MANAGING AND ERADICATING POVERTY THROUGH EDUCATION AMONGST TEACHERS OF SELECTED SECONDARY SCHOOLS IN LAGOS STATE, NIGERIA

Yahya Lateefat Oludare, Ikuenomore Samuel Oluwasayo & Osoja Oluwafemi

Department of Educational Management, Faculty of Education, Lagos State University Ojo, Lagos, Nigeria

Abstract

The paper examined long-term climate change as it affects human mobility in the 21st Century. The poorest economies have experienced the hardest hit, thereby increasing global inequality and extreme poverty. Damages from climate change are expected to vary across and within countries according to proximity of seas and oceans, land topography, industry structure and initial temperature levels. The paper examined the significance of climate change on migration, damaged caused, modeling direct and indirect effect, globally inequality and extreme poverty. The paper discovered that as the impacts of climate change become more severe, people will be increasingly affected by "resources- constrained immobility". The side effects of the menace has rendered many homeless, losing value in the society and no longer able to fetch for the family, now living at the mercies of government intervention or non-governmental organizations. It further discovered that regardless of whether damages are proportional, independent of, or inversely proportional to income, the poorest people will see the greatest damages as a result of climate change. Climate change causes includes Natural and Man- Made causes. It was discovered among others that there are various ways of measuring climate change such as Surface temperature, Sea Level Rise and Parts per Million of Greenhouse Gases. Findings were discussed and few recommendations were made which include electing people at every level of government who are committed to passing laws and enacting policies that defeat climate change and reducing the amount of single-use, disposable plastic items, including bags, plastic bottles, polythene.

Keywords: Climate Change, Poverty, Resources Migration, Ideas

Word count: 248

Corresponding Author Email:
latyfah_2005@yahoo.co.uk

How to cite:Yahya Lateefat Oludare, Ikuenomore Samuel Oluwasayo & Osoja Oluwafemi. (2024). Climate Change and Poverty of Resources Migration and Ideas. *Educational Perspectives, 12*(3),

Introduction

Poverty is a state or condition in which a person or community lacks the financial resources essentials for a minimum standard of living(James, 2023). Poverty-stricken people need medical attention. A person is considered to be poor when they cannot afford the basic necessities of life such as food, clothing and housing. Poverty can be categorised into four dimensions namely; absolute, relative, subjective and social exclusion. Idea on the other end is any conception existing in the mind as a result of mental understanding, awareness, or activity. It is a thought, conception, or notion. Thus, poverty of ideas refers to a situation in which someone lacks the mental capacity or creativity to come up with new ideas or solutions.Poverty of ideas may be caused by climate change.

Resources are anything that has utility and adds value to one's life. Air, water, food, plants, animals, minerals, metals, and everything else that exists in nature and has utility to mankind is a 'Resource'. The value of each such resource depends on its utility and other factors.On the other hand, migration is the movement of people or things from one place to another. Therefore, resources migration can be moving of resources within a country or between countries. Resources Migration can be permanent, temporary or seasonal. Resources migration happens for a range of reasons, which can be economic, social, political or environmental. While resources migration is capable to impact both the place left behind and the new place of settlement, and these impacts can be both positive and negative, it is observed that climate change may induce resources migration.

Climate change is the long-term increase in the earth's average surface temperature and the large-scale changes in global, regional, and local weather patterns that result from that increase, caused by a significant increase in the levels of greenhouse gases that are produced by the use of fossil fuels.However, since climate change is a phenomenon that takes place over decades and even centuries, there are differing definitions for it. Some people believe it is a totally natural occurrence, and one that's happened before, while others believe it's completely man-made. To complicate matters further, another group in the middle thinks climate change is a combination of both factors, and some people outright reject the existence of climate change completely.Despite the public controversy surrounding the topic, the scientific community is overwhelmingly in agreement that climate change is real and that we need to address it in a proactive manner. Climate change deniers frequently confuse weather and climate. If you've ever heard someone say that global warming does not exist because of a recent extended cold snap that brought low temperatures, you know what we mean.For the sake of clarity, while weather is the local meteorological conditions experienced over short periods of time, including temperature, precipitation, and wind speed, humidity, and visibility, climate is the long-term average of patterns and trends in weather, including day-to-day, year-to-year, and even longer time. The two most popular terms used to describe the earth's increasing temperatures are global warming and climate change. These relate to both short-term and long-term trends for both weather and climate. While they are often used interchangeably, there is a slight difference between them. For instance, on the one hand, global warming is the rising average temperature of the earth's lower layers, including the ocean and atmosphere. Such warming occurs from the heat being trapped in the earth's atmosphere due to greenhouse gases. On the other hand, climate change refers to the varying environmental conditions that influence the planet's weather

patterns .Although used in conjunction with global warming, climate change doesn't specifically refer to warming or its causes. Thus, environmentalists often prefer this term because of its broader consideration of all the changes happening on the planet in addition to rising temperatures. The overwhelming majority of climate scientists agree that climate change is actively happening. However, when it comes to pinpointing the specific causes for those changes, there is less consensus. Some argue that natural variations in atmospheric conditions are heating the planet, while others claim humans are mainly responsible for this increase. As it is the case in many controversial situations, others believe that a mixture of both is the culprit. Whether caused by nature or man-made, climate change may lead to poverty of resources migration and ideas.

Generally however, when it comes to natural factors impacting climate change, three causes are frequently cited as contributors. First, changes in solar radiation**.** The sun's rays heat the earth regardless of changes in weather patterns that occur below. As such, any change in the sun's radiation, either an increase or decrease will influence our surface temperatures. Second, greenhouse gases**.** As the temperature increases, more greenhouse gases are released into the air. This traps more heat in the earth's atmosphere while thinning out the ozone layer, which means less radiation can escape. It can cause a nasty cycle where the participants feed off each other. Third, drastic weather changes**.** Climate change can also occur through drastic weather changes. Disasters like hurricanes or floods can cause significant damage to the surrounding environment, which in turn can affect the climate, and lead to poverty of resources migration and poverty of ideas.

Ironically, there are man-made causes of climate change. The most prominent man-made causes of climate change include:Industrialization, whereby increased development has led to greater production and allocation of energy, which releases greenhouse gases into the atmosphere in greater percentages than in the past; Inconsistent Emissions Controls**,** whichis a situation where emissions control standards have not kept pace as technology continues to improve, resulting in more harmful greenhouse gases being released into the air; Deforestation, a situation whereby increasing amounts of trees are cut down without planting new ones, creating a disproportionate amount of carbon dioxide staying in the atmosphere and heating up the environment since the plants that breathe in carbon dioxide have been denied living. Other man-made causes of climate change include Agribusiness, which occurs as contemporary farms send up large amounts of carbon dioxide and methane into the atmosphere while meeting the food needs of developed countries; and finally, Modernization, whereby the concrete used to build roads, and the vehicles that travel upon them createhigh levels of carbon dioxide and exhaust fumes that contribute to high temperatures.

All of these causes combine to create what is known as “The Greenhouse Effect” where greenhouse gases prevent heat from escaping into space, warming the planet.Human activities have caused the increase in radiation, temperatures, and gases to spiral out of control. This results in these warming factors being trapped in the earth’s atmosphere, creating an unhealthy greenhouse-like environment that are capable to induce poverty of resources migration and poverty of ideas. Greenhouse gases (many of them man-made) feature prominently among the human causes of climate change because the levels of those gases emitted to the environment have increased significantly in the last few centuries. Greenhouse gases are the gases that contribute directly to the greenhouse effect. They trap heat in the earth's atmosphere, which can

trigger increases in average global temperature. Some of the greenhouse gases include: Carbon Dioxide (Natural), which absorbs, retains, and radiates heat, resulting in global warming; Methane (Natural),a more potent greenhouse gas than carbon dioxide, which converts into carbon dioxide when it comes in contact with oxygen due to a chemical reaction, and causes an increase in global temperatures; Nitrous Oxide (Natural), which can remain in the atmosphere for 150 years, and is about 300 times more potent than carbon dioxide; Chlorofluorocarbons (Man-Made), which are the gases used as refrigerants and aerosols that leak into the atmosphere, accumulate and contribute to the increased greenhouse effect.

Researchers have observed that, depending on the scenario, climate change will force between 210 and 320 million people to move, mostly within their own countries in this 21st century if climate change is not addressed. They further posit that given the same condition, massive international flows of climate refugees are unlikely, except under generalised and persistent conflicts; and that the poorest economies will be hardest hit, thus increasing global inequality and extreme poverty. Specifically, developing countries that have contributed the least to climate change will be the most adversely affected, and migratory pressures, both internal and international will presumably be strongest in the poorest countries of the world (Dell et al. 2014).

It is against this backdrop that this paper investigates climate change and poverty of resources migration and poverty of ideas, especially as it affects the developing countries and Nigeria in particular. To achieve this objective, the paper shall be divided into 7 segments, beginning with the introduction, which is being concluded, followed by a brief discussion on poverty, resources, migration and poverty of ideas; climate change effects ;measurement of climate change; climate damage functions; conclusion; and recommendations.

Poverty

Poverty is a state or condition in which a person or community lacks the financial resources essentials for a minimum standard of living (James Chen, 2023). Poverty-stricken people need medical attention. A person is considered to be poor when they cannot afford the basic necessities of life such as food, clothing and housing. Poverty can be categorized into four dimensions namely; absolute, relative, subjective and social exclusion

Resources

Resources are anything that has utility and adds value to life. Air, water, food, plants, animals, minerals, metals, and everything else that exists in nature and has utility to mankind is a 'Resource'. The value of each such resource depends on its utility and other factors.

Types of Resources

1. Natural Resources: These are resources created from the nature which includes air, water, rock, mountain, limestone, e.t.c.
2. Human Resources: Both trained and untrained employee made available to handle one task or the other.
3. Capital Resources: The financial resources which can be money or asset needed to cope with living standard of life

Migration

Migration is the movement of people from one place to another. Migration can be within a country or between countries. Migration can be permanent, temporary or seasonal. Migration happens for a range of reasons. These can be economic, social, political or environmental. Push and pull factors drive migration. Migration impacts both the place left behind and the place where migrants settle. These impacts can be both positive and negative.Some people decide to migrate, e.g. someone who moves to another country to improve their career opportunities. Some people are forced to migrate, e.g. someone who moves due to famine or war. A refugee has left their home and does not have a new one. Often refugees do not carry possessions with them and do not know where they will finally settle.

Poverty of Ideas

Any conception existing in the mind as a result of mental understanding, awareness, or activity. A thought, conception, or notion. Poverty of Ideas refers to a situation in which someone lacks the mental capacity or creativity to come up with new ideas or solutions. For example: His latest work showed a poverty of thought, and it was clear he had run out of fresh ideas. For as many that is displaced and later finds themselves in IDP camp or as refugee in a foreign country will definitely not be in a good mood to think and come up with new ideas or innovation. The displacement from their original home affects them not only financially but also mentally. Many are mentally unstable as a result of unforeseen tragedy that arises due to climate change.

Climate Change Effects

Climate change impacts our world in a wide variety of ways, including:

1. **Weather:** As weather patterns become unpredictable, it affects food production. Also, extreme weather conditions put people at significant risk of disease and injury.
2. **Plants:** As the weather becomes warmer and sea levels rise, plant life moves higher or further inland. This can result in problems for local animal life.
3. **Wildlife:** Changes in the environment cause changes in animal behavior. Many animals are affected by the lack of food sources and new predators that were previously unable to penetrate into their territories. Consequently, animals are forced into a position where they have to migrate or face extinction.
4. **Businesses:** Extreme weather conditions such as hurricanes and tornadoes can destroy vast amounts of property. As such, businesses suffer the losses that these tragedies bring.
5. **Increasing Sea Levels:** As polar ice caps melt, sea levels begin to rise. This can potentially displace millions of people worldwide as well as destroy various ecosystems and natural landmarks.
6. **Ocean Acidification:** As the oceans absorb carbon dioxide from the atmosphere, they become increasingly acidic, which can be dangerous to coral and marine life.

Modelling and predicting migration responses to long-term climate change is a challenging task. Beyond uncertainty about expected climate change, climate variables closely interact with other economic and political drivers of migration. In addition, mobility decisions are context-specific and are influenced by many factors that vary across regions and countries – such as country size, level of economic development, political situation, migrants' networks, or cultural characteristics.

Burzynski et al. 2019, examined long-term effects of climate change on intra-regional (rural or urban), inter-regional (rural to urban), and international migration, as well as on global inequality and extreme poverty. We carry out simulations for virtually all developing countries and the OECD countries. South–South migration – often between contiguous countries affected by similar long-term climate trends – is ignored.

Modeling direct and indirect effects of climate change

Instead of extrapolating empirical estimates of reduced-form migration responses to weather shocks, we use a structural model of the world economy that formalizes the income and mobility responses to climate-related changes in space live ability, and economic and health variables. The model distinguishes between forced displacement and voluntary migration. It accounts for the interplay between different forms of migration at various spatial scales, as well as for the high degree of heterogeneity in migratory behaviour between people of different places of origin (rich versus poor countries, rural versus urban regions, flooded versus unflooded areas), and levels of education. The model is used to predict the joint effects of changing temperature and sea level on income distribution and individual decisions about fertility, education, and mobility. Mitigation policies are not considered; climate change scenarios are exogenous to human decisions or reflect the outcome of mitigation policies that are not captured in the model. The parameters of the model – reflecting technological disparities between spatial units as well as all legal and private mobility costs – are calibrated to exactly match international mobility and urbanization data from the last 30 years. The 'backcast' exercises conducted with this type of model demonstrate that it accurately fits past migration trends and generates sensible projections. The calibrated model is simulated over three periods of 30 years each (2010–2040, 2040–2070, and 2070–2100) under three main climate scenarios:

1. **Benchmark**: Constant temperature and sea level. Most likely unattainable, this scenario serves as a reference for comparisons.
2. **Intermediate**: +2.1°C in global temperature with +1.1m sea-level rise over the century. This corresponds to the median scenario from the World Bank. The bulk of changes in the sea level is expected to take place during the first half of the century.
3. **Maximalist**: +4.1°C in global temperature with +1.3m sea-level rise over the century.

Measurement of Climate Change

Given that climate change is something that occurs over a long period of time, measuring it can be challenging. The evidence of climate change relies on tracking specific metrics to measure and monitor these changes, including (in the order of importance):

1. **Surface Temperature:** This is the temperature of the air, land, and water on the surface level. It is a direct indicator that climate change has occurred. It's important because measuring the rate of change in temperature helps scientists project how much it will warm or cool over time.
2. **Sea Level Rise:** While this is a slower process, melted ice causes sea levels to rise, and monitoring that rise can help scientists project how much the oceans will grow in size. This is essential as rising sea levels threaten to displace millions of people.
3. **Parts per Million of Greenhouse Gases:** This is the measurement of greenhouse gases in the atmosphere. For example, when scientists measure how much CO2 humans are

emitting into the atmosphere, they can better predict future levels of global warming that will occur as a result

Climate damage functions

Four climate damage functions are considered. Two relate to slow-onset mechanisms that are easier to anticipate and are more likely to induce adaptation strategies such as crop switching and migration. We also include two additional mechanisms related to the greater frequency of fast-onset climate shocks, which are more difficult to estimate and/or are more uncertain.

1. First, we account for changes in total factor productivity driven by long-term variations in mean temperature (Desmet and Rossi-Hansberg 2015, Shayegh 2017). For countries close to the equator, agricultural productivity will decrease by 20–25% over the century if the temperature increases by 2.1°C; non-agricultural productivity will decrease by 10%. The effect will be 2.5-times greater if temperature increases by 4.1°C. In contrast, productivity will be positively impacted in countries above the 35th parallel.
2. Second, we model forced displacements driven by the uniform rise in the sea level**.** Combining NASA estimates with our population forecasts, we predict that about 80 million adults will be forcibly displaced by the middle of the century if the sea level increases by 1.1 metres, a scenario that is consistent with a +2.1°C change in temperature (Desmet et al. 2018). About 100 million adults will be forced to move if the sea level increases by 1.3 metres, which is consistent with a +4.1°C change in temperature.
3. Third, we model the expected income losses induced by natural disasters and by the productivity and health effects of extreme heat waves (Burke et al. 2015b). Those losses are calibrated using cross-sectional data on the US states.

Another set of explorative results accounts for climate-driven conflicts over resources.

Climate change will increase global inequality and extreme poverty

In Figure 1, we report the relative differences in 2100 between the intermediate (+2.1°C and +1.1 metres) and benchmark scenarios (no climate change). Focusing on the intermediate scenario, climate change will reduce income per worker by 15% in countries close to the equator and will increase it by 10% at higher latitudes. Hence, the income gap between the richest and poorest countries will increase by 25% over the course of the 21st century. Climate change increases the share of the world population living with less than 2% of the worldwide mean level of income by 0.5 percentage points.

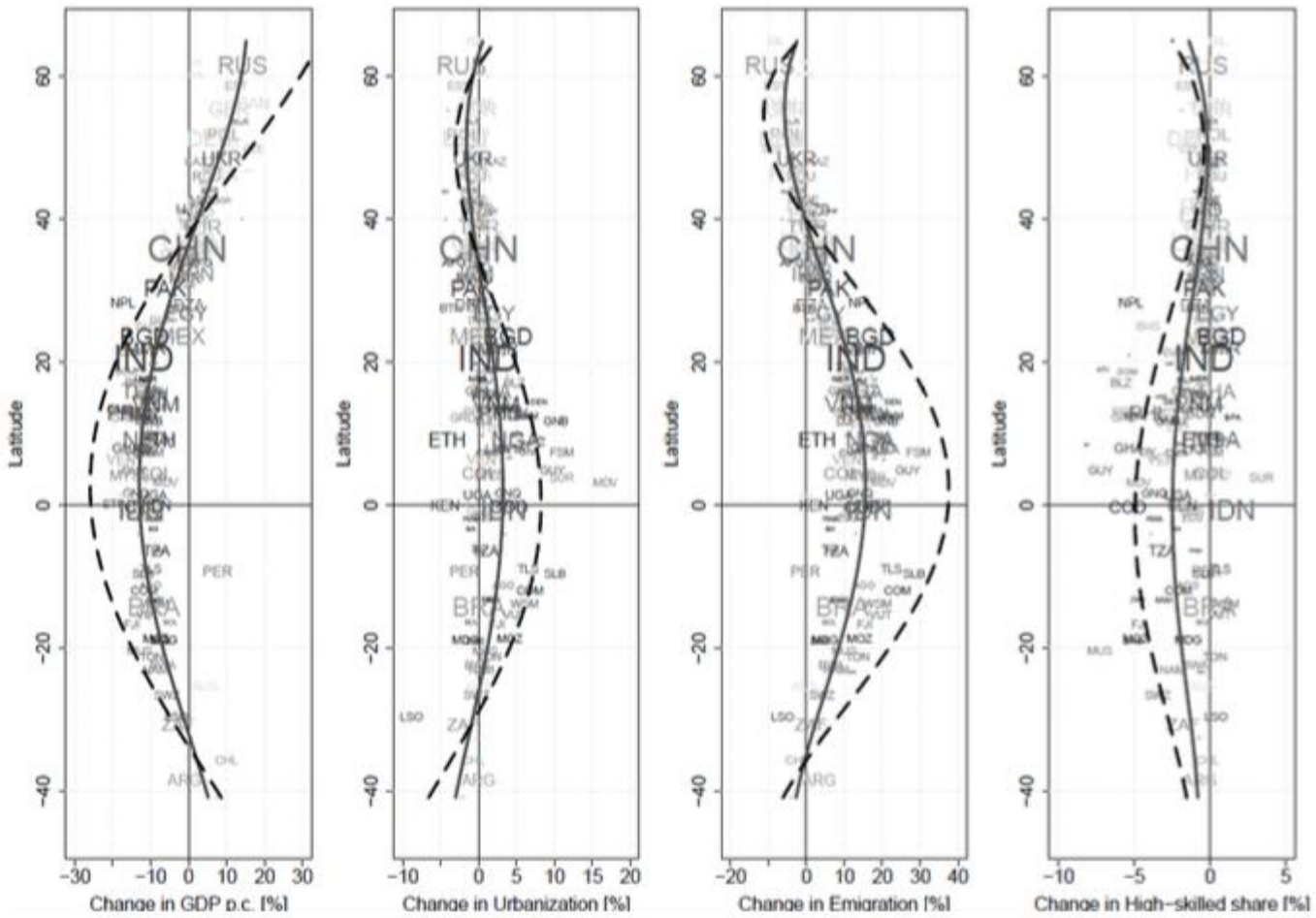

Figure 1 Macroeconomic responses by latitude (2100)

Notes: The font size of country labels is proportional to the log of population; the font lightens as level of GDP per worker rises (i.e. poor countries are labelled in dark characters). The third-degree polynomial trends in solid grey lines represent the mean difference between the intermediate and benchmark scenarios as a function of latitude. Conversely, the polynomial trends in dashed black lines represent the mean difference between the maximalist (+4.1°C and +1.3 metres) and benchmark scenarios. The second panel in Figure 1 illustrates changes in urbanization, which attenuates the total factor productivity shocks because the average level of labour productivity is greater in non-agriculture than in agriculture. The third panel shows the rise in international emigration. Finally, the fourth panel shows how urbanization and international migration affect human capital accumulation.

Although urbanization increases access to education in poor countries, rising international emigration reduces human capital accumulation in developing countries. The reason is that high-skilled people face smaller migration costs, which implies that international emigration is of the brain-drain type. As temperatures and sea level continue to rise, the economic prosperity of dozens of millions is under threat. Under the maximalist scenario, the macroeconomic effects will be twice as large, and the share of the population below the poverty line will increase by five

percentage points. Climate change represents a direct and immediate threat to poverty alleviation. It's important that we bring the climate and poverty communities together to design interventions that are effective for both,(Marianne Fay), the World Bank Group's chief economist for climate change. Four clear issues are opening those conversations:

1) Climate change is an obstacle to ending extreme poverty.

The poor – both those living in poverty and those just barely above the poverty line – are already the most at risk from climate change. They have the fewest resources to adapt or recover quickly from shocks, and they often live on the most vulnerable land because it tends to be the most affordable, such as homes along creeks that flood or on hillsides prone to landslides, or farmland with limited water access.The damage extreme weather can do to their homes and businesses can prevent the poor from escaping poverty, and it is often the trigger that tips the vulnerable into poverty.

2) Climate policies benefit the poor over the long-term and can benefit the poor in the short-term when accompanied by appropriate social policies.

Climate policies designed to reduce greenhouse gas emissions can increase the cost of energy, but they can also generate or free up public finances to help the poor in more targeted ways.Carbon pricing, for example, puts a price on carbon to help lower emissions and can create a revenue stream from polluters that can be used to help the poor offset any rise in fuel or energy prices. When British Columbia created its carbon tax, it used the revenue to lower income and business taxes and to create a low-income climate action tax credit that provides quarterly support to the poor to help with energy costs.

3) Creating strong, flexible social safety nets can catch the poor before they fall into poverty.

An effective social protection system is one flexible enough to be scaled up quickly in times of crisis. One study in East Africa found that the cost of a drought to households increases from $0 to $50 per household if support is delayed by four months after harvest and to $1,300 if support is delayed by six months or more due to the impact on children and distress sales of livestock and other property.Beyond emergency support, effective social protection systems help increase access to basic services for the poor, to health care, and to financial services such as loans to help rebuild or build businesses.

4) We have a window of opportunity to reduce poverty now.

As the impacts of climate change worsen, it will become harder to eliminate poverty. That leaves a narrow window for ending extreme poverty and putting in place the safety nets that can keep poverty at bay while countries also work to lower their emissions toward net zero. The work underway right now, with a goal of ending extreme poverty by 2030, can help governments lead the way on combating climate change while also working to improve the lives and futures of the least well-off in their countries. In northern Nigeria where poor families used to get a small number of livestock usually cattle from those with more resources for purposes of milking ,draught power and possibly seed stock has all but disappeared. The situation suggests that the United Nation's goal of having poverty and hunger by 2015 may become a mere dream

for African countries, Nigeria in particular, when family support systems collapse extreme poverty may characterize the period up to 2016 and this may be exacerbated by land degradation, less or heavy rain, crop failure, economic meltdown and other climate change related factors (Abdalla, 2010).

Climate migrants will mostly relocate within their country

Comparing climate scenarios to the benchmark, Figure 2 gives the number of climate migrants predicted for the 21st century for each 30-year window. We suppose that migration laws and policies do not change from those of the current period, and we first ignore climate-related conflicts. Combining slow-onset and fast-onset mechanisms, climate change will lead to displacements from vulnerable to more viable locations in their country or abroad (Rigaud et al. 2018). Over the century, this will induce movement of 105 million adults in the intermediate scenario to 162 million adults in the maximalist, translating to about 210 to 320 million people with accompanying children.

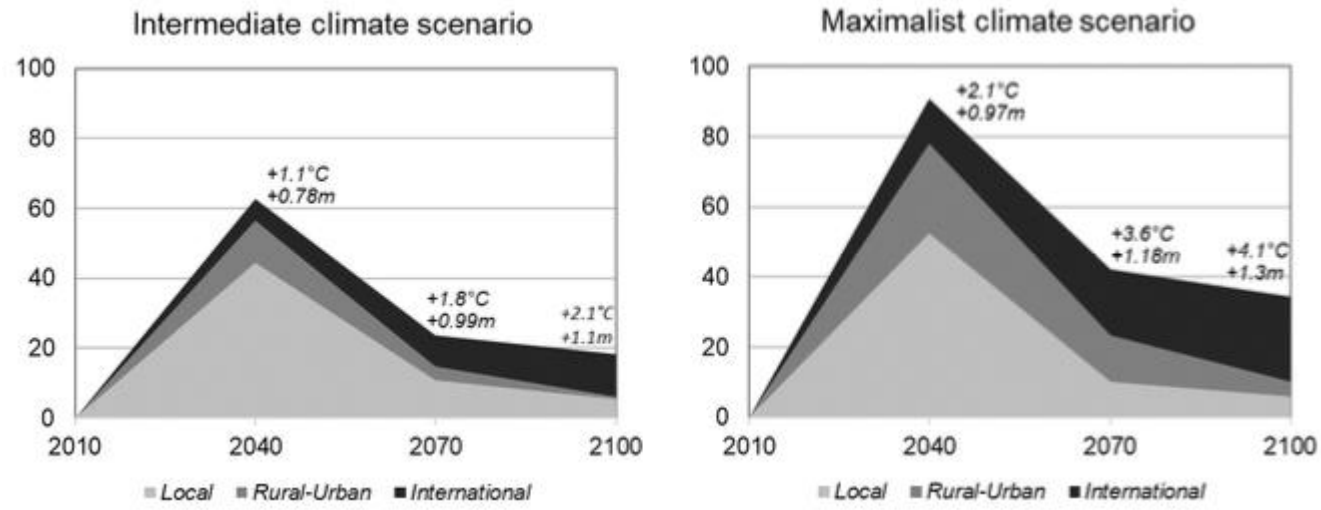

Figure 2 Number and type of climate migrants (million per 30-year window)

In the intermediate scenario, 58% (maximalist scenario: 41%) are local movements within the region of birth (from flooded to non-flooded areas), 16% (maximalist: 26%) are interregional (from agriculture to non-agriculture), and 26% (maximalist: 33%) international to the OECD countries. This represents 27.7 million (maximalist: 56.1 million) international adult migrants over the century. On average, this means that the stock of climate immigrants to OECD countries increases by 9 million (maximalist: 17 million) per period.

Figure 2 also reveals that the brunt of climate change impact is in the first half of the century. By the year 2040, only 10% (maximalist: 14%) of climate migrants will leave their country. Hence, compared to other drivers of migration pressure – such as population growth differentials and the rise in educational attainment – climate change will induce limited effects on the share of international migrants to high-income countries. It will increase the immigrant share in total population by 0.4 percentage points (maximalist: 0.9 percentage points) in the US and in Europe,

while demographic imbalances and the rise of education should increase migration pressure by seven to nine percentage points. Considering additional climate variants, our model clearly suggests that forced displacements due to sea-level rise will be mostly local, while inter-regional and international mobility responses will be overwhelmingly governed by the total factor productivity responses to temperature change.

Conclusion

Climate change is sometimes perceived as a trigger of mass emigration from developing to developed countries. This is because low-latitude countries in general, and their rural population in particular, will likely be the most adversely affected. Considering plausible climate scenarios, this study predict forced and voluntary movements of 210 to 320 million climate migrants over the 21st century. These changes may seem small, but every effort counts. When we work together, we can make a significant difference to help reduce the effects of climate change.

Overall, this study suggests that massive international flows of climate refugees are unlikely, except under generalised and persistent conflicts over resources. On the contrary, climate change will most likely increase global inequality and extreme poverty.

Recommendations

Although there are many causes of climate change, humans play a significant role. As such, we must do our part to slow down the process. We can slow down climate change through:

1. Electing people at every level of government who are committed to passing laws and enacting policies that defeat climate change
2. Reducing the amount of single-use, disposable plastic items, including bags, bottles, and silverware, as the production of these cheaply-made items release high levels of greenhouse gases
3. Turning off lights and electrical appliances when they're not in use.
4. Eating less meat in our diets, as agricultural meat production is one of the leading causes of greenhouse gas emission
5. Taking shorter showers and using water only when needed, since unnecessary heating of water drives up energy usage

References

Abdalla, M Africa Oldest Victims of Climate Change in the African. (2009/2010). Org: views and analyses from the African Continent, Institute of Security Studies, Pretoria, Issue 4, December

Abel, G. M et al. (2019). Climate, conflict and forced migration, *Global Environmental Change* impacts, *Review of Economics and Statistics* 97(2): 461–71.54: 239–49.

Akinbami, C.A.O. et al (2019). Exploring potential climate-related entrepreneurship opportunities and challenges for rural Nigerian women. *J. Glob. Entrep. Res.* 2019, *9*, 19.

Burke, M S M, (2015b), Climate and conflict, *Annual Review of Economics* 7(1): 577–617.

Burke, M, J et al. (2015a), Incorporating climate uncertainty into estimates of climate change

Burzynski, M.C, et al. (2019), "Climate change, inequality and human migration", CEPR Discussion Paper 13997.

Cazenave, A. D. (2010). The Challenge for Measuring Sea Level Rise and Regional and Global Trends. Plenary Paper presented at OceanObs09, September 21-25, 2009, Venice, Italy.

CCSP (Climate Change Science Program and the Subcommittee on Global Change Research). (2003). Strategic plan for the U.S. Climate Change Science Program Washington, D.C: U.S. Climate Change Science Program.

CCSP (Climate Change Science Program). (2007a). The First State of the Carbon Cycle Report (SOCCR): The North American Carbon Budget and Implications for the Global Carbon Cycle. Synthesis and Assessment Product 2.2.

Dell, M. B. F. Jones and B. A.Olken (2014), "What do we learn from the weather? The new climate-economy literature", *Journal of Economic Literature* 52(3): 740–98.

Desmet, K, and E Rossi-Hansberg (2013), "Moving to Greenland in the face of global warming", VoxEU.org, 16 January.

Desmet, K, D, et al. (2018), "Adapt or be flooded", VoxEU.org, 2 October.

Houghton, G. M, et al.(2007). National Climatic Data Center, National Oceanic and Atmospheric Administration, 242 pp.

James, C. et al, (2023), Poverty, Causes and How to measure Poverty.*www. investopedia.com*

King, A.W.et al, (2017). U.S. Climate Change Science Program and the Subcommittee on Global Change Research.

National Academies of Sciences, Engineering, and Medicine. (2010). Advancing the Science of Climate Change. Washington, DC: The National Academies Press. https://doi.org/10.17226/12782.

Olugbenga, E.O. (2013). The Impact of Migration on Internal Security: The Case of Itinerant Fulani Herdsmen in Ekiti State, South West Nigeria. *J. Humanit. Soc. Sci. 16*, 77–82.

Rigaud, K, B, et al. (2018), "Groundswell: Preparing for internal climate migration" World Bank.

Shayegh, S (2017), "Outward migration may alter population dynamics and income inequality", *Nature Climate Change* 7(11): 828.