



**A
POLICY
DIALOGUE**

ADAPTATION

Towards a Resilient Pakistan

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ACRONYMS

ADB	Asian Development Bank
AEZ	Agro-Ecological Zones
CrPC	Code of Criminal Procedure
EDI	Executive Development Institute
EPA	Environmental Protection Agency
EPC	Environmental Protection Commission
FATF	Financial Action Task Force
GDP	Gross Domestic Product
GHG	Greenhouse Gas
ILO	International Labour Organization
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
MFF	Multitranches Financing Facility
NAP	National Adaptation Plan
NCOC	National Command and Operation Centre
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organization
NSPP	National School Public Policy
ODA	Official Development Assistance
PCC	Provincial Coordination Committee
PKR	Pakistani Rupee
PM	Particulate Matter
SIFC	Special Investment Facilitation Council
SRO	Strategic Recovery Objectives
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
US	United States
WAPDA	Water and Power Development Authority
WASH	Water, Sanitation, and Hygiene
WWF	World Wide Fund for Nature

Rector's Message

The National School of Public Policy is the premier national institution for long and short training of civil servants, executives, academia and social sector practitioners in Pakistan. The training methodology of the school as followed by both the National Management College and the Executive Development Institute (EDI) aims at fostering an environment of intellectual freedom amongst participants for analysis and a genuine desire to seek knowledge. In addition through the EDI, NSPP also holds policy dialogues. The overarching aim of the NSPP is to improve the quality and effectiveness of public policy and its implementation.



This dialogue was part of the policy dialogue series conducted through EDI and was a sequel to the successful policy dialogue held earlier on climate change. This was considered necessary as recent disasters have shown that climate change requires not just an understanding but a robust response for better adaptation and resilience. The rapid change in global climate since the mid-19th century, with consistently rising temperatures and worldwide extreme weather and catastrophes continues at an alarming rate. If this pattern continues climate costs will rise and pose formidable risks to global food security, water, and health, amongst many other sectors. Pakistan has experienced erratic weather changes over the last few years, and the average temperature is rising steadily. Such a high temperature does not augur well for the security of life and socio-economic activity, as it is an issue of national security.

While Pakistan contributes less than one percent to global greenhouse gases, it is paying a heavy price in the form of recurring climate-induced calamities. This underscores the global community's need for 'climate justice' and the need to enhance our indigenous capacity for climate adaptation and resilience. EDI in keeping with its tradition of generating critical discourse on issues of national importance held this dialogue. The Speakers deliberated on Pakistan's climate-related challenges and did an analysis of the gaps in the climate governance framework to explore avenues for a more climate-resilient future.

The sessions lead to vibrant discussions and a rich exchange of ideas for formulating concrete recommendations to advance the mainstreaming of climate adaptation policies, plans and actions. The policy dialogue was successful in its aim of generating much-needed debate on mechanisms that can facilitate the process of adaptation, mitigation, and resilience. EDI worked hard to prepare themes of the dialogue, which were carefully selected to cover topics such as climate science, adaptation and mitigation awareness, sectoral analysis, climate financing, and international climate negotiations.

An international expert was also invited to share insights on this crucial topic. The salient points of this critical discourse have been captured along with recommendations in this Report. The Report will hopefully lead to a better understanding and help in policy formulation by various stakeholders.

Dr. Ijaz Munir
Rector NSPP

Executive Summary

The Executive Development Institute (EDI) of the National School of Public Policy (NSPP) is a leading public sector institute that conducts policy dialogues, short trainings, and webinars on issues of national significance. In this regard, it held a policy dialogue on “Adaptation: Towards a Resilient Pakistan” on November 7-8, 2023. The Dialogue carried thematic continuity with some of the previous dialogues and seminars held around internal migration and climate change due to the interlinked nature of these topics.



The world has faced multiple disasters due to man-made climate change. These include floods, droughts, heavy rainfall, bursting of glacier lakes and melting of the glaciers as well as unusual weather patterns, amongst other variations in climate. Global climate change has always happened but never at the pace at which it is taking place now. Scientists believe that this is due to human activity and thus term it as ‘anthropocene’. Scientists tell us that world surface temperature has been rising since the middle of the 19th century, which coincides with the start of the Industrial Revolution. It is this increase in temperature which has led to increasing frequency and severity of climatic anomalies and extreme weather events. Some places receive their annual rainfall in hours, while in others, prolonged dry spells have led to raging forest fires. The repercussions of the unprecedented flooding of 2022 in Pakistan are still being felt while many experts feel that this is the beginning of many such climatic disasters.

Although Pakistan is responsible for less than one percent of global GHG (Green House Gas) emissions; however, it is among the 10 most vulnerable countries in the world to climate-induced disasters. Given this, Pakistan must adopt an effective adaptation strategy to cope with this alarming situation. As part of its efforts, Pakistan adopted a National Adaptation Plan in 2023 identifying priority areas for action, such as water and agriculture, natural and human capital, and urban resilience, etc. It maps out implementation strategies based on institutional arrangements, monitoring and evaluation, and funding.

The UN Secretary-General António Guterres recently issued a stark warning, saying that “humanity has opened the gates to hell” regarding the steadily worsening situation. Thus far, most countries, especially developing nations such as Pakistan, have taken a reactionary approach to climate disasters. This is an untenable situation considering the gradually worsening impact of climate change on an exponential rather than linear scale. One of the major issues that arise while attempting to devise strategies to deal with the impact of climate change is the scale, scope, and timelines that such solutions require. The planet previously witnessed climate change over a large span of time and not mere decades. The time is, therefore, running out to control its detrimental effects before it is too late.

Pakistan is however confronted with multi-pronged issues when it comes to tackling the issue. Even when there is awareness and adaptive measures, political will, capacity, and policy gaps create hurdles to effective implementation. Inconsistent policymaking also does not help the situation. Different issues, such as bureaucratic red tape, lack of coordination and collaboration within the ministries and tiers of government, further exacerbate the situation. In addition, the civil society feels that it is not being made a full part of the national effort. There seems to be lack of awareness among the general public with regard to the severity of the

issue and its causes. In addition, international and regional politics also plays a role in hindering progress on the issue. There is also a difference in emphasis, with the developed nations focusing on mitigation, whereas developing nations want priority to be given to adaptation.

Policy formulation is made complicated by the maze of overlapping federal and provincial concerns. Many issues pertaining to climate change fall within the domain of the provinces. To deal with a sprawling issue that intersects and overlaps with every aspect of human society at some level, disjointed and discordant policies only serve to waste precious resources and efforts. Secondly, lack of credible data, knowledge-backed understanding, and absence of stakeholder consultation may lead to policy making being carried out in a vacuum. Policies formulated upon a dearth of information or off-the-mark approximation which can lead to unintended consequences. Haphazard implementation of patchwork policies has led to the squandering of effort and resources on half- formed strategies or ill-conceived solutions. There is a lack of funding, and policy inconsistency makes it even more difficult to implement long-term plans which can ensure more consistent and reliable outcomes. One of the most direct impacts of climate change is on food security, which poses a major challenge to Pakistan, which already suffers from highly inefficient agricultural practices and stagnant agricultural productivity. Pakistan ranks fourth in the internal migration index in the world. Internal migration and displacement have led to rapid, unplanned, and poorly planned urbanisation, which is tearing the social fabric of cities apart and becoming a massive sink for public funds.

The speakers highlighted that in terms of climate finance and funding, there is a need to understand that there is no such thing as a free lunch. The economic viability of projects must be sound and the implementation guaranteed to obtain funding. Furthermore, much climate funding frameworks cater to mitigation rather than adaptation and are geared more towards smaller nations.

Pakistan's well-lauded, well-coordinated, and unified response to the pandemic is a success story from which lessons can be drawn. It is of utmost importance to spread awareness across state organs that the severity, scale, and depth of the issue requires a "whole of government" and a "whole of nation" approach. It requires the three organs of the state — the Judiciary, Legislature, and the Executive to be aligned and in sync. A multi-pronged, multi-dimensional approach that is localised and granular in nature according to on-the-ground realities is key. Local governing bodies, as well as public-private sector cooperation, can also play crucial roles in ensuring desirable outcomes. The education sector can play an invaluable role in creating grassroots-level awareness and solutions which revolve around the need for changing attitudes. An active and vigilant civil society is also crucial in gathering momentum to tackle issues pertaining to environmental protection.

It would be prudent to escalate the matter to the highest levels of governance to allow enhanced access to the required material and political resources and willpower to implement solutions. There needs to be a consensus on the fact that climate change is not some distant threat looming on the horizon—it is already here, and survival is contingent upon adaptation.

Mr. Ahmad Nazir Warraich
Dean EDI

Climate Change Adaptation

Understanding the Need and Necessary Steps (in keeping with the National Adaptation Plan)

Mr. Saroop Ijaz

Mr. Saroop Ijaz is a lawyer, legal expert and a human rights defender. He is a keen observer of the human rights situation, with particular reference to Asia. He has written extensively on the topic in major publications in the country. He is deeply committed to the protection of human rights. He is currently working as Senior Counsel for the Human Rights Watch (HRW) and teaching at LUMS, one of the top educational institutions in the country.



Mr. Saroop Ijaz briefly touched upon the causes and effects of climate change and stated that any climate crisis is also a human rights issue. He spoke about the National Adaptation Plan (NAP) and its connotations for climate policy in Pakistan.

Changing Climate: Causes and Impact

The Speaker began his talk by pointing out the abysmally high air pollution figures in Lahore, stating how the PM 2.5 measurement of air pollution stood at 324, whereas any level below 50 is considered desirable and anything above 300 is hazardous. To convey the immediate implications of these numbers, the Speaker shared figures from 2019 that reported over 235,000 premature deaths attributed to health issues arising from poor air quality.

Mr. Ijaz then defined climate change as long-term changes in weather patterns. He said there is a mounting body of evidence that attributes such changes to human activity since the onset of the Industrial Revolution. The particulate matter suspended in the atmosphere traps many more pollutants, which then blankets cities with toxic smog known to be detrimental to health. He added that smog was just one element of climate change, with numerous others (known and as yet unknown), with far-reaching consequences that impact the entire society and thus require a structured engagement framework backed by a whole-of-government approach.

The Speaker added that the impact of climate change was something every country in the world would be facing in different ways. Whereas some regions were experiencing torrential rains, others faced severe drought, and small, low-lying island nations such as Maldives were at risk of being entirely submerged as water levels rose.

Mr. Ijaz framed the need to view the climate crisis as a human rights crisis and said that the cost and repercussions of climate change are not distributed equally. He said the already vulnerable—the poor, agriculture-dependent communities, women, people with disabilities and those with pre-existing health conditions suffer disproportionately.

He categorised Climate crises as a Human Rights issue

A Brief Look at Case Law

Mr. Ijaz pointed out that the Constitution of Pakistan, in its current form, does not explicitly address the issue of climate change and its related effects. However, there is a landmark judgment of the Supreme Court in the Shehla Zia vs. WAPDA case (PLD 1994 SC 693) that expounded upon the right to life enshrined in Article 9 of the Constitution to include the right to live in a clean, habitable environment, with an ensured minimum quality of life.

This public interest litigation came before the Supreme Court of Pakistan when petitioners challenged the construction of a nearby electricity grid station due to potential health risks and hazards. The case addressed a range of issues, including environmental protection and an expansive interpretation of the right to life.

The Judgment expounded that a safe and healthy environment was also included within right to life. The Case established the application of the precautionary principle where there is a threat to environmental rights. It emphasized the positive obligations of the State in protecting the right to a clean and healthy environment. Furthermore, the Ruling placed a notice and comment restriction on government agencies with regard to projects that could potentially pose a public risk. This case is also noteworthy in how it has laid the foundations for future public interest litigation brought before Courts for environmental protection.

Pakistan and Climate Change

He said that due to a number of factors, the impact of climate change for Pakistan were quite severe, such as unprecedented flooding, the loss of life and livelihoods, as well massive displacements and infrastructure damage. He emphasised that changing climate in Pakistan is likely to continue.

He added that Pakistan's topography was of a varying nature, and the land has seen some of the highest temperatures ever recorded on earth in Jacobabad and Sibbi. The scope and scale of challenges thus require an urgent response of a proportionate nature.

Mr. Ijaz further pointed out that Pakistan is amongst the fastest urbanising countries of the world, with Sindh as the fastest urbanising province. He explained that this is not due to rapid economic growth but rather due to a failing economy.

The Speaker went on to highlight the importance of water management and said that it was high time that a serious conversation was initiated on the decolonisation of water as it is fast becoming a scarce commodity that most Pakistanis cannot afford.

Mr. Saroop Ijaz laid out two differing paths towards dealing with climate change, one being climate resilience and the other being climate adaptation, considering both complementary. He added that climate change requires action on every level as individuals, societies, and governments need to synergise with adaptive actions aimed at reducing the vulnerability of natural and human systems and may also include actions to reduce exposure and sensitivity to climate effects with increasing capacity.

He said that the challenge is in the implementation of National Adaptation Plan and generating the political and the funds for its implementation

He stated that the NAP addresses climate change in key areas that need to be acted upon for desired results. It also agreed that the NAP was still an evolving document, in the works since 2012-2013, as the current iteration covers a time period between 2023 and 2030; therefore, selective measures and steps have been proposed, and more would certainly follow up subsequently. To that end, the most critical vulnerabilities and risks that Pakistan faces are rising temperatures, uncertainty in rainfall and monsoon patterns, their impact on food security and displacement, the unforeseen consequences of glacial melt and snowmelt, and the increased risk of drought and flooding.

The challenge, according to the Speaker, lies in addressing these issues against the backdrop of weak economic performance and a rigid, inefficient agricultural system, rapid population growth, high levels of urbanisation, weak governance and persistent security concerns. On the social and demographic end, an overburdened healthcare system, low literacy rates, and high gender inequality make the challenge more complex to handle especially as the situation is exacerbating with growing water scarcity, land degradation, and declining forest cover.

The Speaker stressed the need to evaluate every action with extreme care and analysis of impact. The integration of climate adaptation should be made a part of strategic decisions which in turn must be derived from evidence-based solutions, which should promote pro-nature solutions that shall be adapted to local conditions and be inclusive. It is evident that in addition to rural and agricultural development, Pakistan also needs to address its rapid and unplanned urbanisation. Referring to the National Adaptation Plan, the Speaker added that Pakistan needs to start with what is easily accessible and tap its vast natural and human capital.

The Speaker concluded that the National Adaptation Plan needs to be complemented with local adaptation plans, as it is at the provincial, district and tehsil level where adaptation translates into meaningful outcomes. People and communities are quite knowledgeable about their habitat, and should be consulted and have their advice incorporated. Adaptation is, therefore, not an exclusive but all-inclusive framework that requires collaboration at all levels of society, from the local to the federal and institutional levels.

Recommendations and the Way Forward

- Adaptation is better-suited for countries such as Pakistan
- Approach the climate crisis as a human rights crisis
- The National Adaptation Plan should be implemented
- The local grassroots-level implementation requires local stakeholder consultation and input
- Local governments can play a substantial role in executing adaptation plans at the community and regional level
- Pakistan needs to chalk out strategies for water conservation and better utilisation in rural and urban settings
- The economic feasibility of plans is an integral part of adaptation efforts, as it is a funding-intensive activity
- There should be a move towards smaller, localised projects that can be implemented in smaller timeframes with lower economic costs rather than mega infrastructure projects
- Pakistan should prioritise available natural and human capital to the fullest as it is more accessible and viable in the current economic scenario
- At the federal level, all future development policies and plans must incorporate adaptation scenarios
- At the provincial level, steps should be taken to ensure streamlined implementation of adaptation measures free of bureaucratic hurdles

Analysing Regulatory and Administrative Gaps to Strengthen Pakistan's Institutional Framework for Greater Climate Resilience

Mr. Ahmad Nazir Warraich

Mr. Ahmad Nazir Warraich brings together a unique combination of experience of public sector, civil society, academia and the private sector. He is a former civil servant who after resignation has been continuously working in the legal field: as a practicing lawyer, a law teacher and a legal consultant and researcher amongst other things. He brings substantial practical and academic knowledge and experience to his current position as Dean of the Executive Development Institute, National School of Public Policy. He is a recipient of two prestigious scholarships; Britannia Chevening Scholarship Award as well as the Hubert Humphrey Fellowship (Fulbright) Award. He has been educated in Pakistan, England, USA as well as doing short courses from France, IMF-WB Headquarter, Washington, D.C, and University of California Los Angeles. His career also includes heading various legal departments. In addition, he has many publications to his credit.



Mr. Ahmad Nazir Warraich talked about the importance of an enabling regulatory and administrative framework for implementation of climate-related measures. He stressed that even with the best of the law, policy, and plans, without a proper mechanism in place to operationalise the same, it is not possible to get the desired outcomes. Talking about Pakistan, he discussed the federal and democratic governance framework. He mentioned that traditionally, local government has never taken root in the country. In addition, he dilated upon the post-devolution division of powers between the federal and provincial tiers. His talk focused on the legal and administrative aspects and implications of this scenario, which requires, at times, nuanced navigation of the challenges and opportunities between the various ministries and governments with regard to the mitigation and adaptation measures needed to face the challenges of climate change.

The Federal Structure of Pakistan

The Speaker highlighted that even though there is a growing consensus on the urgency of the need for taking steps to counter the adverse impacts of climate change, there seems to be still a lack of clarity and coherence on the exact path forward. Being a federation, much of the implementation regarding climate change falls within the domain of the provinces and regions, whereas climate change policy, by its very nature, requires a whole of the government approach. The division of the legislative subjects between the centre and the provinces requires a closely coordinated legal framework backed by administrative cooperation and a coherent and comprehensive policy both at the federal and provincial levels.

Action on climate change requires coordinated efforts at the federal, provincial, and the local level. For effectively identifying and dealing with the challenges and the needed measures, local vulnerabilities need to be identified and understood. Once the vulnerabilities have been identified, only then can adaptation and mitigation measures be devised to tackle them. Adaptive measures that address vulnerabilities are the key to bolstering resilience. The

Speaker quoted the definition of adaptation from the UNFCCC as, "adjustments in ecological, social or economic systems in response to actual or expected climatic stimuli and their effect". Building up on this, Mr. Warraich identified resilience to climate change as the capacity to react in a constructive manner to the impacts of hazardous climatic events while minimising losses to the fabric of society, the economy, and the liveable environment. The Speaker emphasised that climate resilience requires a holistic and multi-dimensional approach to equip states and societies to cope with, and to deal with the impacts of climate change.

He also clarified the difference between climate change and environmental degradation. Climate change refers to changes in weather patterns and irregular occurrence of events such as temperatures and rainfall, droughts, snowfall, etc. Whereas environmental pollution refers to air pollution, water pollution etc, including smog. He elaborated that although adaptation and resilience are used interchangeably, it is important to view adaptation as a path to resilience.

The Whole of Government Approach

Mr. Warraich quoted the UN Secretary-General António Guterres, who said, "Humanity has opened the gates of hell". In this background, he discussed the devastating floods of 2022 in Pakistan and gave a brief overview of the impacts of climate change upon Pakistan in the last couple of decades. The Speaker talked about the severity of the situation that Pakistan was already facing, from devastating floods to scorching heatwaves, which is likely to continue to play havoc with the life and livelihood of Pakistanis. He said that scientists give projections that unless the rising temperature is capped at 1.5 degrees centigrade, things will get much worse. Pakistan is particularly vulnerable because it is home to multiple climatic zones. Added to this is the fact the Pakistan is in a financially difficult situation which further erodes its ability to build resilience for dealing with such catastrophes.

*"Humanity has opened the gates of hell"
– UN Secretary-General António
Guterres*

Mr. Warraich emphasized that a challenge of such a scale required nothing less than a whole of government, and infact a whole of the nation approach. The core issue lies not in having the relevant polices and laws in place but in meaningful and effective cooperation and collaboration between the various ministries/departments involved in the process of implementation as well as between the federal, provincial and sub-provincial governments. Pakistan already has the legal framework, the policies and also the plans, such as the National Adaptation Plan, in place, however we as a nation, as a whole need to work on its implementation. He emphasised that the complexity of the challenge requires a close coordination between the executive and the legislature, and also can be given a fillip if the honourable judiciary stresses upon the implementation of it's various judgements with regard to issues affecting climate change and environment. He gave examples of how the judiciary has played a role in ensuring the protection of fundamental human rights and how it has defined right to a clean environment as a fundamental right.

He highlighted that Pakistan is a large and diverse country, whose governance by definition involves a complex nexus of interlinked and intertwined government bodies, institutions, ministries, laws, and frameworks which need to work in cohesion towards a unified goal so as to successfully build a climate resilient Pakistan. He also stressed the importance of various sectors

*Mr. Warraich stressed the need for A
Whole of Government, infact a whole
of society approach to deal with the
required adaptation measures*

interdependence and interlinkages with regard to required measures for adaptation and building a resilient Pakistan. In this regard he gave many examples including that of the agriculture-water nexus, tapping of the natural capital, urban resilience, disaster risk management, and building an inclusive society etc.

Major Challenges

The Speaker highlighting Pakistan's diverse climatic and geographic terrain and as yet evolving nature of its democracy and related matters of governance highlighted the major challenges the country faces with regard to climate change: adaptation and building of resilience. He said that the government is committed to building a resilient Pakistan, however there are multiple challenges that need to be addressed. One of them is, as already discussed, closer collaboration between various ministries and relevant agencies and avoidance of turf wars. The other is the evolving nature of democracy, where due to the federal structures at times the Centre and the provincial governments are at odds on certain issues, needed for fighting climate change. The third challenge he highlighted is of a nascent local government structure, which is unable to fulfil its true potential with regard to climate adaptation. Fourthly, he pointed out the financial difficulty of the country, which makes it difficult to effectively deal with the problem. Finally, he stressed the need for creating awareness among the masses about the threat of climate change.

While discussing the legal regulatory framework, he referred to the fourth Schedule, which enumerates the legislative powers of the Centre. Under the constitutional scheme all other legislative powers stand devolved to the provinces. This division of power requires a close and well-coordinated effort by the Centre and the federating units. Pakistan has enacted a number of laws, however, some of the bodies envisaged therein have either not been made fully functional, or not yet setup. Therefore the full advantage of having those laws is yet to be realized.

Mr. Warraich concluded his talk by referring to the urgency of the need for dealing with the challenge of climate change. He was appreciative of the legislative enactments and various governmental initiatives in this regard as well as showed gratitude for highlighting of the issue through some of the judgements by the superior courts with regards to climate change and related issues through role of the judiciary within the context of public interest litigation through some cases, such as the Shehla Zia vs. WAPDA case. However he stressed the gap that still exists between the efforts that need to be made and the goal of meeting Pakistan's commitments and vision of building its resilience to deal with climate induced disasters.

Recommendations and the Way Forward

- A holistic, multi-dimensional approach is needed to address climate change
- Empowerment of the local government to more effectively deal with adaptation and resilience measures
- Climate change requires a whole of government approach
- Better inter and intra governmental coordination for closer cooperation required for dealing with adaptation and building of a resilient Pakistan
- The need to fully operationalise the relevant statutes

Practitioner's Experience of Real Time Interaction with Various Stakeholders

Mr. Hammad Naqi Khan

Mr. Hammad Naqi, an engineer by training and a Chevening scholar with a Master's degree in Water and Environmental Management from the University of Birmingham, currently serves as the Director General at WWF-Pakistan. With over 25 years dedicated to the organization, Hammad has been instrumental in establishing the Freshwater programme and expanding WWF-Pakistan's operations nationwide, overseeing more than 40 projects across various conservation areas. His leadership focuses on climate change adaptation, sustainable agriculture, market transformation, food security, water management, resource mobilization, and building partnerships.



Mr. Naqi while sharing his expertise and experience pointed out that for shaping policy discourse and actions three dimensions are pivotal: political will, capacity, and financial resources. In addition he stressed that for addressing climate adaptation, a nuanced, collaborative approach involving the private sector and NGOs is needed and emphasized the need for tailored adaptation plans at multiple levels rather than adopting a one-size-fits-all framework.

Identifying the Core Issue

Mr. Naqi highlighted the need to introspect the causes for less than optimal response to climate change and to assess Pakistan's preparedness for and attitude toward climate adaptation. This was especially pertinent against climate change is seen by some as financially not viable due to the cost involved.

While appreciating the National Adaptation Plan, the Speaker stated that adaptation plans are needed at the granular level, as those plans would take into account the realities and needs of different regions of the country. He said that the plan was commendable as it highlights the steps that require to be taken as well as raises the awareness about the reality of the situation. He stressed the most important of taking measures without relying on or waiting for international assistance. This means devising and executing solutions which were already within grasp. This also means clearing implementation roadblocks which in his opinion were a result of bureaucratic red tape.

We need tailored adaptation plans at multiple levels rather than adopting a one-size-fits-all framework

The Role of NGOs and the Private Sector

He highlighted that in certain aspects, the NGO sector could play an integral role in Pakistan's progress towards adaptation. In this regard he appreciated the civil society for bringing cases for environmental preservation before the Courts. He also mentioned the success of civil society organizations such as the fundraising efforts of his own organisation, WWF, which he said has independently raised a substantial budget of around PKR 4 billion. He said that it was therefore possible to raise substantial funding through institutional credibility and well-devised actionable proposals. He was of the opinion that NGOs and the private sector could fill in the gaps that

exist in the regulatory and policy frameworks, as they operate in a space where the state was either catching up or there were other issues.

He said that the Indus Ecoregion preservation along with other various interventions are success stories that have produced good results. However, in his opinion there is a gap between planning and implementation. He opined that the work undertaken to revitalise the Ravi River stands as an example of a well-intentioned initiative falling victim to bureaucratic impediments. The lack of communication between government departments and the civil society at times hinders progress and undermines the efficacy of climate adaptation endeavours. Elaborating further, the Speaker explained that in the presence of credible science-backed research, there were disconnects between the science and the implementation of solutions. A lot of research is not acted upon as there are no initiatives to translate that to solutions on the ground, or a lack of funding.

He was of the opinion that sidelining civil society from public spaces poses a critical challenge. He said that contributions of organizations like the WWF are instrumental in kickstarting many useful initiatives, such as organic cotton production. This underscores the urgency of creating an enabling environment that encourages collaboration and inclusivity. It is a success story that has important lessons which can be learnt from the Sustainable Agricultural programme focused on enhancing cotton and sugarcane farming and production to meet international standards necessary for export purposes. He said that the cultivation of Organic Seed Cotton in Pakistan, resulted in the production of the country's first bale of organic cotton in 2019. He opined that this is a notable success story because previously, local brands had to import such cotton but was restricted due to import costs. The successful production of organic cotton has the two pronged benefit of allowing local sourcing of raw materials, but also the added potential of a valuable exportable product. He said that therefore local clothing brands are now investing to increase the supply of organic cotton. This scenario highlights far-reaching benefits that can be achieved by such focused interventions.

Mr. Naqi stressed the importance of creation and enabling environment and encourage the collaboration between the civil society and the government

The Need for a Facilitative Role of the Government

In his opinion bureaucratic red tape is a considerable obstacle, impeding the timely execution of initiatives. He gave the example of 'The Recharge Pakistan Project' which he stated, despite receiving endorsements from 21 different government agencies over 9 months and being approved for US \$78 million in grants, is currently stalled, facing delays. This points to the urgency of streamlining regulatory frameworks, making them more agile, and fostering an atmosphere conducive to swift and effective action.

Together Possible

He said that a paradigm shift was required in the method of dealing with climate change. In this regard he stressed the "Together Possible" approach. This embodies the spirit of collaboration, emphasising that only through collective efforts can we surmount the challenges posed by climate change. He advocated a simplified regulatory regime for non-governmental organizations (NGOs) saying that it will foster their active participation in climate adaptation initiatives, amplifying the impact of government endeavours. In his opinion this will allow them to fill in the gaps left from government interventions / initiatives and allow them to excel in focused areas which otherwise may have a lower priority in the agenda of the state.

Mr. Naqi stated that any discussion around climate adaptation must address political will, capacity building, and financial sustainability. By embracing a multifaceted and inclusive approach grounded in the principles of collaboration and regulatory ease, tangible progress can be made toward resilient climate adaptation.

Recommendations and the Way Forward

- Make the regulatory regime for NGOs easier and streamline reporting requirements, reducing their complexity to facilitate NGOs and timely clearance of financial transfers by donors
- Foster collaboration and coordination through forums existing forums such as PCC and EPC to allow the different entities to work together and share updates on implementation and their work
- Encourage interaction on an ongoing basis, with the responsibility to hold forums placed upon different conservation entities on a rotational basis
- Empower existing environmental tribunals with stronger sanctioning powers to ensure compliance with the relevant laws. Inquiry and investigative powers should also be strengthened as well
- Conduct institutional assessments to identify gaps within the provincial EPAs and other government agencies working on climate change-related issues and matters to gauge where compliance is weak
- Reliance on expert knowledge for assessing technical details and information by government departments and officials should be made a regular process
- All government departments should have a climate desk for better coordination

International Best Practices with Regard to Agriculture and Food Security

Mr. Matthieu Brun

Mr. Matthieu Brun is Scientific Director of the FARM Foundation. The Foundation for World Agriculture and Rural Life is a charitable foundation committed to the sustainable development of agriculture around the world, particularly in developing countries. He holds a PhD in political science and is a research associate at Sciences Po Bordeaux's "Les Afriques dans le monde" laboratory. His work focuses on the geopolitics of agriculture and food security in the context of climate change and agro-ecological transformation. Matthieu Brun has worked for Club Demeter, the Centre international de hautes études agronomiques méditerranéennes (CIHEAM) and the Institut du développement durable et des relations internationales (Iddri – Sciences Po). He regularly publishes articles, columns and interviews in the media, and has edited the annual agricultural and food geostrategic outlook book *Le Déméter* (IRIS Editions).



Mr. Mattieu Brun talked about the importance of food security and the increasing risks it poses and discussed solutions for addressing it. He talked about new modes of rural development for promoting sustainability and environmentalism, cultural preservation, social justice & bolstering resilience.

Food Security and Food Sovereignty

The Speaker highlighted that there are multiple dimensions to access healthy food at affordable prices in today's highly globalised and interconnected world. Due to the deep reliance on global food chains, emerging situations such as climate change and geopolitical events also have an increased impact on food security. Some countries are so vulnerable and dependent upon the conditions of the international markets that any instability has the potential of creating disruptions. Thus, he said that the conversation had evolved from revolving around food security to food sovereignty.

Factors that affect the food security of nations include environmental degradation, resource scarcity, agricultural practices, market access issues, socioeconomic factors, workforce related issues, etc. He said that the crucial intersection of agriculture and food security demands focused attention. A fundamental question which confronts nations and governments is that of funding for sustainable agriculture. This inquiry serves as the foundation for exploration into strategies that not only enhance agricultural practices but also safeguard food security in the face of evolving challenges.

Food Sovereignty and Rurality

The Speaker defined the notion of food sovereignty as ensuring access to food that is resistant to disruption. It hinges upon the mobilising and managing of ecological processes to ensure the provision of a set of services aimed at increasing productivity while preserving renewable resources. To this end, the connection between technical, social, environmental, and institutional components of agroecosystems needs to be understood.

One pivotal consideration emerges from the need to enrich and develop rural areas. Shifting the narrative away from perceiving urbanisation as the sole solution fosters a holistic approach to sustainable development. The nurturing of rural communities becomes a cornerstone for resilient agricultural practices, acknowledging their vital role in ensuring food security.

He said that in recent times, a global rush for food sovereignty has gained momentum, propelled by multifaceted factors ranging from the disruptive impacts of climate change to conflicts and wars. In his view, food has emerged as a weapon, underscoring the need for securing self-reliance in food production. In this regard, he said that the Russia-Ukraine War has triggered a paradigm shift for many nations, necessitating a reassessment of agricultural practices amidst geopolitical uncertainties.

“Rurality” is the concept of developing and advancing businesses and economic activity within rural areas and is connected with food sovereignty. Food sovereignty has become an urgent matter for every nation due to a combination of interconnected factors impacting food security, social, economic and environmental wellbeing

Amidst these challenges, the dichotomy between funding technology and funding practices becomes evident. While financing technological innovations may seem straightforward, supporting sustainable agricultural practices poses a formidable challenge. This duality encapsulates the essence of the two-fold challenge confronting us: continuously increasing productivity while simultaneously reducing the negative environmental impact of agricultural activities.

Pursuing Sustainable Intensification

Mr. Brun identified agro-ecology as a compelling solution in navigating this challenge. By tapping into sustainable natural solutions and resources, agro-ecology offers a harmonious integration of agricultural practices with ecological resilience. This approach necessitates a delicate balance between biotechnical advancements and sociopolitical levers, aligning technological progress with the needs and aspirations of local communities.

He said that the global landscape is witnessing noteworthy strides made by nations such as Brazil and Uganda in the pursuit of sustainable agriculture. Their experiences serve as inspiration, showcasing the tangible benefits of aligning agricultural practices with ecological concerns. Garnering public support for agriculture and food security emerges as necessary for sustainable development and effective climate adaptation. He emphasised the need for collaborative efforts for engaging communities in the decision-making processes that impact their food sources.

Food has become a weapon in the context of climate change and global conflicts

The Speaker stressed that food security requires a paradigm shift towards holistic, sustainable practices that recognise the intrinsic link between rural development, geopolitical realities and the imperative for food sovereignty. Globally, the general trend is that the higher a country's income, the more it spends on agriculture. He said that sustainable agriculture takes on even more significance for countries like Pakistan, which are dealing with a challenging climate scenario. By navigating the delicate balance between technological innovation and community-centred practices, resilience in agriculture can be cultivated, ensuring food security for generations to come.

Recommendations and the Way Forward

- Approach resilience with a holistic and dynamic approach, as it is now as much a political and geopolitical issue as it is a technical one
- Place food sovereignty as a core concept behind adaptive measures as food security is fragile and agriculture can be weaponised
- Highlight and focus on agro-ecological approaches and adaptive strategies to enhance resilience in the face of a changing climate
- Pursue integration of technologies and innovation
- Cross-sector collaboration across different sectors such as health, education, and climate change adaptation
- Empower agriculturalists and farmers with knowledge, resources, and market access due to the vital role they play in food production
- Develop sustainable supply chains to reduce post-harvest losses and waste
- Foster stakeholder commitment and involvement

Pakistan's Experience of Climate Change and its Impact on Food Security

Dr. Abid Qaiyum Suleri

Dr. Abid Qaiyum Suleri is Executive Director at Sustainable Development Policy Institute (SDPI). At present, he serves in different policy-making forums and advisory boards, including National Advisory Council of the Planning Commission of Pakistan and the Pakistan Climate Change Council. He is Convenor of the National Coordination Committee on Prime Minister's Agriculture Transformation Plan and is a Member of the Board of Directors of the National Disaster Risk Management Fund.



He has represented Pakistan in various official delegations. His current research interests include sustainable development, inclusive and sustainable economic growth, food security, regional trade, and the political economy of development. Dr Suleri earned his PhD in Food Security from the University of Greenwich.

Dr. Suleri discussed the multidimensional aspects of the challenges that confronted Pakistan; such as climate change and food security. In this regard, he emphasised the inadequacy of the current business-as-usual approach. He supported special measures, and was also supportive of the SIFC initiative, as he said such measures need to address the complex issues that beset Pakistan

Taking Account of the Situation

The Speaker stated that, at the most fundamental level, climate change could be reduced to issues stemming from water and temperature and their great role in every facet of human existence. A simple statistic that expressed the issue was that humanity's resource consumption required 1.6 times the usable resources of the earth, and was thus unsustainable. He said that in the already resource-constrained and demographically challenging region of South Asia, the problems posed by climate change provide a potent recipe for disaster. The multidimensional nature of this challenge requires a comprehensive and multifaceted approach. He highlighted that the conversation on climate change adaptation must be framed in the aftermath of the unprecedented floods in 2022. The country witnessed 3.2 times more rainfall than usual, mirroring similar extreme events worldwide, such as Beijing experiencing a year's worth of rain in just three days. This caused a series of humanitarian and ecological disasters, whose impact still reverberates over a year later.

While highlighting the need for funds to deal with adaptation issues, he said that despite the pledges made at Geneva and elsewhere, a mere fraction of the promised funds; just one billion dollar has been confirmed, contingent upon Pakistan remaining within the IMF programme. This financial dependency highlights the intricate relationship between global aid and national economic policies, adding another layer of complexity to the adaptive measures needed.

The Nexus of Food Security and Socio-economic Factors

Mr. Suleri elaborated that to understand Pakistan's climate problem, it is important to understand the connection

between water scarcity and rising temperatures. The dual challenge faced by the nation is not merely to develop but to do so in a sustainable manner therefore it has to be a delicate balance. The alarming reality of glacial melt poses a unique dual threat—rapid flooding followed by a drought. This shift from the era of global warming to what has been aptly termed the "era of global boiling" accentuates the urgency of climate adaptation efforts.

He said that food security has emerged as a pressing concern, casting a shadow over every aspect of human life and the stability of society. A staggering 41 percent of the population faces acute and chronic food insecurity, leading to pervasive malnutrition issues that permeate various strata of society. In 43 flood-affected districts, 29 percent of rural Pakistan's population finds itself in crisis or emergency situations, while a staggering 83 percent lacks access to a healthy and nutritious diet.

A staggering 41 percent of the population faces acute and chronic food insecurity, leading to pervasive malnutrition issues that permeate various strata of society

The Speaker split the factors impacting food security into three main components: availability, access, and absorption. All three need to work in cohesion to create a functional semblance of food security. Climate change and its accompanying impact, along with other factors, will threaten food security across the world, and in Pakistan in particular. It will also lead to other issues, such as forcing rural-to-urban migration, changing food habits and cropping patterns.

The trajectory of economic development in Pakistan, bypassing manufacturing in a quantum leap from agriculture to services, raises critical questions about sustainability and resilience. In his view the apparent contradiction between Millennium Development Goals 1 and 7, focused on poverty reduction and environmental sustainability respectively, underscoring the need to recalibrate development strategies.

Agriculture and Development

Mr. Suleri said that to navigate these challenges, a digital revolution in agriculture, harnessing modern technologies from optimization to the Internet of Things (IoT) has become imperative. Simultaneously, the removal of burdensome middlemen through modernisation is crucial to streamline the agricultural value chain.

The Speaker highlighted that any adaptive measures could not be taken in the vacuum. Three critical aspects that needed to be addressed were funding, political will, and stakeholder participation. He said that one possible step to tackle these issues has been the creation of the Strategic Implementation and Facilitation Cell (SIFC), as it collates top-level resources, decision-maker consensus, and stakeholder participation in a streamlined package designed to provide strategically sound, financially-backed policies and solutions to tackle the monumental challenges that lie ahead. Through this united front, it also seeks to build confidence in Pakistan's intention to adapt and thrive, thus attracting much-needed foreign investment and cooperation. In the face of unusual circumstances, the recognition that "business as usual will not work," especially in the case of agriculture, has become a call for transformative action. Mr. Suleri concluded on the note that as Pakistan navigates these uncharted waters, a paradigm shift in policies and practices is critical to secure a sustainable and resilient future amidst the changing climate realities.

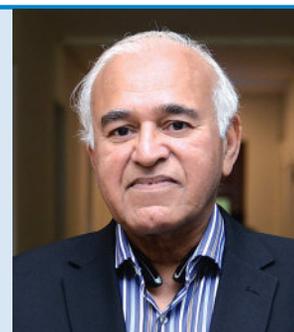
Recommendations and the Way Forward

- Climate-resilient agriculture should be adopted by using technology to implement precision agriculture
- Efficient water management is essential to cope with uncertainties and instabilities arising from climate change
- Disaster preparedness and response is a core aspect of adaptive measures and resilience building
- Sustainable land use and deforestation control will enable Pakistan to preserve existing resources and bolster environmental protection and quality of life
- Capacity Building and Education on precision agriculture are needed to bring about a much-needed transformation of the agriculture sector to enhance its productivity and ensure food security, as well as rural development
- Market Diversification and value chain development are the means which can catalyse agricultural growth and economic development
- International Collaboration, including funding, transfer of technologies and techniques, as well as market access and linkages, are essential
- The SIFC (Special Investment Facilitation Council) can be a potent means of attaining agricultural transformation, sustainable economic stability and growth, and a path to progress

Urban Resilience - Steps Needed in the Context of Pakistan

Dr. Nasir Javed

Dr. Nasir Javed, an Urban Development Specialist, brings over 25 years of diverse experience, serving as a Project Team Lead and consultant. Holding an MBA from the University of Wales, Cardiff, he has degrees in Medicine, Psychiatry, and Law. He was in the civil services as a DMG officer. Dr. Javed played a key role in establishing The Urban Unit, heading it for 14 years, leading projects sponsored by WB, ADB, USAID, JICA, and UNDP. He possesses extensive field experience in urban service delivery in Karachi and Lahore. Dr. Javed's global outlook is evident in his visits to 40+ cities worldwide for training and conferences. He is a member of the Cities That Work council of the IGC, a Syndicate member of the University of Engineering & Technology Lahore, and contributes to the SAGE Journal 'Environment & Urbanization Asia'. He has done much research work in the field.



Dr Nasir Javed's talk was based on his extensive knowledge and in-depth experience with urban planning, design, and management. It highlighted the core issues pertaining to urbanisation, particularly with regard to adaptation required as result of climate change and the challenges to urban resilience, and suggested solutions.

Pakistan's Urban Landscape and its Challenges

Pakistan grapples with issues that hinder sustainable development and greatly affect the well-being of its populace. The causes range from poor governance to flawed urban planning, The Speaker pointed out that this was the situation without factoring in the impact of climate change.

According to Dr Javed, one of the primary challenges facing Pakistan's urban areas is the lack of a robust and comprehensive regulatory framework. The government often operates more like a Non-governmental Organization (NGO), cherry-picking projects instead of fulfilling its mandated obligations and responsibilities. A comprehensive regulatory framework is essential to ensure responsible urban development, monitor construction activities, and safeguard the interests of both citizens and investors. Cities are meant to be the engines of growth for any country which wishes to develop but have become a chaotic sprawl of intersecting elite-centric, unsustainable housing societies and squalid slums.

We are not a poor country; we are a poorly governed country

The Speaker identified core issues considered necessary for urban sustainability. They include waste management, energy production and usage, industrial activities, urban transport, and urban buildings.

In his opinion appointment of individuals lacking the requisite qualifications and specific knowledge in urban planning is another hurdle. Incoherent or flawed urban design is a pervasive issue in many Pakistani cities. The lack of a unified vision and proper planning results in disjointed urban landscapes that do not integrate seamlessly with the natural environment and require increasing maintenance and upkeep costs. Effective urban planning demands expertise in architecture, engineering, and environmental science. A dearth of qualified professionals in

leadership roles results in poorly conceived urban designs that fail to meet the evolving needs of a growing population. The unchecked growth of urban areas not only poses environmental challenges but also exacerbates issues related to transportation, waste management, and provision of basic services.

Cities are meant to be the engines of growth for any country which wishes to develop but have become a chaotic sprawl of intersecting elite-centric, unsustainable housing societies and squalid slums

In his opinion, the absence of an efficient and widespread mass transit system compounds the challenges faced by urban dwellers. Traffic congestion, untenable underpasses, and signal-free corridors become breeding grounds for a range of problems impacting quality of life. Implementing a comprehensive mass transit system is essential to alleviate traffic congestion, reduce pollution, and provide a more sustainable mode of transportation for the rapidly growing urban population.

The speaker said that urban land that has been developed with substantial state investments and expenditure sometimes falls prey to predatory middlemen who capitalise on the exponentially increased value. The pursuit of profits from this oversight has played a key role in affecting the country's economic growth. This, he said, is due to a disproportionate amount of wealth in property profiteering rather than investing in diverse economic activities. Implementing a Land Value Capture tax would help capture the accrued value, preventing exploitation by intermediaries and channelling the funds back into essential and robust public infrastructure and services.

He recommended that the government must shift its role from a project-centric approach to effective governance, incorporating a comprehensive regulatory framework and enforcing policies such as the Land Value Capture Tax. Qualified professionals in urban planning leadership roles, coupled with a focus on curbing unsustainable urban sprawl and implementing efficient mass transit systems, will contribute to building resilient and thriving urban centres. Through concerted efforts and visionary policies, Pakistan can overcome these challenges and pave the way for a more sustainable and prosperous urban future.

Building Resilient Cities

According to Dr. Javed, harnessing the power of data analytics allows policymakers to make informed decisions, optimise resource allocation, and address the unique challenges faced by each city. Data-driven governance also promotes transparency, accountability, and better outcomes for citizens.

Data-driven governance is needed instead of whimsical governance

Regarding the effective usage of the land, the Speaker highlighted the example of the Punjab province, where prime rural land is being urbanised at a rapid pace, while agricultural productivity is mostly stagnant. Balancing urban expansion with the preservation of valuable agricultural land is crucial for food security and sustainable development. Strategic land-use planning should be employed to ensure a harmonious coexistence between urbanisation and agriculture.

Another important measure in the Speaker's opinion was implementing user charges for services is a crucial step towards financial sustainability. Currently, a significant proportion of municipal services are subsidised, leading to very lopsided availability and extremely overburdened, dilapidated systems. Introducing user charges ensures that those who benefit from services contribute to their upkeep, fostering a fair and sustainable model for resource management.

In his opinion, the current building code in use, which was notified in 1988, needs to be updated so as to align it with contemporary standards and technological advancements. An updated building code is essential for ensuring the safety, resilience, and sustainability of urban infrastructure in the face of evolving environmental and social challenges. Precious urban land was wasted due to antiquated building height codes. The Speaker stated that it was essential to expand cities vertically instead of horizontally.

In his opinion, the existing ratio of property tax ownership versus rent (1:5) perpetuates social and economic disparities. Revising this ratio and implementing fair property tax policies can generate additional revenue for local governments and reduce the burden on those who can least afford it. This move towards equity ensures that the poor no longer subsidise the rich. The Speaker gave the example of cities like Faisalabad, which face challenges related to water distribution. The wealthy enjoy free access to water, while others struggle to obtain municipal water and have to either pay relatively higher costs to get access to water or risk severe healthcare complications. A re-evaluation of water distribution policies is necessary to ensure equitable access for all citizens, thereby reducing the economic burden on those who resort to alternative, often costlier, water sources.

Despite only 13% of the population owning cars, a substantial portion of development funding is allocated to car-based infrastructure. Shifting focus towards sustainable and inclusive modes of transportation can free up resources for projects that benefit a larger segment of the population, ultimately fostering a more resilient urban environment.

He also added that much of the malaise and impediments to policy arose due to harsh accountability laws, which, in addition to the already existing system of efficient checks and balances, makes decision-makers risk-averse. In his opinion, reforms are necessary to ensure accountability without stifling decision-making processes. A balance must be struck to encourage responsible governance without compromising the flexibility required for effective urban management.

Despite only 13% of the population owning cars, a substantial portion of development funding is allocated to car-based infrastructure

Finally, he said that in the face of climate change, local action plans are indispensable. Delays in implementing these plans can have severe consequences. Prioritizing climate resilience in urban development strategies is essential to safeguard against the impacts of climate change and build cities that can adapt to evolving environmental challenges. From data-driven governance to equitable resource distribution, each step contributes to building cities that can withstand future challenges. Policymakers must address these key areas and implement strategic reforms to create urban centres that are not only resilient but also inclusive and engines of sustainable growth.

Recommendations and the Way Forward

1. **Resilient Urban Governance:**
 - Classification of cities for developing city-specific urban strategies
 - Data-driven governance
 - Devolving decision-making to the local level
 - Capacity enhancement
 - Vulnerability Assessments at the local level
 - Financial sustainability
 - Introduce User charges (for all urban services to maintain quality)
 - Local revenue and localised expenditure (decentralised governance)
 - Introduce Land Value Capture tax to subsidise the cost of public sector infrastructure that enhances private property values
2. **Economic sustainability:**
 - Encourage smart growth and green development
 - Adopt smart governance (better utilisation of economic resources)
 - Control circular economy (minimise waste and maximise recycling)
 - Carry out research and development of mitigation and adaptation measures
 - Promote Green economy
3. **Spatial sustainability:**
 - Encourage sustainable land use with better densities
 - Develop resilient building codes and regulations to encourage sustainable architecture
 - Take step to reduce the cost of construction
4. **Social sustainability:**
 - Develop inclusive policies in terms of land use and provision of public spaces
 - Foster inclusivity in terms of subsidising public transport
 - Plan equitable usage of road spaces
 - Introduce user charges to make services sustainable with cross-subsidies
5. **Environmental sustainability:**
 - Take steps to minimise transport and industrial pollution
 - Reuse wastewater, harvest rainwater, and preserve water resources
 - Enhance waste management and integrate solid waste management
 - Improve urban ecologies

Sectoral Analysis of National Adaptation Priority Areas

Dr. Muhammad Abid Bodla

Dr. Muhammad Abid Bodla, a seasoned professional in environmentally sound planning and infrastructure development programmes, earned his Master's and Ph.D. degrees in civil engineering from Colorado State University in 1993. Currently, as a Member of the Planning & Development Board for Punjab province, Pakistan, he oversees policy planning and strategic development in Water and Infrastructure Development sectors. With prior roles in the Pakistan Water & Power Development Authority (WAPDA), including Director of the International Waterlogging & Salinity Research Institute (IWASRI), Dr. Bodla has been actively engaged at provincial and national levels in planning, research, and implementation of infrastructure development, flood control, and water resources projects.



Dr. Bodla talked about the scope and complexity of Pakistan's climate change landscape in terms of resource access and socioeconomic impact. He also discussed the policy and regulatory frameworks required to address these challenges.

The Enormity of the Problem

Pakistan is amongst the ten most affected countries by weather and climate shocks from 2000 to 2019, with climate and weather-related disasters resulting in staggering economic losses in billions of rupees between 1992 and 2021. He stated that the consequences go beyond the financial burdens, with approximately 49 million people living in areas with a projected 4-5 percent drop in quality of life by 2030 as a result of climate change. Pakistan is becoming more exposed and vulnerable to a variety of environmental and climate related challenges, including floods, hurricanes, droughts, heat waves, and unpredictable monsoon patterns, as well as the looming threat of rising sea levels. This vulnerability poses a serious risk of pushing millions into extreme poverty and causing internal displacement and migration. These upheavals are blamed for expected decreases in agricultural yields, increased food insecurity, and escalating water stress. Recognising the urgency, he stressed that a lack of investment in resilience could have serious economic consequences, including increased impact poverty, lower productivity, and hampered future growth prospects.

Key High-Risk Areas

The Speaker identified water, health, and education as key areas that will bear the brunt of the effects of climate change. He said that as the IPCC predicts that Pakistan's average temperature will rise by substantially by 2100, and a loss in GDP of upto \$5,000 billion is expected by 2100, putting the Indus Basin at risk of the highest losses due to water scarcity.

He stated that climate change poses a multifaceted threat to public health in several ways. More frequent and severe extreme weather events and natural disasters are having a direct impact on health, resulting in injuries, deaths, and community displacement. Rising temperatures cause heat stress, worsening cardiovascular and respiratory conditions, especially in vulnerable populations. Climate change also has an impact on the

distribution and prevalence of vector-borne and water-borne diseases, broadening the geographical scope of illnesses like malaria and dengue fever. He explained that changing weather patterns can have an impact on food security and nutrition, particularly in vulnerable communities. Contamination in water, sanitation and hygiene systems increase the risk of infectious diseases. He added that climate change has far-reaching consequences for reproductive health, affecting maternal and child health outcomes. Combating climate change is thus not only an environmental imperative but also a critical step towards protecting global health, necessitating comprehensive strategies to mitigate its various effects on human well-being.

The Speaker also highlighted that climate change carries profound implications for education, affecting both physical infrastructure and human responses to the challenges it poses. Increased frequency and intensity of extreme weather occurrences are among the physical effects on educational facilities that cause damage and disruptions, stressing an already deteriorating system and endangering the continuation of education. Human responses to climate-induced challenges include shifts in migration patterns and altered livelihoods, influencing access to education facilities. It takes decades of consistent effort to develop institutions and gradually build up their quality standards. Just as was witnessed with the pandemic, these gains can be eroded in a relatively short time compared to the time needed to build them up. He said that communities facing climate-related hardships resort to negative coping strategies, such as withdrawing children from school to contribute to family income or prioritising immediate survival over long-term educational goals. The negative consequences include an escalating cycle of reduced educational access and achievement, which exacerbates the socioeconomic challenges posed by climate change. Addressing the impact of climate change on education necessitates comprehensive strategies that protect infrastructure, foster community resilience, and ensure equitable access to learning opportunities in the face of changing environmental challenges.

International and National Climate Change Frameworks and Reforms

The Speaker highlighted that Pakistan was a signatory to the UNFCCC, the Kyoto Protocol, and the Paris Agreement. On a national level, climate change reforms and strategies include a variety of plans and strategies, including the NAP, which had a broad impact, as well as more focused strategic plans related to emissions and net-zero attainment strategies.

Three Pillars of Restoring and Building Resilient Ecosystems and Livelihoods

Dr. Bodla highlighted the core areas that could lead to affective adaptive resilience to the challenge posed by the impact of climate change. The first was the large-scale restoration of ecosystems in priority landscapes. This meant rejuvenating, managing and upgrading critical natural ecosystems upon which the environmental stability hinged, including rangelands, forests, coastal ecosystems, and degraded lands. This would positively impact productivity and livelihoods.

The next pillar was to opt for small-scale infrastructure with nature-based solutions. This was to revolve around inclusive community-based civil works to restore ecosystems, protect infrastructure, and build resilience. The aim was also to add larger-scale green-and-grey infrastructure solutions where the opportunity presented itself.

The final major pillar he discussed was the need for stronger institutions, governance, and incentives. The development of institutional capacity was critical in addressing the issues. A system of intelligently designed incentives was also suggested for implementing and maintaining targeted interventions.

A system of intelligently designed incentives was also suggested for implementing and maintaining targeted interventions

He said that steps taken upon the aforementioned pillars are projected to lead to multi-sectoral benefits ranging from strengthening rural livelihoods, creating green jobs, and bolstering resilience to climate change and natural disasters in the most vulnerable areas and populations.

4RF (Resilient, Recovery, Rehabilitation, and Reconstruction)

The Speaker next highlighted the goals of 'Build-Back-Better', which is a people-centred socioeconomic recovery and system of resilience to natural hazards and climate change impacts. This aims to achieve an inclusive and resilient Pakistan by taking a 'Whole of Pakistan' approach that leads to long-term development for the people and the country.

He highlighted that the SRO (Strategic Recovery Objectives) focus on improving governance and capacity to restore affected people's lives and livelihoods, as well as economic activities whereby social inclusion and participation in all aspects of recovery and development are strongly encouraged. Another critical component is the restoration and enhancement of basic services and physical infrastructure.

Recommendations and the Way Forward

Policy Implementation in rural-urban areas

- Focus on effective implementation of Punjab's Vision under 4RF strategy
- Carry out steps for the implementation of national and provincial water, climate change and disaster management policies and action plans
- Pursue policies and make plans that promote green urban mobility
- Strengthen urban planning in departments and provide management with required capabilities
- Promote climate-smart municipal services
- Create sustainable revenue streams for green and resilient urbanisation

Resource Optimisation

- To bridge the potential climate finance gap, close attention must be paid to resource optimisation and mobilisation
- There is a need to transition from fossil fuels towards environment friendly energy resources
- Improve supply-side efficiency and address demand-side efficiency in resources utilization
- Decarbonise the industrial and transport sectors
- Expanding access to safe water consumption (i.e. WASH: Water, Sanitation, and Hygiene) to at least 50 percent of rural households

Recommendations and the Way Forward

Water Resources Management

- Strengthen institutional arrangements for groundwater management in Punjab
- Develop centralised and comprehensive groundwater databases for Punjab
- Introduce groundwater management strategies and groundwater resources plans for Punjab
- Strategise a groundwater monitoring plan for Punjab
- Harness opportunities to augment canal water supply with groundwater in selected canal commands in Punjab

Institutional Development

- Upgrade the Irrigation Research Institute of Punjab
- Strengthen Water Management Training Institutes
- Strengthen Punjab institutional capacities according to the Water Act
- Promote 'Transformational engagement' of Punjab agencies and organisations for the effective management of the MFF investment

Command Area Development

- Review agro-ecological zoning and recommended measures for improving agriculture productivity in each AEZ
- Review Agricultural extension services design for new investments
- Plan and integrated and holistic command area development plan
- Take steps to increase Water Supply through Recycling and Desalination
- Involve Private sector participation and optimal pricing of water
- Expand both local level surface and groundwater storage capacity
- Increase efforts for groundwater recharge, and rehabilitation of dams
- Reduce demand for water by improving water use efficiency and efficient groundwater management
- Redesign urban bylaws to allow vertical construction and discourage urban sprawl to help protect forestry, green areas and soil

Reforms and Governance

- Take steps for water infrastructure maintenance, water conservation technologies and raising awareness regarding its consumption
- Address the disconnect between provincial departments especially dealing with water, food and agriculture, and environmental issues and the federal government on handling policy related to climate change by means of better coordination

Regional Cooperation

- Conduct joint studies related to climate change such as the extent of glacial melt
- Create regional joint mitigation and adaptation techniques for climate change management
- Create fora for sharing information and improving flood-forecasting systems

Disaster Risk Management: A Case Study of Gilgit Baltistan

Mr. Mohyuddin Ahmad Wani

Mr. Mohyuddin Ahmad Wani is a highly accomplished professional with a BSc in Electrical Engineering from UET, Lahore, an LLM from Warwick, U.K, and a Master's in Development Studies from the Institute of Social Studies in The Hague, Netherlands. Over 26 years, he served in various capacities in provincial administrations, Federal Secretariat, and Federal Autonomous bodies. His notable roles include Chief Secretary in Gilgit-Baltistan, Additional Secretary at the Ministry of Federal Education, Chief Operations Officer at the National Disaster Risk Management Fund, and Director General of the Benazir Income Support Programme in Punjab. His diverse career encompasses valuable experience in disaster management, education, public relations, and governance.



Mr. Wani focused on a practitioner's perspective through a case-study of the efforts to tackle climate change in the Gilgit-Baltistan region. He highlighted the challenges that lay in the translation of policy to practice.

On Ground Realities

The Speaker emphasised that there was a difference between the conceptual foundation of frameworks and their on-the-ground implementation. He added that implementation also differed from region to region and was also dependent on a wide range of factors. However, it was essential to learn from experience and incorporate those lessons in future plans.

Mr. Wani shared that Gilgit-Baltistan, due to its geographic location and topical features, was especially prone to climate change. He lamented that although climate action policies had been present in some shape or form for over two decades, implementation had largely been weak. Action was usually taken as a response when matters would get to the point that it would be a public order issue.

You have to transfer and adapt to the risks; they cannot be eliminated

In the specific context and urgency of the issue, the Speaker was of the view that the need of the hour was swift local solutions in addition to long-term policy which was contingent on a vast number of conditions, dependencies, and issues. It was also essential to respect and seek the wisdom of the local communities and incorporate that into planning process for solutions. He gave the example that the locals were intimately aware of their lands and could identify which areas were prone to landslides.

Practical Solutions

The Speaker shared a number of solutions which were effectively implemented with positive outcomes. He said that an entire village was swept away during floods. Within a very short span of six months, it was rebuilt from the ground up at a new location using prefab construction, new roads for easy access, and a safer location. Similarly, every school or government building that was newly built or rebuilt had solar panels to provide renewable, reliable energy at predictable costs. This also helped in reducing the carbon footprint of the infrastructure.

Plastic pollution was also wreaking havoc with the environment. Swift action was taken by initially banning them, and then bringing stakeholders to the negotiation table to facilitate the setup of recycling plants to recycle and recover the plastic in a sustainable way.

Another breakthrough was achieved through the innovative method of teaching of environmental literacy, where environmental awareness was incorporated into the curricula of the education system as well as incorporated into the public awareness campaigns to galvanise support and incentivise action at the community level, which is absolutely essential for adaptation efforts and collaborative action. The message was also continuously reinforced through the use of 'climate walls', which had the relevant messaging conveyed in a visually interesting manner on walls. Extensive reforestation efforts were also carried out.

A dollar spent on disaster reduction saves exponentially more compared to disaster management

Solution-oriented Approach to Climate Change

He said in addition to quick and proactive measures, a culture of environmental friendliness needs to be inculcated. This leads to an inclusive, community-wide engagement with better outcomes and reduced resource expenditure. Local solutions that are independent of external funding and approvals should be implemented as swiftly as possible, as they are effective as preventive measures and can reduce the impact of disasters. He said that the lack of urgency is a serious issue when it comes to adaptive and mitigative efforts, leading to a greater risk of loss.

Utilisation of available and accessible resources and solutions should be the first priority. Following that, there must be steps taken at the government level to ensure consistency of policy to sustain programmes, and ensure that gains are not lost or reversed due to policy flip-flops or lack of follow-up.

In his opinion, innovative solutions should be sought based on the available information. As in the case of climate change, there is now a high level of certainty of the repeated occurrence of flooding and heavy rainfall, and therefore, insurance can and should be bought for critical infrastructure and buildings. Climate bonds (risk bonds) can also be an invaluable source of funds in case of natural disasters. At the national level, the provinces should contribute small portions of their budget to readily available collective funds managed by the State Bank to deal with disasters such as flooding instead of looking for funds. The Speaker ended his talk on the note that catastrophe bonds, risk insurance, risk pooling were the future, and needed to be incorporated into adaptation frameworks and strategies.

Recommendations and the Way Forward

- Inculcate a sense of urgency is required
- Need for continuity of policies is critical
- Understand and plan for the risks predicted
- Inculcate a culture of environmental friendliness
- Raise awareness and understanding at every level of society
- Pursue green and renewable energy solutions
- Take timely preventive measures can significantly save costs and lives
- Adopt smart and technological solutions as early-warning systems can minimise losses at the initial stages of extreme environmental events
- Establish functioning local governments and encourage community engagement as important aspects of adaptation and response to climate change
- The need for a unified and coordinated command for structure disaster management.

The Need for a Whole of Government Approach to Deal with Adaptation & Building of a Resilient Pakistan

Mr. Hassan Nasir Jamy

Mr. Hassan Nasir Jamy is an officer of Pakistan Administrative Service (PAS) with over 34 years of experience in a variety of core disciplines in the public sector. The officer has a diverse range of experience and exposure of the public sector at the Federal and provincial levels. Among other positions, he has worked as Federal Secretary of Water Resources Division, Privatization Division/Commission, Aviation Division and Climate Change Division. He has also served in the Petroleum and Water & Power Divisions as an Additional Secretary. He remained a member of Directing Staff at the National School of Public Policy for two years. Mr. Jamy holds an MBA from Quaid-i-Azam University, Islamabad and a Masters' Degree in Rural Development from University of Sussex, UK. He is also a Hubert H. Humphrey Fellow (in Public Policy) from the University of North Carolina, USA. He is presently working as Federal Secretary, Information Technology and Telecommunication Division.



Mr. Jamy's talk gave a top-down perspective on policy and the strategic initiatives needed to address climate related challenges. He also highlighted success stories from which lessons can be learnt and discussed various important issues that need to be addressed.

Challenges to an Effective Response

The Speaker highlighted that recent events underscore the critical need for a 'whole of government' approach to tackling climate change in Pakistan, moving beyond a mere buzzword and extending its application beyond times of crisis to peaceful periods as well. Both the federal and provincial governments must synergise their efforts, fostering an integrated system capable of addressing the unprecedented challenges posed by climate change. Drawing inspiration from the successful management of the pandemic, where a unified approach proved useful, the same lessons can be applied to address the evolving challenges of climate change adaptation. In addition he also discussed the swift resolution of the locust swarm crisis through a similar whole-of-government approach, which resolved the issue within a month and serves as a testament to the effectiveness of coordinated efforts.

He stressed the need for unified approach to combat climate change

There is a pressing need to proactively strategise and implement policies, moving away from the reactive stance that characterises the dominant, haphazard way of crisis response. He said that as Pakistan is confronted with complex climate related challenges, a comprehensive, pre-emptive approach is essential to navigate the ever-growing urgency and scale of climate-related issues. There is a need to sit down before a crisis emerges, mapping out strategies to address climate change and ensure a holistic, collaborative response that transcends reactive measures and fosters resilience in the face of unprecedented challenges.

The Evolving Climate Situation

Mr. Jamy said that Pakistan finds itself at the forefront of climate change impacts, experiencing a significant rise in the frequency and intensity of extreme weather events. The susceptibility to both natural and man-made

disasters demands a proactive approach. He said that delaying action until the last minute proves inadequate in the face of an evolving climate situation and often leads to avoidable losses of life, livelihoods, livestock, and infrastructure. The urgency is underscored by the lack of emergency response measures in buildings, revealing a critical need to revamp existing infrastructure and building codes. Climate change induced events have the potential to inflict billions in losses, setting back progress by years.

As climate change exacerbates, the challenge of ensuring food security becomes increasingly daunting

He said that recognising the severity of the situation, Pakistan must adopt a comprehensive strategy that not only addresses the immediate impacts but also focuses on long-term resilience. This entails upgrading infrastructure, implementing emergency measures, and formulating robust policies to mitigate the economic, social, and environmental consequences of climate change, safeguarding the nation's future against the escalating challenges posed by a changing climate.

In a situation where multiple crises can convalesce into unmitigated disasters, nothing short of a 'Whole of Government' approach will suffice. Due to the emerging issues being deeply interlinked and overlapping, mounting an effective response is beyond the scope of isolated government institutions or provincial or federal government, alone. Therefore, a unified, integrated front is required. He again highlighted The success of the NCOG was the centralised approach it took, accessing data from different sources and swiftly reacting and responding to the situation. There are valuable lessons to be learned from this experience.

The Speaker stressed that in the long term, adaption requires altering our behaviour, revamping the governance systems, and even readjusting our way of life to protect the people, economy, and the environment from the impact of climate change.

Recommendations and the Way Forward

- Adopt a 'Whole of the Government' Approach
- Establish a coordination forum as a bridge between government institutions, disaster management authorities, and donor agencies
- Keep public/private sector, NGOs, International NGOs, and the media on board
- Adopt effective procurement mechanisms from international markets
- Upgrade and mobilise flood water fighting machinery/dewater equipment
- Urban flood management needs to be given a much higher priority
- The need for adopting and implementing indigenous, localised, and natural solutions
- Resilience needs to be incorporated at every level, from policy to implementation

Adaptation & Building of a Resilient Pakistan

The Perspective of the Province of Punjab

Mr. Tuaseef Dilshad Khatana

Mr. Tuaseef Dilshad Khatana is an experienced public sector leader in Punjab, Pakistan, with over 18 years of diverse experience spanning policymaking, programme implementation, monitoring and evaluation, and administrative leadership across health, finance, social protection, revenue, and local government sectors. He has served in key roles like Additional Secretary Labour & Human Resource, CEO of Punjab Social Protection Authority, and Additional Secretary Finance handling health and agriculture. Khatana has spearheaded high-impact programs benefiting millions, overseen provincial health systems, and focused on public sector capacity building. He holds an Executive Masters in Public Policy, MSc Political Science, and BA Political Science & Journalism. His background demonstrates passion for public service, administration, and governance. Khatana has been recognized for his accomplishments with gold medals and participation in specialized global trainings. He is a results-driven public servant with policy, management, and community-focused experience across Punjab.



Mr. Khatana shared his experience from the field, based on actual incidents and highlighted pertinent lessons for future implementation of plans based on experience in the Punjab province. He stressed the importance of using the lens of resilience to approach adaptation.

Key Elements of Resilience Building

The Speaker brought attention to four factors that were integral elements in resilience building for climate adaptation. The first one was to understand the context and multiple interconnected dimensions of the risks involved. The point was the identification and understanding of the risk posed by action and inaction, which can disrupt social, economic, and environmental systems at the local, sub-national, national, and regional levels.

The second the point, the Speaker wished to emphasise, was a systems-based approach that acknowledges the interconnectedness of systems and has a methodical approach to dealing with them. It should be based upon the understanding that many adverse events are occurring at the global, regional, national, and international levels with repercussions that will have tangible socioeconomic, governance, and ecological implications.

The third element is of resilience building. In this regard, he highlighted those areas and aspects of society which would be closest in proximity to the impact of the evolving situation and to ensure that their range of perspectives are also respected and incorporated into any decision-making. He stressed the importance of special care provision for the most vulnerable. He pointed out that unfortunately many agencies with data do not share the same which hinders some of the work in this regard.

The fourth integral element of resilience building identified revolved around the capacity factor. Resilience requires capacity. Systems, institutions, and people are considered 'resilient' when they have absorptive, adaptive, anticipative, preventative, and transformative capacities and resources to cope with, withstand, and bounce back from shocks.

Case Studies

Mr. Khatana shared a case study of the renovation of the Taunsa Barrage. During the renovation of the barrage, the essential task of removing the debris before re-opening the barrage was ignored. This led to incredibly high levels of damage to infrastructure once the barrage was opened that could have been easily avoided had proper procedures been followed. Furthermore, the responsible individual could not be held accountable for his actions. Instead, his dismissal from service was also challenged, and he was reinstated.

This case study, according to the Speaker, highlighted how an effective system of checks and balances needs to be in place, and mechanisms for effective accountability should be embedded within the system.

The second case study was the aftermath of the devastating earthquake of 2005. The Speaker shared that a key observation during that catastrophe was that the aid and first response system was uncoordinated and chaotic, leading to the loss that could have been saved. The lesson learned was that a coordinated and centralized response system should be in place in case disasters occur. This would allow for efficient management of response and resources.

Recommendations and the Way Forward

- Understand that every policy framework needs an implementation mechanism, without which it is useless
- Incorporate the resilience lens into the planning process
- Approach resilience building from the approach of creating reactive, well-designed, researched, and streamlined systems that provide effective solutions
- Stakeholder consultation is essential in devising adaptation frameworks and implementation plans
- Document success and failure stories to gain valuable insights
- Ensure that steps are taken to protect the most vulnerable from the impact of climate change
- Improve data sharing between governments at every level
- Just as how the roles of federal and provincial governments are well-defined, so should the roles and responsibilities of local bodies be defined

Funds for Climate Adaptation: Bridging the Gaps

Ambassador Nauman Bashir Bhatti

Mr. Nauman Bashir Bhatti is currently serving as Pakistan's ambassador at Astana, but at the time of the seminar, he was Director General Strategic Planning in the Foreign Secretary's Office. He has over 18 years of diplomatic experience and has served as Desk Officer for the U.S. and the UN & as Director for the UN and Foreign Secretary Office. He has also served at Pakistan Missions abroad as First Secretary in Berlin, Counsellor in the Permanent Mission of Pakistan to the UN in New York, and Deputy Head of Mission in Brussels. He specializes in multilateral negotiations and sustainable development issues, particularly Energy and Climate Finance. Based on his expertise he negotiated several international instruments and multilateral agreements on behalf of Pakistan, including Paris Agreement on Climate Change. He is currently Pakistan's Ambassador in Astana, Kazakastan, and Co-Chair of the Green Climate Fund.



The talk was structured around understanding the different responses to climate change, the key questions associated with climate finance, and Pakistan's specific dynamics, challenges and opportunities.

Climate Approaches

Ambassador Bhatti explained that there were two main dimensions in dealing with climate change—mitigation and adaptation. Mitigation aims at reducing the current and future emissions, deviating away from the “business as usual” approach in all sectors of the economy including industrial, energy, transport, infrastructure, agriculture, forestry etc. Climate sensitive development is expensive and creates significance challenges for the economic growth and development in the developing countries. On the other hand, Adaptation focuses on addressing the adverse impacts of climate change and priority issue for the developing countries.

The Ambassador pointed out that the obligations and responsibilities of the developed and developing countries, associated with climate mitigation and adaptation, are distinct and differentiated based on the principles of climate convention and Paris Agreement on Climate Change. Furthermore, the climate actions by the developing countries are to be supported and supported enabled by international climate finance to be provided by the developed countries.

Climate Finance Dimensions

The Ambassador pointed out that there was no internationally agreed definition for Climate Finance (CF). However, CF is understood as the resources allocated for addressing climate change – both adaptation and mitigation. Paris Agreement on Climate Change established global climate finance goal of US \$100 billion annually for the period between 2020 to 2025. Discussions are underway for establishing a new climate finance goal beyond 2025.

The speaker highlighted that as per the UN Climate Convention, climate finance was envisaged to be new and additional for supporting climate action in the developing countries. However, it has been observed that most of the climate finance flows from the developed world are repurposed Official Development Assistance (ODA). The

climate finance is usually channeled through Development Finance Institutions and International Climate Funds/Mechanisms; UN Development System Entities and Bilateral Cooperation Agencies; and the private sector.

The Ambassador emphasized that accessing climate finance remains highly competitive and requires well calibrated measures. He noted that in 2021/22, the global climate finance flows, both public and private, were estimated at US \$1.27 trillion of which US \$63 billion was for adaptation. The projected annual need until 2030 is US \$212 billion.

Challenges for Adaptation Finance

Adaptation interventions and projects are usually not revenue-generating and therefore less attractive to private sector, entailing greater expenditure from public sources. Raising funds for adaptation therefore remains a greater challenge.

Furthermore, most approaches towards delivery of adaptation finance prioritizes least developed countries (LDCs) and small island developing states (SIDS). Middle and lower middle income countries continue to face significant challenges in attracting and accessing international climate finance, particularly for adaptation . Even during the 2022 floods in Pakistan, most of the resources allocated to Pakistan was repurposed development finance.

In the context of Pakistan, the factors that limit the climate finance inflows include: institutional capacity constraints and lack of absorptive capacity; policy implementation and coordination among the federal and provincial structures; absence of credible data, and reliance of external experts/consultants; and continued focus on existing development finance windows, with new opportunities untapped.

The speaker concluded that a holistic national approach was needed to calibrate our approach to enhance CF inflows.

Recommendations and the Way Forward

- Systematic, consistent, and coordinated national approach
- Structured engagement with CF institutions and delivery vehicles
- Undertake critical assessments, ensuring collection of credible data for informed decision making
- Create absorptive capacity, underpinned by better understanding of how different funds and mechanisms operate and the modalities required to be followed. Projects need to be aligned with the nature of availed funding
- Prioritise among available sources and channels for funding, and calibrate approach accordingly
- Develop medium to large scale adaptations programmes and projects
- Pursue structured engagements with key countries and build partnerships
- Mobilise domestic private sector and support their international partnerships to channel FDIs for climate projects in Pakistan

Role of Judicial and Quasi-Judicial Forums in Climate Change

Mr. Ahmad Rafay Alam

Mr. Ahmad Rafay Alam is an environmental lawyer and activist with considerable experience in corporate and constitutional law. He co-founded a law firm specializing in energy, water, natural resources, and urban infrastructure sectors. He advises government bodies, international organizations, and corporate clients on policy and strategy in these areas, as well as on sustainability issues. He has knowledge of government functions in Pakistan. He also serves on various councils and advisory boards related to climate change, environment protection, water management, and air quality.



In his discourse, Mr. Rafay Alam talked about case law of the honourable superior Courts on climate change as well as environmental pollution and the role of environmental tribunals.

Legal Landscape

Mr. Ahmad Rafay Alam began his talk by highlighting that environmental rights are not explicitly enshrined within the Constitution, but that in his opinion seemed to be simply a reflection of that time rather than a deliberate omission. He said that globally climate awareness got centre-stage in 1972 with the UN Stockholm Declaration on the Human Environment, and from there forwards climate change and environment got increasing global attention. This he said was also reflected in a context of the Shehla Zia vs WAPDA case in which the honourable Court expanded the definition of the 'Right to Life' to include a clean environment as part of it.

Environmental rights are not explicitly enshrined within the Constitution, but that seems to be simply a reflection of that time rather than a deliberate omission

Since then, environmental rights have become a recognized part of the fundamental rights of the Constitution of Pakistan. There have been various cases which have reinforced and expanded upon this. In the Asghar Leghari vs Federation of Pakistan (LHC, 2018), the Court established a Climate Change Commission to implement the Policy and Action Plan. The Commission identified 242 priority actions: 380 short-term, 108 medium-term and 5 long-term actions. The Speaker cited another Case upon which the Court elaborated on the precautionary principle 'in dubio, pro natura' (when in doubt, in favour of nature). The Speaker also pointed out that there were three Judgments which adhered to the Principle above, however, he said that they were all by the same Judge.

The Speaker stressed that according to the interpretation of the matter by the Supreme Court, adaptation and resilience are binding, especially on urban authorities and planning. He opined that there was a rising trend of sacrificing environmental concerns where there was substantial economic benefit at stake. In this regard, he gave an example of building of car-centric infrastructure in spite of several voices of concern being raised in the matter. In his opinion, an issue which surfaces repeatedly was that the policies and decisions that have been adopted at the federal level did not always filter down to the provincial and local government level.

The Speaker said that there were numerous examples where the environmental concerns were unable to make an impact since they dealt with land transactions involving private businesses and individuals. This makes it quite challenging to pursue climate justice in litigation in Pakistan.

Role of Quasi-Judicial Reforms

The Speaker informed that under the Federal and Provincial Environmental Acts, the Environmental Tribunals have been setup. The Environment Act(s) have also established environmental quality standards for air pollution, water pollution, automobile emissions, noise, etc. Exceeding the limits set by these acts may lead to prosecution under the CrPC (Code of Criminal Procedure) before an environmental tribunal. The Environmental Act also requires obtaining approvals before any large industry or construction commences and gives Environmental Protection Agencies to take action if there is a violation of environmental standards. However, the Environmental Tribunal cannot hear climate cases, as its jurisdiction is limited only to contravention of quality standards, failure to get environmental approval, or contravention of environmental protection orders. Therefore, the Speaker pointed out they have limited jurisdiction. As a result, there have been no climate justice cases out of any Environmental Tribunals.

The Speaker added that in case of Pakistan, even if the laws were amended and the jurisdiction of Environmental Tribunals expanded to include climate justice cases, it would still not make significant impact on climate change, since Pakistan's emissions' contribution to climate change is already minimal (less than one percent). The main focus of Pakistan, therefore, according to Mr Alam, should be on adaptation.

Recommendations and the Way Forward

- Bridge the gap between policies and decisions at the federal level and their implementation at the provincial level
- Ensure that large-scale infrastructure and development projects should get proper approval
- Empower environmental protection tribunals by broadening their jurisdiction
- Robust and effective enforcement of the environmental protection laws and guidelines must be ensured
- Focus on environmental protection and tackling environmental degradation

Climate Change with Focus on Adaptation: Pakistan's Obligations Under the Applicable International Regimes

Dr. Shakaib Rafique

Dr. Shakaib Rafique is currently serving as the Director UN-III at the Ministry of Foreign Affairs, Islamabad. Dr. Shakaib is a career Pakistani diplomat and joined the Ministry of Foreign Affairs of Pakistan in 2006. Over his diplomatic career spanning 18 years, Dr. Shakaib Rafique has served at different diplomatic missions of Pakistan abroad including Berlin, Vienna, Romania and Bosnia & Herzegovina. During his earlier official assignments at Headquarters, Dr. Shakaib Rafique has looked after the Organization and Career Planning Directorate, US Directorate as well as Central Asia and South East Asia & Pacific Departments. He has also represented Pakistan at the UN Office on Drugs and Crime and UN Office on Outer Space Affairs in Vienna.



Dr. Shakaib Rafique holds a PhD (Political Science) degree from the National University of Political Studies and Public Administration, Bucharest, Romania. His PhD thesis was premised on the constructivist analysis of foreign policies of China and India towards the South Asian region. He holds a Masters Degree in International Relations from University of Sargodha, Pakistan as well as a Masters Degree in Economics from the University of the Punjab, Lahore, Pakistan.

Dr. Rafique highlighted Pakistan's obligations from the perspective of climate change adaptation in view of its international obligations and role under the applicable international frameworks and mechanisms.

The Contours of Adaptation Scenarios

Dr. Rafique said that adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects. Adapting to such situations effectively is considered pivotal to ensuring long-term survival and preservation of lives and livelihoods. Adaptation measures cover a wide range of activities, from enhancing existing infrastructure to setting up early warning systems, redesigning communication systems, and reshaping business activities. Financing is required to carry out these measures, and raising an adequate amount of financing has been challenging for developing countries. Around US \$300 billion is needed globally by different countries annually till 2030 to implement adaptive measures. Only 21 percent of climate finance is provided by wealthier developed countries, which comes out to just US \$17 billion per year.

Under legal instruments such as the UNFCCC and the Paris Agreement, there is an acknowledgment by signatories that adaptation is a global challenge faced by all, with local, sub-national, national, regional, and international dimensions. There is an understanding that all parties which are signatories to these Agreements are committed to strengthening response to global climate change by increasing the ability of all to adapt, build resilience, and reduce vulnerabilities. These instruments thus define the obligations and roles of countries for the purposes of adaptation.

In his opinion, the situation is complex. The performance of developing countries when it comes to fulfilling obligations is found to be lacking. Similarly, developed countries failed to commit to doubling adaptation finance as agreed upon, and the roadmap for implementing the finance goal could also not be agreed upon. In addition, the Speaker shared that the oil-producing countries are also wary that a strong emphasis on adaptation could lead to increased pressure to reduce fossil fuel production. They are also concerned about incurring any legal or financial liabilities for damages related to climate change, as do countries with high levels of greenhouse gas emissions.

Pakistan's Adaptation Needs and Goals

Pakistan's national climate change adaptation vision foresees a climate-resilient Pakistan, based on commitments with socioeconomic and environmental adaptive capacities to pursue prosperity, development, and well-being. The NAP includes adaptation-related objectives that call for pro-poor, gender-sensitive adaptation while also promoting mitigation to the extent possible in a cost-effective manner. The Speaker stressed that Pakistan had been playing a very proactive role in terms of fulfilling obligations in the context of adaptation.

Pakistan's national climate change adaptation vision foresees a climate-resilient Pakistan based on commitments with socio-economic and environmental adaptive capacities to pursue prosperity, development, and well-being

Pakistan is also of the view that doubling adaptation finance and the fulfilment of the US \$100 billion per annum climate promise is essential and urgently required. Pakistan's adaptation needs, as identified by NDCs were identified to be around US \$14 billion per annum, until 2050. Around 70 percent of this was attributed to infrastructure maintenance and repair costs. The Speaker added that Pakistan is constantly engaged and meeting its adaptation commitments made under various agreements.

The Speaker stated that adaptation revolved around financing, and access to this financing was the main issue that needed to be addressed through these various international mechanisms.

Recommendations and the Way Forward

- Ensure that comprehensive and well-laid plans are ready for implementation to attract climate adaptation financing
- Bolster credibility by showing progress
- Maintain engagement on various climate action forums and platforms
- Protect gains that have already been made and preserve the momentum
- Build relationships and mobilise support to collaborate with international agencies and platforms
- Remain committed to adaptation, adjusting plans according to the available finances and options

Social Protection Mechanisms and Social Inclusion for the Vulnerable Groups; Gender, Youth and Internal Migrants

Dr. Asif Mahmood Jah

Dr. Asif Mahmood Jah is an accomplished civil servant and humanitarian leader who has served in various senior roles within the Government of Pakistan. He currently serves as the Federal Tax Ombudsman and formerly held positions like Chief Collector of Customs and Director of Post Clearance Audit. With over 3 decades of experience, Dr. Jah has extensive expertise in tax administration, customs operations intelligence and investigation. As a senior customs official, he has headed major customs collectorates and directorates across Pakistan.



On the academic front, Dr. Jah is a qualified medical doctor who completed his MBBS from King Edward Medical College. He has also attended specialized trainings and courses in areas like tax administration, capacity building and intelligence. In addition to his professional credentials, Dr. Jah is renowned for his exemplary humanitarian and social work. He has been conferred Pakistan's prestigious civil awards like Hilal-e-Imtiaz and Sitara-e-Imtiaz for his services to humanity. He has also authored over 25 books.

Dr. Asif Jah's talk revolved primarily around the role of charitable organizations and civil society efforts to bolster and augment adaptation efforts for the most vulnerable and marginalized groups of society, which has taken particular significance in the backdrop of climate change induced disasters.

Social Responsibility

The Speaker defined social responsibility as an ethical framework that emphasises the obligation upon entities, groups and individuals to benefit society at large. Social protection is seen as referring to programmes and policies aimed at benefitting people against risk and vulnerability. Different organizations and governments may invest such efforts in different areas and sectors of society. For instance, some may focus on migrants and refugees, while others may focus on gender disparities and healthcare. The Speaker highlighted this by elaborating that the International Labour Organization (ILO) considered social protection as entailing policies and programmes designed to reduce poverty and vulnerability by reducing people's exposure to risk, while building their capacity to cope with the risk of interruption leading to loss of income.

The Asian Development Bank (ADB) approaches in a similar fashion, social protection as consisting of policies and programmes designed to reduce poverty and vulnerability by reducing people's exposure to risk and their capacity building to cope with the risk of interruption or loss of income. Regardless of approach, social protection is vital for successful poverty reduction and crisis preparedness for food security, climate reliance, and inclusive economic development.

He cited a World Bank Report from 2015, which stated that about 25 percent of the population in low and middle income countries was covered under such social security nets. Such programmes have lifted at least 69 million from absolute poverty and 97 million from relative poverty. There is still much work to be done, especially in the

wake of the pandemic and the subsequent issues, such as food supply shortages due to global events and the effects of climate-related issues.

Dire Situation in Pakistan across the Board

Dr. Jah explained that many areas needed attention in Pakistan, but the situation in remote places of Balochistan was particularly dire. Most of Balochistan's population lacked access to clean, potable drinking water. The point highlighted was that poverty alleviation programmes, ensuring food security and healthcare, were critically needed across the country. However, any action that was taken was either reactive or to satisfy the requirements of donor agencies. In his opinion this approach creates gaps in the safety net of the population affecting the most vulnerable, the hardest.

The other major issue is that the efforts and systems currently in operation for social protection are plagued by corruption and mismanagement or implementation mechanisms that require considerable optimisation to achieve desired results. Dr. Jah added that even when projects have been executed, such as the digging up of water wells, follow-up maintenance was needed to maintain their functionality.

Core Areas Requiring Attention

Dr. Jah outlined different segments of the population which were among the worst affected by natural disasters, poverty, and environmental degradation. They lacked easy access to education, employment, and the decision-making processes that impacted their lives and were relegated to a lower socio-economic status. The Speaker stated that enhancing women's participation in decision-making and ensuring their access to adequate resources and education was essential. To this end, implementing gender-sensitive and region-specific policies was necessary.

The next demographic that was in high need of assistance was the youth population, which comprised a substantial portion of the potential workforce of the country. Climate change-related challenges, such as diminishing agricultural productivity and limited employment opportunities, were hindering the prospects for youth development. Furthermore, the lack of comprehensive social protection mechanisms exacerbates their vulnerability, leading to increased unemployment and social exclusion. To address this rapidly deteriorating situation, implementation of youth-focus skill development programmes, educational initiatives, and employment opportunities that are resilient to the impacts of climate change are needed.

Inclusivity should be a vital aspect in the development of social adaptation and mitigation policies

The other key area that needed attention was the uplift and care of socially marginalized communities, which were particularly vulnerable, as the current social protection mechanisms neglected their unique cultural and socioeconomic predicaments. Inclusivity should be a vital aspect in the development of social adaptation and mitigation policies. Collaborating with marginalized communities to understand their needs and traditional knowledge can enhance the effectiveness of social protection measures.

On a broader level, the Speaker pointed out that migration due to a number of issues ranging from economic destitution, conflict and strife, and climate change-related disasters posed huge risks to national and

international social stability. Citing UNHCR figures, the Speaker shared that at least 117 million people were currently living life as refugees. Pakistan and many other nations also faced the challenge of internal displacement of millions due to climate change. As they faced exclusion from society and various social protection nets in place, it was essential to draw up effective plans and strategies to ensure that internal migrants were not left behind and integrated into society in a healthy manner, with adequate provision for safe housing, healthcare, and livelihood opportunities. By prioritising the needs of vulnerable groups and integrating climate resilience into social protection initiatives, Pakistan can take significant strides toward building a more equitable and resilient society in the face of climate change.

Recommendations and the Way Forward

- Climatic disasters require an integrated, multipronged social protection framework that should protect income, health, and livelihoods
- The government should reevaluate and redesign conventional social protection programmes to prepare for an effective response to climatic disasters
- Effective implementation of gender-sensitive, youth-focused, socially inclusive, and migrant-aware social policies should be enacted with actionable implementation plans
- Concerted efforts by the government, civil society, and international stakeholders are required. The policy gaps should be identified in funding and policy coherence, along with increasing awareness and data collection, leading to a better understanding of the realities on the ground
- An effective local body system makes a huge difference at the grassroots level of societal improvement
- The involvement of local population is also essential
- Local farmers also engage in sustainable forms of farming, which should be encouraged and supported

Picture Gallery



Picture Gallery

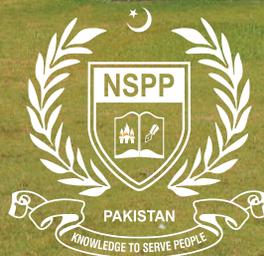
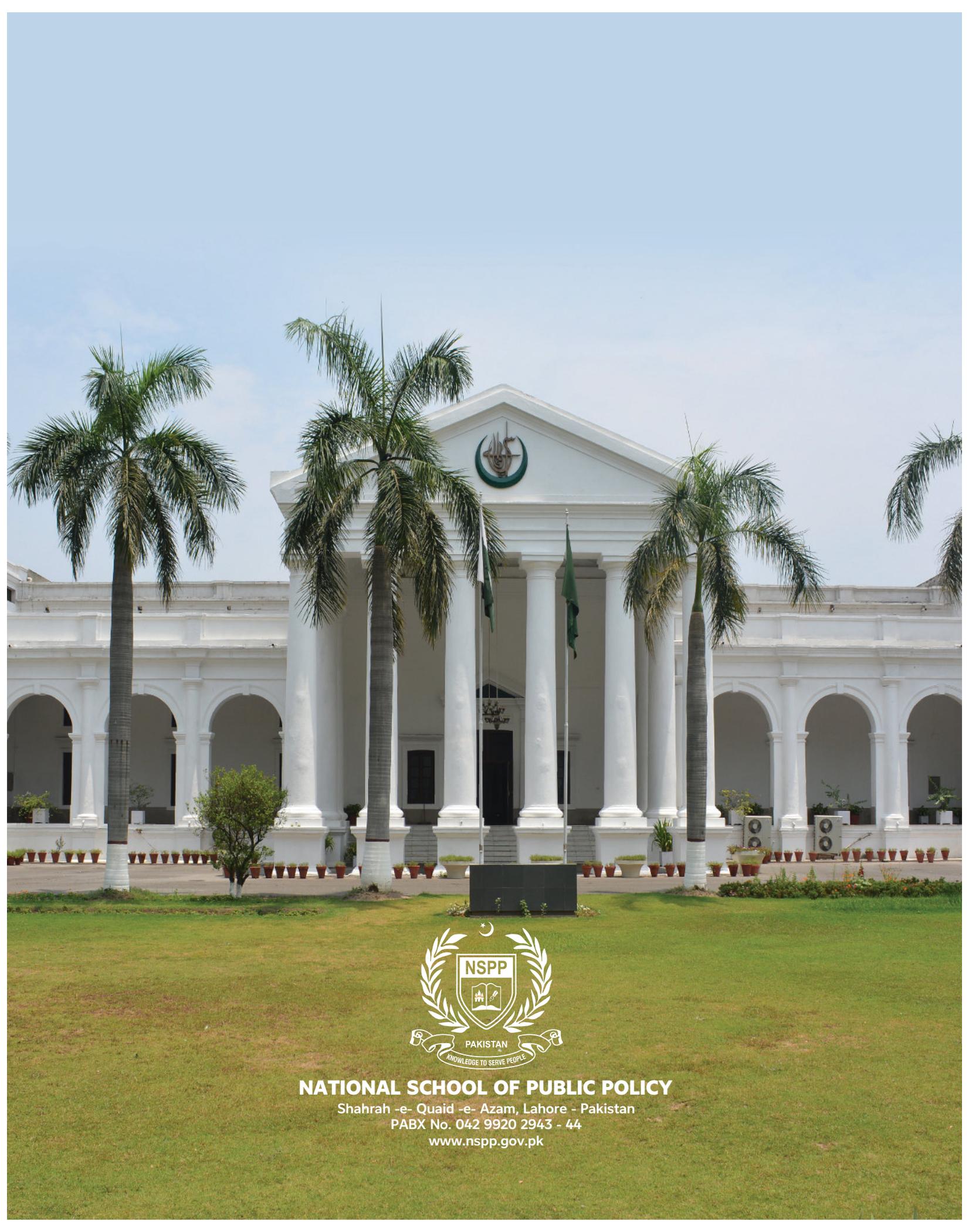




**EXECUTIVE DEVELOPMENT INSTITUTE
NATIONAL SCHOOL OF PUBLIC POLICY
ADAPTATION: TOWARDS A RESILIENT PAKISTAN**
November 7th to 8th 2023



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