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Senegal's Climate Poverty and Migration: the Price of Inaction

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Established at the initiative of the Directorate of Development Cooperation, CAIPD brings together researchers from LISER and J-PAL Europe to equip the government with methodological tools for impact evaluations and programme monitoring in cooperation projects.

Summary

We analyse the potential effects of climate change on Senegal's economy and population movements using a spatially pixellated model of the world economy. Examining scenarios for 2030 and 2050 with a temperature increase consistent with RCP 7.0 (political status quo) and SSP3 (regional challenges), we aim to understand how Senegal, as a part of the global system, might be affected by these changes.

Model

Our model assesses four climate damages in Senegal: extreme heat reduces labour productivity, hitting the central and eastern agricultural areas the hardest; changes in land productivity benefit the central part due to increased precipitation; sea level rise damages the sparsely populated southern coast; and disasters such as droughts, floods, and heatwaves impact central and southern regions the most.

Geographical Landscape

Our model projects that the majority of the country, especially the northern, eastern, and southern regions, faces substantial income losses, leading to outflows of inhabitants. This pattern deepens regional inequalities, hindering economic convergence. Coastal areas may see slight income declines, while the agrarian central part of Senegal records benefits, with income gains due to an increase in land productivity.

Senegalese Context

Climate change impacts Senegal's economic prosperity, social cohesion, and living conditions, causing widespread income declines and pushing millions into extreme poverty. Policymakers face a challenge over the next decades, with potential actions including accelerating economic structural change, developing trade links, unlocking urban potential, and fostering social awareness for proactive migration planning.

Main Takeaways

Without an adaptation strategy by 2050, Senegalese will face the following challenges caused by climate change:

- **11% of Senegalese face extreme poverty:** Climate immobility arises among populations that suffer from poverty, rely on agriculture and lack proper education.
- **Income and purchasing power drop:** The majority of the country experiences significant income losses ranging between 50 and 70 percent, with prices rising by more than 50 percent.
- **40% decline in Senegal's overall GDP:** The sectoral impact varies; industry experiences the most substantial loss (55%), followed by agriculture (45%) and services (36%).
- **Dakar hosts most of internal climate migrants:** Due to climate damages, until 2050, approximately 250,000 people immigrate to Dakar, while 160,000 people become discouraged from leaving.
- **Many choose to move to Europe and North America:** Tens of thousands of people from Senegal move to the North, while emigration to neighboring countries reduces dramatically.

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