



## Webinar Brief

# Global Bargains for Reducing Carbon Emissions

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***"Wealthy nations must take the lead by funding cost-effective mitigation projects in LMICs, recognizing the shared benefits. Simultaneously, LMICs must strengthen their regulatory frameworks and prioritize low-cost, high-impact solutions."***

Climate change has emerged as one of the greatest threats to humanity, posing serious risks to ecosystems, economies, and societies worldwide. Climate change has emerged as a truly worldwide problem, which is characterized by a stark paradox, which means the countries that are most vulnerable to climate change impacts are often those who are least responsible for greenhouse gas (GHG) emissions. This disparity has created the need for innovative solutions and collaborative efforts, particularly for global bargains to reduce GHG emissions.

Nations across the globe are not only acknowledging these threats but also actively seeking solutions to mitigate climate change impacts and adapt for a sustainable future. Pakistan is no exception. Countries like Pakistan provide a striking example of the inequities inherent in the climate crisis. Despite contributing less than one percent of global greenhouse gas emissions, Pakistan remains one of the most vulnerable countries to climate change. Pakistan faces severe climate-induced challenges, including devastating floods, declining agricultural productivity, and emerging water crises. The recent devastating floods in 2022 serve as a stark reminder of the country's susceptibility to climate-induced disasters. Therefore, it is the most discussed issue around the globe, how carbon emissions can be reduced to minimize the consequences of climate change.

Recognizing the urgency, Pakistan recently launched its first carbon market policy, aiming to integrate global climate strategies and build resilience. To explore opportunities, the Pakistan Institute of Development Economics (PIDE), Pakistan's premier think tank hosted a webinar entitled "Global Bargains for Reducing Carbon Emissions." For this webinar, Dr. Seema Jaychandran, Professor of Economics and Public Affairs from Princeton University, USA was invited. She is a distinguished expert in environmental conservation with a special focus on developing nations. The session emphasized vulnerability to climate change and the urgent need for policy intervention and international cooperation exclusively in the context of reducing carbon emissions or mitigation. This webinar was moderated by Dr. Nasir Iqbal, Dean PIDE School of Social Sciences and Head Macro Policy Lab (MPL) at PIDE. This webinar was attended by very diverse experts, students, and researchers.

## Key Takeaways:

The key takeaways from this webinar are summarized below:

### *Global Perspective on Carbon Emissions:*


👍 Richer countries are factually the biggest contributors to GHG emissions, the richest 10 percent of countries contribute over a third of global emissions. Distinct from localized environmental issues, climate change goes beyond national or regional boundaries. Therefore emissions from one region affect the whole world. On the other hand, the low- and middle-income countries (LMICs) bear the severest costs due to economic constraints and geographic vulnerabilities, as well as the weaker healthcare systems.

👍 The highest contribution in GHG emissions has created a moral and economic imperative for the wealthiest countries to take up most of the burden in mitigating climate change and assist vulnerable nations as well. This was one of the most debated agendas at CoP-29 too.

👍 Climate consequences can be minimized in two ways, through adaptation or mitigation. The central focus of adaptations is on building resilience to climate shocks, For example, improving healthcare systems to endure heatwaves. On the other hand, Mitigation is about plummeting emissions to slow down climate change. While both are critical, the discussion in this webinar emphasizes mitigation strategies, particularly cost-effective opportunities in LMICs.


👍 Initiatives such as reforestation, energy efficiency improvements, and methane capture can be economically viable with international support in LMICs.


👍 The key motive behind carbon trading is that if you reduce one ton of CO<sub>2</sub> emissions regardless of the place or country like in Pakistan or Uganda the global atmospheric level of CO<sub>2</sub> emission is reduced. This is offering an opportunity for the global marketplace. Where payers may be from Australia, Europe, or the US and receivers may be from Uganda or Pakistan.


 The key point is now where this mitigation might take place or where mitigation projects should happen. This is usually done with an optimization point of view focusing on the most cost-effective opportunities, which are usually in LMICs. However, willingness to pay varies across different countries.

### ***Cost-Effective Mitigation Opportunities:***

Mitigating carbon emissions in LMICs presents a distinctive benefit. This means that similar environmental effects can be realized at a fraction of the cost compared to richer countries. Several factors contribute to this economic inequality:

 **Unexplored Low-Hanging Fruit:** There are several untapped opportunities for emission reduction in many LMICs. For example, switching from coal to cleaner energy sources or improving energy efficiency in industrial processes. Wealthier states have already pursued such projects, making their marginal costs higher.


 **Lower Costs of Land and Labor:** Different projects that require substantial land or labor inputs, for example, solar farms or reforestation, are considerably inexpensive in LMICs.

 **Greenfield Opportunities:** Building new infrastructure with sustainability in mind is often more cost-effective than retrofitting existing systems. LMICs, with their rapidly growing infrastructure needs, present substantial opportunities for green development.


### ***Practical Examples of Mitigation:***


Several case studies highlight the feasibility and benefits of targeted mitigation efforts in LMICs. **Avoided Deforestation in Uganda:** Almost 10 percent of global carbon emissions are coming from deforestation. Deforestation frequently offers private economic benefits, for example, expansion in agricultural activities or timber sales. This is creating an economically rational choice for the forest owners. However, this comes at a high environmental cost. Regulating or banning deforestation is a good policy option but it fails often due to the challenges associated with enforcement which also levies substantial costs on local communities. For example, forest owners may rely on cleared land for agriculture or charcoal sales to support basic needs like food or medical expenses. Strict bans can exacerbate poverty in these areas.


There is a parallel market-based solution to avoid deforestation. This works by offering financial incentives to forest owners to conserve forests. This is also called Payments for Ecosystem Services (PES). Professor Seema Studied the impact of PES in Uganda. A PES program in Western Uganda confirmed the usefulness of this approach. She found that PES is an effective financial tool to incentivize the reduction in deforestation.

 To conserve forests in treatment villages, forest owners were offered \$28 per hectare annually if they preserved their forests. Compliance with this project


was monitored through on-ground checks and remote sensing (e.g., drones, and satellites).

 Control or treatment villages demonstrated a 9 percent deforestation rate over two years, while treatment villages collectively reduced deforestation by over 50 percent.

 The program showed allocative efficiency, with less productive lands being conserved and more productive lands used for agriculture.

 The cost-effectiveness of this program was extraordinary:

- Avoiding a ton of carbon emissions costs approximately USD 3 only. This also comes with universal social benefits which are 70 times the total cost of the program.
- Due to higher land and labor costs, these kinds of programs are expensive in high-income countries. For example, the Conservation Reserve Program in the USA is 10 times more expensive.

 Therefore, investing in forest conservation in LMICs is an exceptionally economical way to combat climate change. By aligning economic incentives with environmental goals, PES programs offer a scalable and sustainable solution to reduce carbon emissions while supporting local livelihoods.

### ***Improved Brick Kilns in Bangladesh:***

Training brick kiln owners on energy-efficient practices reduced their energy consumption by 10 to 20 percent, leading to increased profits, healthier working conditions, and reduced emissions at a cost of just USD 1 per ton of carbon dioxide.

### ***Methane Capture from Landfills:***

Capturing methane, a potent greenhouse gas, from decomposing organic material not only reduces emissions but can also generate usable energy, exemplifying a win-win scenario.

### ***Barriers to Mitigation in LMICs:***

LMICs offer extensive opportunities for cost-effective emissions reductions. But, numerous challenges must be addressed to unlock their full potential. Some of the major constraints are capital constraints, regulatory capacity, and behavioral inertia, which frequently hamper the acceptance of sustainable practices in LMICs.

### ***Capital Constraints:***

Many mitigation projects require upfront investments. For instance, households may need subsidies to adopt energy-efficient appliances or practices.

### ***Regulatory Capacity:***

LMICs often lack the institutional frameworks necessary to enforce environmental regulations effectively. Building this capacity is fundamental for successful implementation.

### ***Behavioral Biases:***

Inertia and misinformation can hinder the adoption of environmentally beneficial technologies. For example, the transition to energy-efficient appliances in many cases only occurred after regulatory bans on less efficient alternatives.

### ***Mitigation Financing: The Role of Carbon Markets***

A well-functioning carbon market is essential to fill the financing gap for LMICs. To achieve the objective of universal emission reduction, these carbon markets allow organizations in richer states to fund mitigation projects in LMICs. Such arrangements are not merely acts of aid but represent mutually beneficial trade. For instance, companies like Google and governments such as Germany can meet their emissions targets more cost-effectively by investing in different projects in LMICs.

### ***Risks of Double Counting and Development Aid Diversion***

One potential pitfall in carbon financing is the risk of double counting. Distinguishing between the funds spent on climate mitigation and actual local economic benefits is essential. PES programs, like the Uganda Forest Conservation Initiative, demonstrate this nuance. While some payments compensate individuals for foregone economic opportunities, others provide direct economic gains. Policymakers must ensure that mitigation efforts do not inadvertently divert resources from critical adaptation needs.

### ***Technology Transfer: An Untapped Opportunity***

Technology transfer presents another opportunity for supporting LMICs in their climate efforts. By sharing innovations, such as energy-efficient industrial processes or renewable energy solutions, richer states can assist in lowering the costs of mitigation worldwide. Collaborative mechanisms, like advanced market commitments for carbon technologies, can incentivize innovation while ensuring equitable access.

## ***The Political Economy of Climate Change***

Global climate negotiations often reflect underlying geopolitical tensions. Wealthy nations may resist financing commitments, while LMICs struggle to meet international standards due to resource constraints. Regional dynamics, such as the blame game over smog between Pakistan, and India, further complicate cooperation. Moreover, the intersection of climate change with issues like migration and conflict adds urgency. Climate-induced displacement and resource scarcity can exacerbate political instability, necessitating proactive international collaboration.

### ***Towards a Collaborative Future:***

Addressing climate change requires a collective global effort. Wealthy nations must take the lead by funding cost-effective mitigation projects in LMICs, recognizing the shared benefits. Simultaneously, LMICs must strengthen their regulatory frameworks and prioritize low-cost, high-impact solutions.

Global bargains for reducing carbon emissions offer a pathway to achieve climate goals more efficiently and equitably. However, success depends on transcending political divides and ensuring that climate action aligns with broader development goals. As the impacts of climate change intensify, the urgency for such collaborative efforts has never been greater. Therefore this session emphasized the significance of international cooperation and collaborations and the adoption of equitable, cost-effective solutions while addressing climate change, with particular emphasis on:

- Leveraging carbon markets to finance mitigation projects in developing countries.
- Prioritizing projects with co-benefits such as job creation and local environmental improvements.
- Encouraging technology transfer and innovation to lower the costs of green transitions globally.



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