



Assessing Impact of Macroeconomic Shifts on Micro-Economy of Pakistan's Poor and Ultra-Poor Households

Policy Brief

The Poor's Readiness for Climate Emergency

Improving What They Know and How They Respond

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National Poverty Graduation Programme
Pakistan Poverty Alleviation Fund

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The Policy Brief examines awareness among the ultra-poor in Pakistan towards climate emergency and examines their readiness for it.

Pakistan is world's 5th most vulnerable country to climate emergency.¹ It faces adverse climate shocks and environmental poverty, including lack of access to environmental services such as clean water, health facilities, modern fuels, and sanitation amenities. About 86% of its population uses traditional fuel² to cook, and over 40 million do not have access to electricity.³

Climate emergency poses far-reaching impacts on socio-economic development, consumption, employment, and poverty reduction. Globally, climate crises are a severe threat to the poor's livelihood, where 22% of world population and 75% of its poorest depend on agriculture. Climate shocks such as abnormal rainfalls and increasing temperatures also increase severe health risks.⁴ Estimates from Institute for Health Metrics and Evaluation show that death rate from air pollution is 99 per 100,000 individuals in Pakistan.⁵ Exposure to household air pollution is high among women and girls, especially in poor households, who spend the most time cooking.⁶

Therefore, an urgent adaptation to climate emergency is mandatory for survival, especially for women who remain poorly informed about its implications, due to informational asymmetries. Despite knowing that climate crises in Pakistan disproportionately impact poor women, gender-specific climate adaptive strategies remain mostly undocumented. Climate emergency adaptation is severely limited among the poor due to their lack of knowledge on diversification of economic livelihood and their categoric vulnerability to economic shocks. Female vulnerability to climate emergency is compounded because poor women have little or no income sources except working in agricultural lands or as contributing family members, making them dependent on transient sources of income.

Climate Vulnerabilities among Ultra-Poor

Following findings are based on our mixed-method primary data collected with 400 ultra-poor households across 16 Union Councils (UCs) in 8 sampled districts and including 34 Key Informant Interviews (KIIs) and 55 Focus Group Discussions (FGDs) with women, men, and youth.

¹ Global climate risk index 2020 (Vol. 20) https://germanwatch.org/sites/germanwatch.org/files/20-2-01e_Global_Climate_Risk_Index_2020_10.pdf

² Nawaz, S., and Iqbal, N. (2020) The impact of unconditional cash transfer on fuel choices among ultra-poor in Pakistan: Quasi-experimental evidence from Benazir Income Support Program. *Energy Policy*, 142, 111535.

Mainly wood is used as traditional fuel.

³ IEA (2020). World energy balances and statistics. International Energy Agency.

⁴ Ashrafuzzaman, M., and Furini, G. L. (2019). Climate change and human health linkages in context of globalization: An overview from global to southwestern coastal region of Bangladesh. *Environment International*, 127, 402–411.

⁵ <https://vizhub.healthdata.org/sdg/>

⁶ <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>

I) Occupational Vulnerabilities

Most people from sampled UCs were dependent on occupations particularly vulnerable to climate crises. Table 1 shows that around 84% women across sampled households are engaged in family contributing activities such as agriculture and cooking. This indicates that women are more vulnerable to impacts of climate crises due to their limited employment options. Due to widespread reliance on traditional fuel for cooking, and due to lack of protective measures to avoid climate shocks, women face enormous health complications. Table 1 shows that male members are mainly engaged in agriculture and livestock (11%) or daily wage work (65%) – these occupations too are increasingly vulnerable to climate crises.⁷

Table 1: Economic Vulnerabilities			
Type of Employment	Male	Female	Both
Agriculture and Livestock	10.9%	1.5%	6.4%
Daily Wage	65.3%	5.6%	36.8%
Paid Work	15.1%	3.8%	9.7%
Own Business	7.7%	5.3%	6.6%
Contributing Family Work	0.9%	83.8%	40.5%

Box 1: Understanding Climate Crises

Our FGDs reveal that very few respondents have any information about climate crises. Since most did not consider it a threat, due to limited knowledge about it, they did not associate their poverty and associated vulnerability with their vulnerability to climate crises.

A female respondent from UC Gandawa, District Jhal Magsi commented: *We have no awareness regarding climate change.*

A male respondent from UC Jhal Magsi, District Jhal Magsi commented: *Climate change is a natural process. It has no specific impact on poor segments of society.*

A female respondent from UC Bhanbhiar, District Shikarpur commented: *Climate change somehow is change in weathers and nothing more.*

A female respondent from UC Gwadar Shumali, District Gwadar commented: *Climate change is an issue, but I have not taken any measures to address climate change.*

II) Environmental Poverty

Our findings reveal that environmental poverty is very high among ultra-poor households.⁸ Nearly 52% households have houses made up of raw bricks and mud, followed by 36% with burnt bricks and blocks. Almost 86% households are deprived of modern fuels – these households use only traditional firewood for cooking. Around 35% households do not have access to an improved toilet facility. Approximately 48% households do not have access to clean drinking water. These findings show that provision of even essential environmental services is meagre among NPGP and BISP⁹ beneficiaries.

⁷ Arora, (2019) Impact of climate change on agriculture production and its sustainable solutions. Environmental Sustainability 2, 95–96.

Rojas-Downing, et al. (2017). Climate change and livestock: Impacts, adaptation, and mitigation. Climate Risk Management, 16, 145-163.

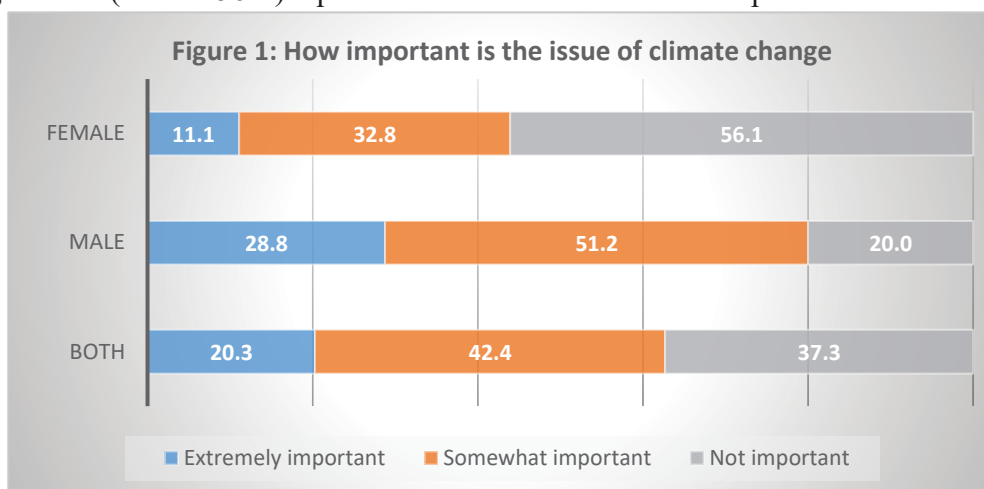
⁸ Environmental Poverty is 'a situation in which a household does not have access to or cannot afford basic environmental services such as water, sanitation, housing, and energy to protect themselves from environmental damage.' Over 55 million people face Environmental Poverty in Pakistan. Around 65% households do not have access to clean fuel; 20% households do not have access to improved toilet facilities, and 50% households do not have a specific place in the house to wash hands with soap and water (Nawaz and Iqbal, 2020).

⁹ National Poverty Graduation Programme (NPGP). Benazir Income Support Programme (BISP).

III) Awareness of Climate Emergency

Around 37% respondents expressed that climate change is not an important issue for them, followed by 42% who term it as somewhat important. Only 20% found climate crises to be an extremely important issue (Figure 1). Our gender-wise findings show that only 11% women and only 29% men feel that climate crisis is an extremely important issue. More than half the respondents among women (around 56%) report that climate crisis is not an important issue. These results reflect an alarming lack of awareness about the urgency of climate crises among ultra-poor, especially poor women.

Gradual shifts in weather patterns and more extreme weather events such as



heatwaves and abnormal rainfalls are evident across Pakistan, depicting rapidly changing climate. The annual mean temperature has increased by 0.5°C in last five decades. Frequency of heatwaves has increased fivefold, and rainfalls have shown higher variability in last 3 decades.¹⁰

Table 2: Information about Climate Shocks			
Observation/Awareness Regarding Specific Events	Male	Female	Both
Abnormal Rainfalls	71.3%	54.0%	63.0%
Abnormal Seasons	80.8%	42.2%	62.3%
Abnormal Droughts	31.0%	17.6%	24.6%

Do the ultra-poor know about these massive climate shifts?

Our household survey reveals that knowledge about these extreme climate events is exceedingly limited among ultra-poor. In each of the classified weather shocks – abnormal rains, seasonal shifts, and droughts – women’s awareness was more limited than that of men (Table 2). It is this lack of awareness which can severely undermine any efforts to mitigate adverse climate shocks, especially those which impact health, especially maternal and child health.¹¹

Among those respondents who do have some knowledge about the climate crisis and its urgency, around 67% took some steps for mitigation, such as using additional clothes and/or protecting their house from rains by make-shift methods. Our gender-wise analysis shows that women are less likely to take precautionary measures for climate shocks than are men. Only 55% female respondents had taken any such precautionary measures.

¹⁰ Chaudhry, Q. Z. (2017). Climate Change Profile of Pakistan, Asian Development Bank <https://www.adb.org/sites/default/files/publication/357876/climate-change-profile-pakistan.pdf>

¹¹ Nawaz, S. (2020). Energy Poverty, Climate Shocks, and Health Deprivations. Energy Economics.

How to Prepare Poor Communities for Climate Emergency?

1. Economic Empowerment: Augmented National Poverty Graduation Program

Poverty graduation programs are effective in that they aim at diversifying income-generating activities among the poor. In doing that, these programs are also effective in mitigating adverse effects of climate change by way of economic empowerment.¹² Poverty graduation programs should be augmented to respond to climate emergency in following ways:

- a. Include an additional component in existing set of graduation interventions to overcome the climate crises knowledge gap and to induce adaptation to climate crises among the poor. This intervention could cover awareness of environmental services, of household-level adaptation measures, and of employment-related climate risks.¹³ The programs should also include assessment on adaptation to climate, in their existing evaluations over the program cycle.
- b. Introduce climate-resilient employment opportunities to minimize vulnerabilities to climate shocks. Climate-resilient sectors include retail business, construction industry, and transportation, among others.
- c. Agriculture and livestock sectors are particularly sensitive to climate variability.¹⁴
 - i. Climate-Smart Agriculture (CSA):¹⁵ Introduce climate-resilient crop varieties and cropping systems.

Box 2: Importance of Community Capital

While speaking to women about different forms of capital which the community possesses, they identified social, human, financial, and environmental capital. According to them, the most important to their community is social capital, followed by financial capital, and then environmental capital. Among all forms, only human capital carried least importance. Ways in which the community classifies capital are:

Social Capital: Networking, norms, institutions, organizations.

Human Capital: Labor supply, education, healthcare, human capabilities.

Financial Capital: Community financial institutions, funds, community loan banks.

Environmental Capital: Natural resources, weather, recreational opportunities.

Women classified environmental capital more important for men than for themselves despite the fact that they were equally and differently impacted by it. They are equally impacted because they work as agricultural laborers like their male counterparts. They are differently impacted because unlike males, they engage in domestic work with traditional fuels. Women also talked at length about major devastation due to floods in the form of devastating impact on crops, derailed transportation, and lack environmental services like clean water, health facilities, modern fuels, and sanitation amenities.

¹² Asfaw, et al (2017). Cash transfer programmes, weather shocks, and household welfare: Evidence from a randomized experiment in Zambia. *Journal of Development Effectiveness*, 9:4, 419-442.

¹³ Risks occur due to extreme weather events including droughts, heavy rainfalls, rising temperature, and smog. These events led to job losses both in rural and urban markets and adversely impacted health.

¹⁴ Ullah, S. (2017) Climate Change Impact on Agriculture of Pakistan – A Leading Agent to Food Security, <https://juniperpublishers.com/ijesnr/pdf/IJESNR.MS.ID.555690.pdf>

¹⁵ CSA is an integrated approach to managing landscapes — including cropland, livestock, forests, and fisheries — and addresses interlinked challenges of food security and of accelerating climate change through increased productivity, enhanced resilience, and reduced emissions. World Bank: <https://www.worldbank.org/en/topic/climate-smart-agriculture>

- ii. **Climate-Smart Livestock (CSL):** Introduce CSL production strategies to meet the increasing demand for livestock products with scarce natural resources. Efficient use of natural resources is essential for decoupling growth in livestock sector from climate risks. Efficiency in natural resources can be achieved by improving animal health, livestock breeds, feed crop varieties, technology, and management.

2. Social Empowerment: Building social capital to up-scale poor people's responsiveness to climate emergency

The social sector is increasingly focusing on community forums, as a way of social empowerment, to disseminate program level information among target communities.¹⁶ These forums, especially women-led forums, can help improve adaptation to climate emergency among the poor by overcoming informational gaps. Information flows have shown to positively affect the poor's attitude towards climate crises preparedness, enriching their knowledge about adaptation and increasing their willingness to bear adaptation costs.¹⁷

3. Women Empowerment: Women-centric interventions to promote climate emergency adaptation

Our findings from the field show that women are particularly vulnerable to climate crises for two reasons: i) Their dependence on occupations which are specifically vulnerable to climate crises ii) Their lack of information on adaptation to climate change. Hence, there is a need to categorically focus on women's access to information and resources. Women should be engaged in livelihood sectors which are more tolerant and less vulnerable to climate shocks,¹⁸ such as the retail sector (for example small shops) and services sector (for example beauty salons) rather than being engaged in climate-prone livestock.¹⁹

4. Environmental Empowerment: Payment for Environmental Services

Financial liquidity constraints prevent the poor from using environmental services²⁰ as they may not know overall benefits of and/or cannot afford these services.²¹ To overcome financial stress, a conditional cash transfer (CCT) can be designed to promote environmental services among the poor. Components of this CCT could be:

- a. Provision of unconditional cash support for consumption smoothening (BISP already incorporates this component).

¹⁶ BISP uses community forums, namely BISP Beneficiary Committee (BBC) to disseminate information on various social safety net programs especially related to Waseela-e-Taleem program to enhance enrolment. NPGP has similar structure at village level to disseminate information on key programme features.

¹⁷ Verma (2020) argues that women-led forums are effective in 'climate change adaptation, including participatory vulnerability assessments, adaptation planning, and training in climate-change and gender-sensitive adaptation' in Bangladesh. Verma, S. (2020) Women-led forums enhance livelihoods and reduce risks to climate hazards, Climate and Development Knowledge Network, <https://cdkn.org/wp-content/uploads/2020/06/Christian-Aid-Basundhara-Forum-Case-Study-2.pdf>.

Oxford Policy Management, OPM (2019) report shows that BISP Beneficiary Committees (BBCs) are effective in disseminating program-level information among BISP beneficiaries. OPM (2019) Qualitative Assessment of Waseela-e-Taleem (WeT) with focus on BISP Beneficiary Committees (BBCs), Third Party Report.

¹⁸ For example, Nestlé Pakistan experimented with Nestlé BISP Rural Women Sales Program to provide livelihood opportunities to BISP beneficiaries, and engaged over 1,300 women as sales agents/retailers. The pilot showed impressive results in enhancing household income <https://www.nestle.pk/csv/ruraldevelopment/nestle-bisp-rural-women-sales-program>

¹⁹ For example, in Bangladesh, due to growing risk of floods, women have been supported in moving away from raising chickens to raising ducks. CARE, 2008: Bangladeshi Women Are Knowledge Keepers in Mitigating Climate Change.

²⁰ Such as clean water, health facilities, modern fuels, and sanitation amenities.

²¹ Duflo, et al. (2012) Improving access to urban services for the poor: open issues and a framework for a future research agenda, J-PAL Urban Services Review Paper.

Sombo, et al. (2010) Constraints to Improving Water and Sanitation Services.

- b. Additional income support for providing low-cost environmental services including clean water, housing, and for provision of sanitation facilities through a household-driven and community-driven participatory approach. NPGP may use existing mechanisms to ensure a participatory approach to providing low-cost environmental services.
- c. Health insurance coverage (through Sehat Sahulat Program).²²
- d. Awareness among beneficiaries, on importance of environmental services, through community institutions/organizations.
- e. Financial support (interest-free loan) to promote Climate-Smart Agriculture (CSA) and generate green jobs in areas of waste management, reforestation, and soil conservation. Government can pay people at the community level to stabilize soil and mountain-slopes, and to undertake similar activities to reduce floods and siltation.

5. Green Empowerment: Green measures as mandatory program components

Pakistan has scarce natural resources which are being used in unsustainable manner. Green economy is a potential solution to addressing this scarcity of natural resources.²³ Social protection programmes aimed at promoting employment and income-generating activities for the poor must consider these green economy requirements for inclusive and sustainable development.

- i) Reducing carbon emissions and pollution
- ii) Enhancing energy and resource efficiency
- iii) Preventing loss of biodiversity and physical ecosystems

Green initiatives²⁴ can be encouraged by incorporating the following parameters in design of social protection programmes.

- i) Provision of free technical support to target groups on adaptation of green measures
- ii) Provision of additional financial support during transition to green measures, such as assistance in purchase of green technology, in human capital development, and in developing market linkages

Typical green economy activities can include waste management and recycling, forestation, reclaiming wastelands to create agricultural lands, making organic fertilizers, and growing herbs, among others. Green economy can be pursued at the village level where its potential is greatest and where willing (and unemployed) locals may be especially available to work. Government

²² Sehat Sahulat Program, through a micro health insurance scheme, provides free indoor healthcare services to people below the poverty line, to persons with disabilities, and to transgender community members registered with NADRA and having specialized CNICs. <https://www.pmhealthprogram.gov.pk/about-us/>

²³ Green economy promotes resource efficiency through lower carbon emission and social inclusivity. In a green economy, employment and income are driven by public and private investment into economic activities, infrastructure, and assets which allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of loss of biodiversity and ecosystem services. <https://www.unenvironment.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy>

²⁴ **Green Initiatives:** Which develop and support sustainable, locally produced, and locally consumed products, leading to resource-efficient community using low-cost, low-carbon methodologies. Examples:

Construction

- i) Use of indigenous but structurally-sound and disaster-resilient material and techniques for infrastructure construction
- ii) Use of clay and sun-dried bricks for constructing floor tiles, pavements, pots, toilets, washstands

Agriculture and Irrigation

- i) Rainwater harvesting for non-potable uses such as within toilets and kitchen gardening
- ii) Processing and packaging locally grown herbs
- iii) Making compost from toilet waste
- iv) Solar water treatment

Manufacturing, Sustainable Farming, Heritage

- i) Production of organic soap
- ii) Building animal shelters which segregate and reuse waste to make compost
- iii) Generating income from cultural and natural heritage

should simultaneously pursue increasing the natural resource base through reforestation, improving the Karez system in Balochistan,²⁵ and employing the poor in these activities to help them earn sustainable livelihoods.

6. Shock-Responsive Social Protection

Social protection programmes in Pakistan mainly use static welfare scores to target their beneficiaries. However, our findings indicate that climatic shocks adversely impact socio-economic and welfare indicators of households. These shocks have more profound adverse impacts on the bottom quintile's welfare due to their vulnerable income sources and lack of ownership of productive assets. During climatic and viral shocks, like floods, earthquakes, pandemics, a quick assessment is required to launch shock-responsive social protection for poor and ultra-poor households. Therefore, poverty targeting methods should be shock-adjusted to make social protection accurately responsive during climate and viral shocks.²⁶

Note: Our proposed interventions may be experimented at smaller levels before being scaled.

Appendix A: Data and Methodology

To examine awareness and readiness to climate emergency among ultra-poor, we adopted a mixed-methods research design. Both quantitative and qualitative data were collected from 8 sampled districts across 4 provinces.

For quantitative data, a three-stage stratified random sampling technique was used to interview NPGP and BISP beneficiaries in 400 households from 16 sampled UCs across 8 districts.²⁷

For qualitative data, 34 Key Informant Interviews (KIIs) and 55 Focus Group Discussions (FGDs) were conducted across sampled districts. To ensure pluri-vocality of views, women, and men from two different age groups, including youth²⁸ and non-youth adults,²⁹ were sampled. Qualitative data is analyzed using thematic analysis, which structured the data across multiple narratives and coding themes.

²⁵ Abudu et al. (2019) A Karez System's Dilemma: A Cultural Heritage on a Shelf or Still a Viable Technique for Water Resiliency in Arid Regions. https://doi.org/10.1007/978-3-030-00728-7_22

The Karez system is not only economically viable, it is also a feasible water supply technique for irrigation and domestic uses.

²⁶ Iqbal (2021) Diluting Impacts of Macroeconomic Shifts on Poverty Graduation Capacities of the Poor, Policy Brief, PPAF, Pakistan.

²⁷ Including 2 UCs from each sampled district.

²⁸ 18-29 years old.

²⁹ Older than 29.