

December 2023



CLIMATE CHANGE, CLIMATE POLICY AND JOBS

Climate change is one of the largest challenges to development, because droughts, floods, extreme events and slow onsetting heat destroy infrastructure, jobs and livelihoods. Climate change affects both existing and future jobs through multiple channels– including by reducing labor productivity, outputs, and labor incomes – across multiple sectors such as agriculture, construction, tourism, energy, and infrastructure. The poor are the most vulnerable, working outside, with no income if climate conditions prohibit work, often in inadequate housing conditions and with no means to adapt. Already, climate change is costing the world [\\$16million per hour](#), underscoring the need for increased targeted and focused climate action.

Climate action, be it mitigation or adaptation, has immediate consequences for the “more and better jobs” agenda. Adaptation and especially mitigation policies are often framed as endangering existing occupations, especially for some sectors. However, these policies also create opportunities for jobs and workers. For instance, the promotion of local green solutions - through policies, regulations and financing can foster [innovation, create new jobs, and support local ownership](#). Early planning and analysis of the potential job impacts of the green transition is crucial to deliver on both adaptation and mitigation goals, for instance to understand the implications of structural change on the current and future demand for skills.

Estimates and projections of job losses under different climate change scenarios span a wide range, but overall point at negative impacts. The ILO estimated the impacts of heat stress as a loss of [two per cent of total working hours worldwide by 2030](#), based on temperature projections, labor productivity measurements and health records. Heat waves also impact tourism, leading to large

losses of often informal jobs. Agricultural yield models have projected losses of up to [10 percent per degree global warming for certain crops](#), which can quickly turn into a tipping point and drive farmers out of business. Global models, which are based on Keynesian aggregate demand and labor productivity growth, show how climate change reduces profitability, [by negatively affecting investment and output in the short and long runs](#). The models suggest that employment falls and then recovers, albeit to a lower level compared to a world without climate change.

Climate mitigation and adaptation policies are projected to overall improve job outcomes. Global simulations show overwhelmingly positive jobs impacts for green scenarios compared to continuing with business as usual. Many sectors relevant for a low-carbon transition are labor intensive and often low-skilled. Construction, for instance, plays a large role in building resilient infrastructure or in the roll-out of renewable energy technologies. [In 2022, globally 13.7 million people worked in manufacturing, installing, and operating renewable energy power and heat generating facilities and biofuels](#). Moreover, carbon prices increase fiscal space, benefitting labor intensive sectors such as education and health. Revenue recycling matters, and payroll tax decreases have led to a double dividend from carbon taxes in several European countries in the past. Access to clean energy supporting occupational choice of non-farm rural economic activities and efficient public transport giving access to better jobs contribute to positive job outcomes.

The political economy of the low carbon transition matters. Climate policies need to be combined with support for 'left-behind' workers to increase the political acceptability of such policies. This support includes labor mobility, re-skilling and upskilling as well as transfers for workers who cannot take on new jobs. Moreover, involving workers in transition decisions and encouraging citizen engagement supports acceptance and buy-in for decisive climate action.



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FEATURED STUDIES IN THIS DIGEST

Combining Short-Term Economic Recovery with Long-Term Sustainability

Chewpreecha et al. | Journal Article | May 2023

Within Reach: Navigating the Political Economy of Decarbonization

Hallegatte et al. | Book | November 2023

Examining parallels between the Covid-19 crisis and the climate crisis reveals their shared global impact and the necessity of collective responses. Solutions for both hinge on a blend of technological advancement and behavioral shifts, prompting an exploration of addressing these dual challenges simultaneously. Through a Schumpeterian lens, this study suggests that initiatives promoting low-carbon technology can drive immediate economic growth while steering the world toward a more sustainable trajectory, showcasing the potential synergy between accelerated economic development and emission reduction.

Despite numerous pledges, technological advancements, and the introduction of thousands of climate policies, global progress toward the Paris Agreement goals is inadequate, with political economy acting as a significant barrier. The book recommends a strategic approach for policymakers, emphasizing dimensions like climate governance, policy sequencing, policy design, and policy process to overcome political obstacles and foster consensus and momentum for transformative climate policies.

Economic Growth, Income Distribution, and Climate Change

Rezai et al. | Journal Article | April 2018

The authors demonstrate that climate change, driven by greenhouse gas emissions, adversely impacts the economy by reducing profitability, investment, and output in both short and long terms. The study underscores the importance of climate policies, which, in contrast to a business-as-usual approach, have the potential to improve incomes and employment while mitigating the negative consequences of a dystopian income distribution and high unemployment.

Does Climate Action Destroy Jobs? An Assessment of the Employment Implications of the 2-degree Goal

Montt et al. | Working Paper | December 2018

The Paris Agreement aims to limit global warming to below 2°C, requiring an increase in renewable energy and energy efficiency. This transition, impacting the interconnected energy sector and other industries, is analyzed using a Multiregional Input–Output database. The study predicts that by 2030, the global shift toward renewables and energy efficiency will result in net job creation across most economies, particularly in construction, manufacturing, and the renewable energy sectors.

OTHER ESSENTIAL READINGS ON THE TOPIC

The 2023 Report of the Lancet Countdown on Health and Climate Change: The Imperative for a Health-centred Response in a World Facing Irreversible Harms

Romanello et al. | Report | November 2023

The report indicates insufficient progress in addressing escalating risks to health from extreme weather events, infectious diseases,

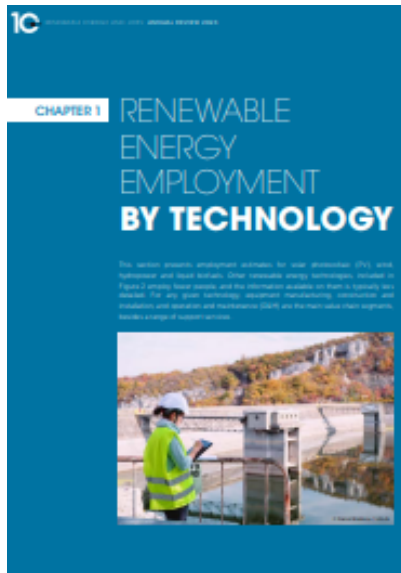
Macroeconomic Impacts of Climate Change on the Blue Economy Sectors of Southern European Islands

Vrontisi et al. | Journal Article
January 2022

This paper presents a model-based evaluation of the macroeconomic impacts of climate change on the Blue Economy of southern

and food insecurity, particularly affecting vulnerable populations. Urgent mitigation measures to restrict the global temperature increase to 1.5°C are imperative, yet prevailing policies are insufficient, hindered by fossil fuel expansion, inadequate utilization of renewable energy, and health disparities, underscoring the imperative for coordinated global initiatives spearheaded by health professionals and policymaker.

European islands. The findings suggest varying economic impacts across islands, emphasizing the detrimental effects of climate change on the tourism sector and the added stress on island economies from increased electricity demand for cooling and water desalination, particularly under a high-emission scenario (RCP8.5) compared to a lower-emission pathway (RCP2.6).



Renewable Energy and Jobs: Annual Review 2023

IRENA & ILO | Report | 2023

The global renewable energy sector employed a total of 13.7 million people both directly and indirectly in 2022, reflecting substantial growth from 7.3 million in 2012. This increase is primarily attributed to the contributions of solar photovoltaic (PV), bioenergy, hydropower, and wind power. The conclusion emphasizes that investing to align the world with climate-safe goals would create millions of additional jobs in the coming decades.

RECENT PAPERS ON THE BROADER JOBS' AGENDA

On Occupational Choice and Energy Access Electricity for More and Better Jobs

Ulrike Lehr | Working Paper | November 2023

While this paper finds a positive correlation between electricity access and engagement in non-farm economic activities in six Sub-Saharan African countries, it emphasizes that factors such as education, age, access to loans, and land ownership also influence occupational choices. Additionally, while access to electricity contributes to higher wages and income, especially in certain sectors, the study notes that rural areas still experience lower earnings compared to urban areas, suggesting that

Gender Gaps in Agriculture Productivity and Public Spending in Nigeria

World Bank | Knowledge Note | September 2023

Women farmers in Nigeria have a 30 percent lower productivity per hectare compared to men, attributed to factors such as limited inputs, restricted participation in extension services, cultivation of less valuable crops, and employing less productive labor. Notably, the four value chains with the highest budget allocations exhibit the lowest participation of women. To address these disparities, adjustments in budget allocation and policy formulation are proposed in this technical note

electricity access and non-farm activities may not prevent individuals from migrating to cities in pursuit of better employment opportunities.

that analyzes gender dimensions in crop value chains, aiming to formulate recommendations for closing gender-based productivity gaps in Nigeria's agriculture.

Navigating Education, Motherhood, and Informal Labor: The Experiences of Young Women in Luanda

World Bank | Report | September 2023

Based on these in-depth interviews with low-income young women in Luanda, this report points to the multiple challenges they face across their life cycle - challenges relating to the dimensions of education, family formation, and work. It also shows how those dimensions in a woman's life are deeply interconnected - and how they are determined by structural constraints including poverty and vulnerability, gender norms, corruption and lack of transparency in access to services and opportunities, and violence in public and private spheres.

Labor Market Impact of the COVID-19 Pandemic in the West Bank and Gaza

Deng et al. October | Working Paper | October 2023

The results reveal that in the West Bank and Gaza, the initial aftermath of the COVID-19 pandemic witnessed a decrease in employment and labor market participation, particularly among men. Despite a seemingly resilient overall labor market, with indicators swiftly returning to pre-pandemic levels, the findings highlight that the most vulnerable segments of the workforce, including informal workers, those in blue-collar occupations, the least educated, and residents in refugee camps, experienced a disproportionately heavier impact.

The Resilience of SMEs and Large Firms in the COVID-19 Pandemic: A Decomposition Analysis

Amin & Jolevski | Working Paper | September 2023

This study examines the sales decline gap between small and medium-size enterprises (SMEs) and large firms in 19 developing countries following the COVID-19 outbreak. SMEs experienced a 12.2 percentage points larger decline in sales compared to large firms. Factors such as input supply disruptions, lower initial labor productivity, concentration in sectors with significant sales declines, and varying returns to financial constraints contributed to widening the gap, especially at higher quantiles of the sales decline distribution. Additionally, the study emphasizes the need for an adaptable policy approach considering local conditions and the size of the economic shock.

Job Training and Job Search Assistance Policies in Developing Countries

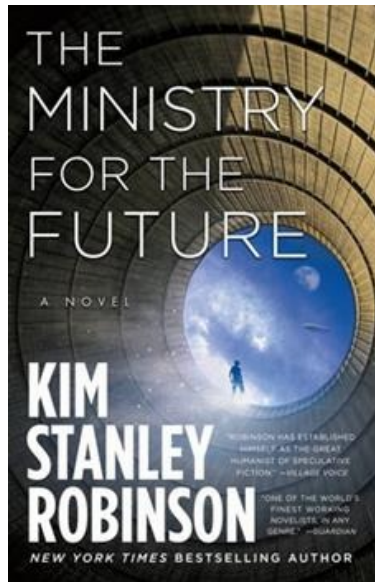
Carranza & McKenzie | Working Paper | October 2023

Governments in developing countries are under pressure to actively assist jobseekers, often employing job training and job search assistance policies. Despite doubts arising from modest impacts observed in initial program evaluations, this paper reexamines the case for developing countries to adopt such interventions. The authors argue that government involvement is still warranted, emphasizing that successful implementation depends on challenging-to-scale program design and delivery elements, and in many instances, the main constraint may be a shortage of firms offering job opportunities rather than a lack of skilled workers.

RECOMMENDED HOLIDAY READ

The Ministry for the Future

Kim Stanley Robinson | Book | October 2020



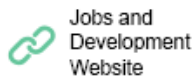
Renowned science fiction author Kim Stanley Robinson presents a unique vision of climate change in his book, "The Ministry for the Future." The story unfolds through fictional eye-witness accounts, offering a captivating exploration of how climate change will impact our lives in the coming decades. Unlike typical post-apocalyptic narratives, the book portrays a future that is not too far away, where we have the potential to overcome the immense challenges we face. It is a compelling and thought-provoking novel that balances a sense of urgency with a glimmer of hope, making it a most powerful work on climate change. It was also Barack Obama's favorite book of the year.

CONTRIBUTORS

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Want to share your recent publication or event for inclusion in our monthly newsletter? Email kpela@worldbank.org

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