



Climate Change and its Impact on Poverty: Marginal Communities

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ABSTRACT

This paper explores the link between climate change and poverty, focusing on the impacts of climate change on poor and marginal communities in developing countries. The paper argues that climate change poses a serious challenge to poverty reduction efforts, as it exacerbates existing vulnerabilities and reduces opportunities for sustainable development. The paper reviews the evidence of how climate change affects various aspects of poor people's livelihoods, such as ecosystem services, water, agriculture, health, displacement, and conflicts. The paper also discusses the potential solutions and strategies to mitigate and adapt to climate change, emphasizing the importance of international cooperation and shared responsibility. The paper concludes that urgent action is needed to prevent the worst-case scenarios of climate change and poverty, and to build a more resilient future for all.

Keywords: Climate Change, Poverty, Adaptation, Vulnerability, Sustainable Development.

1. Background

Climate change is a serious trouble to poverty reduction and threatens to undo decades of development sweats. The adverse goods of climate change are formerly apparent, natural disasters are more frequent and more ruinous and developing countries more vulnerable. While climate change is a global phenomenon, its negative impacts are more severely felt by poor people and poor countries. They are more vulnerable because of their high dependence on natural resources, and their limited capacity to manage with climate variability and axes.

Let us first bandy what Poverty is. Poverty is generally reflected in one's incapacity to feed oneself and one's " family and incapacity to meet indeed the introductory conditions of life analogous as food, vesture, sanctum and health care. Still, poverty is not a static condition but the poverty status can change over a period of time depending on the income position of the family at a particular time and affordability. There are three different orders of poverty chronically poor – under this order generally people are also always poor or generally poor; temporary poor this includes people who are also occasionally poor or shifting poor; and Non-poor which includes people who are just above the poverty line to fall in poor order but are still floundering. Poor people generally live in fragile covering, live on frame lands, depend on subsidence husbandry for livelihood, have no savings to fall back on in case of disaster and have no insurance to depend on either. This section of population is also more vulnerable to conditions or poor health due to malnutrition, health issues related to unsafe drinking water and lack of access to sanitation installations. Despite international sweats, poverty has come wider in multitudinous countries in the last decade, making poverty reduction the core challenge for development in the 21st century. Moment, it's considerably agreed by the scientific community that climate change is formerly a reality. The Intergovernmental Panel on Climate Change (IPCC) has concluded that mortal exertion are altering our climate system and will continue to do so. Over the formerly century, face temperatures have increased and associated impacts on physical and natural systems are increasingly being observed. Science tells us that climate change will bring about gradual changes, analogous as ocean position rise, and shifts of climatic zones due to increased temperatures and changes in rush patterns. Also, climate change is truly likely to increase the frequency and magnitude of extreme downfall events analogous as famine, cataracts, and storms. While there is query in the projections with regard to the exact magnitude, rate, and indigenou patterns of climate change, its consequences will change the fate of multitudinous generations to come and particularly impact on the poor if no applicable measures are taken. The impacts of climate change, and the vulnerability of poor communities to climate change, vary greatly, but generally, climate change is superimposed on being vulnerabilities. Climate change will further reduce access to drinking water, negatively affect the health of poor people, and will pose a real trouble to food security in multitudinous countries in Africa, Asia, and Latin America. In some areas where livelihood choices are limited, abating crop yields hang famine, or where loss of landmass in coastal areas is anticipated, migration might be the only result. The macroeconomic costs of the impacts of climate change are largely uncertain, but truly presumably have the eventuality to hang development in multitudinous countries.

The continued decline in global poverty during the last 100 times is a remarkable achievement, a decline that has been indeed more significant in the last three decades. According to NITI Aayog India has registered a significant decline in multidimensional poverty in India from 29.17 in 2013- 14 to 11.28 in

2022- 23 i.e. a reduction of 17.89 chance points. Uttar Pradesh registered the largest decline in the number of poor with 5.94 crore people escaping multidimensional poverty during the last nine times followed by Bihar at 3.77 crore, Madhya Pradesh at 2.30 crore and Rajasthan at 1.87 crore. At the same time another process has been unfolding over the last century. Scientific validation shows that the global mean surface temperature of the earth has been swiftly rising due to increased concentration of greenhouse gases (IPCC 2007). The performing climate change is likely to have a negative effect on agricultural productivity, particularly in the tropical regions, and to directly impact on poor people's livelihood means including their health, access to water and natural resources, homes and structure (World Bank 2010). There are adding enterprises that the change in the patterns of climatic variability is also likely to add to the formerly high vulnerability of poor homes, which would complicate the frequency, strictness and durability of poverty in developing countries. These enterprises are bedded in the fact that utmost developing countries are more dependent on husbandry and other climate-sensitive natural resources for income and well-being, and that they also warrant sufficient financial and technical capacities to manage adding climate trouble. In this terrain, climate change is believed to represent a serious challenge to poverty reduction sweats around the globe. Given the complications involved in an analysis of the poverty impacts of climate change, different approaches may be helpful in considering these impacts. One way is to use economy-wide growth models incorporating climate change impacts to work out harmonious scripts for how climate change might affect the path of poverty over the coming decades.

2. Approach

A number of recent studies have decided for a — backward looking | approach to anatomize the goods of climate change on profitable exertion, and ultimately on poverty. These studies, mimicking the approach emphasized in the growth and development literatures, examine the relationship between climate and aggregate profitable variables in cross-sections of countries or regions. One advantage offered by this approach is that by examining aggregate issues directly, it's possible to avoid counting on a priori hypotheticals about which mechanisms to include in the climate- economy relations and how these mechanisms might interact, and ultimately influence macroeconomic issues. Another advantage derived by the use of cross-sectional data is that they yield estimates of the long- relationship between climate and aggregate affair taking into account nonfictional adaptation. One analogous study is by Dell et al. (2009) who use cross-sectional data from 134 countries to examine the goods of temperature on the position of GDP. Their affair- climate elasticity estimate, predicated on nonfictional data, reveals that each fresh degree Celsius is associated with a statistically significant reduction of 8.9 chance points of per capita GDP. In a similar tone, Andersen and Verner (2010) examine the relationship between temperature and welfare at the municipality position within five countries in Latin America. The portions of temperature (and temperature squared) give an estimate of the long- run relationship between temperature and welfare (i.e. the affair- climate flexibility) inclusive of adaptation. The estimated connections are also used to pretend the impact of the climate changes. Another system in which Assunção and Chein Feres (2009) they first estimate the impact of climate change on agricultural productivity measured as agricultural affair per hectare in each municipality. Climate change is therefore a serious trouble to poverty eradication. Still, current development strategies tend to overlook climate change risks. An approach that uses both mitigation and adaptation is demanded. Current commitments to mitigate climate change by limiting the emigrations of greenhouse gases (GHGs) will not, indeed if executed, stabilize the atmospheric attention of these gases. Developing adaptive capacity to minimize the damage to livelihoods from climate change is a necessary strategy to round climate change mitigation sweats. A comprehensive approach is demanded that takes into account implicit synergistic and negative goods between original and global environmental changes as well as socioeconomic factors.

3. Impact of climate change

The first part of this document examines how climate change is likely to affect the being vulnerability of poor people to climate related impacts. According to the Third Assessment Report of the IPCC, developing countries are anticipated to suffer the most from the negative impacts of climate change. This is due to the profitable significance of climate-sensitive sectors (for illustration, husbandry and fisheries) for these countries, and to their limited human, institutional, and fiscal capacity to anticipate and respond to the direct and circular goods of climate change. In general, the vulnerability is loftiest for least developed countries in the tropical and tropical areas. Hence, the countries with the smallest coffers are likely to bear the topmost burden of climate change in terms of loss of life and relative effect on investment and the frugality. The extent and compass of indigenous climate change impacts depend on the degree of mitigation. While the urgency and scale of adaption sweats needed will be lower if aggressive mitigation is accepted beforehand, some degree of adaption is ineluctable. Reductions in emigrations of greenhouse gases would delay and reduce damages caused by climate change (IPCC 2001c). Basically, the lower the unborn stabilization position of atmospheric greenhouse gas attention, the lower would be the likely damage. The UNFCCC states that “the parties should cover the climate system for the benefit of present and unborn generations of humankind, on the base of equity and in agreement with their common but discerned liabilities and separate capabilities. Consequently, the advanced country Parties should take the lead in combating climate change and the adverse goods thereof.” (Composition 3.1 of the UNFCCC). Indeed if greenhouse gas emigrations were checked incontinently, the global average temperature would still continue to rise due to the slow response of the Earth's atmosphere system to once emigrations. This suggests that any future situations of greenhouse gas attention, formerly stabilized, will be above current situations. Climate and climate variability are thus important rudiments of the complex web of factors impacting people's livelihoods.

When comparing data on natural hazards in developing and developed countries, the loss of life and the number of people affected tend to be vastly larger in developing country regions for natural disasters of similar magnitude. Damages in relation to GDP are generally also advanced. Bangladesh is a high illustration of a country that's particularly vulnerable to moment's climate. With a low- lying bank, high population viscosity, and an frugality largely dependent on husbandry, the lives and livelihoods of people are hovered by frequent cyclones and the associated goods, similar as saltwater intrusion, that render agrarian lands unproductive. Between 1974 and 1998, the country endured seven major cataracts (Matin 1998). In 1998,

about 68 percent of the country's geographical area was swamped, affecting further than 30 million people and causing 918 losses (Choudhury 1998). Profitable losses were estimated at US\$3.3 billion, original to 8 percent of the country's GDP (Choudhury et al. 1999).

All societies and husbandry have developed mechanisms to manage with climate axes and other natural hazards, which they face sometimes. Trade, migration, or preventative storehouse of food are exemplifications of strategies to manage with adverse climatic conditions. This capacity to manage with climate variability and extreme rainfall events in itself is largely dependent on the position of profitable development. In general, livelihood sources of the poor are generally narrower and further climate-sensitive than those of the non-poor. Extreme rainfall events, which would beget limited damage and many casualties in an advanced country, frequently beget expansive damage and substantial loss of life in a developing country. Poor people are particularly vulnerable to diversions from average climatic conditions similar as dragged failure and to natural disasters similar as cataracts. In ages of stress they may be forced to vend off their physical means similar as land, bikes, and tilling tools, thereby undermining the sustainability of their livelihoods over the longer term. Women for illustration may be constrained by social and artistic structures that place them in inferior social positions, limiting their access to income, education, public voice, and survival mechanisms. In addition, the managing capacities of the poor are frequently formerly strained due to a number of trends including HIV/ AIDS, adding population consistence, and mischievous forces associated with globalization. Climate change will add to these trends and increase vulnerabilities. Climate change may therefore force drastic changes to livelihood strategies. Where profitable diversification is low, income openings and hence options for developing indispensable livelihoods in response to climatic changes may be limited. In some cases migration, which is an important managing strategy for poor people, might be the only result, but will potentially beget social dislocation. The impacts of climate change on the poor will be environment-specific, reflecting factors similar as geographic position; profitable, social, and artistic characteristics; prioritization and enterprises of individualities, homes, and social groups; as well as institutional and political constraints. The ensuing points illustrate the impacts of climate change on poor people's livelihoods.

Ecosystem Goods and Services - Habitat fragmentation is already a leading cause of biodiversity loss and changes in temperature and moisture regimes further limit habitats necessary for the survival of species. Degradation of forested mountain slopes in conjunction with intensified rainfall may increase erosion and loss of fertile soil and affect the quality of watersheds. Climate change is likely to lead to changes in species distribution and abundance, and increase the risk of extinction and loss of biodiversity. Since some ecosystems are largely sensitive, indeed small changes can have large effects. Minor increases in water temperature can, for example, damage coral reefs, exacerbating other stresses such as pollution and overfishing and thereby cause a reduction in fish stocks, jeopardizing fish- and tourism dependent livelihoods.

Water - Water scarcity is already a major problem for the world's poor. The number of people impacted by water scarcity is projected to increase from about 1.7 billion people today to around 5 billion people by 2025, independent of climate change (IPCC 2001b). Climate change is projected to further reduce water availability in many water scarce regions, particularly in the subtropics, due to increased frequency of droughts, increased evaporation, and changes in rainfall patterns and run-off. The melting of glaciers has become a serious concern in the Himalayan region, because of the growing risk of glacial lake out-burst floods.



Fig. 1 - Showing water scarcity.

Agriculture and Food Security - Agriculture is the most important sector for most least developed countries as the impact of agricultural growth on poverty reduction tends to exceed the impact of growth in other sectors. Climate change could worsen the prevalence of hunger through direct negative effects on production and indirect impacts on purchasing powers. Land degradation, price shocks, and population growth are formerly a major concern for sustaining agrarian productivity. Changes in temperature, rush, and climatic axes will add to the stress on agrarian resources in numerous developing country regions and reduce the quality of land areas for agrarian product. Low- lying coastal communities will have to deal with ocean position rise and the impact of climate change on marine resources.

Sea level rise may lead to salinization and render agriculture areas unproductive. In areas where fish constitute a significant source of protein for poor people, declining and migration of fish stocks due to climate change and associated changes in the marine environment will further need to be considered in their impact on the local food security.



Fig. 2 - Showing crop failures.

Health - The potential impacts of climate change on human health would increase vulnerability and reduce opportunities by interfering with education and the ability to work. A direct effect is an increase in temperature-related illnesses and deaths. Prolonged intense heat waves coupled with humidity may increase mortality and morbidity rates, particularly among the urban poor and the elderly. Changes in temperature and rainfall may change the geographic range of vector-borne diseases such as malaria and dengue fever, exposing new populations to these diseases.

Involuntary Displacement, Migration, and Conflicts - The direct and indirect effects of climate change and their interaction with other vulnerabilities and environmental exposures may lead to mass migrations, as crucial resources become degraded and livelihoods are threatened. Loss of land mass in coastal areas due to ocean position rise is, for example, likely to lead to lesser endless or semi-permanent relegation of populations, which may have considerable profitable and political ramifications. Areas most vulnerable to ocean position rise lie in the tropics the west seacoast of Africa; the north and eastern seacoast of South America; South and Southeast Asia; and Small Island states in the Caribbean, Pacific and Indian Oceans. Of the world's 19 mega-cities (those with over 10 million people), 16 are on coastlines and all but 4 are in the developing world. The poor living in Asian megacities are particularly at risk, as sea level rise compounds subsidence caused by excessive groundwater. To this should be added the risk for potential conflicts, including social unrest, political instability, and wars over decreasing water or other natural resources and possible mass migration due to, for example, land loss or degradation and extreme weather events. Such conflicts may have considerable costs both in macroeconomic terms and in human suffering.

Fig -3: Showing migration.



Economy-Wide Effects - Climate change is anticipated to have goods on the overall economy of poor countries, therefore hampering implicit for economic growth. Current extreme rainfall events are formerly taking their risk on developing countries economies, leading to loss of human and economic capital. Regions where climate change exacerbates climatic extremes and which have limited adaptive capacity will be further constrained in their development prospects due to fresh loss of life, private means, reduced productivity of important profitable sectors, and destruction of structure.

4. Potential Solutions

We need concrete steps to build their resilience and adaptation abilities, weaving efforts into every national strategy. Immediate action is needed to reduce poverty and build climate resilience, especially among the most vulnerable, that can be done by achieving sustainable development and eradicating poverty. Integrating climate adaptation into national strategies is crucial. Good strategies for handling present climate challenges and preparing for future ones go hand-in-hand. Not only will they protect people and communities, but they can also yield immediate benefits and reveal opportunities presented by climate change.

There is much experience to date of coping with climate variability and disasters from which useful lessons for adaptation can be drawn. Ensuring that the poor are suitable to adapt to current and imminent climate variability is the first step. The task ahead for the development community is to enhance the adaptive capacity of the poor and poor countries and to help to apply specific conduct for addressing climate change impacts. Few concrete steps that can be taken in this direction can include by acknowledging the positive impacts of climate change, like potential changes in agricultural patterns or resource availability, strategies can be designed to take advantage of these opportunities while mitigating the negative consequences. This creates a more comprehensive and forward-looking approach to sustainable development, ensuring long-term success beyond temporary solutions. Investing in early warning systems, climate-resilient infrastructure, and sustainable resource management practices. Empowering vulnerable communities through capacity building, knowledge sharing, and access to technology. Developing and implementing robust social safety nets to protect livelihoods

and provide support during climate-related disruptions. Holding perpetrators of high greenhouse gas emissions accountable while assisting developing countries in transitioning to sustainable practices.

Countries are taking steps towards this in form of SDGs - SDG 1: No Poverty -End poverty in all its forms everywhere, SDG 2 - Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture and SDG 13: Take urgent action to combat climate change and its impacts. All these with immediate action can help in reducing the impact of climate change on poverty.

5. Conclusions

Through this paper we get a stark picture of how climate change disproportionately impacts and threatens to further entrench poverty, particularly in developing countries. Poor communities are most vulnerable to climate change due to their dependence on climate-sensitive sectors like agriculture and limited capacity to adapt. Climate change intensifies existing vulnerabilities including water scarcity, food insecurity, health risks, and displacement, pushing countless lives further into poverty. Economic opportunities for the poor are further constrained by impacts on productive resources like land and water, hindering poverty reduction efforts. Urgent action is needed to mitigate climate change and implement robust adaptation strategies that empower vulnerable communities. This includes: Reducing greenhouse gas emissions to minimize the magnitude of future impacts. Investing in adaptive capacity through infrastructure development, early warning systems, diversification of livelihoods, and social safety nets. Addressing inequities and ensuring climate action benefits the most vulnerable, while holding responsible those who contribute the most to greenhouse gas emissions.

The future of poverty under climate change is grim, but not set in stone. With sustained global commitment to effective mitigation and adaptation measures, we can still prevent the worst-case scenarios and build a more resilient future for all, particularly the most vulnerable. The choice is ours. Furthermore emphasis can be laid on the importance of international cooperation and shared responsibility in mitigating and adapting to climate change, especially considering the historical responsibility of developed nations. Also one can consider including future projections and potential pathways for a sustainable future that balances development needs with environmental protection. By incorporating these points and continuing the discussion, we can build a more nuanced understanding of the complex link between climate change and poverty, paving the way for effective action and a more equitable future.

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