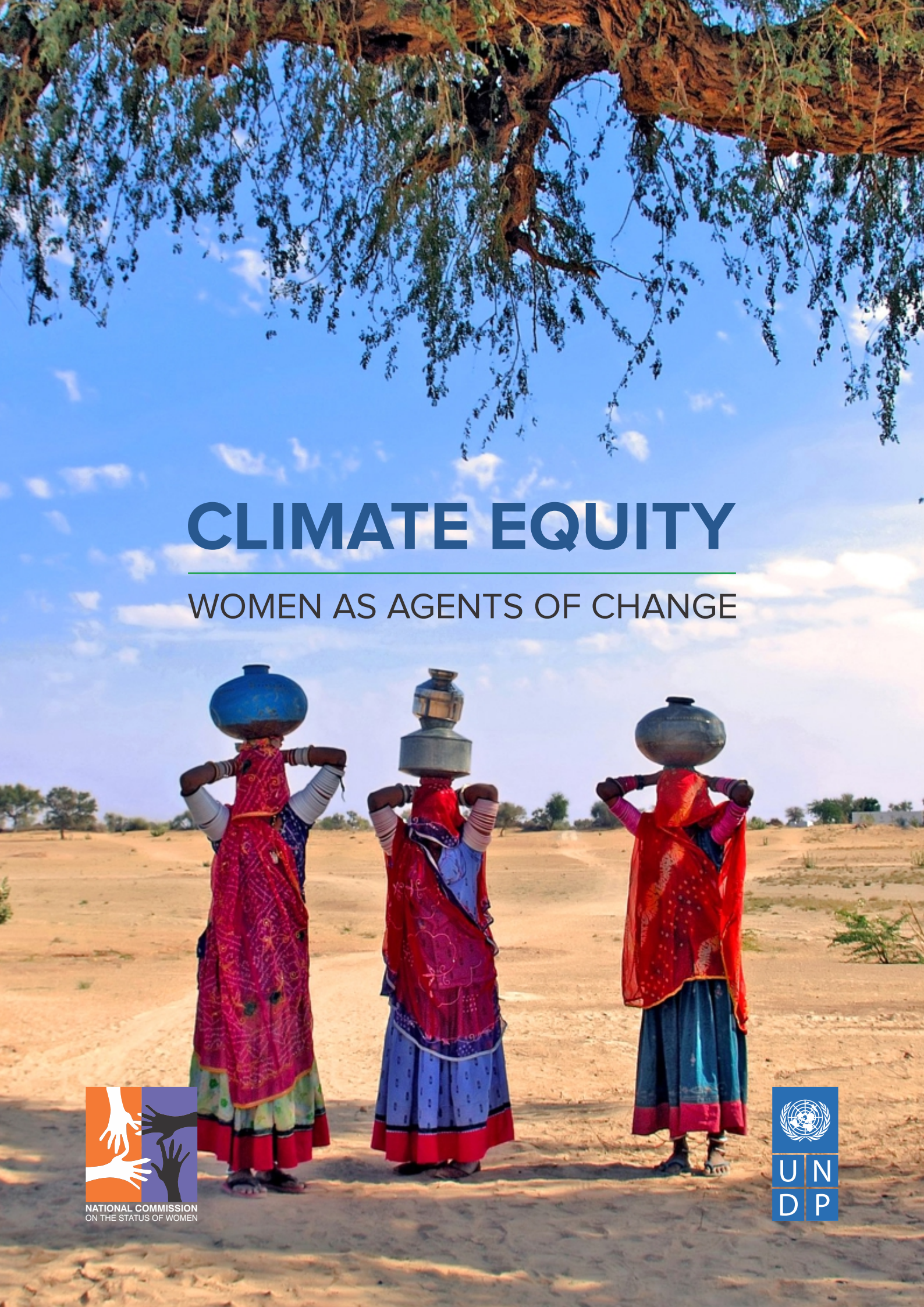
CLIMATE EQUITY

WOMEN AS AGENTS OF CHANGE



NATIONAL COMMISSION
ON THE STATUS OF WOMEN

UNDP

National Commission on the Status of Women (NCSW)

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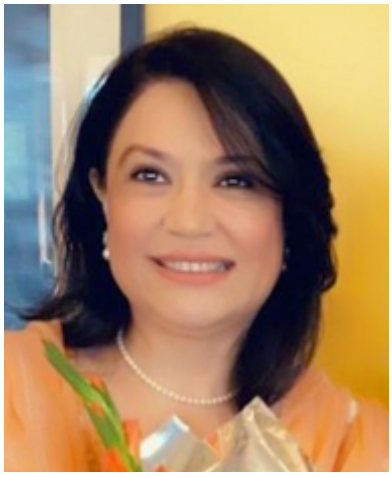
Foreword



Nilofar Bakhtiar
Chairperson
National Commission
on the Status of Women

Pakistan is among the top ten countries heavily impacted by climate change over the last twenty years. The situation is exacerbated because the country is largely dependent on agriculture for economic turnover whereas the agriculture sector itself is bearing adverse climatic conditions such as droughts and natural disasters severely impacting crop production. A snapshot analysis of the last two decades indicates that Pakistan was impacted by four devastating natural calamities: the 2005 earthquake, the floods of 2010, glacier melting resulting in the 2010 Attabad landslide, and a 16-months long dry spell in Sindh and Baluchistan. These kinds of natural disasters immensely affect our vulnerable groups such as women, children, transgenders and people with disabilities (PWDs).

Women and children are often the worst affected by such natural calamities and resources' scarcity. Take the water issue for instance: children are most affected by contaminated water, and women and girls have to travel great distances on foot every day to fetch water for domestic use. Dry spells and water scarcity have also resulted in food insecurity in the country. Another example is the consequences of deforestation. The shortage of fuel wood adds to the difficulties rural women face in terms of cooking food.

Women are not aware of the warning signs of climate change, particularly those in rural setting, most impacted by the phenomena. The lack of training and awareness refrains them from participating in decision making which invariably impacts the entire household during or after a disaster.

The National Commission on the Status of Women (NCSW) recognizes the significance of equipping women and girls with necessary information and awareness of the reasons and consequences of climate change through capacity building sessions. It is equally imperative to spread general awareness among the citizens of Pakistan, on how the active role of women can go a long way in reducing harmful effects of climate change in the country. The NCSW team travelled across Pakistan over two months and had led six consultations with community members and civil society to gain hands-on knowledge of each region's very specific climate change reality. The recommendations included in this report are based on this contextual and documented approach, and highlight various challenges women across the country face due to climate change, and suggest measures to minimize its impact on everyday lives and the surrounding ecosystem.

Special Message by UNDP Pakistan

Knut Ostby
Resident Representative
UNDP Pakistan

Climate change is a major developmental and environmental challenge, especially for Pakistan. In the last 20 years, Pakistan has faced significant loss of life, property damage, and developmental setbacks from floods, cyclones, and earthquakes, exceeding $20 billion in damages. Apart from its economic impact, climate change hits the poorest and most vulnerable first and hardest, compromising our ability to fulfil the promise of Agenda 2030 of the Sustainable Development Goals.

The worsening climate crisis affects all humanity, although the effects are not uniform. Gender discrimination, arising from existing inequalities, makes women disproportionately more vulnerable than men to the impacts of climate change. This is because they are far more dependent on dwindling natural resources for subsistence and livelihoods and are more likely to live in poverty. In Pakistan, 9.1 million women agricultural workers play a substantial role in food production and food security; but they are largely unpaid, and are far more vulnerable to exploitation than men, which diminishes their ability to mitigate the risks of climate change.

Given Pakistan's vulnerability to climate change, this report on gender and climate change comes at a critically important time for Pakistan. The country ranks 152 out of 181 countries in the Notre-Dame-Gain Index, which calculates a country's vulnerability to climate change and other global challenges, as well as their readiness to improve resilience.

This underlines the need to address and revaluate national and provincial policy frameworks incorporating gender-responsive planning and ensuring gender equity in design, procedures, budgeting, and outcomes, to avoid women's exacerbated vulnerabilities to climate change impact.

This report is based on in-depth research and consultations all over Pakistan, with seasoned gender and climate change experts, policymakers, and community-based organizations who have dedicated their lives to improving gender equity and environmental protection in Pakistan. Their insights not only highlight the challenges and impact of climate change on gender equality, but also the solutions and the way forward.

Women are agents of change and have the power to build a brighter and more sustainable future. That is why at UNDP, we are committed to ensuring that women's priorities and needs are reflected in climate change planning and funding. We strongly believe that it is critical to ensure gender-sensitive investments in programmes for adaptation, mitigation, technology transfer and capacity building.

UNDP is a strong advocate for gender equality and empowerment. Through our National Gender Mainstreaming Framework, we are mainstreaming gender into National SDGs programming through evidence-collection, advocacy, and strengthening capacities, to achieve the foundational promise of the Sustainable Development Goals: to Leave No One Behind.

UNDP is also supporting projects across Pakistan to respond to the growing threat of climate change; to mainstream environmental concerns into national development planning processes; and to expand access to environmental and energy services for the poor.

It is with meaningful collaborations – such as those with NCSW and the Planning Commission – that we are able to make progress towards gender equality and climate action. This report takes us one step closer to achieving the empowerment of all women and girls, especially as it relates to environmental and disaster risk reduction policies.

Acknowledgements

The National Commission on the Status of Women (NCSW) would like to express its appreciation to all gender and climate change experts who gave their valuable time and input and were part of our nationwide consultations leading to the national report on the 66th session of the Commission on achieving gender equality and empowerment of all women and girls in the context of climate change, environmental hazards and disaster risk reduction policies and programs.

Pakistan's report 'Climate Equity: Women as Agents of Change' sheds light on the hardships faced by women in the country due to climate change and natural disasters. It presents sector-wise recommendations to reduce the vulnerability of women dependent on our natural environment for maintenance and sustenance.

We are immensely grateful to Mr. Salman Zaidi, author of this report, who conducted in-depth research and analysis to write this report and to Ms. Shabana Arif, National Expert on Gender, NCSW, for leading the consultation process and for her continued support and assistance during the publication of this report.

We are also indebted to the Development Policy Unit Team at the United Nations Development Programme (UNDP) Pakistan Country Office for extending a comprehensive institutional partnership for national and provincial stakeholder consultations with leading gender and climate change experts, as well as the production of this report. Additionally, we are grateful to the Government of Pakistan-UNDP Pakistan supported Federal and Provincial SDGs Support Units for their invaluable assistance in convening national and provincial stakeholder consultations.

Special acknowledgments are due to our other consortium partners: the United Nations Women, the United Nations Population Fund (UNFPA), and International Union for the Conservation of Nature (IUCN).

Finally, the NCSW would like to extend its heartfelt gratitude to leadership of the Chairperson NCSW, Ms. Nilofer Bakhtiar. This endeavour would not have been possible without her keen interest, understanding and support.

National Commission on the Status of Women

Contents

List of Acronyms

BISP	Benazir Income Support Program
CBO	Community Based Organization
ccGAP	Climate Change Gender Action Plan
CGPI	Clean Green Pakistan Index
COP	Conference of Parties
COVID	Coronavirus Disease
CSA	Climate Smart Agriculture
CBDRM	Community based Disaster Risk Reduction
DDR	Disaster Risk Reduction
DRM	Disaster Relief Management
FICCP	Framework of Implementation for Climate Change Policy
GAP	Gender Action Plan
GB	Gilgit-Baltistan
GDM	Gestational Diabetes Mellitus
GDP	Gross Domestic Product
GIC	Gender Integration Continuum
GLOF	Glacial Lake Outburst Flood
IUCN	International Union for Conservation of Nature
KP	Khyber Pakhtunkhwa
LPG	Liquefied Petroleum Gas
MoCC	Ministry of Climate Change
MSW	Municipal Solid Waste
MICS	Multiple Indicator Cluster Survey
NCCP	National Climate Change Policy

NDC	Nationally Determined Contribution
NDMA	National Disaster Management Authority
NGO	Non-governmental Organization
NRM	Natural Resource Management
NSSU	National Strategic Support Unit
PML-N	Pakistan Muslim League-Nawaz
PPP	Purchasing Power Parity
PKR	Pakistani Rupee
PSLM	Pakistan Social and Living Standard Measurement
PTI	Pakistan Tehreek-e-Insaaf
PWD	Persons with Disabilities
SDGs	Sustainable Development Goals
TBTTP	Ten Billion Tree Tsunami Project
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WPG	Work Program on Gender

Executive Summary

Pakistan is among the most vulnerable countries to climate stress, with a large population exposed to frequent natural disasters and coping mechanisms that are in their developing stages. Like other countries, Pakistan faces barriers in aligning its climate policies to a rapidly deteriorating natural environment, which has strained its productive sectors and compounded vulnerabilities of its people, especially women.

Recognizing the need of the hour, Pakistan's government-initiated positives climate smart steps to reduce the vulnerability to climate change in Pakistan. This includes the Ten Billion Tree Tsunami Programme which enabled Pakistan to earn the title of one of the three 'Forestry Champion' in the world during UN Climate Summit COP26 held in Glasgow. Other positive actions include initiating National Adaptation Plan, Climate Change Gender Action Plan (CCGAP), and Clean Green Pakistan Index and Champions Programme. While these all are a step in the right direction, there is much more room for more positive climate smart actions to reduce the adverse impact of climate change in Pakistan, especially for disadvantaged populations such women, children, and transgenders etc.

Some important strides have been made over recent years in overhauling Pakistan's climate policy framework. This includes the newly updated climate change policies, which have set ambitious targets for adaptation and mitigation, and called for a reappraisal of women's vulnerability and gender-sensitive objectives to address women's differentiated burdens in climate stress.

Part of this responds to Pakistan's ratification of the Paris Agreement 2015, which mandates gender equity and justice in climate action by the member states. Simultaneously, there has been a growing recognition of the challenges being faced by women across Pakistan amid threats to the country's growth and survival due to climate degradation, especially in occupations that depend on natural environments or geographic locations where climate stress is causing natural hazards. There is an acceptance that women's productive and caregiving burdens have become extremely taxing against a backdrop of eroded livelihoods, loss of assets and survival resources, rising food insecurity, reduced agency and autonomy, dislocation, and exposure to sexual and gender-based violence.

Given slight improvements being made in human development over the years[1], Pakistan's efforts must begin now with reprogramming climate frameworks along the principles of distributive justice, procedural justice and intergenerational equity in policy, procedures, and outcomes. The climate policies must enable gender empowerment through reviewing the imbalance of benefit accrual, power and exclusionary practices that occur within institutions and through policy implementation that inadvertently reinforces women's disadvantage.

A review of Pakistan's climate related policies reveals that many sectors need further guidance by gender sensitive frameworks, especially with respect to women's differentiated burdens in climate stress, or the vulnerabilities faced by communities. The efforts are underway to overhaul policy and practice in agriculture, water, forestry, disaster management, energy, and urban planning in line with international commitments, and rapidly changing domestic needs, as evidenced in interactions with policy planners and implementers. The importance of gender mainstreaming in policy has widely been acknowledged during these interactions, even if the policy frameworks may not reflect these values in their current iterations.

Sectoral practices reveal the scale of challenges confronting Pakistan. Long term capacity deficits characterize the state of play in the sectors mentioned above. This combined with declining crop yields, disrupted water availability, rural out-migration, and frequent natural disasters triggered by climate stress produce a precarious survival scenario for communities, and especially women. Women are extensively involved in some of these sectors as full-time labour or secondary workers in addition to their dependence on natural environments for sustenance. They are also closely engaged in the preservation, conservation, and protection of fragile ecosystems, which are under threat from climate change and poor policy choices.

The perspectives offered by practitioners and experts during the consultations reveal different stressors across provinces, and dissimilar political priorities for climate action. The impact on women's lives and the quality of resources at their disposal for growth and survival become evident through the discussion presented in this report. It drives home the

1. UNDP (2020) 'Pakistan National Human Development Report', United Nations Development Programme, Pakistan: Islamabad

conclusion that climate stress has surely exacerbated the scale of our challenges, but the underlying reason for this predicament is a collective disregard for environment and environmental governance related sectors.

This report offers policy prescriptions for enhancing resilience and reducing vulnerability of women who depend on natural environments for livelihoods and sustenance. The report gives sector-specific recommendations to make the policies more gender responsive and inclusive to benefit all communities, particularly marginalized cohorts. The key recommendations are as follows:

I. **[Governments and development partners] Develop a keener understanding and awareness of the interlinkages between climate degradation and women's deteriorating plight**, as managers of the natural environment, homes, and communities. The gendered differential occurring due to climate stress is still unknown to many practitioners, especially those unfamiliar with the human fallout of climate change. The socio-economic impact on society, and therein the effect on women and marginalized groups, needs to be prioritized over technical-administrative approaches.

II. **[Governments, development partners and CSOs] There is a need for gender proofing of policy frameworks on climate change**, through developing plans of action for assessing the state of gender equality in the country, targeting inadequately explored gaps, or priority areas and conducting broad-based consultations with stakeholders that help propose strategies on gender mainstreaming, including ways in which policies, programs, and budgets may reflect gender sensitivity, and deliver outcomes that impact women favourably.

III. **[Governments and development partners]** For institutions tasked with climate relevant mandates, **define measurable goals and indicators linked to outcome targets that achieve gender equality benchmarks**, define responsibilities, timelines, action plans and monitoring mechanisms that assist this effort, incorporate gender mainstreaming requirements as an expectation in engagements throughout the environment and climate sectors, and incorporate gender equality objectives in staff performance appraisals as well.

IV. **[Governments and public] Reset knowledge systems on water, agriculture, forestry, and energy** away from top-down engineering-dominated solutions towards promotion of local knowledge and practices of specific populations. This will enable greater equity in natural resource management practices and reveal a better picture of vulnerability and resilience.

V. **[Governments, CSOs and public] There is a need to collect data on micro-level transactions occurring every day** that reveal how household demands vary according to income, locality, sources of climate stress, and how women are altering usage of natural resources in response to their shortages. There is a preponderance towards macro-level initiatives that seek system-wide improvements, whereas any understanding of resilience or vulnerability needs a closer examination of human behaviour during climate degradation.

VI. **[Governments, development partners, CSOs and public] Duly recognize women's capacities and capabilities in DRM and do not limit only to highlight their vulnerabilities.** Women must be supported in building up their households' and communities' resilience during climate stress. Only care-giving role is associated to women, but leadership role needs to be given to them as well for an inclusive DRM. At the same time, recognize and reverse gender discriminatory practices that are deeply embedded in local culture, especially through dismantling barriers to access, information, benefits, and overall empowerment so that the policy interventions are truly transformative.

Introduction

Recognizing the danger

Climate change is the gravest challenge of our time. We do not require further proof of how fast and how extensively it is transforming our world; nor can we doubt its indelible impact on our livelihoods, health, and longevity. What we do need is a plan for survival that fortifies our wherewithal in meeting the climate emergency, and safeguards our communities from its relentless onslaught. To be sure, this cannot be achieved by countries on their own. Every effort must/should be made towards regional and international coordination, cooperation and sharing of evidence in a bid for collective survival.

Governments have variegated capacities and binding constraints that hinder their responses to global challenges, even at the best of times; civil societies too, are mired in daily struggles for sustenance, growth and security. The climate challenge will not be overcome by expecting one entity to redress strains experienced through environmental degradation and its socio-economic fallout. Calls for 'whole of government' and 'whole of society' to synchronize their efforts and resources have certainly yielded more coordinated outcomes in climate action, but the net counterforce to tackle climate stress has to be even greater as we proceed.

What perils are staring us in the face? In the lead up to the very likely 1.5°C scenario, 14 percentage of the global population is exposed to extreme heat waves; sea levels are rising and will likely to increase by 0.77 meters by 2100; biodiversity is undergoing a massive transformation as ecosystems are likely to perish in the heat; coral reefs will decline between 70 percentage and 90 percentage and global fisheries will decline annually by 1.5 million tons.[2] An additional 250,000 deaths will occur each year between 2030 and 2050 from climate induced malnutrition, heat stress, malaria and diarrhea.[3] Heat stress will cause economic losses worth $2.4 trillion by 2030, and take away 136 million jobs, particularly in agriculture and construction sectors worldwide.[4] Already 475,000 lives have been lost across the world between 2000 and 2019 in extreme weather events, with losses of $2.56 trillion (in PPP).[5] Meanwhile, more than 18 million people in South Asia are already displaced or migrating out of climate induced stress, of whom an estimated 682,132 migrants are in Pakistan, some of them are repeatedly migrating in search of livelihoods.[6]

The fallout of climate stress on vulnerable communities is clearly visible. Among them, women and young girls are the worst affected by these changes, with the fewest resources or agency during climate stress, and the heaviest burdens to bear. Women across the world give up their share of food to family members in a poor harvest; their distances carrying fuelwood and water become longer and perilous; basic health facilities are out of reach when roads are swept away in floods or snowed under; children die from preventable diseases for lack of sanitation and hygiene. Women comprise 70 percentage of the world's poor, and the pandemic has exacerbated the gender gap in extreme poverty. There are 119 women for every 100 poor men in extreme poverty, and this ratio is expected to worsen.[7]

How prepared are we?

Climate change has exacerbated socio-economic fault lines in every society, and placed a heavier burden on communities struggling to survive with complex inequalities. It has intensified differentials in income, nutrition and education among population cohorts, and has become an existential 'threat multiplier' for govern-

2. IPCC (2018) 'Global Warming of 1.5°C' In Press.
3. World Health Organization (2021, 30 October) 'Climate Change and Health' available at https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health
4. International Labour Organization (2019), 'Working on a Warmer Planet: The impact of heat stress on labour productivity and decent work', International Labour Office: Geneva
5. Eckstein, D., Kunzel, V., & Schafer, L. (2021) 'Global Climate Risk Index 2021: Who Suffers the Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000-2019', GERMANWATCH: Bonn
6. Singh, H., et al (2020) 'Costs of Climate Inaction: Displacement and Distress Migration', ActionAid, CANSA, Brot Fur Die Welt
7. UNWomen (2020, 2 September) 'The COVID-19 Boomerang Effect: New Forecasts Predict Sharp Increases in Female Poverty' available at: https://data.unwomen.org/features/covid-19-boomerang-poverty

ments and communities adapting to its expansive footprint. Not all countries suffer the same catastrophic effects, as we know; nor do all have the same reaction time before the next natural disaster. Between unfolding extreme weather events and administrative responses, it is invariably the poor and disadvantaged who lose lives, assets and livelihoods.

Much of this is acknowledged in country reports and at the forums dedicated to climate action, but the tools with which we address growing differentials in survival resources, are either not delivering or have to be redesigned for relieving stress. The climate crisis affects all sectors of public life, and compounds vulnerabilities across geographies and time scales. It routinely outpaces our response mechanisms and adaptive ability. We know that climate change cannot be beaten by traditional modes of governance or development programming, yet more often than not, our policy approaches lead us down the pathways that deliver more of the same outcomes. This is as true for Pakistan as the rest of the world.

Ever since the Paris Agreement, the world has made critically important strides in mitigation practices. From discreet carbon projections to phasing out coal powered plants, the global commitment to cutting back emissions has come a long way in just a few years. That is not to downplay the severity of the crisis unfolding with global warming at current levels, nor does it underestimate the political challenge confronting the climate movement. Just as any success in mitigation advocacy is hard won, it will be even more difficult to bring about a transformation of the global economy towards sustainable practices.

Up until recently, climate change has been perceived largely in terms of global warming and deteriorating environmental resources: greenhouse gas emissions accelerating polar ice melt; rising sea levels overwhelming continents; or erratic rainfall disrupting full harvests. The debate had started in the early 20th century and brought sobering scientific evidence to bear against growth trendlines in the global North and South alike. By the late 1980s, an international scientific consensus held that the atmosphere had been heated to a perilous degree by anthropogenic activity, and the environmental fallout was being felt across the world. The scientific debate helped create a baseline for urgent action, and continues to guide governmental mandates to reduce carbon emissions to date.

But the corresponding debate on the human impact of climate change was slower to follow. It was more challenging to project socio-economic outcomes of climate change, especially when the effects were so varied across communities, even within countries. The missing link was demographic data, which was not collected or analysed to match the climate and human catastrophes with each other. As the socio-economic impact on people became evident, it was unmistakable that the communities suffering maximum exposure to climatic hazards had played no part in destabilizing the atmosphere with greenhouse gases. The disequilibrium between those responsible and those at risk of climate change has since mobilized the movement for climate justice.

Where are we headed?

Many decades later, the availability of data has established the extent of vulnerability across the world, and has altered the global mission for climate change. Adaptation remains the world's toughest challenge yet. Millions of citizens in frontline communities have limited recourse to civic entitlements or systems that lend life support in crises. To these communities, climate stress offers only stark choices: escape from a natural disaster to save lives or migrate from areas where slow onset hazards have wiped out livelihoods.[8] It also means risking poverty, food insecurity and other threats to life. Adaptation plans often fall short in effectively liaising policy intent with needs on ground, that is, if countries are able to develop and mechanize responses for people caught up in climate stress.

There is work cut out for each country. The climate crisis

Climate Fact Box: Heath and Children

A major impact of environmental contamination has been on human health including morbidity and mortality. This is evident from the two leading causes of death in children - diarrhoea and acute respiratory infection. The World Bank has estimated that the health cost of ambient air pollution alone is 62-65 billion rupees per annum, whereas the same cost has been estimated to result from indoor air pollution. The mean estimated cost of environmental and natural resources damage is about 365 billion rupees per year in Pakistan or 6 percent of GDP.

8. Abbasi, Naeem & Ansari (2021) 'Climate Induced Migration Among Women: Stories from District Muzaffargarh & District Tharparkar Pakistan', Sustainable Development Policy Institute (SDPI), Islamabad.

is gathering intensity, and so, the resources at our command to meet its multifaceted challenges must also evolve. The forums for policy discourse, data for interpretive analysis, policy chains that convey purpose and feedback, and frameworks that govern climate interventions must all be overhauled in light of what we know today. The climate crisis is claiming lives of disadvantaged women, children, the elderly, and men; and we can prevent that from happening.

This will need placing a far greater emphasis on human vulnerability than done previously. Climate change policy must be recast in a humanitarian frame, through making human development outcomes the ultimate benchmark of effective interventions.

How does this report make a contribution?

This report comes at a time when climate action is gathering a palpable global momentum. The political commitment to forestall climate degradation is met with a large popular consensus to beat the challenge at multiple levels. There are unprecedented financial, human, intellectual and productive resources available for arresting global warming, as well as the socio-economic impact it has on societies.

Similar questions are being asked of decision makers and implementers everywhere: how effective are governmental efforts to curb climate stress? Will implementation strategies arrest environmental degradation and safeguard communities? How effective are adaptation mechanisms? What is the impact of these interventions on women? This report attempts to answer these questions from Pakistan's context, to assist decision making in improving policy frameworks across the country, and to inform interested audiences in other parts of the world.

It is important to note that even though women's vulnerability during climate stress is known, but is poorly documented globally. There is enough evidence available on environmental degradation occurring in forests, rivers, glaciers, or even cities. But its interlinkage with the collapse of community life dependent on fragile ecosystems is seldom fully explored. Estimations of women's access to public services, hours spent at work, or increasing burdens during climate stress have come through sample studies and household surveys that reflect only a part of the picture. This report attempts to go past the stress indicators available from studies conducted in Pakistan, and presents a qualitative picture of women as agents of change inspite of their challenging circumstances. In doing so, it adds to a small but growing body of literature on gender differentials that emerge from climate degradation.

This report also serves a reminder that climate advocacy is taking place within a tense geopolitical setting. This is also a time when the climate movement comes face to face with unresolved security contests across the world, and a race to geopolitical confrontation that can derail progressive development agendas. There is mounting violence and internecine warfare across known strategic fault lines, and new ones are emerging across the oceans. This constrains the work of governments dealing with conflicts, and impels choices between investments in security and development. In capitalizing the momentum for climate action, we must remain cognizant of emerging sources of tension that recast national policy priorities along defence and security imperatives, and re-channel resources accordingly. Our current momentum must not be taken for granted.

Methodology

The findings of the report have emerged from an extensive desk review of policies and sectoral practices, followed by consultative sessions conducted in all provincial capitals of Pakistan as well as Islamabad, Gilgit-Baltistan and Azad Jammu and Kashmir. The sessions were held between December 2021 and February 2022, during which time a series of natural disasters unfolded and resulted in the tragic loss of several lives, including a snowstorm in Murree, an earthquake in Khyber Pakhtunkhwa, and hailstorms across north and central Punjab. It brought a salience to the discussions held among practitioners, experts and activists from Islamabad, Quetta, Karachi, Peshawar, Lahore, Gilgit and Muzaffarabad. The participation in each consultative session was diverse and inclusive. Key informant interviews were also held for soliciting in-depth perspectives on thematic issues touched upon in the consultations.

In each session, the participants were asked if they could identify policy interventions that responded to the climate emergency; furthermore, what connection they saw between interventions and women's vulnerability; and finally, how could vulnerability among marginalized groups be reduced?

The participants were divided according to environmental sectors where climate stress is documented, and which are known to impact women the most in Pakistan: (i) water, (ii) agriculture, (iii) forestry, (iv) disaster management, and (v) energy and urban planning. The perspectives and recommendations generated through this sector-wise analysis are reflected throughout the report.

Discussion in subsequent sections

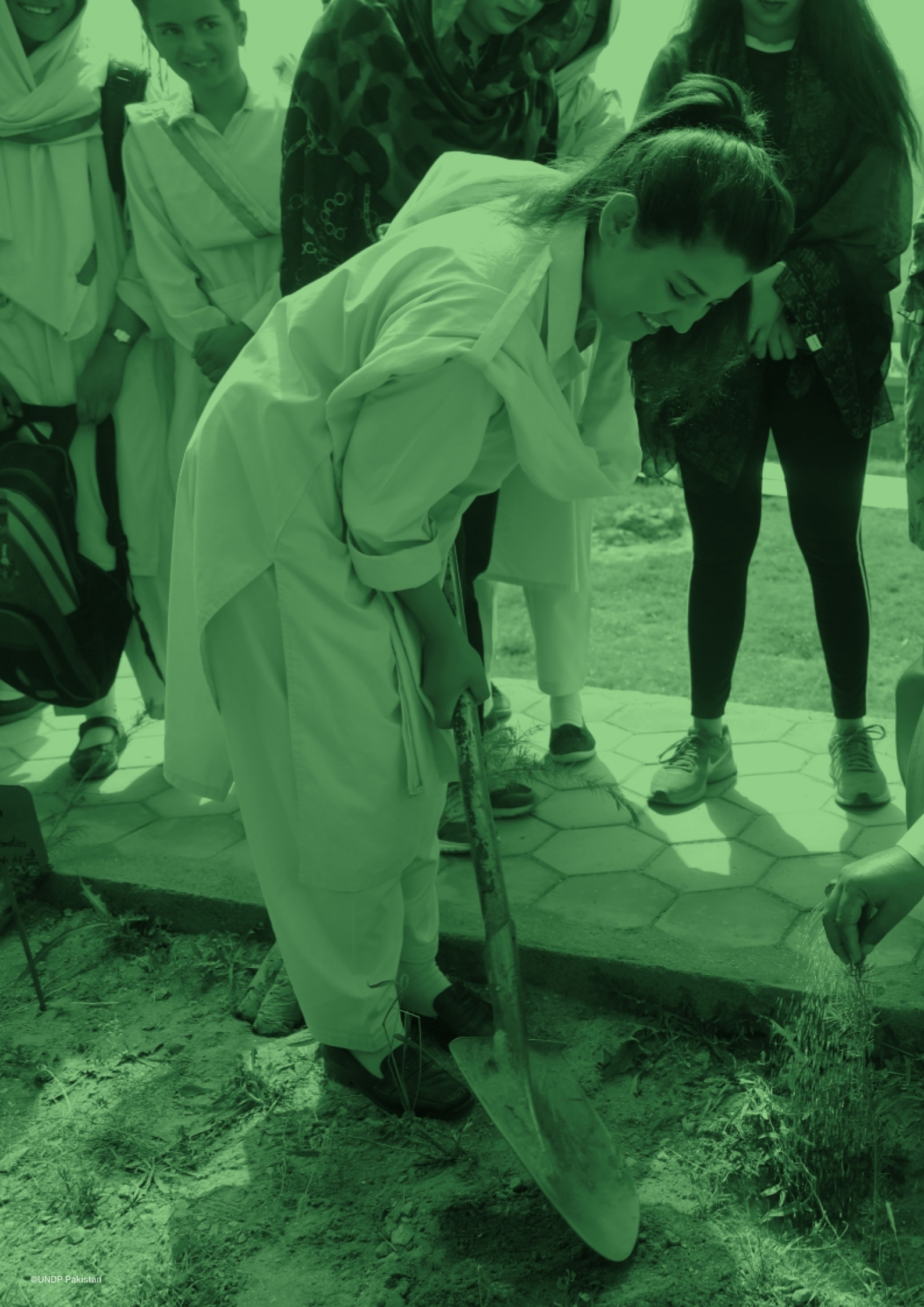
Chapter I: Aiming for Climate Equity explores women's vulnerability in Pakistan and how adaptation mechanisms are being programmed. There are fundamental questions around who interventions are designed for, and whether practitioners and institutions are able to devise gender responsive policies? How have needs been assessed? The provision of relief goods in disasters or inauguration of drinking water facilities does not mean that structural inequities have been overcome for women or other marginalized groups in accessing public goods and services. To address this, principles of climate equity should be programmed into policy frameworks, and the ethos of institutions bearing climate mandates. These principles include distributive justice, procedural justice and intergenerational equity, which collectively aim at enhancing the stake of women as beneficiaries of climate related interventions.

Chapter 2: Gender Proofing Climate Policy reviews several climate policies from a gender lens, and attempts to gauge whether gender considerations have been built into policies, programs, implementation processes and decision-making, so that the impacts on women and men can be analyzed, and appropriate responses devised. The major questions guiding this assessment are (i) do policies contain gender responsive interventions? (ii) to what extent do policies address vulnerability? and (iii) what outcomes do they seek for gender equity?

Chapter 3: Pathways to Equity - Women's Role in Key Sectors examines climate induced stress in agriculture, water, disaster management, forestry, energy and urban planning, and the impact on women's lives. Women are gainfully employed in these sectors, and depend on them for sustenance and survival as well. The pathways to creating equitable access to entitlements, inclusion and stakes in welfare are identified through sector specific policy prescriptions.

Chapter 4: Voices from the Field collates perspectives, solicited from practitioners and experts who have been part of consultation meetings held across Pakistan, that reveal stressors for vulnerability and opportunities for course correction. They provide key political insights about Pakistan's collective resolve in combatting climate change, and pinpoint areas of concern that occur as gaps between policy intent and implementation.

Chapter 5: Recommendations. The chapter sums up the list of interventions suggested for recasting policy frameworks in gender responsive ways, enabling equitable outcomes through institutional reform, and improved procedures in key sectors related to climate change where women are engaged in larger numbers. These recommendations are for the benefit of policy stakeholders, implementing partners, community-based organizations, and citizens.



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1 Aiming for Climate Equity

Aiming for Climate Equity

1

The Global Quest for Climate Action

The Paris Agreement (2015) was instrumental in building the present global consensus on climate action, following decades of incremental progress through dialogue, facilitation and urging UNFCCC member states to commit more fully to the climate regime. Evolving a global consensus on climate change was not easy, given the fiercely competitive economic trajectories of the major emitters, and varying pledges made for adaptation finance. Much of this remains hotly contested to date, as the events of COP26 in 2021 revealed: member states are unwilling to phase out fossil fuels just yet, even as they introduce other interventions to prevent the 1.5°C scenario. But the baseline for domestic and global action has gone higher each year since the Paris Agreement; expectation for results is far greater with sharp scrutiny on country capacities to adapt, as well as mitigate their climate challenges.

There is an equally robust and intensely rich debate going on outside COP sessions, led by civil society activists, academics and practitioners who determine the global agenda for demands on climate change addressed to member states and multilateral forums. This includes the global women rights movement, whose demands for climate equity and justice have informed the work of UNFCCC, and guided the retooling of countries' climate mandates in accordance with these principles.

These principles hold normative value for all countries, and especially Pakistan, whose Constitutional provisions guarantee environmental rights to all citizens. These principles are explored in sections below for the benefit of decision-makers, policy stakeholders, implementing partners, donors and citizens, who oversee and audit the implementation of Pakistan's climate policies. Any policy consensus on climate action must be attentive to emerging asks on environmental rights, and therein, women rights. Sharing these perspectives will hopefully add to the implementation process in Pakistan, and help stakeholders appreciate structural issues in policy that need closer review of national and sub-national capacities, and how they can help realize international commitments.

The Climate Crisis in Pakistan

Like many other countries, Pakistan has struggled with aligning its climate policies and implementation frameworks to rapidly changing needs on ground. As elsewhere, the policy process has been a protracted and conflicted debate among stakeholders, wherein addressing priority issues compels trade-offs between saving the environment and enhancing human resilience. There has been greater sensitivity towards vulnerable populations in recent years, especially towards the challenges confronted by women, but any assessment of climate policy success will reveal modest results, if any.

Pakistan continues to be among the most vulnerable countries, owing to the frequency of natural disasters, the dependence on natural resource endowments for survival and livelihoods, and the exposure of a large population to the climate onslaught. Pakistan ranks 17 out of 191 countries for its exposure to earthquakes and internal conflict (see Table 1). Thirty-nine percent of Pakistan's 220 million people are experiencing multidimensional poverty,[9] and up to 40 percent households face food insecurity.[10] Ninety percent of the agriculture sector is dependent on the glacier-fed Indus River system, and agriculture employs 42 percentage of the labour force. Eighty percent citizens in urban centers do not have access to clean drinking water. Pakistani cities rank the highest on the air pollution score, and smog has

9. Pakistan Institute of Development Economics (2021) 'The State of Poverty in Pakistan. PIDE Report 2021' https://pide.org.pk/wp-content/uploads/rr-050-the-state-of-poverty-in-pakistan-pide-report-2021-68-mb.pdf
10. Mehtab Haider (2021, January 10) 'Survey shows 40pc households facing moderate or severe food insecurity, The News, available at https://www.thenews.com.pk/print/772048-covid-19-survey-shows-40pc-households-facing-moderate-or-severe-food-insecurity

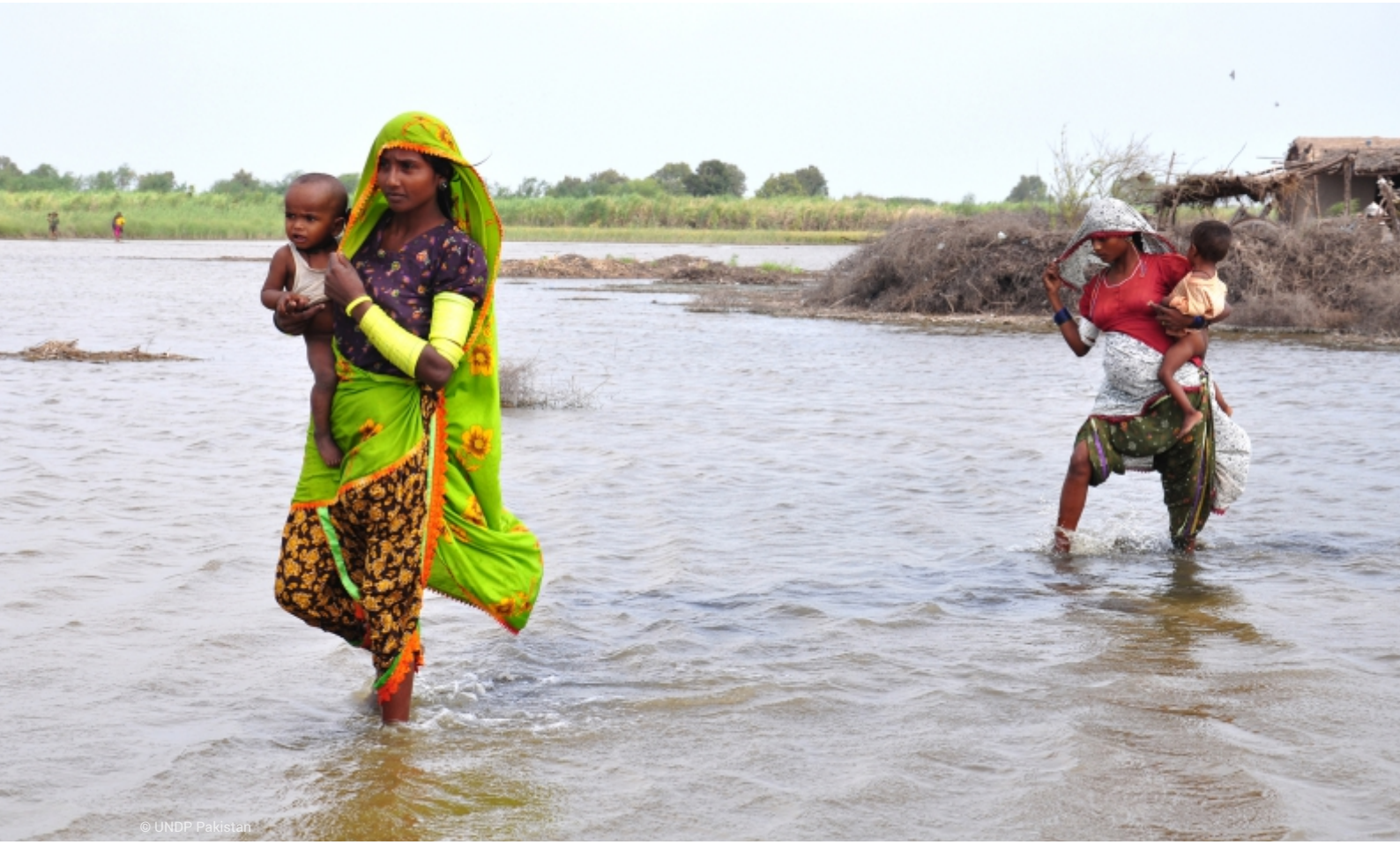


Table 1: Pakistan faces some of the highest disaster risk levels in the world, ranked 17 out of 191 countries by the 2020 Inform Risk Index. This risk ranking is driven particularly by the nation's exposure to earthquakes and the risks of internal conflict. (Higher the rank, the more risk it is at).

Country	Inform Risk Index	Rank
Pakistan	6.3	17
Afghanistan	8	5
Bangladesh	8	22
India	5.4	31
Nepal	5.4	31
Sri Lanka	3.7	96

Source: INFORM Report 2020 https://drmkc.jrc.ec.europa.eu/inform-index

cut five years from life spans in Punjab and elsewhere.[11] One in ten deaths among children under the age of 5 is caused by air pollution, and 128,000 persons die from airborne particulate matter in Pakistan.[12] As shown in Table 2 below, Pakistan's ranking on the Notre Dame Game Index is a reflection of these challenges.

11. Dawar Hameed Butt (2019, February 12) 'No, India is not responsible for Punjab's smog. Here's what's really happening', DAWN, available at https://www.dawn.com/news/1463398
12. S. Khan, "Why Pakistan Has Some of the Most Polluted Cities in the World: DW: 01.11.2021," DW.COM, November 1, 2021, https://www.dw.com/en/why-pakistan-has-some-of-the-most-polluted-cities-in-the-world/a-59686579.

Table 2: Pakistan Profile International Standards

Pakistan ranks at 152 out of 181 countries in the Notre-Dame-Gain Index[13] which calculated a country's vulnerability to climate change and other global challenges as well as their readiness to improve resilience. (The more vulnerable a country is the lower their score and lower their ranking.[14] (Table 1)

The ND-GAIN Country Index 2018

Country	Rank	ND-Gain Index
Pakistan	152	37.5
Afghanistan	176	31.4
Bangladesh	162	36
India	122	41.9
Nepal	128	40.9
Sri Lanka	103	46.1

Source: University of Notre Dame. (2021). "Notre Dame Global Adaptation Index." Available at https://gain.nd.edu/our-work/country-index/

Pakistan's women are further disadvantaged: 9.1 million women agricultural workers play a substantial role in food production and food security, but they are largely unpaid, suffer from greater time poverty, and are far more vulnerable to exploitation than men. Women's ownership of land, and control over physical assets is minimal: only 2 percentage of women report owning a house or agricultural land as compared to 72 percentage men. Only 55 percentage of women have access to adequate healthcare,[15] and 48.1 per cent of women and girls aged between 15 and 49 years in Pakistan, particularly in rural areas, have no say in decisions regarding their own health care.[16] Only 28 percentage women aged 15 to 49 have reported intimate partner violence in their lifetimes,[17] and roughly 1,000 women are killed for honour every year.[18]

Pakistan has made important strides in overhauling its climate policy framework over the last few years. The recently introduced Climate Change Policy (2021) and submission of the updated Nationally Determined Contribution (2021) showcase Pakistan's new climate goals, and pay due attention to women's differentiated burden in climate emergencies. The focus on nature-based solutions that assist mitigation is noteworthy, particularly through the Ten Billion Tree Tsunami Project that aims to sequester about 150 $MtCO_2$ till 2030[19], among other interventions targeted at 'decarbonizing' the economy, while simultaneously enabling a growth trajectory. Having also achieved Goal 13 of the SDGs a decade earlier,[20] Pakistan can lend credible leadership to

13. The ND-GAIN Country Index is a measurement tool that helps governments, businesses and communities examine risks exacerbated by climate change, such as over-crowding, food insecurity, inadequate infrastructure, and civil conflicts
14. University of Notre Dame. (2021). "Notre Dame Global Adaptation Index." Available at https://gain.nd.edu/our-work/country-index/
15. UNWomen and NCSW (2020) 'Gendered Impact and Implications of COVID-19 in Pakistan' available at: http://www.mohr.gov.pk/SiteImage/Misc/files/GenderedImpact.pdf
16. Faiza Ilyas (2018, February 18) '48pc Pakistani women have no say in health matters: UN', DAWN, available at: https://www.dawn.com/news/1389532
17. National Institute of Population Studies (NIPS) [Pakistan] and ICF (2019) 'Pakistan Demographic and Health Survey 2017-18'. Islamabad, and Rockville, Maryland: NIPS and ICF https://dhsprogram.com/pubs/pdf/FR354/FR354.pdf
18. Human Rights Watch (2021) 'Pakistan: Events of 2021' available at: https://www.hrw.org/world-report/2021/country-chapters/pakistan
19. Government of Pakistan (2021) 'Pakistan: Updated Nationally Determined Contributions 2021', available online: https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Pakistan percentage20First/Pakistan percentage20Updated percentage20NDC percentage202021.pdf

Table 3

SDG 13: Climate Action				
● denotes that SDG has been achieved ↑ denotes on track or maintaining SGD achievement ● denotes trends information unavailable	Perfomance by Indicator			
	Value	Year	Rating	Trend
Co2 emissions from fossil fuel combustion and cement production (tCO2/capita) 1.1 2019	1.1	2019	●	↑
CO2 emissions embodied in imports (tCO2/capita) 0.0 2015	0.0	2015	●	↑
CO2 emissions embodied in fossil fuel exports (kg/capita) 0.0 2020	0.0	2020	●	●
SDG 5: Gender Equality				
● Denotes major challenges remain ● Denotes significant challenges remain ↓ Denotes score decreasing → Denotes score stagnating or increasing at less than 50 percentage of required rate	Perfomance by Indicator			
	Value	Year	Rating	Trend
Demand for family planning satisfied by modern methods (percentage of females aged 15 to 49)	48.6	2018	●	→
Ratio of female-to-male mean years of education received (percentage)	60.3	2019	●	→
Ratio of female-to-male labour force participation rate (percentage)	26.5	2019	●	↓
Seats held by women in national parliament (percentage)	20.2	2020	●	↓

Source: Pakistan SDG indicators, https://dashboards.sdgindex.org/static/profiles/pdfs/SDR-2021-pakistan.pdf

climate action. At the same time, it must pay far closer attention to the SDG Goal 5 for gender equality that requires major challenges to be overcome (see Table 3 below).

However, enabling adaptation is a tall order in Pakistan's diverse geographies and communities, where vulnerability and resilience profiles vary. There are fundamental capacity deficits in being able to assist populations in the climate domain, much like other social sectors including healthcare or education. The COVID-19 pandemic placed immense strain on the ability of federal and provincial governments to deliver basic entitlements to citizens, even as large financial bailouts were given to some economic sectors, and social protection mechanisms were expanded. The subsequent economic downturn that followed has depleted household incomes and exacerbated poverty. Falling HDI (154 rank)[21] across Pakistan is as much a reflection of poor historical investments in human development, as continuous inefficiency in governance.

Climate change necessitates policy action from the whole of government and society, but the policy agendas mostly reflect ad-hoc responses to extreme weather events; and that responsibility too is rarely shared across ministerial jurisdictions. In Pakistan, the climate crisis may well be acknowledged as the foremost issue of concern, but often ranks lower on the priority list of crises managed by federal or provincial decision makers. This trend is consistent with Pakistani citizens identifying water or smog as major existential challenges, without possessing any knowledge of adaptation and mitigation practices, or awareness about natural disaster warnings.

20. Jamila Achakzai, (2020, July 13) 'Pakistan meets UN climate change goal a decade ahead of deadline', The News, available at: https://www.thenews.com.pk/print/685979-pakistan-meets-un-climate-change-goal-a-decade-ahead-of-deadline
21. UNDP (2021) 'The Next Frontier: Human Development and the Anthropocene. Briefing note for countries on the 2020 Human Development Report. Pakistan', available online https://hdr.undp.org/sites/default/files/Country-Profiles/PAK.pdf

Do we need a reset?

Climate action anywhere is a work in progress. Multilateral negotiation forums add to its momentum, as much as vibrant protests across global capitals, or parliamentary committees poring over policy drafts back home. Building momentum is crucial till our collective ambition for cooling the planet is realized; our unsustainable patterns of consumption are overturned; our wanton environmental disregard and destruction is arrested; and deeply entrenched exclusions for marginalized groups are reversed. The climate movement is a call for recasting the equilibrium of benefits and burdens in ways that assist the disadvantaged, while maximizing the spread of natural endowments for all.

This means that the climate crisis is not taken merely as an environmental challenge but as a complex social justice problem, putting at its center the populations susceptible to its impacts. It means taking on fundamental issues of unsustainable production, consumption and trade, while building a path towards equity that enables the realization of human rights. Furthermore, a feminist approach to climate change holds that an intersectional analysis is needed that examines unequal power relations based on gender, socio-economic status, ethnicity, nationality, ability, sexual orientation and age, etc. Such an analysis advocates strategies that address the root causes of inequality, transform power relations and promote women's rights.[22]

There are questions we must ask ourselves as we embrace climate action, as governments, activists or affectees. Whom are our interventions meant for? If climate action is about bringing climate rights to those who have never experienced them, or stand to lose them, then the sum total of our interventions must reflect the maximization of environmental resources for these cohorts. How have we assessed their needs? Relief goods and aid should not be taken to mean rehabilitation has come about, rather we should evaluate whether longer term utilization of public services and economic agency has improved for marginalized groups. Do our efforts dismantle barriers to equitable benefit sharing? We must take full cognizance of exclusionary dynamics that impede representation, inclusion and recognition for marginalized groups, particularly women, in the receipt of benefits. Social prejudice, lack of physical mobility, patriarchal attitudes and officialdom become prohibitors of individual agency, and during climate stress, they can potentially undermine survival.

Aiming for Climate Equity

Not all will enjoy the benefits of adaptation mechanisms, neither will mitigation reverse the worst effects of climate degradation in all places. Until our strategies can enable universal coverage, we will be forced to choose between alleviating burdens where they are felt the most, and creating ease where it is needed. This brings forth the principle of climate equity.

The idea of climate equity has so far been invoked in connection with the principle of common but differentiated responsibilities and respective capabilities (CBDR/RC)[23] under the UNFCCC. It follows the logic of rich nations providing financial recompense for heating up the atmosphere with greenhouse gases and exploiting environmental resources to the disadvantage of others. The crisis of equity is that financial support provisions do not fix historical environmental degradation, and vulnerable countries across the world will face an aggravated climate onslaught anyway.

To further strengthen existing arrangements on policy action, climate equity can be programmed into domestic responses for climate stress, particularly adaptation mechanisms that can improve quality of life among communities with differentials in resilience capacity and vulnerability. Climate equity strives foremost to protect the vulnerable from precarious environments and to undertake actions that ensure human security. It seeks protection of lives, livelihoods and assets; securing survival resources; ensuring no physical or emotional harm, and further exposure to threats; and unhindered access to facilities.

Furthermore, climate equity entails the pursuit of distributive justice, or the allocation of valued rewards, resources, rights and obligations to recipients.[24] Distributive justice creates transactional 'fairness' in the supply of public goods and services, whereby finite environmental resources must be allocated according to

22. AQOCI (2019) 'A Feminist Approach to Climate Justice' available online: https://www.ocic.on.ca/wp-content/uploads/2019/06/WD_A-Feminist-Approach-to-Climate-Justice_Final_2019-05-31.pdf
23. According to the principle of 'common but differentiated responsibility and respective capabilities' set out in the 1992 UNFCCC treaty, developed country Parties will provide financial resources to assist developing country Parties in implementing the objectives of the UNFCCC.
24. Cook, K., & Hegtvedt, K. (1983) Distributive Justice, Equity and Equality' in Annual Review of Sociology, August 1983, 9(1): 217-241

recipients' need.

In addition, there have been calls for procedural justice as part of climate equity. This view holds that fair procedures based on transparency, neutrality and consistency will bring about fair outcomes. It emphasizes the need for accountability and representation for groups and individuals who have a stake in the process.[25]

Finally, intergenerational equity must also be borne in mind. Intergenerational equity focuses on the rights of future generations with regard to ecological sustainability. The human community is seen as a 'partnership' among generations, with each generation retaining the right to inherit the same diversity in natural resources, and equitable access to the usage of and dividends earned from those resources. Intergenerational equity extends the scope of justice into the future.[26]

Enhancing stakes for women's equity

Women's role in managing natural resources, nurturing communities, and addressing vulnerabilities during climate stress is routinely emphasized in climate policy documents. Across the world, policy frameworks and practitioners mention gender as a key concern in adaptation as well as mitigation responses. Pakistan's

25. Maiese, M., Burgess, H. & Cast, S. (2004) 'Procedural Justice' in The Beyond Intractability Project, Conflict Information Consortium, University of Colarado
26. Summers, J.K. & Smith, L.M. (2014) 'The Role of Social and Intergenerational Equity in Making Changes in Human Well-Being Sustainable' in Ambio 43(6), 718-728

climate change framework highlights gender related concerns as well. Gender mainstreaming in climate action has acquired new importance after multilateral instruments including the Gender Action Plan (GAP)[27] make it mandatory for countries to report progress on gender relevant interventions. But there is a long way to go before gender related considerations can be adequately incorporated in policy and practice, according to the magnitude of the challenge faced by women and men. (A discussion on the GAP follows in Chapter 2 of this report).

There is a need to bring about institutional resets[28] whereby (a) policy cultures willing to undertake self-assessment; (b) there is political and executive commitment at all levels; (c) gender mainstreaming is understood as a constant and evolving responsibility; (d) a conscientious use of gender-differentiated data, indicators and analysis is possible; and (e) adequate human and financial resources are deployed.[29]

Women and marginalized groups need not be mainstreamed in processes set up to deliver inequitable outcomes, rather the arrangements for inclusion need to be reset in ways whereby actors, institutions and procedures and resources are held accountable to better standards of equity. [30]

These questions surely go past the ambit of regular policy frameworks. Yet in our quest for reducing vulnerability and enhancing resilience, we must raise the bar on the outcomes we seek. The fight against climate change is a long one, and we have become alert to its dangers only after irreparable damage has been done. Just as the scale of ambition is set for a net zero future, climate equity and justice must also feature as part of that vision.[31]

Recommendations

I. **[Governments] Comply with the Constitutional injunction[31] to provide a safe and clean environment for all public**, and enable access to environmental resources for survival, sustenance and livelihoods, especially in provinces and districts where vulnerability for women is higher.

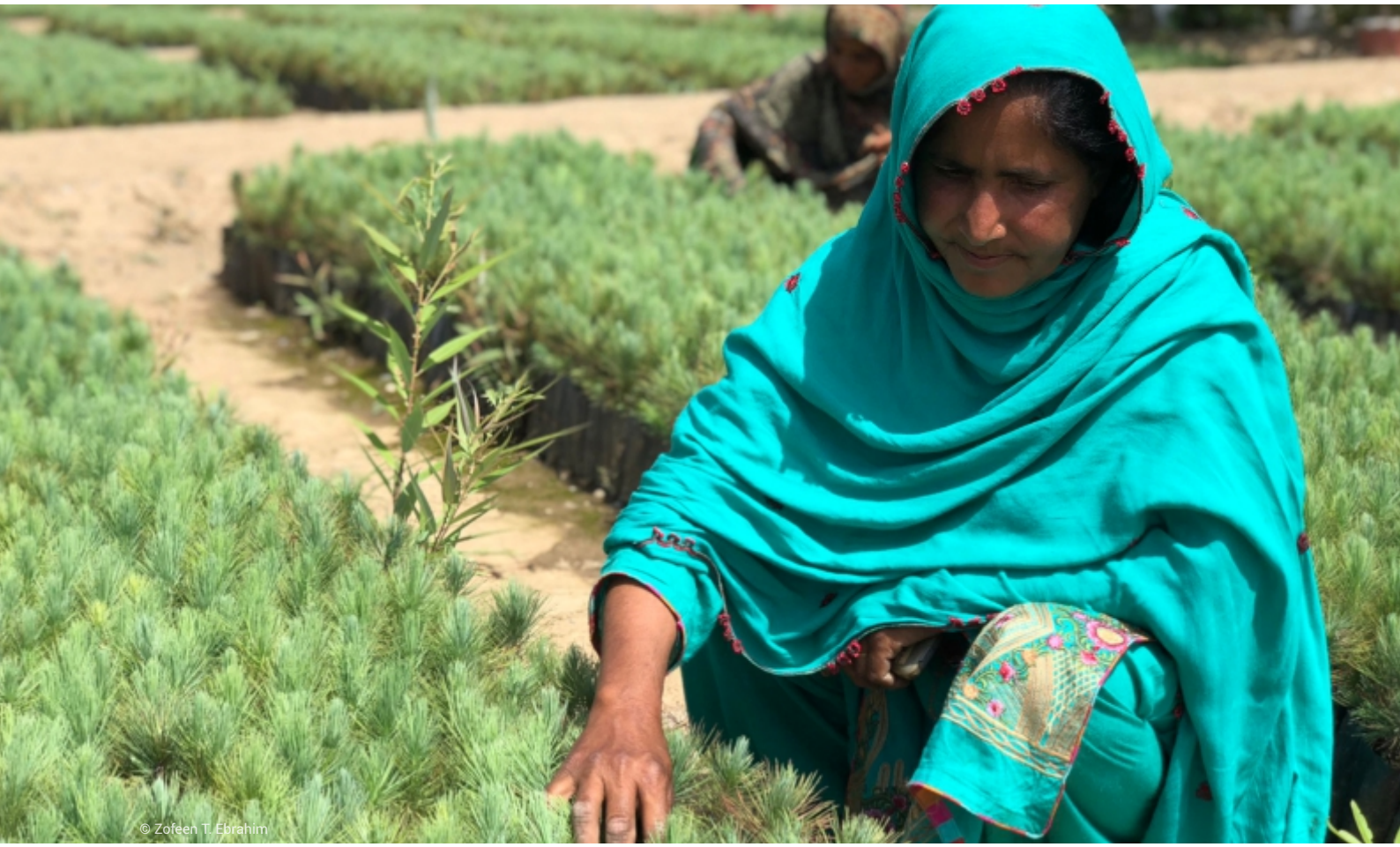
II. **[Governments]** Ratifications to international instruments (such as the Kyoto Protocol and Paris Agreement) require mandatory periodic assessments on progress and capacity. **Subscribe to international commitments more holistically and encourage the adoption of their mandates in provinces**, especially as they relate to equity and inclusion of women and marginalized groups in climate action and as recipients of benefits.

III. **[Governments, development partners and CSOs] Develop a keener understanding and awareness of the interlinkages between climate degradation and women's deteriorating plight**, as managers of the natural environment, homes and communities. The gendered differential occurring due to climate stress is still unknown to many practitioners, especially those unfamiliar with the human fallout of climate change. The socio-economic impact on society, and therein the effect on women and marginalized groups, needs to be prioritized over technical-administrative approaches.

IV. **[Governments, development partners and CSOs] In reviewing climate policies and procedures, take equity as a guiding principle to determine outcomes.** This means enabling distributive justice in the share of benefits; procedural justice in resource transactions between citizens and state; and preserving the environment for future generations. This will require scrutinizing climate policies from their intended outcomes, and determining whether they enlarge the scope of benefits for vulnerable cohorts.

V. **[Governments, development partners and CSOs] Build analytics for women's vulnerability in climate policies**, as this is critically important for assessing the conditions they face; their relative resilience; and whether policy frameworks are benefit oriented. So far Pakistan's climate policies and implementation framework have no metrics devised to assess the human impact of interventions. This must be the first step in that direction.

27. In 2014, the COP established the first Lima work program on gender (LWPG) to integrate gender related concerns into country positions. COP 22 agreed to a three-year extension of the LWPG, with a review at COP 25. The first gender action plan (GAP) at the UNFCCC was set up at COP 23. At COP 25, member states enhanced the Lima work program on gender and its gender action plan by 5 years.
28. Dankelmen, I. (ed) (2010) 'Gender and Climate Change: An Introduction', Earthscan: London, UK,
29. Seager, J. & Hartmann, B. (2005) 'Mainstreaming Gender in Environmental Assessment and Early Warning', UNEP. Nairobi
30. Ibid.
31. Ibid.



VI. **[Governments, development partners, CSOs and public] Do not see women as victims only.** It is well documented that women manage the natural environment, produce food for entire countries, nurture and manage communities while climate stress exacts a daily toll. Their agency needs to be bolstered through removing hurdles that create and entrench gender differentials, in addition to making goods and services available to them that enhance qualitative life, worth and capacity.

VII. **[Governments] Enhance the share of all marginalized groups in policy procedures, through inclusive representation, participation, negotiation and leadership.** This is mandated by the Gender Action Plan, as well as country strategies for climate action.

VIII. **[Governments and development partners] Standardize vulnerability assessments.** Multiple models are in use and bring their strengths to the analysis, but it will be helpful to apply a common standard across all sectors to allow comparability.[32]

32. Turner, B.L., et al (2003) 'A Framework for Vulnerability Analysis in Sustainability Science' in Proceedings of the National Academy of Sciences of the United States of America (PNAS), 2003 Jul 8; 100 (14): 8074-8079, available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC166184/

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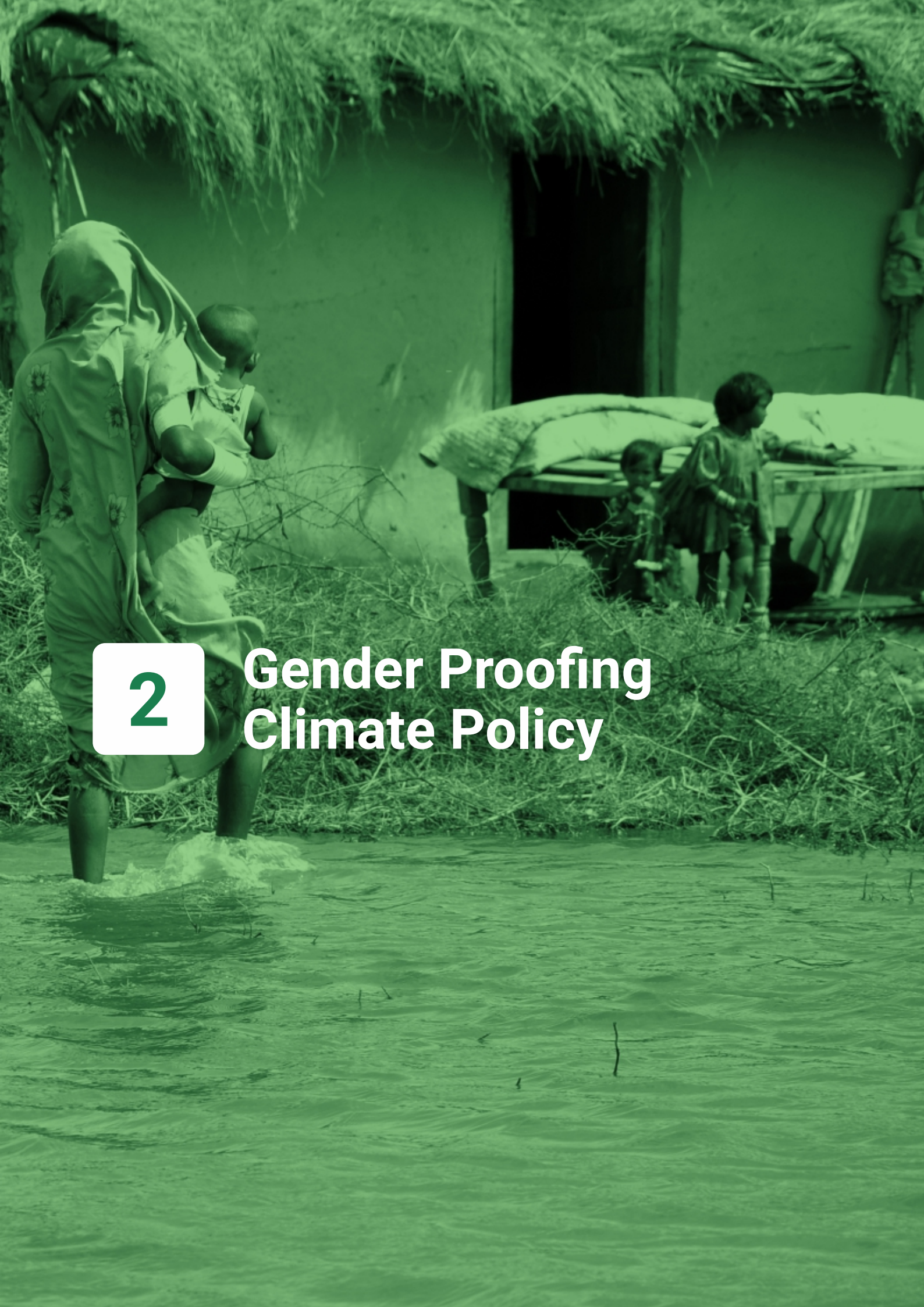


2 Gender Proofing Climate Policy

Gender Proofing Climate Policy

2

Does climate policy need to be gender proofed?

Any assessment of public policy will reveal that the ultimate benchmark of performance is the reversal of exclusions for women, and the accretion of potential and capacity in their lives. It represents the collective enterprise of many policies' ends that pay due attention to needs on ground, especially those experienced by women in high-risk contexts, and successfully dismantle the obstacles they experience in survival and growth.

Unfortunately, most policy frameworks are unable to alleviate difficulties on ground, nor do they have a thorough correlation with how interventions will impact beneficiaries. In the climate domain, the challenges faced by vulnerable communities are well documented, but here too policy procedures have been slow to respond to climate induced stress affecting communities, as they are narrowly focused on environmental interventions alone. In many cases, policy frameworks may disregard the human element entirely, let alone achieve the development indicators ratified by the state.

Climate stress has compounded vulnerabilities for women across Pakistan, and brought to light the multiplicity of challenges they meet in daily struggles, far more than men in the same households, communities, professions and situations. Policy implementers and practitioners have a mature understanding of this gender differential, as this research found. However, the policy parameters they operate in are as yet /till now underdeveloped or the institutional capacity requires an overhaul, making it difficult to address clearly visible issues.

This chapter reviews climate policies from a gender lens, and attempts to gauge whether climate policies need gender proofing, or ensuring that all policies and practices within the climate domain have equally beneficial effects on men and women. Gender proofing is seen as the means to an end, which is gender mainstreaming i.e. the inclusion of gender considerations into policies, programs, implementation and decision-making, so that the impacts on women and men can be analysed, and appropriate responses devised.[33]

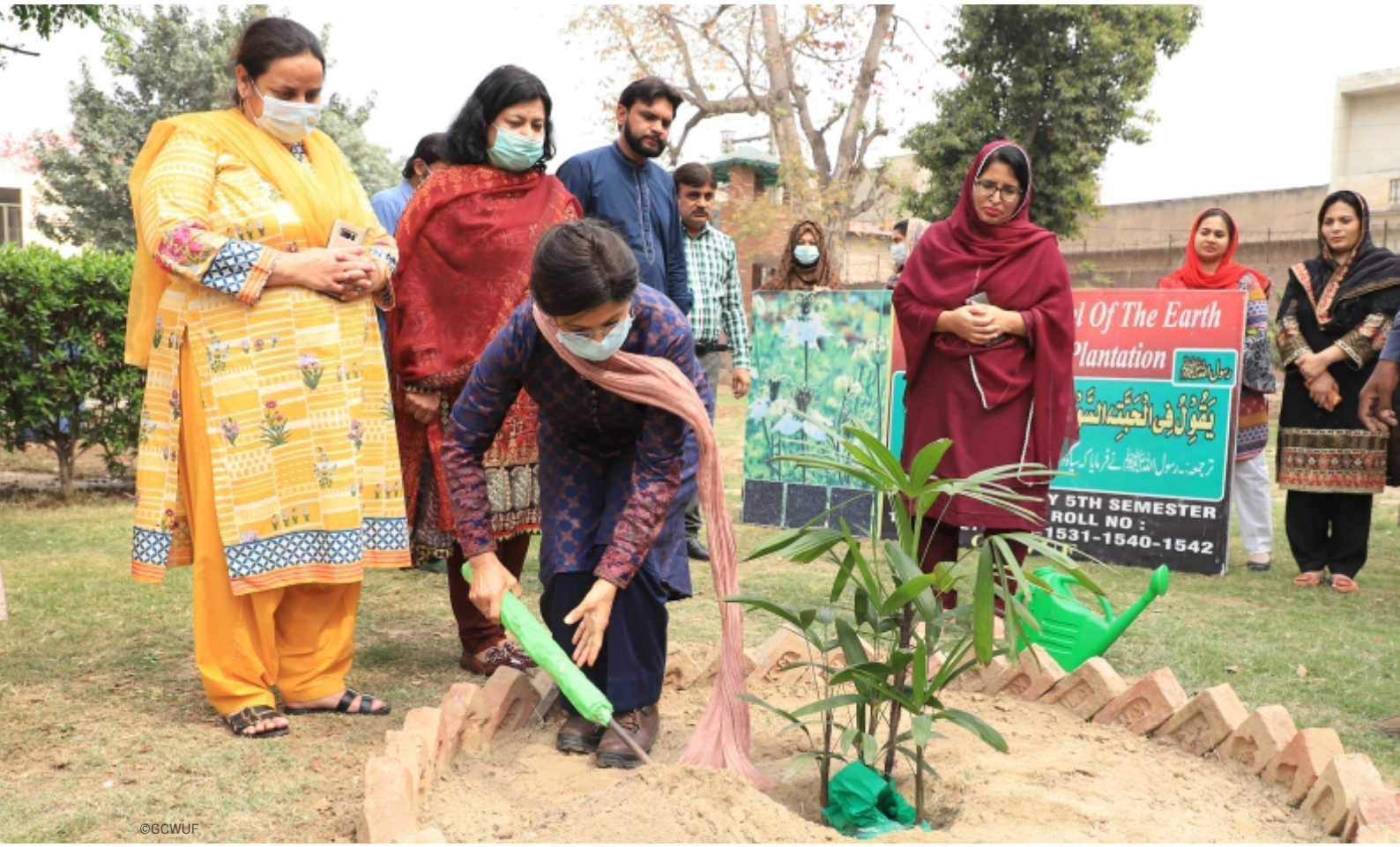
The major questions guiding this assessment are (i) Do policies contain gender responsive interventions? (ii) To what extent do policies address vulnerability? (iii) What outcomes do they seek for gender equity? As subsequent sections will demonstrate, Pakistan's climate policies stand in the middle of Gender Integration Continuum, shown in Figure 1 below.

Figure 1: Gender Integration Continuum

FENDER NEGATIVE	GENDER BLIND	GENDER SENSITIVE	GENDER RESPONSIVE	GENDER TRANSFORMATIVE
Unequal gender roles, relations and norms are upheld.	Ignores unequal gender roles, relations and norms and gender-based discrimination.	Recognises unequal gender roles, relations and norms, but does not activiely address them.	Recognises unequal gender roles, relations and norms and attempts to actively combat them.	Addresses the deep roots of unequal gender roles, relations and norms.

Source: IKI (2021, September 9) 'Release of IKI's Gender Strategy at COP26', available online.

33. Crawley, M. & O'Meara, L. (2002) 'The Gender Proofing Handbook', NDP Gender Equality Unit, Dept. of Justice, Equality, and Law Reform: Dublin.



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Review: Climate Change policies

Pakistan has consistently upgraded its official framework on climate action since a decade, in line with international commitments and evolving domestic needs. The key documents guiding climate interventions across Pakistan include the National Climate Change Policy (NCCP), the Framework of Implementation of Climate Change Policy (FICCP) and the Nationally Determined Contribution (NDC), some of which have had more than one notified iteration.

In 2008, the Planning Commission of Pakistan initiated a series of expert discussions that resulted in a report prepared by the Task Force on Climate Change (2010), which became the basis of the first National Climate Change Policy (2012). In 2013, the Framework of Implementation of Climate Change Policy was developed and notified. This period coincided with the Paris Agreement (2015) which solicited Pakistan's Nationally Determined Contribution, submitted in 2016 by the then Pakistan Muslim League-Nawaz (PML-N) government. Thereafter, under the incumbent Pakistan Tehrik-e-Insaf (PTI) government, the NCCP was redrafted and notified in 2021, along with an updated submission of the NDC at UNFCCC in 2021. Recalling this timeline makes it easier to mark and compare the progression in climate goals, articulations of national intent, and the attention devoted to gender related issues in these documents.

Analyzing these documents is important so that improvements can come about in our abilities to counter the climate challenge, while avoiding the regular omissions that lead to greater disenfranchisement of population cohorts, despite well-intentioned policy responses. As the analysis below will demonstrate, there have been many such omissions in policy, as well as a number of/numerous/several path-dependent formulations that can benefit from course corrections. This analysis draws chiefly on the gender components built into the national policy framework, and the review is geared towards the effectiveness of our policy instru-

ments in alleviating the burdens women experience during climate stress. Whether these policies stand to enable resilience and reduce vulnerability, and what pathways they determine in achieving climate equity, are the major questions guiding this inquiry.

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The following analysis examines the NCCP of 2012 and 2021, as well as FICCP of 2013-2030, which hold several common interventions and recommended actions.

Technical-Administrative Straitjacket

Pakistan's NCCP (2012) and FICCP (2013) were drafted with a view to combatting climate degradation through interventions in climate science. The technical-administrative lens for climate management follows scientific evaluations that determine loss and gain in environmental resources.[35] This approach has traditionally favoured standardized governance and planning in environmental sectors, linear policy procedures, easily transferable technology, economic rationality, and the belief in technology to overcome resource deficits Climate policies across the world are drafted in this fashion, making it all the more/even more necessary to upgrade them according to new evidence and perspective.

The revised NCCP (2021) follows the same tradition, and the majority of its recommendations are devised to beat the climate in technical terms. In this respect, it offers a competent treatise that is of demonstrable value to planners and decision-makers. However, it is impossible that policies are implemented in a politically detached vacuum – that too in as contested a policy landscape as Pakistan – and the socio-economic impact is treated as secondary to the climate science project. The correlation of climate degradation and stress within human communities must be explored and emphasized far more than what it is at present. As it stands, these policies need a supplementary protocol, or substantive addendum that showcases the implications these very policies have on vulnerable communities; at times inadvertently reinforcing their exclusion, for example, through emphasizing technological innovations in agriculture that favours rich landowners over poor farmers; or urging the development of environmental infrastructure that forces forest communities out of their habitat.

Gender Components are 'Additives'

Climate policies recognize women's differentiated burden in climate stress, but relegate this theme to 'additional' considerations such as poverty that require redressal through appropriate adaptation measures. The NCCP 2012 devotes one page[36] to gender that reads very much like a standalone theme, with little illustrative value for other domains of climate action.

The NCCP 2021 explores gender considerations at some more length, but here too, gender is an ancillary theme in the larger climate policy. The interventions are mostly the same as were in the previous policy, although there is greater sensitivity to the losses experienced by vulnerable communities residing in forests or deserts, whose challenges are acknowledged. The policy recognizes that "gender equality is an important part of a sustainable and resilient path for the whole population"[37] and the need for formulating gender responsive procedures

34. Zaidi, S., et al (2018) 'Gender Perspectives on the National Climate Change Policy', Civil Society Coalition for Climate Change, Islamabad.
35. Leach, M., Scoones, I. & Stirling, A. (2010) 'Dynamic Sustainabilities: Technology, Environment, Social Justice', Earthscan: London.
36. Ministry of Climate Change, Government of Pakistan (2021) 'National Climate Change pg. 21
37. Ibid, pg. 23


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such as increasing representation for women and an institutional reorientation that allows favourable outcomes for gender mainstreaming.

These inclusions are important and encouraging. However, there is now a need to go beyond gender as an 'added' component in policy drafts. The benefit of actually utilizing a gender lens in climate policy will be that the relationships among actors, institutions, policy procedures and outcomes are better known to planners and implementers, and help minimize redundancies in action that have little chance of delivering benefits in real contexts. For example, the current policy framework recommends incentives for industry to curb emissions, while not acknowledging illegal practices and malafide utilization of natural resources for commercial purposes. There must be a corresponding mechanism for penalizing pollution, environmental abuse, harm to natural resources and communities, as part of the same framework.

The gender lens also allows power dynamics to be studied in any policy setting. The FICCP has correctly pointed out that "climate change interventions that are not gender responsive often result in deepening the gender divide".[38] The fact that policy frameworks advocating for women's inclusion in policy give credence to a disequilibrium in consultation, representation, knowledge sharing and practice which prevented women from assuming control of policy implementation and results that favour them.

38. Climate Change Division, Government of Pakistan (2013) 'Framework for Implementation of Climate Change Policy (2014-2030)', pg 8

Rights-based approach to climate change needed

Highlighting the need for a gender lens, or emphasis on rights, serves to enhance the remit of climate change policies, as they cut across multiple policy domains, and can assist the realization of rights through environmental endowments accessible to women and marginalized groups.

A human rights-based approach analyzes obligations, inequalities and vulnerabilities so that any discriminatory practices can be redressed, and unfair distributions of power that hinder progress and undermine human rights can be remedied. In practical terms, such an approach can be used to recast measures for climate change mitigation and adaptation; inform assessments and add rigour to policy processes through factoring in poverty reduction, healthcare, access to justice and security.[39]

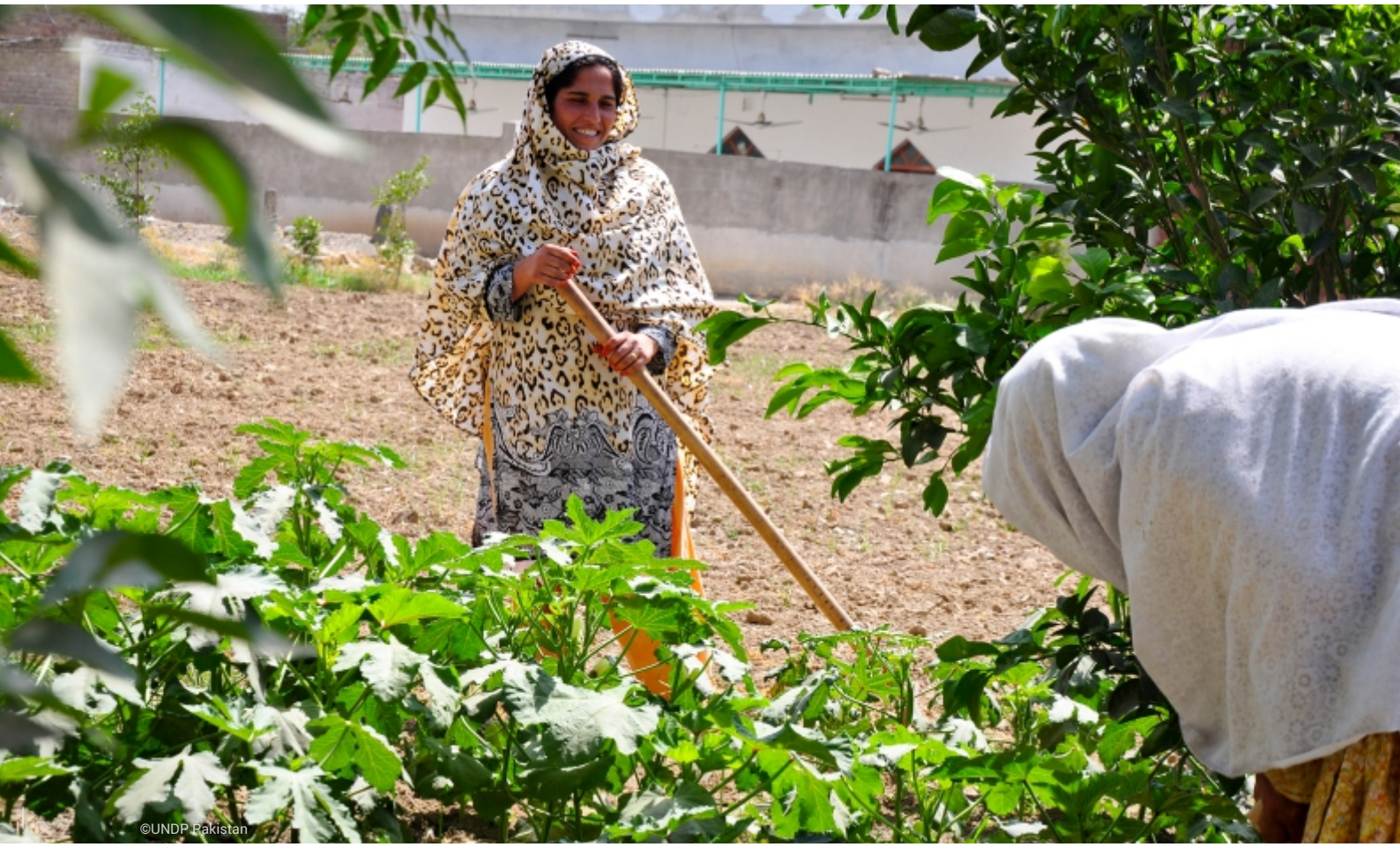
The Sustainable Development Goals (SDGs) are referenced as a guiding benchmark for delivery in the current policy framework. It would help to create specific indicators for climate action that connect with human vulnerability and resilience in phased scenarios, with a view to assisting communities build their way out of climate stress through procedures that equip and empower them.

Table 4: Reviewing Climate Change Policies from Gender Lens

Policy Reviewed	Does the policy talk about gender equity/gender mainstreaming/gender	Does the policy contain gender responsive interventions?	What outcomes does it seek for gender equity? Does it cite gender disaggregated data?
National Climate Change Policy	Yes	Yes	Limited interventions; data is not cited.
Nationally Determined Contribution	Yes	Yes	Several measures have been identified for gender equity. Gender disaggregated data not available.
National Water Policy	No	No	No gender specific outcomes are sought. Gender disaggregated data not available.
Agriculture and Food Security Policy	Yes	Yes	Some outcomes have been sought for gender equity. No gender disaggregated data has been cited.
National Forest Policy	No	No	None
Several policies undertaken by the Planning Commission of Pakistan	Yes	Yes	Several outcomes have been sought for gender equity. Gender disaggregated data has been cited.
Several policies under the social protection umbrella	Yes	Yes	Several outcomes have been sought for gender equity. Gender disaggregated data has been cited.
National Disaster Response Plan	Yes	Yes	Some outcomes have been sought for gender equity. No gender disaggregated data has been cited.

Source: Author's policy review

39. The Office of the UN High Commissioner for Human Rights (2012) 'Applying a Human Rights-Based Approach to Climate Change Negotiations, Policies and Measures' available at https://www.ohchr.org/Documents/Issues/ClimateChange/InfoNoteHRBA.pdf



Climate Fact Box: Pakistan's National Adaptation Plan

Pakistan started preparing a National Adaptation Plan in 2021 for enabling greater resilience against climate stress, and reducing vulnerabilities through identifying comprehensive medium- and long-term strategies, which will feature as part of the National Climate Change Policy.

Source: Economic Survey of Pakistan 2021

Nationally Determined Contribution (NDC)

Pakistan's updated NDC (2021) is the second draft submitted to the UNFCCC in the lead up to COP26. This document represents the most comprehensive case put forward by Pakistan on climate and gender mainstreaming thus far.

It presents an elaborate set of interventions titled 'Gender Mainstreaming Actions and Potential Targets' that span several adaptation domains: (i)agriculture, forestry and other land use change, (ii) water sector, (iii) energy sector, (iv) waste sector, (v) disaster management, (vi) health, and (vii) research and knowledge

management. The proposed actions include capacity building, training and education for women, access to credit, information, and livelihood generation methods, initiatives for raising awareness among women and communities, enhanced participation, representation, leadership and integration, etc.

This is a useful scheme aimed at addressing women's vulnerability and enhancing resilience that has absorbed previous policy recommendations made regarding gender mainstreaming. It leaves the achievement of these objectives open ended, subject to the wilful capacities and timelines of federal and provincial governments. It also does not indicate a statistical baseline on the status of women in these domains, which could potentially help determine targets to be achieved by implementers as per federal and provincial workplans. All the same, this document does indicate that policy thinking is moving in the right direction, and sets a critical precedent for provinces to evolve their own templates. The NDC is an evolving document like the NCCP, and perhaps will reflect more evidence about its core targets on women in later iterations. (Challenges regarding the adoption of federally ratified international commitments by provincial governments is highlighted further below in the discussion).

The NDC is also attentive to the UNFCCC's ask of all member states to submit a Gender Action Plan, as decided at COP23 (2017). It informs that a Climate Change Gender Action Plan (ccGAP) is being prepared that prioritizes five thematic areas aimed at advancing knowledge and understanding of gender responsive climate action: i) capacity building, knowledge-sharing and communication, ii) gender balance and women's leadership, iii) coherence across UNFCCC and UN, iv) gender-responsive implementation and means of implementation, and v) monitoring and reporting. The ccGAP must be seen as a starting point for gender mainstreaming, whose objectives require concerted and sustained efforts over several years before progress can be reported.

It must be highlighted that, unlike the NCCP and FICCP, which guide domestic climate action, the NDC is akin to a reporting instrument for the UNFCCC. It represents the best showcasing of policy intent and an updated set of interventions being processed domestically. It has illustrative value for international registers of Pakistan's climate action, but should not be taken as a score-card of domestic climate policy achievements. Nor does the NDC have a formal mandate over provincial action plans.

Other policies relevant to Climate Action

Interventions through the climate change framework does not represent the total efforts undertaken to arrest climate degradation and safeguard communities. For that matter, climate change policies have been relatively recent inclusions in Pakistan's evolving strategies to manage natural resources through the decades. Multiple policies initiated at the federal level and thereafter adopted by the provinces, or developed independently by the provinces after the 18th Amendment (2010), have assisted this effort through the years.[40] This analysis will refer to the latest policy instruments in different sectors, including the National Forest Policy, National Water Policy, National Food and Agriculture Policy, National Disaster Response Plan and social protection. The provinces are at liberty to devise their own policy frameworks; resource and monitor them according to their own assessment criteria, especially in relation to environment, food and agriculture, forestry, and water management.[41]

Some thematic issues are worth pointing out at the outset, and hold insights for the implementation process in climate action. These have previously been documented as well, and are being reiterated here as challenges that need resolution.

40. Interprovincial Coordination Division, Government of Pakistan (n.d.) 'Overview of the Constitution (Eighteenth Amendment) Act, 2010' available at: http://ipc.gov.pk/SiteImage/Misc/files/Year percentage20Books/Final percentage20Report percentage20of percentage20Implementation percentage20Commission.pdf

41. Alam., A.R. (2018) 'Climate Governance After the 18th Amendment', Civil Society Coalition for Climate Change (CSCCC): Islamabad

Data deficient baselines

The absence of credible data presents a severe challenge in analyzing climate change sectors. There is no unified baseline of data sets, even in official sources; therefore, dated statistics have to be relied upon to conceive a picture of climate stress. The subsequent chapters of this report provide sectoral reviews where this challenge is highlighted again. Environmental data is poorly documented, and its impact on communities is even more challenging to establish, as there are no direct indicators of stress or vulnerability. Proxy indicators are used to demonstrate difficulties faced by women, and their differentiated burdens or agency during climate stress. Gendered statistics, where available, do not go beyond labour force enumerations in official statistics, and only allow an inference of climate stress through matching indices in the Pakistan Social and Living Standard Measurement (PSLM) against environmental conditions in select geographical locations and time periods. This makes climate action almost entirely dependent on approximations.

Some gaps in data have been filled by UN agencies, whose Multiple Indicator Cluster Surveys demonstrate the resilience of households, and these too will benefit by the inclusion of climate specific indicators. In addition, the national census planned for 2023 in Pakistan must include gender related indicators for gauging climate stress experienced by men and women. For a challenge to be classified as an existential threat in Pakistan, the information and knowledge available about its different aspects is evidently poor.

National Water Policy (2018)

Pakistan has a National Water Policy (2018) that provides a federal framework within which provinces can devise their own workplans. Water resources are a "national responsibility"[42] as per the policy, whereas irrigation, agriculture, urban and rural water management, and other related subjects fall under the provincial purview. Punjab Water Policy (2018), Sindh Drinking Water Policy (2017), Khyber Pakhtunkhwa Drinking Water Policy (2015), Gilgit-Baltistan Drinking Water Policy (2019) and other relevant documents from Balochistan and PAK were also reviewed for this research. There are multiple other guiding documents that inform the mandates of provincial ministries and departments, including new policy drafts under consultation or review. The following analysis summarizes the major findings from water related policies.

Only Gilgit-Baltistan's policy recognizes gender differentiated needs in the sector. Most other policies are focused on technical and administrative interventions to deal with challenges in the water sector, and have little or no interlinkage with human vulnerability. In the scant mention women receive in these policies, women's responsibility as managers of domestic water hygiene is highlighted in ways that typecast their domestic gender role.

The National Water Policy does hold that "people are the prime stakeholders of the water sector" and all measures should be geared towards their welfare and interest. It also emphasizes the need for citizen participation in "performance, operation and ownership of water assets" towards this end. In this respect, it does present a people-oriented approach, that can benefit from greater elaboration and focus on vulnerable segments, especially women's challenges.

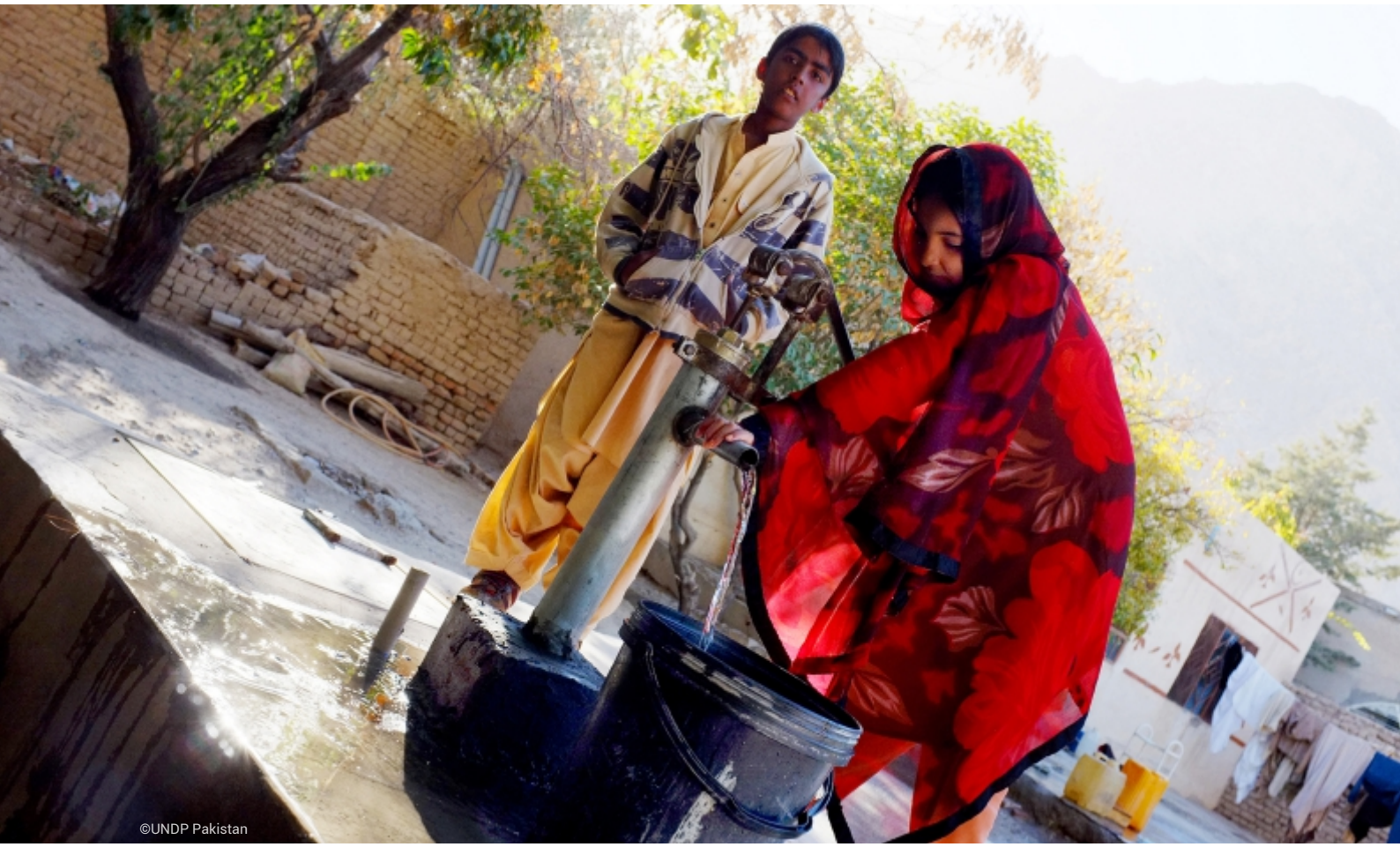
However, interactions with policy implementers in the water sector often reveals a far more nuanced understanding of gender related issues occurring as a result of climate degradation, even if the policy guideline does not indicate a written mandate for gender mainstreaming. Implementers freely share sectoral innovations and initiatives that situate women at the centre of their planning criteria, and discuss outcomes in terms of women's resilience and vulnerability. These perspectives are shared in the chapter 'Perspectives from the Provinces and Regions'. There is also an adequate appreciation of increasing difficulty faced by other marginalized groups, especially with socio-economic stressors worsening over the recent past, which compounds households' challenges.

Agriculture and Food Security Policies

Pakistan's Agriculture and Food Security Policy (2018) incorporates several gender relevant insights, paying due attention to the challenges faced by women, as well as how climate change is impeding their productive, reproductive and community related roles. The problematization of environmental issues is concurrent with the human impact throughout the policy document, whereby slow onset hazards such as drought are defined in terms of vulnerability of households.

The policy highlights the principle of equity in empowering women and vulnerable groups, including sharecroppers, tenants, the landless, transhumant pastoralists, and marginalized communities from fragile ecosystems in mountains and deserts. In addition, it imparts a framework of sustainable agriculture that aims for universal food security in ways that the economic, social and environmental bases for future generations' food security is not undermined. It states that the "fundamental rights of every human being can be protected if provided with food that is healthy, of sufficient quality and quantity, affordable and safe, and culturally acceptable."

42. Ministry of Water Resources, Government of Pakistan (2018) 'National Water Policy', pp. 2, available at: https://water.muet.edu.pk/wp-content/uploads/2019/03/National-Water-Policy.pdf



The Agriculture and Food Security Policy notches a high standard when it comes to a collective analysis of gender responsive policy procedures, measures of vulnerability and equitable outcomes for marginalized groups. It naturally follows that there will be questions around the translation of good policies into better practice, which has significant gaps.

Policy implementers also echo many of the same insights, and display the requisite understanding of women's agency, resilience and vulnerability. They point out that policy overhauls in agriculture are fairly recent, and although the policy guidance may emphasize principles of equity and empowerment for women, the institutions tasked with carrying out these directives have yet to incorporate them in their work cultures. The transformation of institutions is as critical as policy templates.

National Forest Policy (2015)

The flagship Ten Billion Tree Tsunami Project (TBTTP) is worth mentioning here for its significant impact on the environmental profile of Pakistan. The project aims to plant ten billion trees between 2019 and 2023, and has thus far enabled 0.5 million jobs for rural women and unemployed youth, who raise tree nurseries. The precursor to the TBTTP was the Billion Tree Tsunami, in which women held 20 percentage share of raising nurseries. They currently hold 10 percentage share in the TBTTP.[43]

43. Billion Tree Tsunami: provinces to increase women share in raising plant nurseries', (2020, August 17), Daily Times, available at: https://dailytimes.com.pk/655042/billion-tree-tsunami-provinces-to-increase-women-share-in-raising-plant-nurseries/

National Disaster Response Plan (2019)

Pakistan's national disaster response policies have undergone several iterations over the decades, and the latest one offers a contemporary framework that responds to differentiated needs of men and women during disasters. The National Disaster Response Plan makes the gender differential explicit at the outset, stating that humanitarian responses are far more effective when the needs, agency, vulnerability, and coping strategies of conflict affectees are factored in, which may include women, men, girls, boys and children.

The policy makes a case for upholding human dignity in disasters, and equal entitlement to humanitarian assistance and protection. The National Disaster Response Plan is the only policy reviewed for this research that makes a detailed mention of persons with disabilities, and ways in which they can assist humanitarian efforts in the event of disasters.

Furthermore, it recognizes that vulnerable groups may not be able to access relief assistance given their numerous disadvantages, including limited mobility, therefore, priority must be given to these groups in rescue operations, as well as the distribution of relief. Other insertions in the policy reinforce the principle of equity in benefit sharing, and emphasize the importance of 'fairness' in attitude on the part of individuals and institutions tasked with disaster responses.

From a gender lens, this policy framework makes a competent case for gender equity, and reflects a degree of institutional evolution as well, which facilitates the adaptive competence of planners and implementers. Unlike other policy spheres, the disaster response framework indicates a more streamlined and proactive institutional role and attitude.

Social Protection

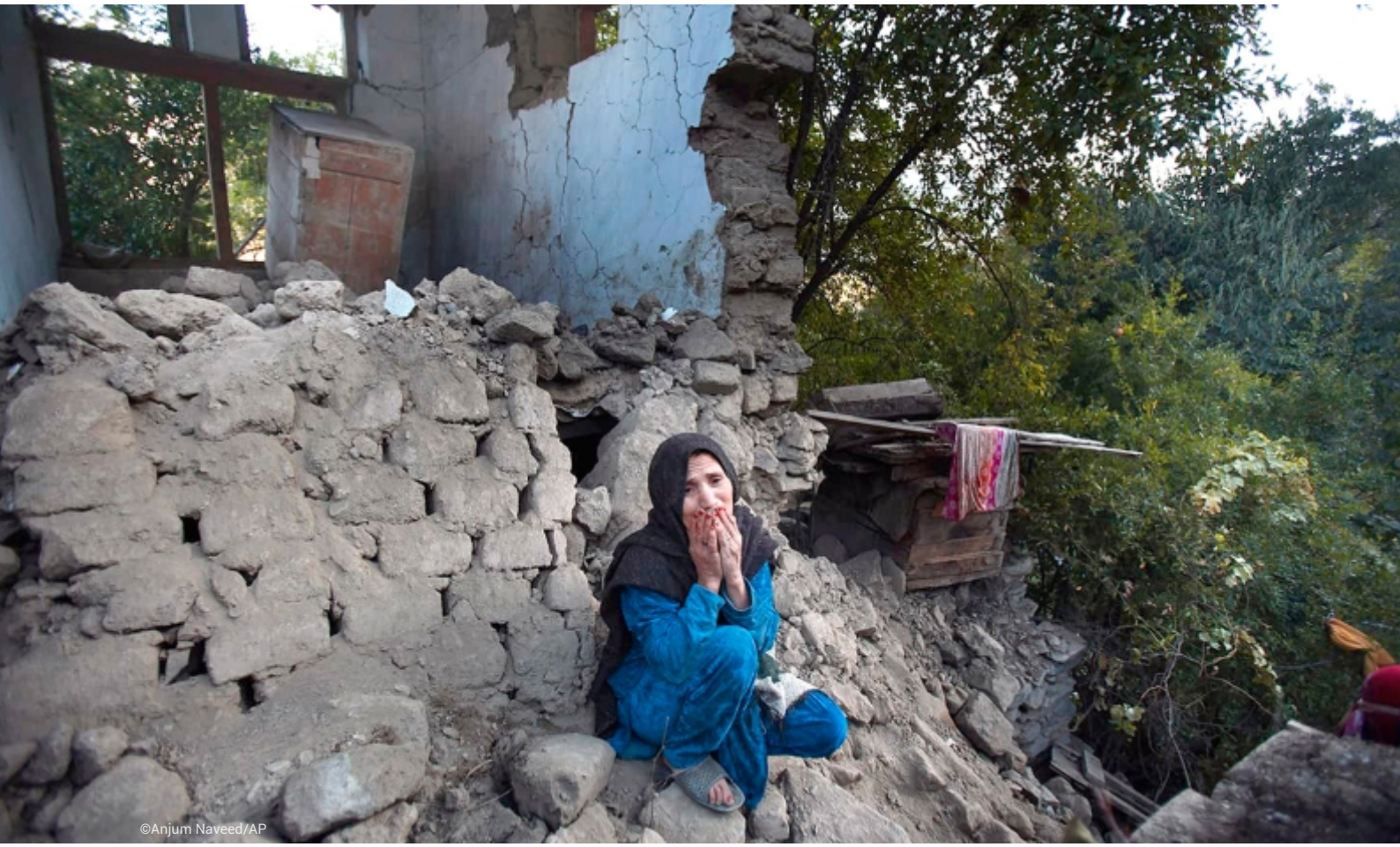
Not traditionally part of climate adaptation or mitigation categories, social protection policies have been highlighted for their critical bearing on women's survival and resilience at the local level. Social protection represents an amalgam of multiple federally initiated programs, including the Benazir Income Support Program (BISP), the more recent Ehsaas Emergency Cash Transfer Program and longer running Baitul Maal, Zakat and Ushr and Employees Old-Age Benefit Institution programs.

These policies came into renewed focus on account of COVID-19, which undermined livelihoods and led to socio-economic hardship throughout the country during 2020-2021. The Ehsaas program was launched in response to the challenges being faced by poor groups, who were badly impacted through prolonged lockdowns.

The combined effects of BISP, Ehsaas and other social protection initiatives taken by the provinces, including Punjab's Ba Himmat Buzurg, Sarparast and Musawat; Sindh's Mazdoor card, KP's Sehat Sahulat card (now introduced in other provinces as well), in addition to other interventions have enabled some resilience on ground.[44] The availability of social protection schemes are a key node in helping vulnerable groups address their systemic disadvantage, especially occurring in districts where climate stress is evident, and other public goods and services are underdeveloped or not available. The pro-poor focus of social protection and the cash transfer schemes have assisted millions of families survive the pandemic, especially those situated in the rural agrarian economy.

Social protection policies have been cited by some as 'climate protection' policies.[45] Sure enough, there are obvious crossovers in policy that can assist both climate protection and poverty alleviation. Ehsaas' focus on agrarian livelihoods makes it an enabler of farm incomes, and the data sets generated from social protection enumerations give decision makers a much clearer picture of capacities and vulnerabilities. The social protection framework can make a considerable impact if it focused on women and girls caught up in climate stress, seeking basic financial assistance for productive, reproductive and community tasks.

44. Gul, S. (2021) 'A Social Protection of Pakistan: Building an Inclusive Social Protection System', ILO: Geneva
45. Sania Nishtar (2021, November 4) 'Climate Policy is Social Policy' Project Syndicate, published online: https://www.project-syndicate.org/commentary/right-climate-fight-poverty-by-sania-nishtar-2021-11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National Planning Initiatives

Recognizing the need for gender mainstreaming across all sectors of governance, the Planning Commission of Pakistan has undertaken a broad-spectrum agenda for transforming institutions, policy procedures, delivery mechanisms and inter-agency coordination that help radically remould Pakistan's gender profile.

Priority areas identified in this exercise include establishing gender-transformative governance structures; closing the gender gap in primary and secondary education in partnership with private sector; introducing strategies to equip women with employable and high-income skills, promoting equitable access to qualification-appropriate employment opportunities, provide gender-responsive health services, empowering women through leadership pathways, and integrating women-protective measures across all programs.[46]

To address gaps in data mentioned above, which makes climate action dependent on loose estimations, the Planning Commission intends standardizing and harmonizing data collection on gender development. Furthermore, it is overseeing gender-responsive data analysis, programming, budgeting, and monitoring across all ministries.

The Planning Commission enjoys an authoritative mandate across Pakistan, and can bring about changes in policy frameworks and procedures in all provinces. The transformation of climate related ministries and departments will come about in due course, but stakes must be raised for gender mainstreaming through these means as well. The Commission's interventions, aimed at gender transformation, have mobilized a decade's worth of recommendations and policy prescription that

46. Sarfraz, S. (2022, February 6) 'Gender Road Map: Integration across all national policies, programs, offices and key management processes', [PowerPoint Slides] Ministry of Planning, Development & Special Initiatives, Planning Commission, Government of Pakistan

recognized systemic roadblocks to women's full participation, representation, inclusion and challenges to progress.

The outcomes of this exercise will produce results further down the road. But for now, some glaring deficits in institutional capacity will be overcome in the medium term. An evaluation of how far this has served the vulnerable women of Pakistan must wait till then.

Recommendations

I. **Recast the major guiding documents on climate action**, including the NCCP and FICCP, from a gender lens, and incorporate strategies that are inclusive and respond to women's vulnerability and resilience across environmental sectors, and enhance their stakes in adaptation and mitigation mechanisms;

II. **The technical-administrative overhang in climate policies needs to be replaced with a gender sensitive approach to overall climate action.** Climate indicators should be seen in tandem with human development indicators so that interventions can pursue both ends simultaneously; interventions that inadvertently entrench exclusions for women and marginalized groups must be reviewed and replaced;

III. **There is a need for further gender proofing of policy frameworks on climate change** through developing plans of action for assessing the state of gender equality in the country, targeting inadequately explored gaps, or priority areas and conducting broad-based consultations with stakeholders that help propose strategies on gender mainstreaming, including ways in which policies, programs, and budgets may reflect gender sensitivity, and deliver outcomes that impact women favourably;

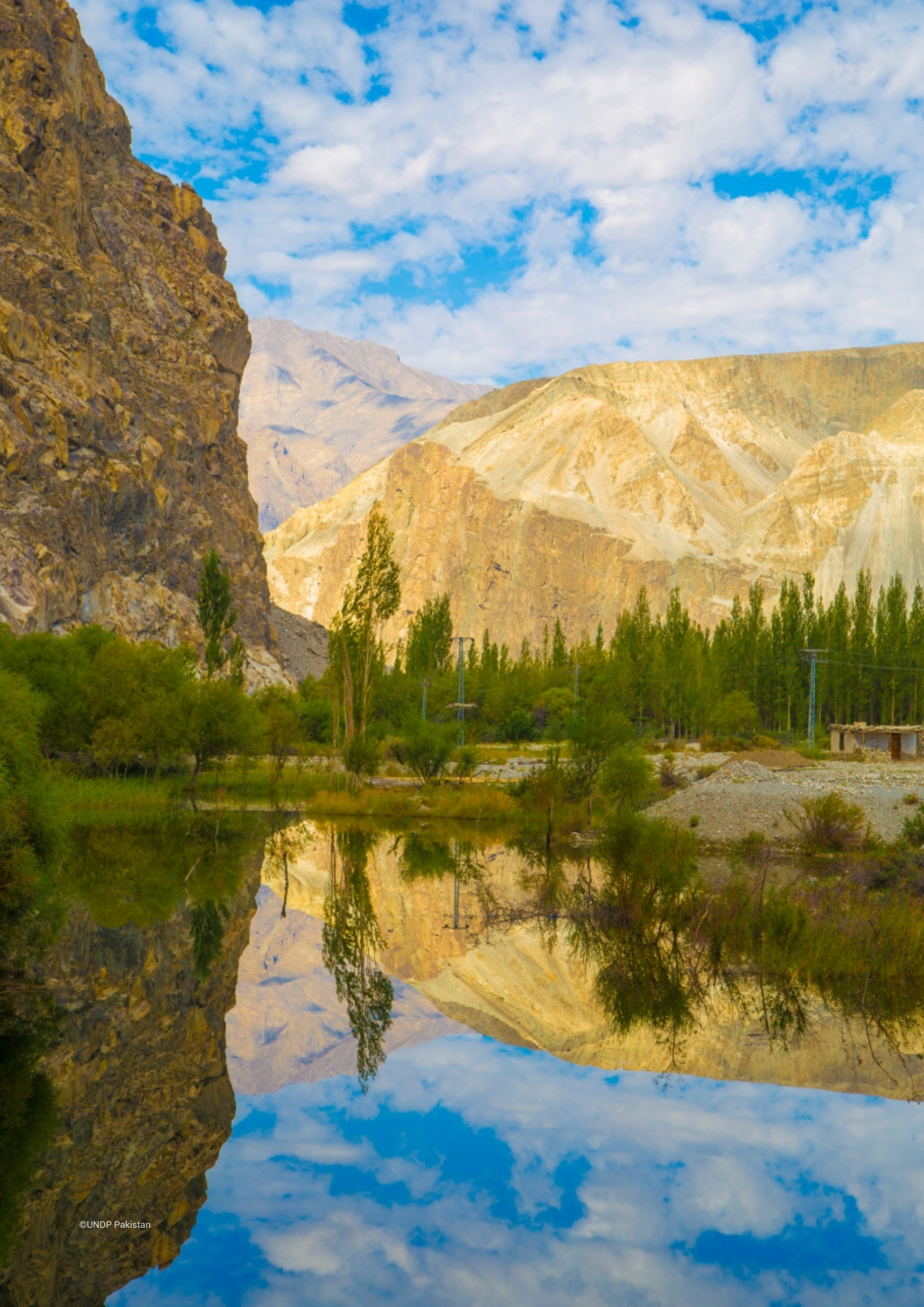
IV. **The policies/frameworks must be set to deliver transformative changes for women**, especially through addressing the root causes of inequality and exclusion, unequal power dynamics, unequal capacities to navigate and negotiate with socio-economic and political stressors that threaten growth and even survival during climate stress;

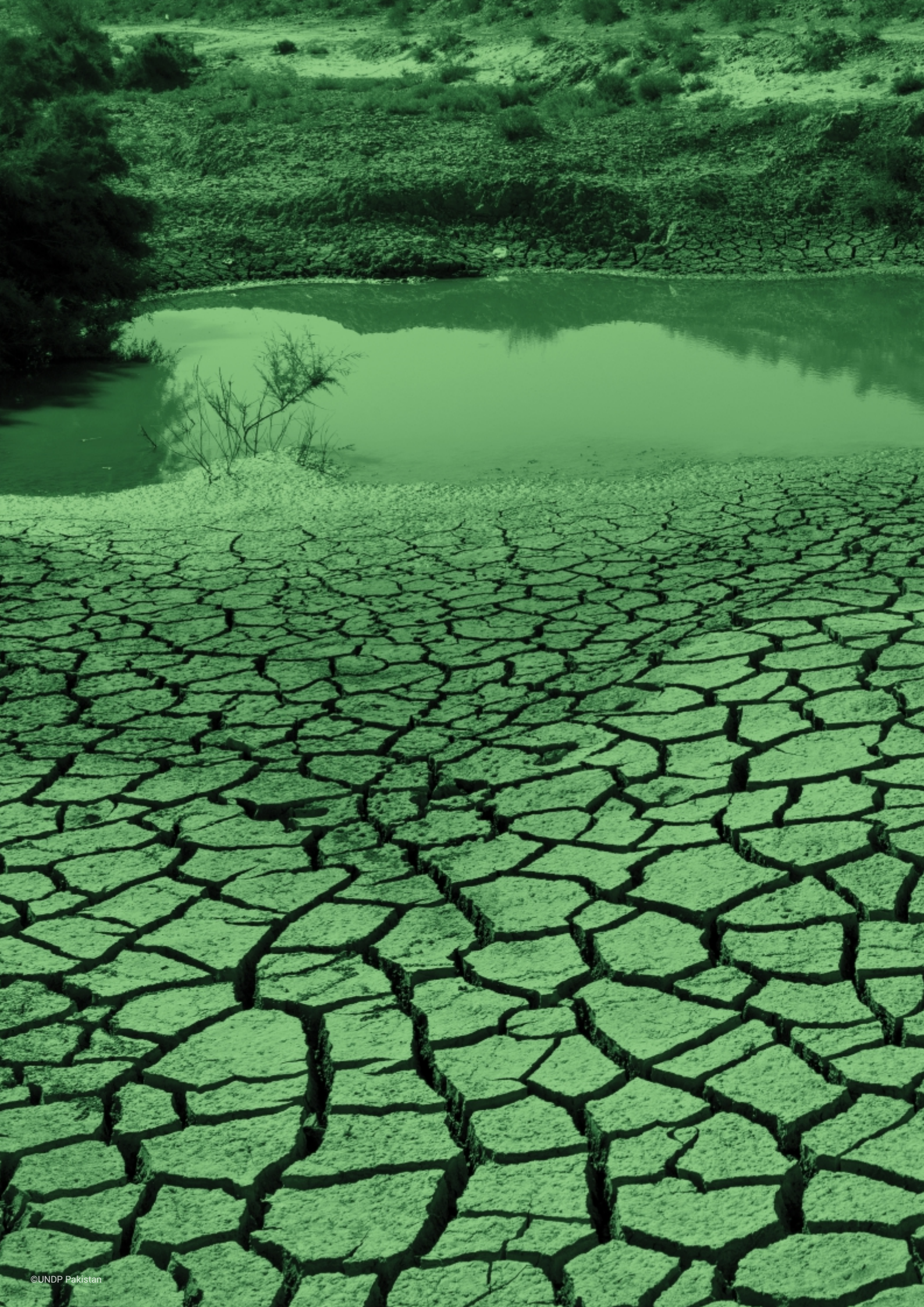
V. For institutions tasked with climate relevant mandates, **define measurable goals and indicators linked to outcome targets that achieve gender equality benchmarks**, define responsibilities, timelines, action plans and monitoring mechanisms that assist this effort, incorporate gender mainstreaming requirements as an expectation in engagements throughout the environment and climate sectors, and incorporate gender equality objectives in staff performance appraisals as well;

VI. **Gender mainstreaming, gender sensitization and training** should be conducted for policy planners and implementers for integrating gender in the work of climate related ministries and departments, especially those whose policy frameworks are not gender friendly;

VII. **Develop and implement the ccGAP (Climate Change Gender Action Plan)** through gender-sensitive and gender-responsive procedures, while supplementing the roadmap provided in the NDC for achieving outcomes for gender empowerment and equality as a priority; and

VIII. The importance of sex-disaggregated data is paramount. **Develop climate specific data sets that review human vulnerability and resilience in tandem with climate degradation at national, provincial, district and local levels.** In particular, develop and disseminate data on women's vulnerability and resilience across all sectors where climate stress is evident, including water, agriculture food security, forestry, disaster management and energy. The national census scheduled for 2023 can incorporate gender specific climate indicators in the enumeration exercise, as one way to do this.





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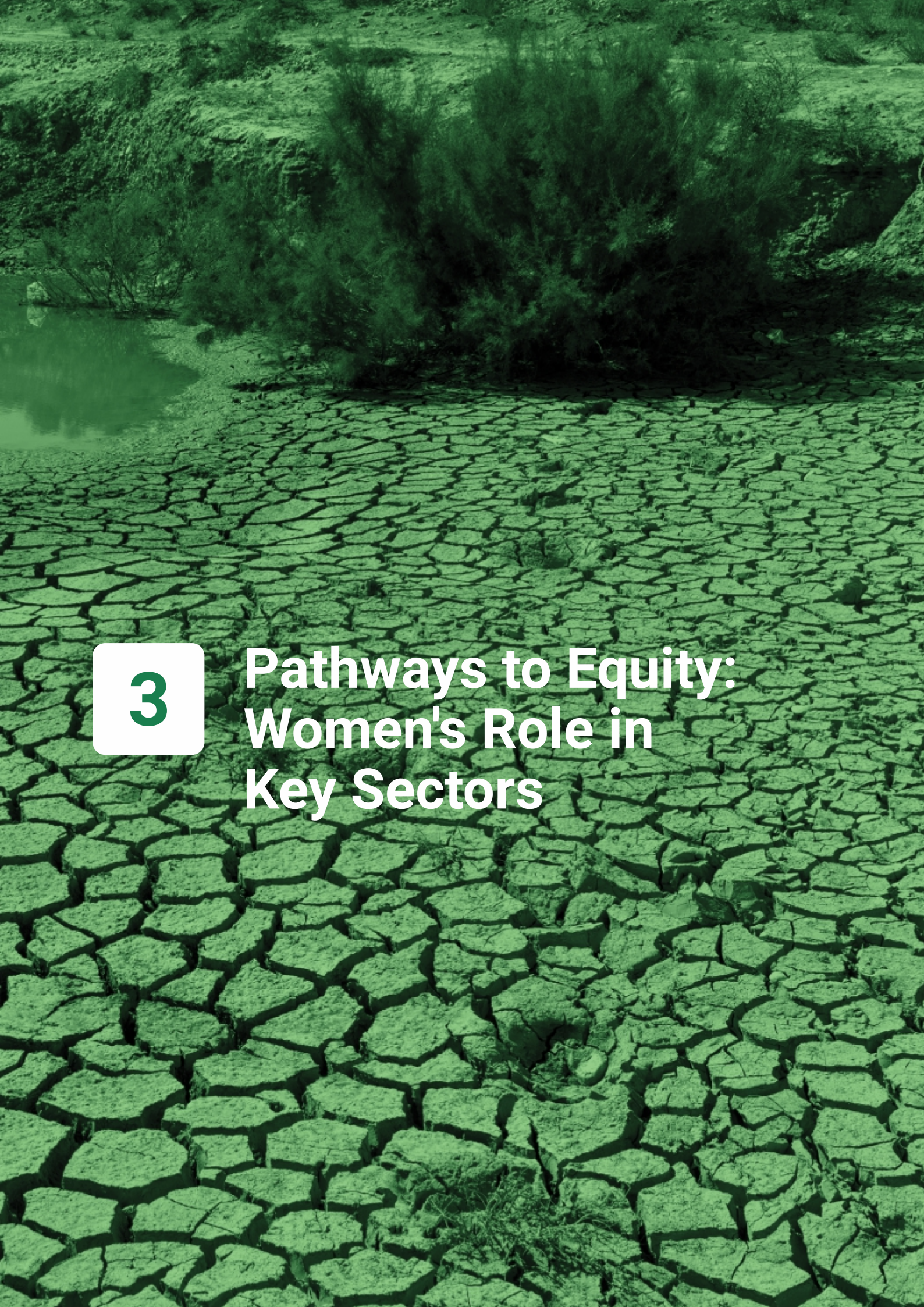


3 Pathways to Equity: Women's Role in Key Sectors

Pathways to Equity: Women's Role in Key Sectors

3

Pathways to Equity

Climate change is advancing at a rapid pace, and its formidable impact is evident across all productive sectors of Pakistan's economy, particularly primary industries. Loss of productivity, declining competitiveness, surplus turning to shortage, and disruptions in supply chains are reported every year, with greater salience and intensity.

Pakistan's predominantly agrarian economy is the main employer of labour across the country, and determines the demographics of rural Pakistan to a large extent. Stress in agrarian output comes with a spate of vulnerabilities in farm incomes, rural livelihoods, nutrition, healthcare and education. Many households are pushed to surviving in extreme conditions out of poverty triggered by climate degradation. Men and women are impacted in differentiated ways; and at times, it becomes difficult for them to perform due to aggravated labour conditions. Women have the heaviest burdens to bear, as they negotiate among productive, reproductive and community roles, often struggling for their survival.

Meanwhile, a large part of Pakistan's productive decline and stress in primary sectors is caused by decades of policy inaction and inefficiency. For a country which intensely dependents on its primary sectors, the investments in innovation, mechanization, or improving management practices are shockingly poor. The threat of climate change has galvanized cohorts within government and the bureaucracy to take timely action, but the tools for adaptation are still unfamiliar and waiting to be deployed. In the meanwhile, millions of households experience the effects of climate induced hazards on a daily basis, and their vulnerabilities may never benefit from adaptive wherewithal.

The sections below review key sectors where climate stress is apparent. Women's status within these sectors is detailed to the extent possible through documented evidence. It is clear that women nurture the environment as much as drawing sustenance from it. They are closest to nature through sheer time spent foraging through natural environments looking for biotic materials, and are skilled in its preservation and protection. Capitalizing on their strengths, and building upon their capacities is necessary as much as providing them the instruments to safeguard themselves and their communities from predicaments caused by policy neglect or degradation of the environment they depend on.

These descriptions are meant to illustrate trendlines, and are not exhaustive. The challenges may also be familiar in each sector, but their interconnection with women's lives is seldom explored through a gender lens. For example, debates in the energy sector usually take the form of macro-level policy analysis with little reflection of how end users – disadvantaged women – will cope with the effects of policy reform. The energy sector, like other mitigation domains where women are traditionally excluded, will benefit from gender mainstreaming. The recommendations for each sector below represent the collective wisdom of numerous academic and policy studies, and the work of civil society organizations engaged in these domains. The objective is to enable equitable outcomes for women through plausible steps in policy and practice that have path breaking effects on ground.

Climate Fact Box: Gender Dimension in Climate Action

The gendered nature of climate stress is widely recognized by policy practitioners and experts. A working group has been established by the MoCC on gender and climate change, tasked to mainstream gender within existing and future policies, plans and interventions that address climate related sectors vulnerable to environmental degradation such. Additionally, an initiative in collaboration with International Union for Conservation of Nature (IUCN) is also underway that seeks capacity strengthening, implementing gender responsive programming and the Climate Change Gender Action Plan (ccGAP).

Source: Economic Survey of Pakistan 2021

Agriculture

The agriculture sector employs approximately 42 percentage of the population, contributes 19.5 percentage towards the national GDP, brings 65 percentage export earnings, and provides livelihoods to 62 percentage of the population.[47] It has critical strategic importance for Pakistan, as gleaned from these figures. Agriculture comprises a number of activities spanning crop production, animal husbandry and non-timber forestry, which are experiencing increasing strain because of climate degradation. The sector draws 90 percentage of its water from the River Indus for irrigation, and remains highly sensitive to changes in the river flows. Between 2010 and 2014, mega floods destroyed 10.63 million acres of crop, placing acute stress on farm incomes and land use. Over 25 percentage of cultivable land is wasted due to water logging, salinity, flooding and erosion.[48]

The agriculture sector has had several challenges that have impacted its productivity and potential. Growth has hovered around 3.3 percentage over the last decade. These challenges include sparse mechanization or technological innovation, inadequate technology transfer, complications with quality, quantity, and timing of inputs, dilapidated social infrastructure, commerce and trade regulations, non-availability of credit or loans for agricultural production and expansion, and unfair trading practices that disempower and exploit small farmers.[49]

47. Ministry for National Food Security and Research, Government of Pakistan (n.d.) 'Agriculture and Food Security Policy', available at: http://mnfsr.gov.pk/mnfsr/userfiles1/file/Policy percentage20Draft percentage2029 percentage20September.pdf
48. Kapoor, A. et al (2021) 'Climate Change Impacts on Health and Livelihoods: Pakistan Assessment', International Federation of Red Cross and Red Crescent Societies (IFRC), available at: https://reliefweb.int/sites/reliefweb.int/files/resources/RCRC_IFRC-Country-assessments-PAKISTAN-3.pdf
49. Agriculture and Food Security Policy

Studies suggest Pakistan's crops are highly sensitive to changes in temperature and water availability, and that temperature rises in the region of 0.5°C–2°C could lead to around an 8 percentage–10 percentage loss in yield. Rice and sugarcane are worst affected under a high emissions scenario, experiencing 25 percentage and 20 percentage yield reductions, respectively. Therefore, adaptation practices must urgently be administered, including soil and water conservation technologies, greater use of high efficiency irrigation systems, planting drought resistant crop varieties, and undertaking climate-smart agriculture practices (see recommendations below on climate-smart practices).[50]

Food security has remained a perennial challenge in Pakistan, owing to high population growth (2 percentage in 2020),[51] rapid urbanization, low purchasing power, frequent price fluctuations especially in food, inconsistent food production, and inefficient food distribution mechanisms. Twenty percent of the population in Pakistan is undernourished, and 45 percentage children younger than five years of age are stunted as a result.[52] Food insecurity also occurs due to limited economic access of vulnerable groups to food. With the poorest families forced to spend larger and larger portions of their income on food, there has been a corresponding increase in malnutrition and vulnerability. Estimates project that there will be approximately 9.32 climate-related deaths per million population per year linked to lack of food availability in Pakistan by the year 2050 under highest Representative Concentration Pathways (RCP) 8.5.[53]

Women's vulnerability in agriculture

Women often give up their share of food to family members during drought.[54] Women in agriculture in Pakistan work an average of 15.5 hours per day.[55] Only 19 percentage are paid for their labour and 60 percentage work as unpaid workers on their families' landholdings. They are considered 'contributing family members' and their labour is valued (using 27 comparative median wages) at PKR 683 billion, or 2.6 percentage of GDP.[56] Women's triple burden makes them overworked and vulnerable to exploitation, as they have little agency to overturn unequal divisions of labour. Their negligible incomes, and lack of asset ownership makes them dependent on male family members or public services, if any are available. Women own 2 percentage land compared to 72 percentage men in Pakistan,[57] and in rural contexts these are usually smaller land holdings with crops that are less remunerative, and with lower yields.[58]

Women are closely involved in soil and water conservation, afforestation and crop domestication. Climate degradation adds to their challenges, including pressures to manage households single handedly in case of male out-migration, or poor yields from subsistence farming or vegetable gardening on account of shifting weather patterns. They face discrimination and harassment in negotiating prices for farming inputs, as well as selling produce at a profit.

Recommendations

I. **[Governments, CSOs and public] Evolve a gender-responsive approach for introducing climate-smart agricultural (CSA) practices.** Since men and women contribute and benefit differently from the sector, the planners introducing CSA practices must pay heed to gendered differentials in food security while promoting adaptation, mitigation and resilience.

II. **[Governments, CSOs and public] Involve women and vulnerable groups in climate-smart agriculture** (CSA) to increase chances of favourable gender-related outcomes that help decrease poverty and increase sustainability. Very few farmers have taken up CSA practices due to higher costs and benefits accruing in the long-term. Since women have less access to resources, including labour and money, and less secure

50. Ibid
51. Data Commons (n.d.) 'Pakistan – Overview' available at: https://datacommons.org/place/country/PAK?utm_medium=explore&mprop=count&popt=Person&hl=en
52. USAID (2020, April 2) 'Food Assistance Fact Sheet Pakistan', available at: https://www.usaid.gov/pakistan/food-assistance#:~:text=More percentage20than percentage2020 percentage20percent percentage20of,World percentage20Food percentage20Program percentage20(WFP).
53. Springmann, M., Mason-D'Croz, D., Robinson, S., Garnett, T., Godfray, H. C. J., Gollin, D., . . . Scarborough, P. (2016). Global and regional health effects of future food production under climate change: a modelling study. The Lancet: 387: 1937–1946. URL: https://pubmed.ncbi.nlm.nih.gov/26947322/
54. Tichagwa, W.(1994) 'The Effects of Drought on the Condition of Women.' Focus on Gender, 2(1), 20–25. Available at: http://www.jstor.org/stable/4030186
55. IFAD (2020, May 26) 'Planting seeds in the new normal: Rural women in Pakistan amid COVID-19' available at: https://www.ifad.org/en/web/latest/-/story/planting-seeds-in-the-new-normal-rural-women-in-pakistan-amid-covid-19#:~:text=Studies percentage20show percentage20that percentage20a percentage20typical,caring percentage20for percentage20her percentage20own percentage20children.
56. Pakistan Bureau of Statistics, Government of Pakistan (2010) 'Agricultural Census 2010 – Pakistan Report', available at: https://www.pbs.gov.pk/content/agricultural-census-2010-pakistan-report
57. Ministry of Human Rights, National Commission on the Status of Women, and UNWomen(n.d.) 'Gendered Impact and Implications of COVID-19 in Pakistan' available at: http://www.mohr.gov.pk/SiteImage/Misc/files/GenderedImpact.pdf

land holdings, they will find it harder to adopt CSA practices on their own.

III. **[Governments, CSOs and public] Ensure that technologies and extension services respond to women's needs.** New technologies for drought-resistant crops or irrigation practices will be more effective when they cater to the needs of women. Women must be consulted thoroughly while switching to new technologies.

IV. **[Governments, CSOs and public] Eliminate legal discrimination against women's ownership of assets, especially land tenure ship.** Enhancing women's ownership and control over land has brought about increased productivity and welfare in other contexts, improved food security and enabled a key source of resilience for communities in distress. Undertake the reform of laws that restrict women's ownership of and/or access to productive resources.

V. **[Governments, CSOs and public] Make it easier for women to access critical agricultural inputs** such as land, labour, credit, equipment, and services that allow them to adapt their agricultural practices. Women's participation in decision making related to technology adoption and land is also limited.

VI. **[Governments, CSOs and public] Collect more specific data on the agriculture sector** that highlights sources of vulnerability and resilience. This will allow more informed gender analysis, and gender-sensitive programming for all adaptation and mitigation actions. Establishing gender disaggregated information is the first step in addressing knowledge deficits and identifying gender barriers and opportunities.

VII. **[Governments, development partners, and CSOs] Integrate gender analysis and gender-sensitive tools** (assessment, design, monitoring and evaluation) into all climate related interventions, especially in the agriculture sector.

VIII. **[Governments, development partners, CSOs and public] Pay attention to how information needs differ for men and women.** Neither are receiving adequate climate-related information to make their decisions, but women are more marginalized in this respect. Ensure that interventions do not create privilege systems and barriers for women.

Water

Pakistan has one of the world's largest contiguous irrigation systems fed by glacial and snow melt, as well as monsoon rains that recharge the Indus River System and its tributaries. Irrigated agriculture is the mainstay of Pakistan's economy and consumes 95 percentage of available water resources, and the remainder is dedicated to domestic and industrial usage. Pakistani is going from a 'water stressed' country to a 'water scarce' by 2025, by when per capita water availability is projected to drop to 860 cubic meters against 1,000 cubic meters per capita per year which is required to prevent nutrition and health related challenges posed due to water scarcity.[59] Between 1990 and 2015, water availability declined from 2,172 cubic meters to 1,306 cubic meters per capita.[60]

The reasons for this accelerated stress are well documented: population explosion, rapid rate of urbanization, water intensive agriculture and industrialization. At the same time, the availability of water is impeded by climatic changes that make precipitation erratic, bringing about floods and droughts, sometimes simultaneously in different parts of the country. Excessive usage of groundwater through tube wells and pumping has led to a depletion of the water table, whereas surface water is either lost because of limited storage capacities and poor lining of canals. A major cause for concern is the contamination of water resources, through industrial discharge, agricultural run-offs and household effluent dumped in water channels, which creates a host of water borne diseases for downstream consumers.

These challenges are widely recognized. Over the years, there have been moves by federal and provincial governments to address much of this, particularly through improving water storage and infrastructure by introducing an integrated water management system, creating greater institutional capacity and awareness among the people.

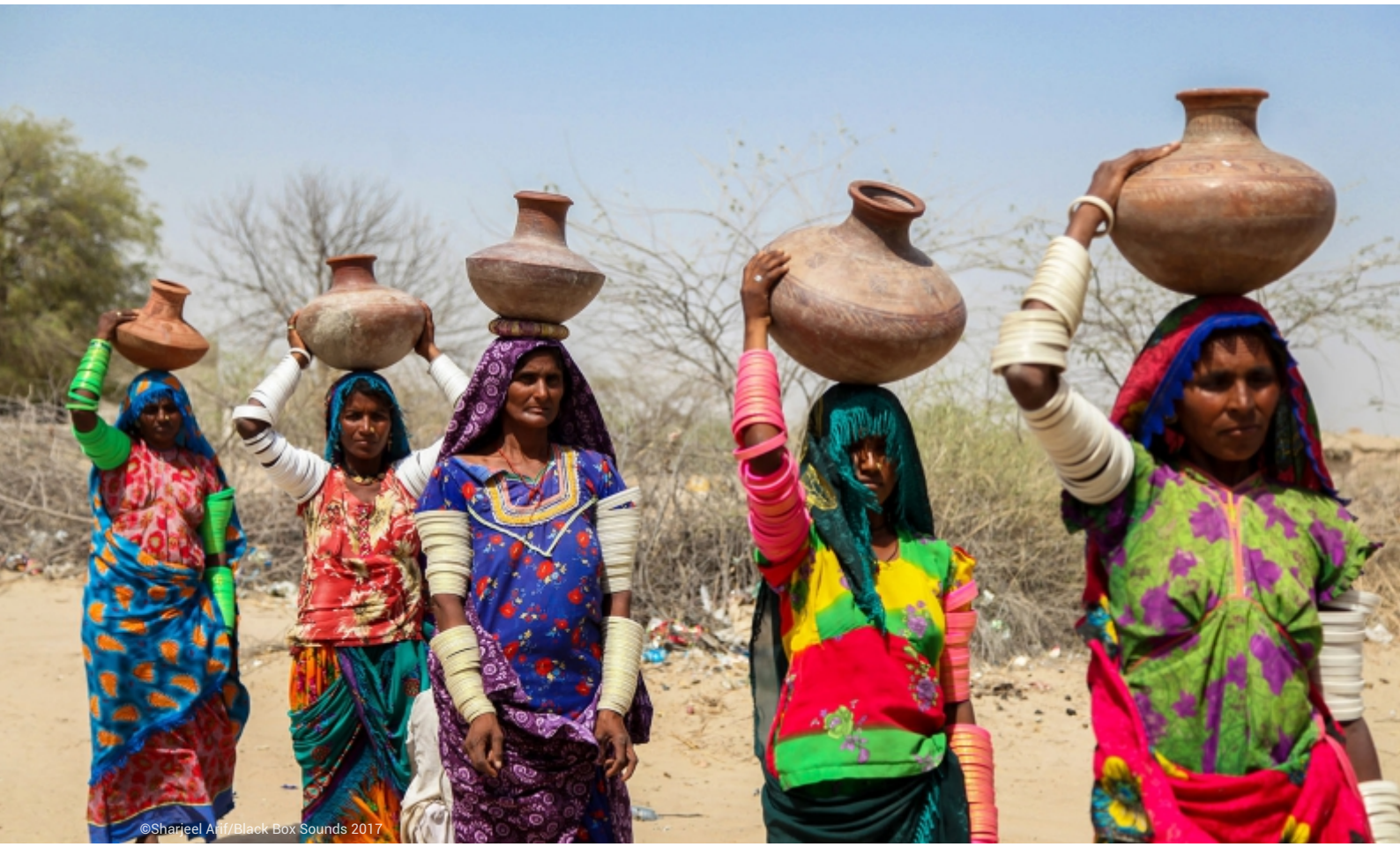
There have been key improvements in enlarging access for the population to cleaner water sources, and improved sanitation facilities, over recent years. All the same, 27.2 million citizens cannot access safe water, and 52.7 million cannot avail sanitation facilities. Provincial analyses present a dire picture where state penetration is weak and public services have historically been underdeveloped: For example, in Sindh, 70 percentage households cannot avail water from the source, or it is too expensive and 65.4 percentage households receive water contaminated by E. coli. The effects on healthcare are extreme, as an estimated 39,000 children under five years of age die every year from diarrhea because of contaminated water and lack of sanitation hygiene.[61]

Women's vulnerability in water stress

Depleted water resources and contaminated water add to women's difficulty in both urban and rural contexts. When water sources dry up or become unserviceable, women are forced to walk longer distances in search of new freshwater sources. Global estimates hold that women and girls spend an estimated 200 million hours combined every day fetching water;[62] and in Pakistan this translates to 1260 hours a year,[63] or the equivalent of more than 50 days searching for water sources, which become further out of reach in areas with acute climate stress. Traversing difficult terrain in mountainous areas or deserts is challenging on its own, and the incidence of sexual and gender-based violence is common on these journeys, especially for girls and younger women. The time spent in fetching water undermines other productive, educational, and reproductive tasks, and especially takes away time to care for themselves.

Water stress usually brings about a discontinuation of hygienic practices that prevent several diseases. Women in such households are more likely to consume and utilize contaminated water, especially if they have reduced mobility on account of ill health, pregnancy, or cultural barriers. Men have a lesser chance of consuming contaminated water, as they have greater mobility for work outside homes and communities. In times of food and water scarcity, women prioritize their family's needs over their own and show signs of higher malnutrition.[64]

58. Zaidi. S, et al (2018) 'Gender Perspectives on the National Climate Change Policy', Civil Society Coalition of Climate Change (CSCCC): Islamabad.
59. Ministry of Water Resources, Government of Pakistan (2018) 'National Water Policy' available at: https://water.muet.edu.pk/wp-content/uploads/2019/03/National-Water-Policy.pdf
60. UNDP (2016) 'Water Security in Pakistan: Issues and Challenges', Development Advocate Pakistan, Vol 3, Issue 4, United Nations Development Programme: Islamabad, available at https://www.pk.undp.org/content/pakistan/en/home/library/development_policy/development-advocate-pakistan--volume-3--issue-4.html
61. Ibid
62. UNICEF (2016, August 29) 'Press Release: Collecting water is often a colossal waste of time for women and girls', available at: https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls
63. Zaidi. S, et al (2018) 'Gender Perspectives on the National Climate Change Policy', Civil Society Coalition of Climate Change (CSCCC): Islamabad.
64. Ibid



Recommendations

I. **[Governments and development partners] Combine gender equity and equality commitments with water-related goals** to enable gender mainstreaming in the water sector in Pakistan, and ensure that the needs and concerns of men and women are identified and addressed. Reorient state institutions towards principles of equitable water sharing at the local level, and enable an institutional understanding of gender mainstreaming in the water sector.

II. **[Governments, development partners, CSOs and public] Reset knowledge systems on water** away from top-down, undertake engineering-dominated solutions towards promotion of local knowledge and practices of specific populations. This will enable greater equity in water management practices, and reveal a better picture of vulnerability and resilience.

III. **[Governments, CSOs and public] Enable the use of emerging technologies for women** in the water sector so that gendered divisions of labour are disrupted, especially the search for water that requires travelling long distances. Bringing about interventions in water supply, irrigation, agriculture and sanitation that target women and win the cooperation of men, will boost resilience on ground and enable empowerment.

IV. **[Development partners, CSOs and public] Support and enhance collective action among women groups**, and reorient them towards income generating activities rather than subsistence only. Women must graduate from kitchen gardening to productive agriculture. Such a move will need the support and training of more women acting as facilitators, service providers, experts, financial managers, etc.

V. **[Development partners, CSOs and public] There is a need to collect data on micro-level transactions occurring every day** that reveal how household water demands vary according to income, locality, sources of climate stress, and how women are altering water usage practices in response to water shortage. There is a preponderance towards macro-level initiatives that

seek system-wide improvements, whereas any understanding of resilience or vulnerability needs a closer examination of human behaviour during climate degradation.

VI. **[Governments, CSOs and public] Explore the equity implications of new technologies being introduced.** While new technologies enable better water usage and productivity, it must be seen whether their benefits reach small farmers and farming-dependent households, as opposed to benefitting large agri-businesses and landowners.

Forestry

Pakistan has only 5 percentage forest cover, which is lower than other countries. Forest types in Pakistan include conifer, riverine and scrub forests, coastal mangroves, linear and irrigated plantations, and the highly unique varieties of deodar, chilghoza and juniper forests. The climatic, soil and water conditions do not support large scale afforestation efforts; and forest resources are currently insufficient to meet the increasing population's domestic demand for wood. Many local communities depend on forests as their primary source of income and rapidly depleting forest resources are pressurizing all provinces, especially Gilgit-Baltistan (GB) and Khyber Pakhtunkhwa. The national deforestation rate is estimated to be 27,000 hectares per annum, occurring predominately in community owned and private natural forests. Deforestation negatively impacts biodiversity, land degradation, sea water intrusion and flooding, potentially causing significant economic loss to the country. The major issues faced by the forestry sector are (i) lack of forest monitoring mechanisms is in place, (ii) inter-provincial trade and movement of timber is mostly unregulated, and (iii) high vulnerability to adverse effects of climate change. Lack of resources and technical know-how in the respective provincial setups require the federal government to intervene and address financial gaps and provide technical support to meet international obligations.[65]

Further evidence from the provinces allows insights about climate degradation. For example, GB's forests are fragmented and exist in patches in the valleys. They have been managed in unsustainable ways, with excessive deforestation and degradation. Fuelwood demand is high in GB for lack of alternative energy sources, but timber and fuelwood harvesting often gets dominated by the 'timber mafia', which is responsible for illegally felling large portions of the pine, spruce, deodar cedar and juniper tree cover. This has been disastrous for both wildlife and livelihoods. Mining undertaken in forest areas has also contributed to this.[66]

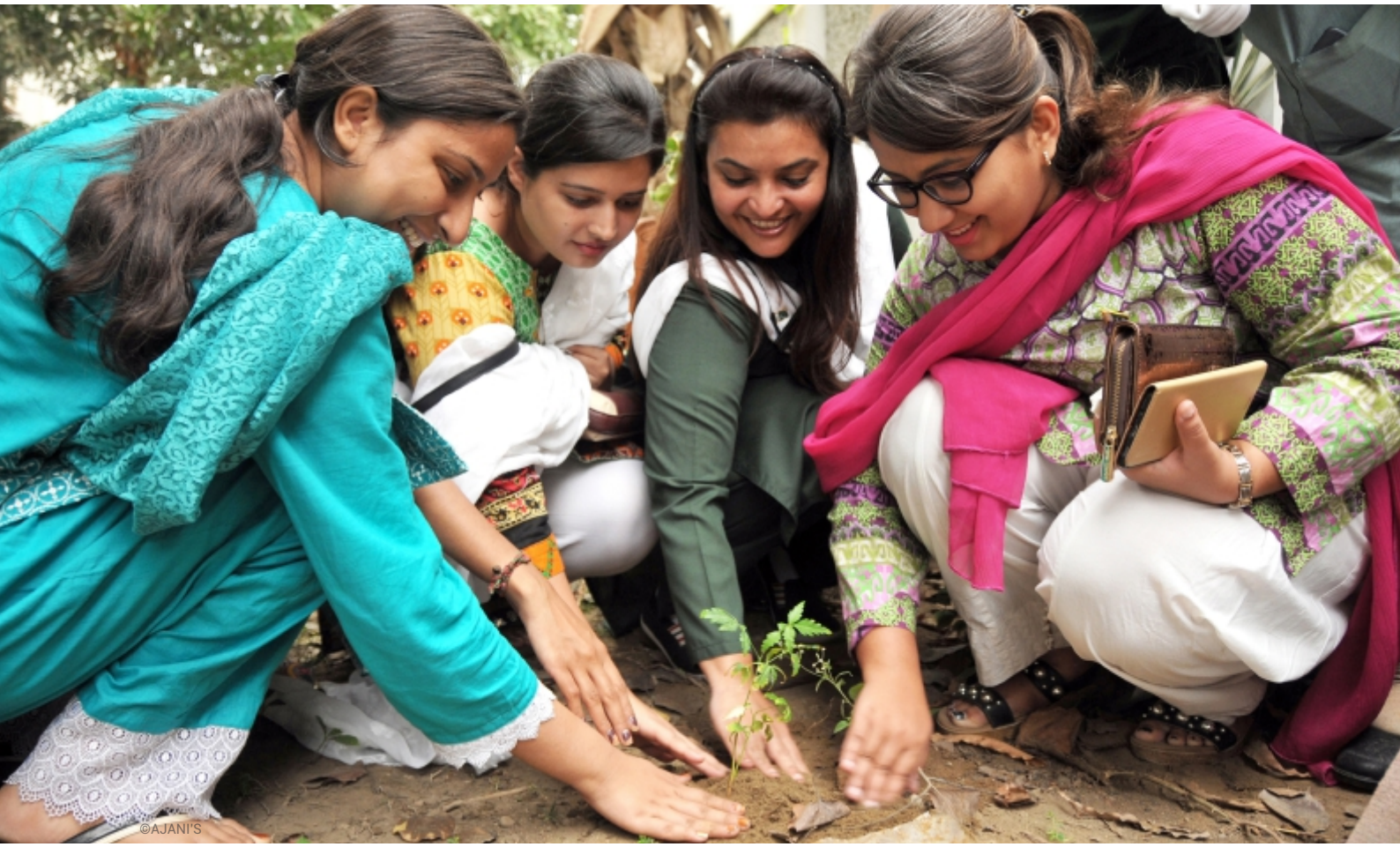
In Sindh, 2.29 percentage of 2.782 million acres of green cover are riverine forests. These are protected by the government, and consist of mangroves and rangelands. They are threatened by both deforestation and environmental degradation such as freshwater and environmental flow variation, or rising sea levels. The Indus Delta is crucial to 97 percentage of Sindh's mangrove cover, which is the habitat of over one million people, of whom 135,000 depend on them for livelihoods. Sindh's mangroves are considered biomes that house a great deal of biodiversity, and serve as effective carbon sinks. The depletion of forests in Sindh has already bought

Climate Fact Box: Ten Billion Tree Tsunami Programme

The TBTTP is built on Khyber Pakhtunkhwa's successful Billion Trees Afforestation Project (BTAP). Following its positive appraisals by independent observers, the government has set a goal of 'Ten billion Tree Tsunami' across the country. The total PSDP amount for the TBTTP forest component is Rs. 109.38 billion, while Rs. 15.59 billion has been allocated for wildlife over 2019-2023. PSDP funds released for FY 2019-2020 are Rs 7.5 billion against the requisitioned amount of 15.6 billion. The total PSDP amount authorized for CFY (2020-21) is Rs. 4900.00 million against the requisitioned Rs. 23 billion, with financial cuts of 78.69%. Almost all NSSU and RSSU hirings are complete. Staff for Monitoring and Evaluation of the TBTTP is being stationed across Pakistan.

Source: Ministry of Climate Change

65. Ministry of Climate Change, Government of Pakistan (2015) 'National Forest Policy', available at: http://www.mocc.gov.pk/SiteImage/Policy/National percentage20Forest percentage20Policy percentage202015 percentage20(9-1-17).pdf
66. Ismail, I. et al (2018) Forest inventory and analysis in Gilgit-Baltistan – A contribution towards developing a forest inventory for all Pakistan' in International Journal of Climate Change Strategies and Management, Vol 10, No. 4, 2018, pp 616-631, available at: https://www.emerald.com/insight/content/doi/10.1108/IJCCSM-05-2017-0100/full/html



about ecological degradation and compromised the socio-economic wellbeing of communities that depend on them.[67] Pakistan's coastline holds considerable vulnerability to sea-level rise and its associated impacts. Research by the UK Meteorological Office (2014) predicts that without climate change adaptation strategies, around one million people will face coastal flooding annually by the period 2070–2100.

These mangrove communities include women working in fisheries who are among the most marginalized cohorts in Pakistan. These women traditionally live below the poverty line and are mostly unlettered and do not earn wages.[68] Climate degradation has taken its toll on the mangroves, but the commercialization of fisheries has driven out poorer fisher-folk and led to overfishing. Women's livelihoods as net-weavers have also been undermined. Illegal felling of the mangroves has been disastrous for flora and fauna, and the communities that depend on this eco-system for survival.[69]

As for the effect of lost tree cover in urban areas, Karachi's thriving wildlife up until the 1960s has disappeared due to massive construction, urban sprawl and pollution-caused asphyxia, in addition to the plantation of 'alien' trees including conocarpus, mesquite, and eucalyptus.[70]

Kp's Billion Tree Tsunami Project upgraded the prov-

67. CSCCC (n.d.) 'Stakeholder Recommendations for Climate Change Implementation Framework, Sindh', available at: https://www.csccc.org.pk/attachments/news-bulletin/Sindh percentage20Implementation percentage20Framework.pdf
68. Shah, N.A. (2016) 'Women Working in Fisheries at Ibrahim Hyderi, Rehri Goth and Arkanabad' in Pakistan Journal of Gender Studies, Vol 13. pp. 207-220, Women Studies and Department of Social Work, University of Karachi, available at: https://doi.org/10.46568/pjgs.v13i1.191
69. Shah, M.A. (2002) 'A Bleak Future – Women of fishing communities in Pakistan face increasing marginalization' in Yemaya No. 9, April 2002, International Collective in Support of Fishworkers, available at: https://pff.org.pk/wp-content/uploads/2020/08/A-Bleak-of-Future-Women-in-Fishing.pdf
70. Latif, A. (2019, October 2019) 'Pakistan's Karachi in danger of losing wildlife', Anadolu Agency, available at: https://www.aa.com.tr/en/asia-pacific/pakistans-karachi-in-danger-of-losing-wildlife/1629258

ince's tree cover by a great extent and enabled 0.5 million jobs for rural women and unemployed youth, involved in growing tree nurseries. The Billion Tree Tsunami which allocated 20 percentage share to women has now been scaled to the Ten Billion Tree Tsunami (TBTTP) in which women have a 10 percentage share.[71]

Recommendations

I. **[Governments, development partners and public] Take urgent action to expand Pakistan's forest cover by carrying out mass afforestation** involving women, youth, and other marginalized groups. The Ten Billion Tree Tsunami Project has done well by giving 10 percentage share to women-owned nurseries. It must bring women to the center of afforestation, and make them the chief beneficiaries of this exercise, rather than hold marginal roles that supplement larger activity.

II. **[Governments, CSOs and public] Increase and streamline efforts to curb deforestation and promote conservation.** This is usually a male dominated preserve, but increasing women's participation in forestry institutions has demonstrated improved forest governance and greater sustainability of resources. The communities with women responsible for forestry reveal better forest conditions, forest regeneration and canopy growth.

III. **[Governments, CSOs and public] Mitigate illegal timber logging and address corruption in the forestry sector.** By including women in forest audits, monitoring mechanisms and reporting, a degree of corruption may be curtailed. This recognizes that women should not be cast into roles that bring about insecurity for them and their families; rather establishing accountability in any sector requires both men and women to challenge corrupt practices. The inclusion of women in climate accountability overall must be promoted.

IV. **[Development partners and CSOs] Invest in research initiatives that reveal gendered aspects of forestry and climate stress.** Gendered indigenous ecological knowledge can provide critical guidance in the adoption of culturally sensitive, and gender responsive forestry initiatives. Partnerships with researchers, agriculture experts and forest inhabitants may prove useful in this respect.

V. **[Governments and development partners] Establish province-based institutions for forestry related research**, education, training and monitoring, that cater to a large number of women. Such institutions are especially needed in Khyber Pakhtunkhwa, where forest communities are engaged in indigenous medicinal practice.

VI. **[Governments] Develop a gender responsive policy for forestry** to pay attention to the challenges women experience on ground, and their differentiated needs and knowledge on forest preservation and protection.

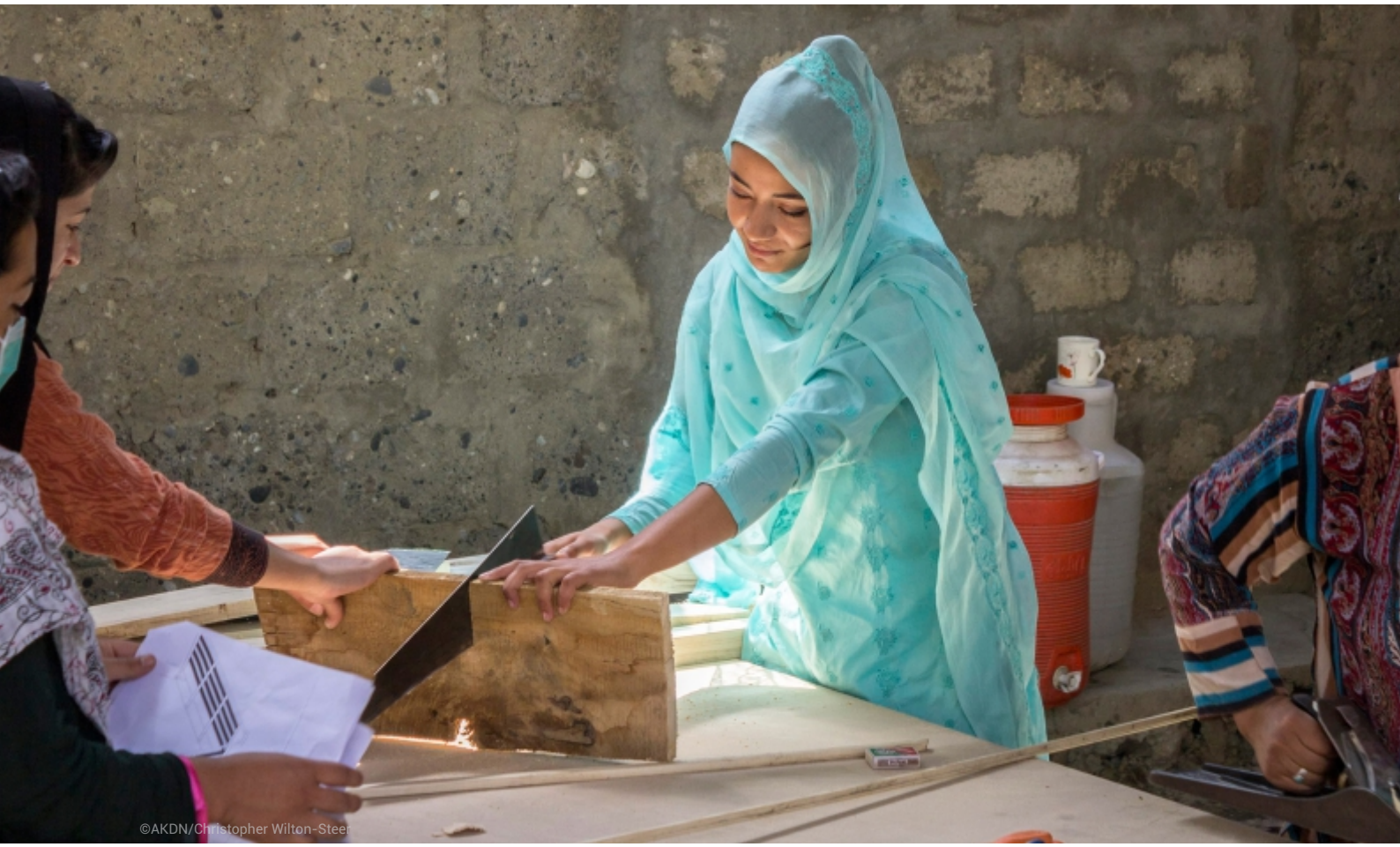
Energy and Urban Planning

Twenty-six percent of Pakistan's population (56 million people) lack access to electricity and 51 percentage (110 million) cannot avail clean fuel for cooking.[72] The energy sector has had long standing challenges of centralized governance, irregular supply and limited contribution of renewable sources (5 percentage). The absence of an integrated energy policy framework has brought about a policy disconnect between top-down regulation of urban electricity and bottom-up rural mechanisms that are limited and largely unregulated. In between, there are challenges of affordability and sustainability that add to people's hindered access to electricity. [73]

Natural gas is Pakistan's major source of fuel that fulfils 50 percentage of all energy consumption since several decades. It is used for generating electricity, industrial needs, especially manufacturing, and households' requirement of cooking and heating. Gas shortages and load shedding exacerbate the energy crisis, but indigenous gas resources cannot be extracted for affordability reasons. Production of gas has plateaued and is not replacing depletion from the existing fields, whereas reserves are in decline. Natural gas has been the traditional answer to Pakistan´s electricity shortage as it is more affordable.[74]

Pakistan is cited to be the fastest urbanizing country in South Asia, with a 3 percentage growth rate each year. By 2030, more than half of Pakistan's projected 250 million citizens will be residing in cities, on account of high birth

71. Billion Tree Tsunami: provinces to increase women share in raising plant nurseries', (2020, August 17), Daily Times, available at: https://dailytimes.com.pk/655042/billion-tree-tsunami-provinces-to-increase-women-share-in-raising-plant-nurseries/
72. Khalid, R., & Malik, H.W. (2021) 'Energy Access and Gender in Pakistan: Policy Brief', Global Sustainability Institute: Cambridge
73. Majid, A. (2019, December 16) 'Can Pakistan make its energy sector greener, cheaper and more reliable? The government thinks so', World Economic Forum, available at: https://www.weforum.org/agenda/2019/09/a-new-dawn-approaches-for-pakistans-troubled-energy-sector/
74. Spencer, R. (2015, May 4) 'Increasing domestic gas availability in Pakistan,' Bank Blogs, available at: https://blogs.worldbank.org/endpovertyinsouthasia/increasing-domestic-gas-availability-pakistan



rates and migration from rural areas. More and more migrants seeking better jobs and improved access to basic services are arriving in cities, only to find that municipal authorities are struggling to provide entitlements and jobs. Urban poverty is on the rise, as one in eight persons falls below poverty line. Pakistan's cities contribute 55 percent to the GDP, far less compared to other developing countries. Pakistan's urbanization is untidy from low-density sprawl, and cities have grown well beyond administrative boundaries to include slum localities, now estimated to make up to 60 percent of urban Pakistan.[75]

Pakistan faces increases in average temperatures significantly above the global average. Cities in its northern regions will be strongly impacted. These rises add to already high baseline temperatures. Under higher emissions pathways the number of days per year with temperatures over 35°C may rise from around 120 to over 150 by the middle of the 21st century.[76] These changes will place extreme pressure on urban environments, and the energy systems which support them as research suggests that on average a one degree increase in ambient temperature can result in a 0.5 percentage–8.5 percentage increase in electricity demand.[77] The temperature peaks that will result from combined Urban Heat Island (UHI) and climate change, as well as future urban expansion, are likely to damage the productivity of the service sector economy, both through direct impacts on labour productivity, but also through the additional costs of adaptation.[78] For instance, night time UHI as high as 13°C has been

75. Shaikh, H. & Nabi, I. (2017, January 16) 'The six biggest challenges facing Pakistan's urban future', International Growth Centre (IGC), available at: https://www.theigc.org/blog/the-six-biggest-challenges-facing-pakistans-urban-future/
76. ADB and World Bank. (2020). "Climate Risk Country Profile 2020." Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/climate-risk-country-profile-pakistan.pdf
77. ADB (2017). Climate Change Profile of Pakistan. Asian Development Bank. URL: https://www.adb.org/publications/climate-changeprofile-pakistan
78. Sajjad, S. H., Blond, N., Batool, R., Shirazi, S. A., Shakrullah, K., & Bhalli, M. N. (2015). Study of Urban Heat Island of Karachi by Using Finite Volume Mesoscale Model. Journal of Basic & Applied Sciences, 11, 101–105. URL: https://www.lifescienceglobal.com/pms/index.php/jbas/article/view/2724

reported in Karachi.[79] Both Karachi and Lahore are among the cities that are most vulnerable to increases in extreme heat where, even under lower emissions pathways, temperature currently considered heatwave and associated with high mortality risk becomes a regular occurrence.[80]

Vulnerabilities for women

The energy crisis is acute in rural contexts, and women are forced to look for alternative sources of fuel that are accessible and cheap. Climate stress has impacted the environment where fuelwood, crop residue, dung or traditional 'dirty' sources are readily available, and women have to travel longer distances and search harder for fuel, especially in districts where tree cover has receded. In urban areas, affordability becomes the primary determinant of what households use for cooking and heating. The varieties of energy sources include electricity, natural gas, LNG, fuelwood or biomass.

As studies indicate, the choice of energy depends on gender, education, wealth and location. Female-headed households are more likely to utilize cleaner and convenient sources of fuel, such as natural gas for cooking. Household size determines what fuel will be used; those with several individuals utilize dung and crop residue, as 'contributing labour' is readily available. The families where household heads or members have attained education, tend to use clean fuel for cooking as there is greater awareness of the harmful effects of dirty fuel, and better affordability due to higher incomes. Relatively wealthier families can afford clean and convenient sources of energy such as natural gas, while low-income families tend to use unclean traditional fuels.[81]

Pakistan's cities are not 'gender-friendly' owing to an exclusive 'street culture' dominated by men. Workplaces, transport, marketplaces, public buildings and even family spaces like parks and entertainment areas, primarily cater to men's mobility, access, usage and purpose. Gender sensitive initiatives have been undertaken in Pakistan to assist and protect women from sexual and gender-based crimes, but demand outstrips supply by far. For example, the introduction of women-only buses has catered to a small number of women. Urban poverty delimits women's agency, mobility, choices and access to facilities across Pakistan, and habitats in urban slum dwellings make women vulnerable to the heat island effect with poor access to water and sanitation and being in proximity to polluted water bodies or dumping sites that result in a host of diseases. As the Table 5 below indicates, millions of Pakistanis are living in potential hotspots.

Table 5: Millions of Pakistanis Are Living in Areas Projected to Become Hotspots

Severe	0
Moderate	48.7
Mild	144.5
Total Population	193.2

Sources: World Bank calculations based on WDI (population data); World Bank 2016.

Note: Estimates are based upon the carbon-intensive scenario by 2050. Data show that around 800 million people live in moderate or severe hotspots

Recommendations

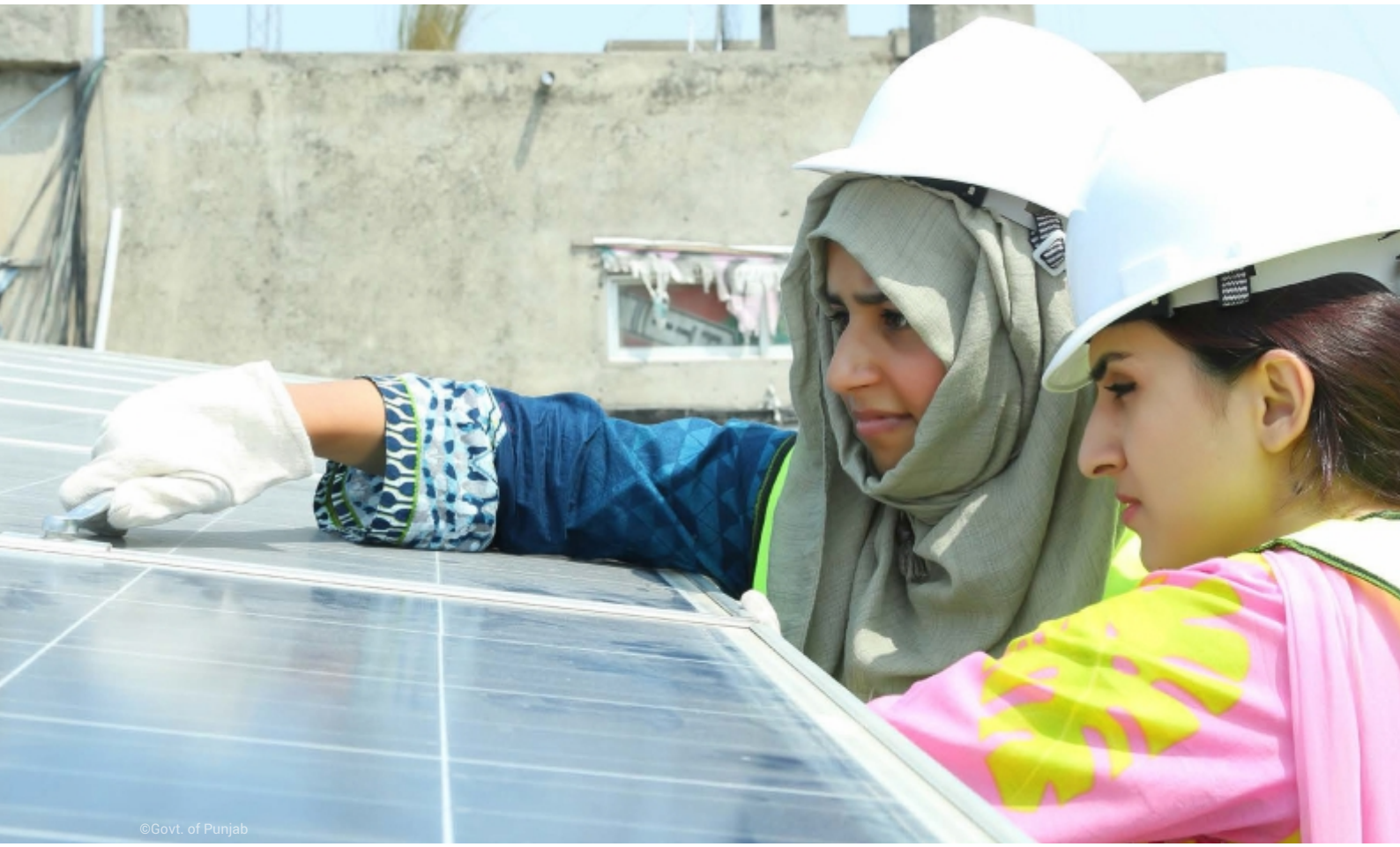
I. **[Governments] Develop a gender-responsive framework for the energy sector through gender-mainstreaming in energy policies and budgets**, with clearly stipulated targets and impacts. There must be a recognition of how urban, rural, and low-income women experience different energy challenges, and have poor access to energy services on account of inadequate fuel types, lack of technologies, knowledge and skills, immobility and time constraints in addition to cultural barriers. Design interventions that are gender-sensitive and that address broader social and economic inequities for women.

II. **[Governments and CSOs] Develop an integrated energy framework** that creates a nexus among access to energy supply, energy services and the gendered use of energy at local levels. Decentralization and distribution of the energy system can bring this about, and effectively address local imbalances and challenges for women, while allowing for community participation and innovation by women. Ministries and line departments should leverage community-based energy solutions through partnering with local small and medium energy initiatives or CBOs to work with communities that have limited access to energy sources. This will enable regulatory oversight and overcome oversight of cultural practices.

79. Ibid

80. Matthews, T., Wilby, R.L. and Murphy, C. 2017. Communicating the deadly consequences of global warming for human heat stress.Proceedings of the National Academy of Sciences, 114, 3861–3866. URL: https://www.pnas.org/content/114/15/3861

81. Rahut, D.B. et al (2019) 'Wealth, education and cooking-fuel choices among rural households in Pakistan' in Energy Strategy Reviews, Volume 24, 2019, Pages 236-243, ISSN 2211-467X, available at: https://www.sciencedirect.com/science/article/pii/S2211467X19300276



III. **[Governments, CSOs and public] Increase women's representation in the energy sector as key agents of change** at all levels of energy-supply chain. This will need establishing gender quotas, creating enabling environments and support structures, and granting equal opportunities for employment and occupational mobility. In particular, building technical skills and training in science-based education is needed.

IV. **[Governments, CSOs and public] Develop policies for gender equity in other spheres for a multiplier effect**, such as healthcare access, equal opportunities in education, mobility and employment, financial inclusion and digital rights, etc. The availability of gender disaggregated data in all these fields is critical to a holistic understanding of women's status and needs.

Disaster Management

The policy sector of disaster management has received considerable attention in Pakistan due to the frequency of natural disasters and their devastating impacts on the population. The National Disaster Management Authority (NDMA)'s data shows that since the 2005 earthquake, natural disasters have resulted in over 80,000 deaths, 200,000 injuries and destruction of over 4 million houses. The 2005 earthquake alone caused 73,338 deaths and 128,309 injuries when Pakistan's disaster management systems were unprepared to deal with a calamity of such large proportions.[82] Table 6 above summarizes the tally of casualties and damages over a century.

Pakistan's capacity to deal with disasters has considerably improved since 2005. There is an elaborate

82. Zaidi. S, et al (2018) 'Gender Perspectives on the National Climate Change Policy' , Civil Society Coalition of Climate Change (CSCCC): Islamabad.

Table 6: Summary of Natural Hazards in Pakistan from 1900 to 2020

Disaster Type	Disaster subtype	Event Counts	Total Deaths	Total Affected	Total Damages ('000 US$)
Drought	Drought	1	143	2200000	247000
Earthquake	Ground movement	35	144116	7435786	5376755
Epidemic	Bacterial disease	3	142	11103	0
	Parasitic disease	1	0	5000	0
	Viral disease	2	130	56338	0
	Others	5	131	371	0
Extreme temperature	Cold Wave	3	18	0	0
	Heat Wave	15	2936	80574	18000
Flood	Flash floods	24	3590	22114253	10184118
	Riverine flood	43	9229	34967357	9727030
	Others	39	5286	23863294	2670030
Landslide	Avalanche	12	567	4435	0
	Landslide	9	222	29707	18000
	Mudslide	2	16	12	0
Storm	Convective storm	15	402	1906	0
	Tropical cyclone	7	11555	2599940	1715036
	Others	7	184	2988	0

Source: Climate Risk Country Profile 2020 by ADB and World Bank

institutional and policy structure in place, especially after the 2010 mega floods, and the initial institutional overlap and competing jurisdictions have been harmonized over time. There is a broad consensus that Pakistan's disaster response mechanisms deliver during natural calamities, however, there are definitely some areas that need help and improvement.

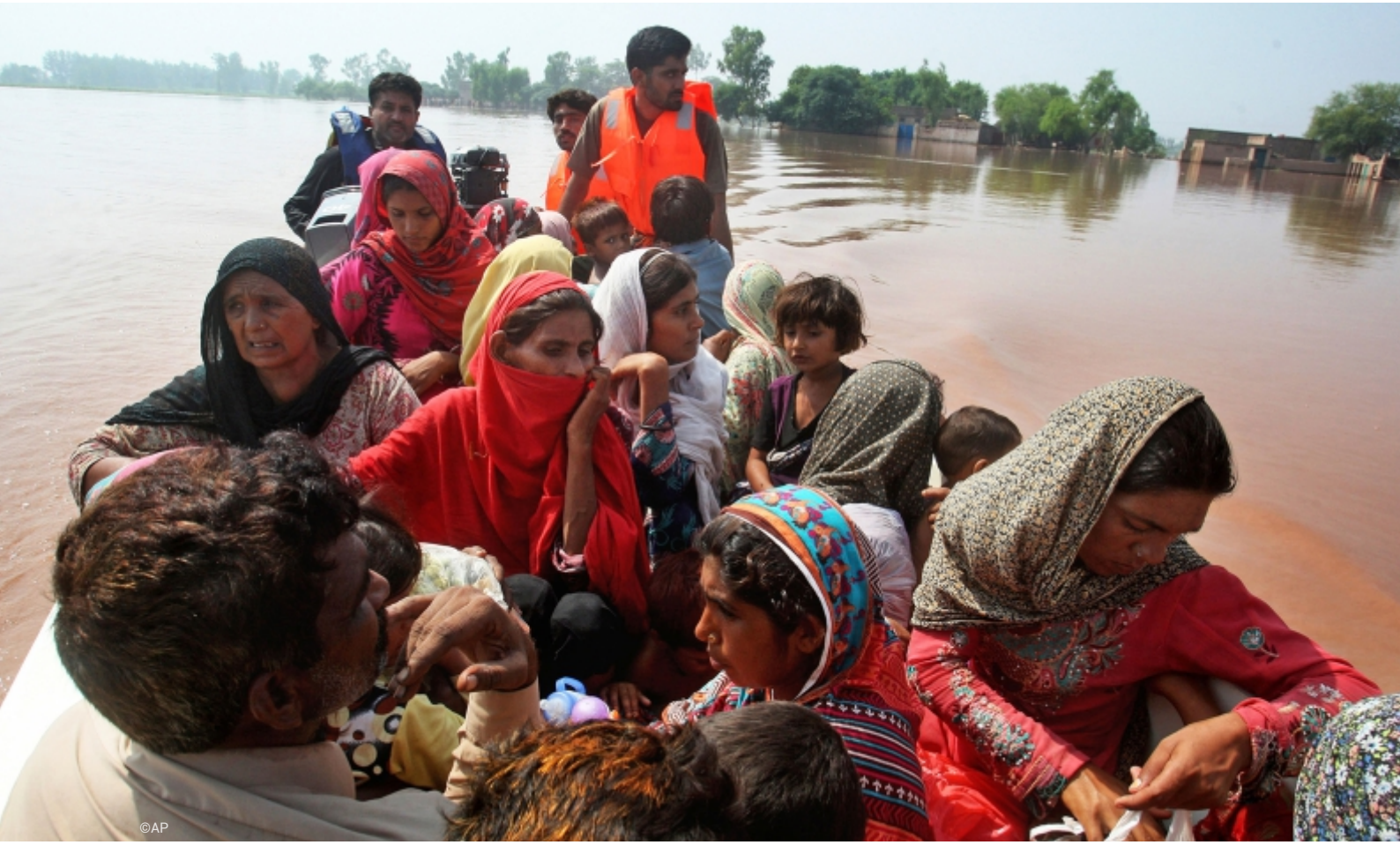
Most Early Warning Systems are not working, especially when it comes to public messaging. The national and provincial governments use mainstream media to warn about disasters including floods, heatwaves, or heavy snowfall for citizen's safety, but majority of these campaigns are reactive and fairly limited in content. Correspondingly, there is little or nothing taught in educational institutions about disaster preparedness, risk reduction or responding to emergencies, which makes understanding of disasters management difficult for poor public. The community-based organizations (CBOs) run awareness campaigns at the community level as well, with an obvious lack of coordination or commonality in disaster messaging. Media plays a dominant role in educating citizens about disaster preparedness, but the content varies based on the interest and capacity of media houses.[83]

There are several instances of man-made disasters each year that are more localized, and fall within the purview of municipal administrations, such as industrial disasters, infrastructure breakdowns and collapse, fire accidents, or terrorist attacks. A patchwork of municipal jurisdictions addresses these challenges, going between city administrations, law enforcement agencies, judiciaries, hospitals and emergency responders. The engagement of these agencies is more political and subject to less coordination, less ownership and outcome-oriented resolution. Unlike natural disasters which instantly become a national issues, accidents or disasters of this nature are only handled by city administrations or provincial governments at the best.

Vulnerabilities for women

Evidence from around Pakistan suggests that women are more vulnerable to suffering casualties in disasters as they are less likely to receive early warning signals through telecommunication than men; in many instances women and girls are not taught survival skills

83. Fayaz, A. & Bussell, J. (2017) 'Disaster Preparedness in Pakistan - Research Brief No.8', Robert Strauss Centre for International Security and Law, University of Texas at Austin, available at: https://www.strausscenter.org/wp-content/uploads/UPDATED-FALL-2019-CEPSA_Brief-08_DisasterPreparedness_Pakistan.pdf



like swimming, to rescue themselves or minors; and cultural barriers prevent women from leaving their homes unattended without permission of their male family members. As seen in multiple disasters, women attempt to save the lives of their children or the elderly, and protect key assets at the risk of their own lives.

Moreover, the dependence of households on women increases manifold during disasters, with or without male family members. A number of studies quote women's vulnerability to sexual and gender-based violence and lack of privacy at the relief camps, in addition to insufficient medical-care to women amid their specific needs in pregnancy and delivery. The rehabilitation process also favours men over women, where men were provided resettlement compensation while women often lack adequate identification documentation.[84]

At the same time, women's agency and unique ability to activate community networks, caring skills, and providing critical support to save lives during disasters is often overlooked in the field of disaster management.[85] Women have the ability to play a pivotal role in protecting children, caring for the elderly and safeguarding households and community assets in the event of a natural disaster, as well as providing post-care to the vulnerable in the same context.

Recommendations

I. **[Governments, development partners, CSOs and public] Prepare women for leadership roles in the whole spectrum of disaster management- DM** (humanitarian response, rehabilitation, reconstruction, and community-based disaster risk management (CBDRM) to ensure a women's and community-led humanitarian architecture. While being in the decision making and at

84. Zaidi. S, et al (2018) 'Gender Perspectives on the National Climate Change Policy' , Civil Society Coalition of Climate Change (CSCCC): Islamabad.
85. Ibid.

the leadership levels, women contribute towards gender-inclusive policy and implementation processes around community's and women's differentiated needs.

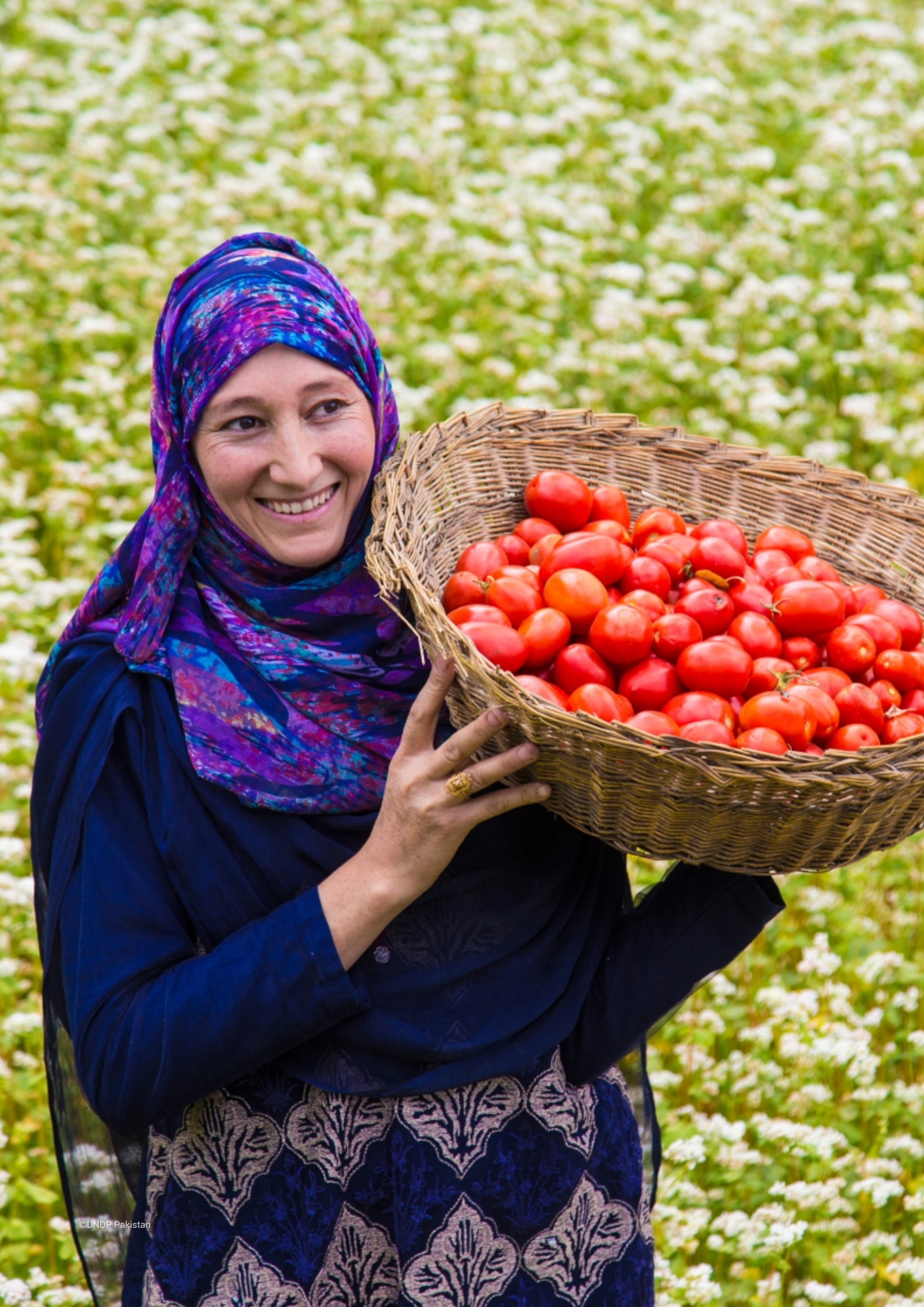
II. **[Governments, CSOs and public] Increase women's representation in the DM institutions from national to local levels.** Women can best represent communities, especially women, children, elderly and persons living with disabilities, whom they provide care during emergencies and in normal circumstances at the households as they know their special needs better than men. They can best facilitate implementation of gender sensitive disaster risk management (DRM) policies and procedures.

III. **[Governments, CSOs and public] Include interventions in DRM to address women specific issues** such as hygiene and reproductive health needs, access and mobility challenges, barriers in accessing information and developing skills, and sexual and gender-based violence. Ensure that these considerations are built in all tiers of disaster management.

IV. **[Governments, CSOs and public] Women should be given special role in camp management.** This will help reduce vulnerability of women and girls to sexual abuse and gender-based violence.

V. **[Governments, CSOs and public] Recognition of women's capacities and capabilities in DRM and do not just/only highlight their vulnerabilities.** Women must be supported in building up their households' and communities' resilience before and after disasters. Only care-giving role is associated to women, but leadership role needs to be given to them as well for an inclusive DRM.

VI. **[Governments, CSOs and public] As part of DRM, recognize and reverse gender discriminatory practices** that are deeply embedded in local culture, especially through enabling access to disaster relief or post-disaster rehabilitation. Disaster risk reduction (DRR) must be considered as a long-term effort to reduce vulnerability of women.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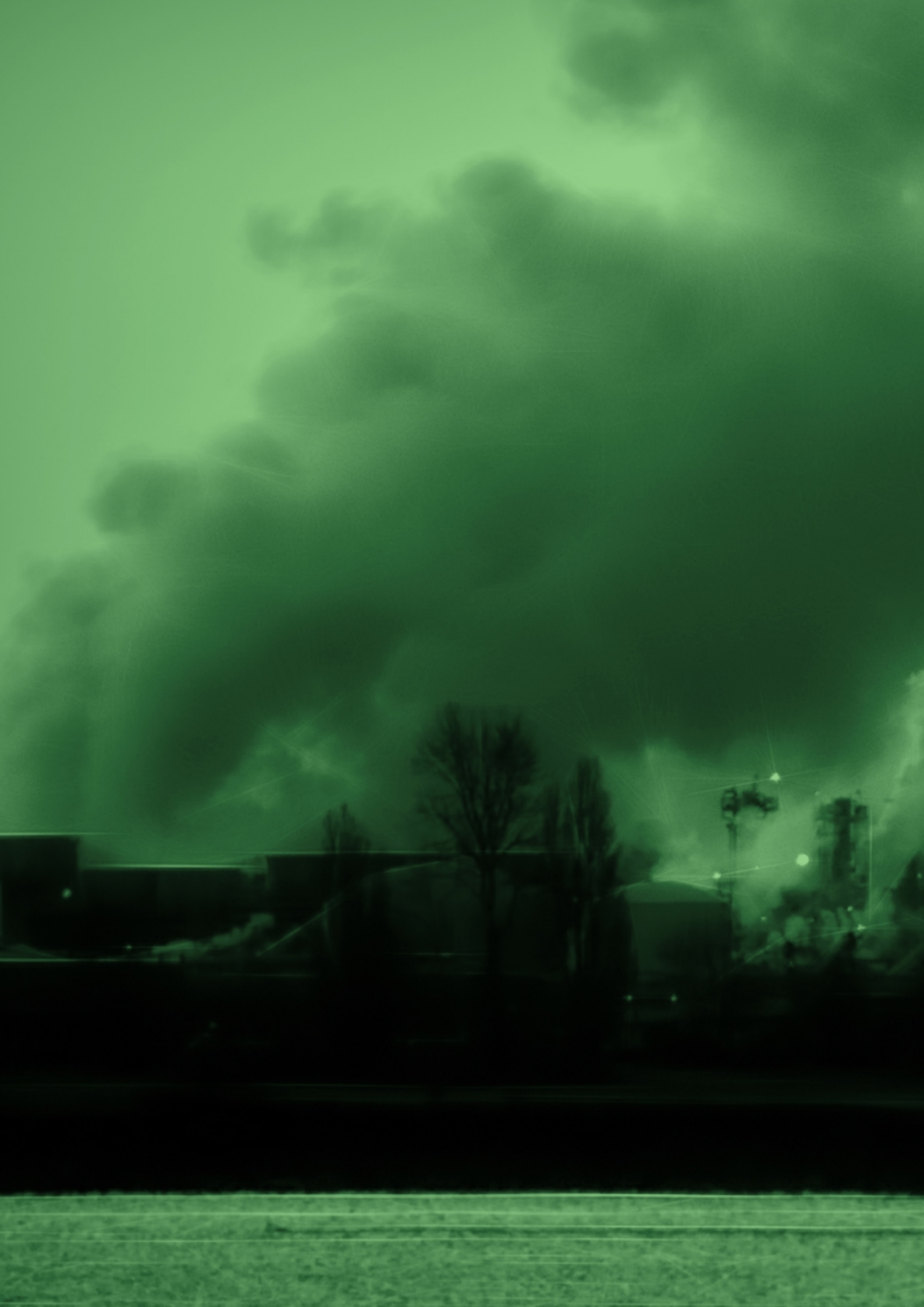


4 Perspectives from the Provinces and Regions

Perspectives from the Provinces and Regions

4

Perspectives from the Provinces and Regions Consultations conducted for this report across the country elicited several insightful observations made by practitioners, academics, field experts and activists, which have been collated in sections below. These perspectives reveal stressors for vulnerability and opportunities for course correction, as well as reflecting Pakistan's collective resolve in combatting climate change. The issues presented here have been selected from the larger discussions in each province, and hold instructive value for all of Pakistan.

Sindh

Water out of reach for most households

Sourcing water has improved for 70 percentage households who find water on their premises, whereas 30 percentage households do not have ready access (50 percentage of the poorest households do not have water). 60 percentage women in rural Sindh are involved in collecting drinking water; more than 50 percentage spend between 1-3 hours fetching it. For as many as 70 percentage households, water is not available from the source, or is too expensive; 65.4 percentage households receive water contaminated by E. Coli, with piped water and protected springs containing the most bacteria. 25 percentage households do not have handwashing facilities (with soap and water) and 44 percentage of rural households have no sanitary facility.[86]


©Sharjeel Arif/Black Box Sounds 2017

Shifting climatic patterns explain part of the problem: 6-7 inches of rainfall on average annually, other than episodes of heavier precipitation that turns into flash flooding and other hazards. The province relies mainly on monsoon rainfall to replenish its hydrology, leaving it vulnerable to drought that has a precarious impact on its agricultural sector. Water scarcity is a major challenge in Sindh, with more than 30 percentage households accessing water from unsafe sources; this can go as high as 42 percentage in districts with extreme water scarcity. Because groundwater in the lower parts of Sindh is predominantly found to be saline, there is a great deal of dependence on surface water for both irrigation and domestic usage.[87]

Women in fisheries among the most marginalised

Women in fisheries are among the most marginalised cohorts in Pakistan, who have traditionally lived below the poverty line, are mostly unlettered and do not earn wages.[88] Climate degradation has taken its toll on the

86. Bureau of Statistics, Planning & Development Board, Government of Sindh (2020) 'Sindh Multiple Indicator Cluster Survey 2018-19, Survey Findings Report', Bureau of Statistics Sindh, Planning & Development Board, Government of Sindh: Karachi
87. CSCCC (n.d.) 'Stakeholder Recommendations for Climate Change Implementation Framework, Sindh' Civil Society Coalition for Climate Change: Islamabad, available at: https://www.csccc.org.pk/attachments/news-bulletin/Sindh percentage20Implementation percentage20Framework.pdf
88. Shah, N.A. (2016) 'Women Working in Fisheries at Ibrahim Hyderi, Rehri Goth and Arkanabad' in Pakistan Journal of Gender Studies, Vol 13. pp. 207-220, Women Studies and Department of Social Work, University of Karachi, available at: https://doi.org/10.46568/pjgs.v13i1.191

mangroves, but the commercialization of fisheries has driven out poorer fisherfolk and led to overfishing. Women's livelihoods as neat weavers have also been undermined. Illegal felling of the mangroves been disastrous for the flora and fauna of Sindh, and the communities that depend on this eco-system for survival.[89]

2.29 percentage of Sindh's 2.782 million acres of green cover are riverine forests. These are protected by the government, and consist of mangroves and rangelands. They are threatened by both deforestation and environmental degradation such as freshwater and environmental flow variation, or rising sea levels. The Indus Delta is crucial to 97 percentage of Sindh's mangrove cover, which is the habitat of over one million people, of whom 135,000 depend on them for livelihoods. Sindh's mangroves are considered biomes that house a great deal of biodiversity, and serve as effective carbon sinks. The depletion of forests in Sindh has already bought about ecological degradation and compromised the socio-economic wellbeing of communities that depend on them.[90]

Commercial interests harming environment and communities

Commercial interests are almost always prioritized over environmental concerns, until they turn into man-made disasters. Respondents in consultations cited multiple megaprojects in Karachi where construction was completed without the requisite environmental feasibilities, and resulted in casualties, financial losses and damage to the environment. Unchecked commercialization of Sindh's environmental resources for entertainment and leisure; arbitrary building projects that further impinge on land ownership of impoverished groups; and blatant disregard for environmental harm that occurs as a result of urbanization, are common to all provinces, but whose consequences are clearly visible in Karachi's metropolitan collapse.

Karachi's thriving wildlife up until the 1960s has disappeared due to massive construction, urban sprawl and pollution-caused asphyxia, in addition to the plantation of 'alien' trees including conocarpus, mesquite, and eucalyptus.[91]

Women's participation in policy still lagging

Respondents highlighted a national challenge whereby women in the climate policy domain were still few in numbers, and needed higher representation at all levels. They cited that the Nationally Determined Contribution aims to enhance women's participation in policy as well as key sectors related to climate change, but this was a milestone as yet far away. Women in national and provincial legislatures, especially those part of parliamentary committees on climate change, were among the most active representatives on climate action. It would serve to build their capacity and resource them in lawmaking related to climate change, as well as push for institutional reform within other public bodies, such as municipal water boards. It was observed that a 'supply gap' has also occurred as women themselves are not opting for careers in public policy, therefore positions for public office will invariably be filled by men.

Rivalry in climate mandates

All climate action is not headed in the same direction, and some of it may be competitive in nature. Respondents felt that there were dissimilar 'climate mandates' being administered in Pakistan, with a perceptible rivalry between the federal and provincial

89. Shah, M.A. (2002) 'A Bleak Future – Women of fishing communities in Pakistan face increasing marginalization' in Yemaya No. 9, April 2002, International Collective in Support of Fishworkers, available at: https://pff.org.pk/wp-content/uploads/2020/08/A-Bleak-of-Future-Women-in-Fishing.pdf
90. CSCCC (n.d.) 'Stakeholder Recommendations for Climate Change Implementation Framework, Sindh' Civil Society Coalition for Climate Change: Islamabad
91. Latif, A. (2019, October 2019) 'Pakistan's Karachi in danger of losing wildlife', Anadolu Agency, available at: https://www.aa.com.tr/en/asia-pacific/pakistans-karachi-in-danger-of-losing-wildlife/1629258

governments that becomes more evident in climate policy. Empowered by the 18th Amendment, provincial government are at liberty to determine their own environmental action plans, although traditionally, federal ratifications of international instruments do inform the provinces' mandates as well. Currently, Sindh was prioritizing other aspects of environmental degradation, especially water management and disasters, but not without scrutiny by federal decision-makers. This rivalry is even more evident in discussions over water sharing and ways to preserve the Indus Basin. Respondents saw this as counter-productive to the national effort to climate degradation and felt that cooperation should be undertaken in all aspects of policy formulation, implementation, data sharing and pursuing outcomes, especially in relation to women and marginalized groups.[92]

Khyber Pakhtunkhwa

Dirty fuel compromises women's respiratory health

Khyber Pakhtunkhwa (KP) shares the energy crisis with the rest of the country. Energy sources used in homes depend on the relative affluence and education of the household members, as well as rural or urban settings. While there is corresponding urban population growth (30.6 percentage in 1990 to 38.3 percentage in 2014) and declining rural population (69.4 percentage to 61.7 percentage), electric power consumption has jumped by 70 percentage during the same period. Households in KP use a variety of energy sources: rural area use biomass in the dry season or fuelwood and kerosene stoves in the wet season; urban areas use electricity, gas, LPG and fuelwood.

Table 7: Variation in the air quality index of major cities of Pakistan from October 2019 to October 2020

	Karachi	Lahore	Islamabad	Peshawar
Oct-19	155	265	111	177
Nov-19	149	186	160	169
Dec-19	210	315	190	215
Jan-20	106	278	129	205
Feb-20	117	195	167	194
Mar-20	69	51	67	77
Apr-20	60	49	65	75
May-20	78	73	69	70
Jun-20	103	112	92	90
Jul-20	120	129	86	102
Aug-20	198	176	109	112
Sep-20	200	201	102	117
Oct-20	204	178	110	124

Source: Rasheed, R., Rizwan, A., Javed, H. et al. 2021.

Prolonged power outages, poor gas supply and increasing prices of fuelwood means that poor households have to rely on 'dirty' sources of fuel, including crop residue and dung. These compromise women's respiratory health, and increase the daily workload of sourcing or preparing biomass. They are also a major source of environmental pollution, especially ambient air quality.[93] The numbers of tuberculosis patients is highest in Swat.[94]

Worsening ambient air quality

Peshawar has ranked among the world's most polluted cities when it comes to air quality. The Hayatabad Industrial Estate alone has 550 factories emitting particulate matter (PM), along with vehicular traffic comprising of buses, rickshaws and trucks that would not pass any fitness or emissions test.[95] Source apportionment studies reveal that emissions from small

92. Rahut, D.B. et al (2019) 'Wealth, education and cooking-fuel choices among rural households in Pakistan' in Energy Strategy Reviews, Volume 24, 2019, Pages 236-243, ISSN 2211-467X, available at: https://www.sciencedirect.com/science/article/pii/S2211467X19300276
93. Abedullah & Tanvir, M. (2020) 'Unveiling the Effects of Indoor Air Pollution on Health of Rural Women in Pakistan', PIDE Working Papers No. 2020:12, Pakistan Institute of Development Economics: Islamabad.
94. DHIS (2015) '3rd Quarter Report', District Health Information System, Khyber Pakhtunkhwa, available at: https://phkh.nhsrc.pk/sites/default/files/2019-07/DHIS percentage20Khyber percentage20Pakhtunkhwa percentage20Qrt percentage2003 percentage20Report percentage202015.pdf
95. Khan, A. (2021, November 22) 'Hazardous living : Peshawar's rising pollution problem', The Express Tribune, available at: https://tribune.com.pk/story/2330496/hazardous-living-peshawars-rising-pollution-problem

industries; domestic reliance on biomass due to shortages of natural gas; brick kilns burning wood, rubber and coal; vehicular traffic using diesel and poor quality fuels; and re-suspended road/soil dust from construction sites and broken roads are major contributors to KP's hazardous air quality.[96] The mushrooming of open air barbeques in major cities, especially Peshawar and Mardan, is also considered to be a source of degraded air quality.

There is a direct correlation of worsening air quality with women's healthcare, especially preconception maternal health and during pregnancies. Higher exposure to Nitrogen Oxide and Sulphur Dioxide result in premature births, abnormal lung development and low birthweight among babies and complications like gestational diabetes mellitus (GDM) among mothers.[97]

A potential reset of the environment can improve the air quality. Table 7 provides a comparison of air quality in different cities, especially during the COVID-19. The air quality data of different major cities of Pakistan confirmed that a decrease in the concentration of primary air pollutants occurred mainly from

March 2020 to June 2020 when strict lockdown was in place, beyond which the air quality worsened again.[98]

Climate Fact Box: Clean Green Pakistan Index and Champions Programme

Under the Clean Green Pakistan Movement (CGPM), the MoCC initiated a Clean Green Pakistan Index (CGPI) for ranking cities against five pillars of Clean Green Pakistan i.e., drinking water, sanitation, hygiene, solid waste management and plantation. The Index is calculated through 35 performance indicators. The pilot has been successfully implemented in 20 cities in Khyber Pakhtunkhwa and Punjab, and was concluded in October 2020. It is being scaled up across 93 cities of Pakistan since 2021. The CGPI is a key tool for integrating accountability mechanisms for WASH in Pakistan.

Source: Economic Survey of Pakistan 2021

Municipal Solid Waste

Pakistan generates approximately 50 million tons of solid waste annually, increasing at a rate of 2.4 percentage each year. This is mostly collected from major metropolitan centres like Peshawar, which discards an estimated 2,048 tons of waste per day.[99] Municipal Solid Waste (MSW) has become a challenge in its collection and treatment, and particularly for the communities that live in adjoining areas. Peshawar city has 12 dumping pits for MSW, the majority of which are filled to capacity, and have created a host of environmental and healthcare issues for those exposed it. Respondents cited that resident of peri-urban localities next to dumping sites suffer from multiple health complications, including malaria, diarrhea, skin disease, and pulmonary complications.

The stench and toxic fumes from the pit have had an impact on the environment as well.[100] Waste finds its way into water bodies and contaminates the soil, groundwater, and food chain. Uncontrolled burning of waste is a source of carcinogens, including dioxins, furans and

96. Alam et al. (2015) 'Particulate Matter and Its Source Apportionment in Peshawar, Northern Pakistan', in Aerosol and Air Quality Research, 15: 634–647, 2015, Taiwan Association for Air Quality Research
97. University of Buffalo (n.d) 'Health Impacts of Air Pollution Exposure During Pregnancy', available at: https://tinyurl.com/4upzrra3
98. Rasheed, R., Rizwan, A., Javed, H. et al. (2021). "Socio-economic and environmental impacts of COVID-19 pandemic in Pakistan—an integrated analysis." Environment Science Pollution Research. Available at: https://doi.org/10.1007/s11356-020-12070-7.
99. For comparative reference, Karachi generates 16,500 tons per day; Lahore 7,690 tons; Rawalpindi 4,500 tons; Faisalabad 5,017 tons per day. International Trade Administration, Department of Commerce, United States (2022, January 27) 'Pakistan – Country Commercial Guideline, Waste Management', International Trade Administration, available at: https://tinyurl.com/epzbrje3
100. Rehman, A. et al (2017) 'Municipal Solid Waste Management Crises in the Developing Countries: A Case Study of Peshawar City' in Sarhad University International Journal of Basic and Applied Sciences, Vol 5, No 1, 2017, Sarhad University of Science and Information Technology

black carbon.[101] This connects with the larger challenge of improper collection, scarce funding, lack of policies, expertise and checks on waste management in Khyber Pakhtunkhwa.

Punjab

Demographic change is the real challenge

Lahore's population currently stands at over 13 million people, and the city is slated to become the world's largest city by 2050, given its population growth rate of 4.14 percentage since about 20 years.[102] This is occasioned by high birth rates and constant migration from rural areas to Lahore, which have resulted in uncontrolled urban sprawl over green farms. Horizontal expansion in Lahore, unlike Karachi's vertical or high-rise development, requires more infrastructural resources which is less efficient when these resources become politically contested or scarce. In the absence of any checks to prevent this urban sprawl, more and more productive land will be consumed by residential development.[103]

Unfortunately, cities do not always turn into engines of growth when they are poorly resourced, badly planned, and their populations have low human development endowments. More than half the urban population across Pakistan is living in slums in metropolises like Lahore. Living conditions in Lahore's slums or katchi abadis have been documented: 38 percentage slums do not have daily water supply; some 18 percentage receive water once in 15 days; nearly 50 percentage slums have no system for sewerage and garbage collection. While 79 percentage households have their own toilets, 13 percentage had shared, 5 percentage used public toilets and the remaining 3 percentage resorts to open defecation.[104]

Limited access to credit for women in livestock

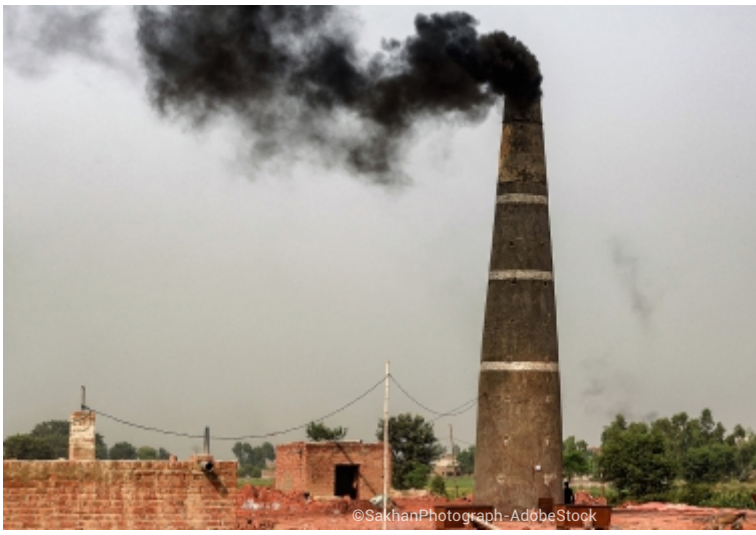
Livestock plays an important role in Punjab's rural economy, contributing an estimated 11.5 percentage to national GDP and constitutes 55 percentage of agriculture's contribution to GDP. 75 percentage of Punjab's rural population is engaged in the livestock sector of whom a sizeable number is women. In recent years, natural disasters have brought about losses, in addition to diseases caused by increasing heat have reduced livestock numbers; droughts in parts of Punjab have reduced grazing zones.[105] More than 90 percentage livestock farmers are smallholders with poor resources who use traditional breeding techniques, low quality and quantity of fodder and outdated managerial practices. Women in livestock find it difficult to access to credit for expanding their business, or to afford veterinary services.[106]

Brick kilns only part of the problem

The move to make brick kilns more environmentally friendly is welcomed, but this is only part of the problem. The 11,000 brick kilns in Punjab marked for zig zag technology will reduce carbon emissions by 60 percentage and save 30 percentage energy in doing so, it was informed.[107] Respondents stated that smog was a

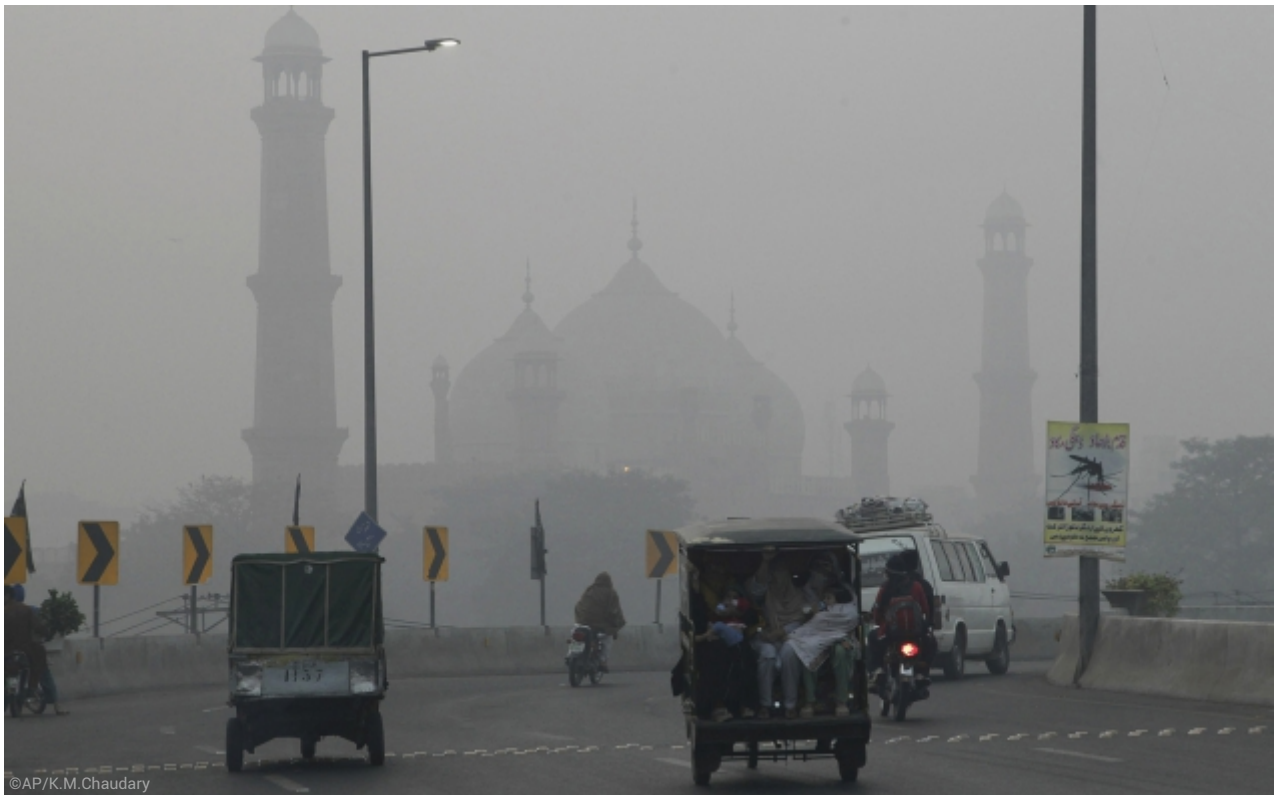
101. World Bank (2021) 'Pakistan: Sustainable Solid Waste Management in Mountain Areas', The World Bank: Washington, DC
102. Khawar, H. (2017, September 6) 'Lahore — world's largest city in 2050', The Express Tribune, available at: https://tribune.com.pk/story/1498663/lahore-worlds-largest-city-2050
103. Adeel, M. (2017, February 19) 'Comparing urban footprint of Lahore and Karachi' in Pakistan Today, available at: https://archive.pakistantoday.com.pk/2017/02/19/comparing-urban-footprint-of-lahore-and-karachi/#:~:text=If percentage20we percentage20calculate percentage20population percentage20density,merely percentage20102 percentage20persons percentage20per percentage20hectare
104. Khan, F.S. (2021, December 4) 'Educational outcomes', The News, available at: https://www.thenews.com.pk/print/913975-educational-outcomes
105. CSCCC (n.d.) 'Stakeholder Recommendations For Climate Change Implementation Framework, Punjab' , Civil Society Coalition for Climate Change: Islamabad.
106. Awan, Z.A. et al (2021) 'Women's Participation and their constraints in livestock management activities: A case study of Bahawalpur District, Punjab' in International Journal of Veterinary Science and Research, 7(2): 083-087.
107. DAWN (2022, January 17), '11,000 brick kilns converted into environment-friendly technology in Punjab, says ministry' available at: https://www.dawn.com/news/1669819

problem that affected cities from "Kabul to Calcutta" and became apparent during colder months when the air is denser; but carbon emissions produced by industrial sites around Lahore were just as active during summer months as well. Environmental compliance by brick kilns is the correct step, but spot checks and penalties on factories and industrial sites just as important to arrest smog. There have been incidents of violence in recent years when city administration officials investigated Lahore's factories.



Climate stress undermining emotional healthcare

An underreported facet of climate stress is the high level of emotional and psychological trauma borne by women as breadwinners and caregivers, and especially in the event of a family death caused by climate induced diseases. The spread of tuberculosis, cholera, yellow fever, diarrhea and other disease correlates with rising temperatures and deteriorations in the environment,[108] which affects children and the elderly. Women experience a decline in their own health from longer hours spent at work, and from poor nutrition. Pre-term births, neonatal deliveries, and miscarriages due to strenuous labour are common among women in districts where climate stress has caused destitution. Studies corrobo-



108. Biello, D. (2008, October 8) 'Deadly by the Dozen: 12 Diseases Climate Change May Worsen', Scientific American, available at: https://www.scientificamerican.com/article/twelve-diseases-climate-change-may-make-worse/#:~:text=Bird percentage20flu percentage2C percentage20cholera percentage2C percentage20Ebola percentage2C,Wildlife percentage20Conservation percentage20Society percentage20(WCS).

rate this finding and suggest that women undergoing repeated migrations due to climate change suffer from high trauma, and often lose children in the process of migration for lack of healthcare facilities or timely treatment.[109]

Balochistan

Indigenous methods suited to climate adaptation

In drought ridden Balochistan, tube wells have driven the water table to 1000 feet below the ground and excluded most people from easy access to water. Balochistan's time honoured practice of using karez technology, which depends on the passive tapping of groundwater through tunnels, is both effective and inclusive, despite challenges in maintenance. The reason why karez channels have fallen into disuse is lack of community resources to maintain them, and governmental support has not always been forthcoming in this regard. Balochistan's karez infrastructure should be recovered, and the 200 karez aqueducts should be revived for remote communities' access to clean water. Respondents identified the need to utilize indigenous practices in a larger integrated water policy that facilitates women as well.

The Indus Basin must be prioritised

Pakistan's climate change frameworks must try and prioritize the needs of the Indus Basin, which receives attention as part of discussions on water scarcity. Balochistan is the lowest riparian in interprovincial water sharing arrangements, and only part of its water needs is fulfilled by tributaries of the Indus. The Indus Basin sustains life across several countries, but it has not been treated as a common ecosystem even among provinces.

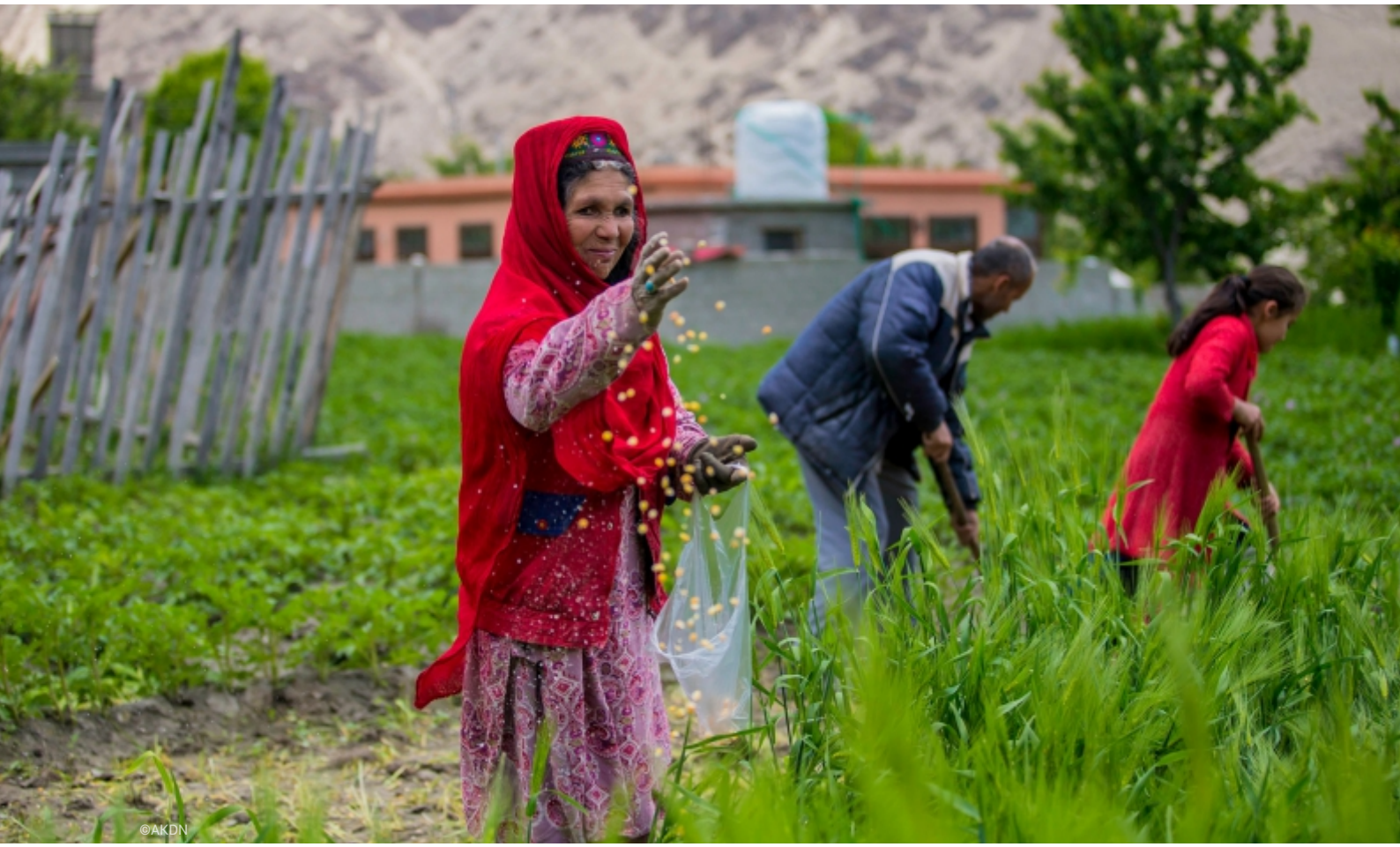
For an effective water-energy-food nexus to be created that supports communities and addresses vulnerabilities for women, a Basin-wide approach must be taken to create complementarities in climate action, and enables a sense of shared resources and commonly held challenges. As of now, intra-departmental competition within the same province was preventing initiatives from benefitting communities at risk.

Population of vulnerable groups unknown

One of the major challenges in devising policies is the lack of adequate enumeration of vulnerable groups. Across all climate relevant sectors, policies are trying to assist vulnerable groups, but without a sense of who and where they are.

There is a significant population of transgendered persons across Pakistan, but the 2017 census puts their population at 10,418, which by any account is underreported. Other estimates hold their numbers at 300,000 or even as high as 2 percentage of the country's total population.[110] There are indigenous people, incorrectly referred to as tribals, and consist of a number of communities including the Kochi, Rabari, Baloch and Bakarwal, who live nomadic lives. There is scant information about their numbers, but they are a highly vulnerable group owing to their poverty, subsistence living, and exclusion from the mainstream. Most of all, the population of persons with disabilities (PWDs) needs more exact data, so that policy interventions can cater to their needs and devise more effective adaptation plans.[111]

109. Abbasi, M.S., Naeem, K., & Ansari, D.H. (2021) 'Climate Induced Migration Among Women: Stories from District Muzaffargarh & District Tharparkar Pakistan', Sustainable Development Policy Institute (SDPI), Islamabad.
110. Punjab Social Protection Authority, Government of the Punjab (2018) 'Transgender Persons Welfare Policy. Government of the Punjab: Lahore.
111. Zaidi, S. & Akbar, H. (eds) (2019) 'Democracy and Inclusion: Fulfilling the Promise of Citizenship in Pakistan', Jinnah Institute: Islamabad



Gilgit-Baltistan

Gilgit-Baltistan is vulnerable to adverse impacts of climatic changes owing to its geographic location between three mountain ranges – Hindu Kush, Himalaya, and Karakorum, geological composition, ecosystem, typography and scattered population. The occurrence of past sporadic incidents in GB are a result of global warming, such as fast melting snow and glaciers, rare snowfall, land slides and heavy rainfalls, and massive floods in 2010 and 2015.

GB is considered food deficient as half of its staple food grains are sourced from other provinces. With a mere 2 percentage of land cultivable for agriculture, most rural households practice subsistence farming and vegetable gardening to meet their nutrition needs.[112] Changing weather patterns have greatly impacted vegetation, pastures, biodiversity and agriculture. Women's 'triple burden' of productive, reproductive and community roles has come under a great deal of pressure with environmental degradation, and especially during natural disasters, when women's caregiving role for the family is critical to the household's survival. Moreover, the dependence of households on women increases manifold during disasters, with or without male family members. PWDs and children are considered the most vulnerable groups during disasters, as they are unable to help themselves from a climatic onslaught and threats of harassment or abuse in other high-risk situations.

Shortage of animal-feed occurs when access to grazing lands is curtailed due to shifting weather patterns or disasters. Lack of fodder brings about low nourishment among animals resulting in reduced milk, meat and wool production, as well as poor immunity from bacterial diseases.[113]

112. Gilgit-Baltistan-Environment Protection Agency, Government of Gilgit-Baltistan (2017) 'Gilgit Baltistan Clmate Change Strategy and Action Plan' Government of Gilgit-Baltistan, available at: http://gbepa.gog.pk/files/GBEPA_CCS_and_AP_2018-07-31.pdf

113. Ibid

Emerging opportunities in tourism

Gilgit-Baltistan is home to five of the world's fourteen mountains that are taller than 8000 meters; several high-altitude lakes; world's biggest mountain ranges – Karakorams and Himaliyas; and world's longest glaciers outside the polar regions. Additionally, it also enjoys presence of rich heritage and topographical diversity (mountains, lakes, plateaus, glaciers, desserts, forests etc.). GB attracts millions of tourists every year. There is dire need to develop and implement an integrated sustainable regional tourism policy which not only facilitates foreign and local tourists but also ensures boosting of industry at minimum cost. If timely investment is made in promoting tourism, it can indeed become a significant source of revenue generation for GB.

Tourism is thriving in Gilgit-Baltistan with more than 2 million tourists visiting annually.[114] This has created new opportunities for employment and economic prosperity. According to estimates, tourism in Pakistan is expected to earn up to Rs. 1 trillion by 2025, in large part derived by the boom in Gilgit-Baltistan.[115]

This is surely expected to generate income across the region, especially in urban areas, and assist livelihoods in rural areas as well. This has also created opportunities for women to market local crafts, organic products and herbal medicines. Women's current labour force participation rate is 39.6 percentage in GB, with 3.59 percentage women unemployed, and 0.81 percentage underemployed.[116]

Land use patterns are dramatically changing in GB, especially in areas where the tourism boom is apparent. Both cultivated and uncultivated agricultural land is being converted into built areas that can accommodate hotels, restaurants and guest houses.[117]

Azad Jammu and Kashmir

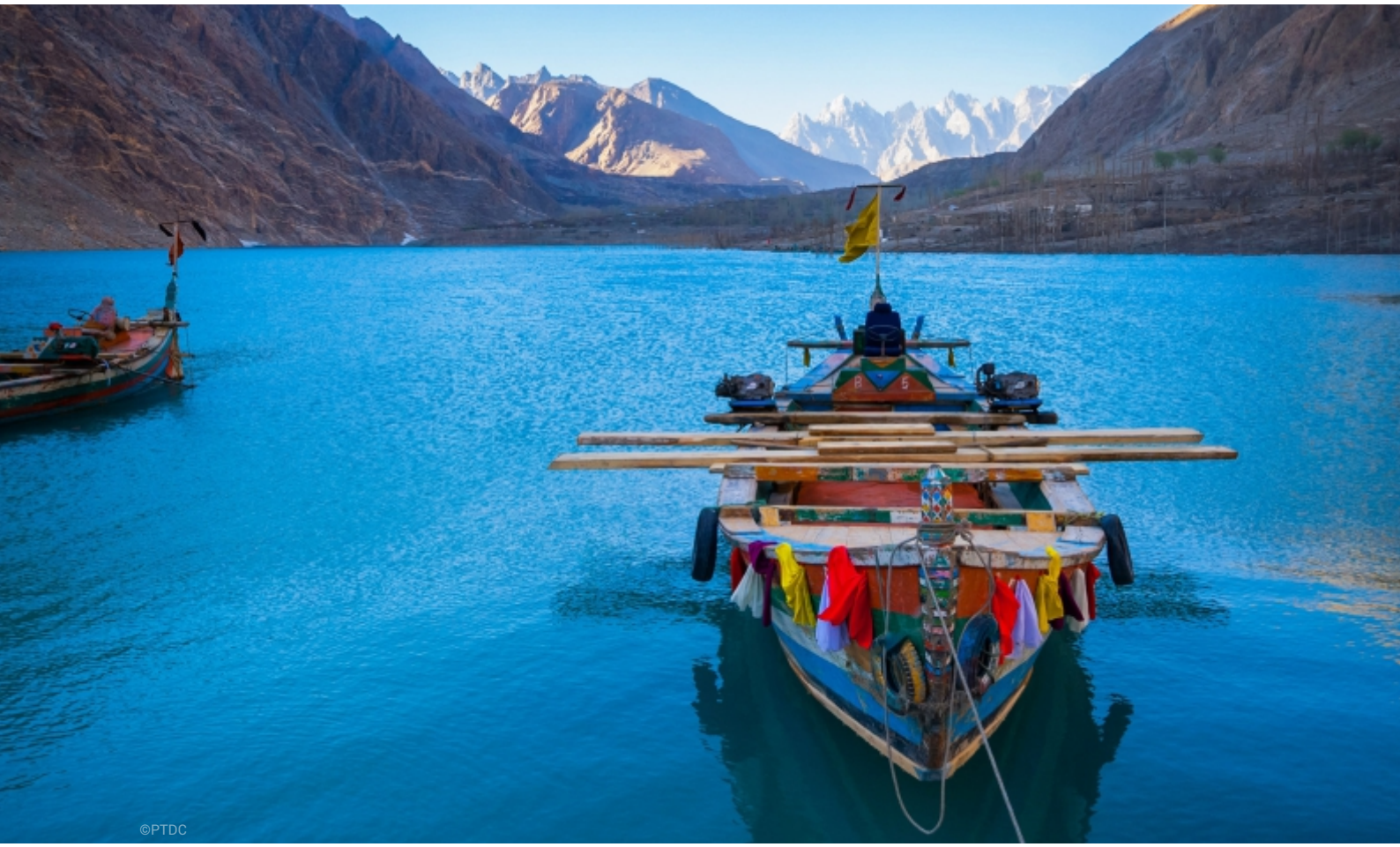
Need for integrating networks of women for climate action

Climate action needs the creative resources of civil society groups, especially women's organizations working on climate change, to come together and aid the work of governments in implementation, monitoring, policy review, and especially tracking outcomes for vulnerable groups. Governments also need to engage NGOs and CBOs for the purpose of conducting policy audits and creating awareness among citizens about adaptation practices. Climate action necessitates 'whole of government' and 'whole of society' approaches.

Climate related education and training for women

Education attainment among women is high across Azad Jammu and Kashmir and introducing climate sciences in universities and colleges will further help women acquire technical knowledge about adaptation and mitigation strategies. This will also help integrate them in policy processes where they can advise the work of governmental departments, as well as forums for policy formulation. Women trained and working in the climate sector can make a real difference in representation and recognition of different communities' needs, and positively impact the status of women impacted by climate stress in Azad Jammu and Kashmir.

114. Planning and Development Department Statistical Research Cell, Government of Gilgit Baltistan (2020) 'Gilgit Baltistan at a Glance 2020', Government of Gilgit-Baltistan, available at https://portal.pnd.gog.pk/Content/Files/Reports/Gilgit percentage20Baltistan percentage20at percentage20a percentage20Glance percentage20New percentage20Design percentage202020 percentage20Final_210554160.pdf
115. Karim, R. et al (2021) 'Estimating he Economic Contributions of Tourism Sector by Using Tourism Satellite Account (TSA) In Hunza-Nager District of Gilgit Baltistan-Pakistan' in International Journal Of Scientific & Technology Research Volume 10, Issue 02, February 2021. http://www.ijstr.org/final-print/feb2021/Estimating-The-Economic-Contributions-Of-Tourism-Sector-By-Using-Tourism-Satellite-Account-tsa-In-Hunza-nager-District-Of-Gilgit-Baltistan-pakistan.pdf
116. Op cit
117. Ali, A. et al (2021) 'Factors shaping economics of land use change in Gilgit Baltistan, Pakistan' in GeoJournal 2021, available at https://doi.org/10.1007/s10708-021-10478-3

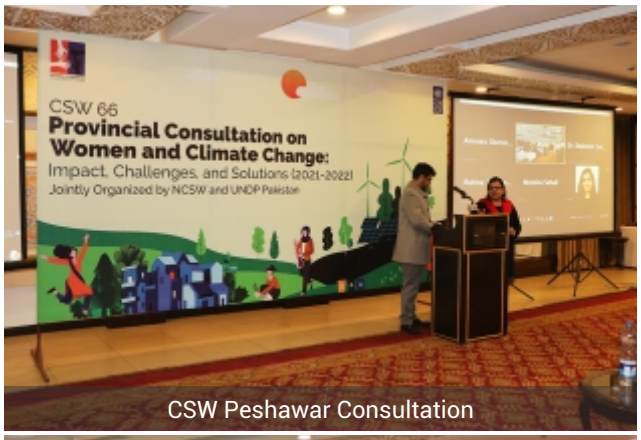


Sensitization for marginalized groups

Sensitization trainings across Azad Jammu and Kashmir and other provinces are needed to inform citizens about marginalized groups, and what they can do to help them, especially in the event of a disaster.

While Pakistan is cited to be among one of the world's most charitable nations,[118] challenges, there is a need to retrain citizens in sustainable living patterns themselves, and channeling their assistance to the marginalized in ways that rehabilitate them. This becomes even more necessary as climate conditions worsen and vulnerabilities intensify. Recognizing this challenge is part of the adaptation process.

118. The News (2020, August 8) 'Pakistan with most generous people to mark Day of Charity on Sept 5' available at: https://www.thenews.com.pk/print/707761-pakistan-with-most-generous-people-to-mark-day-of-charity-on-sept-5#:~:text=The percentage20World percentage20Giving percentage20Index percentage20has,Gross percentage20Domestic percentage20Product percentage20to percentage20charity



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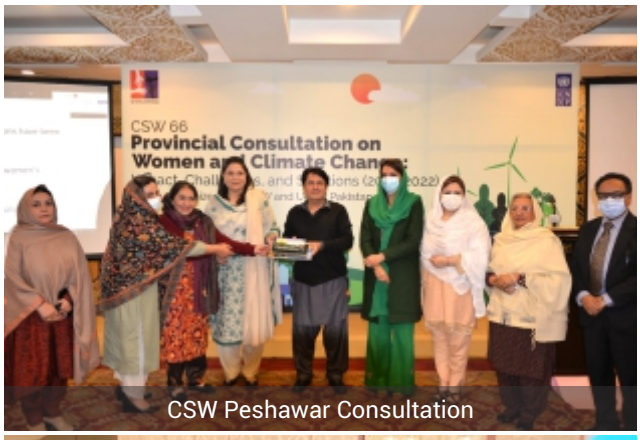

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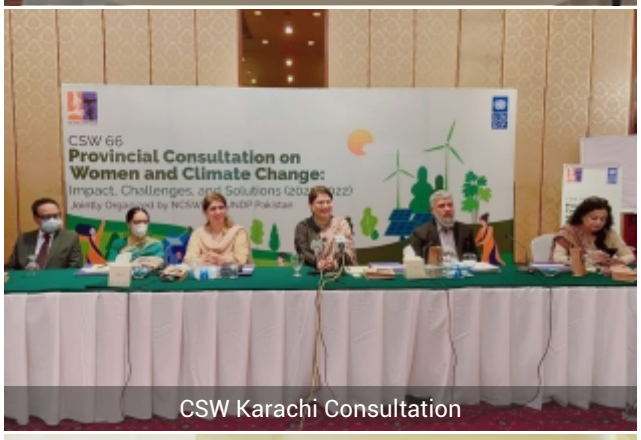

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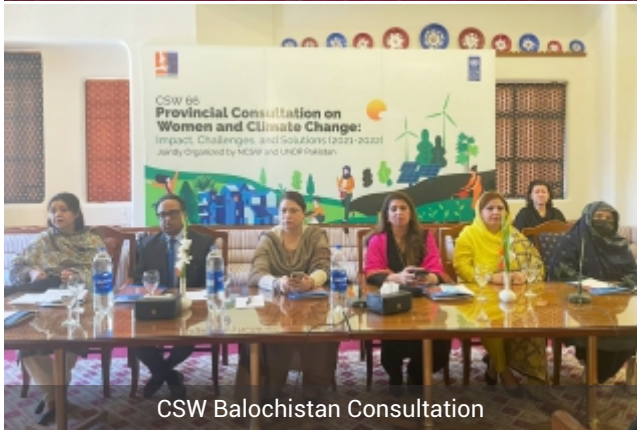

CSW Balochistan Consultation


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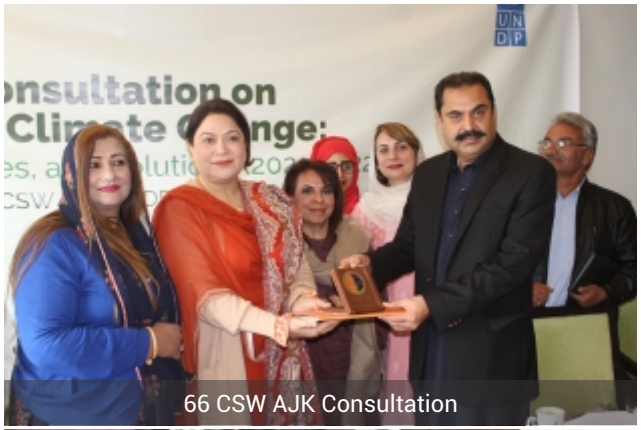
66 CSW AJK Consultation



66 CSW AJK Consultation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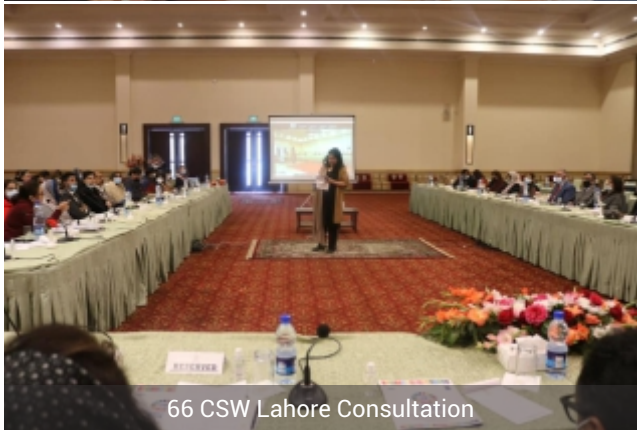
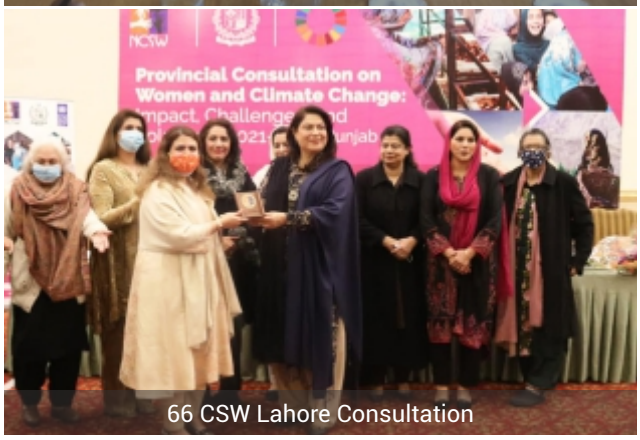

66 CSW Lahore Consultation



66 CSW Lahore Consultation

5 The Way Forward

The Way Forward

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The climate crisis is eroding our livelihoods and lifespans at a pace that outstrips our ability to counter its worst effects, even if we devise responses that adequately meet this challenge. We became attentive to this emergency when the damage had become irreparable, and lives were lost which could have been saved. The climate crisis continues to predate the weakest segments of our society, who have poor coping mechanisms and meagre resources that will not last another natural hazard. The most disadvantaged cohort consists of women.

In meeting this challenge, we ask ourselves, how realistic are our efforts and can our strategies arrest the onslaught? How many lives will we save? Unfortunately, the answers are uncertain in Pakistan, as we have recently mobilized public consensus around this challenge, and are far from reaching our policy milestones.

This report attempts to fill critical knowledge gaps that will help decision-makers grasp the extent of vulnerability women are confronted with during climate stress. This insight has been missing from adaptation strategies or barely explored at length in country level frameworks. This report has highlighted the interlinkage of climate stress with the collapse of vulnerable communities dependent on fragile ecosystems, and underscoring the burdens women are forced to take up as a result, often far exceeding their share.

This report posits a qualitative picture of women caught up in sectors where climate stress is evident: agriculture, forestry, water, disasters, energy and urban planning. The fundamental question is whether our strategies can bring a modicum of relief to women in these sectors, who have historically been side-lined from public entitlements, and whether equity can be enabled through minor amendments in policy that create significant benefits in their lives. These include greater inclusion and representation; easier access to livelihoods, decision-making and autonomy; increased agency, security and resilience.

The contribution of this analysis has been to emphasize that women's vulnerability can be reversed through amendments in policy, if made along the principles of climate equity and justice. These are neither difficult to institutionalize, nor unfamiliar to practitioners who appreciate the urgency of helping communities in need. These inclusions will save the lives of women caught up in climate stress, as well as their families and communities. Most of all, it will help roll back deeply entrenched exclusions created and perhaps reinforced through policy action.

The climate crisis is very much an opportunity in this respect. By embarking on a climate mission that aims to assist women in sustaining themselves, as well as saving the environment, we can establish a system of equitable benefit sharing with a transformative impact in the long term.

Key Recommendations

I. **[Governments and development partners] Develop a keener understanding and awareness of the interlinkages between climate degradation and women's deteriorating plight**, as managers of the natural environment, homes and communities. The gendered differential occurring due to climate stress is still unknown to many practitioners, especially those unfamiliar with the human fallout of climate change. The socio-economic impact on society, and therein the effect on women and marginalized groups, needs to be prioritized over technical-administrative approaches.

II. **[Governments, development partners and CSOs] There is a need for gender proofing of policy frameworks on climate change**, through developing plans of action for assessing the state of gender equality in the country, targeting inadequately explored gaps, or priority areas and conducting broad-based consultations with stakeholders that help propose strategies on gender mainstreaming, including ways in which policies, programs, and budgets may reflect gender sensitivity, and deliver outcomes that impact women favourably.

III. **[Governments and development partners]** For

institutions tasked with climate relevant mandates, **define measurable goals and indicators linked to outcome targets that achieve gender equality benchmarks**, define responsibilities, timelines, action plans and monitoring mechanisms that assist this effort, incorporate gender mainstreaming requirements as an expectation in engagements throughout the environment and climate sectors, and incorporate gender equality objectives in staff performance appraisals as well.

IV. **[Governments and public] Reset knowledge systems on water, agriculture, forestry and energy** away from top-down engineering-dominated solutions towards promotion of local knowledge and practices of specific populations. This will enable greater equity in natural resource management practices, and reveal a better picture of vulnerability and resilience.

V. **[Governments, CSOs and public] There is a need to collect data on micro-level transactions occurring every day** that reveal how household demands vary according to income, locality, sources of climate stress, and how women are altering usage of natural resources in response to their shortages. There is a preponderance towards macro-level initiatives that seek system-wide improvements, whereas any understanding of resilience or vulnerability needs a closer examination of human behaviour during climate degradation.

VI. **[Governments, development partners, CSOs and public] Duly recognize women's capacities and capabilities in DRM and do not limit only to highlight their vulnerabilities**. Women must be supported in building up their households' and communities' resilience during climate stress. Only care-giving role is associated to women, but leadership role needs to be given to them as well for an inclusive DRM.. At the same time, recognize and reverse gender discriminatory practices that are deeply embedded in local culture, especially through dismantling barriers to access, information, benefits, and overall empowerment so that the policy interventions are truly transformative.

VII. **[Governments, development partners and CSOs]** A more detailed study needs to be undertaken on each sector of climate adaptation with regard to gender implications, which this report has touched upon.

VIII. **[Governments]** Environmental vulnerability indicators for women need to built into the National Census. These need to formulated, technically vetted, and deployed as soon as possible, so that more definite statistics are available for policy interventions over the next decade.

IX. **[Governments, CSOs and public]** A public awareness campaign needs to be undertaken for citizens that engages them in climate action and sensitizes them to the need for environmentally conscious behaviours.

X. [Governments, development partners, CSOs] As part of cultivating women's leadership in climate action, forums need to be created that train women in climate policy analysis, negotiation and representation.

Overall Recommendations

Climate Equity

I. **Comply with the Constitutional injunction to provide a safe and clean environment for all citizens**, and enable access to environmental resources for survival, sustenance and livelihoods, especially in provinces and districts where vulnerability for women is higher.

II. Ratifications to international instruments (such as the Kyoto Protocol and Paris Agreement) require mandatory periodic assessments on progress and capacity. **Subscribe to international commitments more holistically and encourage the adoption of their mandates in provinces**, especially as they relate to equity and inclusion of women and marginalized groups in climate action and as recipients of benefits.

III. **Develop a keener understanding and awareness of the interlinkages between climate degradation and women's deteriorating plight**, as managers of the natural environment, homes and communities. The gendered differential occurring due to climate stress is still unknown to many practitioners, especially those unfamiliar with the human fallout of climate change. The socio-economic impact on society, and therein the effect on women and marginalized groups, needs to be prioritized over technical-administrative approaches.

IV. **In reviewing climate policies and procedures, take equity as a guiding principle to determine outcomes**. This means enabling distributive justice in the share of benefits; procedural justice in resource transactions between citizens and state; and preserving the environment for future generations. This will require scrutinizing climate policies from their intended outcomes, and determining whether they enlarge the scope of benefits

for vulnerable cohorts.

V. **Build analytics for women's vulnerability in climate policies**, as this is critically important for assessing the conditions they face; their relative resilience; and whether policy frameworks are benefit oriented. So far Pakistan's climate policies and implementation framework have no metrics devised to assess the human impact of interventions. This must be the first step in that direction.

VI. **Do not see women as victims only**, it serves to remind each time. It is well documented that women manage the natural environment, produce food for entire countries, nurture and manage communities while climate stress exacts a daily toll. Their agency needs to be bolstered through removing hurdles that create and entrench gender differentials, in addition to making goods and services available to them that enhance qualitative life, worth and capacity.

VII. **Enhance the share of all marginalised groups in policy procedures, through inclusive representation, participation, negotiation and leadership**. This is mandated by the Gender Action Plan, as well as country strategies for climate action.

VIII. **Standardise vulnerability assessments.** Multiple models are in use and bring their strengths to the analysis, but it will be helpful to apply a common standard across all sectors to allow comparability.

Gender proof climate policy

I. **Recast the major guiding documents on climate action**, including the NCCP and FICCP, from a gender lens, and incorporate strategies that are inclusive and respond to women's vulnerability and resilience across environmental sectors, and enhance their stakes in adaptation and mitigation mechanisms.

II. **The technical-administrative overhang in climate policies needs to be replaced with a gender sensitive approach to overall climate action.** Climate indicators should be seen in tandem with human development indicators so that interventions can pursue both ends simultaneously; interventions that inadvertently entrench exclusions for women and marginalized groups must be reviewed and replaced.

III. **There is a need for gender proofing of policy frameworks on climate change** through developing plans of action for assessing the state of gender equality in the country, targeting inadequately explored gaps, or priority areas and conducting broad-based consultations with stakeholders that help propose strategies on gender mainstreaming, including ways in which policies, programs, and budgets may reflect gender sensitivity, and deliver outcomes that impact women favourably.

IV. **The policies/frameworks must be set to deliver transformative changes for women**, especially through addressing the root causes of inequality and exclusion, unequal power dynamics, unequal capacities to navigate and negotiate with socio-economic and political stressors that threaten growth and even survival during climate stress.

V. For institutions tasked with climate relevant mandates, **define measurable goals and indicators linked to outcome targets that achieve gender equality benchmarks**, define responsibilities, timelines, action plans and monitoring mechanisms that assist this effort, incorporate gender mainstreaming requirements as an expectation in engagements throughout the environment and climate sectors, and incorporate gender equality objectives in staff performance appraisals as well.

VI. **Gender mainstreaming, gender sensitization and training** should be conducted for policy planners and implementers for integrating gender in the work of climate related ministries and departments, especially those whose policy frameworks are not gender friendly.

VII. **Develop and implement the ccGAP (Climate Change Gender Action Plan)** through gender-sensitive and gender-responsive procedures, while supplementing the roadmap provided in the NDC for achieving outcomes for gender empowerment and equality as a priority.

VIII. The importance of sex-disaggregated data is paramount. **Develop climate specific data sets that review human vulnerability and resilience in tandem with climate degradation at national, provincial, district and local levels.** In particular, develop and disseminate data on women's vulnerability and resilience across all sectors where climate stress is evident, including water, agriculture and food security, forestry, disaster management and energy. The national census scheduled for 2023 can incorporate gender specific climate indicators in the enumeration exercise, as one way to do this.

Sectoral Recommendations

Agriculture

I. **Evolve a gender-responsive approach for introducing climate-smart agricultural (CSA) practices.** Since men and women contribute and benefit differently from the sector, the planners introducing CSA practices must pay heed to gendered differentials in food security, while promoting adaptation, mitigation and resilience.

II. **Involve women and vulnerable groups in climate-smart agriculture** (CSA) to increase chances of favourable gender-related outcomes that help decrease poverty and increase sustainability. Very few farmers have taken up CSA practices due to higher costs, and benefits accruing in the long-term. Since women have less access to resources, including labour and money, and less secure land holdings, they will find it harder to adopt CSA practices on their own.

III. **Ensure that technologies and extension services respond to women's needs.** New technologies for drought-resistant crops or irrigation practices will be more effective when they cater to the needs of women. Women must be consulted thoroughly while switching to new technologies.

IV. **Eliminate legal discrimination against women's ownership of assets, especially land tenure ship.** Enhancing women's ownership and control over land has brought about increased productivity and welfare in other contexts, improved food security and enabled a key source of resilience for communities in distress. Undertake the reform of laws that restrict women's ownership of and/or access to productive resources.

V. **Make it easier for women to access critical agricultural inputs** such as land, labour, credit, equipment, and services that allow them to adapt their agricultural practices. Women's participation in decision making related to technology adoption and land is also limited.

VI. **Collect more specific data on the agriculture sector** that highlights sources of vulnerability and resilience. This will allow more informed gender analysis, and gender-sensitive programming for all adaptation and mitigation actions. Establishing gender disaggregated information is the first step in addressing knowledge deficits and identifying gender barriers and opportunities.

VII. **Integrate gender analysis and gender-sensitive tools** (assessment, design, monitoring and evaluation) into all climate related interventions, especially in the agriculture sector.

VIII. **Pay attention to how information needs differ for men and women.** Neither are receiving adequate climate-related information to make their decisions, but women are more marginalized in this respect. Ensure that interventions do not create privilege systems and barriers for women.

Water

I. **Combine gender equity and equality commitments with water-related goals** to enable gender mainstreaming in the water sector in Pakistan, and ensure that the needs and concerns of men and women are identified and addressed. Reorient state institutions towards principles of equitable water sharing at the local level, and enable an institutional understanding of gender mainstreaming in the water sector.

II. **Reset knowledge systems on water** away from top-down engineering-dominated solutions towards promotion of local knowledge and practices of specific populations. This will enable greater equity in water management practices, and reveal a better picture of vulnerability and resilience.

III. **Enable the use of emerging technologies for women** in the water sector can so that gendered divisions of labour are disrupted, especially the search for water that requires travelling long distances. Bringing about interventions in water supply, irrigation, agriculture and sanitation that target women and win the cooperation of men, will boost resilience on ground and enable empowerment.

IV. **Support and enhance collective action among women groups**, and reorient them towards income generating activities rather than subsistence only. Women must graduate from kitchen gardening to productive agriculture. Such a move will need the support and training of more women acting as facilitators, service providers, experts, financial managers, etc.

V. **There is a need to collect data on micro-level transactions occurring every day** that reveal how household water demands vary according to income,

locality, sources of climate stress, and how women are altering water usage practices in response to water shortage. There is a preponderance towards macro-level initiatives that seek system-wide improvements, whereas any understanding of resilience or vulnerability needs a closer examination of human behaviour during climate degradation.

VI. **Explore the equity implications of new technologies being introduced.** While new technologies enable better water usage and productivity, it must be seen whether their benefits reach small farmers and farming-dependent households, as opposed to benefitting large agri-businesses and landowners.

Forestry

I. **Take urgent action to expand Pakistan's forest cover by carrying out mass afforestation** involving women, youth, and other marginalized groups. The Ten Billion Tree Tsunami Project has done well by giving 10 percentage share to women-owned nurseries. It must bring women to the center of afforestation, and make them the chief beneficiaries of this exercise, rather than hold marginal roles that supplement the larger activity.

II. **Increase and streamline efforts to curb deforestation and promote conservation.** This is usually a male dominated preserve, but increasing women's participation in forestry institutions has demonstrated improved forest governance and greater sustainability of resources. The communities with women responsible for forestry reveal better forest conditions, forest regeneration and canopy growth.

III. **Mitigate illegal timber logging and address corruption in the forestry sector.** By including women in forest audits, monitoring mechanisms and reporting, a degree of corruption may be curtailed. This recognizes that women should not be cast into roles that bring about insecurity for them and their families; rather establishing accountability in any sector requires both men and women to challenge corrupt practices. The inclusion of women in climate accountability overall must be promoted.

IV. **Invest in research initiatives that reveal gendered aspects of forestry and climate stress.** Gendered indigenous ecological knowledge can provide critical guidance in the adoption of culturally sensitive, and gender responsive forestry initiatives. Partnerships with researchers, agriculture experts and forest inhabitants may very prove useful in this respect.

V. **Establish province-based institutions for forestry related research**, education, training and monitoring, that cater to a large number of women. Such institutions are especially needed in Khyber Pakhtunkhwa, where forest communities are engaged in indigenous medicinal practice.

VI. **Develop a gender responsive policy for forestry** to pay attention to the challenges women experience on ground, and their differentiated needs and knowledge on forest preservation and protection.

Energy and Urban Planning

I. **Develop a gender-responsive framework for the energy sector through gender-mainstreaming in energy policies and budgets**, with clearly stipulated targets and impacts. There must be a recognition of how urban, rural, and low-income women experience different energy challenges, and have poor access to energy services on account of inadequate fuel types, lack of technologies, knowledge and skills, immobility and time constraints; in addition to cultural barriers. Design interventions that are gender-sensitive and that address broader social and economic inequities for women.

II. **Develop an integrated energy framework** that creates a nexus among access to energy supply, energy services and the gendered use of energy at local levels. Decentralization and distribution of the energy system can bring this about, and effectively address local imbalances and challenges for women, while allowing for community participation and innovation by women. Ministries and line departments should leverage community-based energy solutions through partnering with local small and medium energy initiatives or CBOs to work with communities that have limited access to energy sources. This will enable regulatory oversight and overcome oversight of cultural practices.

III. **Increase women's representation in the energy sector as key agents of** change in at all levels of the energy-supply chain. This will need establishing gender quotas, creating enabling environments and support structures; and granting equal opportunities for employment and occupational mobility. In particular, building technical skills and training in science-based education is needed.

IV. **Revise energy policies in line with other policies for**

gender equity including gender-sensitive urban planning and design, healthcare policies, equal opportunities in education, mobility and employment, financial inclusion and digital rights, etc. The availability of gender disaggregated data on energy access, as well as other fields is critical to this exercise.

Disasters Management

I. **Prepare women for leadership roles in the whole spectrum of disaster management- DM** (humanitarian response, rehabilitation, reconstruction, and community-based disaster risk management (CBDRM) to ensure a women's and community-led humanitarian architecture. While being in the decision making and at the leadership levels, women contribute towards gender-inclusive policy and implementation processes around community's and women's differentiated needs.

II. I**ncrease women's representation in the DM institutions from national to local levels.** Women can best represent communities, especially women, children, elderly and persons living with disabilities, whom they provide care during emergencies and in normal circumstances at the households as they know their special needs better than men. They can best facilitate implementation of gender sensitive disaster risk management (DRM) policies and procedures.

III. **Include interventions in DRM to address women specific issues** such as hygiene and reproductive health needs, access and mobility challenges, barriers in accessing information and developing skills, and sexual and gender-based violence. Ensure that these considerations are built in all tiers of disaster management.

IV. **Women should be given special role in camp management.** This will help reduce vulnerability of women and girls to sexual abuse and gender-based violence.

V. Duly **recognize women's capacities and capabilities in DRM and do not limit only to highlight their vulnerabilities.** Women must be supported in building up their households' and communities' resilience before and after disasters. Only care-giving role is associated to women, but leadership role needs to be given to them as well for an inclusive DRM.

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