for the world's rural poor, so increasing on-farm productivity holds the promise of reducing poverty. We generate evidence that helps partners design effective agricultural interventions while bolstering farmers' resilience:



Infrastructure investments, like irrigation, require complementary measures to unlock their full potential. Our findings show that addressing land, labor, and water management constraints can increase the use and impact of infrastructure.



Extension systems are a core delivery mechanism for innovation, but their effectiveness hinges on how well they align with the way farmers learn. Evidence shows that firsthand experience, feedback loops, and gender-sensitive design significantly speed up learning and technology diffusion.



Connecting farmers to **markets** is critical. Our evaluations of rural roads, value chain certifications, and institutional procurement models (such as local sourcing for school meal programs) show strong potential to increase smallholder incomes and food system efficiency.



Digital technologies can be leveraged to make input subsidy programs more efficient. Our work on e-vouchers in Mozambique increased the productive efficiency of input subsidies and saved millions in program costs—evidence that is ready to retarget subsidy systems worldwide.



Finally, as shocks intensify, **building resilience** is no longer optional. We're identifying how to integrate adaptive technologies into disaster response and recovery—ensuring that support not only mitigates immediate losses but also accelerates long-term recovery and productivity gains.

Making Agricultural Extension Systems Work for Farmers

Extension systems introduce new technologies to farmers, including technologies that can boost productivity and climate resilience, and they support farmers with knowledge about how to use them. Despite large investments in extension, however, access to information and uptake of new technologies is still low. In Mozambique, for example, we found that contact farmers who were directly trained in sustainable land management techniques by extension agents increased their adoption of these techniques by 24–41 percent, but these new techniques mostly did not diffuse well to other farmers (Kondylis et al. 2017).

Our rural transformation research program has shown that designing extension systems that are suited to the ways farmers learn and the local conditions they face can make the difference between slow and fast diffusion of new technologies. Our evidence shows that farmers' learning and interest increase when they have the opportunity to gain firsthand experience with a technology (Kondylis et al. 2023) and provide feedback on extension agents (Jones and Kondylis 2018). Further evidence shows that training women instead of men as contact farmers (BenYishay et al. 2020; Kondylis et al. 2016) increases women farmers' knowledge of new technologies, indicating the importance of including both men and women in knowledge diffusion.

Digital and mobile-based extension services are another innovation that could cost-effectively expand access to information and networks. However, our research emphasizes the need to design these services carefully so they are user-friendly and customizable to users' needs.

Designing Input Subsidy Programs to Boost Agricultural Productivity

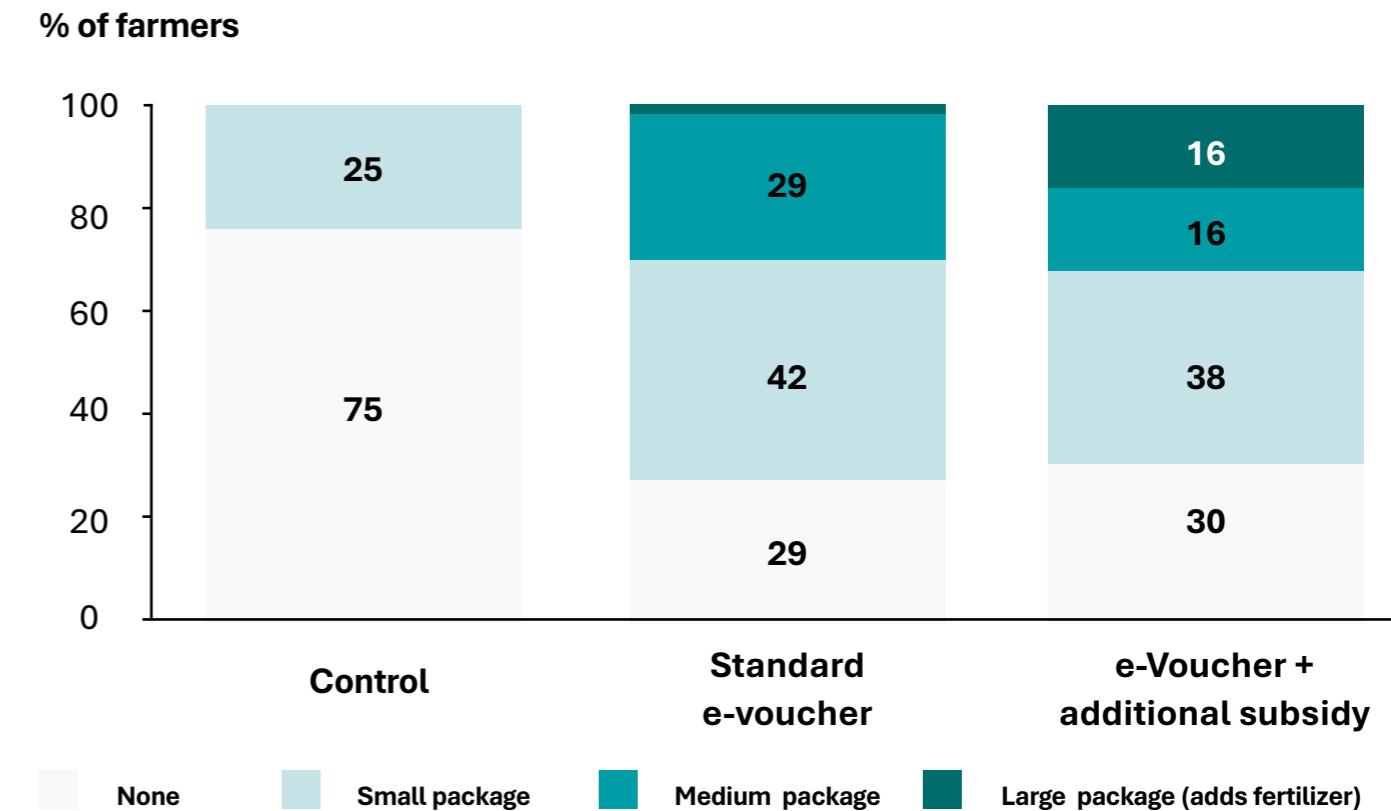
Subsidies are an effective way to boost investments in modern inputs, which can increase agricultural productivity and reduce yield volatility—especially critical in the face of climate shocks (Carter et al. 2021). However, subsidies need to be carefully designed to accommodate fiscal constraints and minimize the risk of market distortions. Reforming input subsidy systems can drastically improve cost-effectiveness while bolstering food security and regional food systems.

Electronic vouchers (e-vouchers) offer a promising way to deliver input subsidies that can reduce inefficiencies and shift subsidies to the people and places that see the biggest returns. E-vouchers enable farmers to choose from multiple package sizes at different subsidy rates, allowing for self-targeting. This approach maximizes the crowding-in of farmers' own investments while promoting self-experimentation among farmers who have never used modern inputs. E-vouchers are also well suited to promoting local markets compared to in-kind input drops.

Our rural transformation research program measures the impact of e-voucher systems and studies how to adapt them across contexts. In Mozambique, for example, e-vouchers increased the use of improved seeds by almost 50 percentage points. Our evidence also suggests that the design of subsidy packages has a large impact on what farmers buy. Nudging farmers to take up larger packages triples their investments in fertilizer and moves them toward a more commercial crop mix (figure 2.1) (Christian et al. 2023; Development Impact 2024a). This evidence on e-vouchers is shaping the World Bank's multiphase sector program and informing the next cycle of lending.



Figure 2.1 Impact of e-Vouchers on Farmers' Use of Improved Seeds and Fertilizer in Mozambique



Source: Christian et al. 2023.

Note: This figure shows the share of farmers who selected different sizes of input subsidy package under a traditional input subsidy system (control), a standard e-voucher system, and an e-voucher system in which an additional subsidy was added to the large package. The standard e-voucher system encouraged more farmers to experiment with improved inputs, and farmers were willing to make co-payments to do so. Adding the additional subsidy encouraged farmers to select the large package.

Call to Action

Optimizing e-Voucher Subsidies to Increase Agricultural Productivity

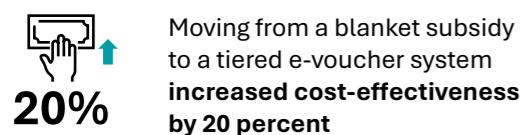
Modern agricultural technologies, like chemical fertilizers and improved seeds, are a key driver of productivity and prosperity—but many farmers do not use them. Even farmers who could benefit the most from these technologies do not adopt them, and poorer farmers often cannot access them.

We can reverse this situation and jump-start global agricultural productivity by adopting e-vouchers, a highly flexible system for subsidizing agricultural technologies on farmers' own terms. Subsidies are already a widely used strategy for encouraging farmers to adopt modern technologies, but their design must accommodate fiscal constraints and minimize the risk of market distortions.

E-vouchers maximize returns and reduce inefficiencies by letting farmers choose the size of subsidy package that best meets their needs, whether they are just starting to experiment with new technologies or aiming to scale up their productivity, while also maximizing their own investments.

E-vouchers also allow policy makers to easily put the trial-and-adopt approach into action to optimize subsidy packages and rates.

Our work in Mozambique shows that e-vouchers work:



(Christian et al. 2023).

E-vouchers can easily be adopted to deliver input subsidy programs across the globe, optimizing the impact of this key intervention on agricultural productivity and rural prosperity.



Learn

We tested the impact of e-vouchers in Mozambique, a country where more than 80 percent of people rely on agriculture as their primary source of income but practice low-productivity subsistence farming (Baez Ramirez et al. 2018, 2020; Cunguara and Hanlon 2010). We leveraged the flexibility of e-vouchers to learn how to optimize subsidies by studying how different groups of farmers responded to different subsidy packages.

We found that e-vouchers can encourage farmers to use modern agricultural technologies: 94 percent of farmers who were contacted registered for an e-voucher subsidy package, and 68 percent successfully made a co-payment to receive agricultural inputs. A flexible subsidy scheme allows governments to enhance social protection and increase agricultural productivity simultaneously: small packages promote self-experimentation among poorer farmers who have never used modern inputs, while larger farmers self-target into larger packages that generate persistent impacts on productivity.

We also learned that encouraging farmers to select larger packages paid large dividends. Temporarily increasing the subsidy rate for the large package led nine times as many farmers to choose it, and these farmers tripled their own investments in fertilizer and planted more cash crops (Development Impact 2024). Our results show that e-vouchers are a promising instrument for policy makers to directly incentivize farmers to increase their use of fertilizer, leading to higher agricultural productivity and income.

Adapt

The success of our e-voucher pilot has led to discussions among the World Bank, the Food and Agriculture Organization (FAO), and the government of Mozambique about scaling up the program. We have shown that if Mozambique had spent \$50 million on e-voucher subsidies, **they could have saved \$9.8 million**, enough to extend their coverage by 18.9 percent.

Scale

Our work is poised to maximize e-vouchers' potential to increase the impact of limited resources across Eastern and Southern Africa. The government of Mozambique has agreed to pilot and integrate a national e-voucher system to overcome the shortcomings of their previous input distribution model. At the Africa LEADS workshop, we discussed scaling up the use of e-vouchers across the region through the Regional Sustainable Rural Economy Program.

Our evidence is also transforming the Malawi Food Security Resilience Program. Before Africa LEADS, this program functioned like a typical input subsidy program: subsidies covered a fixed quantity of fertilizer and seeds. During the workshop, participants agreed to implement a flexible subsidy among half of targeted recipients. We project that **e-vouchers will save \$2.4 million of project value** by increasing the cost-effectiveness of subsidies.

We can't stop here: e-vouchers are too promising an innovation not to scale up globally. Our work shows that e-vouchers enable policy makers to optimize subsidy programs for their contexts, ensuring that limited resources have the greatest possible impact on agricultural productivity and rural prosperity.



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Complementary Interventions to Ensure Irrigation Transforms Food Systems

Irrigation has the potential to transform the agricultural sector, doubling productivity and resilience in the context of climate change. Across multiple impact evaluation projects, our rural transformation research program has produced evidence that irrigation can increase agricultural production by allowing dry-season cultivation and enabling farmers to switch to high-value crops. Despite large infrastructure investments, however, farmers have been slow to adopt irrigation. In Rwanda, for instance, we have found that farmers do not make full use of irrigation infrastructure that is provided for free, and in Mozambique, there is substantial conflict over water allocation and little cultivation of high-value crops.

Our evidence shows that complementary interventions are critical to ensuring that large investments in irrigation infrastructure deliver on their potential. Results from experiments and theory suggest that land and labor markets are key constraints to farmers' adopting irrigation (Jones et al. 2022) and that delivering basic information about optimal water use can reduce water conflict by 50 percent (Christian et al. 2022). Lifting these constraints may encourage more farmers to adopt irrigation.

Our evidence has already begun to shape policy. In Rwanda, our ongoing work has informed the government's Strategic Plan for Agricultural Transformation and scale-up/scale-down decisions within the World Bank lending cycle. Our evidence has also led to further testing of labor-saving technologies and market-access coordination to increase the use of newly built irrigation infrastructure.

Developing Markets and Value Chains

Agricultural production does not happen in a vacuum: farmers must be connected to markets to realize the value of their products. Our evidence shows that linking farmers to markets can strengthen the food system and generate greater prosperity. However, these gains need to be shared with the poorest producers since smallholder farmers often earn just a fraction of what consumers pay for goods (Zavala 2023).

We must carefully assess existing value chain structures and local context to understand which value chain interventions are most likely to be successful. For example, rural feeder roads in Rwanda reduced local transport costs by 30 percent, increasing competition among intermediaries and strengthening local value chains. Quality certifications can also help farmers conform to food safety standards and access international markets (Bold et al. 2022; Saenger et al. 2014; Zavala et al. 2023).

Other linked areas of investment include group formation and certification, warehousing, post-harvest management, and fostering linkages to institutional markets, such as schools and hospitals. In Burundi, Jordan, and Malawi, we are partnering with WFP to assess whether school

meal programs that are locally procured can stimulate rural economies by establishing local value chains that transform farmers' returns (Khincha et al. 2022).

Supporting Households' Resilience to Extreme Climate Events

As described in the social protection section of chapter 1, acting early to deliver disaster relief can help households withstand climate shocks and natural disasters without falling into poverty or food insecurity. But acting early is not enough on its own. Extreme climate events accelerate the degradation of natural resources, inducing economic losses beyond the duration of the crisis. The impact of these shocks can be particularly stark for farmers.

Our rural transformation research program explores interventions that can complement cash transfers to build longer-term resilience for rural households. Our evidence shows that recovery from climate shocks likely requires a combination of cash transfers and information about technologies that can be used to address longer-term yield losses.

In Bangladesh, for instance, we documented a 19 percent decrease in farmers' yields after tidal floods increased soil salinity. New technologies can help address these post-shock losses. Our evidence shows that a new seed variety can fully offset these negative impacts—but farmers must be encouraged to adopt it.

We tested various methods to encourage the adoption of new technology and found that letting many farmers run small demonstration plots doubled the impact of large demonstration plots. In addition, learning about the new seeds was particularly high in the season following the floods in Bangladesh, suggesting that timing agricultural trials with shocks may also speed up the adoption of proven technologies (Kondylis et al. 2023).

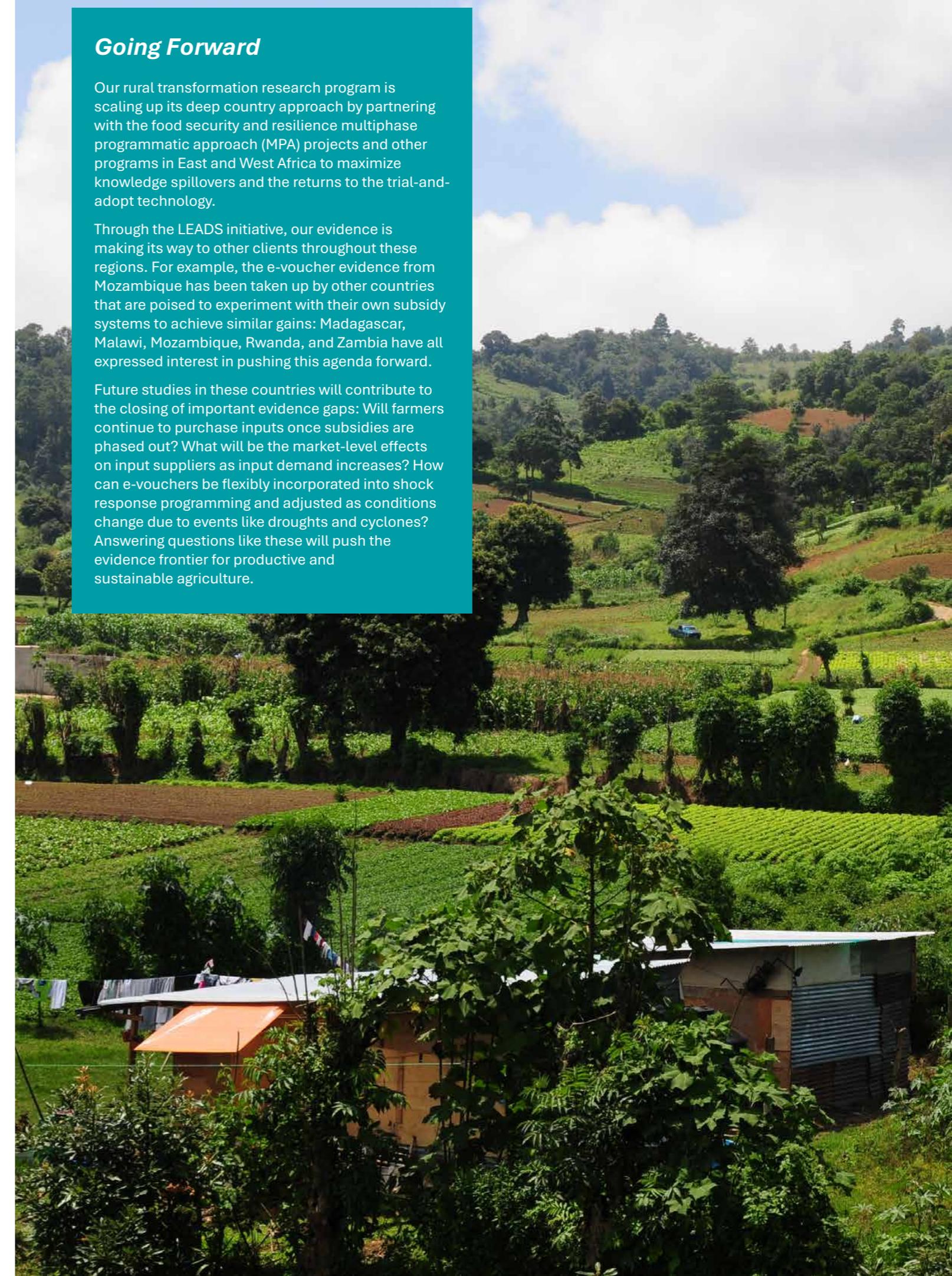


Going Forward

Our rural transformation research program is scaling up its deep country approach by partnering with the food security and resilience multiphase programmatic approach (MPA) projects and other programs in East and West Africa to maximize knowledge spillovers and the returns to the trial-and-adopt technology.

Through the LEADS initiative, our evidence is making its way to other clients throughout these regions. For example, the e-voucher evidence from Mozambique has been taken up by other countries that are poised to experiment with their own subsidy systems to achieve similar gains: Madagascar, Malawi, Mozambique, Rwanda, and Zambia have all expressed interest in pushing this agenda forward.

Future studies in these countries will contribute to the closing of important evidence gaps: Will farmers continue to purchase inputs once subsidies are phased out? What will be the market-level effects on input suppliers as input demand increases? How can e-vouchers be flexibly incorporated into shock response programming and adjusted as conditions change due to events like droughts and cyclones? Answering questions like these will push the evidence frontier for productive and sustainable agriculture.



Water

Water is essential to agriculture, to the health of the natural environment, and to life itself. Worldwide, however, about 2 billion people cannot access safe water, and 3.6 billion people lack safely managed sanitation services. Despite significant infrastructure investments, this number has been steadily increasing in Sub-Saharan Africa.



How can we ensure that everyone has access to safe water and sanitation?

Our water research program works not just to evaluate the impact of investments in water infrastructure but also to support policy makers and donors who focus on interventions to complement these investments. These complementary interventions aim to strengthen institutions, promote behavioral change, and encourage community participation in water, sanitation, and hygiene (WASH). We explore how to provide sustainable WASH services in support of the following goals:

- Building resilient WASH infrastructure
- Strengthening WASH service providers
- Changing WASH-related behaviors
- Delivering comprehensive WASH packages to achieve development impact.

Why Does Our Work Matter?

We've known for over 150 years that poor-quality water, sanitation, and hygiene (WASH) are detrimental to human health and development. Each year, an estimated 1.4 million people die from WASH-related diseases—with the heaviest burden falling on children under five. Reliable water services are also becoming increasingly critical for strengthening climate resilience. Yet across Sub-Saharan Africa, the number of people without safe water and sanitation services is steadily increasing, despite significant investments in the sector. We also see significant variation in the impacts of WASH investments, with many having limited effects on health and human development. How can this be?

We apply the trial-and-adopt technology to move from broad-strokes measures of WASH infrastructure connections and access to a more detailed picture of what WASH services are actually provided. Across Sub-Saharan Africa, we find the following:



More than a quarter of communal hand pumps are nonfunctional.



Community WASH organizations often rely on volunteers rather than professionalized services.



WASH utilities systematically fail to account for maintenance costs when setting prices.



Even improved WASH infrastructure regularly delivers water containing *E. coli*.

Our findings clarify why WASH investments may fail to deliver on their potential—and what can be done about it. By taking aim at the structural challenges of delivering quality WASH services, we build evidence on how to unlock the full potential of these investments.





Building Resilient Infrastructure

WASH infrastructure—such as water pumps and taps—is the fundamental ingredient in providing access to safe water, but existing infrastructure won’t do any good if it is not functional. This means that investments in building WASH infrastructure will fall short of their aim if new infrastructure isn’t sustainably maintained over time.

Our evidence demonstrates that sustainable maintenance of WASH infrastructure can effectively expand access to safe water at a fraction of the cost of new capital investments. In Tanzania, for instance, billions of dollars were invested in building new WASH infrastructure between 1990 and 2015, but access to improved water only increased by 2 percentage points during that time (Joseph et al. 2019). In 2018, we found that the majority of Tanzania’s communal water points did not deliver water, and 30 percent of the functional water points did not meet WHO standards for water quality because of *E. coli* contamination (Bailey et al. 2022). Of the nonfunctional water points, however, 88 percent could be rehabilitated for less than it would cost to build equivalent new infrastructure (Development Impact 2022).

As the importance of sustaining existing infrastructure became more salient, the World Bank and the FCDO shifted their investment approach, with transformative results. Rather than only investing in building new water points, the World Bank and the FCDO invested in institutions and incentives to maintain existing ones. Between 2019 and 2021, the proportion of functional water points increased by 18 percentage points (Development Impact 2022).

To sustain these results, we are studying how government and community actors coordinate their shared responsibility for water management and maintenance and evaluating the impact of this coordination on the functionality of WASH infrastructure. Our new evidence will shed light on the potential for low-cost, scalable “action-learning workshops,” which would bridge coordination breakdowns to improve water point functionality, expand water access, and sustain these gains over time.

Strengthening Service Providers

Service providers, such as utilities or community water organizations, that provide water and sanitation to customers are the crucial interface between WASH services and the people being served. However, service delivery models and ways to strengthen the effectiveness of service providers are relatively understudied because of the difficulty of testing interventions with service providers. In Sub-Saharan Africa, for instance, water utilities often suffer from weak management and chronic financial distress, which limits their ability to expand services to underserved populations and maintain their existing infrastructure (Van den Berg and Danilenko 2017).

Our evidence helps water utilities bolster their financial sustainability in order to expand their services. In Kenya, for instance, nonpayment is a persistent issue that limits revenue collection for water and sanitation utilities. We tested two different approaches to managing this problem: one emphasized transparent, credible, and predictable contract enforcement, and the other featured a communication campaign in which utility staff met customers face-to-face to encourage payment. We found that the enforcement approach quadrupled the likelihood of payment, while the communication campaign had no observable effect. Thanks to our evidence, the utility was able to meet the private capital requirements needed to expand coverage to additional underserved communities (Coville et al. 2023).

Financial sustainability is only one part of the puzzle for strengthening service providers, however. We are also exploring how to improve management practices and coordination across groups—for instance, between local governments and communities. These broader questions offer new possibilities for improving WASH service delivery.

Changing Behavior

Even if people have access to WASH infrastructure and services, encouraging more-hygienic behaviors may require further complementary interventions, such as handwashing and sanitation promotion campaigns. In rural Tanzania, for instance, we found that a sanitation promotion campaign increased the ownership of improved latrines by 15 percentage points and decreased open defecation by 12 percentage points (Briceño et al. 2017).

Despite these behavioral changes, however, this campaign had no effect on children’s health. Our findings are consistent with recent global evidence, which shows that although WASH is an important driver of health, improved WASH access does not guarantee health improvements (Cumming and Curtis 2018). This means that focusing on WASH infrastructure, services, or behaviors in isolation may not be sufficient to improve WASH access. Instead, we need to be more ambitious in delivering WASH interventions that address multiple obstacles at once.

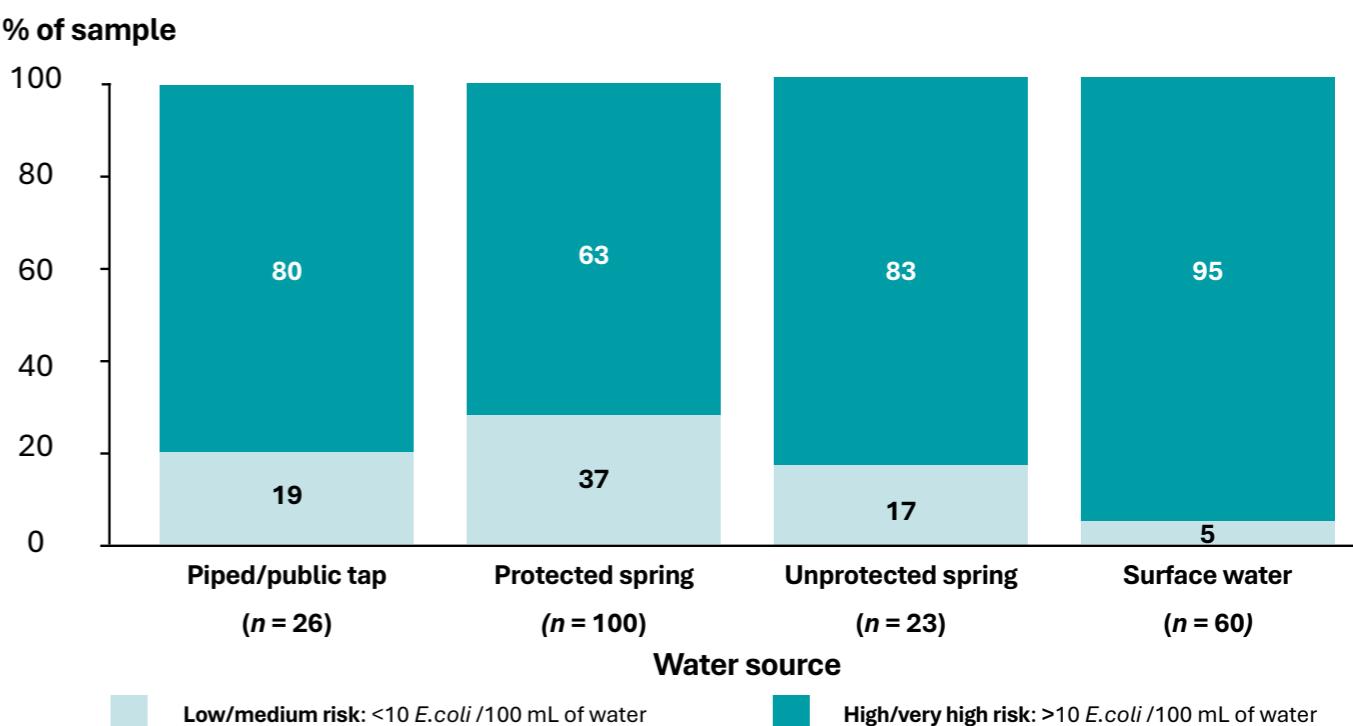
Delivering Comprehensive Packages

Comprehensive packages, which address multiple obstacles to WASH access at once, have already been implemented in several countries (see, for instance, Null et al. 2018). These packages are expensive, however, so policy makers need to understand their effectiveness and cost-effectiveness compared with more-targeted interventions.

We evaluated the largest rural WASH program in the Democratic Republic of Congo, a big-push package that included behavioral, institutional, and infrastructural components. We found that the program led to large increases in access to safely managed water and sanitation services, as well as management and infrastructure improvements that were sustained three years later (Quattrochi et al. 2021, 2025).

Although this program addressed several constraints at once, water quality tests showed that people often received access to contaminated water, and we did not observe any health benefits (figure 2.2). This means that increased access to water and sanitation infrastructure, stronger WASH governance through improved local committees, and more-hygienic behaviors—even in combination—may not be enough to move the needle on health outcomes if mechanisms for disease transmission, like water quality, are not adequately addressed.

Figure 2.2 Contamination Risk of Water Sources in Villages Targeted by WASH Program, Democratic Republic of Congo



Source: Original figure for this publication.

Note: This figure shows the results of water quality testing (focused on *E. coli* contamination) conducted in rural Democratic Republic of Congo. Water risk is measured according to the WHO decimal risk categories based on levels of *E. coli* contamination. Our evidence shows that *E. coli* contamination is pervasive, and levels of contamination are high, even for “improved” communal water points, such as piped taps and protected springs, in villages targeted by the rural WASH program.

Going Forward

Our water research program generates evidence about how to build resilient WASH infrastructure, strengthen the institutions that provide WASH services, and change WASH behaviors. However, our results show that even comprehensive, big-push WASH packages may struggle to achieve transformative development outcomes.

Going forward, our water research program will work with World Bank operations and other partners to bring these insights to project design. We will also work with partners across the World Bank and in the broader water sector to undergo an ambitious transformation and define learning priorities around key policy areas, such as water quality, to understand how to achieve the full potential of WASH investments.





Chapter 3

Prosperity

Shared prosperity means that the benefits of economic growth are inclusive of all. The goal of shared prosperity thus builds on and supports efforts to end extreme poverty and sustain a livable planet. Practitioners need to prioritize interventions that work to help the poor catch up and support inclusive economic growth.

This chapter presents our work across a variety of sectors that impact shared prosperity: the **private sector** that drives economic growth, the **trade** that supports it, and the **governance and institutions** that safeguard it. Across these sectors, our trial-and-adopt technology supports the World Bank's operations by deepening the evidence base for effective, balanced interventions that create opportunity and prosperity for all.

Private Sector and Finance

A vibrant private sector—one that innovates, generates good jobs, creates new products and markets, builds on government support and infrastructure, and uses natural resources responsibly—is the engine of sustainable and inclusive prosperity. In many lower-middle-income countries, however, the private sector is dominated by micro-, small, and medium enterprises (MSMEs) that are trapped by unfriendly business environments, limited in their productivity, and unable to grow beyond a few employees (Hsieh and Klenow 2009; Hsieh and Olken 2014).

A growing body of evidence shows that MSME policies must facilitate firms' access to markets—through the adoption of digital technologies (such as e-commerce) or by easing the integration of small firms into local and global value chains. Without transforming this situation, it will be difficult to promote sustained economic growth and full and productive employment.



How can we transform the private sector to encourage more-productive businesses, better jobs, and sustainable economic growth?

Our private sector and finance research program approaches the private sector as a key player in increasing economic prosperity and solving local and global challenges. We work across three areas where evidence is most urgently needed:

- Climate adaptation and mitigation
- Market access
- Government-business relations.

Why Does Our Work Matter?

Market incentives can play a key role in boosting productivity and growth for small and medium enterprises, and in speeding up the transition to a green economy. But these incentives are often overlooked.

The trial-and-adopt technology allows us to identify and optimize market incentives and industrial policies that can transform firms' success while encouraging sustainable growth.



Encouraging Private Sector Leadership in Climate Adaptation and Mitigation

The private sector is a major contributor to greenhouse gas emissions. At the same time, it is a source of finance, innovation, and jobs to support low-carbon growth. Our private sector and finance research program explores the private sector's role in climate adaptation and mitigation—such as by making green investments, complying with regulations, and supporting low-carbon economic transitions. Our evidence will help policy makers better implement climate policies that target the private sector, which is essential for reducing emissions.

Given the scale of the renewable energy transition, climate finance will need to be driven by the private sector. In Brazil, we have investigated whether attaching climate conditionalities to commercial loans can promote green investments by small and medium-sized firms. The private sector will also need to absorb losses in high-carbon sectors and create opportunities in new, green sectors. To explore how businesses can support this transition, we have engaged with the Climate Investment Funds to test whether incentives for firms and reductions in labor market frictions can facilitate shifts to new sectors and productive modalities.

Regulations and policies to mitigate climate change—such as emission standards and carbon markets—also rely on the private sector. While these policies may address climate objectives on paper, their effectiveness relies on firms' compliance, which can be undermined if states lack the capacity for oversight.



Our work on regulation compliance in Benin (Goldstein et al. 2018) and Senegal (Kondylis and Stein 2023) offers a way forward. Our evidence in these contexts emphasizes the importance of procedural reforms to support the implementation of regulations. We are working to extend these insights from land rights and judicial reform to climate regulation in Central Africa and East Asia and Pacific.

Ensuring Firms Can Access Markets

Understanding the barriers and costs that prevent firms from accessing new markets can help policy makers make evidence-based decisions in response. A growing body of evidence suggests that lack of demand is one key barrier to firms' access to markets (Woodruff 2018).



Expanding the adoption of digital tools for market access might help small firms break through. In Georgia, we partnered with e-commerce platforms to help small and medium-sized firms overcome both supply- and demand-side constraints to market expansion. By testing different interventions, we have shown that creating demand for online transactions can have a large effect on the adoption of e-commerce by small businesses. Our evidence underscores the need to enhance firms' capacity to capitalize on digital tools and improved trading environments.

Access to credit markets is also vital to firms' long-term success. In Brazil, we evaluated the short- and longer-term impacts on small firms' survival of their access to credit markets at the beginning of the COVID-19 pandemic. Our evidence shows that in the short term, marginally riskier firms would have been 60 percent less likely to shutter in the first 12 months of the pandemic had they been given access to credit.

In Kosovo, we evaluated the impact of a partial credit guarantee (PCG) fund intended to help credit-constrained small and medium enterprises (SMEs) access working capital. We found that although the PCG fund could have been better targeted, the subsidized credit had large effects on SMEs' performance outcomes—including their revenue, productivity, and survival. Using simulation techniques that combined regression analysis and machine learning, we generated new evidence that commercial banks may be leaving money on the table by not tapping into a much larger pool of potential borrowers. Based on our evidence, a World Bank team is exploring a new lending operation in the region to support the design of a more impactful PCG fund.

Calibrating Government-Business Relations

Size-based policies, tax policy, and procurement rules can be potent instruments for industrial policy, but they risk introducing market distortions and limiting fiscal space. Our private sector and finance research program evaluates the impact on firm performance and market efficiency of general tax policies, targeted interventions (such as exemptions, subsidies, and preferential procurement), and direct assistance to firms (such as management consulting programs and tailored credit lines). In Honduras, for instance, we investigated how value added tax refund policies affect firm growth and supplier networks within special economic zones. We found that fiscal incentives for job creation must be balanced against associated costs, like market distortion and fiscal resources.

Our evidence helps reveal easy fixes to make programs more cost-effective and impactful. In Brazil, we partnered with the Brazilian Business Support Program to Micro and Small Enterprises to assess the impact of a large-scale program that provides small firms with consulting services to diagnose their management practices and determine how to upgrade them (Bruhn and Piza 2022). Our evidence shows that small tweaks in the program's design could double the demand of badly managed firms for these services in the short term, with potential downstream effects on their performance outcomes.



Going Forward

Our private sector and finance research program will focus on two areas in the future. First, we will leverage private sector support and market incentives to incentivize the adoption of greener business models by SMEs and the sustainable use of land through the preservation and rehabilitation of primary forests. Second, we will leverage existing partnerships with policy makers and government counterparts to embed the trial-and-adopt technology in the design of industrial policies to measure their impacts and identify opportunities to improve their effectiveness.

Trade

Trade is a promising avenue for promoting shared prosperity. By enhancing pricing dynamics and boosting productivity, trade can support inclusive economic growth and reduce poverty. Since 1990, improved trade practices have been responsible for economic growth that has lifted more than 1 billion people out of poverty (World Bank 2022b). However, low-income countries still face trade challenges, including tariff evasion and barriers to trade.



How can we encourage fair competition and improve infrastructure to remove barriers to trade?

Our trade research program studies trade facilitation programs in low-income settings to generate evidence about how these programs can be most effective. To make these programs as effective as possible, we identify the binding firm-level constraints to trade and the balance of trade-offs between reducing controls and ensuring revenue collection.

To integrate the trial-and-adopt technology into ongoing World Bank projects, we collaborate with World Bank sectors focused on transport, trade corridors, and border management. This collaboration is currently active in Malawi, Mozambique, and Zambia and provides analytical support to \$469 million in development financing for trade facilitation.

Why Does Our Work Matter?

Over the past 25 years, tariffs have been replaced by an increasingly complex web of standards and regulations governing access to international markets. At the same time, hard and soft infrastructure is still lacking in many low- and middle-income countries. Understanding these barriers is more difficult than ever—but reducing them is also more important than ever.

Our trade research program adopts a comprehensive approach to trade reform that evaluates improvements in infrastructure and regulations on border crossing as well as broader changes to trade policy. Our approach integrates impact evaluation projects and structural modeling to measure the effects of trade reform across the entire economy. This approach relies on deep engagements with customs authorities, as well as close collaboration with trade policy teams at the World Bank and the World Trade Organization.



Our trade research program improves trade policy decisions by leveraging administrative data analytics to provide real-time metrics of border performance and revenue collection. By incorporating our analytics into open-source tools, we strengthen customs agencies around the world. Our evidence also enhances trade facilitation programs that have been proven to reduce barriers and benefit the most vulnerable, and it addresses pitfalls in trade policy by focusing on risk management, auditing, and compliance.

In Malawi, for example, we have partnered with the Global Trade Unit to support government efforts to reduce the cost of trading for this small, landlocked country. Malawi depends on many imports, such as fertilizers and fuels, for its large agricultural sector. Overall, the ratio of trade to gross domestic product (GDP) is about 30 percent. However, barriers to import and export slow the economy's growth.

Our evidence shows that the government's trade facilitation reforms have reduced border-crossing inefficiencies, but transport costs remain high. Using trader surveys and customs data, we found that the average border-crossing time in Malawi is about 2.5 days, which is substantially better than many neighboring countries (figure 3.1).

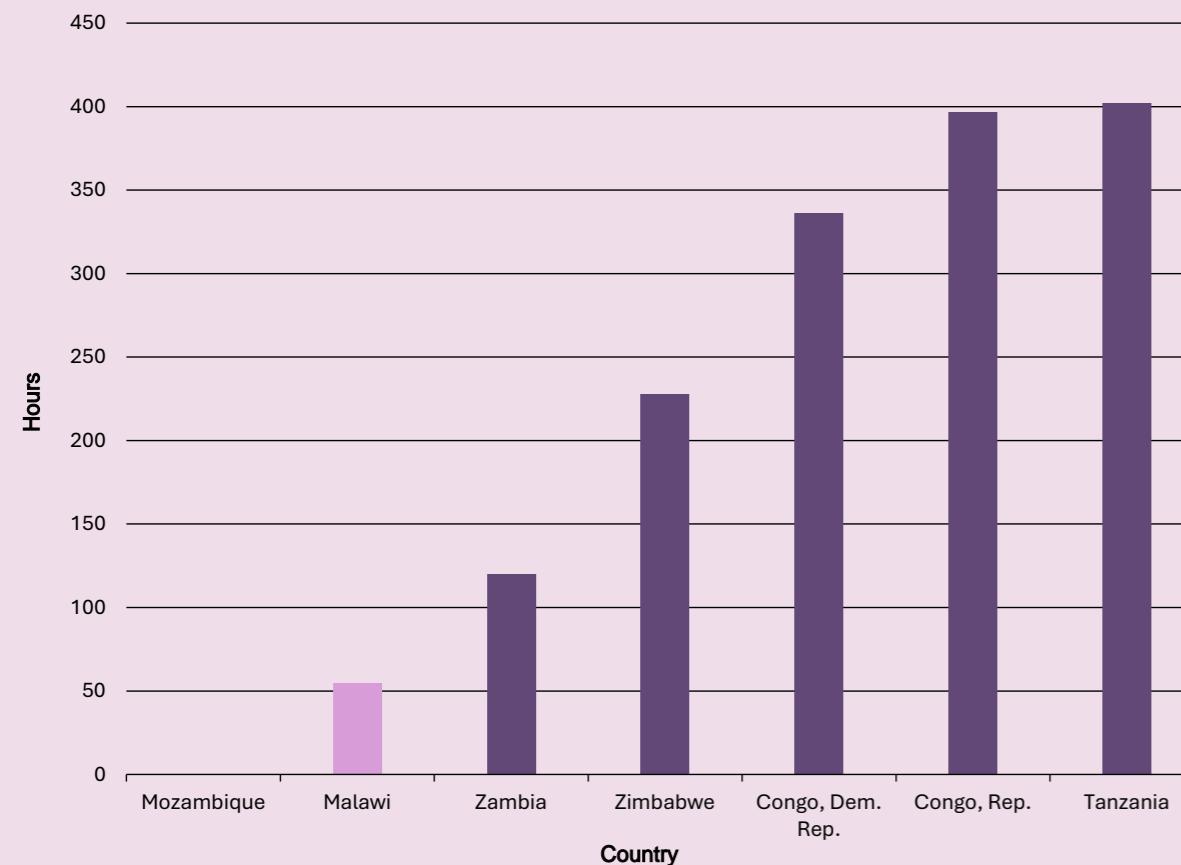
Traders report that the primary remaining costs are taxes and excises and transport costs. These costs are not addressed by the current reforms, but our evidence has led Malawi to consider them as next steps in its trade liberalization process.

In Latin America, we are studying the impact of quality regulations and voluntary sustainability standards on exporters and domestic producers. We also collaborate closely with trade facilitation projects to effectively target and eliminate identified barriers. In Ecuador and Honduras, we examine how large firms influence networks of small suppliers, emphasizing the need to balance buyer growth with ensuring profits reach suppliers, which is crucial for designing competition policies.

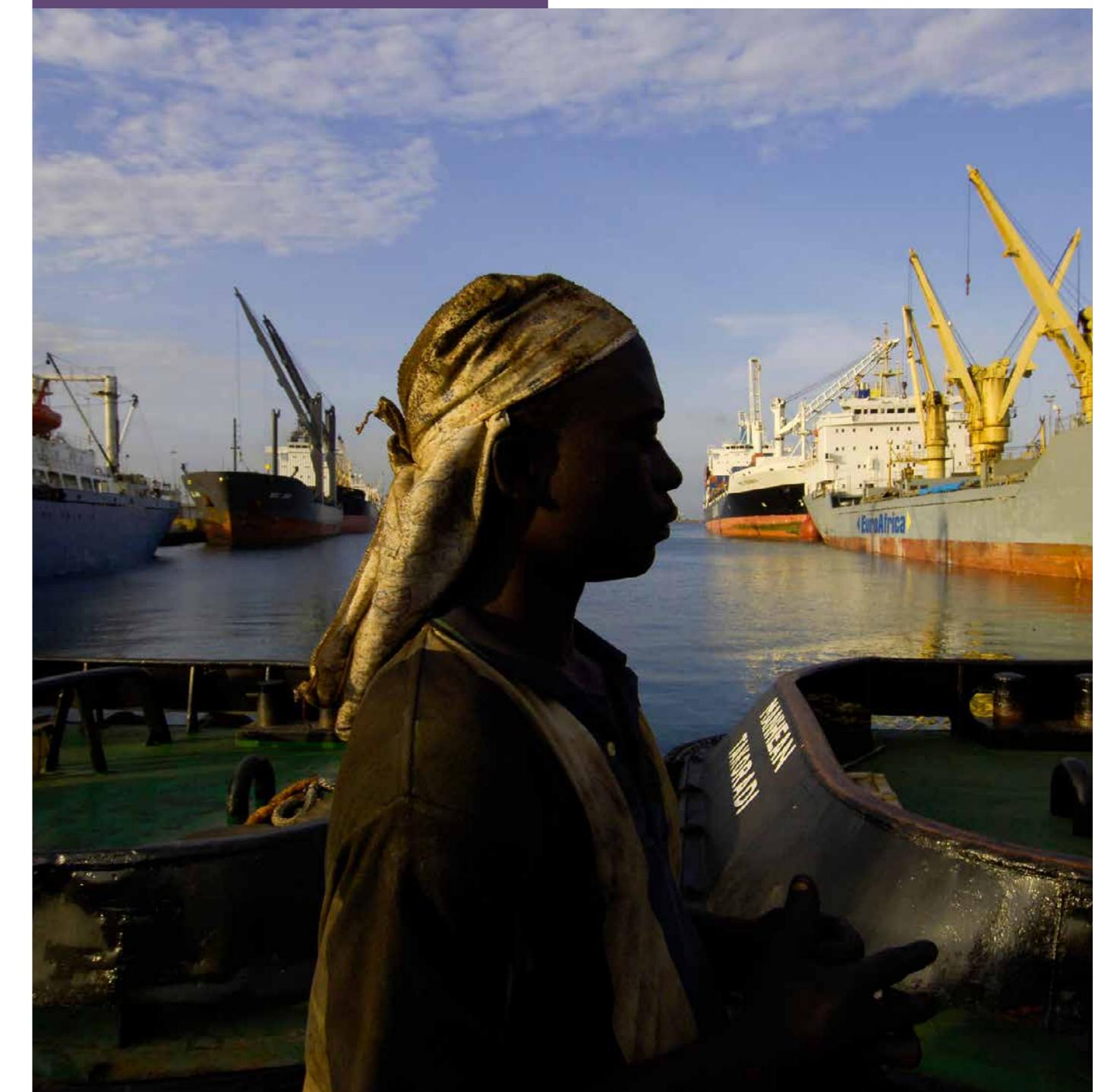
Going Forward

Our trade research program will deploy its hybrid microdata–macro model approach to understand the rapidly shifting landscape of trade in developing countries. This landscape encompasses simultaneous trends toward trade integration and decoupling. On trade integration, we engage with customs authorities in Central America and East Africa to measure the impacts of regional trade unions. On decoupling, we work with World Bank operations to understand how governments in developing countries can respond to new barriers, such as the implications of the EU Carbon Border Adjustment Mechanism and the EU Deforestation Regulation.

Figure 3.1 Border-Crossing Time for Imports by Country in Southern Africa



Source: Doing Business (database), World Bank, <https://archive.doingbusiness.org/en/data/explore/topics/trading-across-borders>. Data collected in May 2019.



Governance and Institutions

Government organizations and institutions deliver vital public services across areas like health, education, justice, and infrastructure, to name just a few. This is especially true in developing countries, where the public sector is particularly prominent. To safeguard shared prosperity, citizens need an effective civil service, a robust public finance system, and an efficient justice sector to deliver these public services.

Despite the importance of effective governance for the efficient provision of public goods, the factors that strengthen it are still poorly understood. Governance reforms, which are inherently long-term and intricate, are difficult to measure. As a result, there is not enough rigorous evidence about successful strategies within this sector.



How can we strengthen governance to promote efficient, effective service delivery?

Our governance research program generates rigorous evidence to improve the results of governance projects and to push the frontier of available evidence on what works in governance reform. The program was launched in 2013 in partnership with the World Bank's Governance Global Practice (GP).

We focus on four major areas of knowledge about governance:

- Public administration reform
- Public finance
- Security and justice
- Decentralization and subnational public sector management.

Why Does Our Work Matter?

The qualities of the public administration that implements public policy explain a substantial portion of its ultimate impact. In cases we have studied across the European Union, being served by one local government rather than another can halve (or double) the time it takes to get a business license or receive your social security payment (Hasnain et al. 2024). Different local governments exhibit huge differences in their capacity to execute public policy, as do different units within a single organization (Rasul, Rogger, and Williams 2021). Similarly, the quality of tax administration plays a key role in how effectively tax offices collect taxes.

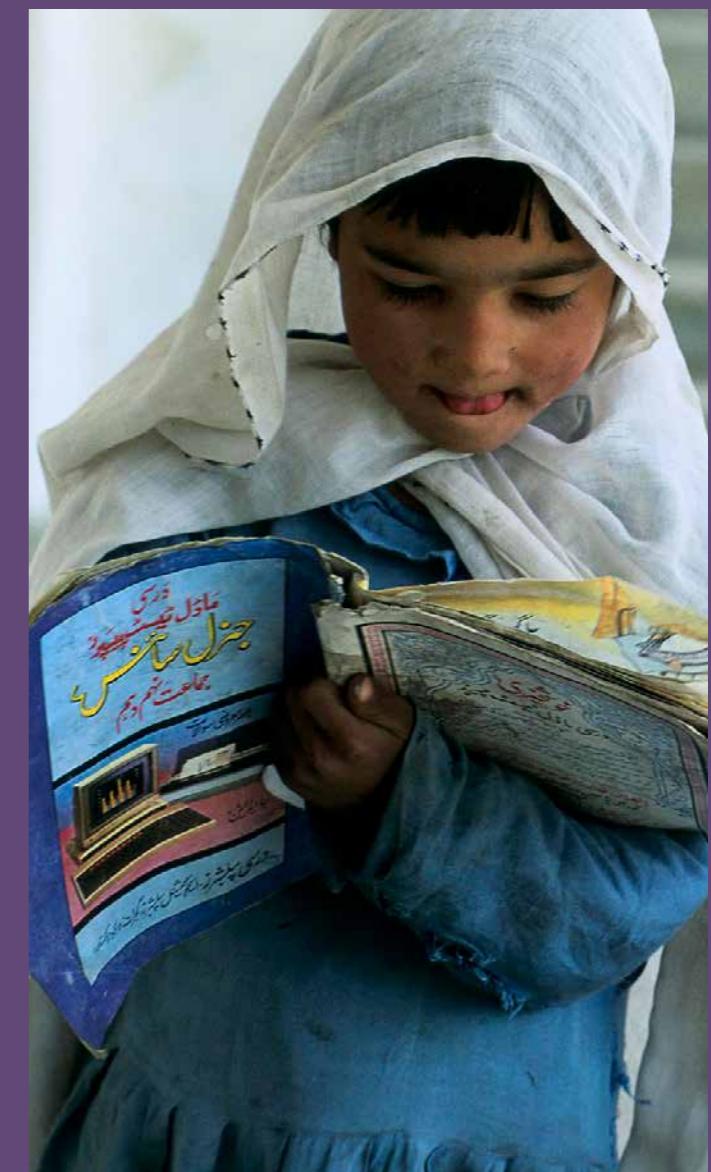
We are documenting this variation at scale and presenting it back to public sector managers for action. Our evidence both shows managers where challenges are located and identifies strengths that can help resolve them using knowledge from within the local system.

We have also built a handbook, tool kits, and training programs to capitalize on this variation to better reform the state. We have worked with hundreds of public officials under the umbrella of “government analytics” to build bureaucracy and tax labs across the world, changing the way governments see themselves and grounding reforms in evidence.

Finally, we have used the trial-and-adopt approach to indicate where reforms to public administration are working and should be scaled up, and where they are not. For example, in Liberia, we showed the effectiveness of appraisal reforms in getting officials to come to work. In Pakistan, we showed the ineffectiveness of a school accountability system and suggested how it should be reformed based on international experience.

The size of public administration means that even small improvements can have a broad impact. Worldwide, wages for public sector employees amount to about 10 percent of countries' GDP, and public procurement accounts for roughly 12 percent (Bosio and Djankov 2020; World Bank 2019). Assigning the best managers to the right organizations, adopting the best practices for

helping public servants learn new information, or enabling organizations to monitor the prices paid for equivalent goods and services across the government—any of these interventions may literally change a country's GDP. And as described in chapter 1, optimizing the health care model for mild-risk, chronically ill patients in Estonia reduced mortality by over a third—meaning that small improvements to public administration can even save lives (World Bank 2022a).



Public Administration Reform

Public administration is vast and diverse, but most research has focused on front-line staff—like teachers and health workers—and on the effects of performance incentives for managing issues like absenteeism and underperformance. This emphasis is valuable: as our work in Colombia shows, when mothers in underserved settings receive care from physicians whose skill level is one standard deviation higher, the proportion of unhealthy newborns drops by 9 percent (see chapter 1).

While effective front-line service delivery is essential, it is only one part of public administration. Our governance research program applies the trial-and-adopt technology to deepen this body of evidence by exploring the rest of public administration—especially public servants in core ministries like finance and education. Public servants in these organizations are responsible for key government functions, like policy design and tax collection. Using evidence to enhance their work can improve government functionality on a broad scale.

Our work on public administration reform is managed by a shared initiative between the Development Impact group and the Governance GP called the Bureaucracy Lab. The Bureaucracy Lab has one of the largest portfolios of impact evaluation projects on government functioning of any research group in the world. We collaborate with academic coauthors to investigate the design of government organizations, pushing the global frontier of knowledge about how public administration works. The important policy questions the Bureaucracy Lab is studying include the following:

- Which incentives (monetary, mission-based, or accountability-related) improve the performance of public servants? (Ethiopia, Liberia, and Pakistan)
- How can governance over public infrastructure maintenance be improved? (Tanzania)
- What are the most impactful ways to train public servants? (Ethiopia and Ghana)
- How much does information sharing affect the activities, efforts, and incentives of local policy makers? (Estonia)

Our evidence shows how policy makers and public servants can make major improvements to public functions at low cost. Improving the quality of management in government organizations in Nigeria would make infrastructure projects 32 percent more likely to be completed (Rasul and Rogger 2018), while providing public servants in Ethiopia with evidence briefings offering basic administrative facts can help reduce errors in their tacit beliefs about the populations they serve (Rogger and Somani 2023).

The Bureaucracy Lab also generates global data on public servants to inform the design of public sector

organizations. The [Worldwide Bureaucracy Indicators database](#) presents more than 300 indicators on public and private sector workforces, public sector wage bills, pay compression ratios, and gender pay gaps. The [Global Survey of Public Servants](#) presents the largest harmonized set of public servant survey data in the world, encompassing 29 countries and responses from over 1 million public servants. To improve future surveys of public servants, we are undertaking experimental work within these surveys and generating new evidence about how to survey public servants effectively.

To further this methodological work, the Bureaucracy Lab has created the largest repository of guidance on measuring public administration to date in the form of *The Government Analytics Handbook* (Rogger and Schuster 2023). The *Handbook* presents frontier evidence and practitioner insights on how governments can leverage data to strengthen public administration. Its chapters cover everything from analytics using administrative data (such as payroll or procurement data) to the methodology of administering public servant surveys, and it offers practical tools and resources for public servants looking to diagnose and reform their own organizations.



Call to Action

Transforming Public Administration Using Government Analytics

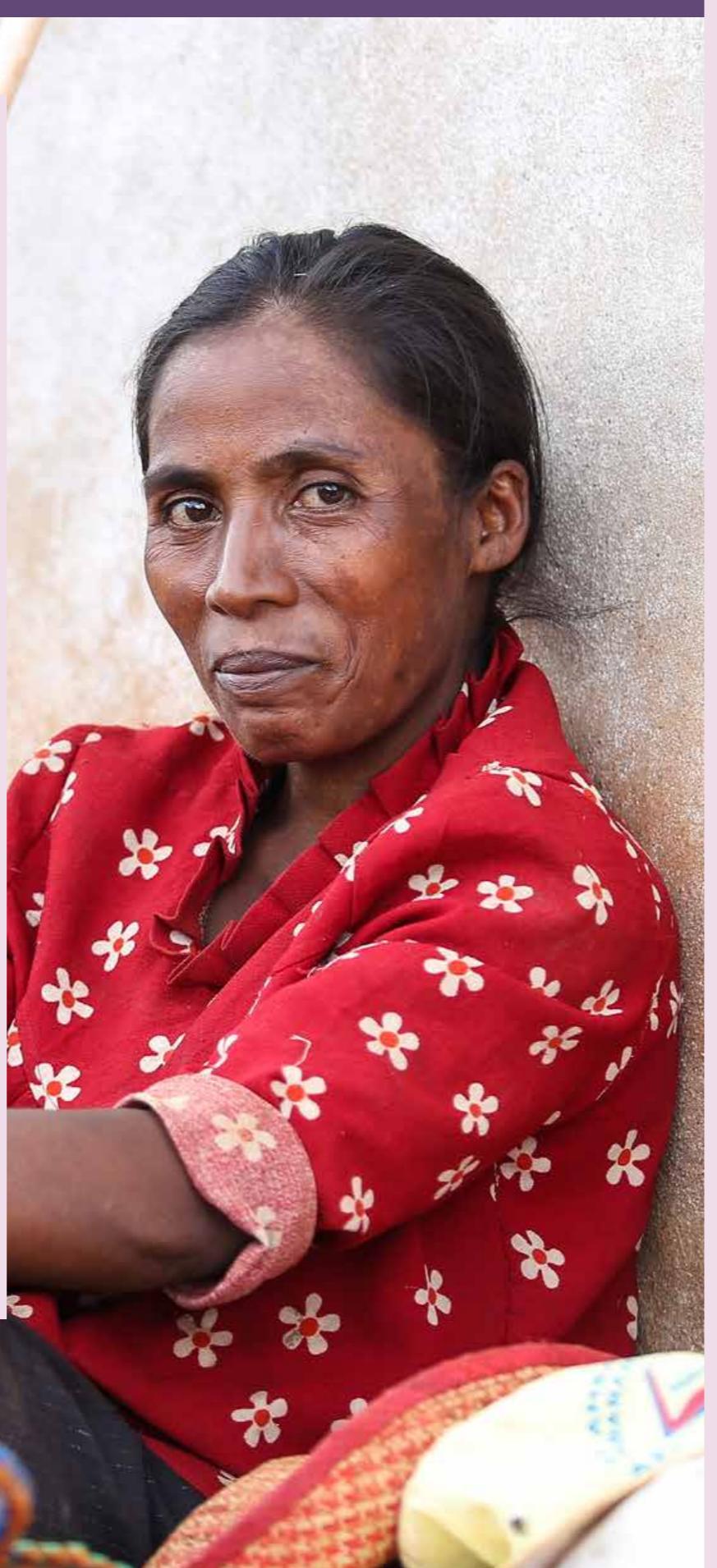
Public policy is only as impactful as the public administration that puts it into action. Even well-designed policies lose impact if the organizations, units, and individuals that implement them can't do so effectively and efficiently. This means that we don't just need causal evidence to help design better policies; we also need evidence to improve government itself. By strengthening public administration, we can use scarce resources efficiently while enhancing public services and safeguarding economic prosperity.



The potential cost savings and productivity gains are huge. Worldwide, public sector wages amount to about 10 percent of countries' GDP, and public procurement accounts for roughly 12 percent (Bosio and Djankov 2020; World Bank 2019).

Small, evidence-based changes can have an enormous impact in this context. In Nigeria, improving the quality of management in government organizations would make infrastructure projects 32 percent more likely to be completed (Rasul and Rogger 2018). In Italy, reassigning the best managers to the largest offices would boost the productivity of social security claim processing by at least 7 percent (Fenizia 2022). And in Pakistan, offering the best-performing tax collectors their preferred jobs would increase tax revenue by 40 percent (Khan, Khwaja, and Olken 2019).

Gains like these are well within reach for governments worldwide. With DIF's support, the Bureaucracy Lab is building the premier collection of resources to help public servants around the world achieve them by repurposing data they already have for government analytics.



Learn

To a large extent, governments already have the data they need to improve their own functioning—the administrative data they collect as part of their daily activities. But no government repurposes these data for diagnostic assessments that drive reforms in a way that reaches the full potential of this approach. As a result, they are missing out on data insights that could help them save billions of dollars in procurement expenditure, recruit better talent into government, identify sources of corruption, and much more.

In response, the Bureaucracy Lab has developed the Government Analytics collection, a set of practical guides and region-specific reports, data, and tools, all designed to help public servants identify sources of government data, analyze them to generate evidence about government functioning, and apply that evidence to increase the impact of policies and programs. At the collection's center is *The Government Analytics Handbook* (Rogger and Schuster 2023), a comprehensive guide to using data to transform government coedited by the Development Impact group.

The *Handbook*, which was launched in 2023, brings together evidence and insights from all over the world into a one-of-a-kind resource. Over the course of 30 chapters, the *Handbook* describes the major sources of government data, key technical considerations for analytics, and strategies for using analytical insights to transform public administration. Since its publication, the *Handbook* has been downloaded over 35,000 times.

Our surveys indicate that the administrative data housed in government information systems are enormously underutilized. These data are growing constantly—for instance, every time a firm submits a procurement bid, a shipment of trade goods clears customs, or a human resources department sends an employee their monthly paycheck—and they can be used for everything from identifying choke points in the customs process to predicting wages and turnover across government. Public servants simply aren't equipped to use the treasure trove of data they have access to. Our work to provide step-by-step guidance on the practical use of government data is thus a key step to strengthening government performance.

Adapt

To help public servants across the world use the *Handbook*, the Bureaucracy Lab has built out the Government Analytics collection by adapting its insights to distinct regional contexts and creating complementary resources.

A region-specific report about Europe (Hasnain et al. 2024) offers an accessible introduction to government analytics with attention to the questions policy makers in Europe care most about. The report explores how public servants can use the rich microdata available in many European countries to study why government quality varies

across regions and districts, as well as the impact of this variation on citizens. It also discusses five case studies of Bureaucracy Lab projects in Europe that used government analytics to improve public servants' motivation, strengthen youth mental health services, and improve the management of public organizations.

On the other side of the world, a region-specific report about Latin America and the Caribbean (Santini et al. 2024) assesses how far governments in the region have come in harvesting the benefits of government analytics. The report provides new evidence of how governments can realize the potential of significant investments in information systems by strengthening the enabling conditions of government analytics: data infrastructure and analytical capabilities. It also discusses 12 case studies of government analytics projects in the region and advances a set of policy recommendations.

Together, the Government Analytics collection paints a precise picture of how governments can reshape their data systems and use administrative data to drive reform. This transformation can happen at the level of a whole government or unit by unit, transaction by transaction.

Scale

Government analytics will gain momentum as more and more public servants pick up the resources in the Government Analytics collection and use them to solve problems in their organizations. To catalyze this process, in 2024, the Bureaucracy Lab launched the Government Analytics Fellowship Program in collaboration with the Governance Global Practice and University College London.

The fellowship program offers public servants from around the world individualized training and support from senior experts at the World Bank and University College London. Over the course of six months, 30–40 fellows identify a problem they want to solve in their government and learn how to harness government data and apply analytical tools to solve it. Fellows also benefit from joining a network of public servants, professionals, academics, and data experts who want to use government analytics to transform public policy.

Between the in-person versions of the fellowship in Washington, DC, and an online version, we are supporting thousands of public servants as they undertake analytical projects that aim to adapt their administrations to function more effectively. These public servants are forming a community of practice to solve analytical problems with novel techniques and ideas from across the world.

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Public Finance

Low- and middle-income countries face a challenging fiscal environment characterized by increasing demand for more and better public services against a backdrop of rising debt and weak fiscal balance. The World Bank's Evolution Road Map identifies domestic revenue mobilization as a priority in the Bank's support to client countries.

Our research into public finance is managed by the Public Finance Lab, a collaborative hub that works closely with taxation and procurement authorities to enhance governments' institutional capacities, support World Bank operations, and conduct high-impact research. The Public Finance Lab has established partnerships with tax and procurement authorities in Brazil, Chile, the Dominican Republic, Georgia, Honduras, Kenya, Lithuania, and Rwanda. Our work in these countries focuses on building local capacity and harnessing the rich administrative records available to government authorities to inform policy design and improve public finances.

Our high-impact evidence feeds directly into our partners' policy implementation. For example, as part of our long-term collaboration with the Honduras Tax Authority, we have generated evidence that a tax reform aimed at increasing tax payments by large corporations raised revenue collection by 30 percent but also increased misreporting of revenue to avoid taxation. As a result of our evidence, the tax authority has incorporated new indicators in its risk model, improving compliance. And as a direct result of our training and collaboration, the tax authority has introduced randomized experiments to evaluate their compliance interventions. Likewise, our collaboration with the Kenya Revenue Authority to document the challenges that small enterprises face in complying with the simplified tax regime encouraged the creation of the new Small and Medium Enterprise unit.

Our research has also yielded significant evidence on the dynamics of public procurement. In China, our analysis of subnational public procurement revealed that approximately two-thirds of auctions were subject to manipulation by participants—and that implementing a fair rules design could cut costs by as much as 18 percent. Similarly, in Chile, we showed that centralizing payments at the treasury could substantially decrease delays in procurement payments by hospitals, leading to greater competition in auctions and a 5 percent reduction in the price of pharmaceutical products. We are expanding this program to other contexts, from Bangladesh to the European Commission to Kazakhstan, where we aim to identify and address systemic inefficiencies.

The Public Finance Lab is committed to building our partners' capacity to ensure that learning from our engagements is long-lasting. Over the last three years, we have held dozens of workshops on big data analytics, impact evaluation methods, network analysis, text-as-data tools, and other topics. Our in-person and virtual workshops in Rwanda, Kenya, Honduras, Georgia, the Dominican Republic, Lithuania, and Brazil have been attended by hundreds of tax officials, who consistently recognize the importance of these new tools for their ability to use data to design better policies.



Security and Justice

Efficient, fair, and accessible justice systems promote peace and security, support economic investment and growth, and provide fundamental protections to citizens. However, there is limited evidence about what works in improving justice.

Our research into security and justice is managed by the Data and Evidence for Justice Reform (DE JURE) program, an initiative that harnesses the power of science and data to transform how justice systems are measured, understood, and strengthened. DE JURE's research aligns with growing interest among governments, donors, and academics in using data and evidence to foster equitable, growth-enhancing, and sustainable justice systems. We have successfully applied the trial-and-adopt technology in collaboration with government partners and academics in countries across Africa, Europe, Latin America, and South Asia, including Chile, Croatia, India, Kenya, Peru, and Senegal.



By collaborating with governments and judiciaries, DE JURE identifies and addresses key factors that contribute to court delays, uncovers systemic biases in decision-making, and increases access to justice for marginalized groups. For example, we partnered with the Judiciary of Kenya to enhance efficiency, transparency, and access to justice by digitalizing and expanding the Court-Annexed Mediation program. A new mediation case management system streamlines case tracking, automates mediator assignments, and integrates with the judiciary's case-tracking system, enabling data-driven decision-making. As of December 2024, the system is operational in 41 regions and 104 court stations and has tracked over 24,000 cases. By embedding digital technology in mediation services, we are helping to strengthen alternative dispute resolution, improve efficiency, and promote equitable access to justice.

We are also leveraging AI and data analytics to enhance justice systems. In India, we have leveraged AI to improve the quality of judicial decisions by developing statistical procedures to identify judicial biases in decision-making and training programs to mitigate them (Bhupatiraju et al. 2023). And in Peru, we have increased access to justice by leveraging administrative data and innovations in legal aid and digital mediation to enhance alternative methods of dispute resolution. In these contexts and beyond, DE JURE's interventions and knowledge products have supported personalized recommendation systems, behavioral interventions, and cost-effective reforms to enhance the speed, accessibility, and quality of justice.

Decentralization and Subnational Public Sector Management

Transferring power and responsibility to local organizations has been a very popular reform in many countries. However, evidence on how decentralization reforms fare in practice has not kept up with the number of reforms. How can we measure and incentivize the performance of local governments? How can we deal with potential elite capture at the local level? And how can we ensure that local governments have sufficient capacity to handle increasing responsibilities and collect their own revenue?

Our governance research program is developing new measurement approaches to assess state capability in middle-to-low-income countries and is exploring several aspects of decentralization. In Cambodia and the Dominican Republic, for example, we are testing social accountability interventions to improve the service delivery of local governments. In Burkina Faso and the Solomon Islands, we are studying the impact of demand-side actors, such as community officers and community-based organizations, in making local governments more accountable. And in Tanzania, we are assessing resource transfers from the central government to local governments to see whether a program-for-results incentive scheme, based on an institution's performance, is effective in improving local service delivery.

Going Forward

The path forward for our governance research program reflects our powerful vision to revolutionize public administration and private sector partnerships through the strategic use of digital investments, data analytics, and AI. Our overarching goal is to enhance government functions, improve public services, and drive efficient governance that benefits citizens and businesses alike. By leveraging cutting-edge technologies, such as our Microdata and Evidence for Government Action (MEGA) platform, we aim to bridge the public-private divide and create streamlined, adaptable systems that improve the efficiency, continuity, and quality of service. Our data-driven approach helps optimize policy design for equity and sustainable growth, ensuring that government initiatives are responsive, inclusive, and effective.

The trial-and-adopt technology has empowered us to develop validated, evidence-based measurement tools that address critical service delivery challenges. Our approach complements the World Bank's long-term engagements with governments, creating a global repository of microdata to support cross-context learning and continuous improvement. We will continue to leverage these resources to optimize governance and service delivery globally, ensuring that both policy and implementation are strengthened.

As the **Bureaucracy Lab** explores new initiatives, it remains deeply committed to advancing global knowledge on the effectiveness of public administration through data and technological innovation. The Bureaucracy Lab's work will include a deep dive into open government initiatives, like Estonia's, and an examination of team structures in the Ethiopian public administration. Our collaborations with academic partners will continue to explore pressing policy questions, generating more data to further enrich the **Worldwide Bureaucracy Indicators** and **Global Survey of Public Servants**. By focusing on holistic public administration reform, the Bureaucracy Lab aims to ensure its initiatives remain dynamic and impactful.

The **Public Finance Lab** continues to expand its engagement with clients and World Bank operations. By co-leading DaTax, a new World Bank lab that uses microdata to study taxes, firms, and jobs, the public finance team will substantially expand its reach and closely collaborate with development partners working on domestic revenue mobilization.

The Public Finance Lab is also leading the way in making tax microdata more readily available to other government agencies, development institutions, and researchers. Our innovative approach is to establish tax data labs jointly with our clients. We are piloting the first lab with Honduras and setting the stage

to expand the model in the near future. Building on this momentum, we plan to establish a public procurement lab to consolidate and advance the World Bank's work on public procurement.

Moving beyond traditional themes like transparency and competition, the Public Finance Lab will prioritize sustainable procurement, including green procurement practices, and explore the use of AI-powered tools to transform how the World Bank and client countries approach procurement challenges. These new tools and solutions will drive efficiency, sustainability, and inclusivity in public procurement systems worldwide. Taken together, our initiatives to leverage new digital tools and rich administrative data aim at revolutionizing how the World Bank and client countries tackle public finance challenges.

Finally, **DE JURE** will prioritize advancing digital and AI-powered solutions to enhance the efficiency, equity, and accessibility of justice systems. On the digital front, we will focus on improving the interoperability of government technology by promoting and supporting the integration of case management systems across judicial institutions, streamlining workflows, and enabling data-driven decision-making. In parallel, our AI research will optimize key justice processes, such as case assignments, to improve case outcomes and resource allocation.

By integrating data, AI infrastructure, and cross-sector collaboration, the Bureaucracy Lab, Public Finance Lab, and DE JURE seek to drive transformative reforms that improve government functionality, policy design, and service delivery for more equitable, efficient, and sustainable outcomes.



Chapter 4

Infrastructure

Infrastructure investments are essential both to economic development and to managing the effects of climate change. Reliable electricity, safe roads and public transportation systems, and access to the internet and digital government services can all help create economic opportunities and pathways out of poverty. Sustainable energy, green transport, and digital infrastructure can improve people's lives while also setting country growth paths on low-carbon trajectories. Given the significant technological, social, and institutional adjustments required to meet these goals, managing the distributional effects of the green transition will be critical to securing broad-based support for these efforts. This chapter presents our work to support investments across three kinds of infrastructure: **energy, transport, and digital**.

The need for high-impact investments in each of these areas is crucial: 685 million people worldwide lack access

to electricity (IEA 2024b), 1 billion people live more than two kilometers from a road they can count on using at any time (World Bank 2024b), and 2.6 billion lack access to the internet (ITU 2023). The scale of investments in expanding the electrical grid, building and maintaining roads, and connecting homes to broadband internet—not to mention the high cost of disruptions when infrastructure fails—makes it essential to know exactly how to target these investments to achieve development impact.

By working alongside governments and practitioners to apply the trial-and-adopt technology, develop cutting-edge data systems and analytics, and generate new evidence, we are not just helping to enhance the impact of existing infrastructure investments—we are also building capacity for evidence-based decision-making about the future impact of infrastructure on reducing poverty and protecting a livable planet.

Energy

Energy access, productive energy use, and reliable energy services are essential drivers of development (Hsu and VanVuren 2023). At the same time, energy is the largest source of greenhouse gas emissions worldwide, leading to global temperature increases with far-reaching consequences for economic growth and the environment (Ritchie et al. 2020). To expand energy access and fuel development, we must also pursue low-carbon, resilient growth trajectories.



How can we balance energy services with climate goals to help developing countries achieve climate-compatible growth?

Our energy research program supports informed decision-making in developing countries by identifying complementarities and trade-offs between expanding energy services and meeting climate goals. A renewed and coordinated “big push” is underway to connect at least 300 million people in Sub-Saharan Africa to electricity by 2030 through the Mission 300 initiative (World Bank 2024a). Our evidence can help ensure that, beyond the drive for increased access, these investments in electrification are sustainable and help to unlock economic development. To support climate-compatible growth in developing countries, our energy research program focuses on three main goals:

- Identifying constraints to electricity access and cost-effective ways to overcome them
- Testing complementary interventions to ensure electricity access achieves the greatest impact
- Designing and evaluating policies to support a “just” energy transition by mitigating its distributional impacts.

Our energy research program pursues these goals by working at the intersection of infrastructure expansion and maintenance, government policy, and social responses to energy services and policies. Our research agenda has benefited from direct engagements with the World Bank’s Accelerating Sustainable and Clean Energy Access Transformation (ASCENT) Program, the Climate Change, Energy and Extractives, Environment and Natural Resources, and Water Global Practices (GPs), the Global Environment Facility, the Climate Investment Funds (CIF), the Energy Sector Management Assistance Program (ESMAP), and the FCDO, particularly its evaluation department and climate change teams.

Why Does Our Work Matter?

No country has been able to achieve economic growth and poverty reduction without scaling up energy use. But because of the high capital costs of energy infrastructure, many utilities, especially in low- and middle-income countries, are financed through long-term debt. Nearly two-thirds of these countries are unable to cover even their operating and service costs.

At the same time, these countries are home to the vast majority of the 685 million people who still don’t have access to electricity: Sub-Saharan Africa alone accounts for 83 percent of the global deficit (IEA 2024b). They also account for approximately two-thirds of greenhouse gas emissions today (Enerdata 2021) and have economic growth rates three times higher than those of developed economies (IMF 2024). These countries have the greatest need to scale up accessible energy and phase down fossil fuel use.

We are seeing progress, but realizing energy’s potential to drive economic growth without compromising the planet will require better data and a deeper understanding of solutions that are financially viable, politically acceptable, and environmentally sustainable. We apply the trial-and-adopt technology to produce robust evidence about what works, what does not work, and which pathways hold the most promise for the future of energy policy.



Overcoming Energy Access Constraints

Energy access is defined by ESMAP according to a [multi-tier framework](#) that ranges from solar lanterns (tier 1) to a continuous, reliable grid supply (tier 5) (Bhatia and Angelou 2015). Our energy research program explores energy access constraints on both the extensive and intensive margins—in other words, we study how to overcome barriers to energy access across these tiers and how to move households and businesses to higher tiers of energy access.

One key constraint to energy access that our evidence has emphasized is last-mile connection costs. Investments to expand the electrical grid by building new transmission lines are not enough to increase energy access if households are unable or unwilling to pay to connect to the grid. Targeted subsidies are essential to overcome this constraint, but providing these subsidies poses fiscal challenges. Meanwhile, marginal costs of clean energy continue to fall, highlighting the growing potential to deliver cost-effective solutions to those most in need.

In western Kenya, for instance, last-mile connection costs are many times higher than what households are willing to pay—as a result, only 5 percent of households connected to a newly expanded electrical grid (Lee et al. 2020). A take-it-or-leave-it randomized subsidy offer found that at a cost of \$150, slightly more than 20 percent of the population in a community was willing to connect to the grid. This cost reflects a significant subsidy: the unsubsidized cost of connection per household is approximately \$1,150. Providing this level of subsidy, however, is difficult because of increasing indebtedness in developing countries (World Bank 2023) and the weak financial positions of many electric utilities across Sub-Saharan Africa (Trimble et al. 2016).

Because grid expansion can be costly, national electrification strategies increasingly rely on off-grid technologies and market-driven approaches to expand energy access. For instance, our evidence has shown promising results in increasing demand for high-quality solar technology. Households appear to underinvest in this technology despite the potential economic benefits (Rom 2018). This underinvestment may be the result of market failures.

In Senegal, for instance, we found that imperfect information (mostly about product quality) inflated demand for low-quality lighting products at the expense of high-quality pico-photovoltaic systems. Direct consumer outreach campaigns (using leaflets and posters) that aimed to improve knowledge about high-quality products increased demand for them by 6.5 percentage points (Coville, Orozco-Olvera, and Reichert 2024).

In a companion study, we tested different approaches to reduce consumers' uncertainty about the quality of solar products ([warranties and the Lighting Global certification](#)) or about their usefulness (six-week money-back guarantees). We found that addressing quality concerns could increase willingness to pay for solar energy by 12–14 percent (Coville, Graff Zivin, et al. 2024).

Despite this increase in demand for solar products, this level of willingness to pay still remains well below market prices for high-quality solar products. More comprehensive pricing reforms, such as tax policies and manufacturing support, are needed to bring down costs and promote markets for high-quality solar products.

These interventions aim to overcome constraints to energy access at lower tiers of service—but how can we move people up to higher tiers of energy access? Our ongoing research explores how access to basic energy services impacts the long-term demand for higher tiers of service. In particular, we are studying households that were provided solar lanterns (tier 1) to see how access to this basic energy technology affects demand for solar home systems and grid service eight years later. By learning what motivates households to move up to higher tiers of energy access, we can help ensure that increased energy access drives economic growth.

Translating Energy Access into Development Impact

Past research has found that the impact of electrification programs varies across income settings, with stronger effects in middle-income countries (Dinkelman 2011; Lipscomb et al. 2013) than in low- and lower-middle-income ones (Burlig and Preonas 2024; Lee et al. 2020). Likewise, households in low-income settings that are provided with grid access continue to consume very low levels of electricity (Lee et al. 2020; Lenz et al. 2017). These findings may indicate that developing economies lack complementary inputs—such as high-skill labor, capital, and infrastructure—necessary to secure the development impacts of electrification (Moneke 2020).

In Sub-Saharan Africa, our energy research program is testing necessary preconditions and complementary interventions that may help realize the development impacts of expanded energy access amid unreliable grid service. In Tanzania, we found that after-school study and hours of video viewing increased after secondary schools were provided with solar panels, solar televisions, and educational videos, although test scores did not increase in the first year (Seo 2017). In Rwanda, as part of the ASCENT Program, which aims to increase electricity access across East and Southern Africa, we are now exploring how targeted complementary productive assets (electric cookers) may help strengthen latent demand for energy use and generate economic returns. We are also examining factors such as energy reliability, revenue sustainability, and the role of complementary infrastructure and human capital in translating increased energy access into broader and more meaningful development gains.

Managing the Distributional Impacts of the Renewable Energy Transition

Approximately 40 percent of the energy sector's greenhouse gas emissions come from the coal industry (IEA 2024a), so reducing coal emissions is essential to climate mitigation goals. At the same time, however, the coal industry provides secure jobs and economic spillovers to many communities in developing countries, which have come to depend on it. Policies that support the transition from coal to renewable forms of energy will have significant distributional impacts both across and within countries, and policy makers must take these impacts into account.

Our energy research program is partnering with the CIF through the Accelerating Coal Transition (ACT) program to help quantify the impacts of coal decommissioning in developing countries and identify interventions that could minimize the negative impacts on marginalized workers and communities. This five-year program focuses on emerging market economies highly dependent on coal.

We aim first to model the job transition costs for coal and electric workers who switch to another sector and then to test different interventions—including active labor market interventions, social protection, and upskilling—that might help reduce or compensate for these transition costs. Our initial estimates of the sectoral mobility costs that South African workers face when transitioning from coal to non-coal sectors range from 0.12 to over 4.5 times the average annual wage, with some transitions also involving significant wage cuts. These costs fall within the bandwidth of transition subsidies that some advanced economies have instituted, suggesting that targeted support measures and monitoring could ease the transition. Future work will explore targeted interventions and policies to help reduce labor transition costs and increase support for broader energy transition policies.

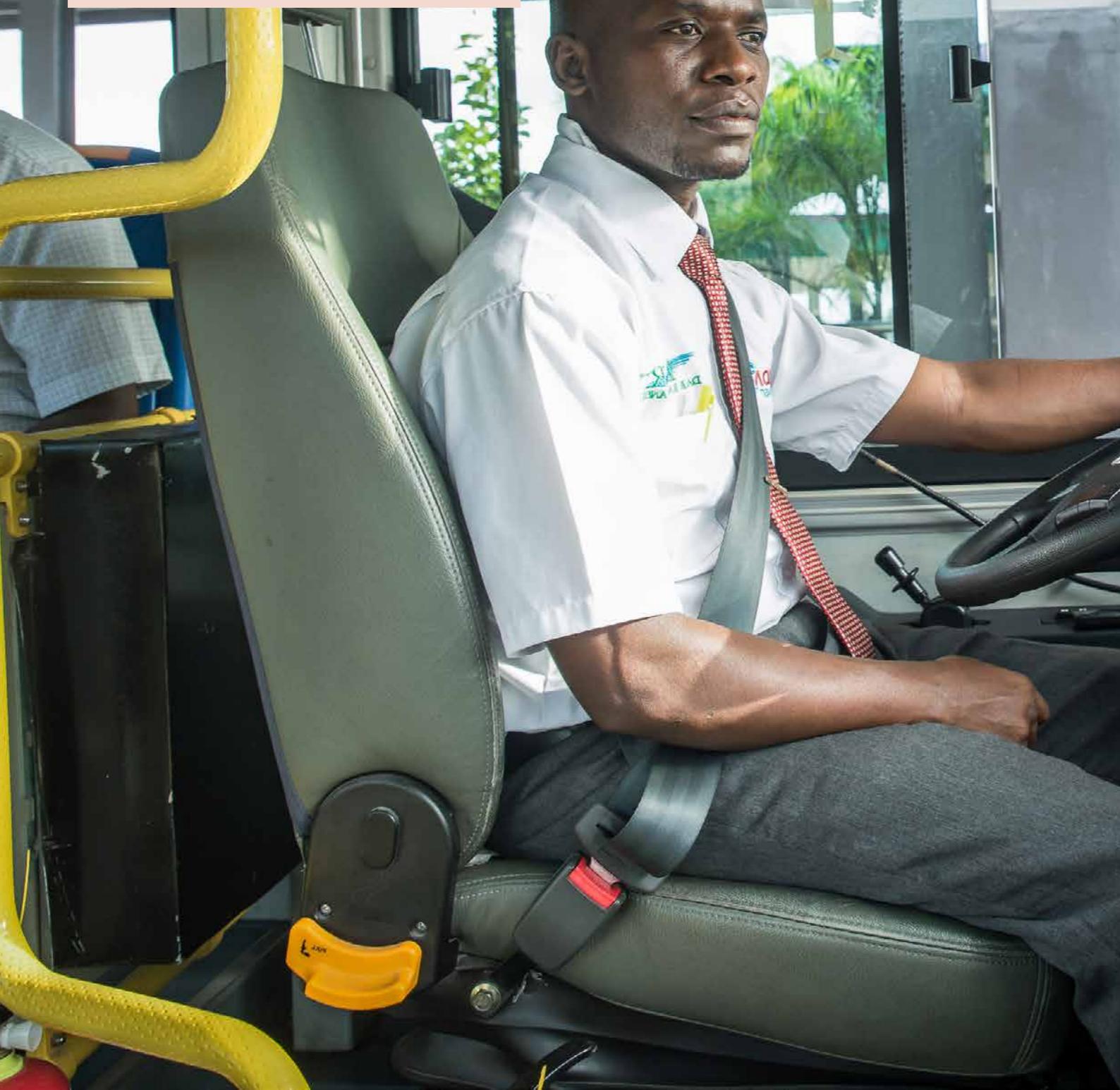
Going Forward

Our energy research program will work in partnership with large investments by the World Bank and other donors to provide a big push for energy access in Africa and support renewable energy transitions, with a focus on emerging economies. The program will also expand its research into energy access constraints, which has focused on the consumer perspective, by trying to understand the drivers of energy supply from the provider perspective. To accomplish this, we will work with utilities and other service providers to explore how management, pricing, service delivery guarantees, billing and payment schemes, and enforcement interact with one another. This approach will help identify bottlenecks and develop solutions to use electricity infrastructure optimally and provide reliable energy to households and industry.



Transport

The transport sector receives billions of dollars of investment each year, accounting for approximately 16 percent of all lending by multilateral development banks since 2000. Transport investments are much needed: 1 billion people worldwide still live more than two kilometers from a road they can count on using at all times of year and in all weather conditions (World Bank 2024b). Measuring whether infrastructure investments are having their intended impacts is challenging, but data and technological advances have created new opportunities to evaluate these investments.



How can new data systems, technologies, and impact evaluation projects help strengthen transport investments?

Our transport research program, known as ieConnect for Impact, is the first impact evaluation program at the World Bank dedicated to studying transport. The ieConnect program aims to make rigorous evidence from impact evaluation projects available to policy makers to shape the selection, design, and implementation of transport infrastructure projects. In this way, ieConnect helps align research priorities with development financing. The program was launched in 2015 with funding from the UK government. Since then, under the helm of Development Impact and the World Bank's Transport GP, ieConnect has grown to encompass 30 projects in 18 countries and has enabled the evaluation of over \$5.7 billion in transport investments.

In addition to implementing impact evaluation projects, ieConnect has prioritized developing and expanding data systems to generate new evidence at a scale that can substantially improve the evidence base for policy making.

ieConnect supports clients in these efforts by focusing on three overall goals:

- Collecting innovative data to support evidence-based transport infrastructure decisions
- Designing data systems to inform government projects and policy
- Building clients' technical and institutional capacity to use transport data.

By helping clients collect and analyze many kinds of transport data, build data systems that will outlive particular transport projects, and transition from traditional data sources and paper records to real-time, digital data, ieConnect lays the foundation for better long-term decision-making about transport investments.

Why Does Our Work Matter?

Urban density, congestion, and pollution limit cities' potential to serve as matchmakers between people and jobs. Addressing these challenges requires a mix of housing and transport policies, as well as initiatives to reduce air pollution. But transport projects present distinct challenges: they require large-scale investments with long timelines between design, construction, and rollout.

By collecting data from innovative and nontraditional sources and continually building policy makers' capacity to use these data, ieConnect has helped monitor and evaluate transport projects through all phases of design and rollout. We examine important policy concerns at the intersection of transport and health care access, jobs, and urban development. We scale up data and evidence across Sub-Saharan Africa in partnership with three key government authorities: the Lagos Metropolitan Area Transit Authority (Nigeria), the Nairobi Metropolitan Area Transit Authority (Kenya), and the Conseil Exécutif des Transports Urbains de Dakar (Senegal).



Collecting Innovative Data to Support Evidence-Based Decision-Making

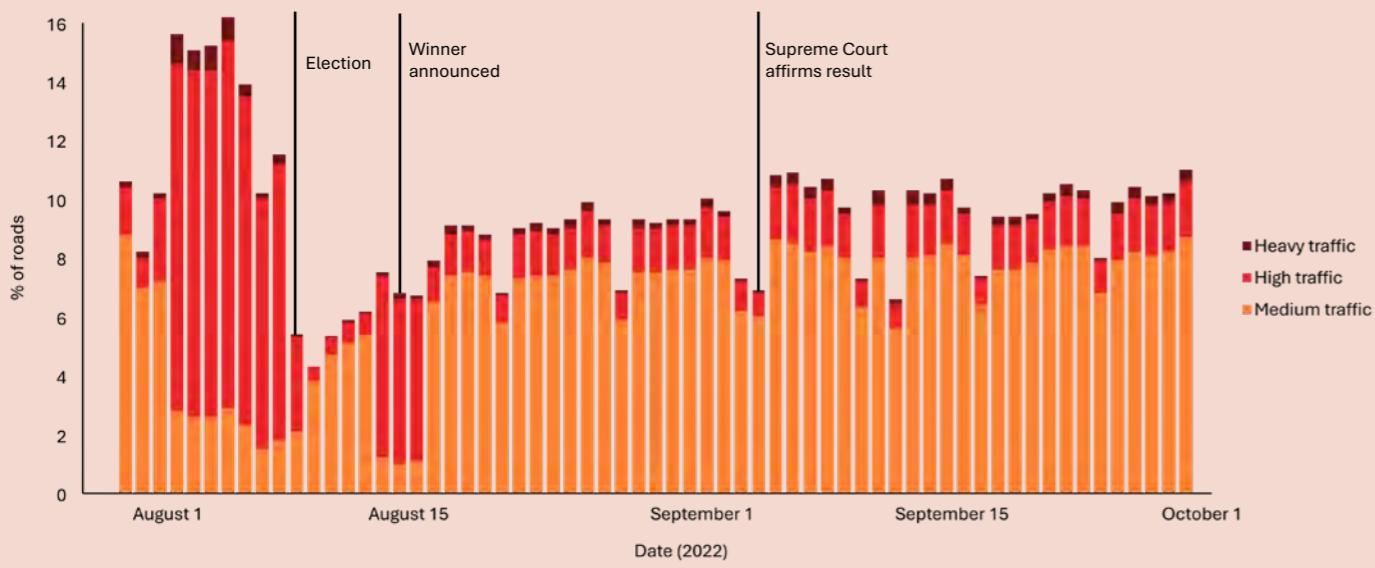
Transport impact evaluation projects are typically large, intensive in their data requirements, and unique in their methodological challenges. For this reason, ieConnect prioritizes the use of innovative technologies that can harvest large amounts of data at higher frequencies and with greater geographic coverage and spatial resolution than traditional survey methods allow. The ieConnect team has used data from numerous sources, both traditional and nontraditional, including high-frequency mobile surveys, satellite imagery, crowdsourcing, remote sensors, SMS and QR codes, machine-learning algorithms, paper records, Google Maps, GPS trackers, and mobile phones—to name just a few.

Many ieConnect projects are also generating code to leverage new data sources, including algorithms that use machine learning and computer vision. For example, we have developed the `googletraffic` R package to facilitate the use of Google traffic data for decision-making. ieConnect's Smart and Safe Kenya Transport (smarTTrans) project used the package to study changes in traffic during Kenya's 2022 presidential election, demonstrating the utility of Google traffic data for understanding the impact of events on traffic congestion. Because of fears of violence surrounding the election, many people reported leaving Nairobi during the election and returning after the results had been confirmed. The Google traffic data confirm these reports (figure 4.1). By creating the necessary tool to make Google traffic data available and useful to policy makers, ieConnect unlocked the potential of these data as a public good, supporting evidence-based decision-making not just in Kenya but globally (Marty et al. 2022).

These diverse and innovative data sources have helped governments better understand the impact of costly investments in transport infrastructure and make decisions in response to this evidence. In Mozambique, for instance, the ieConnect team is collaborating with the World Bank's Integrated Feeder Road Development Project to evaluate the impact of improved rural transport infrastructure on agricultural development. This impact evaluation project uses data from satellite imagery to detect changes in land use after new rural feeder roads are constructed or old ones are rehabilitated. These data will allow the research team to distinguish the causal effects of road construction and maintenance from other activities that might influence agricultural intensification, helping the government to understand whether the investment in feeder roads is having the intended effect.



Figure 4.1 Daily Traffic Trends in Nairobi Before, During, and After the 2022 Presidential Election



Source: Marty et al. 2022, based on Google traffic data collected through the `googletraffic` R package.

Designing Data Systems to Inform Government Projects and Policy

By leveraging innovative data sources, ieConnect's evidence has helped to improve both the design and the implementation of transport projects. Crucially, it has also had a broader influence on policy making, resulting in frameworks that can be scaled up in different contexts and even leading to entirely new projects. In Rwanda, for instance, we evaluated the impact of investments in feeder roads on multiple outcomes: household income, household agricultural production, market prices, market structure, access to services, land transactions, and private sector development. To do this, we collected high-frequency market data from areas near planned road construction and developed a customized data dashboard to visualize them. After seeing the value of these data—in terms of both their quality and cost savings—both the Ministry of Agriculture and the Rwanda Transport Authority transitioned to electronic data collection for their broader monitoring and evaluation processes.

Similarly, in Malawi, the trade research program used trucks' GPS trackers together with customs data and traditional surveys of traders to evaluate the impact of reforming border-crossing processes. Our findings show that border-crossing times in Malawi are comparable to its peers and that traders are not aware of the reforms. Traders also report that bottlenecks for traders are a greater impediment than border crossings. See the trade section of chapter 3 for further discussion of this research.

ieConnect projects have even led clients to undertake additional impact evaluation projects to improve government performance. In India, for example, the ieConnect team evaluated a policing program that aimed to prevent gender-based violence, including while women were traveling to work or school. The resulting data and policy dialogue during the evaluation prompted the government to implement an additional impact evaluation project to better understand police performance and test interventions to improve police effort and motivation and to reduce bias.

Building Technical and Institutional Capacity

To scale up evidence-based decision-making and results-driven transport investments in the long term, countries must have both strong transport data systems and the institutional and technical capacity to use them. The ieConnect team has helped a broad set of stakeholders build their capacity to use data and evidence systematically through its collaborative, "learning-by-doing" approach.

In Kenya, for example, the government was unable to develop effective road safety policies and interventions because of poor data, limited analytics, and a lack of policy experimentation. Under the smarTTrans project, the ieConnect team has been working closely with key government agencies in Nairobi—including the National Transport and Safety Authority, the Kenya Urban Roads

Authority, the Kenya National Highways Authority, and the National Police Service—to strengthen their institutional capacity to use road safety and urban mobility data for monitoring, evaluation, and learning.

In October 2022, the results of this capacity-building work were highlighted at the Kenya Road Safety Workshop. The team designed this workshop to put these agencies in the spotlight and allow them to present their smarTTrans-supported work. These agencies took ownership of the workshop presentations and led the discussion of road safety data and analytics applications, demonstrating the power of ieConnect's learning-by-doing approach to capacity building. A key outcome of the workshop was that Kenyan government agencies requested continued engagement to build better data systems, build capacity for data analysis, and engage in research aimed at informing priority investments.

Going Forward

By partnering with operations to transfer evidence and tools, ieConnect has influenced the design and implementation of transport projects financed by the World Bank, other multilateral development banks, bilateral development institutions, and government agencies. ieConnect will continue collaborating across institutions to address emerging development challenges—including transport decarbonization, the link between transport and health, gender, urban mobility, and trade—building evidence to inform and strengthen the future pipeline of global transport investments.

Call to Action

Leveraging Artificial Intelligence to Revolutionize Road Safety and Save Lives

Road traffic crashes kill 1.19 million people each year. They are the leading cause of death for children and young people worldwide and the 12th leading cause of death overall. Most people killed by road traffic crashes live in low- and middle-income countries (WHO 2023).

We can save these lives by pinpointing the times and places that crashes happen and targeting resources to prevent them. Our work in Nairobi, Kenya, shows that **it is possible to cut the number of road traffic deaths in half**—even in a city with one of the highest traffic fatality rates in the world. We analyzed Nairobi's entire road network and built a monitoring system to show decision-makers exactly where and when investments in traffic enforcement and infrastructure are needed.

90%

What's more, we did this at low cost by leveraging crowdsourced data and artificial intelligence (AI) to locate road crashes with over 90 percent accuracy.

Africa has the highest rate of road traffic deaths in the world. Our innovative tools and approaches can be immediately deployed across the continent to optimize road safety policies and save lives.



Learn

We tested our approach to mapping road safety in Kenya, a country in immediate need of attention.



71%

In Nairobi, **71 percent of all road traffic crash deaths are pedestrians**, according to police records.

Past road safety interventions in Kenya were hindered by low-quality data, limited analytics, and a lack of policy experimentation.

To learn how to make Nairobi's roads safer, our team combined police reports with crowdsourced Twitter data to create a detailed map of road traffic crashes, pinpointing high-risk areas. By using AI to analyze these data, we were able to accurately locate road traffic crashes 92 percent of the time (Development Impact 2022). In this way, we built **Nairobi's first detailed, real-time road crash data system**.

Our database gave policy makers concrete evidence that **half of road traffic crashes were occurring in less than 1 percent of Nairobi's road network**, that 53 percent of deaths and 50 percent of injuries happened when visibility was poor, and that 35 percent of deaths happened near bus stops (Arguelles et al. 2019). Targeting resources to these places and times can maximize the effect of road safety investments.

Adapt

Our comprehensive approach to understanding road traffic crashes in Nairobi helped policy makers optimize road safety interventions. The Kenya Urban Roads Authority, the agency responsible for Nairobi's infrastructure, used our analysis to choose **102 high-risk locations** to install speed cameras and improve infrastructure. Our tools gave policy makers in a data-scarce setting the evidence they needed to help limited resources save lives (Development Impact 2022).

Scale

Our collaboration with the Kenyan authorities shows that AI can be used to build a system for monitoring road safety and targeting resources, even in a context with limited data. Our approach can be immediately scaled up across Africa to support policy making and optimize resource allocation.

But road safety is just the beginning. Governments could harness the value of time-stamped and geolocated event data, whether recorded in their systems or crowdsourced from social media, to identify crime scenes, locate victims during a natural disaster, or pinpoint neighborhoods that need immediate attention during an emergency. Our work shows that these AI-powered data systems can be built at low cost and with enormous potential to accelerate policy responses that save and improve lives.



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Digital

Economic and social opportunities increasingly depend on digital infrastructure and connectivity—but digital progress is not being shared equally. Many low-income countries have fallen behind in digitalization: just over one in four people in low-income countries used the internet in 2023, compared to over 90 percent of people in high-income countries (ITU 2023). People in low-income countries aren't seeing the full benefits of the digital revolution and are prevented from participating in the global economy.



How can we ensure that all countries share in the benefits of the digital revolution for meeting development goals?

For some countries, closing the digital divide means investing in hard infrastructure, including widely accessible broadband internet. In others, it requires developing digital public infrastructure—for instance, unique digital identification, government-to-person transfer systems, and data-sharing systems—so governments can provide badly needed public services more efficiently. And in many others, it requires developing and expanding existing digital services, which hold enormous potential to transform social protection, financial services, agriculture, health, and education, among other service sectors. Furthermore, as the *World Development Report 2016: Digital Dividends* (World Bank 2016) argues, digital progress depends not just on infrastructure investments but also on the “analog” components that translate those investments into development impact—such as the skills that workers need to use digital tools effectively.

Our digital research program aims to provide evidence to close the digital divide by supporting three main digital development goals:

- Distinguishing between the promise and reality of digitalization and digital services
- Ensuring that the benefits of digitalization are shared by all
- Identifying and addressing new digital risks and unintended impacts.

Why Does Our Work Matter?

Digital development has enormous potential to improve peoples’ lives, but it also presents unknown challenges. Artificial intelligence, for instance, offers powerful tools for monitoring development outcomes, but it also poses risks like job loss and cybercrime. Digital tools are evolving quickly, making it urgent that we gather evidence on both the benefits and harms of digitalization.

In response, we are rapidly expanding our digital research portfolio and using the trial-and-adopt technology to generate this much-needed evidence. We have co-led a trio of digital public infrastructure workshops with the World Bank Digital Transformation Global Department’s Identification for Development (ID4D) team in India, Ethiopia, and the Philippines. These workshops have served as a launching point for a set of impact evaluation projects beginning in 2025 that will fill critical evidence gaps on the barriers to and effects of digital identification on access to high-value services. Additional projects assessing the impacts of digital social protection systems and sector-specific use cases can also be found across our portfolio.



Our digital research program pursues these goals through a partnership with the Digital Transformation Global Department, the foundation of the World Bank's new Digital Knowledge Vice Presidency. This partnership gives us the opportunity to use the trial-and-adopt technology to measure the impact of interventions on women's economic empowerment, digital literacy, online trust, access to digital government services, and socioeconomic well-being. Likewise, our co-production model has helped create a sustainable framework for development impact.

Through this partnership, we are working closely with the Identification for Development (ID4D) and Digitizing Government-to-Person Payments (G2Px) initiatives on a growing portfolio of projects—from foundational research and analytics to ambitious impact evaluation projects. Over the past year, we have also supported the Accelerating Digitalization Global Challenge Program in defining its research agenda as well as the Framework for Financial Incentives' articulation of priorities for the promotion of projects with cross-border digital externalities. Finally, we are in discussions with the Inclusive Digitalization in Eastern and Southern Africa (IDEA) program, a multiphase programmatic approach (MPA) project, to define and launch a set of policy-relevant impact evaluation projects, potentially in Angola and the Democratic Republic of Congo.

In addition to our research agenda assessing the impacts of new digital services, and the prospects for artificial intelligence (AI) to facilitate their design, delivery, and efficacy, we are also actively using AI tools to synthesize evidence and measure key development outcomes (see chapter 5).

As the World Bank's Digital vertical continues to expand in the coming year, digital development will become an increasingly important component of our overall research program.





Chapter 5

Cross-Cutting

Solutions

and Innovations

Development policies often succeed or fail because of how they are implemented. This insight is at the heart of the trial-and-adopt technology, and it drives our efforts to give development practitioners the evidence they need to optimize the design and implementation of their interventions. It also shapes the way we approach generating and disseminating that evidence. This chapter focuses on cross-cutting solutions that help us uphold high standards for **reproducible and credible research**, bring insights from **behavioral science** to development practice, and build the next generation of development research tools and methods using **artificial intelligence**.

As the examples that follow illustrate, we are leveraging these solutions to drive innovation across our entire research portfolio. With the support of specialized teams within the Development Impact group, we are raising the quality of our research and bringing cutting-edge techniques and tools to practitioners. At the same time, we are also creating the new tools and systems that will allow the World Bank to evolve into a world-class Knowledge Bank, and the knowledge and insights we generate are being widely distributed to enhance the impact of development globally.

Data Analytics and Reproducibility

Following best practices for transparency and reproducibility makes research conclusions more credible and reliable, while developing open-source tools and resources to analyze and publish data makes research more scalable and accessible. We uphold the highest-quality research standards, scale up the impact of our evidence, and build global research capacity through a highly structured research production cycle (figure 5.1). This production cycle is supported by Development Impact Analytics, a team that develops and promotes the adoption of high-quality research practices across our portfolio.

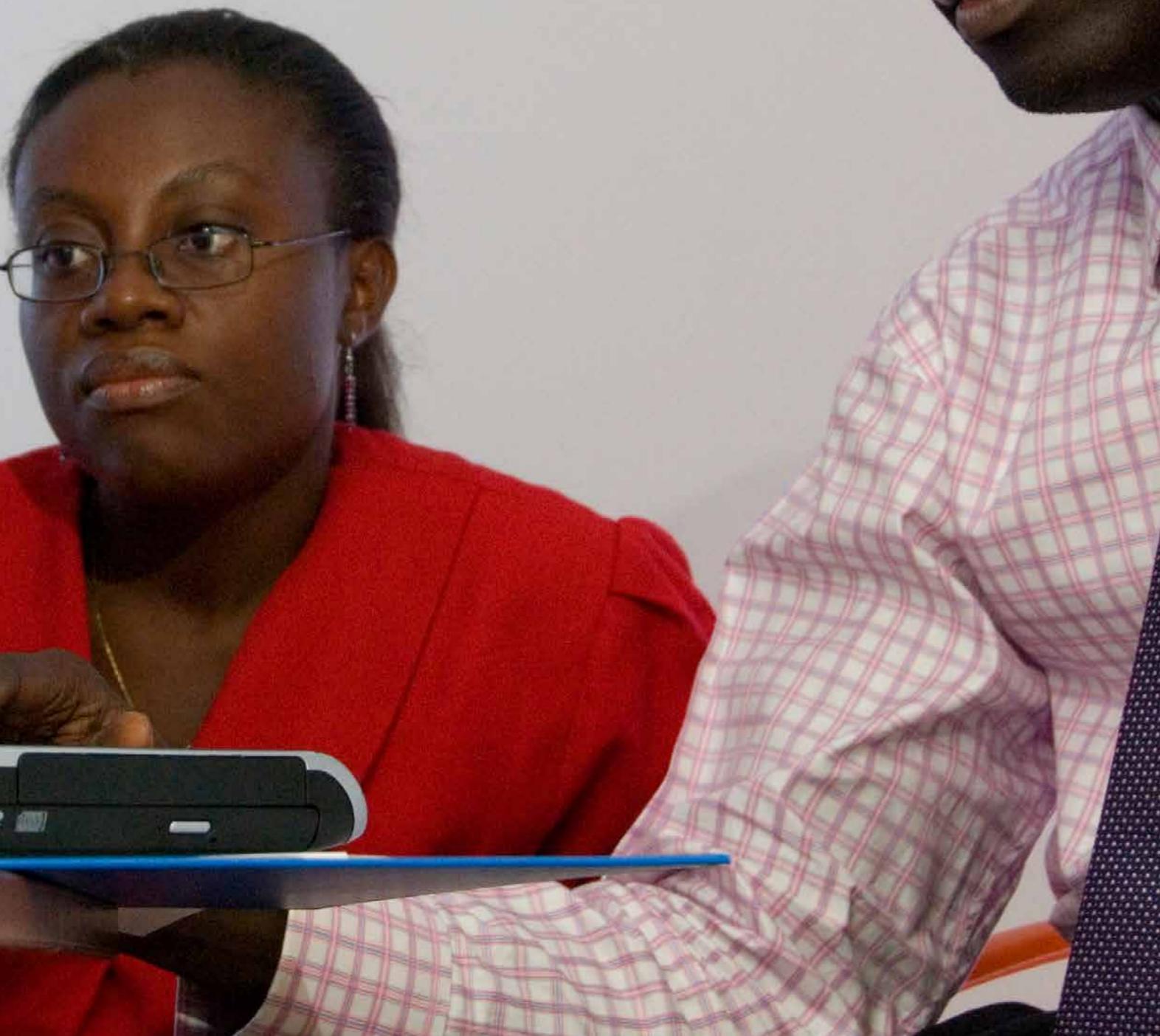
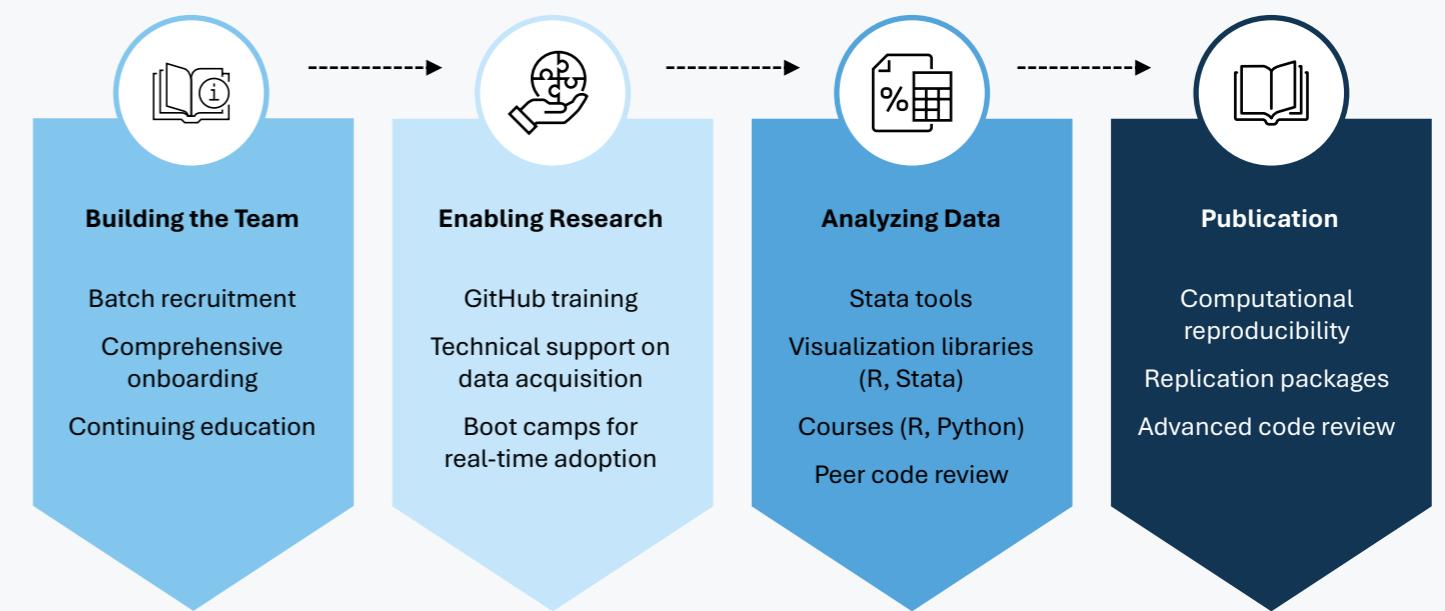


Figure 5.1 How the Analytics Team Provides Support Across the Research Production Cycle



Source: Original figure for this publication.

We are pushing the frontiers of reproducible and transparent research across our portfolio. To enhance the credibility, transparency, and impact of our evidence, each of our publications includes a “reproducibility package” that fully documents the data and code upon which research findings are based. These reproducibility packages are published to the World Bank’s [Reproducible Research Repository](#). By making our analytical code accessible and documenting our data sources, we deliver more reliable solutions, and we also enable other researchers to replicate, build on, and extend our findings, scaling up the impact of our evidence.

We also help our partners across the World Bank and around the world adopt these protocols for high-quality research by creating and sharing open-source tools. Especially in developing countries, researchers may lack efficient tools and workflows to digest and use their data. Our open-source resources include the [Development Impact Wiki](#), which has surpassed 1.8 million views, and *Development Research in Practice* (Bjärkefors et al. 2021), a guide to using development data effectively, efficiently, and ethically that has been downloaded more than 20,000 times. To meet the needs of our growing research portfolio in the years to come, the analytics team will build a new suite of tools to facilitate high-quality data collection, and our state-of-the-art monitoring system, MyIE, will also be rebuilt as MyImpact.

Finally, we build global research capacity by offering open-access training programs about how to conduct high-quality empirical research. The analytics team’s flagship training courses have had more than 20,000 participants and large impacts: participants in one course increased their subject matter knowledge by 64 percent (as measured using a before/after test). In the years to come, we will develop new courses to cover the full research production cycle, build collaborations with universities and initiatives in low-income countries, and lead efforts to democratize training and adoption of new tools and data sources within our portfolio and across the World Bank.

By investing in the research production cycle, we uphold the highest standards of rigor, reproducibility, and methodological excellence across our portfolio. This cross-cutting effort allows us to deliver better evidence and more reliable solutions that are informed by up-to-date scientific knowledge. Through our open-source tools and open-access training programs, we also strengthen the capacity of our partners, the World Bank, and the global development community to use our evidence and generate new solutions. In this way, we maximize the impact of our evidence across each of the areas of development described in this report.

Mind, Behavior, and Development

Traditional policy making strives to influence development outcomes by funding projects, reforming laws, and creating new incentives. But these tools often account for just a small portion of the context in which human beings act and make decisions. If policies don't account for the mindsets, decision-making frames, and social influences that shape people's decisions, they will be less effective than they could be, and complex problems will go unsolved.



Our approach to maximizing the effectiveness of development interventions recognizes the need to place human beings at the center of development policy. With the support of our behavioral science team, the Mind, Behavior, and Development Unit (eMBeD), we apply insights from behavioral economics, psychology, anthropology, sociology, and neuroscience across our research portfolio to make programs and policies more effective by capturing the wider context in which decisions happen. By supporting the trial-and-adopt technology, eMBeD helps practitioners learn how the complex details of human behavior shape what works in development, directly informing and enhancing operations.

We help our partners design, implement, and evaluate behaviorally informed programs and policies. The eMBeD team identifies key bottlenecks and equips practitioners with tools to apply behavioral insights effectively. Through a “learning-by-doing” approach, they build capacity among policy makers, equipping them to diagnose and address development challenges in the long term. By examining the social and psychological factors that influence decision-making, eMBeD helps practitioners refine project design, improve bureaucratic and technological processes, and develop creative, low-cost solutions. The team also helps policy makers recognize and mitigate cognitive biases, leading to more effective decision-making and sustainable impact.

eMBeD’s work demonstrates how embedding behavioral insights into policy design, implementation, and evaluation can drive meaningful change across the different areas of development described in this report:

- To strengthen **tax compliance**, eMBeD developed tailored reminders and simplified messaging that reached 600,000+ taxpayers across 14 countries, increased filing rates by up to 21 percentage points, and influenced national tax policies.
- To bolster **youth employment**, eMBeD’s behaviorally informed job training and search support reached 100,000+ job seekers, increased employment rates by 6 percent in South Africa, and led to a nationwide digital youth platform.
- To enhance **climate resilience**, eMBeD developed behavioral interventions to encourage energy efficiency, waste management, and clean energy adoption across 35+ countries, increasing solar power uptake in Rwanda and Uganda and driving higher adoption of energy-efficient heating in Poland and the Balkans.

With eMBeD’s support, we are demonstrating the power of behavioral science insights to reshape national programs, inform policy reforms, and deliver scalable and sustainable development impact across our research portfolio.

Call to Action

Applying Behavioral Science Insights to Alleviate Vaccine Hesitancy

Vaccines are a key public health intervention that can save lives, reduce pressure on health care systems, and protect economic stability. Although vaccines offer significant protection against hospitalization and death, many people are hesitant to receive them. Vaccine hesitancy emerged as a significant challenge during the COVID-19 pandemic. People who were hesitant to receive the COVID-19 vaccine were not necessarily opposed to vaccination in general, but they often had specific concerns about the novelty of the vaccine. Addressing concerns like these can help increase the uptake of vaccines.

Public health campaigns can be an effective way to reduce vaccine hesitancy if they alleviate people's specific concerns. Too often, however, these campaigns take a blanket approach rather than trying to understand the root causes of vaccine hesitancy. These root causes can vary from country to country and context to context, and campaigns to encourage vaccination may be ineffective if they do not take them into account.

eMBeD influences policy and program design by offering expertise about the psychological, social, and economic factors that shape people's decisions—such as the decision to receive a vaccine.

Through an experimental study across 23 countries and territories, eMBeD identified the key ingredients for addressing vaccine hesitancy, generating evidence to inform a growing set of public health campaigns worldwide.



Learn

eMBeD's study used a chatbot to survey Facebook users in 23 countries across all regions of the world. eMBeD used its understanding of behavioral science to design messages about the COVID-19 vaccine that were framed to address different concerns, beliefs, and social norms. Survey respondents who had not received the COVID-19 vaccine were randomly sorted into groups: some were shown one of these tailored messages, while others were not shown any message. The respondents were then asked whether they intended to receive the vaccine. This experiment allowed the team to test which messages about vaccines were most effective.

Compared with those who didn't see a message about the vaccine, respondents who saw any one of the tailored messages were 1.28 times more likely to report that they intended to receive the vaccine. The most effective messages were those that used trusted messengers, like experts and religious leaders, to encourage vaccination (Pinzon Hernandez et al. 2024).

Adapt

eMBeD's research reveals three essential ingredients that can help public health campaigns tailor their message to different countries and contexts.

First, campaigns must design messages based on the **social norms** of a community. Messages that told people how many other members of their community had been recently vaccinated were effective across all the countries eMBeD studied.



In North Macedonia, for instance, this framing increased respondents' intent to be vaccinated by 39 percent (Kovacevic et al. 2022).

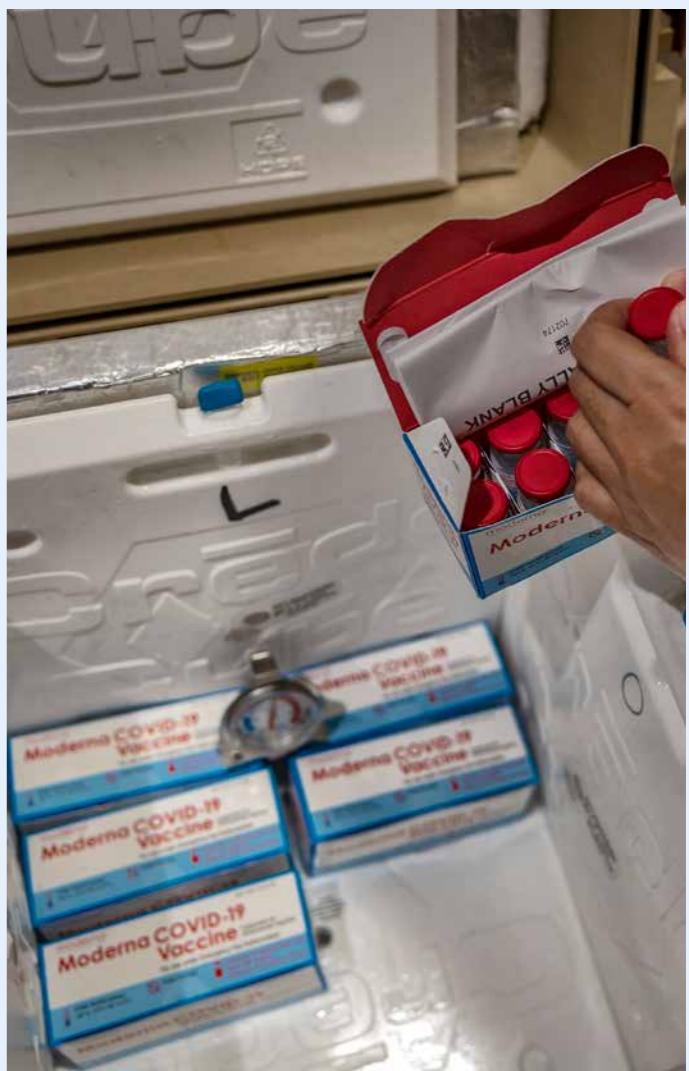
Second, campaigns must be able to **customize messages** to address people's particular concerns. In Jordan, for instance, respondents who were concerned about the efficacy of the COVID-19 vaccine were more likely to report that they intended to receive it if they saw a message that addressed the vaccine's efficacy and reminded them that they would protect friends and family by receiving it (Kovacevic et al. 2022).

Finally, campaigns must identify the **trusted messengers** in each context. These might include health care workers, doctors and other experts, friends and family members, or religious leaders.

Adapting public health campaigns to different contexts also requires building country capacity and developing new approaches. eMBeD is deepening its engagement with different countries by addressing new issues that have arisen during their campaigns, such as vaccine hesitancy among health care workers, vaccine misinformation, and the impact of COVID-19 variants. It is also focusing on adapting campaigns to countries that lack extensive communication capabilities, or in which the use of social media platforms is less common, by identifying new tools and complementary approaches (Bidani et al. 2022).

Scale

eMBeD's evidence can be applied beyond COVID-19. The team's findings can scale up to guide future vaccination campaigns, especially those that involve new vaccines, like the malaria and human papillomavirus (HPV) vaccines. Likewise, eMBeD's approach to using social media for data collection can make it far easier to adapt messages to different contexts and conduct timely research to learn what works best. By building a robust evidence base, eMBeD is helping the public health community prepare for future health emergencies and pandemics (Pinzon Hernandez et al. 2024).

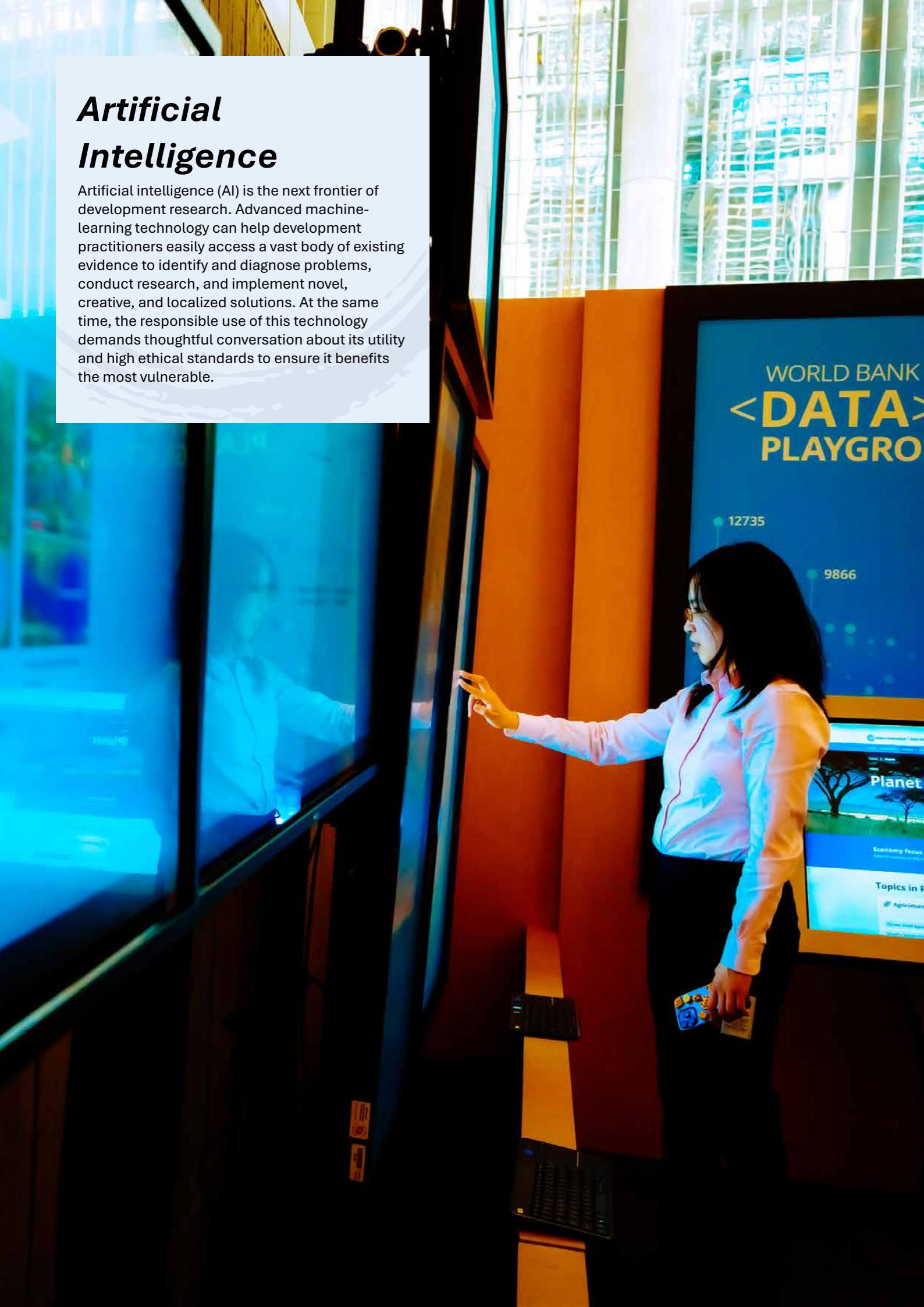


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Artificial Intelligence

Artificial intelligence (AI) is the next frontier of development research. Advanced machine-learning technology can help development practitioners easily access a vast body of existing evidence to identify and diagnose problems, conduct research, and implement novel, creative, and localized solutions. At the same time, the responsible use of this technology demands thoughtful conversation about its utility and high ethical standards to ensure it benefits the most vulnerable.



We are harnessing the power of AI to support the research production cycle across our entire portfolio and scale up the impact of our evidence globally. Our new, AI-focused team employs state-of-the-art technologies to advance the impact of development programming across the entire project life cycle—from better diagnostic analysis to novel policy interventions and syntheses of existing research evidence.

By leveraging AI-powered tools to support the trial-and-adopt technology, we have already uncovered new, evidence-based approaches to predict food insecurity and mitigate online hate speech and misinformation. The AI team has also partnered with Google.org, Google's philanthropic arm, and with the Gates Foundation to develop the tools that will drive the next generation of impact evaluation and policy reform.

Food security is a key area in which the AI team has developed innovative solutions to support our work. Our trial-and-adopt technology supports food security for the world's most vulnerable by helping development practitioners tackle challenges related to climate change, agriculture, and natural resource use (see chapter 2). But predicting these crises is difficult because of outdated data.

In response, the AI team has used natural language processing to detect early signs of food crises (Balashankar, Subramanian, and Fraiberger 2023; Fraiberger 2023). By using AI to identify and monitor risk factors in news articles, we have improved forecasts by as much as 50 percent one year in advance, providing extra time for proactive measures to be taken. In this way, we are using real-time news integration to support decision-making in data-scarce environments, improving humanitarian responses and saving lives.

Our AI-powered solution will enable decision-makers to target populations and geographical areas in advance of food crises, an approach that has proven more effective and more persistent in its impacts than responding to crises after the fact. The AI team plans to scale up this successful research pilot by turning it into a live public good with weekly district-level updates across all 75 International Development Association (IDA) borrowing countries. This new project will also allow the team to add local languages and construct geospatial signals to make forecasts more precise and accurate.

The AI team's latest solution—and flagship product—is ImpactAI, a tool that aims to transform data-driven policy making by giving practitioners easy access to the vast body of development research and evidence that has been produced in recent decades. ImpactAI harnesses the power of large language models to sift through this research and extract insights, providing effortless access to causal evidence for improved decision-making.

Through a chat interface, ImpactAI delivers insights alongside interactive visualizations and source links within seconds, saving users months of manual research. The value of ImpactAI can be measured in multiple ways: it can avert the huge costs of synthesizing evidence, an activity that is conducted across all policy and research institutions, avert investments in interventions that have been proven ineffective, and improve the design of policy

interventions to significantly increase their impact. As a one-stop source that lowers the barriers to accessing cutting-edge ideas, best practices, and empirical evidence, ImpactAI is a global public good that will enhance the effectiveness of development projects—both across our research portfolio and worldwide.

With the support of our AI team, we are increasingly bringing AI-powered solutions to our entire research portfolio. For instance, as noted in the women's economic empowerment section of chapter 1, we are using AI-powered tools to map gender norms in entertainment media in Nigeria, Kenya, and India. Our automated analysis delivers scalable insights into both media content and AI-generated gender biases, allowing us to evaluate their impact on young women and their communities. In these and other areas, we are integrating AI into our work throughout the research production cycle to generate better evidence at a truly global scale.





Chapter 6

The Way Forward

The future of development research and practice lies in equipping decision-makers with the evidence they need, when they need it, and empowering them to participate in producing that evidence for themselves. The Development Impact Fund (DIF) is leading the way forward to this future. As the five chapters of this report have shown, our research portfolio has already had a transformative impact across major areas of development finance: people, planet, prosperity, and infrastructure. With adequate investment, we can scale up our work even further.

At the heart of our work across all these areas is the trial-and-adopt technology. From learning what works to increase women's economic participation and support farmers' climate resilience, to developing data analytics to reform public administration, to harnessing artificial intelligence (AI) to monitor food crises, we are providing decision-makers with essential evidence about which interventions work and which ones fail.

The trial-and-adopt technology enables decision-makers to test packages of interventions and delivery modalities to be sure they work before scaling them up. It also helps them target programs and investments by identifying the populations that will benefit the most and the areas that will experience the greatest impact, making public services more efficient. Crucially, it generates evidence that can benefit not only current projects but also future ones. In this way, the trial-and-adopt technology produces knowledge as a global public good, one that can maximize the global impact of development finance.

Just how much does the trial-and-adopt technology improve development effectiveness? We measure the impact factor of the trial-and-adopt technology—how much it contributes to the effectiveness of programs—by tracking the effectiveness of programs designed based on our evidence against the status quo. The results are clear: investments of as little as 1 percent of a project's overall budget can produce increases in operational impact of 50 percent!

In some cases, investments see even greater impact factors, as the projects described in this report demonstrate:

- Adding two new interventions to an education program in northern Nigeria—community video screenings and smartphone literacy applications—increased the literacy of six-to-nine-year-olds by 4.9 years in school and reduced the number of out-of-school children by 42 percent, representing an impact factor of 5×.
- Optimizing the financial incentives for farmers in Ghana to plant trees on their land tripled the number of trees planted and cut the cost in half, representing an impact factor of 2×.
- Designing regulations to address health care quality in Kenya, rather than implementing financial transfers, led to a 15 percent increase in patient safety at little cost, representing an impact factor of 10×.
- Replacing Afghanistan's community-driven development model with a cash transfer program increased consumption by 30 percent and reduced poverty by 20 percentage points, an impact factor of 30×.

We continue to seek partners to join us in building this proven approach to optimizing development finance. The year 2024 marked a major milestone in this journey, as the first year in which the trial-and-adopt technology was systematically integrated into the World Bank's portfolio of projects through our LEADS (Learn. Adapt. Scale.) initiative. But there is still enormous untapped potential. Although the World Bank is a leader in the field, it conducts rigorous impact evaluations of less than 5 percent of its projects (Development Impact 2022).

DIF will provide funding support for an ambitious work program in the years ahead to scale up the impact of evidence generated through trial-and-adopt. The LEADS initiative will continue to allow us to scale up our solid foundation of evidence—developed through over 231 projects—and our finely honed tools for collecting and analyzing data to shape programs and policies. By leveraging behavioral science insights and AI-powered tools, we will be able to accelerate economic development even further.

Moving forward, we will focus on deepening our collaborations with the World Bank's Regions, Global Practices, and Global Challenge Programs. These collaborations will help the World Bank deliver on its new policies by embedding trial-and-adopt evidence into its programs. They will also ensure that our work with development partners enhances the World Bank's extensive global programs, enabling the World Bank to provide a joined-up service approach to client countries. We will also continue to respond to our clients' and partners' changing capacity-building needs.

The value added of the trial-and-adopt technology is high in fragile and conflict-affected situations (FCS), but these contexts pose significant challenges to achieving results. For this reason, we will develop additional strategies for operating in FCS, particularly against a backdrop of increasing climate change and instability. We will continue to address climate change and women's economic empowerment as cross-cutting themes in our research portfolio, and we will target our efforts at critical evidence gaps and scalable interventions.

DIF supports a proven approach to developing innovative, evidence-based solutions to development challenges. In collaboration with our partners, we aim to continue this valuable work, learn from experience, and adapt to novel challenges. We extend our gratitude to our partners and look forward to collaborating closely in the coming years. Together, we can scale up scientific evidence to enhance development impact, advancing the World Bank's vision of a world free from poverty on a livable planet.

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Chapter 5: Cross-Cutting Solutions and Innovations

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Appendices

Appendix A. Results Framework

DIF Results Framework						
Outcomes	Indicators	Target by calendar year			Value 2024	Definition of the indicator (relevant base)
		2024	2025	2026–31		
1. Improved awareness, demand for, and use of evidence in decision-making in key sectors	Proportion of project team members participating in Development Impact workshops that improve their knowledge of impact evaluation (IE) methods	n.a.	75%	75%	n.a.	% of project team members participating in LEADS workshops with an IE methods teaching component that show improvement on pre-post knowledge test (% of team members participating in LEADS workshops with a pre-/post-test)
	Proportion of projects participating in Development Impact workshops that made design improvements as a result of workshop participation	65%	65%	65%	68%	% of projects participating in LEADS workshops that adopted evidence and made design changes by the end of the workshop week as a result of the workshop (% of projects participating in LEADS workshops)
	Proportion of IE projects with multiarm evaluation designs to test project innovations	65%	65%	65%	66%	% of IEs that have more than one treatment arm (% of supported IE projects)
	Proportion of IEs that influence the project being evaluated during design or implementation	55%	55%	55%	84%	% of IEs that improved project design based on clear understanding of the underlying theory of change or whose baseline results were used to stimulate policy dialogue or help identify problems and solutions (% of DIF-supported IE projects in phase 2 and above)
	Proportion of completed IEs that generate evidence used to support project adoption, scale-up, scale-down, continuation, or cancellation decisions	45%	45%	45%	55%	% of IEs that contributed to these outcomes (% of supported IE projects)
	Proportion of IEs that have influenced the design or implementation of other projects outside of the project being evaluated	10%	10%	10%	74%	% of IEs that have influenced the design or implementation of other projects outside of the project being evaluated
2. Improved effectiveness and impact of new and existing interventions	Proportion of completed and published research projects that are cited in academic literature	25%	25%	25%	61%	% of supported research projects in phase 4 with academic publications

Outcomes	Indicators	Target by calendar year			Value 2024	Definition of the indicator (relevant base)
		2024	2025	2026–31		
3. Increased quantity, quality, and relevance of evidence available to improve policy design and implementation in priority areas	Number of new data sets (baseline or follow-ups)	n.a.	TBD	TBD	n.a.	Number of new data sets produced across supported research projects
	Proportion of baseline research results discussed with clients (if the results have been available for nine months or more)	70%	70%	70%	85%	% of research projects with available baseline results for more than nine months
	Proportion of final research results discussed with clients (if the results have been available for nine months or more)	70%	70%	70%	84%	% of research projects with available final results for more than nine months
	Number of research projects (in all stages of implementation)	200	210	TBD	231	Stock of supported research activities across all stages of implementation (design, implementation, and completed)
	Number of research projects completed and reported	110	115	TBD	124	Stock of completed research activities with final products (final report, working paper, policy brief, and/or publication)
	Proportion of research projects with a gender-specific intervention	15%	15%	15%	27%	% of supported research projects
4. Increased use of evidence in policy design and implementation in priority areas	Proportion of research projects performing gender-disaggregated analysis	50%	50%	50%	58%	% of supported research projects with household- and individual-level data
	Proportion of research projects in fragility, conflict, and violence (FCV) countries	20%	20%	20%	23%	% of supported research projects

Outcomes	Indicators	Target by calendar year			Value 2024	Definition of the indicator (relevant base)
		2024	2025	2026–31		
4. Increased capacity of policy makers, implementers, researchers, and partners to incorporate rigorous evidence/tools into policy making	Number of global or regional workshops designed to enhance project impact	1	1	4	2	Number of global or regional workshops designed to enhance project impact by integrating high-quality evidence into project design and strengthening counterparts' capacity for evidence-based policy making (e.g., LEADS workshops)
	Number of people trained in the workshops	100	200	400	350	Number of people (World Bank, donors, governments, nonprofit agencies, etc.) participating in workshops (from indicator above)
	Proportion of completed research projects that have at least one reproducible research output	n.a.	50%	50%	n.a.	% of completed research activities
	Proportion of research projects that improve counterpart's monitoring and evaluation (M&E)	55%	55%	55%	82%	% of research projects whose data requirements led to improvements in M&E data collection and/or reporting activities of the counterpart(s) (% of supported projects in phase 2 and above)
5. Increased communities of practice and knowledge platforms for sharing of evidence and its application for policy making	Number of organizations, universities, research centers, and government agencies participating in research projects	20	30	100	194	Stock of partner agencies engaged in research projects (researcher and counterpart affiliation)
	Number of seminars for knowledge dissemination	10	10	50	11	Total number of seminars that showcase results from the supported research projects
	Number of dissemination events to policy makers	10	10	50	15	Total number of events organized to disseminate research results (baseline or final) to policy makers

Phase Legend	
Phase 1	Before Concept Note (CN) review
Phase 2	After CN review but before baseline results are available for discussion (or before implementation starts if the research project has no baseline)
Phase 3	After baseline results are available for discussion (or after implementation starts if the research project has no baseline) but before results are available for discussion
Phase 4	After research project results are available for discussion

Appendix B. List of Projects

Title	Region	Country	Vertical	Department	Status	Summary
School-Based Programming Impact Evaluation: Burundi	Africa	Burundi	Planet	Agriculture	Analysis	We use a randomized controlled trial (RCT) to assess whether the community-based targeting procurement model impacts the performance of meals distributed by schools (e.g., the quantity, diversity, and quality of meals). We will also compare quantities of food procured across the two treatment models and provide descriptive evidence of the efficiency and reliability of the new procurement system.
Impact Evaluation of the STEP Agricultural Transfer Program in Eastern Democratic Republic of Congo	Africa	Congo, Dem. Rep.	People	Social Protection	Design	We evaluate the impacts of the agricultural transfers as well as shed light on the potential mechanisms through which those impacts might occur.
Empowering Adolescent Girls Through Girls Clubs or Safe Spaces: Evidence from the Democratic Republic of Congo	Africa	Congo, Dem. Rep.	People	Education	Design	In partnership with the Development Research Group and Africa Gender Innovation Lab, we have partnered with the Democratic Republic of Congo Girls' Learning and Empowerment Project (P178684) to explore the effectiveness of two interventions: socioemotional and life skills training for empowering adolescent girls through Girls Clubs and a whole-school approach to preventing violence in school (behavioral change campaigns to challenge gender inequalities and violence supportive attitudes) on the basis of the following outcomes: adolescent girls' empowerment, gender attitudes, education outcomes, labor outcomes, and prevalence of violence in school, among others.
Fighting Irregularities in Human Resources: Public Sector Reform in Guinea	Africa	Guinea	Prosperity	Institutions	Design	We evaluate the impact of reforming the human resources (HR) function of the public sector on the basis of the following outcomes: HR irregularities, cognitive and noncognitive skills, motivation, measures of meritocratic hiring, and measures of on-the-job performance.
Evaluating the Liberia Land Administration Project	Africa	Liberia	Prosperity	Institutions	Design	We evaluate the impact of the implementation of customary land rights through a land reform process and the design of incentives for the civil servants within the new Liberia Land Authority on the basis of the following outcomes: surveyors' activities (in terms of the quality of implementation of their duties) and community characteristics (along margins we might expect from effective engagement with government officials).
School-Based Programming Impact Evaluation: Madagascar	Africa	Madagascar	People	Education	Implementation	This impact evaluation is part of a Programmatic Advisory Support and Analytics (PASA) program to integrate existing evidence and generate new insights through rigorous impact evaluations in Madagascar. We will strengthen national capacity for evidence-based policy making and apply the trial-and-adopt approach to enhance development finance effectiveness. Structured around five core activities, the PASA will support key sectors, mobilize funding for evaluations, and promote adaptive project implementation. This activity will focus on school-based programming.
Fingerprinting to Reduce Risky Borrowing	Africa	Malawi	Prosperity	Finance, Competitiveness & Innovation	Implementation	We evaluate the impact of improved borrower identification in financial institutions on the basis of the following outcomes: access to credit and repayment.
Accelerating Growth: High-Speed Internet in Mauritania	Africa	Mauritania	Digital	Digital Transformation	Design	We evaluate the impact of high-speed internet provision on the basis of the following outcomes: jobs, employability, and economic activity of firms and individuals.
Experiments to Increase Women's Participation in Business Plan Competitions	Africa	Mozambique	Prosperity	Finance, Competitiveness & Innovation	Analysis	We examine strategies to support female entrepreneurs in Mozambique, where women face constraints that limit them to small-scale, low-growth, informal businesses in the service sector. The project launched a nationwide business plan competition (BPC) to attract and support high-growth, female-owned businesses. Our RCT will evaluate interventions aimed at increasing women's participation in the BPC and improving their business performance within and beyond the competition.

Title	Region	Country	Vertical	Department	Status	Summary
Mozambique Public Works and Graduation	Africa	Mozambique	People	Social Protection	Implementation	This impact evaluation is part of a PASA program to integrate existing evidence and generate new insights through rigorous impact evaluations in Mozambique. We will strengthen national capacity for evidence-based policy making and apply the trial-and-adopt approach to enhance development finance effectiveness. Structured around five core activities, the PASA will support key sectors, mobilize funding for evaluations, and promote adaptive project implementation. This study focuses on public works and graduation programs.
Anticipatory Action Shock Response: Mozambique	Africa	Mozambique	People	Social Protection	Implementation	This impact evaluation is part of a PASA program to integrate existing evidence and generate new insights through rigorous impact evaluations in Mozambique. We will strengthen national capacity for evidence-based policy making and apply the trial-and-adopt approach to enhance development finance effectiveness. Structured around five core activities, the PASA will support key sectors, mobilize funding for evaluations, and promote adaptive project implementation. This study focuses on shock response in the context of Mozambique.
DIME-INTPACT: Impact Evaluation to Address Human Development Challenges	Africa	Nigeria	People	Social Protection	Implementation	We assess the effectiveness of the World Bank–funded IDEAS (Innovation for Development Effectiveness in the Acquisition of Skills) apprenticeship program, following up on the Movies and Mobiles education intervention, and test online edutainment tools for home learning. Additionally, we study women's safety in Lagos's public transportation system by examining fare subsidies' role in reducing harassment. Last, we evaluate Nigeria's national safety net program by analyzing cash transfers and livelihoods support for poverty reduction. These studies use RCTs and partnerships with local and international stakeholders to inform policy and improve program effectiveness.
Research Collaboration with the Rwanda Revenue Authority	Africa	Rwanda	Planet	Agriculture	Design	We provide tailored impact evaluation support for administrative and legislative tax policy making in Rwanda. Previous research assessed the effects of licensing and incentivizing domestic face mask production during COVID-19. Ongoing evaluations examine the impact of requiring itemized receipts for income tax expense reporting. Our findings will inform tax authority strategies on incentive design and compliance interventions, as well as trade policy measures to leverage interfirm spillovers for accelerated economic growth.
Can Legal Aid Make Investment in Mining and Agriculture Work for the Local Poor?	Africa	Sierra Leone	Prosperity	Institutions	Design	We evaluate the impact of Information and collective redress on the following outcomes: regulatory compliance, firm-community conflict, intracommunity conflict, local activism, legal knowledge and attitudes, and socioeconomic welfare.
Uganda Urban Childcare Impact Evaluation	Africa	Uganda	Prosperity	Jobs	Analysis	We evaluate two childcare models for market women in Kampala, assessing their impact on women's time use, business performance, well-being, and childcare decisions. In a study of 1,000 women across six markets, participants are randomly assigned to subsidized market-based childcare, community-based childcare vouchers, or a comparison group. We measure effects on women's mobility, socioemotional well-being, and children's well-being.
Impact Evaluation of Cambodia's Social Accountability for Improved Service Delivery Project	East Asia & Pacific	Cambodia	n.a.	n.a.	Completed	We use an RCT conducted across 42 districts in 15 provinces to determine whether the coordinated interventions mandated by the Social Accountability Framework improve the quality of education, health, and commune services in rural Cambodia and increase villagers' engagement with local government.
DIME Urban Transport Tianjin Impact Evaluation	East Asia & Pacific	China	Infrastructure	Transport	Design	We evaluate the impact of infrastructure investments for improving nonmotorized transportation and public transportation access on the basis of the following outcomes: urban vibrancy (level and quality of activities taking place) and green (reducing car trips, reducing greenhouse gas emissions) and safe (reducing accidents) accessibility.

Title	Region	Country	Vertical	Department	Status	Summary
Aceh Community Ranger Program Impact Evaluation	East Asia & Pacific	Indonesia	Planet	Environment, Natural Resources & Blue Economy	Completed	We examine the impact of a multifaceted intervention that includes training at-risk youth rangers, patrols, community livelihood and training, and outreach and awareness-raising campaigns about environmental and other issues. Our results show that the community ranger program (CRP) succeeded in improving economic outcomes for rangers on a number of dimensions. The economic outcomes of interest include both objective measures of well-being, such as income and household poverty, as well as more subjective measures associated with perceptions of economic status and economic conditions. The program had positive effects on life satisfaction. The effect of the CRP on other social outcomes, such as social integration and acceptance, is weaker. With regard to environmental outcomes, the evidence is mixed. While the program improved attitudes toward environmental conservation, outcomes on behaviors were not impacted.
Evaluating Early Childhood Education Services	East Asia & Pacific	Indonesia	People	Education	Completed	We measure the impact of a package for villages with the following components: a facilitator to raise community awareness of the importance of early childhood services, block grants for three years per village to be spent on establishing or supporting two centers, and 200 hours of teacher training per center. We measure the following outcomes: enrollment rates and duration of enrollment in early childhood education and development services and primary school, early childhood development outcomes, and test scores in primary school.
Increasing the Evidence of the Impact of Third-Party Procurement Oversight	East Asia & Pacific	Philippines	Prosperity	Institutions	Design	We evaluate the impact of citizen oversight training and tools (geotagging, etc.) and contract information to citizens (SMS, posters, etc.) on the following outcomes: value-for-money (cost/efficiency, implementation timing, infrastructure quality and sustainability, and utilization), and citizen governance perceptions (transparency, accountability, and governance).
CRSD Vietnam: Evaluation of Fisheries Comanagement	East Asia & Pacific	Vietnam	Planet	Environment, Natural Resources & Blue Economy	Completed	We assess the impact of forming community-based coastal fishery comanagement groups on the basis of the following outcomes: longevity, adherence to the comanagement scheme, and uptake of sustainable fishing practices.
Vietnam Central Highlands Poverty Reduction Project: Impact Evaluation	East Asia & Pacific	Vietnam	n.a.	n.a.	Completed	We measure the impact of the Central Highlands Poverty Reduction Project, which provides a package of local infrastructure and livelihoods interventions, on the basis of the following outcomes: identified development priorities, access to services, quality of local infrastructure, objective and subjective economic well-being, and participation of marginalized groups in decision-making.
Vietnam Results-Based Rural Water Supply and Sanitation Under the National Target Program: Impact Evaluation	East Asia & Pacific	Vietnam	Planet	Water	Completed	We induce random variation in the marginal price of piped water to estimate demand and willingness to pay (WTP) for piped water connections. We compare WTP estimates from the experiment to the household waiting time to obtain a piped water connection and a WTP measure (Becker-Degroot-Marshak) elicited from unconnected households at baseline.
Impact Evaluation of the Angola Local Development Project	Eastern & Southern Africa	Angola	People	Social Protection	Completed	We examine the impact of community-school scorecards (questionnaires asking parents to rate teachers and schools; parents and schools discuss an action plan to solve issues raised by the scorecards) on the basis of the following outcomes: learning outcomes, school enrollment and attendance, teacher performance, and social capital dimensions.
The Direct and Indirect Effects of Public Works Programs: A Randomized Controlled Trial of a Cash-for-Work Program in the Comoros	Eastern & Southern Africa	Comoros	People	Social Protection	Completed	We examine the impact of a labor-intensive public works program on individual and household socioeconomic outcomes. The program had substantial effects on labor market outcomes, including employment and income. It also appears to have had a sizable and positive impact on investments in migration. The program also increased the probability that women had an income-generating activity, but no compelling evidence was found that the program outcomes varied by gender.
Attracting and Deploying Talent to Reform Civil Service in the Democratic Republic of Congo	Eastern & Southern Africa	Congo, Dem. Rep.	Prosperity	Governance	Implementation	We assess the impact of civil service retirement and recruitment reform on the basis of the following outcomes: the age structure of the civil service, qualifications and skills of young professionals, and perceptions of the fairness of retirement and recruitment processes.

Title	Region	Country	Vertical	Department	Status	Summary
From Welfare to Well-Being: A Randomized Evaluation of the Effects of Labor-Intensive Public Works on the Urban Poor in Eastern Democratic Republic of Congo	Eastern & Southern Africa	Congo, Dem. Rep.	People	Social Protection	Completed	We assess the impact of a labor-intensive public works program—with or without an extended training program and incentivized savings accounts—on socioeconomic outcomes. We find that the program increased employment, including self-employment, but not income. The positive welfare impacts also contrasted with the negative impacts on well-being, as certain beneficiaries were more aware of criminal groups, engaged less in prosocial behavior, and held more negative gender views. This occurred when different components of the program were offered; however, there was a strong positive impact for beneficiaries when they received cash for work, as well as the savings and training component. The program also had lasting impacts on women and displaced people.
Thimo Ruraux: Targeting Democratic Republic of Congo STEP	Eastern & Southern Africa	Congo, Dem. Rep.	People	Social Protection	Implementation	Through experimental methods, we test the efficacy of alternative targeting systems that feature different community agents in the selection process, as well as the overall impacts of public works schemes on the socioeconomic welfare of recipient households and communities.
Making Services Work for the Poor in Fragile and Conflict-Afflicted Contexts: An Impact Evaluation of Tuungane Interventions to Strengthen Accountability of Service Providers—T2 Plus	Eastern & Southern Africa	Congo, Dem. Rep.	n.a.	n.a.	Completed	We assess the impact of a community-driven development (CDD) program, which is a bottom-up model of development that aims to put the people in the driver's seat. We evaluate the impact of bottom-up community involvement, top-down ministry involvement, and combined bottom-up and top-down approaches on socioeconomic outcomes. We do not find any evidence that involving the community, the government, or both in the program improved local accountability. There is little evidence that the program as a whole influenced information sharing or stakeholder involvement.
Strengthening Community Resilience in Conflict-Affected Societies: A Randomized Impact Evaluation of a Community-Driven Development Intervention with a Conflict Resolution Dimension in Eastern Democratic Republic of Congo	Eastern & Southern Africa	Congo, Dem. Rep.	n.a.	n.a.	Implementation	We measure the impact of CDD-chosen infrastructure projects, with or without a conflict-mediation component, on the basis of the following outcomes: infrastructure, access to public services, access to health, social cohesion, and access to education. The program took place in six provinces of eastern Democratic Republic of Congo. We find that the CDD or CDD+ interventions with the mediation component had no impact on access to infrastructure or strengthening of community cohesion. We find no evidence of impact on socioeconomic well-being, including economic welfare, income-generating activities, or subjective well-being.
Participatory Development in Fragile and Conflict-Affected Contexts: Tuungane 1	Eastern & Southern Africa	Congo, Dem. Rep.	n.a.	n.a.	Completed	We investigate the long-term effects of Tuungane 1, a major CDD program. We find that the program had a positive impact on the quality of primary schools and health facilities and on the presence of materials and supplies. However, we find no evidence that the program had an effect on other dimensions of service provision, including health and education outcomes.
Participatory Development in Fragile and Conflict-Affected Contexts: Tuungane 2	Eastern & Southern Africa	Congo, Dem. Rep.	n.a.	n.a.	Completed	We assess Tuungane 2, a major CDD program in eastern Democratic Republic of Congo, that included scorecards, more intensive work within communities, and larger grants. The rollout of the program was not randomized, but nonexperimental techniques were used to estimate the impacts of the program. The program performed well on outcomes related to the relationship between villagers and service providers. It also improved outcomes on tangible items provided, such as the quality of building infrastructure for both education and health facilities. However, it did not improve outcomes related to health or education indicators. There is scattered evidence that the program contributed to women's empowerment.
Optimizing Targeting Methods in Humanitarian Interventions: Evidence from an Experiment in the Democratic Republic of Congo	Eastern & Southern Africa	Congo, Dem. Rep.	People	Social Protection	Implementation	We aim to understand which targeting approaches are most effective for providing assistance in emergency settings in terms of accuracy, cost-effectiveness, and timeliness, as well as their impact on community perceptions and social cohesion. We look at a range of targeting approaches employed by the World Food Programme (WFP), specifically data-driven approaches, community-based approaches, self-selection, geographic, or blanket targeting.
Ethiopia Governance Impact Evaluation	Eastern & Southern Africa	Ethiopia	Prosperity	Governance	Completed	We test the knowledge of Ethiopian civil servants at the three tiers of government, aiming to understand whether local tiers of government make fewer errors regarding citizen characteristics than regional or federal tiers. We experiment by sending packets of information to a random subset of the officials. Though the average treatment effect is significant at the usual levels, the effect is driven by organizations with a weak culture of information management.

Title	Region	Country	Vertical	Department	Status	Summary
Hawassa Industrial Park COVID-19 Impact Evaluation	Eastern & Southern Africa	Ethiopia	People	Jobs	Completed	We conduct high-frequency phone surveys of a panel of workers in the ready-made garment industry in Ethiopia's largest industrial park in the city of Hawassa to document how their lives changed during the COVID-19 crisis. We investigate the economic impacts of the pandemic and the interaction between health behaviors, trust in government, and economic preferences. We aim to inform the government's response and development partner programming by rapidly reporting key areas of vulnerability and their predictors.
Human Capital, Credit Constraints, and Rural Poverty: Impact Evaluation of Productive Safety Net Project Livelihoods	Eastern & Southern Africa	Ethiopia	People	Social Protection	Implementation	We evaluate the impact of livelihoods interventions in the context of Ethiopia's rural Productive Safety Net Project. We estimate the direct impact of the interventions on beneficiaries and examine who benefits the most from them. We investigate the value added of additional government-implemented life skills training. Finally, we study the indirect (spillover) effects of these interventions. Using a regression discontinuity, we also investigate the value added of the grant compared to facilitated access to subsidized credit.
Ethiopia Expressway	Eastern & Southern Africa	Ethiopia	Infrastructure	Transport	Completed	We evaluate the impact of the Ethiopia Expressway on the basis of the following outcomes: trade, investment, income, land use, environmental outcomes, and poverty.
Evaluating the Impact of Urban Corridor Improvement in Addis Ababa	Eastern & Southern Africa	Ethiopia	Infrastructure	Transport	Design	We aim to understand the causes of road safety risks at key intersections and along five selected transit corridors in Addis Ababa. We also aim to assess the most effective interventions to reduce road safety risks and improve traffic and pedestrian flow, as well as to improve police traffic management in Addis Ababa through the application of data diagnostics and technology.
Hawassa Industrial Park Community Impact Evaluation	Eastern & Southern Africa	Ethiopia	Infrastructure	Transport	Implementation	The Hawassa Industrial Park is one of 10 industrial parks that are currently being planned and built all over Ethiopia. We use a unique large-scale, government-led industrialization project in Hawassa to understand the impact of factory employment on workers and the rural communities from which they originate.
Cash for Assets and Women's Empowerment in Kenya	Eastern & Southern Africa	Kenya	People	Social Protection	Analysis	We test the impacts of providing training and agricultural inputs to women and men on their consumption, food security, and intrahousehold gender dynamics.
The Potential for e-Justice Innovations to Build More Resilient Justice Systems in the Wake of COVID-19	Eastern & Southern Africa	Kenya	n.a.	n.a.	Implementation	We use data science, machine learning, and impact evaluations to achieve a more just and evidence-based justice system. We develop algorithms to assign cases based on the past performance of judicial mediators, and we investigate the sources and effects of judicial bias, leverage administrative data and innovations in legal aid and digital mediation to enhance dispute resolution, and evaluate large court-building projects and their impacts on access to justice.
Strengthening Court-Annexed Mediation in Kenya: The Impact of an Algorithm to Optimally Assign Cases to Mediators	Eastern & Southern Africa	Kenya	Digital	Digital	Implementation	We examine the impact of a tech-enabled innovation on the efficiency, quality, and productivity of court-annexed mediation in Kenya. This has the potential to support the Kenyan Judiciary in reducing backlogs and increasing citizens' access to justice. The intervention consists of a data management platform called Cadaster with two primary sets of features available only to the treatment group of users: allowing users to query and manage a list of mediators and allowing users to create, query, and manage mediation cases.
The Social and Economic Impacts of Rural Electrification: Evidence from Kenya	Eastern & Southern Africa	Kenya	Infrastructure	Energy & Extractives	Completed	We measure the impact of national grid electricity connections for rural households on the basis of the following outcomes: energy consumption, human capital, household wealth and income, and empowerment.
Kenya: Impact Evaluation of the Judicial Performance Improvement Project	Eastern & Southern Africa	Kenya	Prosperity	Governance	Completed	We assess the impact of alternative implementation strategies for court performance feedback and management on the basis of the following outcomes: timeliness of case resolution and quality of court user satisfaction.
Gender and Ethnic Biases in Judicial Decisions in Kenya	Eastern & Southern Africa	Kenya	Prosperity	Governance	Completed	We examine in-group bias among judges in Kenya, building on evidence from high-income countries that suggests judges may favor litigants who share their identity. Analyzing judicial decisions, we find that, relative to a baseline win rate of 43 percent, defendants are 4 percentage points more likely to win when they share the judge's gender and 5 percentage points more likely to win when they share the judge's ethnicity.

Title	Region	Country	Vertical	Department	Status	Summary
Kenya Patient Safety Impact Evaluation	Eastern & Southern Africa	Kenya	People	Health, Nutrition & Population	Completed	We examine the impact of top-down and bottom-up accountability systems through inspections of private and public health facilities on the basis of the following outcomes: patient safety and quality of care, prices, and demand for health services.
Microfranchizing Nairobi Impact Evaluation	Eastern & Southern Africa	Kenya	People	Social Protection	Completed	We assess the impact of a microfranchizing program operated by the International Rescue Committee on the basis of the following outcomes: income, occupational choice, empowerment, and skills.
smarTTrans: Road Safety in Kenya	Eastern & Southern Africa	Kenya	Infrastructure	Transport	Implementation	We build on previous work by combining multiple interventions adapted to Nairobi, taking into consideration constrained resources and the Kenyan Road Safety Strategic Plan. National and global priorities include developing a low-cost data system and incorporating low-cost behavioral and educational targeted interventions into the impact evaluation in ways that may provide easily scalable solutions.
Matatu Efficiency and Safety in Nairobi	Eastern & Southern Africa	Kenya	Infrastructure	Transport	Completed	We evaluate the impact of employee monitoring technologies on contracts and firm productivity. We introduce real-time monitoring devices in commuter minibuses in Nairobi to track driving behavior and daily productivity. Our findings show that treated vehicle owners adjust contract terms to encourage higher effort and reduce risk-taking. In response, drivers work longer hours and adopt safer driving practices, leading to lower repair costs, reduced firm expenses, and increased profits.
DIME-WaSSIP Impact Evaluation: Nairobi	Eastern & Southern Africa	Kenya	Planet	Water	Completed	We estimate the impacts of two interventions implemented as field experiments in informal settlements by Nairobi's water and sanitation utility to improve revenue collection efficiency and last-mile connection loan repayment: face-to-face engagement between utility staff and customers to encourage payment and contract enforcement due to nonpayment, in the form of transparent, credible service disconnection notices.
Teaching Farmers Through Social Networks	Eastern & Southern Africa	Malawi	Planet	Agriculture & Food	Completed	We measure the impact of farmers' learning about a new agricultural technology and then communicating it to others to encourage adoption on the basis of the following outcomes: knowledge and adoption of the new technologies, maize yields, and social network relationships and perceptions.
School-Based Programming Impact Evaluation: Malawi	Eastern & Southern Africa	Malawi	People	Education	Implementation	This impact evaluation has two components. Homegrown school feeding (HGSF) activities are expected to expand to 44 new schools in Kasungu district in 2023 and cover a total of 31,000 new students. The first component leverages this planned expansion to assess the impact on children's outcomes through an RCT. The second component leverages a randomized encouragement design to assess the impacts of the HGSF program on farmer organizations that supply fresh produce to schools. The objective of the encouragement design is to increase the likelihood that farmer organizations participate in the tendering process used by schools to competitively procure produce.
Protecting Early Childhood Development in Malawi	Eastern & Southern Africa	Malawi	People	Education	Completed	We examine the impact of the Protecting Early Childhood Development Project—focused on play and learning materials, teacher/caregiver training and mentoring, teacher/caregiver cash incentives based on regular attendance, and parenting education—on the basis of the following outcomes: language development, fine motor skills, sustained attention, memory and problem solving, basic math skills, and socioemotional development. We also assess parental knowledge of child development and household stimulation for learning.
Impact Evaluation of the Social Support for Resilient Households Project	Eastern & Southern Africa	Malawi	People	Social Protection	Implementation	This impact evaluation consists of two experimental studies to evaluate the socioeconomic impacts of the Social Support for Resilience Livelihoods Project (SSRLP), a project of the Government of Malawi implemented by the Community Savings and Investment Promotion initiative with support from the International Development Association (IDA). The first experiment will assess the comparative impacts of enhanced livelihoods and graduation packages, while the second experiment will assess the impacts of a business-oriented package for youth called Youth Skills Challenge. The two experiments are RCTs.

Title	Region	Country	Vertical	Department	Status	Summary
The Short-Term Health Impacts of Emergency Response and Trauma Registry: An Impact Evaluation of the Health Services Improvement and Emergency Response of the Southern Africa Transport and Trade Facilitation II (SATTF-SOP2) Program	Eastern & Southern Africa	Malawi	Infrastructure	Transport	Completed	We assess the effectiveness of a pilot program aimed at reducing adverse health outcomes from road traffic injuries through increased quality of medical care. While some of the measures have been implemented in other contexts, there is scant evidence about the effectiveness of implementing this specific combination of interventions, especially in a low-income, high-incidence setting such as Malawi. The comprehensive data system that we developed can be used to improve the intervention and increase its cost-effectiveness.
Does Investment in Emerging Farmers Catalyze Input and Output Market Linkages for Smallholders?	Eastern & Southern Africa	Mozambique	Planet	Agriculture & Food	Implementation	We evaluate the impact of the large-scale financing of emerging farmers (PACE) on PACE and smallholder outcomes, analyze the relative importance of different components of the PACE model, and contrast the PACE approach with alternative smallholder support modalities implemented by the Ministry of Agriculture and Rural Development.
Impact Evaluation of Cashew Input Subsidy Pilot in Mozambique	Eastern & Southern Africa	Mozambique	Planet	Agriculture & Food	Completed	We study changes in subsidy delivery modality for tree-spraying pesticides in the cashew sector in Mozambique, measuring the change from an untargeted subsidy system that has been in place for around 20 years to a voucher-based subsidy system. Evidence on this change will inform policy about how to phase out the current subsidy program and whether a voucher system could replace it.
The Impact of Targeting Mechanisms on Efficiency and Equity of Irrigation in Mozambique	Eastern & Southern Africa	Mozambique	Planet	Agriculture & Food	Completed	We examine whether different approaches to selecting beneficiaries can reduce elite capture and result in a more equitable distribution of benefits. We exploit exogenous variation in the composition of water user groups induced by a random assignment to two targeting regimes to understand the causal relationship between group composition and collective action over the operation and maintenance of the schemes, as well as the final impact on production.
Group Interventions for Agricultural Transformation in Mozambique	Eastern & Southern Africa	Mozambique	Planet	Agriculture & Food	Completed	We use high-frequency, crowdsourced irrigation-water-use data in combination with a quarterly agriculture production survey to develop personalized feedback on water use, timing of planting, and coordination within schemes to increase water efficiency and coordination and reduce conflict over water resources.
Seeing Is Believing? Evidence from a Field Experiment in Rural Mozambique	Eastern & Southern Africa	Mozambique	Planet	Agriculture & Food	Completed	We examine the impact of extension training through lead farming, gender leadership, and performance-based incentives on the basis of the following outcomes: agricultural knowledge, adoption, and perception.
Impact Evaluation of Farmer Field Schools in Mozambique	Eastern & Southern Africa	Mozambique	Planet	Agriculture & Food	Implementation	We seek to assess the impact of the farmer field school (FFS) methodology of agricultural extension service provision by the Food and Agriculture Organization (FAO) in Mozambique. We aim to understand and test different measures to strengthen the FFS model to disseminate information and empower farmers and evaluate initiatives to overcome the constraints faced by female community members to become FFS facilitators. We also study the impact of facilitator gender on FFS outcomes.
Optimal Incentivizes for Adoption of Improved Agricultural Inputs	Eastern & Southern Africa	Mozambique	Planet	Agriculture & Food	Implementation	We aim to generate substantial evidence about the impact of the e-voucher subsidy for agricultural inputs offered by FAO in Mozambique. We assess the impact on the adoption of improved agricultural technologies and crop productivity and explore which types of farmers benefit most from e-vouchers in the short and long run. In order to maximize program and policy impact, we test varying subsidy levels and technology composition early on to inform program implementation in subsequent years.
Route for Development: Complementary Effects of Improved Roads and Agricultural Extension Services	Eastern & Southern Africa	Mozambique	Infrastructure	Transport	Implementation	We measure the effect of a program of transport infrastructure improvements on agricultural intensification in rural Mozambique. We leverage remote-sensing data as well as advances in machine learning to measure changes in land use that indicate agricultural intensification, such as the predicted presence of irrigation, dry season normalized difference vegetation index, plot size, and forest cover. These data are complemented by high-frequency data on market prices and road quality.

Title	Region	Country	Vertical	Department	Status	Summary
Rural Roads and Agricultural Value Chains	Eastern & Southern Africa	Rwanda	Planet	Agriculture & Food	Implementation	We estimate the impacts of rural feeder roads on trade costs in agricultural value chains, the share of these reductions in trade costs that is passed on to smallholder farmers and intermediaries, and the behavioral responses of truckers, intermediaries, and farmers.
DIME RWA Irrigation	Eastern & Southern Africa	Rwanda	Planet	Agriculture & Food	Completed	We measure the impact of irrigation on the basis of the following outcomes: gross and net agricultural yield, income, expenditure, migration, land transactions, irrigation fee collection, crop choice, sale of production, and time use. We aim to address the challenges in sustaining the returns to irrigation investments.
LWH One Acre Fund	Eastern & Southern Africa	Rwanda	Planet	Agriculture & Food	Completed	We examine the impact of various feedback tools to client farmers of a fee-based extension service provider on the basis of the following outcomes: farmers' attendance, interactions with extension services, propensity to experience problems and the response to them, service perceptions, knowledge score, and uptake among existing and new members.
LWH Rural Finance Evaluation	Eastern & Southern Africa	Rwanda	Planet	Agriculture & Food	Completed	We assess the impact of innovative financial products designed to help farmers save for agricultural inputs (targeted savings and commitment savings) on the basis of the following outcomes: use of agricultural inputs, savings patterns, use of input credit, and household expenditures.
Land Husbandry (GAFSP), Water Harvesting, and Hillside Irrigation (WB) Project	Eastern & Southern Africa	Rwanda	Planet	Agriculture & Food	Completed	We measure the impact of a large investment on agricultural productivity in land husbandry, water harvesting, and hillside irrigation in Rwanda on the basis of the following outcomes: agricultural income and commercialization, cropping pattern, and use of improved technologies.
Leveraging Land Markets Toward a Rural Transformation	Eastern & Southern Africa	Rwanda	Planet	Agriculture & Food	Completed	We investigate the role of land and labor markets in improving agricultural productivity, against the backdrop of large-scale irrigation investments in the agricultural ecosystem. A key component is understanding the role that social networks play in land and labor markets.
Impact Evaluation of the Sustainable Agricultural Intensification and Food Security Project	Eastern & Southern Africa	Rwanda	Planet	Agriculture & Food	Design	We examine the Sustainable Agricultural Intensification and Food Security Project and specifically investigate the role of small-scale irrigation technology and improved market access in improving agricultural productivity, against the backdrop of large-scale irrigation investments in the agricultural ecosystem.
Gender and Cash Transfers Impact Evaluation: Rwanda	Eastern & Southern Africa	Rwanda	People	Social Protection	Implementation	We examine the impact of transferring assistance to women within households, a strategy increasingly favored by international institutions to promote women's empowerment. While this approach aims to enhance gender equality, its effectiveness remains uncertain. By varying key programmatic features, we identify the stages at which women's control over assets and income can be most significantly strengthened and assess whether this translates into broader improvements in gender equality.
Impact Evaluation of Rwanda Rural Feeder Roads	Eastern & Southern Africa	Rwanda	Infrastructure	Transport	Implementation	We measure the impact of feeder road investment on the basis of the following outcomes: household income and agricultural production, market prices, market structure, access to services, land transactions, and private sector development.
Lake Victoria Transport Program Rwanda Corridor	Eastern & Southern Africa	Rwanda	Infrastructure	Transport	Implementation	We study the effects of the construction of the Ngoma–Nyanza highway, a 130-kilometer section of road linking southern Rwanda with border crossings to Tanzania and the Democratic Republic of Congo. The southern corridor is currently unpaved and consequently services no long-range traffic. We leverage the government's administrative data, complemented with surveys, to document the national impact of this large infrastructure program.
South Sudan Start-Up Business Grant Impact Evaluation	Eastern & Southern Africa	South Sudan	People	Social Protection	Completed	We analyze the impact of a canceled cash transfer program on the intended entrepreneur beneficiaries to understand whether interventions that are not implemented as planned generate net benefits or costs to beneficiaries. We provide lessons about when policy makers should try to intervene early in these fragile and conflict-affected settings or wait until the risk from canceling a program is minimal.
Gender Targeting and the Psychosocial and Economic Effects of Livelihood Programs in a Fragile Setting	Eastern & Southern Africa	South Sudan	People	Social Protection	Design	We study the marginal impact of economic opportunity programs when layered on top of regular income support programs in a resource-scarce and fragile environment. We also use gender-selection variation to assess how households' socioeconomic outcomes respond differently when a woman is assigned to participate in programs, for households that initially preferred a male participant.

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World Food Programme Resilience: South Sudan	Eastern & Southern Africa	South Sudan	People	Social Protection	Completed	We are supporting vulnerable households and strengthening the national safety net through the South Sudan Productive Safety Net for Socioeconomic Opportunities Project. We focus on economic opportunities beneficiaries in Juba and aim to assess the additional impact of this livelihood program when layered on top of regular cash transfers in a resource-scarce and fragile environment.
Promoting Economic Inclusion at Scale Through Self and Wage Employment Support in Tanzania	Eastern & Southern Africa	Tanzania	People	Social Protection	Implementation	We document the impact of a large-scale flagship social protection program in Tanzania called the Productive Social Safety Net. We use a multiarm cluster RCT to examine the relative and combined impacts of a self-employment support component (livelihood) and a wage employment component (public works). We cross-randomize the mode of payment (digital vs. manual) to understand the impact of digital e-payment, with particular attention to gender outcomes.
Impact Evaluation of Embedded-Ethics Coding Education on Socioemotional Learning	Eastern & Southern Africa	Tanzania	People	Education	Completed	We investigate how students' interactions with embedded-ethics artificial intelligence influences educational outcomes and outlooks, including the social preferences of youth, their psychosocial well-being, prosocial behavior, altruism, inequity aversion, and digital literacy.
Impact Evaluation of Urban Local Government Strengthening Program	Eastern & Southern Africa	Tanzania	Prosperity	Governance	Completed	We study the impact of performance targets for local governments on service delivery performance.
Tanzania Revenue Collection	Eastern & Southern Africa	Tanzania	Prosperity	Governance	Completed	We examine the impact of introducing an electronic taxation system and of nudges such as digital reminders to taxpayers to increase tax morale and subsequent tax payments on property tax compliance.
Building a Supportive Environment for Operation and Maintenance in the Tanzanian Rural Water Supply Subsector	Eastern & Southern Africa	Tanzania	Prosperity	Governance	Analysis	We conduct two impact evaluations around a payment-by-results (PbR) water project in Tanzania, both measured against rural water access as the outcome. First, we evaluate Maji Endelevu, which is a complementary intervention overlaid onto the wider PbR. Maji Endelevu aims to improve co-production between water civil servants and village community organizations through repeat action-learning consultations. Second, we evaluate the performance of PbR itself to feed learning into the project's iterative programming.
Impact Evaluation of Emergency Response and Post-Crash Care in Tanzania	Eastern & Southern Africa	Tanzania	Infrastructure	Transport	Completed	We aim to generate a data set to assess the effectiveness of a pilot program designed to reduce adverse health outcomes from road traffic crashes by improving the quality of medical care. While some interventions have been implemented in other contexts, there is limited evidence on the impact of this specific combination, particularly in low-income, high-incidence settings. The comprehensive data system we developed through this study will provide insights into trauma outcomes and care in Tanzania.
Impact Evaluation of Scaling Up Handwashing and Sanitation Behavior Project in Rural Tanzania	Eastern & Southern Africa	Tanzania	Planet	Water	Completed	We measure the impact of a handwashing campaign and sanitation marketing on the basis of the following outcomes: child health and development (anthropometrics and hemoglobin levels), handwashing behavior, and latrine construction.
SMS Nudges to Improve Hygiene Behavior in Tanzania	Eastern & Southern Africa	Tanzania	Planet	Water	Completed	We evaluate strategies to improve sanitation and hygiene practices, addressing the well-documented link among hygiene, sanitation, and health. Despite this connection, thousands of children die annually from exposure to contaminated fecal matter, and evidence on the effectiveness of behavioral change interventions remains limited. We implement a series of RCTs embedded in SMS surveys to test different approaches for designing effective behavioral change campaigns.
Understanding and Addressing Gender-Based Violence in Public Transportation in Dar es Salaam	Eastern & Southern Africa	Tanzania	n.a.	n.a.	Implementation	We seek to develop a reliable measurement system for gender-based violence (GBV) that crowdsources data collection to document the nature and extent of GBV experienced by women at high risk during their daily commute, to test the reliability of this data reporting system, and to test interventions to incentivize reporting in crowdsourced GBV data. The resulting data collection system will provide a tool to evaluate future innovative public policies to address the problem.
A Multifaceted Education Program for the Poor and Talented	Eastern & Southern Africa	Uganda	People	Education	Completed	We investigate the long-term impacts of the MasterCard Foundation Scholars Program on its beneficiaries and their households to shed light on the benefits and cost-effectiveness of multifaceted education programs in a low-income setting. The main outcomes we analyze are beneficiaries' secondary school achievement, their employment status, their households' socioeconomic conditions, and spillovers on their siblings' education.

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Evaluation of the Permanence of Forest Conservation Following the End of Payments for Environmental Services	Eastern & Southern Africa	Uganda	Planet	Environment, Natural Resources & Blue Economy	Completed	We examine whether forests included under a payments for environmental services (PES) program remained conserved once payments ceased and, if not, the rate and extent of deforestation. We also examine the extent to which the results vary among different subgroups.
Social Protection Governance and Fragility	Eastern & Southern Africa	Uganda	People	Social Protection	Completed	We analyze whether providing monitoring skills and encouraging the reporting of cases of mismanagement, as well as disseminating information on project performance, allow citizens to improve local development projects.
Fostering Long-Term Savings	Eastern & Southern Africa	Zambia	Prosperity	Finance, Competitiveness & Innovation	Completed	We use a text-messaging-based intervention to identify the behavioral barriers that lead to low engagement with formal financial services and test strategies to help people overcome those barriers to increase engagement and financial security. We provide the first evidence on the impact of conversational, two-way text messaging designed to encourage savings and loan repayment.
Reforming Village-Level Governance via Horizontal Pressure: Evidence from an Experiment in Zimbabwe	Eastern & Southern Africa	Zimbabwe	Prosperity	Governance	Completed	We examine the effectiveness of horizontal pressure from civil society leaders for reforming the local governance of village heads. Two different scenarios are compared: one in which a capacity-building exercise is offered only to village heads and another in which civil society leaders are also involved in the sessions. We find evidence that horizontal pressure from civil society leaders can improve governance at the local level, including raising trust among citizens, generating evidence that they can serve as a mechanism for change in the absence of complementary pressures from above or below.
Experimental Evidence on Delivering Legal Aid to Vulnerable Groups	Europe & Central Asia	Azerbaijan	Prosperity	Institutions	Design	We evaluate the impact of smart courts on dispute resolution and economic welfare.
Evaluating the Rollout of Estonia's Enhanced Care Management	Europe & Central Asia	Estonia	Prosperity	Governance	Completed	Estonia faces an aging population with an increasing burden of noncommunicable diseases, such as hypertension, diabetes, and depression. Using claims data from the Estonian Health Insurance Fund, we test the impacts of strategies to increase physicians' adoption of a quality enhancement program for high-risk patients, including a week-long mentoring visit from a peer doctor with a structured curriculum, weekly coaching sessions, and a combination of mentoring and coaching sessions.
Impact of Land Registration on Land Values, Investment, and Factor Market Performance	Europe & Central Asia	Georgia	Infrastructure	Urban, Resilience & Land	Design	We evaluate the impact of land titling on the basis of the following outcomes: land market activation, investment, access to financial markets, and intrahousehold bargaining.
Georgia: Internet for Firm Innovation	Europe & Central Asia	Georgia	Prosperity	Finance, Competitiveness & Innovation	Completed	We explore the barriers to e-commerce participation and impacts of using e-commerce for firms.
Experimental Evidence on Legal Aid and Socioeconomic Rehabilitation of Former Offenders	Europe & Central Asia	Kazakhstan	Prosperity	Institutions	Design	We evaluate the impact of legal aid on the following outcomes: dispute resolution, economic welfare, and employment.
Promoting Community Engagement of Youth Through Learning and Life Skills Training: An RCT in Kazakhstan	Europe & Central Asia	Kazakhstan	People	Jobs	Completed	We test the effects of the Kazakhstan Youth Corp Project's two main components: support for community-based service learning through a grant and training and mentorship activities designed to enhance life/noncognitive skills of participating youth. We ascertain the short-term effects of the pilot program on key outcomes of interest: civic and community engagement, socioemotional skills, and antisocial behavior of participants. We find limited evidence that participants benefited significantly from the activities.
Investment Readiness Impact Evaluation	Europe & Central Asia	Kosovo; North Macedonia; Serbia; Montenegro; Croatia;	Prosperity	Finance, Competitiveness & Innovation	Completed	We measure the impact of an Investment Readiness Program for start-ups and small and medium enterprises on the basis of the following outcomes: investment readiness (as measured by judge scores), investments made, and firm growth.

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SEE Trade Facilitation Impact Evaluation	Europe & Central Asia	North Macedonia; Serbia; Albania	Prosperity	Macroeconomics, Trade & Investment	Completed	We examine the impact of several interventions—improvements to risk-management procedures in technical-control agencies in North Macedonia, delays in customs examination following a substantial reform in customs during the first decade of the 2000s in Albania, and the costs of delays in customs for the private sector in Serbia—on the basis of the following outcomes: reduction in time to trade, effectiveness to detect noncompliance, changes in firm behavior, and changes in trade flows and in the distribution of trade across firms.
Impact Evaluation of e-Filing and In-Depth Study of Risk-Based Audits in Tajikistan	Europe & Central Asia	Tajikistan	Prosperity	Macroeconomics, Trade & Investment	Completed	We study the impact of electronic tax filing on the basis of the following outcomes: adoption, tax compliance costs, tax behavior of firms, and perceptions of corruption in tax administration.
Migration, Climate, and Cells: A Disaggregated Analysis	Global	Global	Planet	Agriculture & Food	Completed	We test new methods of data collection and measurement related to pollution and study the impact of innovations or policies in the green space. We begin by focusing air quality, methane emissions, and the use of solar lamps in Senegal. The evaluation will expand to other countries where the initial findings and innovations in measurement can be scaled and tested further.
COVID-19 Mobility Analytics Task Force	Global	Global	Infrastructure	Transport	Implementation	We use telecom data based on a systematic set of initial building block indicators to inform multisectoral COVID-19 response in countries. In particular, we provide analytics on mobility and population density that can act as input into policies and projects related to the immediate mitigation of the spread of COVID-19 and poverty analysis.
Women's Home Care Burden and Labor Force Participation	Global	Global	People	Social Protection	Implementation	We assess how women's home care burden affects their labor force participation rates. Using web-scraped data and rich time-use surveys, we evaluate the effects of women being the primary caretakers of home production on their economic outcomes.
Understanding the Constraints to Women's Use of Urban Public Transportation in Developing Countries	Global	Global	n.a.	n.a.	Design	We study the constraints on women's use of urban public transportation in developing countries.
Impact of Expansion of the Brazilian Conditional Cash Transfer Program	Latin America & the Caribbean	Brazil	People	Social Protection	Completed	We study the impact of the expansion of Bolsa Família in March 2020 as a result of the Brazilian government's response to the COVID-19 pandemic. This expansion provides an almost natural experiment to understand the effects of this program on recipients' welfare: particularly on consumption and savings decisions of public transfers, decisions related to human capital and food security, demand for health- and education-related services, and attitudes and barriers to labor market participation.
Evaluating Procurement Reforms in the States of Amazonas and Naus	Latin America & the Caribbean	Brazil	Prosperity	Governance	Completed	We document firm participation in public procurement through a large administrative data set on the universe of procurement auctions for the state of Amazonas from 2010 to 2016. We also use a survey of 150 suppliers in the state, which asks suppliers to discuss the factors that led them to choose whether or not to sell to the government, to better understand the main barriers to participating in government procurement auctions.
Ceara Rural Development and Access to Markets Project	Latin America & the Caribbean	Brazil	Planet	Agriculture & Food	Completed	We examine the impact of a package of technical assistance and matching grants for the adoption of new technologies and the identification of new markets in Ceara, Brazil, on the basis of the following outcomes: organizational capacity, access to credit, sales value, agricultural production, commercial activities developed, and investment.
São Paulo Matching Grants Impact Evaluation	Latin America & the Caribbean	Brazil	Planet	Agriculture & Food	Completed	We examine the impact of a package of technical assistance and matching grants for the adoption of new technologies and the identification of new markets in São Paulo, Brazil, on the basis of the following outcomes: organizational capacity, access to credit, sales value, agricultural production, commercial activities developed, and investment.
Impact Evaluation of Brazil's Financial Literacy 2	Latin America & the Caribbean	Brazil	People	Education	Completed	We present the findings of a large-scale, experimental evaluation of a financial education pilot program for primary school students. The program's objective was to increase students' financial proficiency and change attitudes and behaviors regarding consumption and savings. Our results suggest that the program increased financial literacy for the overall sample and for middle school students. We also found positive results on attitudes toward consumption and savings.

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Pedagogical Innovative Program	Latin America & the Caribbean	Brazil	People	Education	Completed	We examine whether the Rio Grande do Norte Pedagogical Innovative Program improved the quality of education in the state, measured in terms of learning outcomes. To shed light on the causal chain underlying the intervention, we measure its effects on noncognitive skills, promotion, and dropout and repetition rates.
Impact of H1N1 Pandemic on Learning Outcomes	Latin America & the Caribbean	Brazil	People	Education	Completed	We explore the 2009 H1N1 pandemic in the state of São Paulo to benchmark the impacts of school shutdowns during COVID-19. We leverage existing data and a recent episode of school closure during a pandemic crisis. Results indicate that fifth graders' math skills decreased by around 0.2 standard deviations, equivalent to two months of learning loss. The impacts are most pronounced in schools in the lower deciles of math test scores, suggesting the effects were stronger among vulnerable students.
The Impact of an Online Platform to Disseminate Business Practices on Business Performance	Latin America & the Caribbean	Brazil	Prosperity	Finance, Competitiveness & Innovation	Completed	We test whether showing firms how their management practices look and how they compare with their competitors incentivizes them to improve management and performance. We test low-cost, scalable information interventions to see whether these interventions can promote the adoption of better business practices and impact firms' performance.
SEBRAE (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas) na sua Empresa	Latin America & the Caribbean	Brazil	Prosperity	Finance, Competitiveness & Innovation	Completed	We study how to boost the adoption of good management practices and how their adoption affects firms' performance. We test whether providing small firms with informational packages about the potential benefits associated with adopting good management practices incentivizes them to improve. We also test whether combining information with a coaching intervention increases adoption.
Long-Term Effects of a Financial Literacy Program	Latin America & the Caribbean	Brazil	Prosperity	Finance, Competitiveness & Innovation	Completed	We present the findings of a large-scale, experimental evaluation of a financial education pilot program for primary school students. The pilot was carried out during the 2015 school year and included students from four different grades in 201 municipal schools in Manaus and Joinville. The program's objective was to increase students' financial proficiency and change attitudes and behaviors regarding consumption and savings. The goal of the long-term analysis is to assess whether the intervention impacted reading and math scores as well as progression and dropout rates.
Impact Evaluation of Brazil's Financial Literacy	Latin America & the Caribbean	Brazil	Prosperity	Finance, Competitiveness & Innovation	Completed	We assess the impact of a financial literacy program for high school students in six states on the basis of the following outcomes: financial proficiency score, savings, budget planning, parents' financial knowledge, and student graduation.
Impact of Credit on Marginally Riskier Firms	Latin America & the Caribbean	Brazil	Prosperity	Finance, Competitiveness & Innovation	Analysis	We use a regression discontinuity design to assess the impact of credit availability on firms perceived as marginally riskier by the lender.
Impact of Labor Regulation on Firms' Growth	Latin America & the Caribbean	Brazil	Prosperity	Finance, Competitiveness & Innovation	Design	We evaluate the impact of a labor regulation that lifted the requirement that small enterprises (up to 10 employees) have dedicated restrooms for men and women on firms' strategic behavior and growth. We will investigate the impact of the legislation on sorting and which firms were impacted by the law change.
Impacts of Green Financing on Take-Up of Clean Technology	Latin America & the Caribbean	Brazil	Prosperity	Finance, Competitiveness & Innovation	Design	We will evaluate the impacts of a credit line under design by a Brazilian commercial bank to incentivize medium-sized firms to adopt clean technologies on the basis of the following outcomes: adoption of clean technology and performance outcomes.
The Impacts of a School-Based Information Campaign in Reducing Teenage Pregnancy and the Mediating Role of Social Networks	Latin America & the Caribbean	Brazil	People	Health, Nutrition & Population	Completed	We study the effectiveness of a comprehensive sex education program in middle schools that aims to increase aspirations and reduce teenage pregnancies in Bahia state. We also experimentally study the effectiveness of selecting student peer educators based on network centrality measures.
Rio de Janeiro Gender-Segregated Public Transportation	Latin America & the Caribbean	Brazil	Infrastructure	Transport	Completed	We examine the impact of gender-segregated public transportation on the basis of following outcomes: revealed choice to ride in the women-only or the mixed car and WTP, measures of harassment and subjective well-being by car type, and compliance with the law by men.

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DIME BR São Paulo Experimental Site	Latin America & the Caribbean	Brazil	Infrastructure	Transport	Design	We evaluate the impact of urban mobility interventions on the following outcomes: mobility, asset prices, and shift to low-pollution modes of transport.
Impact of a Fare Policy Change on the Well-Being of Vulnerable Groups in Bogotá	Latin America & the Caribbean	Colombia	Infrastructure	Transport	Implementation	We examine the impact of bus fare pricing on public transportation use. We analyze household survey data and high-frequency smart card (transportation card) data to understand how people choose their mode of transportation and measure the impacts on the types of trips that they take.
Microenterprise Supply Chain Intermediation Pilot	Latin America & the Caribbean	Colombia	Prosperity	Finance, Competitiveness & Innovation	Completed	We assess the impact of a mobile platform to lower costs for small vendors purchasing produce and improve the supply chain on the basis of the following outcomes: time spent traveling to obtain inputs, prices, and firm profits.
Impact Evaluation on a Framework Agreement for Colombia's School Meals Program: Does Centrally Coordinated Buying Get Better Meals to More Students?	Latin America & the Caribbean	Colombia	Prosperity	Governance	Design	We examine the impact of procurement through framework agreements, citizen information, and a grievance portal on the basis of the following outcomes: value-for-money (student coverage, price paid, order quantity, quality of product, timeliness), firm-level outcomes (firm bids, characteristics, profit and loss, performance), and student educational welfare (attendance, enrollment, dropouts).
Colombia Mobile Victims Unit Impact Evaluation	Latin America & the Caribbean	Colombia	Prosperity	Governance	Completed	We estimate the effects of a national government program that serves as a front door for victims to access justice services under Mobile Victims Unit legislation. We estimate the short-term effects of the program on receiving reparations, knowledge of rights, access to justice, integration into the community (economic and social), and perceptions of justice and the state.
A Property Tax Experiment in Colombian Municipalities	Latin America & the Caribbean	Colombia	Prosperity	Institutions	Design	We evaluate the impact of online payments and installment payments on the basis of the following outcomes: tax revenues, tax administration, tax compliance, citizen satisfaction, and taxpayer knowledge.
Impact Evaluation of Technology Extension Pilot	Latin America & the Caribbean	Colombia	Prosperity	Macroeconomics, Trade & Investment	Implementation	We examine the impact of two competing interventions—individual consulting services support and group consulting services support—on improvements in management and productivity in the Colombian auto-parts-manufacturing sector, on the basis of the following outcomes: productivity, production levels, machine downtime, inventory levels, defect rates, worker hours, sales, and worker absenteeism rates.
The Impact of a Targeted Fare Subsidy Program on Public Transportation Usage and Labor Market Outcomes: A Regression Discontinuity Analysis from Bogotá	Latin America & the Caribbean	Colombia	Infrastructure	Transport	Completed	Bogotá is a pioneer in implementing fare policies for public transportation, including fare discounts for the poor, based on a citywide targeted scheme that is unprecedented in public transportation. In 2017, the municipality implemented a new fare policy by changing the subsidy program while providing additional benefits. We aim to quantify the impact of these fare policy changes on mobility and labor market outcomes, time use, and quality of life.
Pro-Poor Targeted Subsidy Schemes for Bogotá's Integrated Transport and Information and Communication Technologies System	Latin America & the Caribbean	Colombia	Infrastructure	Transport	Design	This impact evaluation is under discussion. We will test cost-saving variations of the current pro-poor public transport subsidy in Bogotá and/or interventions to reduce fare evasion and other antisocial behavior on the public transportation system.
Effects of Park Lights on the Incidence of Crime in Cali, Colombia	Latin America & the Caribbean	Colombia	Infrastructure	Urban, Resilience & Land	Design	We examine the effects of nighttime lighting on crime and public space use in Cali, Colombia. The city is installing lighting in over 1,000 parks, with 434 parks remaining unlit. Using a randomized rollout and a difference-in-differences approach, we will assess whether lighting reduces crime, increases park usage, improves safety perceptions, and fosters social cohesion. Data sources include surveys, observational measures, and administrative records. A quasi-experimental interrupted time-series analysis will complement the main evaluation, enhancing the study's rigor and external validity. We will also examine crime displacement effects.

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Gender-Based Violence and Girls' Empowerment in El Salvador	Latin America & the Caribbean	El Salvador	People	Gender	Implementation	We develop a validated tool to measure social norms surrounding GBV and women's economic empowerment (WEE) in El Salvador. Given the country's high GBV prevalence, we are analyzing how social norms sustain or challenge GBV. In partnership with Glasswing International, we are conducting qualitative research, focus groups, and psychometric testing with key stakeholders. The tool assesses descriptive and injunctive norms, providing insights into the GBV-WEE relationship. Our findings will inform interventions to improve women's safety, mobility, and economic opportunities in Central America.
Gender and Cash Transfers Impact Evaluation: El Salvador	Latin America & the Caribbean	El Salvador	People	Social Protection	Completed	International institutions increasingly favor transferring assistance to women in a household to provide women with more power in that context. However, there are reasons to believe that transferring additional assets and income to women might not achieve its desired effects. We test the impact of various strategies designed to increase women's ability to retain the income and assets they receive from international institutions.
School-Based Programming Impact Evaluation: Guatemala	Latin America & the Caribbean	Guatemala	Planet	Agriculture & Food	Completed	We assess the impact of HGSF on school procurement systems and on local economies. We pilot the School Feeding Management App, which aims to facilitate linkages between schools and farmers, and examine whether this leads to more transactions and more-transparent prices.
Impact Evaluation of the Technology Transfers for Small Farmers (PTTA) Project	Latin America & the Caribbean	Haiti	Planet	Agriculture & Food	Completed	We measure the impact of providing subsidy vouchers for agricultural inputs on the basis of the following outcomes: yields, farmer income, and farmer profit.
Haiti Strengthening Agriculture Public Services II (RESEPAG II) and Women in Leadership of Small and Medium Enterprises	Latin America & the Caribbean	Haiti	Planet	Agriculture & Food	Completed	We measure the impact of matching grants provided to cooperatives and agricultural service providers for input provision, post-harvest processing, and business training for women on the basis of the following outcomes: production and income of farmers, especially women.
Economic Inclusion for People Living with Disabilities in Grand'Anse	Latin America & the Caribbean	Haiti	People	Jobs	Design	We examine a multifaceted intervention designed to promote the economic inclusion of people with disabilities living in the Grand'Anse region.
World Food Programme Gender and Resilience: Haiti	Latin America & the Caribbean	Haiti	People	Social Protection	Implementation	We evaluate the impact of women's participation in WFP's cash-for-work programs, which target poor households in four countries. We randomize participation and participant gender to assess the effects on women's autonomy, measuring whether participation contributes to closing the gender gap in autonomy.
Moving Youth out of the Market for Crime: Interventions in the Honduras Safer Municipalities Project	Latin America & the Caribbean	Honduras	People	Jobs	Completed	We test a skills-development and labor-market-readiness program targeting at-risk youth living in high-violence communities in Honduras. The program includes technical/vocational training, soft skills training, group-based cognitive behavioral therapy, and a temporary job. We test the impact on youth's life outcomes, including reduced participation in crime and violence, improved soft skills and mental health, and better labor market outcomes.
Mexico Competition Reforms	Latin America & the Caribbean	Mexico	Prosperity	Economic Policy	Design	We evaluate the impact of removing cargo-freight entry restrictions on the following outcomes: price of transport, volume of transport, and firm entry.
Mexico Payment for Environmental Services Scheme: A Retrospective Evaluation	Latin America & the Caribbean	Mexico	Planet	Environment, Natural Resources & Blue Economy	Completed	We measure the impact of PES provided to communities to reduce deforestation and forest degradation. We measure impacts on social capital, livelihoods, forest management activities at the community and household levels, and deforestation rates.
Neighborhood Gentrification and Development of the Private Sector	Latin America & the Caribbean	Mexico	Prosperity	Finance, Competitiveness & Innovation	Completed	We investigate the links between public sector infrastructure investment and private sector growth in urban environments by assessing the impacts of randomized infrastructure investment in urban Mexican neighborhoods from 2008 to 2010. We find that residential infrastructure investment has a strong positive effect on firm concentration, business investment, and profitability and that these impacts grow over time.

Title	Region	Country	Vertical	Department	Status	Summary
Impact Evaluation of a Large-Scale Female Entrepreneurship Pilot in Mexico	Latin America & the Caribbean	Mexico	People	Jobs	Implementation	We measure the impact of Mujeres Moviendo México, a program offering comprehensive business support to female microentrepreneurs, on the basis of the following outcomes: firm outcomes, innovation, and the decision to continue or quit as an entrepreneur for high-potential vs. low-potential entrepreneurs.
Promoting High-Impact Entrepreneurship	Latin America & the Caribbean	Mexico	Prosperity	Macroeconomics, Trade & Investment	Design	We assess the impact of funding on start-up firms and scale-ups with high impact potential, as well as alternative methods to select applicants (specifically traditional reviewers vs. expert investors), on the basis of the following outcomes: matching grant uptake, investment, sales, revenues, jobs created, increase in innovation, and investment received.
Enhancing Female Participation in Household Decision-Making for Improved Impacts of Rural Roads on Factor Accumulation and Productivity in Nicaragua	Latin America & the Caribbean	Nicaragua	Infrastructure	Transport	Implementation	We follow a nonexperimental approach to assess the economic effects of rural road infrastructure investments on women. We also conduct an experiment as part of the follow-up data collection round to capture intrahousehold decision-making.
Manager Selection and Student Learning: Evidence from Peru	Latin America & the Caribbean	Peru	People	Education	Analysis	We examine the impact of Peru's 2014 transition to a merit-based civil service examination for school management positions, replacing non-merit-based appointments. We compare schools where managers failed the exam and were replaced with those where managers passed and retained their positions, assessing the effects on student progression and learning outcomes.
Impact Evaluation of the Peru Support of the Subnational Transport Program Project	Latin America & the Caribbean	Peru	Infrastructure	Transport	Implementation	We assess the impact of rural road rehabilitation on the basis of the following outcomes: poverty, access to and use of basic services, access to jobs, reduction in local prices, health, education, and production.
Employment and Behavior Impact of a Cash-for-Work Program for Young and Unemployed Females in Egypt	Middle East & North Africa	Egypt, Arab Rep.	Prosperity	Jobs	Design	We focus on the impact of cash-for-work programs on female youth who are vulnerable and on unemployment. We assess their outcomes on social, economic, and psychological well-being.
Public Works and Welfare: A Randomized Controlled Trial of the Emergency Employment and Investment Project in Egypt	Middle East & North Africa	Egypt, Arab Rep.	People	Social Protection	Completed	We assess the impact of a labor-intensive public works program on semi-skilled and unskilled unemployed workers on the basis of the following outcomes: food security/consumption, assets, labor market outcomes, and social cohesion. The project was implemented and delivered through nongovernmental organizations. We found the project had positive impacts on participants and their families, including improvements in economic well-being such as employment and income, as well as on consumption and assets. These program participants were also more likely to save. There is also evidence of gender-specific effects, including positive impacts experienced by woman-headed households and higher savings driven by women participants.
Public Works and Welfare: A Randomized Controlled Trial of Infrastructure Projects Targeting Poor Communities in Egypt	Middle East & North Africa	Egypt, Arab Rep.	People	Social Protection	Completed	We analyze the direct effects of infrastructure projects on the economic, social, and psychological welfare outcomes of program participants as well as the community. We use a phased-in randomized design at the village level and randomize worker-level participants. The specific programs in our sample are cash-for-work projects focusing on school, youth center, and social unit rehabilitation. We find no evidence that the program had any significant effects on economic, social, or psychological outcomes.
Impact Evaluation of Iraq Transport Corridor Project	Middle East & North Africa	Iraq	Infrastructure	Transport	Completed	We use geographically precise information on the timing and location of road improvements to examine whether investments in transport corridors are associated with increases in the level of economic activity (measured by nighttime lights) and market access (measured by the urban growth of sectors relative to their income and to other sectors).
School-Based Programming Impact Evaluation: Jordan	Middle East & North Africa	Jordan	People	Education	Analysis	We assess the impact of Jordan's National School Meal Programme on the basis of the following outcomes: children's nutrition, health, education, and learning; girls' well-being; and household consumption and food security in the presence of shocks. We also evaluate the impact of school feeding procurement systems on local economies.

Title	Region	Country	Vertical	Department	Status	Summary
Becoming Better Entrepreneurs: Women and Forcibly Displaced Persons Start-Ups in the Mashreq Region Impact Evaluation	Middle East & North Africa	Lebanon; Iran, Islamic Rep.; Jordan	Prosperity	Finance, Competitiveness & Innovation	Design	We evaluate the impact of digital engagement strategies on entrepreneurship among women and refugees in the Mashreq region through StartMashreq Academy, an online training platform operating in Jordan, Lebanon, and Iraq. Using an RCT, we test how different promotional messages and reminders influence refugees' adoption, engagement, and entrepreneurial outcomes. Our research provides evidence on designing digital strategies for marginalized communities, informing policies on refugee integration and female labor market participation. It also addresses the need for data on the effectiveness of online training interventions, particularly in the context of the COVID-19 pandemic, and scalable digital solutions.
How Effective Are Matching Grants for Promoting Export Competitiveness?	Middle East & North Africa	Tunisia	Prosperity	Finance, Competitiveness & Innovation	Implementation	We measure the impact of a matching grant and rebate scheme on firms' export performance on the basis of the following outcomes: product quality and diversification, destination of exports, job creation, firm profitability, sales, and productivity.
Enhancing Female Entrepreneurship of Vulnerable Women Through an Unconditional Cash Grant	Middle East & North Africa	Tunisia	People	Jobs	Completed	We investigate the effects of offering unconditional cash grants to a random sample of female participants who participated in a labor-intensive public works project. The project also offered gender dialogue sessions, where women could participate in the trainings with their male counterparts. We find that the cash grant had no clear effect on participants' income-generating activities. While there is some evidence that women who received the cash grant only (and not the gender dialogue component) were more likely to have an income-generating activity, this effect was not observed for women who benefited from both the cash grant and the gender dialogue interventions. The cash grant intervention also did not have a measurable impact on indicators of women's autonomy and agency, but the effect on life satisfaction was positive and statistically significant.
Tunisia Community Works and Local Participation (JSDF) Impact Evaluation	Middle East & North Africa	Tunisia	People	Social Protection	Completed	We measure the impact of a labor-intensive public works program for the long-term unemployed in Jendouba on the basis of the following outcomes: employment, productivity, income, consumption, human capital, assets, and credit resources. We find evidence of positive impacts on economic outcomes, such as employment, expenditures, asset holdings, and savings. Among sociopsychological outcomes, the program improved participant well-being and civic engagement.
Impact of Highway Upgrading on National Integration and Local Economic Development	Middle East & North Africa	Tunisia	Infrastructure	Transport	Completed	We provide evidence about the impact of highway improvements on local output, employment, and market access. That evidence adds to the existing literature on market access and local development, providing insight into the evolution of spatial disparities between hinterland and coastal areas. We gather evidence of the impact of road upgrading and improved access to coastal cities on local output growth.
Targeting the Ultra-Poor in Afghanistan	South Asia	Afghanistan	Prosperity	Finance, Competitiveness & Innovation	Completed	We examine the impact of a package of interventions—including productive assets, skills training, and consumption support and other complementary services, such as health care support, community mobilization, and access to microfinance services—on the basis of the following outcomes: economic well-being, labor occupation status, and psychological well-being.
Anticipatory Action Shock Response: Bangladesh	South Asia	Bangladesh	People	Social Protection	Implementation	Based on a database of 130,000 vulnerable households verified by WFP, we are implementing an RCT to assess the impact of anticipatory cash transfers across several countries in Asia, including Bangladesh. Households will be randomly assigned to receive support either before, shortly after, or 2.5 months after a flood peak. We will track 6,000 households to analyze how transfer timing affects recovery, with at least three follow-up data collection activities. Our findings will inform strategies to enhance resilience and response efficiency in disaster-prone areas.
Integrated Agriculture Development Project	South Asia	Bangladesh	Planet	Agriculture & Food	Completed	We examine the impact of promoting improved agricultural technologies through the FFS methodology on the basis of the following outcomes: technology adoption, yields, and farmer income.
Impact of Electronic Know Your Customer on Access to Finance: Evidence from Bangladesh	South Asia	Bangladesh	Prosperity	Finance, Competitiveness & Innovation	Design	Existing know your customer (KYC) rules for mobile money and agent banking in Bangladesh require customers to initiate the application for a mobile money account with a mobile financial service provider's agent. We examine how on-the-spot verification using biometrics improves the uptake and affects the use of mobile money, as well as its impact on fraudulent activities, the profitability of agents, and the composition of the client base.

Title	Region	Country	Vertical	Department	Status	Summary
Countering Coercion and Collusion: e-Procurement in Bangladesh	South Asia	Bangladesh	Prosperity	Governance	Completed	We examine the impact of baseline e-government procurement and baseline e-government procurement plus a contract management module on the basis of the following outcomes: access and efficiency (for example, bidder number, agency spending concentration, local bidders, and perception of impartiality), cost overrun, delay, unit price, winning rebate, administrative cost, and scandals reported in the media.
Evaluating Interventions to Ensure Women's Safety in Public Transport: Experimental Evidence from Training Service Providers	South Asia	Bangladesh	n.a.	n.a.	Completed	We examine interventions to ensure women's safety in public transportation using experimental evidence from training service providers.
Facebook Ads vs. Malaria: Content and Targeting	South Asia	India	People	Health, Nutrition & Population	Completed	We study entertainment media through content analysis, monitor it to identify trends across time, and evaluate its impact on norms and behaviors in major entertainment hubs, including India, Kenya, and Nigeria. We leverage machine-learning approaches to accelerate the use of these tools in content analysis, monitoring, and evaluation. The activity will support capacity building and the production of open-source tools.
Testing a Norm-Changing Approach to Domestic Violence	South Asia	India	Planet	Agriculture	Design	We evaluate the impact of a norm-changing intervention on the basis of the following outcomes: levels of violence against women in intra-household conflicts and social norms.
Women's Urban Mobility Barriers: Evidence from Delhi's Free Public Transportation Policy	South Asia	India	Infrastructure	Transport	Implementation	Women's mobility is often restricted in developing countries. We examine a policy in Delhi, India, that made public buses free for women and introduced bus marshals. Despite increased female ridership and high awareness, panel survey data from low-income women show no detectable impact on mobility. However, a prior randomized experiment providing a one-month free bus pass to the same group revealed significant and lasting mobility improvements. These findings suggest that individual-level frictions hinder mobility and that personalized interventions can effectively relax these constraints, offering insights for policies aimed at enhancing women's access to public transportation.
Shifting Gears: Unleashing the Potential of South Asia's High-Growth Women Entrepreneurs	South Asia	India	Prosperity	Finance, Competitiveness & Innovation	Completed	India has the world's third-largest start-up ecosystem, yet women-led enterprises remain underrepresented. We examine over 110,000 Indian firms to assess barriers faced by women-led start-ups. Women encounter higher entry costs and favor high-growth sectors, limiting gains from emerging industries. Despite strong networks, they struggle to secure investments. However, once past initial barriers, women are more likely to receive early-stage funding and achieve successful exits. Women-led start-ups also enhance female participation in the ecosystem. These findings highlight challenges and opportunities, informing policies to foster a more inclusive and gender-equal entrepreneurial landscape in India.
Debiasing Law Enforcement Officers: Evidence from an Expressive Arts Intervention in India	South Asia	India	Prosperity	Institutions	Implementation	Gender bias in law enforcement remains a critical challenge with limited evidence on effective solutions. We evaluate a novel training program using expressive arts pedagogy to enhance male police officers' skills related to GBV in Bihar, India. An RCT across 419 police stations trained senior officers in group sessions. Assessments of victim-blaming attitudes, empathy, and knowledge of GBV law, along with a decoy experiment, showed improved empathy and truthfulness and reduced discrimination toward low-caste women. The program also enhanced female officers' decision-making roles and workplace well-being, offering insights for gender-sensitive policing reforms.
Impact Evaluation of the Andhra Pradesh Rural Poverty Reduction Project	South Asia	India	Planet	Agriculture & Food	Completed	We measure the impact of women's group formation, social mobilization, savings and credit, and skills formation on the basis of the following outcomes: consumption, assets, education, health, empowerment, and access to programs.
Measuring Violence Against Women in Public Spaces: Drawing on Experimental Evidence	South Asia	India	People	Social Protection	Implementation	We assess the impact of a novel policing program in Hyderabad on preventing GBV. The Safety, Health, and Environment Program enhances police patrol interventions at hot spots to deter GBV. We evaluate whether increased police presence improves women's safety and influences their beliefs and choices regarding mobility and labor force participation.

Title	Region	Country	Vertical	Department	Status	Summary
Using Safety Technology to Improve Training Opportunities and Labor Force Participation for Women	South Asia	India	People	Social Protection	Analysis	We examine how perceptions of safety are formed and their impact on various aspects of women's lives. We explore the role of wearable technology in measuring the incidence of GBV and changes in public safety for women. We also assess whether these devices influence women's labor force participation, reduce gender inequalities in wages and opportunities, and improve job performance and psychological well-being in low-skill science, technology, engineering, and mathematics careers.
Benefits of Drip Irrigation	South Asia	India	Planet	Water	Implementation	We assess the impact of drip irrigation for groundwater-based dry season cultivation in southern India on the basis of the following outcomes: irrigated area, pumping hours, yield, crop profits, and farm income.
Punjab: Impact Evaluation on Rural Water Supply and Sanitation	South Asia	India	Planet	Water	Implementation	We assess the impact of the construction of sewerage schemes for facilitating behavioral change to improve the use of sewers to convey wastewater on the basis of the following outcomes: incidence of waterborne, water-washed, water-related, and excreta-related diseases; children's nutritional outcomes; educational outcomes; beneficiary households' income; and open-defecation-free status.
Anticipatory Action Shock Response: Nepal	South Asia	Nepal	People	Social Protection	Implementation	Based on a database of 130,000 vulnerable households verified by WFP, we are implementing an RCT to assess the impact of anticipatory cash transfers across several countries in Asia, including Nepal. Households will be randomly assigned to receive support either before, shortly after, or 2.5 months after a flood peak. We will track 6,000 households to analyze how transfer timing affects recovery, with at least three follow-up data collection activities. Our findings will inform strategies to enhance resilience and response efficiency in disaster-prone areas.
Evaluation of Agricultural and Food Security Project	South Asia	Nepal	Planet	Agriculture & Food	Completed	We examine the impact of agricultural technology adoption and the dissemination of information on best-practice nutrition for children and pregnant women on the basis of the following outcomes: improved agricultural productivity and improved nutritional practices for mothers and pregnant women.
Food and Nutrition Security Enhancement Project	South Asia	Nepal	Planet	Agriculture & Food	Completed	The Food and Nutrition Security Enhancement Project aims to improve the agricultural productivity and food security of smallholder farmers in Nepal. The project forms FFSs to provide training on climate-smart agricultural practices and livestock rearing and help farmers access key inputs. We use an RCT to measure the impact of FFSs on farmers' learning, adoption of new agricultural practices, and, ultimately, their food security and income.
Nepal's Export Incentive	South Asia	Nepal	Prosperity	Macroeconomics, Trade & Investment	Completed	We examine the impact of a cash incentive scheme provided to exporters of 30 products, conditional on complying with a threshold of domestic value added and exporting to countries other than India, on the basis of the following outcomes: export growth in high value added products, diversification to markets other than India, and firm entry into exporting targeted products.
Complementarities of Irrigation and Extension Services	South Asia	Nepal	Planet	Water	Completed	We assess the impact of the modernization of irrigation canals and agricultural extension on the adoption of promoted technology and yield. We randomly assign the extension training schedule to eligible farmer groups to test whether farmer groups that have the biggest expected changes from irrigation have the biggest responses to irrigation.
Pakistan: Estimating Poverty from the Sky	South Asia	Pakistan	Infrastructure	Transport	Completed	We seek to estimate the impacts of economic corridor investments on transport costs, market integration, pollution, and local economic development. We built a comprehensive data system, leveraging high-frequency satellite imagery and combining it with existing data on firms and households to document micro-level impacts of the infrastructure changes.
Improving Bureaucratic Information in the Civil Service of Pakistan (a)	South Asia	Pakistan	Prosperity	Institutions	Design	We evaluate the impact of an information and communication technology (ICT) platform with virtual engineering assessments of public sector projects. We seek to understand the mechanisms through which the ICT network has impact and which kinds of information are useful and likely to have the largest impacts.

Title	Region	Country	Vertical	Department	Status	Summary
Evaluation of Pakistan Poverty Alleviation Fund Partner Organizations: National Rural Support Programme and Movement for Rural Development Organization Using Inclusion and Governance Mandates to Increase Accountability in Participatory Development	South Asia	Pakistan	Prosperity	Governance	Analysis	We assess the impact of women-inclusion mandates and ratification in village-level grant management on the basis of the following outcomes: type and location of public goods built and attitudes and behavior of women as leaders.
Improving Bureaucratic Information in the Civil Service of Pakistan (b)	South Asia	Pakistan	Prosperity	Governance	Completed	We measure the impact of an ICT platform with virtual assessments of public sector schools. We seek to understand the mechanisms through which the ICT network has impact and which kinds of information are useful and likely to have the largest impacts.
Training Effective Altruism	South Asia	Pakistan	Prosperity	Governance	Completed	We randomize trainings for deputy ministers according to different schools of thought about cultivating prosociality. We find that training ministers in the utilitarian value of empathy resulted in 0.4–0.6 sigma greater altruism, cooperation, coordination, and teamwork. Treated ministers increased mentalizing of others, not only in strategic dilemmas measuring theory of mind but also in the field: orphanage visits, volunteering in impoverished schools, and blood donations roughly doubled, but blood donations only increased when the blood bank requested a minister's exact blood type.
Training Policy Makers in Econometrics	South Asia	Pakistan	Prosperity	Governance	Completed	We provide experimental evidence that training policy makers in the school of thought associated with the credibility revolution increases demand and responsiveness to causal evidence.
Carrots or Sticks: The Impact of Incentives and Monitoring on the Performance of Public Extension Staff	South Asia	Pakistan	Prosperity	Poverty & Equity	Implementation	We measure the impact of performance-based incentives, with credible monitoring, on the basis of the following outcomes: extension staff outreach to farmers (small farmers in particular); farmer feedback on extension staff availability and information quality; and improvement in cropping practices, technology adoption, and, ultimately, crop yields.
Pakistan: Impact Evaluation	South Asia	Pakistan	People	Social Protection	Completed	We estimate the impacts of biometric verification systems (BVS) on early-adopter districts using administrative data and a quasi-experimental approach. We estimate the broader impacts of BVS on efficiency, targeting, leakage, ease of access, and female empowerment using a phased-in RCT of the rollout of BVS in the remaining districts and test complementary solutions that could improve service delivery.
Understanding the Impacts of Central Asia Regional Economic Cooperation Corridor Investments in Pakistan on Connectivity and Local Economic Development	South Asia	Pakistan	Infrastructure	Transport	Implementation	We examine the impact of economic corridors in Pakistan on regional integration, transport and logistic costs, firms and job creation, household welfare, and air quality. We address the distributional impacts of the investments within Pakistan, paying attention to regional inclusivity. We look at the heterogeneous effects of the road infrastructure projects for firms in sectors that produce goods with different sensitivity to transport costs and with different exposure to global trade.
Impact Evaluation of a Land Certification Program	Western & Central Africa	Benin	Planet	Agriculture & Food	Completed	We examine the impact of a large-scale land rights formalization program, which included community identification and demarcation of all parcels and legal documentation of customary land ownership, on the basis of the following outcomes: agricultural investments and production.
Benin Apprenticeship Impact Evaluation	Western & Central Africa	Benin	People	Jobs	Design	We examine the impact of the dual apprenticeship system on the economic inclusion of vulnerable youth and the costs/benefits for firms and apprentices of including a complementary intervention to support master artisans.
Impact Evaluation of the <i>Entreprenant</i> Status in Benin	Western & Central Africa	Benin	Prosperity	Macroeconomics, Trade & Investment	Completed	We examine the impact of the introduction of the <i>entreprenant</i> status (a simplified legal regime for small, informal businesses to enter the formal economy) on the basis of the following outcomes: formalization, business performance, business skills, accounting systems, level of trust, access to new markets, level of advertising, access to banking, tax payments, investment, employment, and standards of living.

Title	Region	Country	Vertical	Department	Status	Summary
Incentivizing Social Learning for the Diffusion of Climate-Smart Agricultural Practices	Western & Central Africa	Burkina Faso	Planet	Agriculture & Food	Analysis	We test the effectiveness of subsidizing the adoption of sustainable land management practices (SLMPs) in the context of a cascade training program, in which some farmers are trained in SLMP implementation and are expected to disseminate their knowledge through their social networks. We find that within one agricultural season, peers of trained farmers ask for advice more frequently and adopt significantly more SLMPs when offered financial payments conditional on adoption.
Protecting Livelihoods and the Environment: Sustainable Forest Management in Burkina Faso	Western & Central Africa	Burkina Faso	Planet	Environment, Natural Resources & Blue Economy	Completed	We analyze the impact of a package of interventions on forest cover changes in 12 gazetted forests, using synthetic control as the main identification strategy. In addition, we examine how contract design options affect the effectiveness of PES. We test this in the context of payments for reforestation activities, in which contracts are signed with communities to care for newly planted trees.
Municipal Performance Scorecards in Burkina Faso	Western & Central Africa	Burkina Faso	Prosperity	Governance	Completed	We test whether municipal governments can be nudged to fix performance issues in public service delivery by informing decision-makers about specific performance shortfalls and facilitating the internal assignment of responsibilities. We developed an annual municipal government performance monitoring system. Local decision-makers were provided with a scorecard that explained performance standards and actual performance on service delivery and institutional capacity.
Citizen Observers at Municipal Councils in Burkina Faso	Western & Central Africa	Burkina Faso	Prosperity	Governance	Implementation	We examine the impact of personal invitations to municipal council meetings for individual citizens on the basis of the following outcomes: citizens' civic participation, interest in and knowledge of local governance, and public trust; municipal councillors' attendance and speaking behavior at council meetings and their ability to communicate their agenda and responsibilities to citizens; and basic municipal service delivery. This is a low-cost, replicable intervention designed to increase accountability between local politicians and their constituents.
Partnerships with Community-Based Organizations to Improve Municipal Government Performance in Burkina Faso	Western & Central Africa	Burkina Faso	Prosperity	Governance	Completed	We test whether community-based organizations can be incentivized to lobby for better municipal services by creating a financial stake in the municipality's performance. The idea is to build on existing high-functioning local collective action structures, such as hometown associations, savings groups, farmer cooperatives, and other membership-based organizations. We assess whether this is an effective means of improving municipal service delivery.
Optimizing for Scale: Economic Inclusion for Urban Youth in Cameroon	Western & Central Africa	Cameroon	People	Social Protection	Design	We assess how to optimize an economic inclusion intervention for vulnerable urban youth to inform its scale-up by government agencies. First, we assess the effectiveness of a multifaceted package for improving urban youth employment, earnings, savings, and investment in income-generating activities. Second, we assess the characteristics of front-line providers (trainers/coaches) who affect the quality of program delivery and have the highest value added on youth outcomes. Third, we test the optimal design of a multifaceted intervention package, including by documenting the marginal impacts (value added) and joint effects of key components, such as digital savings promotion, cash grants in one or two installments, high-touch or light-touch coaching, and enhanced market linkages through mentoring by successful microentrepreneurs.
Côte d'Ivoire Public Works Impact Evaluation	Western & Central Africa	Côte d'Ivoire	People	Education	Completed	We measure the impact of labor-intensive public works and related graduation strategies on employment, earnings, and risky behavior among youth.
Côte d'Ivoire Apprenticeship Impact Evaluation	Western & Central Africa	Côte d'Ivoire	People	Education	Completed	We assess the impact of the provision of formal apprenticeships on the basis of the following outcomes: employment and earnings (among youth) and workforce, intake of apprenticeship, value of work, and profits (among firms).
Côte d'Ivoire Evaluation of Apprenticeship	Western & Central Africa	Côte d'Ivoire	People	Education	Design	We assess how supply and demand for apprenticeships vary when different components of a subsidized dual apprenticeship program are presented to youth and mastercraftspeople.
Côte d'Ivoire Microentrepreneurship and Social Cohesion Impact Evaluation	Western & Central Africa	Côte d'Ivoire	People	Social Protection	Completed	We assess an intervention seeking to improve livelihoods for vulnerable groups in post-conflict Côte d'Ivoire. The intervention provides capital and training and encourages social cohesion. We test the overall effectiveness of the integrated package, as well as the relative cost-effectiveness of alternative instruments to relax capital constraints: cash grants, semi-credit, and village savings and loan associations.

Title	Region	Country	Vertical	Department	Status	Summary
School-Based Programming Impact Evaluation: Gambia	Western & Central Africa	Gambia, The	People	Education	Implementation	We assess the impact of expanding a homegrown school feeding program in The Gambia, implemented through the Global Agriculture and Food Security Program (GAFSP), on the basis of the following outcomes: children's nutrition, health, education, and learning; girls' well-being; and household consumption and food security in the presence of shocks. We also evaluate the impact of school feeding procurement systems on local economies.
Evaluating Efficient Ways to Promote Sustainable Land and Water Management and Payments for Environmental Services in Ghana	Western & Central Africa	Ghana	Planet	Environment, Natural Resources & Blue Economy	Completed	We assess the impact of a program designed to encourage sustainable land and water management through agricultural extension and a new PES scheme for farmers on the basis of the following outcomes: adoption of SLMPs, awareness of the environmental impacts of technologies, and sustained use of behaviors promoted through PES.
Assessing Civil Service Training in Ghana	Western & Central Africa	Ghana	Prosperity	Governance	Completed	We assess the Training for Productivity Project, the focus of which is to improve the capacity of the Ghanaian civil service by implementing novel individual and group-based training methods for public servants. The training programs were experimentally implemented as part of a standard package of training sessions coordinated by the Office of the Head of Civil Service and the Civil Service Training Centre of Ghana.
Guinea-Bissau Rural Transport Project: Impact Evaluation on Women's Access to Essential Services and Economic Opportunities	Western & Central Africa	Guinea-Bissau	Infrastructure	Transport	Implementation	We help quantify the impact of better road infrastructure for women and will provide policy makers in Guinea-Bissau with clarification about whether the infrastructure is leading to equitable access for all or whether additional interventions are necessary to increase the impact of road rehabilitation for women. We also test whether investment in a complementary policy (feeder roads connected to the main trunk road) can help magnify the wider economic benefit of the road project.
Impact Evaluation of Smallholders Agricultural Productivity and Commercialization	Western & Central Africa	Liberia	Planet	Agriculture & Food	Completed	We measure the impact of subsidized delivery of agricultural inputs on food security and agricultural revenue, with a particular emphasis on youth. Within the sample, farmers of varying ages were offered subsidized seeds and tools and also sent an SMS-based e-voucher enabling them to buy rice or fertilizer. We study the impact of these inputs on household outcomes and test whether youth or more experienced farmers are better targets for similar programs.
Elections and Collective Action	Western & Central Africa	Liberia	Prosperity	Governance	Completed	We examine the impact of introducing elections in traditional settings on the basis of the following outcomes: voting, community meeting attendance, political and community leader contacts, collective action and trust participation, and governance procedures. We find that the introduction of elections for clan chiefs has little effect on community- and national-level political participation but that it increases contentious collective action and lower levels of contribution to public goods.
Experimental Evidence on United Nations Mission in Liberia Radio's Electoral Programs and Female Political Participation in Rural Liberia	Western & Central Africa	Liberia	Prosperity	Governance	Completed	We measure the impact of rural women's organizations' listening to the United Nations Mission in Liberia (UNMIL) Radio's electoral programs in a series of weekly group listening sessions on women's political attitudes and participation. We find significant positive effects on female political participation arising from access to UNMIL Radio at both the national and the local level. Communities that received the intervention also exhibited smaller gender gaps across the majority of outcome indicators.
Promoting Democracy in Fragile States: Behavioral and Experimental Evidence from Liberia	Western & Central Africa	Liberia	Prosperity	Governance	Completed	We examine the impact of different strategies to promote democracy in fragile states on the basis of the following outcomes: voting in the 2011 elections, contributions to a political campaign, contacts with a government agency or official, community meetings, and peaceful protest attendance. We find that civic education increased enthusiasm for electoral participation, produced a coordinated shift from parochial to national candidates, and increased willingness to report on manipulation. An intervention combining the civic education and security committees had similar effects. The security committee's program produced a modest reduction in parochial voting.
Promoting Political Participation in War-Torn Countries: Micro-Level Evidence from Postwar Liberia	Western & Central Africa	Liberia	Prosperity	Governance	Completed	We measure the effects of UNMIL operations (military and nonmilitary) on the political participation of ordinary Liberians after civil war. We find positive effects on political participation, with most effects concentrated around measures associated with participation in national politics and political efficacy. We also find that self-reported measures of citizens' interactions with UNMIL personnel and exposure to human rights campaigns are strongly associated with political participation.

Title	Region	Country	Vertical	Department	Status	Summary
Measuring the Effect of Extrinsic and Intrinsic Factors in Improving Performance in the Public Sector	Western & Central Africa	Liberia	Prosperity	Governance	Completed	We examine the impact of improved methods of appraisal and promotion within the civil service by the Employment Services Department of the Civil Service Agency on the basis of the following outcomes: quality of civil servants' appraisals and corresponding promotions and motivation of civil servants within the affected organization.
Liberia Youth Opportunities Project	Western & Central Africa	Liberia	People	Social Protection	Implementation	We assess the impact of cash grants to youth with and without skills-development opportunities (such as opportunities to develop psychosocial skills or basic business skills and apprenticeships) on the basis of the following outcomes: employment, income, consumption, and well-being.
Liberia Road Safety Impact Evaluation	Western & Central Africa	Liberia	Infrastructure	Transport	Design	We aim to build evidence about which road safety interventions are most effective in Liberia and to inform policy decisions. This evidence may include estimates of the change in safe driving behavior and road crashes and injuries when different road safety interventions are implemented, the change in the effect when interventions are implemented as a package, and the size of the spillover effects.
Sahel Shock-Responsive Cash Transfers in Mauritania, Niger, and Senegal	Western & Central Africa	Mauritania; Niger; Senegal	People	Social Protection	Implementation	We measure the relative effectiveness of early responses to drought (providing temporary cash transfers after the weather shock but before the peak impact on household food security and welfare) versus traditional responses to drought (providing temporary cash transfers at the peak of the food insecurity crisis).
Enhancing Apprenticeship Programs Impact Evaluation	Western & Central Africa	Nigeria	People	Education	Implementation	We investigate a dual apprenticeship intervention under the IDEAS project to understand how policy interventions can enhance apprenticeship programs by identifying the needs and priorities of firms and mastercraftspeople and developing training curricula for mastercraftspeople and youth.
Detecting and Reducing Hate Speech Through Twitter Social Influencer Campaigns	Western & Central Africa	Nigeria	Prosperity	Governance	Implementation	We study social influencer campaigns to target networks (not individuals) aimed at reducing hate speech on Nigerian Twitter. Our research is facilitated by access to data on individual users' posts and their social ties.
Impact Assessment of Financial Literacy	Western & Central Africa	Nigeria	Prosperity	Finance, Competitiveness & Innovation	Completed	We examine the impact of a financial education movie and the opportunity to open a microsavings account on the basis of the following outcomes: perceptions, trust, intentions to save/borrow from formal institutions, and saving and borrowing behavior.
Growth and Employment Impact Evaluation	Western & Central Africa	Nigeria	Prosperity	Finance, Competitiveness & Innovation	Completed	Many small firms lack the finance and marketing skills needed for growth. A standard approach is to train the entrepreneur in these skills. An alternative is to link firms to these skills in a marketplace through insourcing workers or outsourcing tasks to professionals. We test the relative effectiveness of these approaches.
Changing Norms and Behaviors Through Entertainment TV: Impact Evaluation of the MTV Series <i>Shuga</i>	Western & Central Africa	Nigeria	People	Health, Nutrition & Population	Completed	We evaluate the impact of community screenings of the TV drama <i>MTV Shuga</i> on the basis of the following outcomes: knowledge, attitudes, and behavior related to HIV/AIDS and GBV. We use an RCT to study spillovers and, experimentally, the mediating factors of social norms and peer effects.
Mafita Skills Program: A Randomized Controlled Trial of Apprenticeship Schemes in Northern Nigeria	Western & Central Africa	Nigeria	People	Social Protection	Completed	We measure the impact of the Mafita apprenticeship program in northern Nigeria's Kano state, in which youth trained with mastercraftspeople to develop trade-specific skills. We find that the apprenticeship program had strong positive effects on participants' employment, productivity, job search behaviors, and economic welfare. We also find mixed evidence of impact on nonmaterial outcomes, mainly positive outcomes on social networks and self-esteem for female participants. We do not find evidence of impact on crime and violence outcomes.
Mafita Skills Program: A Randomized Controlled Trial of Community Skills-Development Centers in Northern Nigeria	Western & Central Africa	Nigeria	People	Social Protection	Completed	We examine the impact of the Mafita community skills-development center (COSDEC) program in the Kduna and Katsina states, in which youth were provided vocational and technical training aimed at developing trade-specific skills through a classroom-based approach. We find that the COSDEC program had strong and positive effects on participants' employment, productivity, entrepreneurship behavior, and economic welfare. We also find mixed evidence of impact on nonmaterial outcomes, mainly positive outcomes on social networks and subjective well-being by female participants. We also find that the program improved attitudes toward female empowerment among both youth participants and their caregivers. We do not find evidence of impact on crime and violence outcomes.

Title	Region	Country	Vertical	Department	Status	Summary
Efficiency of Informal Transit Networks: Evidence from Lagos, Nigeria	Western & Central Africa	Nigeria	Infrastructure	Transport	Completed	We evaluate the impacts of the Bus Reform Initiative, which introduced a formal bus system with 820 high-capacity vehicles operating across 50 routes in Lagos, in collaboration with Lagos State authorities. We examine how the existing informal transportation system responds to competition from the expanding formal system, generating policy-relevant insights on an understudied area of urban transportation economics.
Senegal Behavior Change Campaign and Solar Lights Evaluation	Western & Central Africa	Senegal	Infrastructure	Energy & Extractives	Completed	We assess the impact of a radio campaign, a radio campaign in combination with a community campaign, and the provision of pico-photovoltaic (pico-PV) lighting products on the basis of the following outcomes: applications of the pico-PV unit, operation and maintenance knowledge, product recognition, quality perceptions, purchasing decisions, and benefits of pico-PV.
Senegal Solar Lights Quality Assurance and Guarantee Impact Evaluation	Western & Central Africa	Senegal	Infrastructure	Energy & Extractives	Completed	We analyze measures to overcome the problem of asymmetric information, a significant issue in the solar lighting market in rural Senegal. We test different approaches that can help consumers better assess the quality of solar lighting products, including providing households with direct information about product quality or offering the chance to purchase a solar lighting product with a money-back guarantee.
Quality Signaling and Consumer Demand for Renewable Energy in Senegal	Western & Central Africa	Senegal	Infrastructure	Energy & Extractives	Analysis	We test approaches that help rural consumers better distinguish quality differences between different lighting products. We test the importance of constraints to demand by providing consumers with the option to buy a high-quality solar lantern and combining this with either a third-party quality guarantee, a two-year warranty to address durability uncertainty, or a money-back guarantee to address uncertainty in product utilization potential. Finally, we assess how these interventions affect demand.
Impact Evaluation of Methane Emissions from West Africa's Largest Landfill	Western & Central Africa	Senegal	Planet	Environment, Natural Resources & Blue Economy	Implementation	We seek a rigorous baseline quantification of methane emissions from Mbeubeuss, the largest landfill in West Africa, which spans approximately 115 hectares. Specially, we combine data collected through ground-based direct measurement and other remote-sensing campaigns to assess the extent of damage caused by methane.
Relieving Capital Constraints for Rice Farmers: Warehouse Receipts System	Western & Central Africa	Senegal	Prosperity	Finance, Competitiveness & Innovation	Completed	We study the effects of introducing a warehouse receipts system (WRS) in the rice sector. We assess farmers' access to collateral and finance, agricultural sales, storage, and income. Our findings suggest that the implementation of an effective WRS warrants careful consideration of cost factors and expected price arbitrage opportunities to ensure farmers benefit.
Group Incentives for the Public Good: A Field Experiment on Improving the URS/URL Environment	Western & Central Africa	Senegal	Prosperity	Governance	Completed	We investigate the impact of an intervention that provides nonmonetary incentives to local community-based organizations to improve and maintain the cleanliness of public spaces and drainage infrastructure in peri-urban Dakar. Our results show that households in intervention areas were less affected by flooding in the past rainy season and that the intervention decreased illness due to flooding. This suggests that community engagement can be an important tool in resolving collective action problems in urban settings.
The Speed of Justice, 2013 Reform	Western & Central Africa	Senegal	Prosperity	Macroeconomics, Trade & Investment	Completed	We study the impact of a procedural reform on the efficiency and quality of adjudication in Senegal. The reform gave judges the duty and powers to conclude pretrial proceedings within a four-month deadline. Our analysis found a reduction in procedural formalism, as the length of the pretrial stage decreased and the number of case-level pretrial hearings was reduced, while judges were more likely to impose deadlines.
The Speed of Justice, Pop-Up Reminders	Western & Central Africa	Senegal	Prosperity	Macroeconomics, Trade & Investment	Completed	We assess the impact of a reminder pop-up window displaying the number of ongoing cases and their treatment duration to judges on the basis of the following outcomes: trial duration, split along steps in the legal chain, hearing-level decisions and actions, firm perception of the justice system, and firm outcomes.
Effects of Large Transportation Infrastructure Projects on Worker Well-Being	Western & Central Africa	Senegal	Infrastructure	Transport	Implementation	We examine the welfare of individuals employed in the construction of large infrastructure projects. Set in the context of a large African city with a relatively high level of unemployment or employment informality, our findings will be relevant for future phases of infrastructure expansion in Senegal and other developing countries.
Measuring and Enhancing Mobility in Dakar	Western & Central Africa	Senegal	Infrastructure	Transport	Implementation	We bring together different types of data to quantify the impact of large infrastructure projects in Dakar on a variety of important indicators, such as urban mobility, commuting patterns, congestion, air quality, housing prices, gentrification, and road safety.

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The Social Costs and Benefits of Infrastructure Construction: Air Pollution and Bus Rapid Transit in Dakar	Western & Central Africa	Senegal	Infrastructure	Transport	Implementation	We pilot a new data system to collect air quality data throughout Dakar during both the construction and operation phases of bus rapid transit (BRT) development. This allows for comprehensive measurement of the effects of building public transportation infrastructure on the quality of the air breathed by the population. In particular, we focus on measuring anticipated pollution increases during construction and decreases during the operational phase.
Impact Evaluation of the Productive Social Safety Nets and Youth Employment Project	Western & Central Africa	Sierra Leone	People	Social Protection	Design	We assess the socioeconomic impacts of the Productive Social Safety Nets and Youth Employment Project of the Government of Sierra Leone, which was implemented by the National Commission for Social Action with support from IDA. We investigate how cash transfer and poverty graduation programs affect household resilience in terms of food security, consumption, assets and savings, and income diversification.