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Development Economics

Knowledge for Inclusive Development

Pioneering Evidence-Based Solutions to Protect Vulnerable Populations and Connect Lagging Regions

THE KNOWLEDGE FOR CHANGE PROGRAM
2024 ANNUAL REPORT



KnowledgeFOR**Change**

Knowledge for Change Program

2024 Annual Report

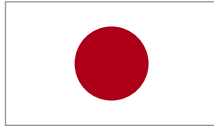
October 2024

Development Economics Vice Presidency of the World Bank

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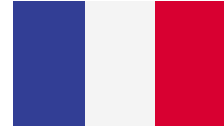
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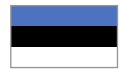
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Message from the World Bank Group Chief Economist

The past year was marked by the acute challenges of fiscal vulnerabilities, conflicts, and geopolitical tensions. Many countries shifted their attention from long-term development priorities to immediate needs, such as debt repayments and humanitarian responses. Amid these urgencies, the KCP remained steadfast in its mission to lead the way in generating knowledge that helps policy makers to improve the quality of their responses to these crises and drive meaningful actions on the ground, especially for the most vulnerable.

Knowledge helps to amplify the voices of those who would be left unheard and sheds light on communities that are remote, hidden, or disregarded. This year, the KCP produced another set of impressive research, data, and analytical products, focusing on the conditions of vulnerable populations and marginalized communities. Our teams worked to uncover overlooked dimensions of the lives of displaced persons, gender minorities, and refugee children and endeavored to enhance our understanding of the drivers of shared prosperity for subnational economies.

The World Bank predicts that by 2030, nearly 60 percent of the world's extreme poor will reside in fragile and conflict-affected areas. Although tremendous development resources have been poured into supporting these vulnerable populations, most assistance is limited to improving their basic economic conditions. KCP-financed research projects go beyond examining the impacts of emergency responses or monetary material support—they study emotional and psychological well-being, tendencies of gender-based violence, and long-term aspects of cultural integration. In one instance, the analysis underscores the profound role that psychosocial conditions play in



Indermit Singh Gill

CHIEF ECONOMIST OF THE WORLD BANK
GROUP AND SENIOR VICE PRESIDENT
FOR DEVELOPMENT ECONOMICS

a refugee's journey. It demonstrates that instead of direct cash transfers, paid work through employment is a more effective instrument that helps to elevate refugees' life satisfaction and self-worth. The study shows that the effects are much larger for women, who experience four times more benefit from paid work than cash transfers, compared to men. These analyses accentuate the importance of addressing the human dimension of development in addition to economic considerations, and we have a pipeline of analytical efforts devoted squarely to these issues.

Knowledge also helps to accentuate places that are glossed over by policy makers, such as lagging regions, rural areas, or second tier cities. This year, the KCP delved deeply into how to connect better and ignite marginalized communities, particularly at the subnational level. The analyses are informing policy debates on effective interventions to propel economic growth in places that are sometimes excluded from mainstream policy dialogues and those that suffer from spatially biased distortions. For example, one project investigated the size and effectiveness of subnational fiscal multipliers in developing countries. It found that in Brazil, cash transfers can significantly boost state-level gross domestic product and employment, particularly in non-traded sectors, stimulating local economies more than previously thought.

By combining geocoded firm-to-firm transaction data, household surveys, and transportation data, another project revealed new insights on regional disparities. In Honduras, the team discovered that firms in export-oriented regimes are more connected to local suppliers than expected. The project showed that in Rwanda, feeder road improvements have reduced transportation costs, but they have yet to show major economic transformation, leading to policy dialogues on the efficiency of investments in feeder roads. As we weave together various components of this strand of research into a summative volume in the coming year, greater emphasis will be placed on concrete recommendations for policy implementation, including issues related to fiscal federalism and government capacities.

Underpinning all the analytical efforts is our relentless pursuit of better measurements, more precise indicators, and data innovation. Our teams are combining traditional data sources, such as household surveys, with geospatial data and exploring how best to employ artificial intelligence (AI)-powered interventions for better development outcomes. For example, a project employed large language processing models to help to reduce the bias in qualitative, subjective narrative analysis, offering a more nuanced understanding of well-being. In the coming years, the World Bank will conduct a critical re-examination of how poverty and well-being are conceptualized, defined, and measured. The KCP is helping to plant the seeds of knowledge in this work by supporting research on subjective well-being, intrahousehold poverty, and efforts to aggregate indicators geographically into multidimensional measures of well-being.

The KCP stands at the critical juncture of knowledge and action. In the coming year, the KCP will zero in on targeting resources at high-impact themes, such as climate compatible development, private capital mobilization, and AI for development. It will significantly ramp up policy engagement efforts by convening a global network of knowledge generators and brokers to translate insights into practical strategies through the World Bank Institute for Economic Development.

As always, we are grateful for the crucial financial support provided by KCP IV's development partners—the European Commission, Sweden, France, and Japan. We look forward to their continued collaboration and welcoming new friends into the KCP family next year.

Here's to another year of impactful research!

Indermit Gill

Chief Economist of the World Bank Group and
Senior Vice President for Development Economics
The World Bank

About the KCP

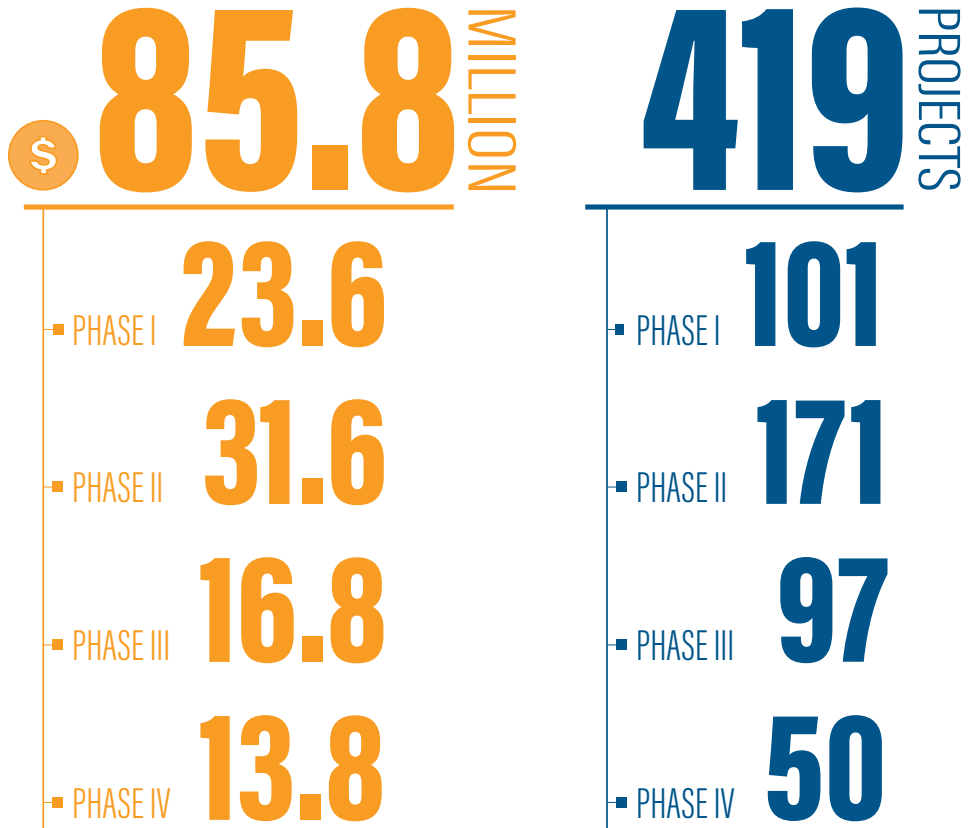
Vision and Mission

The Knowledge for Change Program (KCP) is an umbrella multi-donor trust fund that delivers high-impact, policy-relevant research and knowledge products aimed *at expanding the knowledge frontier in development policy and practice*. Housed in the Development Economics Vice Presidency of the World Bank, the KCP commenced its operation in 2002 and has invested more than US\$86 million in 495 projects on research, data, and analytics across four phases of operations.

The KCP started as a pilot idea to carry out seminal research in important areas for poverty reduction and sustainable development by pooling limited intellectual and financial resources. Over the years, KCP projects have helped to *inject fresh thinking, challenge conventional wisdom, and chart new courses in the policy and practice of international development* by investigating systemic challenges and unraveling complex situations.

For project selection, the KCP meticulously balances addressing urgent issues with achieving long-term objectives. It navigates the complex challenge of research management by anticipating topics early enough to produce relevant findings when needed, while also responding swiftly and adjusting in real-time to emerging urgent challenges. This balance between long-term and short-term goals allows the KCP to instill a holistic perspective in its research endeavors, offering evidence-based insights on analytical and policy issues and fostering a comprehensive reorientation in development methodologies.


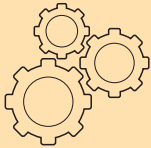

FIGURE 1: KCP's Financial Investments and Numbers of Projects in Its Four Phases of Operation



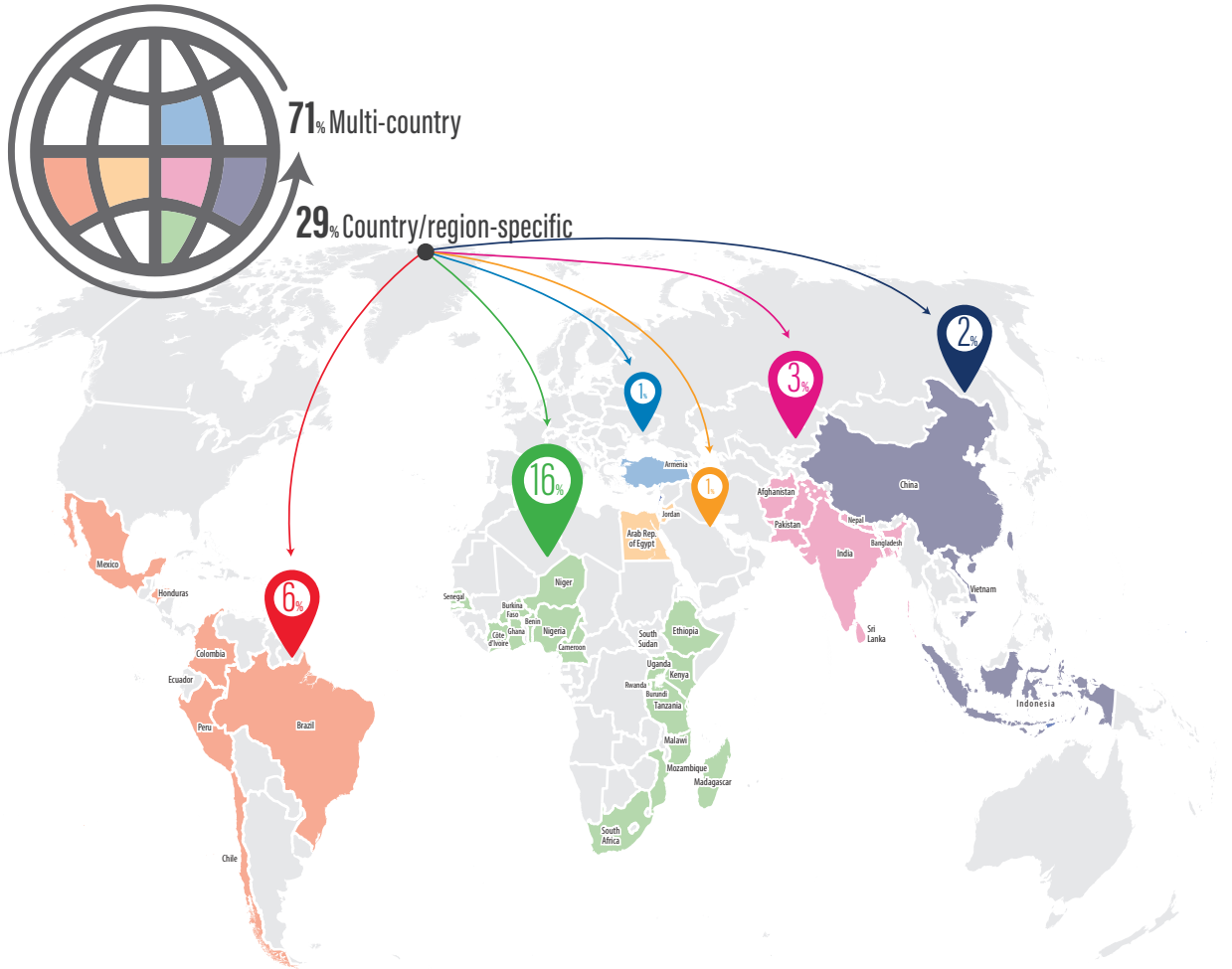
Source: KCP Program Management Unit.

Main Goals

To achieve its mission effectively, the KCP has three main goals:

	<p>ORIGINAL RESEARCH</p> <p>Producing rigorous, high-quality fundamental research and data in support of evidence-based policy making in development.</p>
	<p>OPERATIONAL RELEVANCE</p> <p>Transforming evidence, data, and insights into tangible policy change.</p>
	<p>OPEN KNOWLEDGE</p> <p>Facilitating knowledge flows and integration through partnerships and capacity building.</p>

MAP 1: Geographical Distribution of the KCP Project Implementation Areas



Source: KCP Program Management Unit.



About the Report

The 2024 Annual Report of the Knowledge for Change Program (KCP) has five sections. The first section explores the significant achievements of the KCP in 2024, including selected partnership engagements. The second section provides detailed summaries of completed and ongoing KCP IV projects, offering insights into progress, innovations, and policy impacts. The third section takes a long-term view of the effectiveness of research, tracking the progressive impact of some of the KCP's long-term projects. The fourth section outlines the KCP's future strategic priorities and what to expect in the next fiscal year. The report concludes with an overview of the 2024 funding allocation results and the KCP's current financial outlook.

KCP IV in Numbers



KCP Around the World

The role of research in driving progress and policy innovation is undeniable. However, the true impact of research is realized only when its discoveries are effectively communicated to and adopted by the public and key stakeholders. Over the past year, the KCP continued to prioritize public engagements, organizing and supporting a series of events designed to bridge the gap between cutting-edge research and its practical applications. These events fostered a collaborative environment where researchers, policy makers, and the public could unite to address global challenges and forge a path toward a brighter future. In fiscal year 2024 (FY2024), the KCP supported 178 events across multiple countries, focused on topical areas including climate, infrastructure, gender, and employment.

Global Development and the Middle-Income Trap

Hosted by the KCP, in partnership with the Stockholm Institute of Transition Economics (SITE), the Swedish International Development Cooperation Agency (Sida), and the Expert Group for Aid Studies (EBA), this event addressed how middle-income countries can drive creative destruction amid economic fragmentation, demographic shifts, and climate change. Held in Stockholm on May 27, 2024, the seminar featured keynote speaker Indermit Gill, Chief Economist of the World Bank Group, and panelists Norman Loayza, Elina Scheja, and Haishan Fu from the World Bank and Sida. Introduced by SITE Director Torbjörn Becker and moderated by EBA's Mats Hårsmar, the event offered valuable insights into how countries can apply the concept of creative destruction in overcoming the middle-income trap.

FIGURE 2: Panel Session at the Global Development and the Middle-Income Trap Event in Stockholm, Sweden



Source: KCP Program Management Unit.

FIGURE 3: Elina Scheja (Left), Chief Economist of the Swedish International Development Cooperation Agency, and Indermit Gill (Right), Chief Economist of the World Bank Group and Senior Vice President for Development Economics, Speaking at the Event



Source: KCP Program Management Unit.

Urbanization and Poverty Reduction Research Conference

FIGURE 4: Urbanization and Poverty Reduction Research Conference Event Flyer



Source: Urbanization and Poverty Reduction Research Conference website.

The 8th Urbanization and Poverty Reduction Research Conference, held on March 7, 2024, in Washington, DC, brought together global experts to discuss innovative solutions for urbanization and poverty challenges. The KCP-supported event highlighted the role of research in sustainable urban development. Key themes included harnessing urbanization to drive poverty reduction and the importance of evidence-based policies. The conference featured presentations, panel discussions, and successful case studies, emphasizing collaboration and networking among stakeholders.

Mapping Energy Efficiency: Launch of the Global Data Set on Building Energy Efficiency Code Effectiveness and Compliance

This event, organized by the World Bank's Global Indicators Group and funded by the KCP, was held on May 20, 2024. It addressed the critical issue of building emissions, which account for a significant portion of global energy consumption and greenhouse gas emissions. The event presented the findings of the new global data set and highlighted the knowledge gap in developing countries on the enforcement of energy efficiency standards in buildings. Discussants explored policy challenges and opportunities for policy makers to enhance regulatory environments and enforcement. The discussions emphasized the need for stronger building codes, increased investment in decarbonization, and sustainable practices, aiming to drive significant reductions in energy consumption. The global dataset was made available at www.worldbank.org/building-green/, and more project details can be found in the project spotlight section of this report.

FIGURE 5: Only 88 Countries Have Adopted and Made Mandatory a Building Energy Code or Building Energy Efficiency Standards in at Least One City



KCP Project Spotlights

This section is organized around three central themes that represent the KCP's strategic priorities in fiscal year 2024:

1. Protecting Vulnerable Populations through Social Equity and Economic Inclusion
2. Catalyzing Development through Growth in Subnational Economies
3. Pushing the Analytical Boundary through Innovative Methodology, Data, and Artificial Intelligence.

Each theme reflects the KCP's commitment to leveraging innovative technology, methodologies, and data-driven insights to promote inclusive, human-centered development. By focusing on these areas, the KCP continues to drive impactful change and generate knowledge that supports equitable, long-term growth for communities in developing regions.

Protecting Vulnerable Populations through Social Equity and Economic Inclusion

The KCP supported a series of projects aimed at advancing research that promotes social equity and economic inclusion, with a particular focus on vulnerable and marginalized groups. This report highlights key initiatives that have generated valuable insights for addressing the challenges faced by displaced populations, refugees, gender minorities, and communities affected by fragility and conflict.

These projects have expanded the discourse beyond material support, emphasizing the importance of psychological, social, and cultural dimensions in shaping aspirations, well-being, and social inclusion. These research efforts provide policy makers with new tools and perspectives for fostering inclusive, resilient, and equitable societies. The following sections showcase selected projects and their contributions.

A Breakthrough Blueprint for Economic Inclusion in Fragile Contexts

PROJECT TITLE: Livelihoods Support for Displaced Persons and Host Populations in a Fragile Context—Impact Evaluation for the World Bank-Funded Niger Refugees and Host Communities Support Project (PARCA)

TASK TEAM LEADER: Chloë Fernandez, World Bank

GEOGRAPHICAL COVERAGE: Niger

GRANT AMOUNT: \$196,750

PROJECT DURATION: September 2018–June 2024

Summary

The evaluation of the Niger Refugees and Host Communities Support Project (PARCA) revealed significant improvements in the livelihoods of displaced populations and host communities in Niger through cash grants and entrepreneurship training. The project's multifaceted economic inclusion model, which combined a cash grant, business skills development, and financial access, effectively increased household income, consumption, and financial well-being. Although

the program fostered social cohesion and trust, tensions arose over shared resources, highlighting the need for tailored approaches to different community groups. These findings are already shaping broader World Bank initiatives and social protection strategies across the Sahel, informing programs such as the Adaptive Social Protection agenda and the Adaptive and Productive Safety Net Project in Chad. The evaluation's insights, which have been shared widely on regional and global platforms, provide critical guidance for future interventions in fragile, conflict-affected settings.

How Can Economic Inclusion Programs Improve Livelihoods in Fragile Contexts?

Fragility and conflict have displaced millions of people worldwide, creating severe challenges for vulnerable populations and the host communities that receive them. This is particularly evident in Niger, which ranks last on the United Nations Human Development Index and faces extreme poverty, with nearly half of its population living below the poverty line. The country has also become a refuge for more than 300,000 displaced people, including refugees, internally displaced persons, and returnees. This influx has placed significant strain on local resources and infrastructure, exacerbating the already fragile conditions. In response, the World Bank launched PARCA in 2018 to address these challenges, focusing on livelihood support through cash-for-work and entrepreneurship initiatives in the Diffa, Maradi, Tillabéri, and Tahoua regions.

This KCP-funded project evaluated the impact of the PARCA entrepreneurship initiative, offering critical insights, knowledge, and an evidence base to assess the effectiveness of its interventions—particularly a \$200 cash grant and micro-enterprise training—in enhancing the socioeconomic and psychological well-being of displaced individuals and host community members. The evaluation also aimed to examine broader community effects, contributing valuable knowledge on economic inclusion in contexts of displacement.

Early results from this evaluation indicate that PARCA made significant strides in improving the livelihoods of vulnerable communities, particularly displaced populations in Niger. The evaluation revealed positive short-term outcomes, with notable improvements in household income, consumption, and financial well-being. The provision of cash grants and business training enabled households to invest in productive assets, leading to increased income-generating activities. Additionally, the program fostered greater generalized trust within communities, contributing to improved social cohesion. However, despite these successes, the program also exposed some challenges. Tensions arose between host and displaced communities, primarily due to competition for shared resources such as water and land. These tensions likely resulted from the large influx of resources into poor communities, where only some households benefited directly.

The program's short-term impacts varied across population groups. Host communities saw more significant improvements in profits from nonfarm activities, while displaced households experienced greater increases in overall income and financial well-being. This suggests that future programs will need to tailor their interventions to meet the specific needs of different groups. Importantly, the evaluation found that the program's benefits extended beyond the direct participants, with positive spillover effects on the broader community. Nonparticipants in the program also reported improvements, likely due to the uplift in local economic activities and infrastructure improvements.

Influence and Dissemination

The results from this impact evaluation have influenced World Bank programs through multiple channels. The project's Concept Note garnered significant attention and was recognized for its alignment with Niger's Country Partnership Framework. Insights from the evaluation have informed key aspects of the World Bank's Social Protection and Jobs agenda and contributed to broader initiatives, such as the Adaptive Social Protection program in the Sahel and the Partnership for Economic Inclusion. Additionally, the evaluation's findings have been integrated into Niger's FY2024 Completion and Learning Review and will guide the development of the next

Country Partnership Framework. These insights are also shaping evidence-based programs designed to amplify impacts in fragile, conflict-affected settings.

The evaluation results have been shared at workshops across the Sahel, including in Burkina Faso, Chad, Mali, and Niger, with World Bank task teams reaching more than 100 participants and extending their influence throughout the region. Furthermore, the findings are already informing the design of new initiatives, such as the Adaptive and Productive Safety Net Project in Chad, which focuses on delivering safety net and economic inclusion interventions to both refugees and host communities, with an emphasis on improving social cohesion.

On a broader scale, insights from the PARCA evaluation are shaping social protection strategies in Sahel countries and are being shared on global platforms, including collaborations with the United Nations High Commissioner for Refugees, the United Nations Children's Fund, and the World Food Programme. This cross-agency dissemination ensures that the lessons learned from PARCA are applied to other fragile, conflict-affected regions.

The PARCA impact evaluation results have been widely disseminated, including through reviews and presentations at various workshops and conferences. These events, such as the Amplifying Impacts in the Sahel Workshop, the Partnership for Economic Inclusion Open House, and the Nordic Conference in Development Economics, have played a key role in sharing findings with global and regional stakeholders, ensuring that the insights contribute to ongoing efforts to support displaced populations in fragile settings.

Learn More

Entrepreneurship support for host and displaced communities: An impact evaluation of the Niger Refugees and Host Communities Support Project. <https://documents1.worldbank.org/curated/en/099062624150011318/pdf/P16909212830e20031a9cb103b0c49f1534.pdf>.

Moving beyond Emergency Material Assistance: Supporting Emotional and Psychological Well-Being for Rohingya Refugees

PROJECT TITLE: The Household at Work: A Field Experiment in the Rohingya Refugee Camps

TASK TEAM LEADER: Erin Kelley, World Bank

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: \$97,700

PROJECT DURATION: March 2020–October 2022

Summary

This study examined the impact of different livelihood interventions using random assignments—paid work, cash transfers, and volunteer activity—on psychosocial well-being and intimate partner violence (IPV). The analysis revealed that paid work significantly improves psychological well-being for both men and women more effectively than cash transfers or unincentivized volunteer activity. In addition, the positive effects on IPV were larger when men were targeted with the interventions. The findings highlight the importance of providing livelihood opportunities amid the increase in protection incidents across the camps in Cox’s Bazar.

The Rohingya refugee influx created a major humanitarian emergency. Fleeing violence and persecution in Myanmar, nearly 1 million refugees have sought safety in Cox’s Bazar and Bhasan Char, Bangladesh. Seven years after the initial influx, the crisis continues, highlighting the significant need to shift from emergency assistance to sustainable solutions as humanitarian budgets are cut. The deteriorating security conditions in Myanmar put into question any immediate plans for a safe, voluntary, dignified, and sustainable repatriation. As of December 2023, only 22,653 refugees were legally involved in paid livelihood activities, volunteer programs, or cash for work. Therefore, more effort is required to promote livelihood activities and self-reliance for the Rohingya refugee population despite the restrictive policy on movement and employment.

The benefits of livelihood activities extend beyond providing an income and fostering self-reliance. There are also potential positive consequences related to the psychosocial well-being of individuals and their households, and other positive externalities, including reduction of intrahousehold violence.

This study, a randomized controlled trial, engaged 2,513 married couples in Cox's Bazar for six weeks to explore how different livelihood interventions impact psychosocial well-being. Each couple was randomly assigned to one of three interventions or a comparison group, with either the husband or wife participating in the intervention. Both members of the couple were interviewed, providing insight into how these interventions may affect an individual's spouse. The interventions were (i) paid work, where participants performed surveying tasks four days a week for six weeks in total, earning 300 taka per day (a sum consistent with the volunteer payment guideline in the camps at the time); (ii) cash transfers, where participants received the equivalent sum of money without working; and (iii) unincentivized volunteer activity, where participants did the same surveying tasks without pay, but they received a nominal fee of 50 taka for weekly survey participation. The comparison group received the same nominal fee for survey participation. The study aimed to determine how these interventions impact the participants' psychosocial well-being (which was measured as an index of depression, life satisfaction, stress, sociability, stability, purpose, and self-worth) and relational health (an index of frequency of verbal and physical abuse) and whether these effects differ based on the gender of the spouse involved in the intervention.

The findings of the study included the following:

1. *Both men and women with paid work experienced substantial improvements in psychosocial well-being.* Both genders reported significant reductions in depression severity. Women noted greater feelings of stability, and men experienced enhanced purposefulness, self-worth, and control.
2. *Employment provides significant psychosocial benefits beyond those of cash for work.* Women benefited four times more from work than cash transfers. Unpaid volunteering did not produce any psychosocial benefits.

3. *Employment interventions can affect spouses as well.* Although husbands experienced no detectable change in their psychological well-being when their wives were engaged with any of the interventions, wives experienced psychosocial gains when their husbands received employment or cash. These findings suggest that treatment impacts partner outcomes differentially depending on the gender of the person receiving the treatment.
4. *Wives of husbands engaged in the work, cash, and volunteer interventions experienced significant reductions in IPV.* Among wives of husbands engaged in work, the results show a 31 percent decrease in their being physically threatened by their husbands. These reductions in IPV could help to explain why women experienced higher psychosocial well-being when their husbands were in the treated groups. This might have occurred due to men spending less time at home or the influx of cash alleviating financial constraints.
5. *Women who were employed did not exhibit greater agency or empowerment.* This finding suggests that absent direct norms engagement, programs may not always be able to redistribute power within households over shorter time horizons.

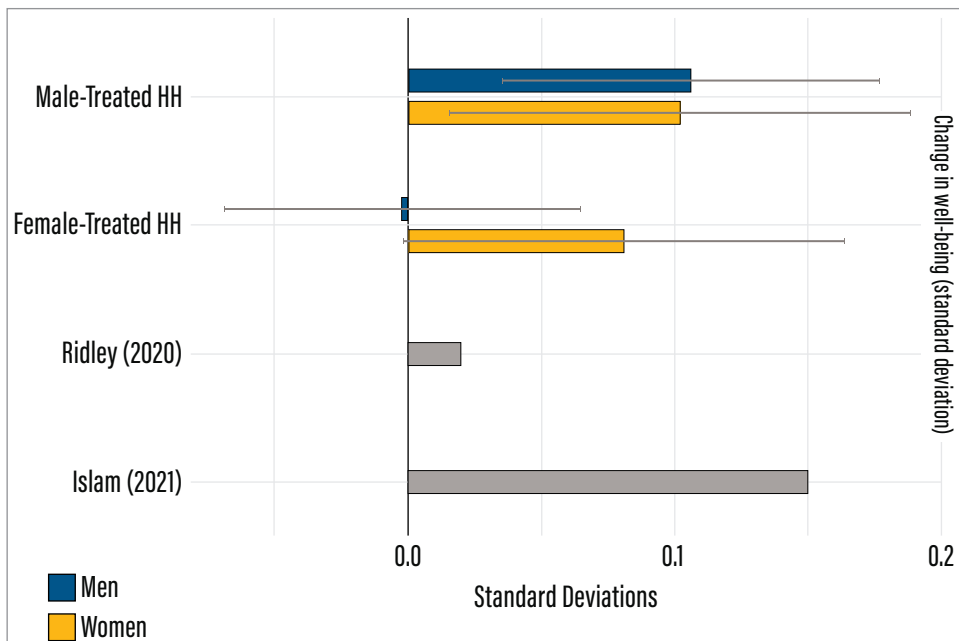
Discussion and Policy Recommendations

- ◆ *Implementing psychosocial well-being through employment programs.* Livelihood programs are powerful tools for improving psychosocial well-being among vulnerable Rohingya refugees. This finding is particularly notable for women. Among the women in the sample, 95 percent had never been gainfully employed previously in Myanmar. The findings of the study suggest that policy makers should advocate for and promote these programs, to maximize impact and ensure self-reliance as well as psychological and social empowerment.
- ◆ *Designing comprehensive social protection programs.* Although cash transfers provide financial relief, they do not offer the same psychological benefits

as paid work. Therefore, integrating paid livelihood opportunities into social programs could provide a more comprehensive approach to improving the lives of refugees and other vulnerable populations.

- ◆ *Considering the identity of the beneficiary when targeting social protection programs.* The impacts of the programs differed across households. The findings indicate that additional factors should be addressed. For instance, employment provides meaningful and comparable psychosocial benefits to both men and women; however, women are not only happier, but also safer when their husbands are employed. Similarly, these programs were unable to redistribute power within households over shorter time horizons without direct norms engagement. Encouraging male participation in work could lead to substantial improvements in relational health and household safety, thereby contributing to overall community well-being.

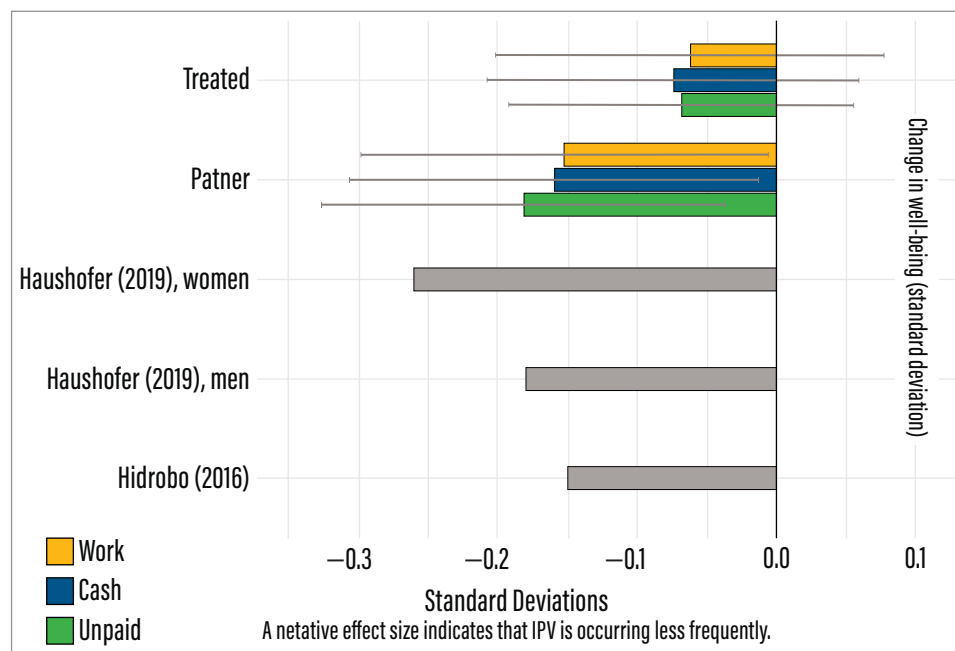
FIGURE 6: The Psychosocial Effect of the Work Treatment



Source: Project team.

As seen in figure 6, the psychosocial effect of the work treatment is comparable when assigned to men or women. However, its spillover effect onto the spouse differs sharply as wives benefit more than husbands do. As a benchmark, the study by Ridley (2020) provides the estimated average effect on psychosocial well-being from a meta-analysis of multifaceted anti-poverty interventions (costing \$120 in purchasing power parity) in other low-income settings. Islam (2021) estimates the reduction in depression severity from a yearlong psychosocial and parental counseling intervention in the same context.

FIGURE 7: Incidence of IPV



Source: Project team.

In the same vein, figure 7 shows that the reduction in IPV for wives (in male-treated households) is greater than that for women who received the treatment directly. There does not appear to be a significant difference by treatment. As a benchmark, Haushofer (2019) estimates the reduction in physical violence toward women from a cash transfer of US\$709 in another low-income setting. "Women" refers to households

where the woman received cash, and “men” refers to households where the man received cash. Hidrobo (2016) estimates the reduction in IPV from a cash transfer of US\$240 (to women only) in a different low-income setting.

Learn More

Hsu, Y., R. Hus, E. M. Kelley, and G. Lane. 2024. “Household at Work: A Field Experiment in the Rohingya Refugee Camps.” Working Paper BGD-23036, International Growth Centre, London School of Economics.

Promoting Social Integration of Refugee Children through Educational Programs

PROJECT TITLE: Protecting Human Capital during Episodes of Forced Displacement: Learning from Ukrainian Refugees in Italy

TASK TEAM LEADER: Quy-Toan Do

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: \$200,000

PROJECT DURATION: December 2022–April 2025

Summary

This ongoing study provides valuable guidance on how to improve the education of displaced children. It recommends targeted interventions, such as supplementary language classes, psychological support, cultural orientation programs for parents, and teacher training in inclusive practices. By addressing barriers, the research offers critical insights for designing policies that prevent long-term human capital losses and improve educational outcomes for refugee children, serving as a model for other countries facing similar crises.

How Does Large-Scale Forced Displacement Impact the Education of Ukrainian Refugees?

As of June 2024, the United Nations High Commissioner for Refugees reported that approximately 6.5 million refugees had fled Ukraine, with nearly 6 million seeking temporary protection in European Union countries under the Temporary Protection Directive of 2022. This massive displacement, particularly of women and children, has posed significant challenges to their integration into host countries, especially within education systems. Italy, which hosts around 191,000 Ukrainian refugees, has faced substantial barriers in enrolling and supporting Ukrainian children in its schools. Language difficulties, differences in education systems, and psychological trauma from the war have created obstacles to their smooth integration. Furthermore, many Ukrainian families view their stay as temporary, which reduces their commitment to investing in the Italian education system.

The lack of a cohesive national strategy, coupled with resource constraints in Italian schools, has left many Ukrainian refugee students isolated and under-supported, with notable gaps in school enrollment and attendance. This raises serious concerns about the long-term educational and labor market prospects for these children, particularly if these barriers persist. Addressing these challenges is essential to avoid long-term human capital losses and support the integration of this vulnerable population.

This ongoing research project aims to understand the broader impacts of large-scale displacement on vulnerable populations, focusing on Ukrainian refugees. By collecting data on displaced children, youth, and caregivers, the research provides a foundation for designing interventions in host countries and establishes a baseline for tracking the long-term effects of displacement.

Preliminary findings from the project reveal critical insights into the education of Ukrainian refugee children in Italy. One of the primary concerns is the low enrollment and high dropout rates among Ukrainian refugee students, many of whom display weak connections to the Italian school system due to frequent absences. Ukrainian refugee students generally perform lower than their Italian peers in all

classes, including mathematics, with significant gaps emerging in language-based subjects, particularly Italian and English, due to language barriers and differing teaching methods.

Several factors contribute to these educational challenges, including language difficulties, psychological distress, social isolation, and trauma resulting from the war. Parental involvement has also been limited, as many parents face their own struggles with integration. The research has found considerable variation in how Italian schools respond to the needs of Ukrainian refugee students, with some regions offering better access to language training and psychological support, while others experience limitations that hinder effective integration.

In response to these challenges, the study proposes a series of policy interventions, including supplementary language classes, psychological support for students, cultural orientation programs for parents, and teacher training in inclusive education practices. These recommendations highlight the need for targeted interventions to prevent long-term losses of human capital and ensure the educational success of Ukrainian refugee children in Italy.

The researchers have employed a mixed-methods approach, utilizing both quantitative and qualitative tools to assess the integration of Ukrainian refugee students. Data were gathered from surveys of students and caregivers, combined with academic performance and attendance records provided by the Italian Ministry of Education. Additionally, 18 semi-structured interviews with teachers, caregivers, and nongovernmental organization workers provided deeper insights into the well-being, educational challenges, and mental health of the students. This comprehensive methodology offers valuable perspectives on the integration of Ukrainian refugee children and the potential risks to their long-term development.

Despite the significant challenges faced by Ukrainian refugee children in the Italian education system, this research highlights the potential for meaningful progress through targeted interventions. With the right support—such as enhanced language programs, psychological services, and inclusive teaching methods—there is hope

for the students to integrate successfully into their new environments and thrive. By addressing the barriers to their educational inclusion, Italy has the opportunity not only to safeguard the future of these vulnerable children, but also to strengthen the country's social fabric by fostering a more inclusive and resilient society. The lessons learned from this project could serve as a model for other countries, showing that with the right policies and commitment, even the most vulnerable populations can achieve success and contribute to their host communities. The team will publish a detailed report on the findings and policy recommendations from this project.

Public versus Private Management: Conservation in Conflict Zones

PROJECT TITLE: Evaluating the Impact of Private Sector Conservation in Conflict Zones on Wildlife Preservation and Local Development

TASK TEAM LEADER: Aaron Gabriel Ratliffe Englander

GEOGRAPHICAL COVERAGE: Sub-Saharan Africa

GRANT AMOUNT: US\$45,000

PROJECT DURATION: November 2023–March 2025

Summary

The findings from this research reveal that private sector management of protected areas in Africa, particularly through African Parks, significantly improves conservation outcomes, reducing elephant poaching by 35 percent and increasing bird populations by 37 percent, compared to government management. African Parks' involvement also boosts tourism by 37–47 percent, although the impact on local asset wealth remains unclear. However, the study highlights an unintended consequence: African Parks' improved enforcement efforts may increase the risk of civilians being targeted by armed groups. These results suggest that although private management enhances biodiversity and tourism, it may also introduce security risks. Policy makers should balance the clear conservation and economic benefits with these potential security concerns when considering further private sector involvement in managing protected areas. The findings will inform future policy discussions and are being disseminated through academic

publications, media, and World Bank internal channels to guide decision-making in protected area management.

Protected areas play a crucial role in wildlife conservation, covering 16 percent of land area and protecting 38 percent of Key Biodiversity Areas in Africa. Despite these efforts, wildlife populations continue to decline. In response, there has been an increasing trend of African governments transferring the management of protected areas to private nongovernmental organizations (NGOs). This shift is motivated by the belief that private NGOs may be better able to access Western aid and bypass corrupt hiring networks, although they may lack local knowledge or support.

African Parks is a prominent example of this trend. It is an NGO that partners with governments and local communities to rehabilitate and manage national parks. African Parks focuses on various aspects of park management, including law enforcement, community development, restoration, tourism, and infrastructure. It manages the largest and most ecologically diverse portfolio of parks among NGOs on the continent.

To evaluate the impact of private sector management, specifically by African Parks, on wildlife conservation, armed conflict reduction, and local economic development, a research team from the World Bank, in collaboration with the University of California, Santa Barbara, and Chapman University, conducted a project financed by the KCP. This study aims to provide the first causal evidence on the performance of private sector management compared to government management, contributing to understanding the potential benefits and drawbacks of this growing trend in protected area management.

The research project has largely examined the impacts of private sector management of protected areas in Africa. The findings indicate that African Parks' private management of protected areas significantly reduces elephant poaching by 35 percent and increases bird populations by 37 percent, compared to government management. In terms of local economic development, the data show that private African Parks management increases tourism by 37–47 percent, although the impact on asset wealth in nearby villages is unclear. However, the research also finds that private African Parks

management increases the risk of armed groups targeting civilians, which could be an unintended consequence of improved monitoring and enforcement.

Overall, the study demonstrates that private sector management of protected areas in Africa enhances biodiversity and tourism outcomes but may also lead to increased security risks for local communities. The research team has disseminated the study design and preliminary findings at several academic conferences and published the full results in a peer-reviewed academic journal and as a World Bank Policy Research Working Paper.

The findings will contribute to a broader World Bank analysis on the relationship between natural and human capital by informing the World Bank analytical project Nature's Paradox: Steppingstone or Millstone. Further planned dissemination of the findings includes blogs, media interviews, and presentations to the World Bank's internal audience working on the Africa region.

Learn More

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Catalyzing Development through Growth in Subnational Economies

Subnational economies, ranging from rural areas to emerging urban centers, are critical yet often overlooked drivers of national development. In FY2024, the KCP funded a series of projects aimed at catalyzing development within subnational economies. The findings from these projects provide critical insights into addressing regional disparities and unlocking the economic potential of underserved areas. From demonstrating that strategic infrastructure investments across various tiers of cities can foster balanced urban growth to studies on fiscal multipliers—such as those related to Brazil’s Bolsa Familia, which revealed how targeted cash transfer programs can significantly stimulate local economies—the KCP is actively advancing its objective of expanding the frontier of development insights. Together, these findings demonstrate how localized approaches, grounded in a deep understanding of regional dynamics, can drive equitable and sustainable economic development across developing countries.

Building Inclusive Futures: Urban Growth, Equality, and Sustainability in Developing Regions

PROJECT TITLE: Economic Development through a Spatial Lens: Urbanization in Times of Climate Change and Social Justice

TASK TEAM LEADER: Forhad Shilpi

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: US\$900,000

PROJECT DURATION: July 2022–June 2025

Summary

The findings from this ongoing research program provide critical insights into urbanization and regional development in developing countries. They include the identification of competitive and complementary dynamics within city tiers in Africa, revealing that infrastructure investments should prioritize connecting cities across different tiers to promote balanced growth. Another project highlights the

concentration of manufacturing jobs and skilled workers in selected cities, exacerbating regional inequality, particularly in poorer nations. Research on educational mobility demonstrates that sibling correlation in schooling—a broad measure of social immobility—is significantly higher in developing countries, underscoring the strong influence of family and neighborhood on educational outcomes. A study on public and private transit in Lagos, Nigeria, shows that public transit investments significantly improve commuter welfare but have indirect effects on informal transit services that reduce the overall benefits. These findings offer valuable recommendations for policy makers, suggesting that infrastructure investments, educational reforms, and urbanization policies should account for regional disparities, social mobility, and the indirect effects of development initiatives to foster inclusive and sustainable growth.

This research program consists of 10 projects, categorized into three focus areas: growth and transformation, fairness and inclusion, and climate change and urbanization. The program's goal is to improve understanding of how to create policies that support productive, inclusive, and sustainable urbanization in developing countries, especially as they contend with increasing regional inequality and frequent climate shocks.

As cities in Africa and Asia experience rapid urbanization, concerns arise about whether this growth is generating the economic benefits typically associated with urbanization or merely overcrowding cities without fostering economic transformation. Additionally, rising spatial inequality—where growth is concentrated in a few large cities and neighborhoods—leads to social and political unrest. Climate change further complicates matters, with projections indicating that climate-induced migration will significantly reshape population distribution, necessitating new policies to manage these shifts. However, there is limited evidence, particularly for smaller cities and towns, on how to address the challenges of inequality, climate impacts, and regional development. This research program aims to fill these knowledge gaps to support effective policy responses. It is compiling subnational data to address the questions posed by the research.

The main output of this program will be a Policy Research Report based on its findings and a broader review of recent and emerging research. The projects within this program were selected to fill research and data gaps in the evolving literature. The following is a brief update on the progress of four of the most advanced projects within the program, as of this report.

Growth and Transformation

“The Urban Hierarchy in Africa: Competition and Complementarity,” J. Vernon Henderson, Cong Peng, and Anthony J. Venables

This project explores the roles that different types or tiers of cities play within the urban hierarchy and how they either compete with or complement each other. The study focuses on several Sub-Saharan African countries where data on local industries are available.

Methodologically, the researchers have utilized satellite data to analyze the number and size of urban settlements across Sub-Saharan Africa, categorizing them into three tiers based on industry composition: agriculture, agro-processing/traditional manufacturing, and higher-order activities such as business services and modern manufacturing.

The initial findings indicate that cities within the same tier tend to compete, while proximity to a larger settlement in a different tier enhances a city’s growth, suggesting a complementary relationship across tiers. This implies that infrastructure investments should prioritize connecting cities across different tiers rather than within the same tier, and that industrial policies should account for these dynamics when planning city development and spatial distribution.

A comprehensive research paper detailing the findings of this project will be published in fall 2024.

**“The Distribution of Economic Activity across Cities: A Global Perspective,”
Mathilde Lebrand and Tatjana Kleineberg**

In poorer countries, the concentration of manufacturing jobs in specific cities can limit economic opportunities in other regions, exacerbating regional inequality. Additionally, the higher concentration of high-skilled workers and services in certain cities could hinder inclusive growth and make it harder for smaller or less developed areas to thrive. Understanding these patterns can inform policies aimed at promoting balanced regional development, reducing inequality, and ensuring that economic benefits are shared more widely across all cities and regions.

The findings of this study reveal that urban manufacturing employment is highly concentrated in cities in poorer countries, while it is more evenly spread out in richer countries. Additionally, high-end services and highly skilled workers are more concentrated in cities compared to the general population, a trend that is consistent across countries at all levels of economic development but even more pronounced in poorer nations. The paper highlights these patterns and suggests potential implications and directions for future research. The study is expected to be completed in December 2024.

Fairness and Inclusion

“Growing Up Together: Sibling Correlation, Parental Influence, and Intergenerational Educational Mobility in Developing Countries,” Policy Research Working Paper 10285, Md Nazmul Ahsan, M. Shahe Emran, Hanchen Jiang, Qingyang Han, and Forhad Shilpi

Sibling correlation is a broad measure of social mobility, as it reflects both seen and unseen family and neighborhood influences shared by siblings growing up together. This paper provides reliable and comparable evidence on educational mobility across generations in 53 developing countries, using sibling correlation as the key measure. The analysis is based on data from 230 rounds of Demographic and Health Surveys.

The initial finding from this research is that sibling correlation in schooling, an indicator of social immobility, is significantly higher in developing countries (average 0.59) than in developed countries (average 0.41). This suggests that family and neighborhood factors play a stronger role in shaping educational opportunities in developing countries. There is considerable variation across regions, with Latin America and the Caribbean having the highest correlation and Europe and Central Asia the lowest. In some countries, particularly in Sub-Saharan Africa, over 80 percent of sibling correlation is attributed to intergenerational transmission, highlighting the dominant influence of parents on children's educational outcomes. The researchers are working on finer geographic analyses and exploring patterns based on urbanization. A draft is expected in 2025.

Climate Change and Urbanization

“Public and Private Transit: Evidence from Lagos,” Daniel Bjorkegren, Alice Duhaut, Geetika Nagpal, and Nick Tsivanidis

Many of the world's fastest-growing cities rely on informal private transit, such as minibuses. As these cities grow wealthier, they begin investing in public transit systems. However, when private operators respond to these changes, public investment can affect everyone, including those who do not use the new system. This paper examines how public transit affects informal transit services in Lagos, Nigeria, Africa's largest city, by tracking how the informal network has responded to the introduction of 14 new formal bus routes under the city's Bus Reform Initiative.

The research finds that the introduction of new public transit routes in Lagos had a significant impact on commuter welfare. Using a custom app and a randomized controlled trial, the study measured how commuters valued changes in price and wait times. When considering only the adoption of the new public bus system, commuter welfare improved by 14 percent. As informal transit services, such as minibuses, adjusted their prices in response to the new competition, the welfare benefit increased to 17 percent. However, when considering longer wait times in the informal sector due to reduced service availability, the net welfare gain dropped to 6 percent.

This demonstrates the important role of indirect effects, such as changes in the informal transit system, in shaping the overall impact of government investments in public transit. Although these magnitudes may change as the paper develops, this already provides suggestive evidence of the important role played by indirect effects. Ignoring these indirect effects could result in an incomplete understanding of the benefits for commuters.

A comprehensive policy research paper detailing the findings of this project will be published in fall 2024.

A Fresh Perspective on Subnational Fiscal Multipliers

PROJECT TITLE: Subnational Fiscal Multipliers in Developing Countries

TASK TEAM LEADER: Steven Michael Pennings

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: \$80,000

PROJECT DURATION: October 2022–January 2025

Summary

This research project investigates the size and effectiveness of subnational fiscal multipliers in developing countries, focusing on cash transfers, like Brazil's Bolsa Familia and the European Union's structural funds. Key findings reveal that Bolsa Familia significantly boosts state-level gross domestic product (GDP) and employment, particularly in non-traded sectors, suggesting that cash transfers can stimulate local economies more than previously thought. Conversely, the study on the European Union's structural funds finds limited evidence of short-term GDP

growth, indicating that their economic impact may be smaller than expected. These insights provide valuable recommendations for policy makers to design targeted fiscal policies that can better stimulate regional economic growth. Additionally, the project has developed a new Subnational Transfers Database, which will support further analysis of fiscal spending impacts across countries. This research holds the potential to guide more effective fiscal strategies in low-income regions, promoting long-term economic development and poverty reduction.

The effectiveness of fiscal policy in stimulating economic growth, particularly at the subnational level, remains uncertain in developing countries. Fiscal multipliers, which measure the short-term impact of government spending on GDP, play a critical role in determining the success of Keynesian fiscal stimulus policies, and the costs of austerity measures. They also measure the possible side benefits of programs with other goals such as anti-poverty cash transfers and development-related spending, like the European Union's structural funds. A large fiscal multiplier suggests that a \$1 increase in spending results in more than \$1 growth in GDP, making spending a powerful tool to stimulate economies in the short term. Conversely, a small multiplier indicates limited impact, requiring much larger spending to achieve the same economic boost.

This project investigates the size of subnational fiscal multipliers in developing countries, particularly in regions where cash transfers and development funds are focused on long-term poverty reduction and infrastructure development. This empirical investigation delves into the sizes of the multipliers of the Bolsa Familia cash transfer program and other development-related spending, such as the European Union's structural funds. Another branch of the work collects subnational data on cash transfer spending in 10 other developing countries. By studying the impact of these policies in diverse contexts, such as Brazil, Central and Eastern Europe, and elsewhere, this research aims to provide crucial insights into the regional economic effects of fiscal spending and inform policy decisions on how best to use government resources to stimulate growth in low-income regions. The research is organized into the following three components:

Investigation of the Subnational Fiscal Multiplier on the Bolsa Familia Cash Transfer Program. Brazil's Bolsa Familia cash transfer program is one of the world's largest and oldest, and it displays substantial subnational variation. For example, in 2010, Bolsa Familia spending ranged from 0.1 percent of GDP in Santa Catarina (one of the wealthiest states) to 2.4 percent of GDP in Maranhão (one of the poorest states), revealing how cash transfers at the subnational level can fuel broader economic activity. The findings hold the potential to reshape the understanding of poverty alleviation as a driver of macroeconomic growth.

Investigation of the Multipliers on the EU Structural and Investment Funds. By reassessing the impact of these funds on regional economies, this research aims to test whether they generate the short-run benefits some policy makers and researcher have claimed.

Collection of a New Database on Subnational Transfers as a Share of GDP. This project is collecting and synthesizing data on cash transfer programs across countries, establishing the first cross-country database on this topic. This data set will allow analysis of the macroeconomic effects of subnational transfers and their role in shaping economies.

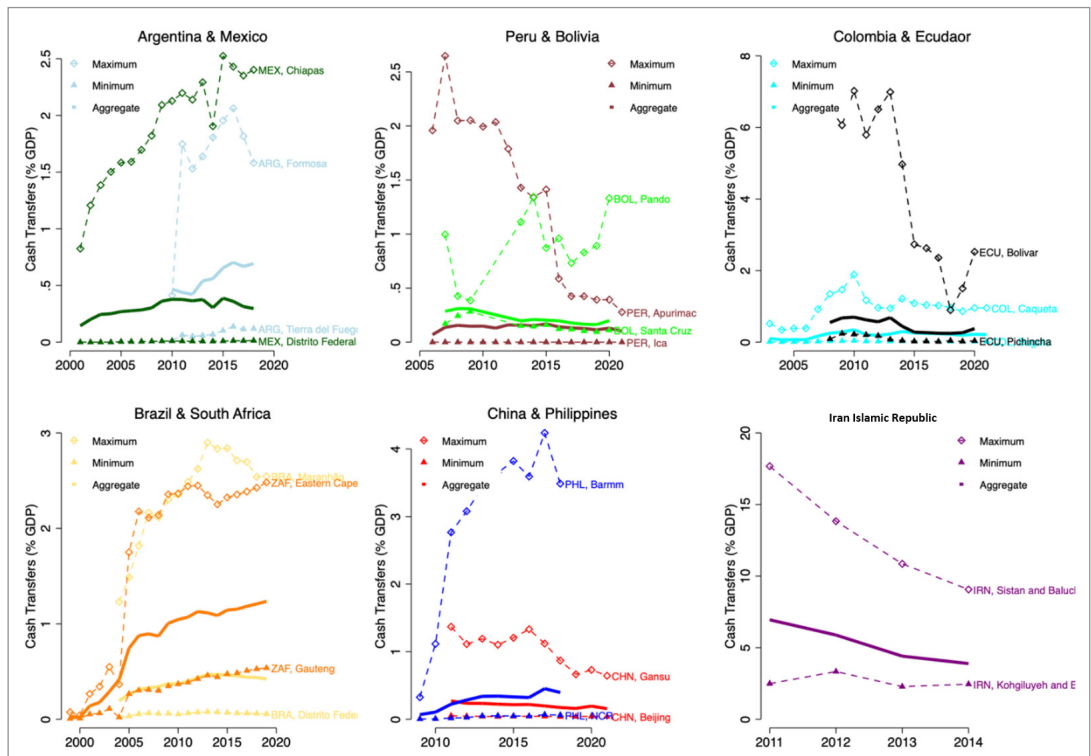
Each of these projects not only promises to enhance understanding of economic multipliers, but also to inform policy decisions, offering new avenues for research and development across regions. Together, they represent substantial progress in addressing the challenges of economic disparity and fiscal policy design.

Progress and Outputs

The research program has made significant progress, producing key outputs that contribute to the global understanding of fiscal policy and subnational development. Notably, two research papers have been published. The first, *The Macroeconomic Effects of Cash Transfers: Evidence from Brazil*, was released in December 2023. Using a Bartik-style identification strategy, the paper demonstrates that Brazil's Bolsa Familia program has a substantial positive effect on state-level GDP and employment,

particularly in non-traded sectors. The paper suggests that current economic models may underestimate the benefits of cash transfers by overlooking supply-side factors like labor and capital.

FIGURE 8: Large Gaps and Differential Trends between Transfers in the Poorest and Richest Regions



Source: Project team.

This work has been widely shared at 26 conferences and seminars, including at the National Bureau of Economic Research's summer institute in Boston; the University of Tokyo; the University of California, Berkeley; Stanford University; and the Center for Economic and Policy Research conferences in Johannesburg, South Africa, and Japan. It has also been summarized as a Federal Reserve Bank of San Francisco Economic Letter.

The second paper, published in January 2024, is *Are Regional Fiscal Multipliers on EU Structural and Investment Fund Spending Large?* It reassesses the short-term economic impact of the European Union's structural funds. Although the paper finds that the funds increase investment, it finds limited evidence of significant GDP multipliers. The results suggest that policy makers should temper expectations of short-term economic growth from these funds and focus on their long-term developmental benefits.

Additionally, substantial progress has been made in collecting data for a Subnational Transfers Database, with data on transfers and GDP at the subnational level collected for 11 developing countries (determined by the size of the program, data availability, and macroeconomic relevance): Argentina, Bolivia, Brazil, China, Colombia, Ecuador, the Islamic Republic of Iran, Mexico, Peru, the Philippines, and South Africa. Future analysis of these data will support further analysis of their macroeconomic impacts.

Learn More

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Fiuratti, F. I., D. E. Nikolova, S. M. Pennings, and M. T. Schiffbauer. 2024. "Are Regional Fiscal Multipliers on EU Structural and Investment Fund Spending Large? A Reassessment of the Evidence." Policy Research Working Paper 10658, World Bank, Washington, DC. <http://documents.worldbank.org/curated/en/099454401092494983/IDU18f59eeba1cf4714b7a190091fb9ef0cc9001>.

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Data and Evidence on Subnational Production, Trade, and Infrastructure

PROJECT TITLE: Data and Evidence on Subnational Production, Trade, and Infrastructure

TASK TEAM LEADER: Florence Kondylis

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: US\$450,000

PROJECT DURATION: October 2022–April 2025

Summary

This project explores how trade and transportation infrastructure affect local economies in developing countries. By combining geocoded firm-to-firm transaction data, household surveys, and transportation data, the project has significantly improved the understanding of regional disparities. In Honduras, firms in export-oriented regimes are more connected to local suppliers than expected, while in Rwanda, feeder road improvements have reduced transportation costs but have yet to show major economic transformation. These findings are influencing policy, such as Rwanda's national feeder roads strategy, and are being disseminated through events, publications, and training sessions with local governments to enhance data-driven decision-making and promote inclusive growth.

The growing recognition of spatial disparities in economic development highlights a critical gap in understanding how geographic factors shape growth and social outcomes, particularly in low- and middle-income countries. Although substantial evidence exists on the role of spatial inequalities in high-income nations, there remains limited research on how subnational factors, such as trade and transportation infrastructure, influence local development in less developed regions. This lack of data and analysis limits policy makers' ability to design effective interventions that address these disparities.

This ongoing research program aims to fill this knowledge gap by advancing the measurement of spatial inequalities and providing new insights into the impact of intranational trade and infrastructure investments on subnational development.

The research project has undertaken a comprehensive and innovative approach, constructing a unique data infrastructure that combines a variety of sources. This infrastructure links geocoded data on firm-to-firm transactions, land registrations, population censuses, market price surveys, and detailed household survey data. By integrating these diverse data sets with quasi-experimental variations in transportation infrastructure—ranging from small-scale feeder roads linking villages to local markets to large-scale corridors connecting secondary cities—the project rigorously assesses the impact of transportation improvements on economic activities. A complementary experiment has been conducted to reduce transportation costs for farmers and traders.

This research project is divided into two main components:

Component 1: Documenting the Effective Tax Rate on Firms across Space

This study investigates how effective tax rates for firms vary geographically. It explores whether differences in tax rates are driven by firm size or industry type, or if geographical disparities persist even after considering these factors. The research also looks at which areas, particularly special economic zones, benefit from tax advantages such as exemptions or lower rates.

In Honduras, the research team has successfully collaborated with the tax authority to access and clean value-added tax firm-to-firm transaction data, resulting in the creation of a trade network for firms. These data have already contributed to a published policy note on the trade networks of firms in export-oriented special economic zones. This note has been shared with government counterparts and the World Bank country office.

In Rwanda, the team has similarly compiled and cleaned value-added tax and firm-to-firm transaction data in collaboration with the Rwanda Revenue Authority (RRA). The resulting data set will play a crucial role in producing a comparative analysis of trade networks in Honduras and Rwanda, with a focus on regional integration of supply chains.

Component 2: Building a Granular Data System to Estimate the Impacts of Intranational Trade on Economic Activity

This project aims to estimate how intranational trade affects economic activity in Rwanda. The research team has developed a comprehensive data system, combining firm-to-firm transactions, land registrations, census data, and market price surveys, alongside infrastructure improvement variations. This system supports Rwanda's agricultural and infrastructure projects, providing policy makers with data through dashboards and training for informed decision-making and crisis response.

The grant has funded a randomized controlled trial to assess the impact of improved road infrastructure on agricultural value chains in Rwanda. To simulate infrastructure improvements, transportation services for households were subsidized, particularly for the transport of agricultural produce. The randomized controlled trial has been fully implemented, with data collection and endline surveys completed in September 2023. Preliminary results were presented to key stakeholders in June 2024, with the final report expected by December 2024. Additionally, the research team is analyzing primary and secondary data, including road quality, traffic, transportation costs, and agricultural production, to assess the broader impacts of intranational trade. Initial findings suggest that targeted feeder road rehabilitation offers high returns by reducing transportation costs. Although the project finds small impacts of feeder road rehabilitation on direct beneficiary communities, including on agricultural production and access to services, transformative effects are not necessary to justify additional investments in feeder roads if they benefit the broader economy. This component uses a framework of social savings calculations (which are commonly used for trunk road infrastructure) and novel data on transportation costs along and usage of feeder roads. The findings show that welfare gains from reduced transportation costs alone imply that there is underinvestment in targeted rehabilitation of feeder roads. Road monitoring data from the Feeder Roads Development Program and the Lake Victoria Transport Program are continuously updated in an online dashboard, supporting real-time project monitoring by the World Bank and the Rwanda Transport Development Agency. Despite some delays in construction and data collection, the Feeder Roads Development Program project's data collection has been completed, with substantial

progress on the Lake Victoria Transport Program project, which is expected to be finished by the first quarter of 2025.

MAP 2: Road Monitoring Data from the Feeder Roads Development Program in Rwanda



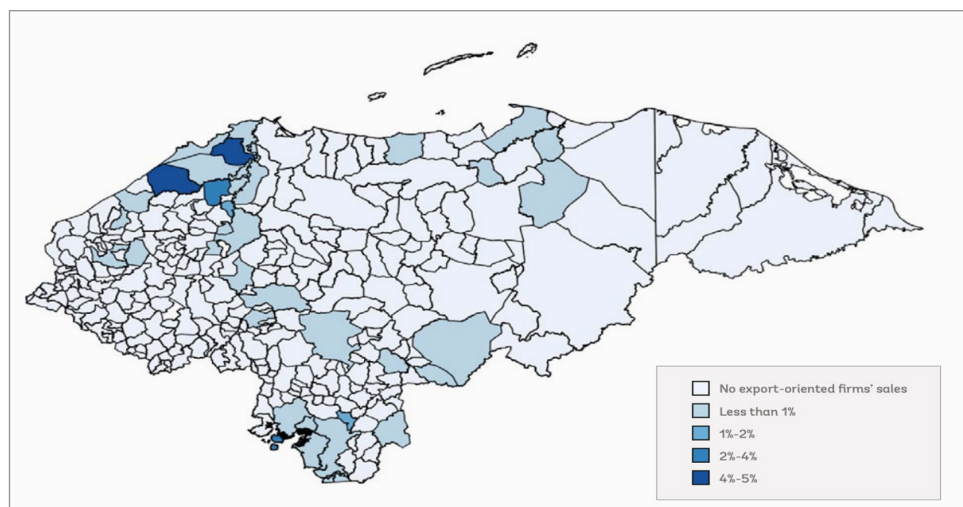
Source: Project team.

Progress and Outputs

The project's outputs include several significant contributions. Notably, a policy paper titled Tax Innovations for Growth was produced as one of four technical background papers for the 2023 Rwanda Country Economic Memorandum titled Pathways to Sustainable and Inclusive Growth. The paper demonstrates that there is a tax threshold around 15 percent of GDP where future inclusive growth significantly improves. Three channels may explain why this threshold exists: increased spending on health and education, lower government spending and growth volatility, and

more progressive taxes. The paper also shows that low-income countries graduate to middle-income status around the same threshold.

MAP 3: Ratio of Tax-Exempt to Total Firms in Honduras



Source: Project team.

Another policy paper, *Firms' Networks under Export Exemption Regimes: Stylized Facts from Honduras*, was published in May 2024, utilizing data financed by the KCP. Using administrative data on firm-to-firm trade in Honduras, this paper finds that firms in export-oriented regimes are similarly connected to local suppliers as comparable nonexempt firms in terms of supplier numbers, sector, size, and geographic proximity. These findings challenge the notion that export-oriented firms function as isolated “enclaves” disconnected from the local economy, but the report does not address whether these firms contribute to supplier growth or development. The study highlights weak enforcement of tax exemption conditions and notes that these firms, while large, are not particularly productive, limiting potential spillovers. Moreover, firms in export-oriented regimes show limited involvement in foreign direct investment, although multinational firms tend to export a larger share of their production.

Additionally, the project has implemented a novel randomized controlled trial to measure the impact of improved transportation infrastructure on agricultural value chains

in Rwanda. This randomized controlled trial involved surveying hundreds of truck drivers across Rwanda, conducting a Becker-DeGroot-Marschak exercise to determine their willingness to provide transportation services along rural feeder roads, and installing GPS devices in their trucks to collect trip data. *The Director General of the Rwanda Transport Development Agency announced that the research findings are being used to shape upcoming changes to the national feeder roads policy.*

Dissemination efforts for the project have been highly effective. In November 2023, a high-level event in Kigali featured Rwanda's Minister of Agriculture and the acting head of the European Union delegation in Rwanda. This event highlighted key research findings and policy recommendations on optimizing road infrastructure investments for cost-effective universal access.

Building on this momentum, the research team presented virtually at the RRA's annual research day in February 2024, focusing on the firm-trade implications of electronic billing machine technology for small businesses. This presentation attracted participation from analysts at the Ministry of Finance, local think tanks, and other research organizations. In May 2024, the team shared preliminary results of the feeder roads impact evaluation at an academic seminar organized by the Structural Transformation and Economic Growth program within the Foreign, Commonwealth and Development Office (FCDO), that the research gained visibility in academic circles as well. Another dissemination event is planned for November 2024 with the Rwandan Ministry of Infrastructure. This year's event will focus on optimizing infrastructure and data for private sector development.

Crucially, these dissemination efforts were reinforced by a strong emphasis on capacity building, particularly with key Rwandan government institutions. Collaborations with the RRA, Rwanda Transport Development Agency, and the Ministry of Agriculture and Animal Resources included regular training sessions on data analysis, data collection, and research management. In 2023 and 2024, multiple training sessions, both in-person and virtual, were conducted to enhance the research skills of government staff. In 2024, the project launched a new program to embed capacity building in RRA research projects, where members of the RRA research team are paired with

the World Bank's Development Impact Evaluation staff, who provide support through regular office hours throughout the entire project life cycle. This comprehensive approach has ensured that the project's findings are not only widely shared, but also actively integrated into policy and practice in Rwanda and beyond.

Learn More

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Pushing the Analytical Boundary through Innovative Methodology, Data, and Artificial Intelligence

KCP projects also harnessed the transformative power of innovative methodologies, advanced data analytics, and artificial intelligence (AI) to tackle complex development challenges. From exploring gender-specific aspirations and well-being through narrative analysis, to assessing the impact of building codes on climate mitigation, and enhancing the discoverability of subnational geospatial data, these projects demonstrate the power of interdisciplinary tools and approaches. By integrating AI-powered models with human expertise, these studies provide nuanced insights, improve scalability, and reduce bias, offering policy makers and researchers new frameworks for evidence-based decisions. Through these innovative methods, the KCP advances a new paradigm for development research—one that captures the complexity of human experiences and promotes sustainable growth in an increasingly data-driven world. The following is a selection of FY2024 projects aligned with this theme.

Pioneering a New Understanding of Human Well-Being through Artificial Intelligence

PROJECT TITLE: The Collection and Analysis of Gender Differentials in Aspirations and Well-Being Narratives

TASK TEAM LEADER: Vijayendra Rao

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: US\$170,262

PROJECT DURATION: September 2022–July 2024

Summary

This research offers new insights into understanding gender disparities in aspirations and well-being, moving beyond traditional economic measures like income and consumption. Using narrative analysis and machine learning–artificial intelligence, the study found that aspirations and well-being involve not only material

factors, but also moral, spiritual, and cultural dimensions. It introduced iQual, an AI software that combines human-coded data and machine learning, which significantly reduces bias in qualitative research. These findings emphasize the need for more holistic approaches to measuring aspirations and well-being, particularly in fragile settings like refugee populations, and can help policy makers design more effective, context-specific interventions that address gender and human welfare complexities.

How Can Gender Differentials in Aspirations and Well-Being Be Better Understood?

Traditional economic measures often fail to capture the full range of human welfare, particularly when it comes to gender-specific experiences. Income and consumption, typically valued at market prices, have long been the dominant metrics for assessing human aspirations and well-being. While these money-centric metrics provide insights into poverty and national economic growth, they fall short in capturing the nuanced experiences of aspirations and well-being, especially those shaped by gender. For decades, researchers have raised concerns about the limitations of these economic constructs. Now, with advances in neurobiology, linguistics, and computational sciences, new methodologies are emerging that allow researchers to rethink how human aspirations and well-being are measured and understood.

This research project, funded by the KCP, sought to address these limitations by developing innovative methods to capture a more holistic view of aspirations and well-being, with a special focus on gender disparities. The project applied tools from linguistics and machine learning to analyze open-ended interviews, comparing these findings with traditional survey data collected from the same populations. The goal was to enhance the understanding of aspirations and well-being and their gender-specific dimensions, providing insights that go beyond conventional welfare metrics.

Narratives were gathered from participants in Bangladesh and Peru to examine the generalizability of findings across diverse contexts. In Cox's Bazaar, Bangladesh, the

research studied the Rohingya refugees and their Bangladeshi hosts, two distinct populations living in close proximity under different conditions. In Peru, the focus was on two contrasting regions: urban Lima and the rural highlands of Sierra Central. These varied settings provided a broad basis for analyzing the intersection of aspirations, well-being, gender, and environmental factors.

The project has already produced significant outputs. Two working papers have been developed to date. The first, "A Method to Scale-Up Interpretative Qualitative Analysis with an Application to Cox's Bazaar, Bangladesh," introduces a novel approach to coding large volumes of qualitative data using natural language processing techniques. This method was tested on more than 2,200 open-ended interviews using AI and has proven effective in scaling up the analysis of qualitative data sets.

The paper demonstrates that qualitative data, which are typically labor intensive and difficult to analyze at scale, can be effectively expanded using a combination of human coding and natural language processing. This innovative method allows for the nuanced insights gained from small, human-coded samples to be extended across larger, statistically representative data sets. In applying this method to study aspirations among Rohingya refugees and their Bangladeshi hosts, the study uncovers that aspirations go beyond material goals like education and employment, encompassing moral, spiritual, and religious dimensions. These aspirations are found to be distinct from ambitions, which focus on more concrete, measurable outcomes.

The paper also explores the concept of "navigational capacity," which refers to individuals' ability to achieve their aspirations. This capacity is shown to be influenced by cognitive and cultural resources and to vary significantly between the refugee and host populations. Importantly, the study also addresses the potential biases introduced by machine learning in qualitative analysis. Through validation and bootstrapping techniques, the researchers minimize these errors, allowing the enhanced sample to add value without introducing significant bias.

The paper emphasizes the importance of context in shaping aspirations and ambitions. Rohingya refugees, having faced displacement and trauma, often expressed

aspirations distinct from those of their Bangladeshi hosts. The study underscores that open-ended interviews are essential for capturing such differences, which traditional quantitative surveys might overlook. This approach has broad implications for the analysis of qualitative data, particularly in fragile and conflict-affected settings, by making it possible to scale qualitative insights and better understand complex human experiences.

The second paper, *“Using Large Language Models for Qualitative Analysis Can Introduce Serious Bias,”* highlights the need for caution when employing large language models (LLMs), such as ChatGPT and Meta’s Llama 2, for qualitative research. The study reveals that LLMs often overpredict certain annotations, especially in cases where data categories are sparse. For instance, when tasked with identifying secular or religious aspirations, LLMs are found to overestimate the presence of these themes, leading to distorted interpretations. Such overpredictions can mislead researchers into overestimating the prevalence of certain topics, which is particularly problematic when analyzing sensitive or nuanced qualitative data.

To address this issue, the researchers developed a new tool called iQual, which involves training supervised models on human-coded data, and compare its performance to that of LLMs. The results show that human-annotated models, like iQual, produce more accurate and less biased results. By relying on high-quality human annotations, the iQual method significantly outperforms LLMs in predicting the content of open-ended interviews, particularly in complex contexts such as interviews with Rohingya refugees and their Bangladeshi hosts.

One of the key findings is that LLMs struggle in these sensitive settings, where subtle nuances such as aspirations and navigational capacity are critical for understanding the data. The errors made by LLMs are closely tied to the specific characteristics of the interview subjects, leading to biased inferences. This highlights the limitations of LLMs in handling the complexity and cultural specificity often required in qualitative research.

As a result, although LLMs hold potential for assisting in qualitative analysis, human input remains indispensable for ensuring the accuracy and validity of the results. The paper suggests that instead of relying solely on pre-trained LLMs, researchers should consider using smaller, bespoke models trained on specific data sets. This approach allows for more accurate, context-aware analysis, reducing the risk of bias and misinterpretation. iQual has also been made available on GitHub as an open source software tool.

Future Contributions and Impact

The research continues to evolve, with several future outputs expected. A forthcoming paper, “Narrative Aspirations and Well-Being: Understanding and Measuring Aspirations and Well-Being from Open-Ended Interviews in Bangladesh,” will explore how people describe aspirations and well-being through narratives about the “good life,” happiness, and the reasons behind their perceptions, with a focus on gender and refugee experiences. Another paper, “Money Is Everything, or Is It? The Instability of Welfare Inference across Money-Metric, Bio-Metric, and Elicited Measures of Aspirations and Well-Being,” will investigate how aspirations and well-being inferences shift when different measurement methods—economic, biological, and narrative-based—are applied. This comparative study will shed light on the complexities of interpreting aspirations and well-being indicators.

Additionally, the project will release a data set titled “Aspirations and Well-Being Narratives Given by Adults in Two Disparate Peruvian Settings,” containing coded responses and anonymized narratives from 420 adults in urban Lima and rural Sierra Central. This data set will provide a valuable resource for future research on aspirations and well-being and gender differentials.

Overall, the research has already yielded significant insights, particularly on how narrative analysis can complement traditional measures of aspirations and well-being. The development of public access software like iQual and the presentation of findings at global conferences highlight the potential of these methods to transform how aspirations and well-being are understood. Moving forward, the project will continue

to inform policy makers and researchers by offering new tools and perspectives for analyzing the complexities of human welfare, especially as it pertains to gender.

Learn More

Ashwin, J., V. Rao, M. R. Biradavolu, A. Chhabra, A. Haque, A. I. Khan, and N. Krishnan. 2022.

“A Method to Scale-up Interpretative Qualitative Analysis, with an Application to Aspirations in Cox’s Bazaar, Bangladesh.” Policy Research Working Paper 10046, World Bank, Washington, DC. <http://documents.worldbank.org/curated/en/099759305162210822/IDU0a357362e00b6004c580966006b1c2f2e3996>.

Ashwin, J., A. Chhabra, and V. Rao. 2023. “Using Large Language Models for Qualitative Analysis Can Introduce Serious Bias.” Policy Research Working Paper 10597, World Bank, Washington, DC. <http://hdl.handle.net/10986/40580>.

Publicly available software package with test data: <https://github.com/worldbank/iQual>.

Building Smarter to Accelerate Climate Action

PROJECT TITLE: Building Energy Codes and Standards for Climate Change Mitigation

TASK TEAM LEADER: Jayashree Srinivasan

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: US\$197,200

PROJECT DURATION: September 2021–May 2024

Summary

This research highlights the dual impact of buildings on climate change, as they are both a major source of greenhouse gas (GHG) emissions and a key solution for addressing climate goals. The central output of this project is a comprehensive data set developed to evaluate building energy efficiency codes and standards

across 88 countries. This data set fills a critical knowledge gap, enabling policy makers to assess the effectiveness of existing building energy regulations and identify areas for improvement. The research highlights the need for more stringent building energy codes, improved enforcement, and financial incentives to promote energy efficiency. This data set serves as a valuable tool for guiding future decarbonization efforts in the building sector.

Double Impact of Buildings on Climate Change

In the global effort to combat climate change, buildings play a dual role. They are a significant contributor to GHG emissions, but also hold promise as a solution to address climate change. Buildings account for 30 percent of global final energy consumption and are responsible for 37 percent of energy-related emissions globally. This is driven by the rapid growth in built-up floor area, with the world adding the equivalent of a new Paris every five days. The United Nations Environment Programme projects that 230 billion square meters of buildings will need to be constructed by 2060 to accommodate the growing population, akin to adding an entire New York City every 34 days.

This rapid expansion of the built environment is undoubtedly unsustainable without significant improvements in the energy efficiency of buildings. The United Nations Environment Programme estimates that the energy intensity of the global building sector needs to improve by an average of 30 percent by 2030 to meet global climate goals. While advanced building energy codes can reduce the energy consumption of buildings by up to 70 percent, the implementation and adoption of these codes and standards has been slow and uneven across the globe.

Data Gap and Lack of Standardized Definitions and Metrics

The slow progress in improving building energy efficiency can be partly attributed to the lack of a comprehensive global data set with standardized definitions and common metrics. These data are crucial for policy makers to evaluate the effectiveness of current regulations, prioritize resource allocation, and implement targeted

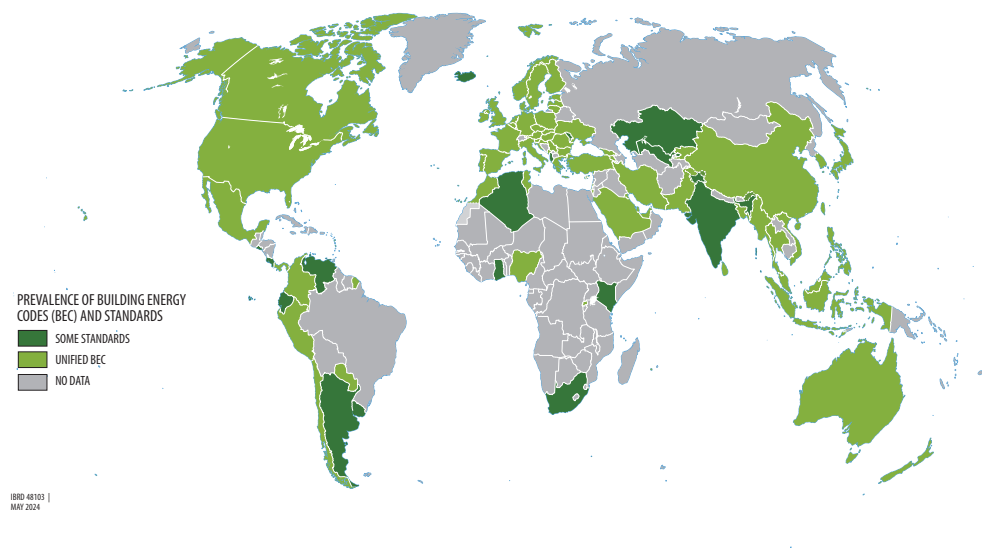
interventions to accelerate the transition toward a more sustainable and energy-efficient built environment. The existing global data on the energy efficiency of buildings, provided by the International Energy Agency, is insufficient, and cross-country data on the actual enforcement of and levels of compliance with building energy codes are limited.

To address this knowledge and data gap and respond to the pressing need to leverage legal and institutional frameworks, the team financed by KCP launched a comprehensive data set that evaluates regulations, enforcement mechanisms, and compliance with energy efficiency standards in 88 cities across all regions and income levels. This newly developed analytical framework and collected quantitative measures on energy efficiency standards enable meaningful comparisons between cities. The data collected cover key variables relevant to the energy efficiency of buildings along three dimensions: coverage of codes, stringency of standards, and enforcement mechanisms and pathways. This is a significant contribution to mitigating and adapting to climate change by mandating minimum energy efficiency performance standards in new and existing buildings.

Global Variations in Energy Standards for Buildings and Code Enforcement

The data collected, measuring one city per country, reveal significant gaps in the prevalence of building energy codes and standards. Currently, only 88 countries (including the world's 25 largest economies) have adopted and made mandatory a building energy code or building energy efficiency standards in at least one city. Fifty-four countries have some standards but lack comprehensive building energy codes. Additionally, 55 percent of these codes have not been updated since 2015, potentially falling short of high-performance standards. With 80 percent of floor area growth by 2030 expected in developing economies, these findings underscore the pressing need for concerted efforts to bridge the existing gaps in the stringency of energy codes and their implementation.

MAP 4: Prevalence of Building Energy Codes and Standards



Source: Project team

The research conducted under this grant emphasizes the importance of stringent building energy codes to ensure that structures adhere to rigorous energy efficiency standards. It highlights the significant global variation in the stringency of these codes, with differences observed even among countries with similar climatic conditions, such as Sweden and Finland. The disparity in requirements underscores the need for standardized, robust regulations to maximize energy efficiency gains.

Critical Role of Enforcement and Compliance

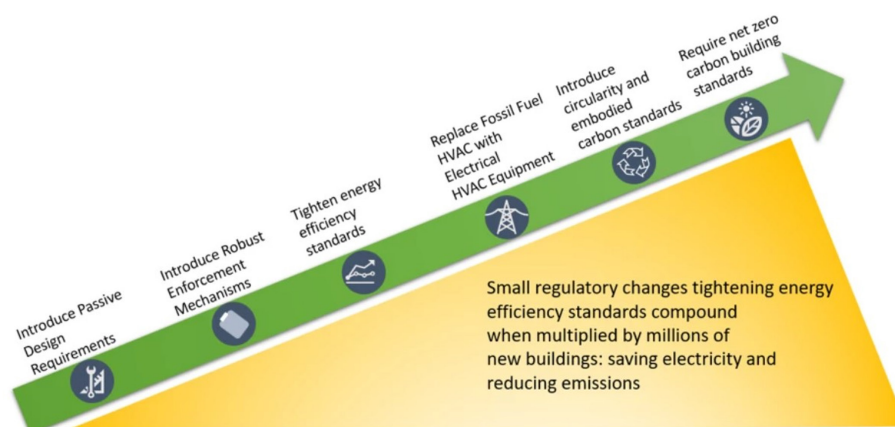
In terms of the enforcement and compliance aspects of building energy codes, the data show that of the 88 countries with such codes or standards, 35 have both pre- and post-construction design requirements, while 53 have only pre-construction and 40 have only post-construction requirements. Retrofitting existing buildings with energy efficiency standards is more challenging, and only 15 countries have such requirements in their regulations. Overall, the research emphasizes the critical role of stringent building energy codes and the importance of consistent, standardized regulations for promoting energy efficiency in the built environment.

The findings reveal that providing adequate resources to the construction industry is essential for facilitating compliance and improving the adoption of energy-efficient technologies and designs. The data show that 78 countries have some form of these resources, such as design guides for architects; operation and maintenance manuals; heating, ventilation, and air conditioning maintenance guides for occupants; consumer guides for energy-efficient appliances; and training for stakeholders. Additionally, survey data reveal that 65 countries have various financial incentives, including grants, fee waivers, tax credits, rebates, loans, and preferential utility rates, to increase the uptake of energy-efficient technology and design.

Pathways to Building Sector Decarbonization

On the decarbonization trajectory of the building sector, a multifaceted approach for both new and existing building stock is required. Passive design requirements, such as optimal orientation and natural ventilation, can reduce energy demand, but they must be backed by robust enforcement mechanisms to ensure compliance. It is recommended that countries with existing building energy codes consider incorporating measures aimed at enhancing the energy efficiency of building envelopes, glazing, and building service systems to meet more stringent Minimum Energy Performance Standards. Where such codes do not exist, establishing specific standards for new construction, as a standalone requirement or as part of future codes, is crucial to set minimum performance expectations for various building types. It is advised that building energy codes should provide a clear roadmap for achieving net zero carbon emissions through gradual tightening of regulations. Research shows that even small regulatory adjustments have the potential to generate significant benefits, such as electricity savings, emission reductions, and alleviation of energy poverty, when applied across millions of new buildings worldwide.

FIGURE 9: Regulatory Changes to Tighten Energy Efficiency Standards That Result in Saving Electricity and Reducing Emissions



Source: Project team.

The data provided are a valuable tool for policy makers to identify areas for improvement in regulatory performance, with the aim of aligning regulations with emission reduction goals and other sustainability and resilience objectives. This can guide the World Bank Group in providing an evidence-based foundation for enhancing operational practices and policy making in the development and management of cities, particularly in addressing climate change mitigation and adaptation. Several global practice teams within the group have expressed a keen interest in the data and are exploring ways to incorporate it into their operations. The World Bank's Climate Change team is positioning this global data set as a resource for operations projects that seek to assess the built environment and comply with the Paris Alignment. Consequently, the data set makes a significant contribution to the climate change mitigation and adaptation goals, facilitating the establishment of minimum energy efficiency performance standards for new and existing buildings.

The global data set has been disseminated extensively within the World Bank and to external audiences, including the Royal Institute of Chartered Surveyors; the private sector in the field of energy efficiency and building control; the International Energy Agency, with whom the team discussed potential future cooperation; and the Climate Global Forum.

Furthermore, the City Gap Fund has provided funding to the team to produce a comprehensive report on the findings from the data, which will offer insights to policy makers on best practices and strategies to bridge the gap in energy efficiency regulations.

Learn More

Comprehensive data set publicly available on the project web page: <https://www.worldbank.org/en/building-green>.

Project launch video: <https://www.worldbank.org/en/building-green>.

Methodology document: https://www.worldbank.org/content/dam/sites/buildinggreen/doc/building_green_methodology.pdf.

Main findings document: https://www.worldbank.org/content/dam/sites/buildinggreen/doc/building_green_main_findings.pdf.

Srinivasan, J., E. Orellana, V. Chiseliov, C. Guittonneau, and T. Doan. 2024. "How Do Building Energy Codes and Standards Measure Up? Unveiling a New Global Dataset." Let's Talk Development Blog, May 19, 2024. <https://blogs.worldbank.org/en/developmenttalk/how-do-building-energy-codes-and-standards-measure-up--unveiling>.

Improving the Discoverability of Local Geospatial Data

PROJECT TITLE: Indexing the World

TASK TEAM LEADER: Aivin V. Solatorio

GEOGRAPHICAL COVERAGE: Global

GRANT AMOUNT: US\$146,000

PROJECT DURATION: October 2022–June 2024

Summary

This research tackles the critical need for improving the discoverability of subnational geospatial data, which are often underutilized due to outdated search technologies and insufficient metadata. The project addresses this gap by developing advanced indexing and search tools, leveraging open-source technologies like Uber’s hierarchical geospatial indexes (H3) system, OpenStreetMap, and artificial intelligence (AI) models. The WorldEx platform, created through this initiative, significantly enhances access to and visualization of geospatial data, enabling researchers and policy makers to perform more localized and comprehensive analyses. By making geospatial data more accessible, this project supports evidence-based decision-making and policy design, particularly in areas such as regional development, infrastructure planning, and climate resilience.

National-level analyses have long been the primary source of insights for addressing welfare, economic, and development issues, but crucial subnational analyses are often missing. This gap is largely due to challenges in accessing and discovering subnational geospatial data. Although such data may exist, they remain “hidden” in repositories due to outdated search technologies and insufficient metadata. Current data platforms rely heavily on manually added metadata, making it difficult for researchers to find specific, localized data, which hampers nuanced analysis and the development of targeted policies. Additionally, concerns about data privacy deter data producers from sharing sensitive information, further limiting the availability of geospatial data. These limitations result in underutilization of valuable data, preventing them from being reused for broader applications, reducing the “dividends” from

data investments, and ultimately hindering evidence-based policy making. This project tackled these gaps by improving the discoverability of geospatial data through advanced indexing and search technologies, which will empower researchers to perform more localized and comprehensive analyses.

Implementation and Progress

To address the discoverability issue of subnational geospatial data, the project employed open-source methods, solutions, and applications using technology from Uber, OpenStreetMap, and AI models from HuggingFace. The focus was on creating a practical and efficient system using only open-source tools. The project's implementation was divided into several key components.

First, an open-source Python package utilizing the H3 indexing system was developed. Originally created by Uber for spatial analysis, H3 partitions the globe into hexagonal cells, providing consistent and accurate geospatial data indexing. This Python package supports various geospatial data formats such as shapefiles, GeoJSON, and raster data, ensuring uniform indexing and easy data management. By integrating this package, the system significantly improved the discoverability and retrieval of geospatial data sets.

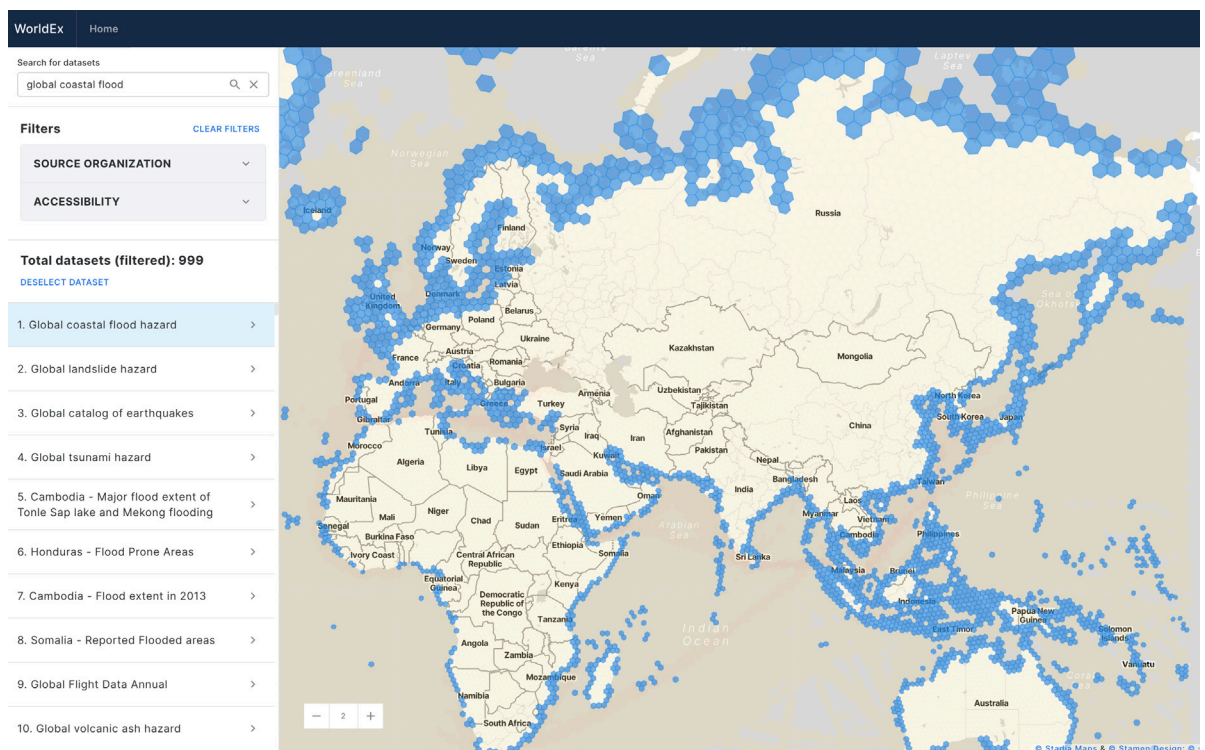
Second, the project collected a wide range of geospatial data sets from sources such as the World Bank, United Nations High Commissioner for Refugees, and Climate Trace. These data sets were gathered via Application Programming Interfaces (API) or web scraping and stored in an Amazon Simple Storage Service-compatible blob storage system. H3 were generated from these data files and stored as parquet files, enabling efficient storage and fast access to large data sets.

Third, to enhance user search capabilities, the project integrated Nominatim (OpenStreetMap) and Generalist and Lightweight Model for Named Entity Recognition (GLiNER), an AI model, into the system. These tools allow users to search for data using natural language queries, making it easier and more intuitive to find geospatial

information. This natural language processing pipeline converts user queries into formats suitable for geospatial data retrieval, ensuring accurate results.

Finally, the project developed WorldEx, an open-source web application designed to showcase the power of H3 indexing. WorldEx features an interactive map interface that allows users to search, access, and visualize geospatial data. With filtering options and integration of various data sets, the application enhances the discoverability and usability of geospatial data while being open-source to encourage community contributions.

FIGURE 10: WorldEx User Interface



Source: Project team.

The project and its outputs were presented at multiple high-profile events, including the United Nations' 8th International Conference on Big Data and Data Science for

Official Statistics (June 10-14, 2024) and the Humanitarian Data Forum in The Hague (June 12-14, 2024). The WorldEx solutions were shared with strategic partners such as the United Nations Statistics Division, International Telecommunication Union, United Nations Human Settlements Programme, Humanitarian Data Exchange, and WorldPop, leading to follow-up discussions on potential collaborations.

Impact Indicators

The WorldEx project, while not a traditional research output, has begun to influence development policies and interventions by providing a practical tool for geospatial data discovery. Early traction has been seen among key stakeholders, including the World Bank's Geospatial Operations Support Team and the Enterprise Survey Team. WorldEx has the potential to influence development initiatives where geospatial data play a critical role, such as in the Water Global Challenge and other World Bank projects. Unlike research papers that influence policy through citations, WorldEx supports decision-making by making geospatial data more accessible for analysis, which can guide project implementation and inform policy decisions. Over time, as WorldEx is integrated into workflows, it is expected to enhance data-informed decision-making and play a crucial role in development practices.

WorldEx has been presented to various internal World Bank teams and has generated significant interest from teams such as the World Bank's Geospatial Operations Support Team and WorldPop, which are known for their influential geospatial data sets. An expert interactive session was also organized to gather input on H3 indexing for development use cases. While WorldEx is still in the early stages of adoption, its potential for integration into World Bank projects is clear, and its role as a practical tool positions it for widespread use in geospatial analysis. The success of similar tools, such as the Realistic Relational and Tabular Data using Transformers (REaLT-abFormer), suggests that WorldEx may follow a similar trajectory, gaining traction over time. As the tool becomes more widely used, it is expected to enhance geospatial data analysis and influence the development of other tools under consideration, expanding its relevance to World Bank operations and client engagements.

Learn More

The WorldEx application, an open-source application for subnational data discoverability:

<https://worldex.org>.

An AI-powered query parser for entity detection in queries, deployed as a publicly accessible application and Application Programming Interfaces on HuggingFace: <https://huggingface.co/spaces/avsolatorio/query-parser>.

A documentation page detailing the various components of the project and examples for generating indexes for data sets from selected data sources: <https://worldbank.github.io/worldex/>.

The WorldEx Application Programming Interface: <https://api.worldex.org/redoc>.

KCP's Impacts in the Long Run

Research plays a crucial role in learning from past policies and thinking about the future with a long-term perspective. Without independent scrutiny of research, the conceptual and empirical foundations of policy making would be weak, best practices would be emulated without sufficient evidence, and new fads and fashions would get more attention and traction than they deserve.

The following subsection highlights two projects that feature long-term engagements. In Cambodia, the World Bank's nearly two-decade engagement has significantly influenced the national education sector and the World Bank's global education strategy. This iterative engagement exemplifies how KCP-supported research can foster impactful reforms, guiding countries to focus not only on access, but also on the quality and outcomes of education. In the Philippines, the team is examining the persistent effects of stunting on cognitive and socioemotional outcomes, reproductive health, and other long-term well-being indicators. These projects embody the KCP's engagement principle and help policy makers maintain their development vision while navigating immediate policy priorities.

Learning to Realize Education's Promise in Cambodia

Learning from Lending: Long-Term Research and Policy Engagement in Cambodia's Education Sector

Project lead: Deon Filmer, Director, Development Research Group, Development Economics

The concept of human capital is now a central focus in development discussions, particularly in the context of education. It is well understood today that education cannot be reduced to mere schooling or enrollment figures. However, just 10 years ago, the majority of development financing in education was directed toward infrastructure—primarily the construction of schools. There was little attention paid to

the critical question of whether students were actually learning. The focus was on access, not outcomes.

Since then, significant progress has been made in how education policies are designed, and foundational research, along with experimental analyses, has played a key role in driving this shift. The evidence generated over the years has demonstrated the importance of not just building schools, but also ensuring that students are gaining the knowledge and skills they need to succeed. Investing in research and building a strong evidence base for sound policy making has proven to be a crucial component in transforming educational outcomes. Such investments pay off, providing essential insights that guide effective reforms and policies in education.

Early 2000s: Conditional Cash Transfers to Increase School Enrollment

At the start of the twenty-first century, Cambodia faced significant challenges in secondary education. Low enrollment rates and a growing youth population lacking access to adequate training were major issues. To address these challenges, the Cambodian government partnered with development organizations, including the World Bank. In 2004, the World Bank's education lending operation enlisted a research team led by Norbert Schady and Deon Filmer to assess existing educational programs and guide new interventions. This operation sought to balance supply-side interventions, such as building and improving school infrastructure, with demand-side strategies designed to boost enrollment through a scholarship program. The research team joined preparation missions, reviewed the performance of existing programs, and demonstrated that the scholarship program significantly increased enrollment and attendance by an estimated 20 to 30 percentage points, with even greater gains observed among the poorest girls.

This evaluation informed the design of the World Bank's 2005 Scholarship Program. That year, the Cambodia Education Sector Support Project Scholarship Program was launched, incorporating insights from the assessment. The Scholarship Program targeted the poorest communes more consistently; extended scholarships to all primary school graduates, including boys; and introduced two scholarship

levels: \$60 for the poorest and \$45 for others. An impact evaluation was built into the program to measure the effectiveness of the scholarships on enrollment and to assess whether the \$45 scholarship was as effective as the \$60 one. The evaluation revealed that students who received scholarships were more likely to stay in school, with enrollment rates jumping to 80 percent for scholarship recipients compared to 60 percent for nonrecipients. The analysis also demonstrated that the \$45 scholarship was as effective as the \$60 rate.

These findings convinced the Cambodian government to expand the program using the \$45 scholarship level. This evidence was subsequently published in three World Bank Policy Research Working Papers, contributing to the 2009 Policy Research Report Conditional Cash Transfers: Reducing Present and Future Poverty, and later published in *The Journal of Development Economics* and *The Journal of Human Resources* in 2010 and 2014, respectively.

The evaluation also highlighted that many of the poorest students dropped out before completing primary school. As a result, an upper primary scholarship was included in Cambodia's 2009 Fast Track Initiative grant. These early interventions significantly improved access to education, leading to higher enrollment rates, increased gender parity, and greater socioeconomic diversity among students. However, new concerns around the quality of learning outcomes started to emerge, which was the focus of the next phase of engagement in Cambodia.

Early 2010s: Poverty- versus Merit-Based Scholarships

Despite the success in raising enrollment rates through scholarship programs, evaluations revealed that increased attendance did not lead to improvements in learning outcomes. At the same time, the Cambodian government found that many young people were entering the workforce at an early age without adequate skills, which prompted a shift in focus from merely increasing enrollment to improving the quality of education and workforce readiness. It became clear that expanding access to education alone would not lead to meaningful progress unless it was accompanied by improved learning outcomes. In response, the Cambodian government and the

World Bank initiated discussions that led to an experimental evaluation comparing the effectiveness of poverty-based versus merit-based scholarships.

The evaluation revealed that while scholarship programs successfully increased school participation, better attendance did not necessarily lead to better learning outcomes. This sparked debates around the relative effectiveness of poverty- versus merit-based scholarships. To address this, the research team collaborated with World Bank colleagues and the Cambodian government to design a pilot experiment to evaluate the impacts of these two scholarship models. The experimental approach involved distributing scholarships in two distinct ways: some schools awarded scholarships based on financial need, while others provided scholarships to high-performing students based on their results in math and Khmer language tests.

The analysis from this pilot experiment revealed important insights. There was little trade-off between poverty- and merit-based scholarships in terms of reaching the poorest students, especially within schools. However, merit-based scholarships had a more significant impact on student performance. These scholarships encouraged greater effort from students and their families, leading to higher primary school completion rates and improved test scores. Although students receiving poverty-based scholarships also had higher completion rates, their performance on tests did not surpass that of students without scholarships.

Based on these findings, the Cambodian government expanded the scholarship program. Guided by the evidence, the government added selected schools serving the poorest communities but awarded scholarships based on merit. This shift aimed to improve both access and learning outcomes, informed by the rigorous evaluation of alternative approaches.

Late 2010s: From Building Schools to Human Capital Accumulation

In the late 2010s, attention in Cambodia's education sector began to shift toward the development of socioemotional learning—an essential process that helps children to manage emotions, build relationships, and make responsible decisions. These skills

are critical for laying a strong foundation for success later in life. The latest round of studies focused on assessing the potential impact of educational interventions on the development of socioemotional skills. Despite an increase in school attendance and improved learning outcomes for some students, the findings revealed that the intervention had no significant impact on the development of socioemotional competencies. This highlighted a gap in the existing education system and underscored the need to address more than just academic outcomes.

Parallel to this, there was a growing body of evidence showing that investments in the nutritional, cognitive, and socioemotional development of young children yield high returns. Early childhood development programs, which address these areas, became a focal point for researchers and development practitioners. By building on this evidence, they worked to raise awareness of the importance of comprehensive child development among decision makers, advocating for increased focus and resources in these areas. These efforts were aimed at ensuring that education systems not only increase access, but also contribute to children's holistic development.

The research and evaluations conducted during this period informed significant actions by the World Bank and the Cambodian government. Notably, the findings contributed to the formation of the Human Capital Index and the Human Capital Project at the World Bank. These initiatives prioritize investments in early childhood development, focusing on nutrition, cognitive skills, and socioemotional growth, using the evidence generated from evaluations like those conducted in Cambodia to guide global efforts in human capital accumulation.

The World Bank's nearly two-decade engagement in Cambodia has significantly influenced both the national education sector and the World Bank's global education strategy. The lessons learned from Cambodia's experience—integrating access and quality improvements through rigorous evaluation—helped to shape the Education Sector Strategy 2020, which emphasizes a shift from merely promoting schooling to ensuring "Learning for All." This iterative engagement exemplifies how KCP-supported research can foster impactful reforms, guiding countries to focus not only on access, but also on the quality and outcomes of education.

Exploring New Policy Approaches for Childhood Nutrition and Development

The Persistent Effects of Stunting—A Ten-Year Follow-up of Beneficiaries and Non-Beneficiaries of the Philippine CCT

Task team leader: Jed Friedman

Stunting, defined as short height-for-age within the first three years of life, is a key indicator in the Human Capital Index. However, there is limited rigorous evidence on its long-term impacts. The study seeks to determine whether stunting has persistent effects on cognitive and socioemotional outcomes, reproductive health, and biometric indicators in later life. Additionally, the study will explore potential mechanisms, such as household resources, childcare practices, and schooling behavior, which may mediate the long-term impacts of early-life stunting.

This ongoing study aims to assess the medium-term effects of early-life stunting using the Philippines' Conditional Cash Transfer program, Pantawid. Researchers have successfully recontacted 98.2 percent of the original 1,023 target households from the initial survey conducted 12 years ago, with 85.1 percent of the households interviewed so far. About 79 percent of these households still reside in their original locations. Tracking efforts will continue until the grant closing date, with the expectation of interviewing over 90 percent of the original sample, setting a high benchmark for studies of this nature.

The research design has already been shared at seminars at Williams College and Tufts University. Preliminary results will be presented at global conferences such as the International Health Economics Association 2025 Conference and research seminars in the Philippines. The initial audience will be partners and clients, with plans to broaden outreach to the academic and development communities. Philippine co-researchers will also lead South-South seminars on the findings, including presentations at international conferences. Findings will also be published in two Policy Research Working Papers, technical papers on biometric data analysis, and a publicly available data set. These contributions will enhance understanding of the long-term impacts of early-life stunting and inform policy decisions related to childhood nutrition and development.

KCP's Future

Looking to the future, the KCP remains steadfast in its mission to lead the way in generating knowledge that drives impactful global development. As the developing world grapples with the intertwined challenges of climate change, inequality, and economic uncertainty, the KCP is committed to supporting cutting-edge research that informs policy and delivers sustainable, evidence-based solutions. In the coming year, the KCP will prioritize the following activities:

	<p>1. TARGET</p> <p>Focus on high-impact themes that align with the most urgent development needs and curate customized research and analyses.</p>
	<p>2. ENGAGE</p> <p>Convene a global network of knowledge generators and brokers to translate insights into practical strategies.</p>
	<p>3. LEARN</p> <p>Enhance capacity development and lower the barrier of access to development knowledge through learning events, trainings, and knowledge exchange activities.</p>

Target High-Impact Themes

The KCP will intensify its spotlight on high-impact themes that address pressing yet under-researched development challenges. This subsection provides an overview of these critical areas and emphasizes the necessity of concentrating on them to drive meaningful, evidence-based development solutions.

Adopting a Broader Approach to Climate Compatible Development

The intersection of climate action and economic development remains a critical challenge. Although progress has been made in clean energy investments, there is a need to adopt a broader approach that integrates climate resilience and economic growth. Current climate models often fail to capture the complexity of risk estimation, limiting effective action. Proposals are invited to explore innovative solutions that enhance resilience, improve climate impact measurement, and design policies that reduce emissions while fostering sustainable economic development. Solutions should focus on integrating climate resilience into economic planning at all levels.

Mobilizing Private Capital for the Sustainable Development Goals

Mobilizing private capital remains a critical challenge in achieving the Sustainable Development Goals, with an annual development financing gap of \$3.5 trillion. Despite significant progress, public resources alone are insufficient, and current efforts to attract private sector investments face limitations such as underdeveloped project pipelines and concerns about greenwashing. The 2024 KCP Call for Proposals (CFP) seeks innovative solutions to scale up private capital mobilization, improve project development in low-income countries, and establish robust frameworks to enhance the credibility of sustainable finance.

Meeting the Challenges of Digital Transformation and AI for Development

The integration of AI with data systems presents a transformative opportunity for development, but significant challenges remain. Key issues include improving the accessibility and quality of subnational and geospatial data, enhancing gender-sensitive poverty measurements, and addressing data gaps in income distribution. Additionally, there is a need for AI-ready data—machine understandable and actionable—to bridge the gap between technical users and policy makers. Proposals are sought to innovate AI-driven data systems, making insights more applicable and accessible, while advancing data for sustainable development outcomes.

To prioritize analytical endeavors in these themes, KCP IV launched its fourth CFP in September 2024. The CFP closed on October 15, 2024, with a total of 54 proposals submitted, requesting a total amount of \$10,833,454. Over 40 percent of the proposals that were received focus on climate compatible development and a roughly similar proportion of proposals was submitted under the two other categories. Based on the available resources, the team may allocate approximately \$2 million for this CFP. The selection of proposals, after external and internal evaluations, is expected to be made by the Internal Management Committee in early calendar year 2025.

Ramp Up Policy Engagements to Maximize Knowledge Impacts

Another key priority for the KCP in the coming year is significant expansion of policy engagements with knowledge brokers, translating research insights into tangible actions. A flagship endeavor will be supporting the efforts of the World Bank Institute for Economic Development (IED). The IED connects global think tanks, researchers, and academics to translate development research into real-world impact. Led by the World Bank Group Chief Economist's office, the IED's work is delivered by staff in the Development Economics Vice Presidency, visiting scholars, and external experts, in collaboration with Regional Chief Economist Offices at the World Bank. A key initiative of the institute that the KCP is already supporting is the Growth Academy. The Growth Academy exemplifies this collaborative approach, offering an interactive engagement platform where stakeholders can tackle pressing issues in economic growth and development.

In this space, the KCP will also deepen its efforts to customize knowledge and provide tailored policy guidance that aligns with the specific needs of individual countries.

Enhance Capacity through Learning

Furthermore, the KCP will focus on strengthening the capacity of local research teams, empowering them to develop the expertise necessary to address their unique challenges. By co-creating solutions alongside local resources, the KCP will strengthen its engagement with policy makers, government officials, and

development stakeholders—paving the way for inclusive and sustainable growth. Learning and training events will be developed and implemented as part of the IED's global offerings with its hubs in Washington, DC; Rome; and a possible center in Asia to be established.

KCP Finances

Donor Contributions

From the beginning of fiscal year 2021 to the end of fiscal year 2024 (June 2024), KCP Phase IV received a total of \$14.61 million in signed contributions from four donors: Sweden, France, Japan, and the European Union. Efforts are ongoing to expand and diversify the donor base for the KCP.

Sweden, through its development agency (Sida), was the first contributor to KCP IV, committing 28 million SEK payable over four installments. As of June 30, 2024, the first two installments of 14 million SEK and 4 million SEK were received, but the third installment was reduced from 34 million SEK to 1 million SEK due to unexpected political reasons.

The French Development Agency (AFD) contributed and disbursed €100,000 to KCP IV in fiscal year 2021.

Japan, a previous donor to KCP I and II, rejoined the KCP initiative in fiscal year 2022 and became an official contributor to KCP IV, with a signed amount of \$3 million disbursed in one tranche. In fiscal year 2023, Japan added another \$2 million contribution, also disbursed in one tranche.

The European Union, another former KCP I donor, through its Directorate-General for Regional and Urban Policy (DG REGIO) and Directorate-General for International Partnerships (DG INTPA), signed two contribution agreements of €3 million each to KCP IV, both payable over two installments. The first tranche of the DG REGIO contribution of €2 million was received in fiscal year 2023, and the second tranche of \$1 million was received in fiscal year 2024. The first tranche of the DG INTPA contribution of €1.5 million was received in early fiscal year 2024, and the second tranche of €1.5 million was received in late fiscal year 2024.

KCP IV Accounts Statement

TABLE 1: KCP Account Statement as of June 2024 (US\$)

	Currency	Amount	Amount (\$)
Contributions Signed			
Sweden	SEK	28,000,000	3,045,369
France	EUR	100,000	122,000
Japan	US\$	3,000,000	5,000,000
The European Union	EUR	6,000,000	6,450,350
Total			14,617,719
Contributions Received			
Sweden	SEK	19,000,000	2,175,875
France	EUR	100,000	122,000
Japan	US\$	5,000,000	5,000,000
The European Union	EUR	6,000,000	6,450,350
Total			13,748,225
Income/Allocations/Disbursements			
<i>Investment income</i>			951,670
<i>Allocations and Expenses</i>			
Project Allocations			(8,876,281)
Of which Program Management and Administration (PMA)			(200,000)
Project Disbursements			(4,364,200)
Of which PMA			(116,487)
Bank executed Trust Fund (BETF) Administrative fees (12% of disbursements)			(523,704)
BETF Administrative fee to be charged (on estimated disbursements)			(530,649)
ESTIMATED FUNDS AVAILABLE <i>(based on contributions received)</i>			4,476,261
ESTIMATED FUNDS AVAILABLE <i>(based on contributions signed)</i>			5,638,754

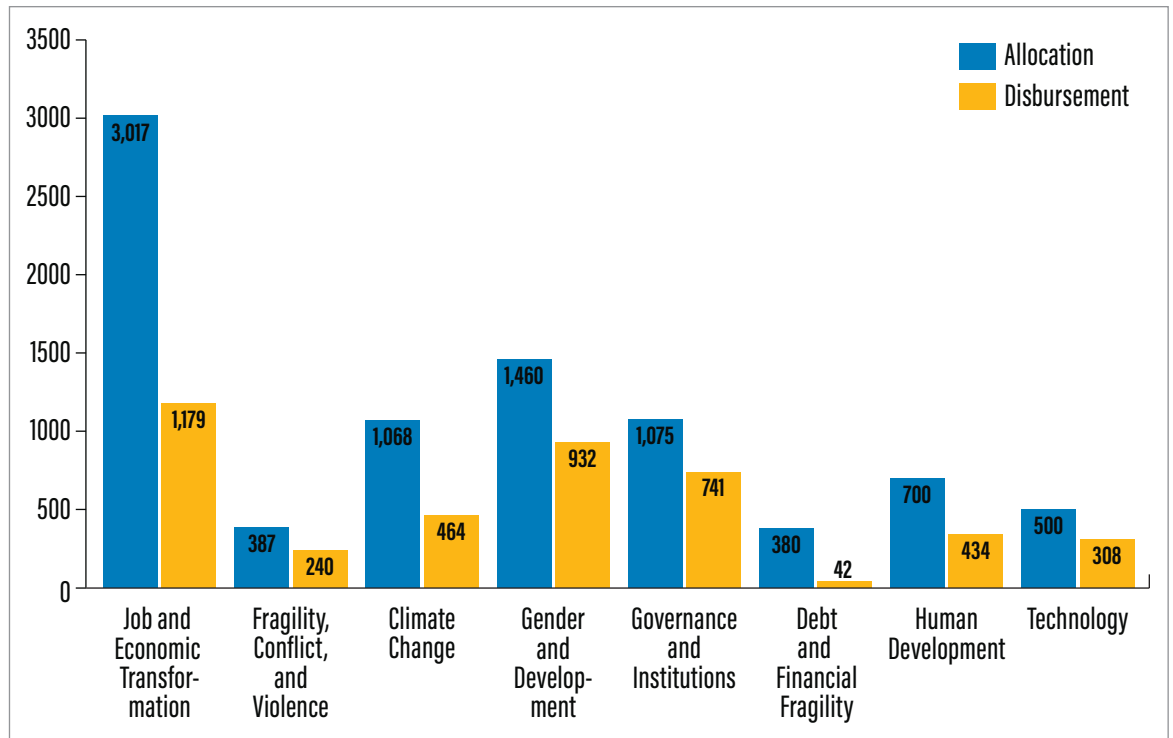
Source: KCP Program Management Unit.

Annex

KCP IV Allocations and Disbursements, by Thematic Window

FIGURE A.1: KCP IV Allocations and Disbursements, by Window

From KCP IV Inception to June 30, 2024 (US\$, thousands)



Source: KCP Program Management Unit.

TABLE 2: KCP IV Results Indicators

Indicator Category	Indicators	Values (FY2024)
Number of outputs	Published working papers	36
	Policy notes briefs and Policy Research Reports	61
	Analytical tools	209
	Databases	47
	Peer reviewed publications	15
Dissemination indicator	Number of conferences/events organized	178
Capacity-building indicators	Training provided	76
	Number of developing country institutions	102
	Number of developing country researchers	53
Outcome indicators	Number of cases demonstrating policy impact of the project within the World Bank	26
	Number of consultation and dissemination events attended by senior stakeholders in this fiscal year	35
Impact indicators	Total number of citations of research findings of this project in this fiscal year	264
	Number of cases demonstrating policy impact in partner governments in this fiscal year	17

Source: KCP Program Management Unit.

TABLE 3: KCP IV Allocations and Disbursements: Project List

From KCP IV Inception to June 30, 2024 (US\$)

Project Name	Task Team Leader	Allocation	Disbursement
JOBS AND ECONOMIC TRANSFORMATION			
Data and Evidence on Subnational Production, Trade, and Infrastructure	John Ashton Loeser	442,999.77	242,133.22
State Capture in Tunisia	Bob Rijkers	75,000.00	29,892.62
Data and Evidence on Subnational Production, Trade, and Infrastructure	John Ashton Loeser	198,222.07	19,610.00
Promoting Economic Inclusion at Scale through Self and Wage Employment Support in Tanzania	Dahyeon Jeong	125,000.00	122,536.30
Evaluating Impact of a Business Plan Competition in Kenya	Abla Safir	150,000.00	15,493.55
Subnational Fiscal Multipliers in Developing Countries	Steven Michael Pennings	80,000.00	57,598.80
Sub-National Differences in Well-Being	Talip Kilic	900,000.00	159,626.51
Economic Development through a spatial lens	Forhad J. Shilpi	900,000.00	386,392.23
Total		2,871,221.84	1,033,283.23
FRAGILITY, CONFLICT, AND VIOLENCE			
Social and Economic Integration of Refugees in Jordanian Communities	Chloe Monica Fernandez	90,000.00	7,228.45
VenRePs Kids—Longitudinal Study	Sandra Viviana Roza Villarraga	100,000.00	36,549.09
Total		190,000.00	43,777.54
CLIMATE CHANGE			
Monitoring Near-Time Changes in Urban Space Usage after Climate Shocks: ECA Urban Resilience	Holly Krambeck	150,000.00	19,854.86
Commodity Prices, Inflation and Climate Change	Hamza Zahid	130,000.00	0.00
Long Term Growth Model Extensions: Climate Change and Human Capital	Steven Michael Pennings	130,000.00	1,712.00
Environmental Impact of a Green Credit Line	Federica Zeni	110,000.00	60,536.98
Lagos mobility study	Samia Ausaf	90,000.00	29,004.42
Climate Adaptation: Evidence from Well Failures in South India	Xavier Gine	90,000.00	68,600.00
Rwanda Electrification Impact Evaluation	John Ashton Loeser	100,000.00	18,011.60
Total		800,000.00	197,719.86

Project Name	Task Team Leader	Allocation	Disbursement
GENDER AND DEVELOPMENT			
Understanding and Ensuring Women's Safety in Public Transport: Experimental Evidence from Training Service Providers	Girija Borker	140,000.00	25,000.00
Drivers and Trends for the Equality of Opportunity for Sexual and Gender Minorities: A Panel Approach	Julia Constanze Braunmiller	170,000.00	37,247.39
Impact Evaluation of Childcare Services for Kampala Market Women	Sylvan Rene Herskowitz	80,000.00	9,178.58
Unpacking the household headship concept implications for survey design, implementation, and analysis	Heather G. Moylan	140,000.00	0.00
Validating Model-Based Estimates of Intra-Household Resource Allocation and Gender Differences in Consumption Poverty	Talip Kilic	200,000.00	131,461.37
Total		730,000.00	202,887.34
GOVERNANCE AND INSTITUTIONS			
The Potential for E-Justice Innovations to Build More Resilient Justice Systems in the Wake of COVID-19	Antoine Deeb	200,000.00	48,969.55
Evaluating the Impact of Private Sector Conservation in Conflict Zones on Wildlife Preservation and Local Development	Aaron Gabriel Ratliffe Englander	45,000.00	24,507.84
Strengthening healthcare systems governance and institutions to improve access to quality healthcare in low-capacity settings	Guadalupe Bedoya Arguelles	60,000.00	25,017.40
Transactional Governance Structures: a Comprehensive Analysis of Underpinnings of Firm-to-firm Agreements	Nona Karalashvili	130,000.00	27,291.00
Optimal Design of Consumption Taxes	Mahvish Ifrah Shaukat	70,000.00	59,020.77
Total		505,000.00	184,806.56
CROSS-CUTTING ISSUES: DEBT AND FINANCIAL FRAGILITY			
The Demand for Debt from Emerging Markets and Developing Countries	Sergio L. Schmukler	200,000.00	42,242.96
Macro- and micro-economic implications of sovereign debt reduction	Hayley Marie Pallan	180,000.00	0.00
Total		380,000.00	42,242.96

Project Name	Task Team Leader	Allocation	Disbursement
CROSS-CUTTING ISSUES: HUMAN CAPITAL			
Improving the Effectiveness of Online Teacher Professional Development	Lelys Ileana Dinarte Diaz	100,000.00	9,060.00
Protecting human capital during episodes of forced displacement: learning from Ukrainian refugees in Italy	Quy-Toan Do	200,000.00	142,378.34
The Persistent Effects of Stunting: A Ten-Year Follow-up of Beneficiaries and Non-Beneficiaries of the Philippine CCT	Jed Friedman	200,000.00	34,755.53
Improving Skills Development and Employability through Traditional Apprenticeships: Evidence from Senegal	John T. Giles	200,000.00	156,965.26
Total		700,000.00	343,159.13
CROSS-CUTTING ISSUES: TECHNOLOGY			
Exploring Data Use in the Development Economics Literature using Large Language Models (AI and LLMs)	Aivin Vicquierra Solatorio	140,000.00	1,925.27
Measuring the Cost of Digital Transactions	Xavier Gine	123,740.80	85,100.27
The transformational impact of novel weather forecasts for smallholder farmers	Paul J. Christian	90,000.00	87,602.91
Total		353,740.80	174,628.45

Source: KCP Program Management Unit.

TABLE 4: KCP IV Projects Completed in FY2024 (US\$)

Project Name	Task Team leader	Allocation	Disbursement
Promoting Economic Inclusion at Scale through Self and Wage Employment Support in Tanzania	Dahyeon Jeong	125,000.00	122,536.30
Livelihoods Support for Displaced Persons and Host Populations in a Fragile Context	Chloe Monica Fernandez	196,750.00	196,687.84
Leveraging Building Energy Codes and Standards for Climate Change Mitigation	Jayashree Srinivasan	197,896.00	197,200.52
Cross-Country Sources of Variation in CO2 Emissions	Susmita Dasgupta	70,000.00	69,439.00
The Collection and Analysis of Gender Differentials in Wellbeing Narratives	Vijayendra Rao	200,000.00	199,442.28
Lack of Employability Skills and Informational Barriers to Female Labor Force Participation in India: Evidence from Two Randomized Controlled Trials	Anukriti LNU	200,000.00	199,921.81
Women, Business and the Law in Practice: Completing a Framework to Measure de Facto Gender Equality	Marina Elefante	200,000.00	199,588.19
Recording Small Receipts: Digital Technology Adoption at the Margin of Formalization	Astrid Maria Theresia Zwager	176,000.00	175,845.95
Understanding How Public Officials Learn through In-Service Training	Daniel Oliver Rogger	74,065.00	71,523.99
Understanding the Determinants of Public Procurement Efficiency: Evidence from Administrative and Survey Data from Brazil	Thiago De Gouvea Scot de Arruda	141,000.00	130,226.36
Indexing the World: Enabling the Effective and Efficient Discovery of Geospatial Data for Holistic and Localized Research	Aivin Vicquierra Solatorio	146,000.00	133,208.44

Source: KCP Program Management Unit.



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