

Light at the End of the Tunnel: Hope in Times of Despair

Edited by:

Uzma Tariq Haroon | Sarah Siddiq Aneel



SDPI
Sustainable Development Policy Institute

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Preface

Dr Abid Qaiyum Suleri

From Renaissance to Realpolitik: Steering Global Policy with Humanity

Dr Arif Alvi, Former President, Islamic Republic of Pakistan

Blueprint for Hope: Policy Pathways Out of Despair

Curated by Sarah Siddiq Aneel, Ahmed Khaver & Dur E Nayyab

Preface



This 25th volume in our series marks a significant milestone, encapsulating the discussions and policy recommendations from SDPI's Twenty-sixth Sustainable Development Conference, held in November 2023. This anthology distils the essence of the Conference into 26 thoughtfully curated chapters. Each academic contribution has been carefully peer-reviewed and revised with the guidance of esteemed referees. The volume also includes transcribed keynote speeches that are thematically organised and bring together the voices of leading decision-makers, researchers and practitioners.

The book captures diverse perspectives on fostering hope in challenging times, offering policy solutions that address crucial themes such as economic development, sustainable energy, environmental reforms, food security, agricultural sustainability, social equity, and the pivotal role of women in development.

The former President of Pakistan, **Dr Arif Alvi**, aptly notes, '*The future of global order hinges not just on technological advancements but on the preservation and promotion of human values. There is a delicate balance to maintain between our technological progress and our humanity.*' This anthology reflects how we can achieve that balance by capitalising on opportunities and safeguarding the threats from the rapid pace of technological innovations, especially concerning Pakistan's socio-technological and socioeconomic circumstances.

From the regional perspective, the volume highlights the importance of initiatives like the China-Pakistan Economic Corridor (CPEC) and the Belt and Road Initiative (BRI). The theme of regional partnerships was also highlighted by **Dr Jeffrey David Sachs**, who emphasised that '*The China model is the right one for Pakistan and other emerging economies – it's a high-investment, high-growth model.*' As you will find, our writers have argued that such initiatives may be pivotal in addressing Pakistan's infrastructural needs and integration into global trade routes. They also outlined that beyond the provision of financing, these projects can offer an opportunity for Pakistan to reimagine its development trajectory, enhancing connectivity not only within the region but also globally. Pakistan can benefit immensely from these investments, provided that strategic reforms accompany capital inflow.

Dr Shamshad Akhtar goes into great detail in her chapter to show that *'Successful implementation of comprehensive stabilisation measures has helped to revitalise the Pakistani economy, placing it back on a positive growth trajectory.'* The former minister further suggested, and the volume in hand endorses, that economic stability must be sustained through a concerted effort involving all sectors. While macroeconomic stability is essential, the deeper question is how Pakistan can ensure that this recovery is inclusive. The chapters within argue for growth that not only benefits the elite but lifts the most vulnerable segments of society.

Trade and regional connectivity are also critical themes. *'By restoring these trade linkages and enabling free movement of goods, we can access cheaper raw materials and enhance the pace of development significantly'* is the message of former State Minister **Dr Mohammad Jehanzeb Khan**. These are key considerations as Pakistan works towards economic recovery in an interconnected world. By revitalising trade routes and restoring regional partnerships, Pakistan can reduce its reliance on distant markets and increase its resilience to global economic shocks. The current geopolitical climate presents both challenges and opportunities for Pakistan, and this volume stresses that trade policy must be agile, forward-looking, and focused on fostering regional integration to unlock new growth pathways.

In the realm of human capital, the former Federal Minister for Institutional Reforms, **Dr Ishrat Husain** reminds us that *'Policymakers need to elevate their goals and strive to match the performance of better-performing countries. Achieving this depends on preparing our youth, especially girls and women, to become a skilled, productive, and competent labour force.'* This volume reiterates that education and workforce development, particularly for women, are essential to sustainable progress. In a global economy increasingly driven by knowledge and innovation, Pakistan's competitiveness will depend on how well it can equip its younger generation with the necessary skills. The chapters underscore that merely increasing access to education is not enough - Pakistan must also ensure quality and relevance of education systems to meet the demands of the 21st Century digital job market.

Energy, a critical theme, is addressed in several chapters. **Senator Dr Musadik Masood Malik** highlights that, *'We must pursue strategies that ensure not only availability of affordable energy but also long-term sustainability. Our goal is to continuously reduce our environmental impact, making our carbon footprint*

greener over time. Our writers argue that sustainable energy transitions are necessary for Pakistan's long-term stability and environmental health. The energy sector, a long bottleneck to growth, presents an opportunity for transformative change. By shifting towards renewable energy, Pakistan can simultaneously reduce its carbon footprint, alleviate energy shortages, and create new economic opportunities through green industries.

Climate change is another pressing concern, and WWF President **Dr Adil Najam** cautions, *'I firmly believe that importing climate solutions won't get us where we need to be - not even in terms of accessing climate finance. The first step must be to think indigenously.'* This anthology calls on the need for homegrown solutions that are tailored to local conditions and challenges. Pakistan's unique climate vulnerabilities require a contextual approach, and innovation in local practices, technologies, and financing mechanisms is critical to building resilience in both rural and urban areas. There is an urgent call for fostering local expertise and leveraging indigenous knowledge systems to address the multifaceted impacts of climate change.

Waste management, too, is an area ripe for innovation. Former Federal Minister and veteran parliamentarian **Syed Naveed Qamar** is absolutely clear, *'For those hesitant to choose recycled options, limiting the market to only recycled products would effectively leave them no alternative but to adapt. This not only supports environmental sustainability but also boosts industry profits.'* The potential for recycling and sustainability is vast, and this volume explores how to harness it for economic and environmental benefits. The shift from a linear to a circular economy can not only reduce environmental degradation but also stimulate new industries and job creation. This volume encourages policymakers and businesses alike to take a proactive role in transitioning towards sustainable production methods.

Food security remains a cornerstone of sustainable development which requires working together with national and global organisations like the Islamic Organization for Food Security, which according to its Chairperson Dr Masoud Jarallah Al-Marri, *'... has been at the forefront of addressing three essential aspects of food security: Availability, Accessibility, and Adoptability. These pillars are the foundation of our quest to secure food for all, even as we face complex challenges.'* In the same context, **Mr Zafar Masud**, President & CEO of The Bank of Punjab, is pragmatic and reminds us that *'Budget allocation towards R&D is an absolute must, for better seed production and other inputs like liquid chemical*

injection through drip irrigation based on biogas production.’ This volume takes a comprehensive approach to agricultural reforms and food systems, exploring ways to enhance resilience and sustainability. By investing in modern agricultural practices (like regenerative agriculture), improving water management, and securing food supply chains, Pakistan can address the dual threats of climate change and population growth that put immense pressure on development.

The role of women in development cannot be overstated. As then-Special Advisor on Human Rights and Women Empowerment, **Ms Mushaal Hussein Mullick**, aptly put it, *‘Education and empowering women are an investment in the sustainable development of communities and nations.’* This volume echoes the sentiment that gender equality and women’s empowerment are vital for achieving the Sustainable Development Goals. Women, as key drivers of social change, hold the potential to catalyse progress across all sectors, from education to agriculture and energy to governance to countering and preventing violent extremism.

I extend my heartfelt gratitude to all contributors for their invaluable insights, expertise, and commitment. Special thanks go to Ms Uzma Tariq Haroon and her team for their tireless efforts in compiling and editing this volume over the past year. I am confident that the policy pathways and ideas presented here will inspire meaningful change and propel us on a collective journey toward a more sustainable and equitable future.

Here’s to many more such publications in the pursuit of sustainable development.

A handwritten signature in black ink, appearing to read 'Dr Abid Qaiyum Suleri', with a long horizontal line extending from the end of the signature.

Dr Abid Qaiyum Suleri
Executive Director, Sustainable Development Policy Institute

From Renaissance to Realpolitik: Steering Global Policy with Humanity*



Dr Arif Alvi, Former President, Islamic Republic of Pakistan

Ms Mushaal Hussein Mullick Saheba, Special Assistant to Prime Minister on Human Rights and Women Empowerment, and a very good spokesperson on Kashmir and on women and human rights as well; Dr Masoud Jarallah Al-Marri, Director General, Islamic Organisation of Food Security, Director, Food Security Department, Ministry of Municipality and Environment, from State of Qatar; Dr Abid Qaiyum Suleri, Executive Director, SDPI; Honourable Ambassadors, Excellencies, Diplomats, Country Director of World Bank, Representatives of UN and UNDP, Ladies and Gentlemen, Assalam-o-Alaikum!

Thank you to all and SDPI that has been doing splendid work for quite some time, and I thank them for inviting me here. This is a matter of serious concern for me. While Dr Abid Suleri mentioned a ray of hope, and I must admit, in recent months, I've found myself grappling with a profound sense of despair. Where can I find hope? It is human intellect that offers me solace, not merely the abundance or scarcity of worldly resources. We cannot afford to dehumanise humanity in our quest to elevate environmental and ecological concerns; such an imbalance is unsustainable. Historically, development has been viewed as a beacon of hope for humanity over the past several centuries. We must find a way to balance our progress with our humanity.

I believe the current era of world history is shaped by the global order established in the 20th Century, a narrative deeply intertwined with Europe's history. This period was marked by the Renaissance, a time of profound advances in intellect, science, technology, as well as arts and culture. The footprint of this new global

* This is a *Provisional Transcript* delivered at the Inaugural Plenary of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 20 November 2023 in Islamabad, Pakistan. It was transcribed by Dur E Nayyab and Asim Zahoor from the Sustainable Development Policy Institute; and subsequently edited for clarity.

order emerged from the numerous conflicts within Europe - regions where human thought was evolving remarkably, despite the turbulence. This is not to say that other parts of the world were free from conflict; rather, these areas experienced more strife at a time when elsewhere, spirits and minds were in a state of ascendance, albeit amidst challenges.

If I look at the challenges of the world today, there is a challenge to peace. There are wars going on, there's exploitation going on, the justification of wars seems very superficial. In my lifetime, I have yet to see - and I challenge anyone here to convince me otherwise - that wars fought for peace have truly led to significant, positive change in the world, even 20 years later. If we are indeed convinced that wars are not the solution, then we must recognise our profound responsibility. We are at the helm of life on Earth, heirs to billions of years of environmental evolution. The pinnacle of this evolution has produced human beings - a mixture of love, hope, hatred, and paranoia. It is remarkable to think that this is the best evolution could achieve. Often, when it's time to choose hate or to judge, our vision is obscured by phobia and bias. This realisation is, frankly, quite surprising.

I used to think that imagery of human desecration, of human destruction, that imagery would convince the world that war, killing - is bad. That belief of mine has also been shattered because there is more imagery available today than the times of the Holocaust where reports came out years later, sometimes decades later, of what evil was being done by humanity on humanity. I earnestly wish to be part of a session where people attempt to convince me that there is still hope. I'm eager to hear arguments and perspectives that might challenge my current views and show me that positive change is still achievable in our world.

I was talking about the killings, and I didn't know that you were going to initiate the issue in looking at sustainable development. Sustainable development cannot occur without considering the human footprint - specifically, human decision-making that impacts our environment. My reference to the extensive list of killings over the past few centuries was to illustrate the historical context that has shaped our current 'rules-based global order.' These events directly influenced the development of the frameworks we rely on today to guide global interactions and decisions.

Let me outline the key historical steps without going too deeply into each. In Europe, we witnessed significant conflicts like the Thirty Years' War, the Hundred

Years' War, and a Seventy Years' War. These culminated in 1648 with the Westphalian treaties, which introduced two pivotal concepts. First, it established that only the state could legitimately wield violence and bear arms. Second, it defined the boundaries of nation-states, often arbitrarily - as seen in the geometric borders drawn across North Africa. This concept of national borders, first solidified in 1648, has profoundly shaped global politics.

Henry Kissinger made an insightful remark regarding this. He noted that the Westphalian order and its subsequent developments primarily involved Europe and, to some extent, North America, with little to no consultation with the rest of the world. I find this perspective particularly compelling and relevant even today.

In discussing the rules-based world order, I once spoke at a forum in Islamabad about the historical atrocities committed by humanity against itself. During this event, someone recommended Steven Pinker's book, *'The Better Angels of Our Nature: Why Violence Has Declined.'* This book offers a hopeful perspective, arguing that violence has significantly decreased over time. Pinker illustrates this by beginning with the story of Adam, Eve, Abel, and Cain, where out of four individuals, one was tragically killed, representing a 25% mortality rate due to violence. From this early biblical reference, Pinker suggests that, in comparison, we live in a far less violent present. His analysis provides a compelling narrative, proposing that despite the dark chapters of history, we have made progress towards a more peaceful human condition.

While statistics might not support my personal feelings, the widespread dissemination of human misery and information often paints a picture of a very unhappy world. I admit, feeling unhappy myself, I sometimes project this sentiment onto others, assuming a general state of discontent. However, when recently asked how we can instil hope in our children regarding human nature, I was reminded of the significant impact of the human footprint on the world. It's crucial to remember that our actions profoundly affect our planet. If humanity treads heavily and carelessly, it is our own home that will suffer in the future.

So, the problems are very big today, and therefore, these challenges have to be faced. These challenges cannot be faced unless diplomats sitting here, unless thinkers effect human policy. The urgency for change is critical because, in our time, the means for devastation and destruction are more accessible than ever. If

it takes centuries for human policies to evolve, this reality leaves me deeply concerned. Let me explain further.

The weapons of mass destruction which were managed and controlled through different treaties under the United Nations - non-proliferation etcetera - was relatively easier compared to the new tools available at the tip of human hands. Previously, tools of destruction like the atomic bomb required the resources of nation-states, making them somewhat more manageable as threats were centralised. However, today's technologies present a different challenge. Tools of destruction, particularly those involving Artificial Intelligence, are becoming accessible in a democratically widespread manner - that is, they are spread across the populace rather than held by a few states. This democratisation of technology can be potentially devastating. A critical issue we face is the slowness of human recognition and response to these emerging threats

The first book I read was in 2013 or 2014, when Nick Bostrom wrote on '*Super Intelligence*.' I'm glad that nations have finally gotten together to look at Artificial Intelligence - to look at the dangers of AI. Even nuclear development which happened, passed through very dangerous 15 or 20 possible accidents. We are alive today, most of us probably, because of the fact that those accidents did not happen. Any accident could have led to the use of nuclear weapons.

Moving from that, I recognise the fact that mankind has been interested in the footprint of environment, and I would bring you back to what inspires me sometimes. What often inspires me is the philosophy of Rumi, particularly his focus on love as a fundamental force. Rumi believed that without love, and without anchoring our lives in love, we cannot steer towards a future of peace. He advocated for starting this journey within ourselves, suggesting that internal transformation is the first step toward influencing the world around us.

Rumi teaches us a profound lesson on self-awareness and love. He urges us first to recognise ourselves and nurture love within our hearts. He advises us to open our hearts, identify any hatred, and actively manage it. From there, Rumi's wisdom unfolds in stages: start by fostering love within your immediate family, then extend that love to your neighbourhood. The next step is to promote love throughout your nation.

Rumi didn't stop there; he encouraged us to embrace love on an even broader scale, across all of humanity, transcending the boundaries of nationhood and religion. But his visionary perspective includes a crucial sixth step, one that highlights his timeless relevance. Rumi asked us to love every creation of nature or of Allah Subhanahu Wa Ta'ala (SWT) - from the clouds and stones to the waters around us. Finally, he teaches that love for your God and the Prophet (Peace Be Upon Him) should come after these foundational loves have been established - a bottom-up approach, not top down, to spiritual and worldly affection. You must start by loving within, allowing that love to radiate outward.

It is very important to recognise that all the prophets of the Abrahamic tradition and other religions around the world have sought peace and prosperity for humanity. Consider Jesus, who not only fed the people but also taught forgiveness by turning the other cheek. Yet, these profound acts often had limited immediate impact. Why is that? Despite their teachings, prophets have struggled to enact lasting change in mankind. Reflecting on this, we must ask ourselves: How can we expect to influence others when even these figures, with their vast followings, faced such challenges? It's a stark reminder of the difficulties in inspiring true change.

What is happening with all that following of Islam and Quran? The Quran says if you kill one man, you have killed humanity. If you save the life of one man, you have saved humanity. It doesn't talk about Muslims or Christians - it talks about human beings. Yet, despite this guidance, humankind ignores such wisdom.

Now, let me come back to what I was saying. When it comes to the environment, I believe the Prophet Muhammad (Peace Be Upon Him), talked about ablution before *namaz* or *salat*. You must take care even if you're sitting on the shores of a river to use water in a conservative manner.

So, if I look throughout history, particularly European history, we encounter figures like Carl Gustav Jung, who profoundly impacted our understanding of human psychology. Recognised globally as a dream psychologist, Jung's approach went beyond his professional expertise. In the 1950s, aware of the burgeoning consciousness about environmental issues, he chose to isolate himself from modern conveniences such as electricity. He opted for a life integrated with nature, settling on an island in a Swiss lake.

I'm appealing to the very essence of our humanity - our intrinsic desire for peace and love. As we reflect on the structure of our current world order, we must ask ourselves: how did we arrive here? Historically, it was the emergence of nation-states and the catastrophic toll of two world wars that shaped our global landscape. The First World War claimed approximately 50 million lives, while the Second World War saw nearly 100 million souls perish. Though these numbers are staggering, they underscore the immense cost of conflict.

In the aftermath, determined to forge a path toward peace, world leaders convened in San Francisco, giving birth to the United Nations. This assembly marked a pivotal moment in our history, a collective commitment to ensuring that such devastation would never occur again.

There were other people in the 19th Century and the 20th Century who proposed that there should be no war. This concept is important for you to understand also. They proposed the concept of no war. In that, one of the leaders of that movement was Tolstoy. Leo Tolstoy, the acclaimed Russian novelist, was a staunch critic of militarism and expressed his anti-war sentiments through influential writings. He advocated for nonviolence and critiqued the dehumanising effects of war, urging a moral stance against it. Tolstoy's philosophy profoundly impacted global nonviolent resistance movements, shaping figures like Mahatma Gandhi. His critiques aimed to reveal how war diminishes our shared humanity, promoting peace as the true reflection of moral progress.

What then, are the rules, where they do indeed exist?

It appears to me that vested interests often override these established rules. Consider the example from 2001, when George Bush criticised Israel for conducting assassinations beyond its borders. Yet, we observe a shift in stance when it suits the interests of a superpower. Such powers then engage in similar actions - assassinations without trial, without due process, merely based on unilateral determinations. These actions are executed, and concept of 'collateral damage' emerges, seemingly as an afterthought. This stark inconsistency highlights malleability of international rules, shaped by the whims of power rather than principles of justice.

So, what are we doing? The impact of our actions - the human footprint on this world - is causing considerable collateral damage, not just to other humans but

to the environment as well. Today, such collateral damage seems to be a widely accepted consequence, whether we're discussing human lives or ecological health. The pace of our intellectual and technological advancement outstrips our ability to adapt our habits and effectively manage these new tools. This isn't a new pattern; throughout history, as new weapons were developed, they were often justified as means for peace. Yet, in reality, they have been predominantly used for war. This historical trend underscores a critical disconnect between the intended peaceful applications of technology and their actual use in conflict.

Having shared these thoughts, and because you are all my friends, we are collectively seeking hope. My journey towards hope is a gradual one, and I'm still assessing how to find it in a world grappling with food and water shortages, and the broader impacts of global warming.

Where does one find hope amid such challenges?

I find it in human intellect, rather than human passions. Often, it's our passions that overshadow hope, yet the human intellect has consistently demonstrated the capacity to foster it. This isn't to present a one-sided argument; rather, I am striving to appreciate both aspects of the issue. The speed at which human intellect evolves is remarkable, often surpassing our expectations and offering solutions to even the most daunting challenge.

There's a very good book titled *'The Future Is Faster Than You Think'* [by Peter Diamandis and Steven Kotler] that captures the essence of our rapidly changing world. It argues that the transformations we witness are not just linear; they are exponential. Understanding the true nature of exponential growth can be challenging in our everyday contexts. For those among us with a mathematical background, looking into the mathematical descriptions of these changes could provide a clearer perspective on just how quickly the world around us is evolving.

Let me give you a small but striking example. The Human Genome Project, an endeavour to map the DNA of humankind, was initially estimated to cost a few billion dollars and was planned to take 14 years. After seven years, only one genome had been fully analysed, leading many to predict that the entire project could take 70 to 100 years to complete. However, mathematicians and AI experts remained confident that this pace was on track. So, let me tell you what is exponential: 1% in seven years, doubled 2% in eight years, 4% in nine, 8% in ten,

16% in 11, 32% in 12, 64% in 13, and in 14 years, it was done. So, please understand this, just a small example. I have lots of examples, but please understand this small example of exponential change in human intellect. It's not just about AI - it's about a broad spectrum of advancements reshaping our world.

And that is where the philosophy of abundance is going to emerge from, and it is emerging, for example, as far as energy is concerned - the ability to handle, to change energy from the sunlight to electricity is changing again exponentially. And tomorrow, fossil fuels may just be a thing of the past, but it is happening exponentially. What has also happened is democratisation and demonetisation of these stories. Individuals are getting into this, irrespective of your very sophisticated educational backgrounds, individuals throughout the world, whether in Africa, people who have just acquired simple basic knowledge of this changing human intellect, are participants in the employment process and contribution process.

So, looking from all that, there is still something missing when considering the formation of the United Nations. There's one significant loophole. Every human thought evolves over time, and this applies to the United Nations as well. We can't expect a sudden change in the UN where strong powers willingly give up their veto rights and distribute power equally. Such a shift has never happened in history, except maybe under the influence of a prophetic figure who could mesmerise everyone into understanding good and bad. However, this is not a practical expectation. Instead, change in the United Nations, as with all evolution, will be gradual, an outcome of evolving truths and perceptions. War happens in every region, but in San Francisco, when the UN was being formed, there was one loophole, that every country because of its interest has the right to wage war against the other if it feels threatened.¹

¹ Editors' Note: The UN was officially established at the San Francisco Conference, also known as the United Nations Conference on International Organization, which took place from 25 April to 26 June 1945. Delegates from 50 countries came together in San Francisco to draft and sign the United Nations Charter, which laid the foundation for the organisation. The conference was a culmination of earlier discussions and plans for a new international organisation to replace the League of Nations, with the aim of promoting peace, security, and cooperation among nations after the devastation of World War II.

For example, consider a scenario where 500 individuals of our nationality are under threat in another country. This gives us the right to interfere, especially when critical resources like oil, needed globally, are involved. Such situations often lead to international tensions. A country claiming ownership of strategic locations like the Suez Canal or halting the export of crucial commodities like opium can threaten global stability. These actions not only impact economies but also affect livelihoods of people, reminiscent of historical events like the Opium Wars, which occurred even before the establishment of the United Nations. A statement given by some UN's subsidiary organisation, maybe it was WHO, that reduction of opium cultivation to 300 tonnes from maybe 7,000 tonnes is remarkable but it will result in devastation and poverty, compromising the livelihood of those people. It is surprising what human intellect can develop!

What we're witnessing today is a continuation of a long-standing pattern of aggression, evident in the historical treatment of indigenous populations such as the Native Americans in the United States or the Incas and Aztecs in South America, where millions perished. It's important to consider history, let's take Thomas Jefferson's views, to understand this perspective. European colonisers often regarded the people of Africa as 'savages,' believing they lacked Christian ethics and were incapable of understanding or honouring treaties. This mentality still persists, as some groups are still classified as 'savages' who must be isolated or eliminated. This is a perilous judgement of humanity, reflecting a dangerous inclination to ostracize those perceived as different.

Can we take a moment to reflect on what is happening in Gaza today?

Do you think the people there, in their search for peace, will abandon their previous aspirations, feeling compelled to compromise because Israel's power has inflicted such devastation? Or do you believe that this will only fuel further reactions and resistance?

It's crucial to consider how historical events shape our current perspectives. Take, for example, the history of the Jewish people in Europe. They faced significant persecution, were maligned, and were expelled from various countries. In Spain, cities like Córdoba had significant Jewish populations, and while there were periods of protection, especially under Muslim rule, Jews also endured numerous hardships. This history underscores the broader struggle for religious tolerance and secularity in Europe, where conflicts between Protestants and Catholics often

erupted into wars, sometimes referred to as the 'Wars of Religion'. This tumultuous history influenced the European shift towards secularism, seeking an alternative to religious morality, possibly leading to a more ethics-based approach to humanity.

In the past century, particularly the last 75 years since the formation of the United Nations, we have witnessed a significant shift in the nature of democracy. Democracies have increasingly become secular, distancing themselves from theocratic systems. These secular democracies have been making decisions that from a human perspective are quite drastic and have, unfortunately, led to numerous wars. This reflects a human thought process where vested interests drive decisions, often at the expense of broader humanitarian principles. As a result, humanity has struggled to fully embrace an alternative to religiously driven humanitarian values.

When considering secular states, it's noteworthy that some constitutions, even in Western societies, begin with the acknowledgement of the right to happiness and belief in God. However, there is a disparity between these foundational principles and the actual implementation of laws. There are essentially two kinds of laws: one law is human law, and the other is state laws. While sometimes these two types of laws align well, incorporating human reactions and considerations, at other times they diverge significantly.

Finally, I would like to touch upon the evolution of law in Europe compared to that in Islamic tradition. The development of law in Europe, especially in nation-states, has followed a different trajectory compared to Islamic law. In Islam, the origin of law is deeply rooted in the Quran, the life of the Prophet (Peace Be Upon Him), and the decisions he made. The spirit of the law in Islam is based on broad principles and adaptability. For instance, the Prophet's encouragement to seek knowledge, even as far as China, implies using every available tool and method for acquiring knowledge, not just literal interpretation. This represents a significant contrast to the evolution of law in Christian Europe, which I prefer not to label simply as 'Christian'. In the Islamic legal system, the role of '*Muftis*' (jurist) was integral in society. People would approach them with disputes, such as conflicts between individuals, seeking resolution. The '*Muftis*' would then examine these disputes in the context of Islamic tradition and make ethical judgments. This system was in place until the era of the Usmanis, during which the states appointed '*Qazis*' (judges) solely for judicial purposes - not for the

creation of new laws. Interestingly, the state itself did not legislate until the 20th Century - it was always the judge, appointed by the state, who would interpret and apply laws based on decisions and principles established by the '*Muftis*.' However, it is notable that a '*Qazi*', while primarily independent, could sometimes be influenced by the state, illustrating how the state could indirectly affect the law-making process.

Having said all this, consider the immense number of resources – hard-earned money of people worldwide invested in the philosophy of Mutually Assured Destruction (MAD). This concept was not foreign but developed by intellectuals globally. The premise of MAD – if one nation attacks or destroys another's cities, the attacked nation will retaliate similarly, leading to a continuous cycle of destruction – is a stark example of human thinking devoid of ethical or humanitarian principles. This philosophy envisages a scenario where the entire world could be destroyed multiple times over, reflecting a deeply concerning aspect of human psychology and strategic thinking.

In contemporary times, particularly in democratic societies, there is an increasing influence of multinational corporations and vested interests. This phenomenon, previously highlighted by figures like President Eisenhower, shows that vested interest of some lobbies and interest groups have amassed wealth surpassing that of many nations. These entities often have significant influence, with individuals making policy decisions based on their immense wealth, sometimes upwards of USD 100 million. This situation presents a challenge to the democratic process, where ideally, policies should be formed through collective decision-making of the populace, not dictated by the wealthy few. Such a situation places numerous critical issues and decisions at the mercy of a handful of powerful individuals, significantly impacting the direction of human progress and global affairs.

I also want to bring to your attention to the staggering sum of USD 10 trillion a figure I've calculated, but one that is corroborated by research. This immense amount, representing the hard-earned money of people from America, Europe, Russia, and around the world, has been invested in creating weapons for Mutually Assured Destruction. Imagine if we redirected these priorities. With just a fraction of this amount, say USD 1 trillion, we could potentially eradicate global hunger or provide education to everyone worldwide. For instance, consider Pakistan, where 28 million children are currently out of school. Addressing such issues

requires a significant shift in our global priorities, focusing on sustainable development and women's empowerment.

The way we value human life varies greatly depending on the context. This disparity is evident in instances like the Gaza situation or the Pan Am air disaster, where Libya was fined USD 10 million per victim. Contrast this with the Vietnam War, where calls for war trials by figures like Bertrand Russell and Jean-Paul Sartre were dismissed due to the unofficial nature of their tribunal.² My aspiration goes beyond seeking trials - I advocate for a new world order based on the participative involvement of people, not just driven by vested interests and exploitation.

We are at a pivotal moment in human history, perhaps for the first time facing a situation where time is running out. Advancements in Artificial Intelligence, predicted to achieve super intelligence by around 2047, pose a serious challenge. This rapid evolution, in contrast to the slow pace of carbon-based DNA evolution which takes thousands of years whereas the silicon evolution takes only mere seconds, signifies a profound shift in our world. Today's AI, like ChatGPT, can process and recall vast amounts of information almost instantaneously - a task beyond the capacity of human memory.

An intriguing development in this technological evolution is the brain-computer interface, like Tesla's Neuralink, which aims to directly connect the human brain to computers. This advancement could dramatically expand our cognitive capabilities, but it also brings ethical considerations. The intellectual gap this technology might create could be as vast as the difference in intellect between a fly and Einstein! As we navigate this new terrain, it is imperative that we ensure such powerful technology adheres to ethical and moral principles.

In conclusion, the future of global order hinges not just on technological advancements but on the preservation and promotion of human values. There is a delicate balance to maintain between our technological progress and our

² Bertrand Russell and Jean-Paul Sartre were prominent critics of the Vietnam War and played key roles in organising the 'Russell Tribunal' (also known as the 'International War Crimes Tribunal') in 1966-67. This tribunal was an unofficial body established to investigate and document alleged war crimes committed by the United States and its allies during the Vietnam War.

humanity. It is a race against time, between nurturing human love and compassion and the relentless march of technological advancement. With these thoughts, I end my speech, hoping for a future where human values guide us through these unprecedented times.

Blueprint for Hope: Policy Pathways Out of Despair*



Curated by Sarah Siddiq Aneel, Ahmed Khaver & Dur E Nayyab

Overview

The proposed policy pathways in this chapter bring together the best minds from Pakistan and over 20 countries, showcasing global expertise and regional insight. While some may seem rudimentary or repetitive to seasoned policymakers, practitioners and event academics, they reflect the depth and breadth of critical subjects that go beyond mere policy formulation. Each proposal embodies a profound understanding of the challenges we face today in Pakistan and on a global scale—whether in climate resilience, economic diplomacy, or sustainable development—and how interconnected efforts across borders can offer pathways to recovery, resilience, and hope.

It is essential to recognise that these subjects, though familiar, carry renewed importance in an era of unprecedented crises. From addressing food security to incorporating gender equity in governance, they highlight the power of collaboration across sectors and geographies. Every recommendation, whether perceived as revisiting old ground or striking new territory, underscores the urgency of actionable solutions that tap into collective wisdom. These pathways, therefore, reflect not just ideas but the lived experiences of experts, leaders, and practitioners who are committed to a resilient future for Pakistan and beyond.

Roadmap to Recovery, Resilience and Optimism

1. Encourage a collaborative approach involving governments, civil society organisations, private sector, and individuals to actively engage in addressing crises like climate change, political turmoil, and economic challenges. This collective action should be informed by the insights and experiences of

* These pathways were derived from the thematic sessions and plenaries of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference held in November 2023, with special thanks to the rapporteurs of the conference and authors published in this anthology.

international delegates and experts, aiming to formulate and implement effective strategies for sustainable development, particularly in regions heavily impacted by these global challenges.

2. Enhance food security through climate-smart agriculture, sustainable water management, and technological integration, focusing on comprehensive strategies for prevention, mitigation, and adaptation in areas affected by climate change and conflicts. This effort should involve international organisations, governments, and agricultural sectors, aiming to develop and implement solutions for a resilient food supply.
3. Promote gender equality as a key element of sustainable development by providing education and economic opportunities for women, ensuring their equitable participation in decision-making processes, and challenging societal norms that hinder gender equality. This effort should involve governments, non-profits, businesses, and individuals, focusing on actionable initiatives that empower women, crucial for achieving a sustainable and equitable future.
4. Governments and international development organisations should prioritise policies that reduce economic and social disparities. Initiatives must focus on equitable access to education and healthcare and support fair trade practices to ensure inclusive economic growth.
5. Environmental regulatory agencies and industry leaders must enforce and adhere to stricter environmental standards.

Balancing Geostrategic and Economic Diplomacy

Implementing the following strategies will require concerted effort from all levels of government, especially the diplomatic corps and active engagement with stakeholders, including civil society and the private sector. The goal is to create a responsive 'Economic Diplomacy Framework.' The Government of Pakistan, therefore, needs to:

1. Acknowledge and actively address macroeconomic challenges such as inflation, import pressures, and weak connectivity. This involves implementing strategic measures like planned development partnerships and privatisation.
2. Reduce the size of the government to make it more efficient and cost-effective. This involves eliminating redundant roles, merging overlapping

departments, and focusing on core functions. Streamlining should aim to improve service delivery, reduce bureaucracy, and improve governance.

3. Implement measures to ensure greater political stability. This includes encouraging long-term policy planning rather than short-term political gains. Political stability is crucial for attracting investment, maintaining economic growth, and ensuring effective implementation of policies.
4. Shift from short-term, reactive policymaking to a long-term, strategic approach. This requires the government to engage in comprehensive planning, considering future challenges and opportunities. Long-term policies should be grounded in data and analysis, and be flexible enough to adapt to changing circumstances.
5. Establish clear boundaries between political and economic decisions. This separation is crucial for creating a stable and predictable economic environment, attractive to investors and beneficial for long-term economic planning.
6. Undertake comprehensive bureaucratic reforms to streamline government operations and make them more conducive to economic growth and efficient administration.
7. Invest in the education and training of individuals to become experts in specific policy areas. This specialisation is essential for informed decision-making and effective policy implementation.
8. Focus on enhancing regional connectivity as a cornerstone of Pakistan's geopolitical and geoeconomic strategy. This would involve fostering development partnerships that are regionally focused and aim to improve transportation, trade links, and economic cooperation with neighbouring countries.
9. Foster a non-zero-sum approach in international relations, stressing collaboration over competition. Focus on aligning diplomatic efforts with Pakistan's national interests independently.
10. Actively seek new international partners and investors. Explore and develop new sectors for trade and investment to broaden economic opportunities.
11. Diplomats should prioritise economic diplomacy, adapting to global economic shifts. This involves understanding and promoting Pakistan's economic interests internationally.
12. With limited resources, Pakistan must intensify efforts to create more economic opportunities, focusing on areas with high potential for growth and innovation, such as services sector and innovation economy.

13. Shift focus to commercial interests while understanding their increasing dominance in international relations. This involves reorienting policies and strategies to cater to contemporary commercial realities.
14. Develop non-traditional, innovative economic strategies in response to the changed geopolitical landscape post-US withdrawal from Afghanistan. This includes diversifying economic activities and creating unique economic value.
15. Encourage deeper understanding of the private sector among foreign ministers. Enhance coordination between the private sector and foreign ministries to align diplomatic efforts with market realities.
16. Incorporate advanced technology to modernise diplomatic processes and restructure embassies, making them more efficient and responsive to contemporary challenges.
17. Adopt a specialised approach towards global economic diplomacy, recognising its unique requirements and potential impact.

Weaving Circularity: Rethinking Pakistan's Textile Industry for a Sustainable Future

The following policy pathways collectively aim to modernise Pakistan's textile industry, making it more sustainable, competitive, and aligned with global environmental and labour standards. The government's role in facilitating these changes through policy, infrastructure support, and international collaboration is crucial:

1. Align the textile industry with the European Union (EU) and global standards on environmental and labour practices. This includes adopting track and trace systems, establishing recycling industries, incentivising waste-to-energy projects, and using recycled materials to meet stringent market requirements.
2. Adopt a holistic approach towards transitioning the textile industry to a circular economy. Implement global guidelines for used textile trade, provide capacity building for Small and Medium Enterprises (SMEs) in managing chemical usage, and initiate consumer behaviour change towards sustainable choices. Leverage support and expertise from international bodies like the United Nations Environment Programme (UNEP) for infrastructure development and regulatory changes.
3. Develop a comprehensive strategy to incorporate circular principles throughout the textile supply chain, involving collaborative efforts and

regulatory support for sustainable practices from farmers to garment manufacturers. Invest significantly in R&D for sustainable product development.

4. Establish structured, in-house recycling processes for pre- and post-consumer waste, focusing on commercially viable recycling systems. Move away from informal waste practices towards organised and sustainable waste management.
5. Innovate in the textile industry by producing higher thread count fabrics, aligning with global quality standards and reducing energy costs. This shift is essential for enhancing global competitiveness and sustainability.
6. Develop policies to incentivise the integration of recycled content into textile products, supporting not only large manufacturers but also SMEs. This approach is crucial for maintaining competitiveness, especially with upcoming EU legislation on waste.
7. Launch educational campaigns to inform consumers about the environmental impacts of fast fashion and the benefits of sustainable purchasing choices. This is vital for promoting a cultural shift towards recycled fabrics.
8. Adopt a life cycle assessment approach to quantify the impact of textile production on resources, energy, and water. This technical method will help the industry manage its environmental footprint and transition towards sustainability.
9. Incorporate sustainable manufacturing strategies like lean manufacturing, Six Sigma, and green practices. Develop standardised designs to address post-industrial waste.
10. Focus on reducing economic activity to prioritise environmental stability and social well-being. Redefine success beyond GDP, advocating for renewable energy, green taxation, and sustainable government policies.
11. Move from a GDP-centric growth approach to a sustainable, circular economy. Focus on regeneration and redistribution, not just recycling and reusing.
12. Emphasise the importance of measuring and reporting sustainability practices for effective management in achieving circularity. Foster strong partnerships between academia and industry to foster innovation.

Policy Agenda for Governance

The following policy pathways focus on creating a sustainable, equitable, and resilient economic environment in Pakistan through tax reform, improved

governance, strategic investments in human capital, and policies that foster ease of doing business and efficient resource management for the attention of the new government in 2024:

1. Initiate comprehensive tax reforms at the provincial level, including the establishment of a provincial agricultural income tax and adjustments to property taxes, to generate significant revenue and promote a more equitable fiscal environment.
2. Implement a new IMF programme to create room for measures that boost Small and Medium Enterprises (SMEs) and safeguard social development indicators. Political parties must understand the seriousness of the economic situation and make swift, well-informed decisions.
3. Tackle the local mafia in agriculture and tailor specific strategies for each segment to optimise potential and contribute to socioeconomic development. Focus on increasing production while reducing costs, requiring political commitment for successful implementation.
4. Enhance governance and decision-making processes to overcome challenges in political and bureaucratic governance. Meaningful change depends on substantial progress in these fundamental aspects.
5. Establish a system that efficiently utilises resources with a focus on long-term conservation, ensuring sustainable and inclusive governance for community well-being and future generations.
6. Prioritise investments in human capital and skill development initiatives to ensure sustainable economic growth. This strategic emphasis on nurturing expertise and talent is key to long-term economic resilience.
7. Simplify documentation processes and adopt a progressive approach towards local enterprises. Ensure consistency in policies, integrating youth-led initiatives, political will in budgeting, and the implementation of e-Governance with vertically aligned data. Streamline progressive taxation and targeted subsidies through effective data alignment.
8. Develop and implement a comprehensive population growth policy to address broader socioeconomic issues.

Tobacco Taxation – Light at the End of the Health and Poverty Tunnel

The following policy guidelines aim to enhance the effectiveness of tobacco control measures in Pakistan by curbing industry propaganda, ensuring transparent policymaking, improving inter-agency communication, addressing tax evasion, and raising public awareness, particularly among the youth:

1. It is vital to stop the tobacco industry's propaganda. The Pakistan Electronic Media Regulatory Authority (PEMRA) and the Government of Pakistan (GoP) must halt treaty and regulatory violations by the tobacco industry. Specifically, state communication channels, including Radio Pakistan, should prohibit the tobacco industry from propagating messages about tobacco harm reduction.
2. The Ministry of Narcotics Control and the Pakistan Tobacco Board should collaborate to prevent tobacco industry intervention in public health policy. This joint effort is crucial to ensure unbiased and effective public health strategies.
3. Enhance communication among relevant government entities to foster effective collaboration in preventing tobacco use. There is a current lack of productive cooperation in efforts to address tobacco consumption.
4. The GoP and the Federal Board of Revenue (FBR) need to work together to address the under-reporting of tobacco product production and combat the issue of illicit trade and the informal sector. Integrating this sector into the taxation framework is essential to manage tobacco usage effectively.
5. PEMRA should develop and disseminate awareness campaigns targeting youth, highlighting the harmful health and social effects of tobacco use. These campaigns should utilise various media channels, including social media, television, radio, and the press, for maximum outreach.

Gender and Disaster Resilience Lens

These following policy pathways are important to integrate gender considerations deeply and systematically into Pakistan's economic and developmental policies, ensuring gender parity and resilience in the face of disasters and economic challenges:

1. Prioritise exploring new revenue streams and addressing gaps in the economy, with a specific focus on incorporating gender considerations to strengthen macroeconomic stability and foster sustainable, inclusive growth in Pakistan.
2. Implement departmental alignment, digitalisation, and institutional reforms to contribute significantly toward achieving these goals, ensuring these reforms are inclusive and gender-sensitive.
3. Ensure the integration of gender considerations into commerce, investment, and taxation policies. This integration is vital for enhancing overall economic conditions and promoting gender equity and financial inclusion of women.
4. Adopt anticipatory actions through tools such as liquidity management, risk management, future investment, institutionalised consultation, international cooperation, and programme impact evaluation, all while incorporating a gender lens.
5. Develop governance structures and infrastructure that are responsive to gender needs. This includes creating a gender data repository and promoting inclusive green finance as part of a comprehensive approach.
6. Centre the discourse around social and cultural factors that impact gender equality, acknowledging their significance in shaping policies and practices.
7. Develop robust support systems that aid in recovering dignity, self-assurance, necessary skills, and physical assistance, with a focus on gender-specific needs.
8. Institutionalise the evaluation of development projects by incorporating a gender perspective into public investment considerations, ensuring gender-responsive budgeting and investment.

Empowering Communities: Poverty Graduation in Pakistan

These policy directions will enhance effectiveness of poverty graduation efforts in Pakistan through improved collaboration, women's empowerment, sustainable planning, local government support, and the integration of climate change considerations:

1. Enhance collaboration between different organisations and with the government to create a more unified and effective approach to poverty alleviation.

2. The Pakistan Poverty Alleviation Fund (PPAF) should recognise and increase the role of women in Third Tier Organisations (TTOs), given that women-led organisations are statistically more likely to be active and effective.
3. Move towards institutionalising poverty graduation initiatives, as the combined efforts of multiple organisations are more impactful than isolated actions.
4. Include post-programme design in poverty alleviation and graduation programmes to ensure sustainable exit strategies. This will enable TTOs to transition from active roles in a way that continues to strengthen communities without the need for ongoing aid.
5. Bolster government presence and support at the local level to enhance local infrastructures, potentially reducing the need for external intervention.
6. Ensure that the PPAF and other stakeholder organisations incorporate and address climate change challenges in their poverty graduation programmes, given the significant impact of climate change on poverty and community resilience.

Towards Affordable and Resilient Food Systems in Pakistan

The following policy pathways will help build a more affordable and resilient food system in Pakistan, addressing key issues such as food diversity, gender disparities, wastage reduction, strategic planning, and improved distribution networks:

1. The government should actively engage with various stakeholders to promote diversification in Pakistan's food system. This includes diversifying crop production, the geographical areas where food is grown, and involving a broader range of people in food production. Enhancing food diversity will not only vary the population's consumption patterns but also increase inclusivity in the food systems.
2. Recognise and reduce gender disparities in the agricultural sector. Women, despite their significant role in agricultural production, are often excluded from decision-making processes. Implementing a food-based social protection system that includes women in decision-making can help address this imbalance.
3. With Pakistan wasting approximately 19.6 million tonnes of food annually, the government should collaborate with relevant stakeholders to decrease

food wastage, especially during post-harvesting. This involves improving food storage, transportation, and distribution systems.

4. The Federal Government should set specific goals for food systems and integrate these pathways into their planning. This requires strengthening decision support systems, such as enhancing data collection and analysis, and fostering collaboration between national and global actors. Establishing a robust coordination mechanism is essential for this approach.
5. Enhance the impact of Pakistan's Food Distribution Networks (FDNs) on women's and children's nutrition. This can be achieved by introducing social and behavioural change communication strategies and linking local production with local markets, ensuring that nutritional benefits are maximised, especially for vulnerable groups.

Envisioning Universal Health Coverage in Pakistan – How to Make It Possible?

The following policy pathways focus on creating a more integrated, equitable, and accessible healthcare system in Pakistan, leveraging both public and private sectors, and urging preventative care and financial sustainability:

1. Increase investment in impactful initiatives like the Lady Health Worker (LHW) programme and adopt a multifaceted approach to overcome financial constraints. This is essential for equitable healthcare distribution, especially in underserved regions.
2. Give focused attention to the LHW programme as a crucial element of primary healthcare provision at the community level.
3. Implement a paradigm shift in healthcare strategy, highlighting a proactive and preventive approach.
4. Link primary healthcare services to health insurance and social health insurance systems to move towards universal healthcare coverage.
5. Introduce and consider various financing mechanisms at the government level, involving the private sector, including insurance companies and general practitioners, given their significant role in healthcare provision.
6. Address the profit motive and lack of standards in private healthcare facilities to provide quality healthcare.
7. Significantly increase investment in district-level healthcare infrastructure to improve accessibility and quality of services.

8. Enhance the linkage between primary and tertiary care to create a more integrated healthcare system.
9. Develop a unified health insurance programme to guarantee financial protection and accessibility for all, irrespective of socioeconomic status.

Green Transition in South Asia

These policy guidelines are likely to facilitate a comprehensive green transition in South Asia, focusing on clean energy adoption, regional collaboration, innovative financing, reduced coal dependency, and inclusive participation in green initiatives:

1. Advocate for import taxes on products associated with non-renewable energy sources to encourage a shift towards clean energy adoption. Support the development of a regional marketplace with flexible terms to enhance collaboration in clean energy initiatives.
2. Foster cooperation among South Asian nations in clean energy projects, such as hydrogen production. Support policies and investments that facilitate regional connectivity and collaborative efforts in clean energy.
3. Explore the creation of regional capital markets specifically for green financing. This includes issuing green bonds and developing financial instruments that support clean energy projects at various scales.
4. Develop and implement a comprehensive plan to reduce reliance on coal, particularly in areas heavily dependent on coal. Encourage sectors like aviation to move away from coal and offer incentives for adopting clean energy alternatives.
5. Introduce legislation to encourage green housing practices, such as solar panel integration in residential areas.
6. Actively involve women in clean energy policymaking and the green transition given their unique contributions and potential.

State of Renewable Energy: Unlocking Private Sector Finance

These policy pathways aim to create a more transparent, stable, and supportive financial environment for the growth of the Renewable Energy (RE) sector in Pakistan, encouraging private sector investment and participation:

1. The Ministry of Climate Change and Environmental Coordination should collaborate with policymakers and regulators to establish a strong Measurement, Reporting and Verification (MRV) system. This system will ensure transparency in climate finance investments and direct them towards appropriate projects, enhancing credibility and accountability.
2. The government, State Bank of Pakistan (SBP), Securities and Exchange Commission of Pakistan (SECP), and Pakistan Stock Exchange (PSX), should collaborate to create a 'De-risking Framework for Climate Finance.' For foreign investments, they ought to develop mechanisms like Currency Exchange Funds in collaboration with Development Finance Institutions (DFIs) to manage risks associated with currency devaluation.
3. The Ministry of Energy, supported by relevant authorities, should hasten decisions on policy frameworks that create a conducive environment for RE investment. This includes easing private sector facilitation and implementing larger policy reforms such as power wheeling, to attract more investors to Pakistan's RE sector.
4. The government should introduce financial incentives for the private sector in the RE domain, including preferential loans, tax reduction schemes, lower import duties, and RE bonds, to encourage investment and participation.
5. Address the challenges of the RE sector being a risky venture for financing institutions and the banking sector. Reinstate the SBP's RE financing facility and provide additional concessional financing options. Utilise structured financing products like InfraZamin or Pakistan Credit Guarantee Company (PCGC) through equity provisions or guarantee structures to support RE offtake.

Sustainable Development in Troubled Times

This following structured approach outlines a comprehensive plan for Pakistan to navigate its current challenges and invest strategically for sustainable development. The focus spans from emulating successful growth models to

investing in critical sectors and adopting a multifaceted economic strategy, with a strong emphasis on technological advancement and digital transformation:

Strategic Investment for Economic Prosperity

Emulate China's strategy of meaningful investment in key sectors for sustained growth. This model, focusing on education, health, infrastructure, and industrial sectors, can serve as a blueprint for Pakistan. In this regard:

1. Prioritise investments in quality education and a robust basic healthcare system. These sectors are fundamental for building a skilled, healthy, and productive population.
2. Allocate resources towards transitioning to sustainable energy sources and industrial development to drive economic growth.
3. Invest substantially in agriculture for food security and economic stability, focusing on sustainable land use.
4. Enhance urban infrastructure to improve living standards and economic activities in urban areas.
5. Invest in digital infrastructure to leverage opportunities in the evolving global digital economy.
6. Ensure that the benefits of these investments reach all societal levels, promoting inclusivity and shared prosperity.

Multifaceted Economic Strategy

1. Implement effective tax policies to broaden the tax base, streamline tax collection processes, and explore alternative revenue sources like Public-Private Partnerships (PPPs).
2. Promote a savings culture through awareness campaigns and financial literacy programmes and introduce incentives for saving.
3. Adopt prudent external borrowing strategies, negotiate favourable debt terms, and diversify external financing sources to mitigate risks.
4. Prioritise digital transformation across sectors to align with future technological trends and enhance efficiency and competitiveness.

Climate-Smart Food Systems: Enhancing Sustainability, Supply Chains and Consumer Welfare

The following policy pathways are designed to modernise Pakistan's agricultural sector by adopting advanced technologies, boosting profitability, strengthening resilience against climate change, and promoting private investment. The integration of modern research, technology, and gender inclusivity is essential to building a robust, 'Sustainable Agricultural Framework' capable of withstanding environmental challenges and climate change impacts, not just in Pakistan but also within the region:

1. Adopt and implement modern agricultural technologies and ensure their dissemination to farmers and crop growers at the grassroots level. This approach is vital for maximising impact and achieving desired outcomes in the agricultural sector.
2. Recognise that farming is currently less attractive to private investors compared to other sectors. The government should implement strategies to make agriculture consistently profitable, thereby encouraging private sector involvement and contributing to the sector's growth and development.
3. Increase government investment in modern agricultural practices and technologies. Actively communicate the benefits of these advancements at the grassroots level, particularly as a means to mitigate the impacts of climate change on agriculture.
4. Identify and address the underlying reasons for limited private sector participation in agriculture. The government should offer incentives and actively promote the sector's potential benefits to attract private investments.
5. Promote active involvement of the academic sector in researching climate-smart agriculture practices. This research should aim to develop innovative strategies and technologies tailored to Pakistan's unique agricultural challenges and climate conditions.
6. Establish an advanced agricultural mapping system in Pakistan. This system should enable the identification of lands best suited for specific agricultural purposes, optimising resource allocation and enhancing overall sector development.
7. Enact appropriate environmental laws and formulate clear, consistent policy guidelines to support climate-smart agriculture. This approach is essential to

ensure sustainable and responsible agricultural practices that align with both national and global environmental standards.

8. Boost female participation in the agricultural sector, particularly in rural areas. Women play a critical role in agriculture, and addressing malnutrition among them is key to managing food security challenges.
9. Tailor region-specific policies to effectively address the impact of pests and climate change on agriculture. These policies should be adapted to local conditions and risks to effectively mitigate adverse effects and promote sustainable agricultural growth.

Sustainability in the Digital Age: Potential of AI in Pakistan

These policy pathways highlight the diverse potential of AI in various sectors in Pakistan, from education and healthcare to disaster management, underscoring the need for strategic collaboration and innovation in its implementation:

Policy and Planning

1. An AI Task Force, representing all sectors, should be constituted in the Cabinet Division to keep pace with the rapidly evolving AI technology. It should meet periodically to discuss and evaluate current developments in this field, foresee future developments and prepare policy and planning recommendations for the implementing agencies.
2. AI Regulation is extremely important, but it needs to come after sufficient development of technology – not too late and not too early. Regulatory frameworks should be adaptable. AI experts in Pakistan should sit together to form the regulations. Universities should play a leading role in research and development in this area.
3. Ethical Challenges of AI have to be addressed by:
 - establishing comprehensive ethical frameworks, guidelines, and codes of conduct and employing techniques like algorithmic auditing, diverse data-set curation, and fairness-aware machine learning to mitigate biases.
 - defining clear lines of responsibility and liability and implementing mechanisms for redressal in case of any AI-related harm.
 - employing rigorous testing, validation, and continuous monitoring of AI systems, ensuring safety and reliability.

4. Long-term AI strategy should be overseen by the proposed Task Force. A conducive environment should be created for AI experts so that they might work with zeal and dedication.
5. AI has the potential to impact every aspect of human life. In particular, the following segments should be addressed as a priority:
 - a. **Climate change:** Multiple catastrophic issues have been exacerbated by the change in climate, leading to natural disasters like floods and wildfires. AI can mitigate these by forecasting using historical patterns of floods and the seasons of flooding in the region. This can help save the lives of millions of people around the world, including Pakistan. Relevant agencies – like National Disaster Risk Management Fund (NDRMF) and flood control agencies - should adopt AI to forecast natural disasters. AI should also be adopted for post-disaster management by filling the informational gap through Automated Damage Assessment using satellite imagery.
 - b. **Education**-related AI should be included in the curriculum from a very early stage. Over 25,000 IT graduates, partly skilled in AI, are produced yearly. They should be utilised to attract Foreign Direct Investment (FDI) in the country. There are other multiple issues associated with attracting AI-related FDI in the country. For example, for AI companies to progress, there is still insufficient publicly available data on which to base their products.
 - c. **Healthcare** providers from the private sector in Pakistan fear including AI in their healthcare systems. They are afraid of who will bear the responsibility if a mistake occurs, and the cost associated with it. Steps must be taken to streamline and regulate the use of AI in the health sector so that healthcare providers can freely operate within the given parameters.
 - d. **Job displacement** is a bigger issue, as more than 400 million jobs (mostly low-skill jobs) are likely to be impacted by 2030. However, AI also creates new/more job opportunities, such as in the media industry where humans can focus on the generation of ideas, make use of AI models, and address major legal issues such as copyright, etc. With important interventions and support, AI can create more than 130 million new jobs. Thus, there is a pressing need to reskill the already skilled professionals. Skill development, especially AI-related, should be promoted at all levels of education.

- e. **Military uses:** Several countries have developed autonomous weapons by using AI. To forestall any surprise, close collaboration between universities, industry, and the military for R&D in this technology should be forged.

Human Security

These policy pathways focus on a multidimensional approach to enhance human security in Pakistan, recognising the intricate relationship between individual welfare and broader national security concerns:

1. Pursue a renewed International Monetary Fund (IMF) agreement to mitigate external vulnerabilities. This is crucial considering the significant economic repercussions, such as a potential 9% decrease in GDP and a 72% increase in prices if Pakistan defaults. Establishing a robust economic charter and achieving political consensus on human security are essential steps.
2. Implement a finance plan with direct taxes from federal and provincial governments to generate substantial fiscal resources. Address the identified poverty gap of Rs 2250 billion through progressive resource mobilisation, targeting different social strata.
3. Incorporate a micro-level approach in policy formulation to effectively tackle the complexities of human security. This approach should focus on the specific needs and circumstances at the community and individual levels.
4. Adopt people-centric approaches that recognise the interconnection between national and human security. Implement measures such as expenditure cuts, pension reforms, and addressing 'VIP culture' to enhance economic security.

Sustainable Consumption and Production in the Context of Circular Economy and Climate Agenda

These policy pathways are centred on embedding sustainable practices in both consumption and production. They advocate for systematic changes and educational initiatives, crucial for aligning with the objectives of a circular economy and climate agenda. The focus is on enhancing sustainability across different sectors through strategies such as reducing carbon footprints, revising

business models, improving production efficiency, and nurturing a culture of individual and collective responsibility towards sustainable practices:

1. Prioritise the effective management and reduction of excessive water consumption as a key element of sustainable consumption and production.
2. Concentrate on achieving sustainable growth that accounts for long-term environmental and social impacts, rather than solely on economic growth.
3. Embrace a comprehensive, holistic approach to sustainable development, addressing interconnected social, economic, and environmental factors.
4. Balance deregulation with the rationalisation of regulations to effectively meet the Sustainable Development Goals (SDGs), ensuring streamlined and efficient frameworks.
5. Increase consumer awareness about sustainable consumption patterns and encourage the private and industrial sectors to adopt sustainable marketing and packaging practices.
6. Advocate the shift towards a circular economy through sustainable production and consumption as a voluntary initiative in both industrial and private sectors, stressing the critical role of food and resource management. Introduce circular economy principles as mandatory practices.
7. Focus on reducing the carbon footprint of Civil Society Organisations (CSOs) and humanitarian agencies. This will involve highlighting green procurement practices and engaging with stakeholders like vendors to educate them about sustainable production and consumption.
8. Foster public and stakeholder engagement to achieve the goals of a circular economy.
9. Make sustainable practices fashionable and appealing to the wider population.
10. Enhance production pathways and intermediary systems, focusing on efficiency and sustainability. The success of a circular economy hinges on this optimisation and resource synchronisation.
11. Adopt a holistic approach in coordinating ministries, integrating scientific evidence for effective policy implementation and sustainable practices.
12. Inculcate a sense of individual responsibility through small steps, building a collective commitment to sustainability. Develop incentives that promote sustainable processes. Highlight success stories, like the decline of cigarette smoking, as models to inspire sustainable production and consumption practices.

Sustainable Agriculture for Food Security in Pakistan

The following policy pathways are designed to tackle crucial elements of sustainable agriculture in Pakistan. They urge efficient water management, robust financial support systems, the advancement of agricultural technology, and the establishment of coherent:

1. Invest in water storage infrastructure and implement smart water management strategies to efficiently distribute water, particularly for agricultural needs.
2. Develop policies and educational programmes to encourage water conservation across industries, agriculture, and households, ensuring equitable water access.
3. Allocate financial resources to support climate-resilient agriculture, including the development of drought-resistant crops, efficient irrigation systems, and sustainable farming practices.
4. Expand financial assistance for farmers through subsidised loans and insurance, facilitating easier access to resources, technology and inputs like seeds, fertilizers, and equipment to ensure affordability and sustainability in farming.
5. Implement soil and water testing initiatives to guide farmers in making informed decisions about fertilization and irrigation, enhancing soil health and water use efficiency.
6. Offer and mandate crop insurance for farmers, particularly with coverage for irrigation, to safeguard against natural disasters and promote responsible farming.
7. Enhance infrastructure, including roads, telecommunications, and internet access, to connect rural and urban areas, aiding farmers in accessing markets, information, and technology.
8. Establish a consistent Agricultural Policy Framework for agricultural reforms to safeguard long-term sustainability of the farming sector.
9. Incentivise and reward the adoption of digital tools in agriculture to facilitate data collection and promote innovative, sustainable practices.
10. Adopt proper packaging methods for food and vegetables to reduce spoilage and extend shelf life in the supply chain.

Climate-Resilient and Low-Carbon Health Systems: Strengthening Partnerships for Impact

The following policy pathways provide a strategic approach to developing a robust, climate-resilient, and low-carbon health system in Pakistan. They underscore cross-sector collaboration, targeted training, infrastructure assessment, and sustainable financing:

1. Designate specific focal points within ministries to coordinate climate change and health initiatives effectively, ensuring focused and streamlined efforts.
2. Create cross-sectional policy and technical working groups involving all relevant stakeholders. This collaborative approach should include diverse perspectives and expertise in policymaking and technical solutions.
3. Enhance local leadership to integrate climate resilience effectively into health services.
4. Develop a National Health Adaptation Framework which is comprehensive and multifaceted for adapting health systems to climate challenges.
5. Encourage multisectoral involvement through the active involvement of academia, public, and private sectors in health and climate research for an integrated approach.
6. Provide specialised training for the health workforce, including medical students, on climate resilience in health and emergency preparedness.
7. Evaluate existing health infrastructures, technologies, and processes, and adopt new technologies to enhance the health system's reliability.
8. Conduct a review of the current private healthcare infrastructure to identify climate change vulnerabilities and establish minimum standards for climate-smart health facilities.
9. Allocate public funds to support health practices that are resilient to climate change impacts.

Transforming Communities

These policy ideas are structured to advance human development in Pakistan, highlighting significant improvements in education and healthcare, redressing economic imbalances, realigning policies for optimal impact, encouraging international cooperation, and engaging the Pakistani diaspora:

1. Build more schools and clinics in underserved regions, train educators and healthcare workers, and provide essential resources to improve access to quality education and healthcare.
2. Foster innovation and entrepreneurship in rural areas through skill development programmes, microfinance, and support for small businesses.
3. Shift the focus of Pakistan's policies towards human development and poverty alleviation, particularly in rural and underprivileged areas. This involves reorienting strategies within key governmental bodies like the Planning Commission and Ministry of Finance to prioritise initiatives that improve quality of life, integrating grassroots-level experiences into national policymaking.
4. Leverage expertise and resources of the Pakistani diaspora, especially those in the healthcare sector, to enhance Pakistan's healthcare infrastructure and practices.
5. Collaborate with international health organisations to create sustainable healthcare models that draw on successful practices from developed nations.
6. Redefine development goals to focus on people's well-being and opportunities, integrating this approach into all government policies. Work towards empowering individuals to access opportunities, including quality education and livelihood training.
7. Strategically involve the Pakistani diaspora in development projects, tailoring approaches to different generations with distinct motivations and expectations. Ensure financial transparency and effectiveness to maximise their contributions.
8. Encourage collaboration among organisations across various sectors, including education and health, to improve Pakistan's Human Development Index through a unified approach.

Domestic Child Labour in Pakistan

The following pragmatic steps focus on aligning national definitions on domestic labour with international norms, resolving legal discrepancies, strengthening legal responses to child labour offenses, and raising awareness through education:

1. Align Pakistan's definitions of 'child,' 'child labour,' 'Child Domestic Labour (CDL),' 'hazardous work,' and 'light work' with international conventions. This should be a collaborative effort involving the Government of Pakistan,

National Commission for Child Welfare and Development, International Labour Organisation, NGOs, and child protection experts.

2. Revise the 'Pakistan Penal Code' to address discrepancies between articles regarding the minimum age of education and work, while also modifying it to classify child labour offenses as cognizable and non-compoundable. This comprehensive legal reform should work towards establishing a unified framework that effectively balances child protection, the value of education, and age-appropriate work experiences, and ensure a consistent and stringent legal approach to child labour offenses across all provinces.
3. Incorporate child labour policy discussions in curricula of academic institutions and universities. This should aim to enhance awareness of social issues and cultivate social responsibility among students.

Implementation of Carbon Markets in Pakistan

These policy pathways propose a systematic approach for establishing and integrating carbon markets in Pakistan. They stress the need for a legal and regulatory groundwork, alignment with national policies, simplified credit assessment processes, and collaborative efforts across various governmental and academic sectors:

1. The Ministry of Climate Change and Environmental Coordination should establish a robust legal and regulatory framework for the implementation of voluntary carbon markets. This framework should detail necessary activities, define the scope, rules, and applicability of the programme, including sector and provincial-level Monitoring, Reporting, and Verification (MRV) protocols.
2. Ensure that the carbon market framework is consistent with existing national policies, particularly in the areas of energy, environment, and sustainable development. The Ministry should foster synergy between carbon markets and broader national objectives.
3. Implement Voluntary Emissions Trading Schemes (ETS) to unlock private finance through carbon credits, focusing on co-benefits to ensure the effectiveness of the Voluntary Carbon Market (VCM).
4. The Ministry should design a mechanism to simplify the 'Carbon Credit Assessment Process' currently managed by international crediting agencies. This mechanism should facilitate the evaluation of abatement potential across all sectors at the provincial level.

5. Strengthen collaboration between federal and provincial governments, relevant stakeholders (e.g., Ministries of Environment and Climate Change, National Energy Efficiency & Conservation Authority), and academia for the effective implementation of the carbon market policy framework.

Rethinking Public Debt Sustainability with a Focus on SDGs

The following provide a comprehensive approach towards managing public debt in Pakistan, underscoring sustainable growth, effective utilisation of resources, fiscal responsibility, and institutional strengthening to align with the SDGs:

1. Regularly assess national debt sustainability, considering the impact on SDGs and potential debt distress.
2. Amplify investments in SDGs despite economic slowdowns and inflation, focusing on managing primary deficits and understanding the nuanced implications of debt levels.
3. Address macroeconomic challenges, including currency volatility and circular debt, through targeted fiscal policies like taxing bank profits from government lending and enhancing auditing for greater accountability.
4. Focus on the effective utilisation of debt, particularly in financing SDGs, while managing the fiscal capacity to meet investment requirements.
5. Conduct comprehensive reviews of public expenditure, especially in key sectors like health, education, and governance, to evaluate progress on SDGs, in collaboration with development partners.
6. Maintain fiscal prudence and sustainability, cautioning against excessive debt accumulation, and focusing on sectors that can drive economic resilience, such as services.
7. Strengthen institutional capacity to implement and sustain fiscal reforms, considering long-term fiscal consolidation and alternative public expenditure strategies.
8. Foster robust political consensus and policy coherence, learning from global examples of successful fiscal reforms.
9. Tackle pervasive corruption and enhance system accountability to strengthen social compacts and tax compliance.
10. Enhance debt management capabilities, focusing on sectors like agriculture and local production to build economic resilience and stability.

Untapped Potential of Waste to Resource

The following will enable harnessing the untapped potential of waste-to-resource initiatives in Pakistan by engaging youth, supporting formal enterprises, integrating gender perspectives, developing recycling infrastructures, and coordinating urban waste management efforts:

1. Develop policies to integrate youth, especially young women, in the circular economy and environmental initiatives, providing education, employment, and skills training, particularly in sustainable practices and waste management.
2. Promote youth entrepreneurship in sustainability.
3. Provide support and incentives to formal waste management businesses, including tax benefits, grants, or subsidies, to enhance their competitiveness against the informal sector.
4. Incorporate gender perspectives in circular economy policies, especially in waste management. Implement gender-based quotas, affirmative action in male-dominated fields, and offer specific training and fiscal incentives for women entrepreneurs.
5. Establish a comprehensive plastic recycling infrastructure to convert plastic waste into high-quality resin for industrial use. Incentivise the collection, sorting, and processing of plastic waste to reduce reliance on virgin plastic.
6. Implement a coordinated policy for municipal solid waste management in urban areas. This should involve collaboration among local communities, municipal authorities, environmentalists, and various government levels to resolve conflicts, allocate resources effectively, and promote waste reduction and recycling initiatives.

Socially and Environmentally Compliant Construction Industry in Pakistan

These focused policy guidelines aim to significantly improve the safety standards and regulatory compliance of the construction and brick kiln industries in Pakistan, contributing to a safer, more sustainable, and socially responsible sector:

1. Implement comprehensive safety protocols and training programmes in the construction industry to address the significant lack of health and specialised skills among workers. This initiative should aim to align the sector with fundamental workplace safety principles and promote decent working conditions, ensuring a safer and more compliant construction sector.
2. Mandate the registration of all brick kiln establishments and their workers with relevant government institutions, such as the Employees' Old-Age Benefits Institution (EOBI), Social Security, and the Workers Welfare Fund.
3. Enforce strict compliance with labour laws, safety standards, and environmental regulations in the brick kiln industry to ensure workers' rights and environmental protection.

Regenerative Agriculture and Climate Change

These policy ideas are geared towards improving agricultural sustainability and productivity, particularly in response to climate change challenges of Pakistan. They highlight the need for incorporation of technology, adoption of regenerative farming methods, diversification of crops, and the efficient management of water and energy resources:

1. Develop policies to seamlessly integrate technology and foster innovation in agriculture, enabling diverse and comprehensive approaches for societal advancement.
2. Implement a comprehensive strategy that begins with soil testing, followed by farmers.
3. Enact policies focused on regenerating agricultural practices to boost productivity in the agricultural sector.
4. Establish a policy framework that encourages farmers to diversify their crop mix, facilitated by government interventions to ensure adaptation of a variety of major crops.
5. Re-evaluate the ecosystem approach for water conservation, with a specific focus on practices like 'warabandi' and integrate energy considerations into water management policies.

Pakistan's SDGs and Polycrisis: How Are We Faring?

It is important to transition to a more advanced economic model that prioritises universal access to healthcare and education, essential for addressing the complexities of the polycrisis. There is need to focus on three broad sectoral strategies:

1. Transform the agricultural sector.
2. Enhance irrigation and water management.
3. Promote renewable energy and low-carbon transportation, including the production of electric vehicles and expanding access to modern energy sources.

Towards Plastic Circularity in Pakistan

These policy pathways propose a comprehensive approach for Pakistan to achieve plastic circularity, focusing on innovative economic models, corporate responsibility, inclusive strategies, and practical support for the recycling sector:

1. Shift towards a circular plastic economy by designing products for multiple uses, repairability, and recyclability.
2. Improve recycling practices by enhancing the recyclability of plastics and incorporating sustainable materials. This transition requires collaborative efforts from the government, businesses, and consumers, with support from organisations like UNEP.
3. Hold industries accountable for the plastics they produce by ensuring efficient collection and recycling systems. Establish necessary infrastructure and set recycling standards, especially for challenging plastics like multi-layer or flexible packaging.
4. Facilitate a just and inclusive transition to plastic circularity by providing clear guidelines, creating green jobs, and collaborating with the private sector and educational institutions for workforce development. Support entrepreneurial ventures in green industries.
5. Develop sustainable business models that capitalise on the untapped value in plastic waste. The government should play an instrumental role in creating a supportive environment for these circular economy models.

6. Offer support to the recycling industry by assisting with raw material inputs rather than tax breaks, considering Pakistan's economic constraints.

Empowering Women Entrepreneurs through Financial Inclusion and Trade Participation

The following additions are vital in order to create a more inclusive and supportive environment for women entrepreneurs in Pakistan, addressing barriers to financial access, market participation, and representation in decision-making processes:

1. Implement legal and regulatory frameworks that facilitate women's access to digital and financial literacy programmes. This should include simplified access to banking loans tailored for women entrepreneurs.
2. Develop and reinforce gender-inclusive lending practices to support women-led Small and Medium Enterprises (SMEs). This will significantly improve women's financial inclusion and access to necessary capital.
3. Create and nurture support ecosystems for women-led SMEs, providing resources, mentorship, and networking opportunities to foster growth and sustainability.
4. Set up business incubators and accelerators specifically focused on supporting women entrepreneurs, offering them tailored training, development programmes, and access to markets.
5. Facilitate greater market access for female entrepreneurs by integrating them into local and international trade networks. This could include creating platforms for showcasing their products and services and easing export processes.
6. Ensure women's representation in decision-making bodies related to trade and finance. This representation can provide a more inclusive perspective in policymaking and create a more favourable environment for female entrepreneurs.

The Governance Approach

The following policy pathways would strengthen governance in Pakistan by focusing on capacity building, economic stability, policy continuity, transparency,

accountability, and decentralisation, paving the way for more effective and responsive administration:

1. Implement a targeted capacity-building programme for public officials, with a focus on specialised training for sensitive roles. Link career advancement opportunities to educational achievements and successful policy outcomes to incentivise skill development.
2. Address Balance of Payments (BoP) issues through structural economic reforms. Prioritise attracting Foreign Direct Investment (FDI) and subsequently implement fair and effective taxation policies to harness organic revenue for sustainable development.
3. Create a 'Charter of Economy' to ensure policy continuity, either as an independent agreement or integrated into the constitution. This would promote stable governance structures and facilitate long-term strategic decision-making.
4. Implement rigorous measures to enhance transparency and accountability in public service. This can involve establishing independent oversight bodies and utilising technology for monitoring and reporting on government activities and expenditures.
5. Encourage decentralised governance models to empower local governments. This approach can improve responsiveness to local needs, enhance service delivery efficiency, and foster community participation in governance processes.

Food and Nutrition Security in Pakistan

The policy pathways below should be implemented to bolster Pakistan's resilience against the impacts of climate change on food and nutrition security, emphasising practical solutions such as risk insurance, early warning systems, community engagement, and innovative agri-technologies:

1. Incentivise climate-resilient agricultural practices with special focus on the use of drought-resistant crops, advanced irrigation techniques, and the development of climate-smart agricultural technologies.
2. Launch government programmes that motivate farmers to diversify their crops, thereby reducing the risk of crop failure due to climate events and enhancing food security through the availability of a variety of crops.

3. Develop and implement climate risk insurance schemes for farmers to safeguard against losses due to extreme weather events. This financial support can help maintain agricultural productivity and food security even in adverse climatic conditions.
4. Enhance early warning systems to provide timely information on climate threats to agriculture. This will enable farmers and communities to prepare and respond effectively to potential risks.
5. Implement community-based adaptation programmes that focus on local knowledge and practices. Engage communities in developing and applying locally-suited strategies to manage climate risks and sustain food and nutrition security.
6. Invest in Research and Development (R&D) for new agricultural technologies that are specifically tailored to Pakistan's changing climate conditions. This includes the development of climate-adaptive crop varieties and sustainable farming methods.

Ten Years of BRI: Charting a Way Forward for Green Development

The following ideas propose a collaborative and integrated approach to advancing green development in Pakistan, leveraging lessons from the Belt and Road Initiative (BRI) and China's development models, with an emphasis on finance, training, planning, technology sharing, and partnerships:

1. The Ministry of Planning, Development and Special Initiatives, Government of Pakistan, should establish a comprehensive framework for green finance policies and reforms. This includes promoting green credit, developing green development funds, and establishing a green bond market in Pakistan. These efforts should be in collaboration with China's reforms commission to accelerate investment in sustainable infrastructure, particularly Renewable Energy (RE).
2. The Ministry should work in conjunction with China's National Development and Reform Commission to provide training programmes focused on energy planning and the integration of RE. These programmes should target energy authorities and the workforce to enhance skills and knowledge in sustainable energy solutions.

3. The Ministry of Energy should formulate an integrated Energy Expansion Plan, drawing inspiration from China's '5-Year Plan for a Modern Energy System.' This plan should involve continuous needs assessment and resource introspection to identify and capitalise on new investment opportunities in energy.
4. Strengthen technology-sharing initiatives with China, focusing on the adoption and localisation of green technologies in sectors like energy, construction, and transportation.
5. Encourage Public-Private Partnerships (PPPs) to facilitate the implementation of green development projects. This approach can mobilise additional resources and expertise, contributing to more robust and sustainable outcomes.

Gender and Climate Change in South Asia

These policy pathways aim to strengthen the role of women in combating climate change in South Asia, focusing on enhancing their participation, financial inclusion, and leadership in climate initiatives, as well as raising awareness about the intersectional nature of gender and climate issues:

1. Ensure active participation of women in climate-related decision-making processes by providing equal pay and establishing specific quotas for women in the workforce. Additionally, invest in capacity-building for women, particularly in rural areas, to enhance their resilience to climate change.
2. Use regulatory and legislative measures to promote financial inclusion for women, enabling them to invest in climate-resilient livelihoods. Ensure women have access to finance and technology, which are crucial for substantive change.
3. Incorporate gender perspectives into all climate change policies and programmes. This includes conducting gender impact assessments of climate policies to ensure they meet the needs of women and men equally.
4. Encourage and support initiatives led by women that focus on climate adaptation and mitigation. This can involve providing grants, technical assistance, and platforms for knowledge exchange.
5. Conduct widespread awareness campaigns to highlight the intersectionality of gender and climate change issues. These campaigns should aim to educate policymakers, stakeholders, and the general public on the unique challenges faced by women in the context of climate change.

Addressing Pakistan's Inflation Woes

The following recommendations aim to address inflation in Pakistan through a combination of monetary policy adjustments, structural reforms, institutional improvements, supply chain management, and economic diversification:

1. The State Bank of Pakistan (SBP) should focus on establishing a stable monetary policy. This requires balancing interest rates and money supply to effectively control inflation without hindering economic growth. The Bank should adopt an inflation targeting framework with clear price stability targets, and tailor monetary policy tools to meet these objectives.
2. Address structural challenges in critical sectors such as agriculture and energy. Strategies might include upgrading irrigation systems, encouraging the adoption of modern technology in agriculture, and resolving inefficiencies in the energy sector.
3. Actively work to reduce corruption and inefficiencies within public institutions.
4. Create a more business-friendly environment that promotes investment and drives economic growth.
5. Improve supply chain management to reduce disruptions and cost escalations. This includes investing in logistics infrastructure and adopting technology-driven supply chain solutions.
6. Encourage diversification in Pakistan's economic activities to reduce dependency on a limited number of sectors. This diversification can help mitigate the impact of sector-specific shocks on the overall economy.

Strategies for Preventing and Countering Violent Extremism

The following policy pathways offer a unified strategy for combating violent extremism in Pakistan, focusing on addressing marginalisation, strengthening law and order, combating hate speech, and creating inclusive environments. Highlighting the importance of local context, community resilience, holistic and preventive strategies, the approach also highlights the need for clarity in policymaking and regional specificity. It advocates for tailored, ethical, culturally sensitive, and gender-aware strategies, including indigenous approaches and bridging research-policy gaps. Additionally, the strategy calls for reshaping media

practices through impact-based media evaluations and regulations to positively influence society and reduce the spread of violence. It is vital for the state to:

1. Understand that Preventing Violent Extremism (PVE) is a relatively new discipline still in its early stages. Careful nurturing and guidance are essential for its growth and maturity, preventing it from succumbing to the pitfalls associated with the discourse on terrorism.
2. Make concerted efforts to evolve PVE practices to address the root causes of violent extremism effectively. Without intentional support and development, the discipline risks encountering challenges similar to those in terrorism discussions.
3. Investigate and understand the communication behaviours and systems related to violent extremism, identifying their critical role in both the proliferation and prevention of extremist ideologies.
4. Fill the gaps in literature and research on violent extremism by dedicating resources to gain a comprehensive understanding of the field and its various facets.
5. Transition from a counterterrorism (CT) paradigm, which has shown limitations, to a more focused PVE approach. This shift involves moving away from strategies primarily geared towards war and terrorism to more preventive and root cause-oriented methods.
6. Recognise and address the issue of marginalisation as a key factor leading to violent extremism. This includes understanding the shift in societal dynamics, such as the transition from inclusive cultural festivals to more exclusive religious events, and how these changes are likely to contribute to feelings of alienation.
7. Focus on understanding and mitigating the underlying causes of marginalisation that can lead individuals towards extremism. This requires a comprehensive analysis of societal, economic, and political factors that contribute to alienation and radicalisation.
8. Develop platforms for open dialogue and address the lack of law and order, which are primary drivers of societal conflicts. These forums should facilitate constructive discussions and dispute resolution to prevent the escalation of conflicts.
9. Investigate and understand the specific factors driving hate speech in society. Implement measures to counteract hate speech and promote inclusivity and tolerance.

10. Work towards providing environments that foster social cohesion and inclusivity. This involves creating spaces where diverse groups feel valued and included, reducing the appeal of extremist ideologies.
11. Pay special attention to rural and conflict-prone areas, which are often neglected in mainstream efforts to counter extremism. Implement targeted interventions to address the unique challenges in these regions.
12. Involve local communities and leaders in efforts to prevent and counter violent extremism. Their involvement is crucial in developing and implementing strategies that are culturally sensitive and effective at the grassroots level.
13. Ensure that Counter-Extremism (CE) and Countering Violent Extremism (CVE) strategies are grounded in local knowledge and languages to enhance their relevance and effectiveness.
14. Focus on building community resilience as a key component of CVE and PVE initiatives. This is currently overlooked as a state priority, though some civil society initiatives are addressing it on a small scale.
15. Embrace a holistic strategy that is not only multidisciplinary but also relies on collaboration across multiple agencies.
16. Redirect the excessive focus on Violent Extremism (VE) to broader, holistic issues. Develop policies with diverse directions that address the root causes of extremism in the country.
17. Develop and disseminate clear, standardised definitions of extremism that are universally understood by children, teachers, parents, healthcare workers, and other community members.
18. Consider the socioeconomic needs of the Pakistani people to prevent them from seeking support from non-state actors, especially in cases where the state fails to meet these needs.
19. Acknowledge that the dynamics of violent extremism vary across different regions in Pakistan and tailor strategies accordingly.
20. Enhance community resilience to extremism.
21. Address the gap between researchers and policymakers, stressing the need for longitudinal research to inform effective policymaking in the field of violent extremism.
22. Improve access to available information and address the sensitivity of data sharing. This step is crucial in understanding and utilising information to counter VE.
23. Acknowledge and study the root causes of radicalisation, particularly among children and youth, with an emphasis on factors like poverty.

24. Understand and incorporate the role of women in peacebuilding, addressing its current absence in initiatives like Paigham-e-Pakistan.
25. PVE is a gendered phenomenon. Therefore, there is a need to adopt softer, gender-sensitive approaches in strategies to counteract extremism.
26. Formulate a strategy that is human-centred, state-centred, and also considers cultural and religious contexts in addressing violent extremism.
27. Introduce Impact Rating Point systems in media to foster CVE/PVE awareness and knowledge among the public. This approach can guide media content towards being more responsible and educational.
28. Encourage media outlets to adopt impact-based rating systems. Such systems evaluate the broader societal impact of media content, promoting a more responsible, informed, and socially conscious media landscape.
29. Implement regulations to restrict media content that contributes to societal violence. Binding media to avoid content that exacerbates violence can help in reducing its propagation and influence in society.

Pakistan's Transformative Digital Future: Growth Strategy and Roadmap

The following recommendations for the Ministry of ITT and S&T collectively focus on driving Pakistan's digital transformation by investing in digital infrastructure, developing digital skills, standardising startup definitions, boosting private sector engagement, facilitating cross-sector collaboration, and simplifying regulations. Together, they lay a comprehensive foundation for a robust digital economy, crucial for Pakistan's growth and innovation potential:

1. Prioritise significant investment in digital infrastructure, including high-speed internet connectivity, especially in underserved and rural areas. This infrastructure is the backbone of a robust digital economy, enabling widespread access to digital services and levelling the playing field for entrepreneurs and businesses across the country.
2. Implement nationwide digital skills and literacy programmes, focusing on both the current workforce and the next generation of digital users. Tailor these programmes to various skill levels, from basic digital literacy to advanced technological skills. This will ensure a well-equipped workforce ready to participate and innovate in the digital economy, addressing the skill gap in the rapidly evolving tech sector.

3. Establish a standard and inclusive definition of startup across all government agencies and organisations. This uniformity will ensure consistency in policymaking and support mechanisms for startups.
4. Reorient the role of government in technology projects from direct execution to oversight and facilitation. Encourage private sector involvement in the implementation and commercialisation of technology projects, enhancing efficiency and innovation.
5. Enhance collaboration and knowledge exchange between government entities, academic institutions, and the private sector. This collaborative approach is vital for speeding up digital transformation and fostering a culture of innovation.
6. Reform regulatory processes to be more streamlined and less burdensome for startups. Simplifying these processes will aid in the rapid growth and smooth operation of new businesses in the digital sector.

Reforms for a Brighter Future

The following policy pathways provide a roadmap for transformative reforms in Pakistan and the need for a holistic approach to address economic disparities, enhance public investment, and leverage the country's demographic potential for sustainable growth:

1. Focus on reducing vulnerability to economic shocks that push people into poverty, through comprehensive and equitable reforms.
2. Utilise an assets-based approach to understand and address disparities in human, financial, social, natural, and physical capital.
3. Invest in improving the productivity of the poor, transitioning from pro-poor growth to fostering pro-growth equity.
4. Mobilise domestic resources by broadening the tax base in a progressive manner, without increasing poverty in the short term.
5. Enhance public investments in physical, social, and human capital, especially for the benefit of the poor, to stimulate long-term growth.
6. Forge coalitions among domestic and external actors for inclusive and sustainable growth, involving elite bargains, citizen engagement, and understanding international/global influences.
7. Encourage virtuous cycles by incentivising productive behaviours and entrepreneurship.

8. Capitalise on Pakistan's young and growing population to potentially achieve higher growth rates.
9. Implement enrolment campaigns, address multi-grade teaching challenges, improve teacher accountability, and progressively increase budget allocations to health, education, and social protection.
10. Strengthen revenues by expanding the tax base, harmonising GST and reducing tax expenditures.
11. Utilise targeted taxation specifically for direct beneficiaries of poverty alleviation programmes.
12. Intensify skills development programmes for women, including vocational training targeted specifically towards them.
13. Draw lessons from global best practices, particularly neighbouring countries like Bangladesh in human development and digital domain strategies.
14. Redirect funds from subsidies towards healthcare and education sectors.
15. Establish a solid theory of change before implementing policy programmes, with a focus on evidence-based policies that target results.
16. Concentrate on improving learning outcomes over simply increasing enrolment in tertiary education and include digital and financial literacy for women in policy designs.
17. Perform detailed cost-benefit analyses for each policy project to ensure effective and result-oriented implementation.

Pathway to Recovery, Hope and Resilience

The following policy pathways provide a comprehensive framework for fostering economic recovery, resilience, and long-term growth in Pakistan:

1. Focus on enhancing human capital through female education and financial inclusion, vital for sustained economic growth.
2. Alongside domestic needs, produce goods and services for the international market to bolster economic growth.
3. Prioritise sustainable and inclusive growth, ensuring environmental well-being and equitable opportunities for all.
4. Maintain a stable economic policy regardless of government changes to foster investor confidence and long-term stability.
5. Emphasise realistic and practical strategies to address immediate challenges and promote sustainable growth.

6. Encourage savings within the country to reduce reliance on external funding and avoid dependency on institutions like the IMF.
7. Develop a robust state that works in tandem with efficient markets and encourage NGO participation for a balanced approach.
8. Shift towards a global perspective by attracting Foreign Direct Investment (FDI), promoting worker exchange, and facilitating technology transfer.
9. Acknowledge and support the crucial role of women in economic, social, and political spheres for national development.
10. Delegate decision-making to local governments for region-specific solutions and to cultivate local ownership and responsibility.
11. Ensure institutions are capable, transparent, and politically neutral to promote good governance and accountability.
12. Accept the necessity of technically qualified personnel for progress and development.

Economic Development and Reform

Navigating the Roadmap to Recovery, Resilience and Optimism

Dr Abid Qaiyum Suleri

Economic Diagnostics and Prescriptions: Envisioning Pakistan's Path to Prosperity

Prof. Dr Jeffrey David Sachs

Unlocking Potential: Strategic Reforms to Boost Pakistan's Economy

Dr Shamshad Akhtar

Building a Brighter Future: Social Equity and Economic Reforms

Dr Luis Felipe López-Calva

Collaborative Governance and Growth: Pathways to Economic Resilience in Pakistan

Dr Mohammad Jehanzeb Khan

Analysing Development: Economic Trajectories of Pakistan, India and Bangladesh

Dr Ishrat Husain

Navigating the Roadmap to Recovery, Resilience and Optimism*

Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan

Honourable President of the Islamic Republic of Pakistan, Dr Arif Alvi; respected Director General of the Islamic Organization for Food Security (IOFS), Dr Masoud Jarallah Al-Marri; worthy Caretaker Minister for Human Rights, Ms Mushaal Hussein Mullick; Your Excellencies, Diplomats, Representatives of Civil Society, Members of Academia, Development and Knowledge Partners and Esteemed Audience, Assalam-o-Alaikum and a very Good Evening!

I welcome you all – on my personal behalf as well as on behalf of staff and Board of Governors of the Sustainable Development Policy Institute (SDPI) – to the Inaugural Plenary of our Twenty-sixth annual Sustainable Development Conference (SDC).

I feel obliged to start by thanking Dr Arif Alvi, Honourable President of the Islamic Republic of Pakistan, individually not only for sparing his valuable time for this Inaugural Plenary but also for supporting our annual conferences every year after assuming the office of the President. His unstinting support for SDC and SDPI certainly shows his engagement with and commitment to sustainable development.

I am also grateful to more than 300 delegates from 19 countries who are taking part in this Conference as speakers, presenters, discussants and moderators from Australia, Bangladesh, Canada, China, Germany, Italy, India, Kenya, Nepal, Norway, Qatar, Thailand, Pakistan, Philippines, Singapore, Sri Lanka, Switzerland, United Kingdom and the United States of America. I welcome them all and highly appreciate them for the precious time they are giving to this Conference.

* Welcome Address and Introduction delivered at the Inaugural Plenary of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 20 November 2023 in Islamabad, Pakistan.

As we sit under the glittering lights of this conference hall, the world around us seems to be sinking in a dark abyss. The world is passing through an economic turmoil. There are 45 countries, including Pakistan, which are facing a debt sustainability issue. For debt servicing, their governments are diverting funds that were meant to be spent on providing quality education, clean environment, and affordable energy.

Global peace too is under serious threat as two nuclear states – Israel and Russia – are direct parties in conflict across their national borders. Racist, religious and regressive tensions and conflicts are on the rise everywhere, often turning violent in such unexpected places as Canada, France and New Zealand.

It is difficult to not include climate change in the present set of blights afflicting countries and communities in different parts of the world. While climate change is heating up the globe, it is cooling down economic activities and darkening and disrupting lives and livelihood at a massive scale – in fact, it is threatening the very existence of several large cities and many tiny island nations.

All these challenges are unfolding within a particularly complex contest. On the other hand, several middle powers are emerging at the expense of older superpowers, sometimes expanding their area of influence rather aggressively.

Secondly, and equally important, technological innovation and its concurrent and inexorable rise and the power of tech companies is both negatively and positively affecting the information that we get.

But of course, we have not gathered here merely to malign others and mourn our own plight. We are here to join hands and share and exchange ideas so that we can change what's wrong with the world around us.

This Conference, I must assure you, is not about doom and gloom. As you may see in its title, it is about light at the end of the tunnel - it is about hope in times of despair.

But where will this light originate from? Where will this hope spring from?

The short answer is – from us, from gatherings similar to the one we are holding today - from people mulling, collectively and individually, over the possibility of

a tomorrow that is brighter, more prosperous, more peaceful and more inclusive than today.

Here I must add that our hankering after such a future is not just a matter of sitting, talking, and walking away, of merely dreaming during the day and hoping wishfully during the night. It, in fact, is premised on new realities that are unfolding around us by the day – or perhaps by the moment – one blogpost, one tweet, one TikTok post at a time.

Let me summarise some new realities for you one by one:

- More than 70 countries will conduct elections in 2024. These include India, the world's largest democracy, and the United States, the world's richest democracy. Within South Asia, elections will also take place in Pakistan and Bangladesh. When more than 50% population of the world speaks, our hope and confidence is that it will be for the better, not for the worse.
- The public outrage over violence in Gaza – particularly in countries of the Global North which have traditionally stood behind Israel silently and unconditionally – indicates that states cannot get away with their conventional stances on cross-boundary invasions and disputed territories as easily as they could until now.
- Transition to clean energy is redrawing the world's energy resources map. Lithium, copper, and nickel now matter much more than fossil fuels did until now. We hope this shift will empower the previously powerless while also ensuring an equitable, affordable, reliable, and sustainable access to clean energy sources across all counties and communities.
- BRICS (Brazil, Russia, India, China and South Africa) - a global alliance of middle powers - is expanding as six more countries are joining it. China, in particular, has established itself as a major economic player in many parts of the globe through its Belt and Road Initiative which is celebrating its 10th anniversary this year. This rise of these middle powers will certainly lead to demands for restructuring of both the West-dominated global economic and financial architecture and superpower-centred political system of the world – as manifested in the structure of the United Nations.
- Internet and Artificial Intelligence are changing almost every traditional mechanism including in education, healthcare, workplace – even in courts

and policing. They are similarly transforming relations between employees and employers and between producers, consumers and everyone in between them. They are also making the production, dissemination, and consumption of information more democratic and more pluralistic than these were before.

The dark tunnel may be long. It is certainly scary to be passing through it – as we are all doing now – but I am both optimistic and confident that the light awaiting us at the end of it, will be as bright and reassuring as this tunnel is dark and confusing.

Over the next three days, we will be discussing the ways and means to reach that light without any human and climatic collateral damage. I am certain that we have assembled enough intellect and wisdom under this roof to be able to do so both swiftly and strongly.

Before I leave the rostrum, I thank you all once again for finding time to be here and partake in this highly important intellectual exercise about our present and about our future. I am also thankful to more than 40 development partners who have supported this Conference. Without their help, this event would never have materialised. So, a big thanks to all of them.

Economic Diagnostics and Prescriptions: Envisioning Pakistan's Path to Prosperity*

Prof. Dr Jeffrey David Sachs, Director, Center for Sustainable Development, Columbia University, USA

We are suffering from a lack of global cooperation. We have a worsening climate crisis of which Pakistan has been a notable victim in the tragic, massive, and unprecedented flooding that Pakistan experienced. And we are just having a very difficult time.

I think the biggest problem in the world by far is the failure of our political systems to keep a focus on the needs of people and to engage civilly, respectfully, and peacefully with other countries. And for me, as a United States' citizen, I bemoan the militarisation of US politics, and its unfortunately very aggressive approach to the rest of the world. The mindset we're discussing isn't truly that of the entire US, but rather that of the US government.

It's a bit irrational, this desperate drive to be number one - whatever that might mean - because such rankings make little sense to me. The US seems more focused on being jealous of other countries, like China, than on prioritising its own well-being, and this has led to numerous conflicts driven by geopolitics. For Pakistan, it's clear that the ongoing, unresolved hostility with India is a significant risk and a major barrier to both well-being, and economic development.

My basic principle for economic development is simple: be friends with your neighbours. While it's easier said than done, the fact remains that countries naturally trade with their neighbours and share critical ecosystems, as Pakistan

* This is a *Provisional Transcript* delivered at the Evening Plenary of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 21 November 2023 in Islamabad, Pakistan. It has been transcribed by Asim Zahoor from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete keynote address, as delivered, can be accessed at: <https://youtu.be/RWlF92GP1eg>.

and India do with the Punjab, the Indus River Valley, the upper Himalayas, and more. If peace could be achieved, even without changing other policies, it would be an incredible boon for both nations. I realise this may sound idealistic, and I don't mean to be naïve at the outset – I know finding a way to co-exist peacefully is a significant challenge in this world. But the losses we've endured due to conflict, when we should be working together to solve problems, are immense.

Now, let me focus on Pakistan - a very large, extremely important, and emerging economy facing a myriad of challenges. As a trained macroeconomist, I approach this like a medical exam, analysing Pakistan's economic indicators to diagnose its key issues. Just yesterday, I gave a talk to the Pakistan Economists' Society, where I reviewed the latest data from the IMF's World Economic Outlook. It's like taking the pulse of an economy; certain issues become immediately apparent, revealing fundamental problems at hand.

The fundamental problem for Pakistan is that it is currently stuck in its development. Economic growth is low and highly volatile - this year, it will even be negative. The economy is prone to crises and vulnerable to shocks, such as devastating floods, which, of course, were beyond Pakistan's control. However, there is no clear strategy in place to change this troubling scenario.

So, if you take the pulse of a patient, you will get a lot of quick information. If I take the pulse of Pakistan's macro economy, the first variable that I looked at in the data is the investment rate, which is the total domestic investment in infrastructure and in business in Pakistan, measured as a share of national income. Last year, the investment rate was 14%. This rate is barely enough to cover depreciation. In fact, with the floods, not even enough to stay level. Pakistan has had a net decline of its fixed capital assets in the last few years because the investment rate is so low. You compare that with China, where growth has been high and robust for 40 years, basically 45 years since 1978. What is the investment rate in China? Typically, it is between 40 and 50% of the Gross Domestic Product, so roughly three times of Pakistan's investment rate.

So, the first simple diagnosis is that Pakistan is not investing in its future. As a result, under the current policy conditions, it cannot expect to achieve sustained economic development.

Then, I looked at the second indicator that I regard as the most important for a society. Investment is one measure of how to look forward. School attainment is a second measure of how to look forward. Schooling is essentially an investment - an investment in human capital. It's arguably the most critical investment a society can make, enabling its boys and girls to grow up with education and labour market skills. However, when you examine Pakistan's investment in human capital, it is alarmingly low, bordering on disastrous. The best measure of this is the 'school life expectancy,' which represents the average number of years a child is expected to complete in school based on current enrolment rates. In Pakistan, according to World Bank data, the average is about eight years of schooling. This figure is among the lowest in the world. Interestingly, while one might expect a significant gender gap, that's not the case - schooling is low for both boys and girls, with boys averaging around nine years and girls about eight, resulting in an overall average of just over eight years.

Pakistan cannot develop if children on average are getting eight years of schooling because to be able to develop and use modern industrial techniques, at the minimum an individual needs high school, or upper high school completion. Beyond basic education, there's also a critical need for tertiary education - whether in the form of vocational skills, a bachelor's degree, or its equivalent. Unfortunately, Pakistan is still far from achieving this level of education. This was the second major indicator I examined, and it's clear that the situation is concerning.

The third major indicator that I looked at yesterday was government revenue as a share of the Gross Domestic Product (GDP). Why is that so important?

Well, government revenue finances two absolutely crucial forward-looking areas. One is public investment - roads, bridges, environmental resilience. The second is human investment: schooling, Research and Development agenda, healthcare, and so forth and that has to be paid for out of government revenues in some way, either today or in the future. If those outlays are financed by borrowing today, you still need revenues in the future. So, I looked at the share of government revenue in the GDP. It is 12% of GDP, one of the lowest in the world. So, the government does not mobilise resources. The government spends 19% of GDP, runs a budget deficit of 7% of GDP. But even the 19% of the GDP is not enough to cover the most basic services. My guess is that if you did the calculation (which I didn't do yet for Pakistan), of what it would really cost to provide a decent

education for all children and to ensure that a significant cohort, maybe 30%, go on to tertiary education - my guess is that the outlays would have to be at least 10% of the GDP. If total revenues are 12% of the GDP that means more than 83% of the budget would be devoted to education alone which is obviously an impossibility.

So, there clearly is a massive shortfall of the public sector in Pakistan. The public sector is essential for human capital because there is no way that the private sector is going to educate Pakistan's young people. The same is true for healthcare, because again, there's no way that a health system could ever be put together by the private sector other than for a small elite. It's essential for public infrastructure for roads, transport, communications, climate resilience, flood protection, biodiversity conservation, and so on. So, the revenue base is just absolutely too low.

Nonetheless, even the limited spending that has occurred is constrained by a 7% of GDP budget deficit, as was the case in 2022. This deficit is a key driver behind Pakistan's high inflation rate, which hovers around 20% to 30% annually, according to official statistics. None of this is sustainable. Pakistan is like a patient in urgent need of a significant lifestyle change - requiring a major overhaul of its fiscal framework, investment strategy, and a comprehensive plan for economic recovery.

None of that is happening right now, unfortunately. The floods dealt a massive blow, likely causing a loss of at least 10% of GDP, possibly even more, with estimated damages ranging from USD 30 to USD 50 billion. While the international community provided some assistance, it was minimal, leaving Pakistan to bear the brunt of the cost. This burden comes on top of the economic strain from the pandemic, which was another significant disaster.

By the way, based on my understanding and extensive research, I believe that COVID-19 was a human-caused disaster, likely the result of misguided US-backed science rather than a natural occurrence. While the US government will never admit this and has done everything to conceal it, my perspective, informed by hundreds of hours of research and discussions with other scientists, suggests that the virus was likely constructed in the US.

So, this is yet another massive blow to Pakistan. And then, of course, the financial crisis hit, leading Pakistan to turn to the IMF. The IMF's approach is predictable: cut spending - spending that is already woefully inadequate. The IMF's answer is austerity. And why? Because the IMF isn't concerned with Pakistan's development; it's concerned with preventing a financial crisis. So, their solution is to slash spending. But what's left to cut? The budget is already stretched thin. Essentially, the IMF's message is cut spending, keep quiet, and avoid triggering a crisis. This is the standard IMF playbook. And while they are right in one respect - a financial crisis is disastrous, and inflation at 20 to 30% is deeply destabilising and can spiral out of control - I don't entirely disagree with the IMF on that point.

But simply saying that austerity is needed doesn't address Pakistan's deeper problems. That's the reading from the medical charts. So, what now?

I regret to say there are no magic or simple answers. The most fundamental step is proper diagnosis followed by strategic planning. Pakistan needs a comprehensive plan to get out of this mess, and at the heart of that plan must be investment-led growth - because there's no economic growth without investment.

What's required is a significant increase in the investment rate. Remember, the magic behind China's success was its sustained high-level investment for over 40 years. They executed effective economic policies consistently, focusing on investment. No magic tricks - just building roads, fast rail systems, power grids, digital infrastructure, educating children, and developing healthcare systems. That's the essence of it.

Of course, plans to repay financing, whether from domestic or foreign borrowing, were driven by rapid economic growth, fuelled by business development and especially by export earnings. The China model is the right one for Pakistan and other emerging economies - it's a high-investment, high-growth model, achieving roughly 7% to 10% economic growth per year. In many cases, China experienced 10% annual growth, doubling its economy in just seven years. They did this through five cycles of doubling, resulting in a 32-fold increase in the size of China's economy. This is the kind of framework Pakistan should adopt.

The essential question for Pakistan is how to mobilise the resources needed for such an investment. The investment rate would need to rise from the current 14%

of GDP to somewhere between 30% and 40% of GDP. This would propel Pakistan's growth from its current negative trajectory to an average of 4% and potentially up to 7% to 10% per year, depending on the quality of investments, peace, and other critical factors that Pakistan urgently needs.

So, the key questions become: where should these investments be made, and how should they be financed? The 'where' is a fairly identifiable list of investments, which I will share briefly.

One is schooling, get children in schools and ensure quality schooling. Secondly, build basic healthcare system to meet core healthcare needs of the whole population. Thirdly, energy and industrial development, especially decarbonised energy, as this is the only kind of energy system that is going to be acceptable in the 21st Century. Fourth is sustainable land use and agricultural productivity. Fifth is urban infrastructure because of the rapid increase in urban population. Sixth is digital transformation to provide essential universal digital access because so many core services like education, healthcare, payment systems, public services, public administration will be online in the future. So having a 5G network in order to use these digital services is critical.

These are the six core areas of investment and then the plan should include targets for scaling up these core investments and an identified financing strategy.

Now, what kind of strategy is this?

Essentially, this strategy has three key components. First, the government must significantly increase its revenue as a share of GDP over time - under any plausible scenario, development is impossible if you're collecting less than 20% of GDP in government revenues. In my opinion, this figure should be closer to 25% to 30%. I would recommend at least doubling the current revenue ratio in Pakistan. This increase would provide the necessary resources for public investments, education, and healthcare in the future.

Second, it's crucial to raise private savings rates. One of China's great strengths in its success was its very high rate of household savings, even among poorer households. This was possible because there was a reliable system for investing household assets, with the expectation of returns that would benefit the elderly, families raising children, or those moving to urban areas.

The third component is taking on more external debt - specifically, long-term external finance, not short-term. A critical mistake in financing development is borrowing short-term bonds, say for seven years, to invest in infrastructure that requires 30-40 years to pay off. The same applies to social services like education, where economic returns, though substantial, take decades to materialise. You invest in a five-year-old child today, but you won't see the full benefits until that child is 35 or 40 years old. Therefore, it's unrealistic to expect repayment within a short timeframe. A strategy focused on long-term financing is crucial.

And in the end, I would like to say that it is possible to mobilise long-term financing, but it requires creativity and directed policy. A partnership with China is one important step, because China's Belt and Road Initiative should lend to finance Pakistan's infrastructure on a 30-year lending basis. This, in my mind, should be the term or request from the Pakistani government to Chinese partners. Similarly, Pakistan has access to the Asian Development Bank or the Islamic Development Bank or other official lenders that also should have the mandate to give long-term loans to Pakistan.

Surprisingly, despite the common belief that Pakistan is facing a debt crisis, the country's level of indebtedness to foreign creditors is only 35% of GDP, according to IMF data. This isn't excessively high. The real issue behind Pakistan's debt crisis is that payments are due, and no one is willing to lend new money to the country. This is what we call a liquidity problem or a rollover problem, rather than a solvency or debt level issue.

What Pakistan needs is a comprehensive debt management strategy focused on long-term borrowing and effective management of cash flows. With the right strategy, Pakistan can take on more debt, but it must be used for investments that generate 7% to 10% economic growth per year. That, in my view, is the crucial framework for addressing the country's challenges

Let me also add, as COP28 on climate financing approaches in Abu Dhabi, that Pakistan stands as a prime example of why official grants are crucial for countries facing the losses and damages from climate change. Pakistan should have received USD 30 to USD 50 billion in insurance payments and transfers to cope with the flooding, not just a small amount that barely made a dent and contributed to its debt crisis. As the discussions unfold in Abu Dhabi, there will

undoubtedly be a lot of debate on climate finance, but Pakistan's situation underscores the urgent need for meaningful financial support.

My country, the United States, is the most egregious in terms of contributing to human-induced climate change, as it has been the largest contributor to fossil fuel emissions. Yet, it is also one of the stingiest when it comes to addressing this issue. The initial stance of US policymakers - that they reject any historical responsibility for climate change - is not only wrong but downright obnoxious. What we need is for countries to contribute to a global Loss and Damage Fund, based on their historical responsibility. This is an area where Pakistan stands to benefit significantly, and where Pakistan's global voice is crucial. The upcoming COP 28 in Abu Dhabi presents a critical opportunity for this issue to be addressed.

So, let me conclude by saying that I would love to work together with you on this. Pakistan needs a comprehensive strategy - a long-term, high-investment plan. This goal is achievable, especially with a good neighbour like China, which has successfully implemented such a strategy and can be a great source of support. I would also be delighted to assist in any way I can.

Unlocking Potential: Strategic Reforms to Boost Pakistan's Economy*

3

Dr Shamshad Akhtar, Former Caretaker Federal Minister for Finance, Revenue and Economic Affairs, Ministry of Finance, Government of Pakistan

There are lots of people I know who are sitting here. So, I cannot call everybody's name, except to say I am amongst friends, professionals and distinguished guests. I have to thank Dr Abid Suleri. It is hard to say no to him and that is why I am here. It has been a pretty hectic few months being in Islamabad.

I have to say, all that had to be said has been said, by the distinguished colleagues from the World Bank. So, what I would like to do is, as Dr Abid Suleri said, I would like to bring some hope. So, let me start by sharing with you the good news. After months of hard work, I think we have successfully reached to a Staff-Level Agreement with the International Monetary Fund (IMF) on the first review of USD 3 billion Standby Agreement, thanks to of course, Ms Esther Perez Ruiz, Resident Representative of IMF to Pakistan, who has been working very hard with us.

This is a very positive development for the economy, and it supports all our efforts for macroeconomic stability. We stand committed to the programme because it has all the elements that should be a homegrown agenda of Pakistan. Successful implementation of comprehensive stabilisation measures has helped to revitalise the Pakistani economy, placing it back on a positive growth trajectory. It will be incipient as IMF calls it.

The government's efforts include lifting restrictions on trade and investment flows by removing bans on imports, allowing banks to settle Letters of Credit

* Speech delivered at the Evening Plenary on 'Reforms for a Brighter Future' at the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 23 November 2023 in Islamabad, Pakistan. It has been transcribed by Asim Zahoor at the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete speech, as delivered, can be accessed at: <<https://youtu.be/mewJgWOZZhU>>.

(LoCs) and profit repatriation of dividends by multinational corporations. These are just some of the steps, but I will elaborate as I go further.

We have addressed volatility in the foreign exchange markets by implementing reforms in exchange companies and by promoting competition. Clamp downs on illegal transactions and anti-smuggling measures, which were long awaited have also helped to stabilise the exchange markets. Keeping a watch on our spending and revenues has been our day-to-day business. Not easy, but very much required.

We have implemented a new 'State-Owned Enterprise (SOE) Policy' and fast-tracked privatisation of loss-making SOEs. We have already started to re-profile domestic debt with investors moving to longer tenure instruments substantially reducing cost of borrowing for the government over a period. It cannot happen overnight at the policy rates that we have. These measures have helped to stabilise the economy and bring confidence back in the markets.

Signs of incipient economic recovery are evident. Our GDP growth estimates are that GDP will grow anywhere between 2 to 3%. Pakistan Bureau of Statistics yesterday told me they think it will be 2.5% in Fiscal Year 2024 which is up from 0.3% in Fiscal Year 2023. Higher agriculture output and pick up in manufacturing are positive for the growth outlook. Business and investor confidence is improving, and the Pakistan Stock Exchange (PSX) has rallied 24% in the last three months and has crossed the psychological barrier of 58,000 points for the first time. For a long time, it was around 46,000 to 48,000 points. Pakistan's international and domestic bond markets have rallied around 16% in the last three months.

So, with this piece of good news, as Dr Abid Suleri mentioned, let me talk briefly about the reforms for a brighter future.

Pakistan has all the requisites of being a major economic player in the region and Asia. According to a World Bank report, which happened to be a bit more optimistic than most reports observed that our economy could reach USD 2 trillion by 2047, from USD 350 billion in Fiscal Year 2023. However, this requires macroeconomic stability. Instability disrupts growth. It has to be, however, backed by structural reforms, critical to the deep-rooted challenges shackling productive sectors of the economy. Macroeconomic stability has become more difficult in the

last decade or even a little before that. The reason being a number of endogenous issues, delays in structural reforms, protracted action, and exogenous shocks that are multi-fold today, from issues like global wars in different pockets, surge in global commodity prices which has hit us badly being the importer that we are. And also, in addition to that, there has been tightening of financial conditions at a time when we could have benefitted from reasonable interest rates that existed earlier.

The frequency of these shocks has intensified now and so has the damage caused to the economy. Though there is some easing of oil prices, we do not know as there has been volatility. The vulnerability of our economy has intensified due to global economic shocks, including fluctuations in commodity prices and tight liquidity conditions in international markets. These factors, compounded by our domestic challenges, have effectively priced Pakistan out of the international credit markets

Vulnerability has increased due to the unsustainable debt position with Pakistan now in breach of the 'Fiscal Responsibility and Debt Limitation Act', which was revised in 2013. Large fiscal and trade deficits over two decades have weakened the debt position, with the cost of servicing debt, rising to almost three quarters of the Federal Board of Revenue (FBR) revenues in Fiscal Year 2023.

Let me touch on another vulnerability that we face – our vulnerability has increased due to climate shocks. The 'Global Warming Model' predicts that Pakistan's weather patterns will become even more volatile and extreme in decades ahead, with an average increase in temperatures by 1.3°C to 4.9°C by 2090. Consequently, climate disasters in particular, floods and droughts are set to become even more frequent and severe. I would like to thank all those that have supported Pakistan in midst of the last round of floods and other disasters that we have faced.

To address Pakistan's vulnerabilities, we must address deep-rooted structural problems; and even though we have a shorter tenure, within the legal limitations or flexibility that has been given to us by the previous Parliament, we are pretty committed to see if we can address some of these structural problems. We must, of course, strive for innovation and diversity in the structure of the economy for sustainable growth. The manufacturing base, the export base, and the agriculture basket are focused on a very narrow range of products and have failed to

penetrate new markets. Tackling unsustainable public debt has to be a top priority of the reform agenda. It is at least a priority of mine.

Our fiscal policy is unsustainable not only due to revenue gaps, and unproductive expenditure, but it is also unsustainable due to the scale of the climate funding gap. We hope that in the forthcoming COP28, there will be a good discussion on this topic. To meet targets set under the Nationally Determined Contributions 2021 of reducing emissions by 50% by 2030, Pakistan will have to scale up investments by 800% on a conservative basis to close the climate financing gap. We are pretty committed to moving to our target of harnessing renewable energy to almost 60%.

Growth has to be driven by higher exports and higher investment flows because with volatility in GDP growth that we have faced and long period of low growth, getting revenue targets to move is challenging. The sustainability of our trade and investment policy is critical to reduce the vulnerability of our economy to global shocks. Work is underway on that front.

Let me turn to the fiscal dimension a bit more. There is a need across the board to strengthen public finance and financial management. First, we must completely overhaul the government's fiscal apparatus. So, I hope the incoming government will take on that challenge, because we really need to lower the revenue GDP gap on a sustainable basis. Revenue to GDP has remained low, around 10 to 11% in the last three decades with the government forced to finance large fiscal deficits through domestic or external finances and although we have a diversified set of creditors, the problem is right now with what the global situation is as it is harder to get higher level of inflows from outside.

The caretaker government has initiated the process of restructuring Pakistan's tax administration. This is a homegrown package. I know there have been heaps of studies done by the World Bank, by Asian Development Bank and by some of our experts from Pakistan. But unfortunately, these were never deployed in the transformation process. So, we have launched a homegrown initiative with the support of good tax experts from Pakistan sitting with the FBR.

Ownership is what drives results in my view. Digital transformation of the tax administration is a critical step to meet the objectives of enhanced tax collection and improve compliance. Innovative digital technologies need to be implemented

to minimise tax gaps, increase tax collections and reduce share of the shadow economy. So, we have produced an FBR restructuring plan to enhance revenue mobilisation from 9.5% of GDP to a minimum of 15% in the first phase and rationalising tax regime to be pro-growth. Our leadership wants this to be fast tracked.

We are working towards the separation of the tax policy and tax administration functions, so as not only to remove the apparent conflict of interest in tax collection but also to streamline the incentive framework for our industry that suffers because of unhealthy taxes that may have been imposed in a rush to raise revenues.

Similarly, customs is being reformed to separate tax policy from the collection functions if possible. But at this time, we are trying to see if we could get the customs to become more focused on trade facilitation, as well as anti-smuggling, which is a major evil in our country and across our borders.

Tax policy has to be designed to be fair, equitable and productive. Revenue and fairness objectives need to be pursued by expanding the tax base, reducing tax exemptions and through a more efficient digital tax administration. There are multiple agencies that will be involved with us on this frontier. Simultaneously, we have to enhance efficiency and effectiveness of our public expenditure. There is an urgent need to improve coordination within the Federal Government and with provinces and reorient expenditure priorities towards social welfare.

Towards this end, the Government has initiated dialogues with the provinces for sharing expenditures on this and Public Sector Development Programs (PSDP) projects falling under the domain of provinces. A review is being conducted to close departments at the federal level for devolved subjects. Options are being explored to shift large infrastructure projects under the Public-Private Partnerships (PPP) mode, providing sizeable savings on budgetary resources for both the federal and provincial governments. We are exploring options to increase funding for the viability gap fund to support infrastructure projects carried out in PPP mode.

We are also exploring avenues to seek credit guarantees, which you probably already know, to enhance private sector investment in infrastructure. Within this whole fold of public sector reforms, we have done soul-searching on SOEs. To

address structural weaknesses of loss-making SOEs, we have to first focus on improving their efficiency and functioning so that we can reduce drain on the budget. It is very tempting to say, *'let us just get rid of them.'* But, you cannot do that in a political system. More so, nobody wants to take over sick SOEs. We are losing about PKR 500 million on account of top ten SOEs at the lower end. The government is focused on operationalising the Centralized Monitoring Unit (CMU) and we have already interviewed candidates for it. The CMU will monitor the SOEs and publish regular reports on financial performance and contingent liabilities.

We have already finalised a 'State-Owned Enterprise Policy'. It's just been signed off by me today under the SOE law as agreed with the IMF. The focus of the policy is on improving governance and financial efficiency of loss-making SOEs. A privatisation programme has been fast tracked and financial advisors for Pakistan International Airlines (PIA) have been appointed. We are working with the International Finance Corporation (IFC) team on concessionaire and management contracts for discussion. There are other smaller entities that are also there where the process is underway.

We are working on operationalisation of the Sovereign Wealth Fund (SWF) for which the legal framework had been left behind by the outgoing government. The holding company will help us fast track privatisation of our most strategic assets through several modalities and arrangements. This Sovereign Wealth Fund has been operationalised and it is chaired by the Prime Minister of Pakistan and it includes some of us from the government.

Let me touch upon another vulnerability that we have by pointing out that we have to ultimately make our debt sustainable. Pakistan's debt has become unsustainable, and we have been in breach of our 'Fiscal Responsibility and Debt Limitation Act' since 2013. The cost of servicing existing debt has skyrocketed as I mentioned. Managing public debt will require significant focus on reforms to enhance resource mobilisation and contain unproductive expenditures, including SOE losses, with particular focus on the energy sector.

Debt structure presents numerous complexities to be worked out between Pakistan and its creditors. With limited buffers, moderate shocks could make debt further unsustainable. Any communication around debt issues needs to be extremely carefully and be very well managed because Pakistan has no intention

of trying to delay our payments. Premature public discussion will, of course, create many problems and given Pakistan's debt composition would complicate matters and engagement with multiple creditors.

So, what are we doing?

One, we have started as I said earlier, home-driven domestic re-profiling which is in the hands of the Government. With limited buffers, moderate shocks, could make debt unsustainable. In this regard, we are working on different strategies to improve the maturity profile of our existing domestic debt, reducing short-term repayments. On the other hand, we are trying to reduce the cost of government debt. In this regard, the recent bond auction indicates a shift in investor behaviour, with increased interest in longer-term investments ranging from three to ten years in Pakistan Investment Bonds (PIBs). Previously, investments were predominantly short-term, limited to durations of less than twelve months. This has helped to reduce cost of our borrowing on the margin, but it is only a modest step.

On the external side, options are very limited. The bulk of our external debt close to 44% is to multilateral agencies and cannot be re-profiled as a result of their preferred creditor status unless they launch a global initiative to address the issues of 60 or more distressed countries or even more. Commercial debt is 14% of our external debt and re-profiling this portion of debt is difficult because it involves a larger number of stakeholders and involves a cumbersome process. Bilateral debt accounts for 35% of external debt and is an area where the Government has benefitted from G-20's debt service suspension initiative after COVID.

I wish more positive developments like these would occur while we're in the office. However, although the Global Sovereign Debt Roundtable (GSDR) is actively discussing these issues, there hasn't been any favourable news for us yet.

Recently, we completed debt re-arrangement with China for Fiscal Year 2024-25 amounting to USD 2.4 billion in total. We are also exploring avenues to complete debt-for-nature 'swaps' with bilateral agencies. Pakistan and Italy have recently extended the USD 100 million debt swap agreement time lined until December

2024. I count on all multilateral as well as bilateral support to help us do more of these transactions with, of course, holding hands right and left to do so.

Besides other things that I have talked about, Pakistan has to raise its competitiveness. The export-import gap has to be reduced through promoting exports, which is our natural hedge to the Balance of Payment crisis. For this, competitiveness of Pakistani exports has to be improved and impediments to exports removed. The Government believes in a market-based exchange rate that can avoid persistent overvaluation of local currency.

Anti-export policies of the last three decades and arbitrary changes have led to the loss of competitiveness of our manufacturing base. Exports have failed to make a transition from low technology to high technology products as about 70% of our country's exports continue to be low technology products. We have a very serious initiative on this frontier too. In addition, the country has failed to diversify export commodities and export markets. Again, slow and steady work will pay dividends and work is underway. Textile and clothing sector which contributes about 5% to the world trade dominates today, the country's exports accounting for around 58% of total exports.

Similarly, more than 50% of exports rely on only four markets: US, EU, China and Afghanistan. So, the country has been losing competitiveness in international markets and now it finds it hard to sell even within its traditional markets. But, the good news is that we are talking about several initiatives with some of our regional partners to steadily change these things. It takes a long time to achieve this change. Pakistan's loss of competitiveness is hurting us because in our neighbourhood, other countries have close to 15% to 19% of GDP levels of exports. To facilitate exports to new markets and encourage export of new products, we have after some years been able to in the short stint operationalise the EXIM Bank. This will bring credit guarantees and insurance products for exporters encouraging them to target new markets for exports.

Another factor is the tariff structure that has a significant anti-exports bias, although I have to admit that our tariffs have gone down quite significantly. Within tariff policies, a large number of Statutory Regulatory Orders (SROs) distort the trade regime, impacting trade through Single Window Operations. But more work is needed to achieve international best practices. We are also working on reducing the saving-investment gap.

Lastly, another point that I would like to mention here that with Karandaaz we are working on developing the 'Pakistan Digital Stack' - a blueprint for digital infrastructure for a connected ecosystem that enables a digital economy and drives efficiency for individuals, public and private sector. This is being done in collaboration and with financing from Bill & Melinda Gates Foundation and Karandaaz being the implementer. We are also launching an ambitious capital markets agenda and we launched work on a new government instrument - the short-term '*Ijarah Sukuk*' and 'Zero Coupon Bonds' on the Pakistan Stock Exchange, and this will be listed in due course, to mobilise a wider consumer base for absorbing debt which is exclusively being handheld by banks. We hope that we can, in our limited time, target few listings of SOEs on the Pakistan Stock Exchange through Initial Public Offerings (IPOs). But, you know, it takes a while to do so and I am not sure we would have adequate time.

So, let me just conclude that the first priority for me was diagnostics. Second, was to launch a strategy, which is being embraced by the whole government. And we did produce an economic revival package, but it does not include some of the elements that I may have talked about because we are now in the process of launching a stocktaking of where we have exceeded and where we are behind.

We need to establish a fast growing and efficient economy that is capable of creating more quality jobs to absorb its labour force, especially youth of the country and also children and infants who are suffering because of low nutrition and other problems. We have to be self-reliant. There is dignity in self-reliance. Yet, we have to be integrated with economies at least within our region because my strong belief is we can sell them products more competitively than the European markets on whom they are relying. This is going to be a forward, an outward looking future for Pakistan, whether we are there or not. So, thank you, Dr Abid Suleri; thank you, Mr Najy Benhassine, for all your support. Thank you for all of your support. It really means a lot to us.

Building a Brighter Future: Social Equity and Economic Reforms*

Dr Luis Felipe López-Calva, Global Director, Poverty and Equity Global Practice, The World Bank

It is a great honour to be here, and I thank SDPI for allowing the World Bank and myself to be part of this conversation. In my presentation, I will be covering why we need reforms? Why does equity matter for economic reforms? How do we design more equitable reforms? And how can reforms achieve more inclusive social outcomes?

I will try to present first the series of global challenges and afterwards, I will share some of the aspects that we see as specific challenges in the case of Pakistan. At the end, I will try to talk about a framework that will allow us potentially to see what the way forward is in terms of institutional and governance aspects based on the World Bank's '*World Development Report 2017: Governance and the Law*'.¹

Why is it necessary to adopt a different way of thinking in response to the current situation?

It is clear that the world has entered an era of structurally lower growth. So, when we see the 'Global Growth' chart, you can see during the shocks that we saw in 2009 with the financial crisis, and more recently with the Pandemic, the growth rate falls into the negative. It is for all groups of countries, even those that were growing at faster rates, now we see a low level of growth going into the future. And that relates to what you know as the global collective challenge of

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¹ The World Bank 2017, 'World Development Report 2017: Governance and the Law', Washington, D.C: World Bank, doi:10.1596/978-1-4648-0950-7.

eradicating poverty by 2030 which is SDG 1. We can see that it is out of reach, even though we have decades of very important improvements in terms of that. And recently, in the last two decades, about one billion people were lifted out of poverty. Yet, you see that after the COVID crisis, there is a slowdown and you see the current projections telling us that if we do sustain the current rate of progress, still 6.8% of the population will be living in extreme poverty, even with the best projections. Hence, we would not be reaching the goal of 3% global poverty by 2030.

So, we have to do things differently. We have to accelerate our commitment to eradicate poverty. An important aspect I want to emphasise while discussing these projections is that a significant portion of the global poor now resides in middle-income countries. So, poverty is not only an issue of low-income countries, but also an important issue for middle-income countries as well. We are talking here about extreme poverty, which is based on the USD 2.15 per day per person poverty line. So, this is a challenge for the world as a whole and not only for low-income countries.

If you see the evolution of poverty in the case of Pakistan, first, you see that over time, Pakistan has been lagging behind other countries in the region. Current economic growth in Pakistan is insufficient for meaningful poverty reduction. This is evident from the volatility of growth, which leads to a slow and inconsistent decrease in poverty levels. Additionally, increases in poverty are often a direct reflection of contractions in income. It's important to note that the poverty line we are discussing is set at USD 3.65 per capita per day, as defined by the World Bank for lower middle-income countries. Given this context, we face a significant challenge in reducing poverty, and it is crucial that we understand how to address these issues structurally.

One indicator that I want to take up as an important element for reflection, because this is an indicator of long-term growth, a structural constraint for economic growth, is the Human Capital Index (HCI). Pakistan's Human Capital Index is 41% lower than the other South Asian Region (SAR) countries' average of 48%. Surprisingly, it is actually at the level of Sub-Saharan African's level, which is 40%. So, this is one of the most important structural constraints I would like to highlight here in terms of potential for growth in the years to come.

Similarly, non-monetary indicators of poverty like health, nutrition, education, etc., in comparison to other countries of this region, have also worsened. Between 1990s to 2022, Pakistan showed improvement from 1990s to 2010, but then the progress became stagnant and even for some time deteriorated. Furthermore, living standard differs substantially across urban and rural areas, as access to services and opportunities is based on location. So, growth is spatially unbalanced with rural areas falling behind. Transitioning into urban areas has been a key driver of poverty reduction. Consequently, the poverty rate might be lower in urban contexts, but due to the larger population size in cities, the absolute number of people living in poverty could still be higher in urban areas compared to rural ones. This means that, in terms of sheer numbers, urban poverty may be more significant, even if the relative rates appear more favourable.

With reference to the concept of resilience, it is very important in a context in which shocks become more intensive, and also more frequent, that we construct elements or we provide elements for resilience. So, resilience has a very specific meaning. You are going in a certain direction, there is a shock that derails that journey. And now what matters is the speed at which you can recover and go back to the previous path is what we call 'resilience.' So, we need to provide the elements for that. And again, this is not only in terms of flows. Traditionally, economic thinking has been to measure that resilience in the space of flows. When considering factors like consumption or income, it's crucial that our efforts toward resilience do not come at the expense of depleting our stocks. Instead, we must focus on protecting, investing in, and accumulating resources to ensure we remain resilient in the future.

When we talk about poverty and inequality within the World Bank, and this is the group that I have the privilege to lead within the World Bank, which systematically shows these types of indicators like poverty rates, the Gini Index for Inequality, Shared Prosperity Indicator, which is the growth of income for the bottom 40, or just average income, which is GDP. These are all indicators of something we really care about, which is the concept of '*Growth Incidence*.'

So 'growth incidence' is about describing the pattern that shows how different groups in the population contribute and benefit from the process of economic growth. When examining the '*Growth Incidence Curve*' for South Asia, you can observe the income growth values for different economic groups, ranging from

the poorest to the least poor. It's important to understand the underlying factors that contribute to this pattern. While the absolute levels of these lines, indicating growth levels, are significant, our primary focus is on the shape of the curve. A negatively sloped curve suggests that income growth is faster for the poorest segments, indicating a reduction in inequality. Conversely, a positively sloped curve indicates faster growth for the relatively less poor, potentially exacerbating inequality.

So, in case of Pakistan, we can see that this shape has been evolving over time and has become lower in terms of growth and more regressive in terms of the pattern. So, even during the period before COVID, it was more progressive, but at a very low level of growth. So, we care about this because we want to equip different groups in the population so they can contribute to economic growth.

When discussing equity, it's useful to illustrate with a simple example. Imagine three people of different heights trying to watch a game over a fence. If you provide each of them with an identical box to stand on, the shortest person may still not see the game clearly - this is equality, where everyone receives the same support regardless of their needs. In contrast, equity involves giving each person a box appropriate for their height, ensuring all have an equal view. This scenario highlights the distinction: while equality provides the same resources to everyone, equity tailors support to meet individual needs, ensuring everyone can participate equally.

This principle applies directly to economic development. We must provide different groups within the population with the appropriate means to engage effectively in the economy. It's not just the level of growth that matters, but also how it occurs - the 'growth incidence curve' reflects this by showing who benefits from economic growth and how. Ultimately, this approach to equitable support is what we refer to as justice, embodying various theories that aim to balance disparities within society.

How do we design more equitable reforms? What are some of the instruments that we have?

To understand the pattern of growth incidence I discussed earlier, we employ the assets approach, focusing on the different types of assets people possess. Our goal is for individuals to accumulate, protect, and utilise these assets. One of the

most straightforward examples is 'human capital.' We facilitate this through access to education and healthcare, enabling individuals to leverage these assets in the labour market to generate income.

However, our concern extends beyond human capital to other forms of capital as well:

- **Physical capital**, such as housing and land.
- **Financial capital**, which includes measures for financial inclusion.
- **Social capital**, recognising its potential returns.
- **Natural capital**, focusing on how households can utilise environmental resources.

The accumulation and effective use of these diverse types of capital are crucial for active participation in economic development. To understand poverty structurally and in the long-term, we examine individuals' endowments in these asset categories. Furthermore, governments use policy instruments like taxes and transfers to recalibrate wealth distribution, aiming to provide support for those at the lower end of the economic spectrum. This comprehensive approach helps us address long-term poverty more effectively.

How do you equip households with the capacity to be proactive actors in the process of economic development?

A crucial point to understand is that it's incorrect to view economic growth and income distribution as separate phenomena. They are, in fact, jointly determined. This concept was initially proposed by Professor Hollis B. Chenery in the 1970s under the theme of 'redistribution with growth.' This idea has been revisited and expanded upon in recent times, such as in the research paper by Professor Francisco H.G. Ferreira titled '*Distribution in Motion: Economic Growth, Inequality, and Poverty Dynamics*.' These works argue that strategies aimed at economic growth must simultaneously address income distribution to be effective.

So, the idea is really to think of the process of economic growth and distribution as jointly determined. And we can think of what are the elements that we can use to provide for the conditions for this to be more equitable. We have fiscal policy. We have institutions and public goods to be provided. We have elements to deal

with risk management and risk coping mechanisms for households, and well-regulated markets to prevent biases that could favour certain groups over others.

To illustrate the impact of fiscal instruments on income distribution, we at the World Bank have conducted a comprehensive analysis of the ‘incidence’ of fiscal policies. Our findings reveal that these policies effectively reduce short-term inequality across all economies, albeit in varying ways, from different starting positions, and to differing extents. We categorise income into different groups, such as market income, which households generate autonomously. Further, we analyse points of redistribution through various mechanisms, including direct taxes, transfers, and in-kind transfers. The culmination of this process can be observed in ‘ex-post distribution,’ which shows the Gini Coefficient of market income compared to the distribution after government intervention through these redistributive instruments.

The data clearly illustrates that in Organization for Economic Cooperation and Development (OECD) countries, there is a significant change due to robust fiscal redistribution. These countries possess a high capacity for redistribution. In contrast, non-OECD and low-income countries typically have fiscal systems with limited redistributive capacity, resulting in less pronounced changes in income distribution.

So, we must focus on enhancing the capacity of fiscal systems to ensure they are more equitable. To achieve this, I will briefly outline three key principles before talking about the political economy aspects of these systems.

First, we should aim to establish virtuous cycles by making the fiscal system supportive of growth, ensuring it does not stifle productivity. Second, we must eliminate inefficient expenditures and reallocate these resources more effectively. Finally, we must reform less progressive fiscal instruments that perpetuate inequality, thereby reinforcing more equitable patterns of wealth distribution.

When we examine the reorientation of fiscal spending, we observe that generalised subsidies, such as those for energy or fuel, result in lower prices that benefit everyone, including those who are not necessarily poor. However, targeted programmes like direct transfers demonstrate a more effective ‘incidence’ as they more accurately reach those most in need.

Second, in Pakistan, when examining the ‘incidence’ of indirect versus direct taxes and transfers, we can observe distinct impacts. Indirect taxes, primarily levied through consumption, disproportionately affect those at the bottom of the income distribution, having a negative impact on the poorest groups. In contrast, direct taxes are far more effective at targeting those at the top of the income spectrum. Thus, from a basic microeconomic perspective, indirect taxes are more regressive as they burden the poor more heavily than the wealthy. Indirect taxes disproportionately affect the poorest because a larger share of their budget or income goes towards basic consumption compared to richer groups. Thus, any indirect tax increase significantly impacts their financial stability.

Finally, in Pakistan, there has been a decline in investment in productive capacity and infrastructure. This trend is concerning and echoes findings from multiple research studies, which highlight a structural issue within the country: notably low levels of public investment.

So, how can reforms achieve more inclusive social outcomes?

To gain a deeper understanding of governance and reform, the ‘*World Development Report 2017*’ on governance and law is highly informative. This report explores the micro-foundations of how power asymmetries among actors influence their capacity to impact economic decision-making. Such disparities can significantly affect efficiency and effectiveness of policies.

According to the framework developed by Albert O. Hirschman, ongoing demand for redistribution creates tensions within societies. How these tensions are managed and processed plays a crucial role in explaining the long-term development trajectories of countries.

Let me illustrate with a simple graph: there is a designated space where policies and rules are formulated, known as the ‘policy arena.’ In this arena, stakeholders reach agreements and decide on specific policies that subsequently shape a particular pattern of development. For instance, we might observe a pattern where income is highly concentrated at the top. This concentration can reinforce itself if the benefits of growth consistently accrue to the top echelons, thereby enhancing their *de facto* ability to influence the policy arena. Over time, this cycle allows certain groups not only to garner more resources but also to shape the rules themselves. As these groups define the rules, the distribution of *de facto*

power - or you might say, *de jure* power, pertaining to the laws - becomes structurally biased in their favour. This results in rules of the game that systematically favour these influential groups, perpetuating inequality.

We need to carefully consider who is participating in the policy arena and how power asymmetries manifest there. It's important to identify the rules that create these power dynamics and the policies that disproportionately benefit certain groups. Understanding who the actors are in this policy arena is crucial. The goal should be to foster a more contestable policy arena, one where multiple stakeholders can participate and influence decision-making, ensuring a fairer distribution of power and benefits.

One effective strategy to create a more inclusive policy arena is by providing quality information to all societal actors. This approach enhances the quality of public deliberation, empowering a broader range of stakeholders to engage in policy debates. Our aim is to mitigate distortions in the interactions between citizens and decision-makers, such as the exclusion of certain groups from policy decisions and the disproportionate influence of more powerful actors in policy design. Additionally, we strive to combat clientelism, where policies are crafted not to empower citizens but to maintain their *status quo*, benefiting specific groups. These issues are discussed in depth in the report.

The ultimate goal is for citizens to have trust in their government, a sentiment that fundamentally depends on legitimacy. This legitimacy can be constructed through two key avenues: outcomes and processes. By delivering the results that citizens expect, governments demonstrate their effectiveness. Fostering a more inclusive decision-making process ensures that diverse outcomes reflect participation and contributions of various groups. When people feel that they are genuinely part of the policy design process, it strengthens their trust in the resulting policies and in the government as a whole.

Finally, how can we do this as external actors? And this is a very important message with which I want to close because, you know, change and positive change for society cannot be imported. It is not external actors which are going to bring change. Change can only come from agreements among domestic actors, new policies, and new rules. The only thing we can do, and this is chapter nine in the report, is we have different instruments lending technical capacity and so on. What leads to change is agreements among elites, and here 'elite' is a very

descriptive definition. It is not normative. Elites are those who are closer to the decision-making process. Citizens are those who can influence the process through voting for example. And we as international actors, who have technical capacity, have international conventions. We have many other instruments that can be provided to support the policy game within a specific context. But the agreements have to be reached among local actors, and those are the ones who are going to bring about change. So, this is very important, and we have seen throughout history, that change can come from new agreements among elites, new agreements among elites and citizens as shared in our report.

Collaborative Governance and Growth: Pathways to Economic Resilience in Pakistan*

Dr Mohammad Jehanzeb Khan, Former Special Assistant to the Prime Minister, Special Investment Facilitation Council (SIFC) & Deputy Chairman, Ministry of Planning, Development and Special Initiatives, Government of Pakistan

I would like to congratulate SDPI on bringing this regular annual event with great dedication, preparation and in a very timely fashion. It is now one of the hallmarks of Islamabad, which brings together a galaxy of experts and SDPI must be fully appreciated for this wonderful gathering that they host every year.

This year, its significance is somewhat different. The title of the Conference itself is very interesting as it talks about light at the end of the tunnel which does mean that these are difficult times. It is time to generate hope, and to look forward to what could be done. The theme of this session, 'Pathway to Recovery, Hope and Resilience', underlines the thought that there would be some kind of a plan and a programme which is going to get us where we wish to be. After the distinguished keynote address by Dr Ishrat Husain, I won't go into those matters again because he has laid them out very well, given all the regional perspectives of how our neighbouring countries and how our peers have done this.

We all started more or less in the same situation, but the pathways went in different directions. I think the audience knows very well what needs to be done and by now, a large number of the population also talks a great deal about economics. In recent times particularly, even common people, who are not that literate about economic matters are also concerned and they understand a lot. Public debates are focusing more and more on economic matters. In some ways,

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of course, this is very good. So, I would not talk about what needs to be done. I think everybody knows it. It would be reinforcing something that you have heard all through these few days. We also know the difficulties as some of them were highlighted in the keynote address on how we have not been able to keep this narrow path of economic development with equity for the people of Pakistan.

I should mention a little about how it should be done and the challenge we are tackling with. So, let us begin with looking at some of the things in recent past that have happened. And of course, they were not the solutions. Those factors tell us that governance is at the centre of all that matters in this country.

With some degree of attention and effective action, the Government was able to curb smuggling. No country can afford to have smuggling. It destroys all economic parameters. And the results were immediate. You saw what an effective administration can do. Behind this success, there was a lot of work of a number of institutions. You saw the resolve and you saw the result. You also saw stability in the forex market. Again, I would not say this is the solution, but we saw how speculation calmed down. Markets in our region are not particularly perfect. Perhaps, you have not seen its result in the power sector, but many effective actions have been taken there. Recoveries have improved, pilferage has gone down, and electricity theft is declining. But, of course, the problem is so huge that it needs sustained action, and still has a long way to go as well. I have just mentioned here only the three. I could talk about more, but these are [examples] of better governance and more administrative actions [are required].

In parallel, we are implementing the Stand By Arrangement (SBA) and very rigorously adhering to what needs to be done in fulfilling our commitments with the International Monetary Fund (IMF). And that too has stabilised some of the indicators as well which are well-known by now. So primarily this means that we can do it. It is not rocket science or some new invention. This is the result of sound administration, economic policies and good implementation. So, the good news is that it can be done.

How do we move forward on this?

I would particularly focus on institutions of economic decision-making. Pakistan is a federation, and provinces are a very meaningful partner in the economy of the country.

The first thing that needs to be done and we are trying to do it is to engage provinces in economic decision-making. You hear a great deal about the Economic Coordination Committee (ECC) of the Cabinet, which meets virtually every week. But you do not hear so much about the National Economic Council (NEC). It's a constitutional entity, hence, it has very important functions. The Constitution states that this Council will take care and pay attention to the economic, social, and commercial well-being of the country. The provinces are equal partners in this Council. Usually, its meeting is held once a year. It is a fairly routine meeting in the sense of approval of certain matters that are placed before it. It has representation from all the provinces, their Chief Ministers are there. My own experience is, when they sit together, they find solutions. One big strength the politicians have is that when they sit together, they find solutions. Politics is the art of the possible. So, bringing them together, even if from different political entities, as we have in the recent past, it is all the more important that this collaboration and continuity at the highest forum of economic decision-making takes place.

We also have an Executive Committee of the National Economic Council. It's been reduced to only an approval body for projects, but we are trying to make it a more effective entity. We are also in consultation with the provinces and finding meaningful ways of working together. So, for instance, if you were to ask the provinces to throw surpluses from their budgets so that the national deficit could go down, it is a better idea to devolve the expenditures on provincial functions and let them handle it. That way the federal deficit goes down significantly because of the historical legacy and also because of the political economy, the Federal Government continues to perform a number of provincial functions, such as subsidies on agricultural tube-wells, on fertilizers, both of these are provincial subjects. The Benazir Income Support Program (BISP) is not mentioned in the federal legislation. So that is also a provincial subject, and same goes for sharing of cost on higher education. In our estimate, it's about a trillion rupees that the Federal Government spends on matters that are provincial in nature. We don't want to abdicate our responsibility. We will continue to support those areas of the country, which are deprived and are left behind. In our initial discussions with the provinces, we proposed sharing costs on a 50-50% basis. As a result, we will share a burden of approximately 500 billion, significantly improving our fiscal deficit.

Looking at this, who would be able to do this? It can only be done by institutions like the NEC, where the provinces are represented. The other important institution of decision-making is the Council of Common Interests (CCI). When we are in a federation, and a number of things are done in the provinces, it is extremely important to coordinate those functions. It is not enough to say that these are devolved, and the Federal Government has nothing to do with it. Take for instance, agriculture. Some bits in agriculture are devolved and handed over to provinces but the key policy levers are still with the Federal Government. The decision to import and export of agriculture products lies with the Federal Government. Seed certification belongs to the Federal Government and so does plant protection. Building up Sanitary and Phytosanitary Measures is again a federal function and so is the decision of investing in Research and Development. Similarly, the higher education mechanism is driven by the Federal Government as well. Therefore, it is essential to foster meaningful partnerships among all relevant institutions. Collaboration is crucial; we cannot overlook these matters simply because they have been decentralised and devolved, assuming they no longer require federal coordination. The Council of Common Interests serves as the ideal platform for this coordination, ensuring efficient resource use and yielding significant dividends.

I also wish to highlight an institutional weakness that we have encountered for a number of decades which is that there is no Ministry of Economy in Pakistan, only a Ministry of Finance. Unless some of you start thinking of the Economic Affairs Division as something to do with economics, there's a misnomer there. It's only concerned with external capital assistance. Back in the 1950s, it was decided that instead of having a Ministry of Economy, we will have a Planning Commission (Ministry of Planning Development and Special Initiatives). Therefore, the function of economic planning, squarely rests with the Ministry of Planning Development and Special Initiatives and the Ministry of Finance is largely concerned with stabilisation of the budget. Over the years, these rules have somewhat changed, and the Planning Ministry is now left to only approve projects and take decisions of public investment. This institutional requirement also needs attention, particularly in terms of integrating the operations of the Ministry of Finance, the Planning Commission, and potentially a Ministry of Economy. Such coordination is crucial not only for budget stabilisation but also for developing a clear plan aimed at economic growth, prosperity, and equity.

Dr Ishrat Husain spoke about the civil service and I should echo his thoughts. Competence may be an issue but the ecosystem for the civil service has deteriorated. Without an impartial, professional, honest and dedicated civil service, policy cannot be translated into action. This is a very important task at hand and needs to be addressed urgently. A simple example is the security of tenure. We cannot expect civil servants to be able to give impartial and honest advice if they are scared of giving this advice because it might be politically unfeasible, the risk of losing support, at the risk of being transferred. These are the concerns that the civil service has that must be addressed. You also may have noticed a culture of rapid turnover in the civil service. So, we need to keep it in order. The rules are there. The procedures are there. The Supreme Court judgements are there. Implementation is now required.

We are also working on building capacity of technical people. With civil service alone, we cannot function. They are public policy specialists, they are the general managers, but we need to have first rate agriculture scientists, health professionals, economists, water specialists, IT specialists and so on and so forth. These sectors have been neglected in terms of human resource development. While there might be very eminent people in the wider society, but those who work for us in the government, either they have not been developed in terms of their training and profession or have not been allowed to utilise their full potential for the progress of the nation. Without technically qualified people, we can't move forward. Economists can give very good policies. But beyond that, there are other specialties that will have to work and create a pathway as the world today is of science, technology and innovation. We can use these terms, but to translate them into the direction, we would need to have capable, competent, and qualified professionals, who are given a meaningful role in public service. You have IT professionals out there who are earning for the country, bringing back valuable foreign exchange. And there are other people who are doing similar work but their voice within policy circles is weak. From the private sector, it's essential to involve professionals in public policymaking to ensure a more broad-based, inclusive approach that leads to positive outcomes.

I think one of the key areas in which some work has been done, and more would be done, is public spending.

What do we spend on?

Of course, tax revenues need to be increased and that's important. Tax rates need to be brought down so that there's more activity. It's not that tax collection is the only function that is required, the quality of public spending also matters. Where's the money being spent? And how does it benefit the vast majority is extremely important. I think we have been trying to cut down on public spending but not doing enough to understand the quality of public spending. Where does it bring more value? And when we talk of public spending, the government spending must be on core public works only.

When I talk of core public good, with a country like ours, we just don't have enough money, hence, cannot spend a lot of money on everything. So, for instance, in education, there is a consensus that elementary education is a public good. But higher education should be more selective and must go to those who have the merit and those who cannot afford must be fully funded from public funds. However, universities cannot be dependent on public budgets only. They need to reform and generate revenues. Still, those who cannot afford must not suffer. For them, endowments and scholarships can be created, and the government is fully committed to make sure that every student who has the ability, must have the opportunity of studying. But not at the cost of governance of universities.

I just illustrated this as one point to define the concept of public good in a very narrow manner so that we concentrate on what the Government should be doing and leave the rest to private capital. This is where again, I refer to Dr Ishrat Husain's talk on state versus markets. I think that debate is largely over. But the debate about being able to have a fair market is very important. The ability of the government to make sure that the market functions not to the detriment of those who cannot afford and are vulnerable. Good functioning markets with private capital would allow us to give a lot of services to citizens and some public services should also be delivered by the private sector. The question of affordability can then be addressed through conditional direct transfers, education, and health and services of our core public services. I think there are many models worldwide, and this can be done.

Partnerships are crucial, and although we often discuss their importance, actual collaboration has been limited in our country. While some partnerships have emerged in infrastructure development, vast potential remains untapped, not only within the private sector but also within the voluntary sector. For decades,

the voluntary sector has operated independently. We are now focusing on revitalising partnerships with this sector to enhance public service delivery. Our goal is to leverage the dedication and motivation of these groups without expanding the bureaucracy, thereby improving efficiency and impact.

I would like to re-emphasise, as previously mentioned, the necessity of core devolution - from the provinces to the district level. Taxes such as property tax and motor vehicle tax should be directed to the districts and municipalities. This will enable them to generate sufficient revenue to meet local urban needs. Additionally, provinces play a crucial role in the collection of agricultural taxes. Given their success in collecting GST on services, they are well-positioned to assist federal agencies in improving tax collection. Their proximity to the public and presence throughout the country make them effective partners in these efforts.

I would like to highlight three or four areas that require a national consensus. While initiatives like the charter of democracy and the charter of economy are commendable, variations in political opinions are inevitable. Globally, it is common for political parties to have differing views, particularly concerning economic policies. Expecting unanimous agreement is unrealistic. However, it is crucial that policies are not overly dependent on individual policymakers. Changes in ministers or governments should not result in drastic policy shifts. In my experience, I have observed such inconsistencies within the same government, where one minister aimed to reform railways through public sector initiatives, while their successor favoured outsourcing many railway operations.

It seems to me that when we discuss a charter of economy, we're really talking about a broader agenda and fundamental principles. However, the success of these policies largely depends on what we've discussed previously: stability and security of civil servants tasked with executing these policies. Their role is crucial in turning these broad economic frameworks into effective, actionable strategies.

Population growth continues to challenge us significantly, standing as the 'big P' in our economic debates. Despite efforts, we still struggle to gain sufficient support and awareness for our population welfare programmes. A particularly stark issue is the substantial unmet demand for planned parenthood services. Initially, our focus must be on fulfilling this demand where there is a clear desire for family planning. This challenge is compounded by weak federal coordination,

but improvements in facility utilisation could be seen within three to four years if these needs are addressed promptly.

Moreover, health implications of rapid population growth are profound, affecting mother and child health. Lack of medically advised spacing between pregnancies is contributing to health issues and alarming rates of stunting, which ironically persists in a country rich in agricultural resources. It is concerning to see a decline in breastfeeding in some urban areas, replaced by an increased reliance on formulated milk. This shift poses a significant risk, with approximately 39% of our population being stunted, thereby jeopardising the productivity and potential of our future generations.

In addition to population and health issues, climate change remains a critical concern that demands urgent attention. However, beyond these challenges, there is a pressing need to create more livelihood opportunities. I use the term 'livelihoods' intentionally to encompass a broader spectrum than just 'jobs.' The world needs skilled, able, and competent young people, and with our vast reservoir of talent, Pakistan can meet this international demand in the coming years. This approach not only addresses domestic needs but also positions our youth as valuable global contributor.

Dr Ishrat Husain highlighted the significance of regional trade, a field where economists are acutely aware that political boundaries do not define economic boundaries. For the past five or six decades, regions have recognised the benefits of connectivity and trade. There is considerable work to be done from Central Asia to the Far East, as we are part of a vast market. By restoring these trade linkages and enabling free movement of goods, we can access cheaper raw materials and enhance the pace of development significantly.

I am very grateful to you for your patient hearing. Dr Suleri, you and your team have done a fantastic job. Congratulations, and we will be looking forward to your recommendations.

Analysing Development: Economic Trajectories of Pakistan, India and Bangladesh*

Dr Ishrat Husain, Former Advisor to Prime Minister of Pakistan on Institutional Reforms and Austerity; and Former Dean and Director, Institute of Business Administration, Karachi, Pakistan

I am very grateful to SDPI for consistently inviting me to all their annual Sustainable Development Conferences. It has been a great pleasure for me to attend these conferences, and learn about new developments, new ideas which crop up every so often. So, it is a big learning experience for me to meet some of the great minds and public intellectuals at these gatherings, both from within and outside Pakistan.

I really appreciate Ambassador Shafqat Kakakhel, Dr Abid Qaiyum Suleri, and Dr Vaqar Ahmed for giving me this opportunity to attend this Conference. I have just published a book, which is '*Development Pathways: India - Pakistan - Bangladesh (1947 to 2022)*', and it is based on hard data and evidence about the different trajectories of development which have been adopted by these three countries since 1947 when the subcontinent was partitioned.

There is a lot of dearth of data and information, especially about the earlier years of Pakistan and India's history. So, I had three PhD scholars involved in this project to collect comparable data, clean it up, analyse it, and present the trends. So, it is not an opinion piece which is the case in most of books on this subject, rather it is based on very solid evidence.

* This is a *Provisional Transcript* delivered at the Closing Plenary of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 23 November 2023 in Islamabad, Pakistan. It has been transcribed by Asim Zahoor from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete address, as delivered, can be accessed at: <https://youtu.be/H8lenVvrWs4>.

What I would like to share with you this evening are the lessons from this period of 75 years. I will first divide my remarks and concentrate on the critical success factors, which have led these countries with poverty, illiteracy, ill health, to becoming quite active participants in the global economy over 75 years. Then, I will come to what I call as 'pain points and risks' which these countries have to address if they want to continue their journey of development and growth in the next 75 years.

My starting point is, that I do not believe in growth, for the sake of growth. I believe that we all should aspire to have sustained, sustainable and inclusive growth. Where we care for the planet, we care for the people, and we care for the prosperity of the majority of the population. And that is quite a difficult task. Especially in the light of technological advances as well as risks of climate change. So, the next 75 years are going to be quite different from what it was in the past.

Let me also highlight that, for economists, this period can be viewed as an experiment that can be divided into two distinct phases: the first from 1947 to 1990, and the second from 1990 to 2022.

During its first 40 years, Pakistan was a star performer. Many young men and women, accustomed to hearing only doom and gloom on social and electronic media, might not realise the remarkable journey this country has undergone. At the time of Partition, Pakistan had no industrial base - just a single cement factory in Karachi - and received nothing from the reserves of the Bank of India that should have been allocated to it. The country lacked even the basic resources, such as pens and pencils, to start government operations, and it struggled to pay salaries.

Yet, despite these challenges, Pakistan became one of the top ten performers in the world over the next four decades. The economy grew by 6% to 6.5% annually, poverty fell from nearly 75% to 35%, and the standard of living significantly improved.

During the same period, Bangladesh separated from us in 1971, but from 1971 till 1990, their economy was flat. During those 40 years, the Indian economy was growing at just 3%, which was only half the rate of Pakistan's economic growth. So, Pakistan's per capita income was much higher than both India and Bangladesh.

What's particularly remarkable is that this period saw Pakistan endure five major shocks. One of the most significant challenges was the rehabilitation of nearly eight million refugees from India. In a country of 32 million people at the time, this meant absorbing a population equal to one-fourth of the country under extremely difficult circumstances. The second was, we had a war in 1965 with our neighbour, which is eight times bigger than Pakistan; and we were able to preserve our freedom, integrity, and security against a big neighbour. The third was a tragedy that we lost half of our country, which was the separation of East Pakistan, which became Bangladesh. The fourth shock was nationalisation of our industries, our banks, our insurance companies and educational institutions, which set us back.

In a report from the 1970s, the World Bank highlighted that Pakistan's manufactured exports in 1969 were higher than those of Thailand, Malaysia, the Philippines, and Indonesia. This is particularly impressive for a country that had no industrial base in 1947.

But what happened?

We completely dismantled our industrial infrastructure by nationalising it. Government officials, myself included - I began my career as a civil servant - were not trained to run businesses. That wasn't our expertise, and as a result, we made a complete mess of industrial development. The final shock came with the Afghan War, where we played a significant role in pushing the Soviet Union out of Afghanistan.

Despite these five shocks, Pakistan was way ahead. However, since 1990, we have been on the downward path. Both India and Bangladesh are growing by 6% to 7% per year. We are growing between 3-4% per year. Their population growth is much lower than our population growth in per capita terms. India is at USD 2100, Bangladesh at USD 2700, and we are still at USD 1600. So, we are way behind both these countries now.

So, you would ask me the question what happened between the two periods? Why were we doing so well? And why are we doing so poorly now?

The answer to this, which I also explored in my previous book, *'Governing the Ungovernable'*, lies in the institutions of governance during that first period. The

civil servants who ran those institutions were competent, honest, and deeply dedicated to the country. Their only motivation was a genuine love for Pakistan. This commitment was the driving force behind those institutions. And I can give you four examples to illustrate this.

During that period, the Pakistan Industrial Development Corporation (PIDC) laid the foundation for many of the industries we see today. They established these industries and then sold them to the private sector with the assistance of PICIC and IDBP.¹ At the time, we struggled to feed our 30 million people and had to import wheat to meet our needs. The Agriculture Development Corporation played a crucial role by introducing new seeds and chemical fertilizers, enabling us to boost agricultural productivity. Today, Pakistan's population is nearly 230 to 240 million, and we produce 30 million tonnes of wheat, making us the third-largest exporter of rice. Although our cotton production has declined, we once produced 16 to 17 million bales, a testament to the contribution of the Agriculture Development Corporation.

WAPDA, the Water and Power Development Authority, was another key institution. After losing the rivers Ravi, Beas, and Sutlej, WAPDA took charge of the Indus Basin projects, constructing barrages, linked canals, and the Tarbela and Mangla Dams, which significantly increased our water availability for agriculture.

Then there was Pakistan International Airlines (PIA), the only airline from the developing world at the time that connected three continents with landing rights and frequent flight schedules. PIA even played a pivotal role in establishing airlines like Singapore Airlines, Royal Jordanian, Air Malta, and Emirates, which is now one of the best airlines in the world.

However, when we look at the period from 1990 to 2022, the picture changes dramatically. PIA accumulated PKR 750 billion in liabilities and debt and can no longer afford to pay for fuel, leading to frequent flight cancellations. The once-prominent PIDC is now a shadow of its former self, occupying an old, deteriorating building in the heart of Karachi, with little to no activity. The Agriculture Development Corporation has disappeared entirely. WAPDA, after decades of

¹ PICIC stands for the Pakistan Industrial Credit and Investment Corporation, and IDBP stands for the Industrial Development Bank of Pakistan.

dormancy, only started major projects again in 2019-20, beginning work on ten dams after nearly 50 years of inactivity.

These institutions, once the backbone of Pakistan's development, have become dysfunctional. The roots of good governance lie in these institutions, but their effectiveness depends on the calibre, competence, and dedication of the civil servants who run them. Unfortunately, the quality of our civil servants has deteriorated compared to the earlier generations.

So, that is the story of Pakistan. Now, I come to the lessons and briefly I will share one by one, eight points as far as critical success factors are concerned and eight points which what I call as the 'pain points or risks.'

The first consideration is the form of government - whether it's a democracy, autocracy, authoritarian, or hybrid system - this is irrelevant. What truly matters is continuity, consistency, and predictability of economic policies. If those elements are in place, the nature of the regime becomes secondary. Therefore, our ongoing debate about whether democracy, dictatorship, or authoritarianism is best is ultimately irrelevant.

My second point is that there is now a consensus in all three countries that economic policymaking should be approached pragmatically, rather than being driven by rigid doctrines or ideologies. For instance, Jawaharlal Nehru introduced socialism in India under the influence of Fabian socialism. However, in 1991, when India faced a severe balance of payments crisis and had to pledge its gold reserves, they abandoned socialism and embraced integration into the global economy. They attracted Foreign Direct Investment (FDI), dismantled the License Raj, and liberated the private sector. The result is evident in India's remarkable progress since then. The key takeaway is that pragmatism, not capitalism, socialism, or communism, is the way forward.

The third point, which is particularly relevant for Pakistan, is that both India and Bangladesh have relied on their own domestic savings, raising their investment ratios from 15% to 30%. They do not depend on external assistance, nor do they go begging for dollars from around the world. In contrast, we are stuck at a 15% investment rate because our domestic savings rate is only 8%. Thankfully, our workers abroad contribute another 3% to 4% through remittances. Without the USD 30 billion in remittances they send us, our current account deficit would be

USD 50 billion. So, what are we doing? We continue to borrow and borrow to finance ourselves. India and Bangladesh have managed without going to the IMF, while we have turned to the IMF 22 times.

My fourth point is that the debate over state versus market is entirely outdated and irrelevant. What truly matters is having a strong, effective, and capable state alongside well-functioning competitive markets. Success lies in the synergy between the private sector and the public sector. In Bangladesh, an additional factor has been the significant role played by NGOs, such as Professor Yunus' Grameen Bank and Sir Fazle Hasan Abed's BRAC. These organisations have been instrumental in empowering women, providing microcredits, and establishing schools, hospitals, and clinics, all of which have played a crucial role in the country's development.

The lesson here is that we need all hands on deck - whether you're part of civil society, the private sector, or the government. Let's work together for the betterment of our country.

My fifth point, which I illustrated with the example of India, is this: India and China both have populations of 1.4 billion, but why is China the world's largest exporting nation? The key is that China didn't just produce for its domestic market; it produced for the global economy, which is ten times larger than the Chinese economy. India also learnt this lesson: despite having 1.4 billion people, it cannot truly prosper without opening up to the world. Participation in global trade, attracting FDI, worker migration, and technology transfer are all essential ingredients for successfully transforming economies.

Sixth is the need for investment in human capital, female empowerment, and financial inclusion. These are essential for achieving inclusive and sustained growth. These factors are what will lead us to better times.

Seventh, it's crucial to empower, devolve, and decentralise authority and resources from the federal and provincial governments to local governments. Local communities have a deeper understanding of their own problems and are best equipped to address them effectively.

And finally, as I've already discussed in the case of Pakistan, institutions need to be robust and strong. The way to achieve this now is through digitalisation,

computerisation, and automation. These measures not only enhance transparency and efficiency but also ensure that all leakages in assistance to the poor are plugged, thanks to a digital transaction mechanism.

Now, let's address the 'pain points and risks.'

The most critical issue, and one that SDPI strongly advocates, is that climate change is not a distant concern - it is already here. We must urgently adapt to and mitigate the risks posed by climate change, environmental degradation, and air pollution. Cities like Lahore and Delhi experience such severe pollution that they often have to shut down, with children unable to attend school due to the poor air quality. We must also address the increasing frequency of floods and prepare for the threat of droughts as glaciers continue to melt.

Second, despite India's impressive economic performance, income inequalities have actually increased. More billionaires are being created, but the distribution of wealth is highly uneven. The bottom 50% of the population holds only 20% of the national income, while the top 20% controls 50%. This is far from desirable. Regional inequalities are on the rise: states in North India, such as Bihar, Uttar Pradesh, Madhya Pradesh, and Rajasthan, have per capita incomes that are only half or even a third of those in Southern states like Maharashtra or Gujarat. So, regional inequalities are rising.

Third, informal employment is absorbing most of the younger population in all three countries, highlighting a significant shortage of formal jobs. India, for instance, needs to find jobs for 12 million young men and women entering the labour force each year. While India has excelled in the IT industry, employing around five million people, this is still far short of the 12 million new entrants to the labour market each year. This is a serious concern that needs to be addressed.

Fourth, job creation for the youth is crucial, especially as aging populations in countries like Japan, Korea, and Germany face a declining labour force. These nations are increasingly looking to countries with youthful populations, such as India, Pakistan, and Bangladesh, to supply them with skilled labour. However, to meet this demand, we must invest in training our youth. This effort needs to start at the school level, with a strong emphasis on science and mathematics, to prepare them for employment opportunities in these aging countries.

The fifth pain point and risk is low female labour force participation in India and Pakistan. I was surprised to find that India's rate is only 23%, which is lower than expected. In contrast, Bangladesh has a female labour force participation rate of 38%, which contributes to its much better social indicators.

The sixth point is that, before 1947, this region functioned as a single economic union. You could travel by train from Calcutta to Peshawar or take the Grand Trunk (GT) Road all the way across. Trucks could easily move from Calcutta to Peshawar or from Bombay to Madras, reflecting a contiguous, unified economic system. In contrast, East Asian countries are incredibly diverse - Indonesia is spread across numerous islands, the Philippines has its own archipelago, Thailand has a distinct culture, and Malaysia has a diverse ethnic population. Despite their diversity, they never had a unified economic union like the one we had. Their intra-regional trade today is 55%, and guess what our inter-regional trade is? It used to be 100% before 1947 is now 5%. We are not trading among ourselves. The goods from Lahore to Amritsar only take one hour and there's no movement of goods from Lahore to Amritsar. Why should Amritsar get goods from Bombay which you know, takes several hours and are more expensive. Why cannot border districts of Assam and Bangladesh trade? That is where the momentum for growth comes in.

Seventh is the issue of unplanned urbanisation. If you travel from Rawalpindi to Lahore via the GT Road, you'll see numerous housing societies along the way that are unplanned and unregulated, lacking proper facilities for water supply, sewerage, and solid waste disposal. This unplanned growth is going to create significant problems for our population in the future.

And finally, my pet subject: institutions and governance must be strengthened in all three countries if they are to reach the benchmarks set by East Asia. While they may have performed well from 1947 to 2022, the challenge now is to compete in a globalised world against East Asian nations that have excelled. Policymakers need to elevate their goals and strive to match the performance of these better-performing countries. Achieving this depends on preparing our youth, especially girls and women, to become a skilled, productive, and competent labour force. This must be the priority for all three countries over the next 20 to 25 years, but the planning must begin today.

Energy and Environmental Sustainability

Enabling Renewable Energy Investments in Pakistan

Amir Paracha

Green Energy, Green Future: Pakistan's Pursuit of Energy Security

Senator Dr Musadik Masood Malik

Living Indus: Rethinking Climate Action in Pakistan

Dr Adil Najam

Greening the Loom: Innovations and Challenges in Sustainable Textile Manufacturing

Syed Naveed Qamar

Green Transition in South Asia

Maheen Rehan, Abdullah Khalid & Ahad Nazir

Enabling Renewable Energy Investments in Pakistan^{*}

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Amir Paracha, President, Overseas Investors Chamber of Commerce and Industries (OICCI) and CEO, Unilever Pakistan Limited

Thank you very much for inviting me on this very important session on renewable energy. Before I start, I would like to congratulate Dr Abid Suleri and SDPI's team for successfully organising this conference, and I must say that the theme of this year's Twenty-sixth Sustainable Development Conference, i.e., '*Light at End of the tunnel: Hope in Times of Despair*' is very insightful and significant, as well as both timely and inspiring. I would also like to recognise here that SDPI and Unilever have been partnering on this agenda since 2022. I remember, last year with our collaboration, SDPI organised the first Annual State of Renewable Energy Session at our head office in Karachi, where Chairman NEPRA¹ also participated.

Many people ask, what is the connection of Unilever with sustainable renewable energy as our company is more into goods manufacturing, marketing, and selling. And why energy?

I say that energy is our national agenda, hence I believe entities from every sector should actively participate, irrelevant of their domain, in the energy sector. Therefore, Unilever took a step by partnering with the SDPI last year.

Today, I would like to offer you some food for thought on the importance of renewable energy solutions, not only from the perspective of climate change impacts but more so from the perspective of building commercial solutions to fast track climate change action in Pakistan, which is desperately needed right now.

^{*} Keynote Address delivered at the Evening Plenary on 'Annual State of Renewable Energy 2023' on 21 November 2023 at the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' in Islamabad, Pakistan. It was transcribed by Asim Zahoor from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete address, as delivered, can be accessed at: <https://www.youtube.com/watch?v=o0Qlz_p2bs4>.

¹ National Electric Power Regulatory Authority.

As you all know, Pakistan is particularly vulnerable to climate change, evident from the devastating floods last year (2022). So, climate change is not a distant future problem now, as we all are seeing, it is happening within our life span. Therefore, we must prioritise long-term solutions, and invest in building a more climate-resilient future. Hence, I believe, the key solution lies in economic opportunities.

Having said that, I have the privilege to share these views as the President of Overseas Investors Chamber of Commerce & Industry (OICCI). This Chamber includes a collective body of around 200 multinational companies from 14 different sectors and 35 countries. Some of these multinational companies have been doing business in Pakistan for over seven or eight decades, while others have been active from pre-Partition times. Some are Pakistan's largest investors. Multinational companies are strategically placed to influence new investors to enter the supplier market as well as influence global grants and MGIs² for green transition.

Since we are talking about the private sector, it sees climate action as a compelling business opportunity. Environmental sustainability is no longer just a matter of ethics, it has now become a strategic imperative for business. Companies that take proactive steps to address climate change, minimise environmental footprint and invest in resilient strategies are not just doing the right thing, rather they are safeguarding their long-term financial stability. Sustaining that competitive edge - embracing climate action - is actually a smart business decision. There is a clear commercial case for sustainability, alongside our responsibility to the planet. The private sector plays a crucial role as a driver of investment and financing. For example, we've seen significant contributions in areas such as wind energy, solar projects, and other Public-Private Partnerships focused on energy recovery.

Pakistan has immense potential for renewable energy, offering numerous benefits such as enhanced energy security, socioeconomic growth, reduced pollution, and climate change mitigation. In order to unlock the full potential of renewable energy, Pakistan must adopt pragmatic and long-term policies, which incentivise the use of renewable energy sources and gradually increase their contribution to overall energy mix. Now, to successfully commercialise the renewable energy, we

² Multi-Governmental Instruments.

must support the private sector by giving them returns on their investment which requires robust feasibility studies, transparent financial models, and risk assessment.

As a representative of a private sector body comprising around 200 multinational companies, I can say that the most unsettling concern for any investor - whether international or local - is the sustainability of policies related to investment. Inconsistent policies are leading to a decline in investment, and this is a critical issue that demands urgent attention and action.

Relevant stakeholders must actively work to create a conducive financial environment, consistent policies and regulatory provisions that provide stability and predictability enabling the private sector to make long-term investment commitments and finally, implementation of risk mitigation tools like insurance, guarantees and other agreements to alleviate concerns and provide greater certainty to the private sector and investors.

To me, the way forward for Pakistan must include adoption of green financing tools to incentivise investments and sustainable infrastructure. I remember back in 2017, the State Bank of Pakistan introduced a great package for local and multinational companies, providing funding for transition of industries from grid electricity to solarisation, with only two to three percent mark-up. This scheme was appreciated, and many companies benefitted. Hence, with the right financial mechanisms in place, Pakistan can attract both domestic and international investors to fund renewable energy projects, energy-efficient buildings, and sustainable transportation systems. In addition to this, participating in carbon trading markets can also help to monetise Pakistan's efforts to reduce greenhouse emissions. This will not only provide financial incentive for industries to adopt cleaner technology and practices but will also help Pakistan to contribute to global efforts in mitigating climate change. We also urge the Government of Pakistan to expedite power sector reforms, which we have been advocating for over the past two years, particularly in relation to renewable energy resources. These reforms will not only reduce reliance on fossil fuels but also enhance the stability and reliability of electricity supply.

Recently, a video clip caught my eye showing how Indonesia, being an island nation with limited flat land, has creatively integrated floating solar systems on

water bodies. Countries around the world are coming up with and implementing innovative solutions to decarbonise and transition to sustainable energy.

As I mentioned earlier, consistency in policies and regulations is crucial for creating a stable and predictable environment for sustainable development. It is also essential that these policies align with long-term sustainability goals and provide clear guidelines for investors and businesses. These measures will not only contribute to the country's economic growth but also help mitigate climate change and enhance the well-being of citizens.

In the end, I would like to thank everyone for the opportunity to share my thoughts with you. The OICCI and its members remain committed to being an active part of the solution to Pakistan's climate challenges. I look forward to the rest of the discussion, insights from experts gathered here, and actionable outcomes recommended in this summit.

Green Energy, Green Future: Pakistan's Pursuit of Energy Security*

8

Senator Dr Musadik Masood Malik, Federal Minister for Energy (Petroleum Division), Government of Pakistan

At the beginning, Dr Hina Aslam said that we have come a long way in terms of renewable energy. When I think about where we are, it appears to me that we have to go a long way and frankly a much longer way. We have an aspiration and there are so many ways of looking at renewable energy.

Having said that, I have chosen to speak on the subject from a political lens, from a policy lens and from a national lens. We have an aspiration, and I think this aspiration is shared across, hopefully, among all political parties. Our aspiration is first and foremost, to ensure availability of energy because the most expensive form of energy is not having it. Therefore, it is a mission critical for us to make sure that the next decades are hopefully of growth and development and we are fully energised. We are a big country. We have around 230 to 240 million people. The way we are growing, by the year 2050, we are going to be a country of roughly 350 million people. I hope our Population Planning Wing pays special attention to this, because this current kind of growth is completely unsustainable. Nevertheless, we have to plan. We have to plan for energy, plan for every 1% growth in GDP, depending upon what kind of industrial and commercial footprint we have. We are going to require anywhere from one-point to multiple of 1.7 to 2.

So, if you look at that, you can figure out how much more energy we are going to require, whether you look at it from the population, or per capita utilisation

* This is a *Provisional Transcript* delivered at the Evening Plenary 'Annual State of Renewable Energy 2023: Unlocking Private Sector Finance' of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 21 November 2023 in Islamabad, Pakistan. It was transcribed by Asim Zahoor from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete keynote address, as delivered, can be accessed at: https://youtu.be/o0Qlz_p2bs4.

perspective, which is the lowest in the region. Or you look at it from the industrial and commercial footprint, and GDP growth perspective. No matter how you look at it, one thing is amply clear - we are going to require a lot of energy. The energy that we do not have.

So, the first and foremost aspiration for us is to make sure that we have energy security or energy availability. In Pakistan, for a common man, there are two sources of energy. The first one is electricity, and the other is gas. There are other sources of energy for industrial footprints. They are multiple sources of energy. But if you go to the poor people of Pakistan and because I have chosen to take a people-centric approach - people have two sources of energy, less than 30% of people are connected to gas (about 27%). About 93-95% of people are connected to electricity.

So, if we were to ensure that people have energy available, this country will have to get electrified. Electrification, I think, is going to be a big thrust for us because that is the only way. LPG is not the solution. LNG is not the solution because how many more pipelines can you put? Where can you take these canisters of LPG? People are already connected, rich and poor, 93% to 95% of people of Pakistan are already connected to electricity. Electrification is also aligned with the global trend. So, it's not like we are alone in this universe.

Our second aspiration is affordability. Now, electrification may well be the answer. But at PKR 60 per unit, is it really an answer? I was looking at the best data and I found that the fourth quintile, four out of five households, the average income of the fourth quintile is roughly PKR 64,000 to PKR 65,000 per month. Now, if you are making PKR 60,000 per month, and I am not talking about the first quintile, second or third, I am not talking about PKR 25,000, PKR 35,000 or PKR 44,000. I am talking about the highest, the fourth quintile, after which there is only one quintile left. If the average household income is PKR 65,000, how can you afford PKR 10,000 in electricity bill? If you have PKR 60 worth of a unit, going to PKR 64, PKR 65 and PKR 69, it is amply clear that we may as well not provide energy to people because they cannot afford it.

So, our second aspiration is to make sure that we not only have energy available but it's also affordable. In terms of affordability, what could be more affordable than 3¢ worth of solar or 4¢ or 5¢ - between 3 and 5 cents.

If you could get renewables, why would you not get them? Why would you not have all the roofs that you see across Pakistan as sources of energy? What is stopping us? We have wind. Why are we not tapping into the wind? Amazingly, in Pakistan, solar and wind discount is cyclical which basically means the sun rises and the wind goes down. When the sun goes down, the wind gust rises. So, if you can have a hybrid solution between wind and solar, if you can have all the rooftops as sources of energy, if you have larger forms but also have smaller solutions. Why would you not make energy more affordable? So, it's a slam dunk, it's an obvious answer.

We have to move towards renewable energy if you want to enhance affordability; and that means solar. That means when the sun rises, you have energy; wind blows, you have energy; ocean moves, and you have energy; geothermal, you have energy. There are so many sources of energy. Every canal is a source of energy, every flowing river is a source of energy and if you tap into it and create a balanced portfolio, I think we would be in a better place than the place where we are at right now.

The third aspiration is sustainability. Now sustainability is a complex phenomenon. We are suffering from three kinds of sustainability issues. Sustainability has become suspect in three different manners. The first and foremost, and the most obvious is the environmental.

If you consider Pakistan's geography, it lies almost like a valley beneath the Himalayas. Even slight environmental changes, such as the rate of glacier flow or melting, could dramatically affect our barrage system. A single surge could devastate the entire system.

In regions where traditional farming prevails, climate change presents significant challenges, not only affecting the environment but also jeopardising food security. Despite having a negligible carbon footprint - barely visible on the global heat map - Pakistan ranks as one of the top five countries most vulnerable to climate change. This vulnerability isn't just a regional or global issue - it's a direct threat to our future generations. Therefore, we need to adopt environmentally responsible practices. We must pursue strategies that ensure not only availability of affordable energy but also long-term sustainability. Our goal is to continuously reduce our environmental impact, making our carbon footprint greener over time.

We have another challenge of sustainability as well. And that is fiscal sustainability. We import what USD 25 billion worth of energy, right? Sometimes more, depending upon oil prices, depending upon global prices of petroleum products, LNG and gas. We do not have that money. Our total export ranges from USD 22 billion to around USD 28 billion. How can we import energy for USD 22 to USD 25 billion? This is fiscally, in terms of our external sector, not sustainable. Therefore, we have to find indigenous solutions. What could be more indigenous than the sun? What could be more indigenous than wind? What could be more indigenous than a flowing river or a flowing canal? So not only from the environmental sustainability, but also from fiscal sustainability, it is imperative that we move towards renewables.

The third kind of sustainability issue that we have is trade sustainability. I mean, this carbon accounting thing that is going on, is not benign. I promise you, it's not benign at all. This is the new generation of trade barriers. Very soon, every garment that you export, every little shoe that you export, they are going to track the carbon footprint on that. They are going to put penalties. Europe has already come up with an entire scheme of penalties that they are going to appropriate based upon the carbon footprint on every product that is exported. So, this is a whole new way of creating an entry barrier from the trade perspective as well. Although right now, our textile industry does not see it or our leather industry, does not see it, but as you move forward, all of a sudden, these barriers will come down on you. You would see how they are used, not just in the way of trade, but also in the way of politics and geopolitics.

So, for all of these reasons, I would say from the availability perspective, from the affordability perspective, and from the sustainability perspective, it is critically important that we move towards renewables. In moving towards renewables, there are many benefits that will come along as I speak, I would enumerate them. But, the most important thing is that we will have to manage this transition. It is not just taking the switch and turning it off and on, and off and on.

Remember last year, we had the power breakdown which lasted about a day-and-a-half, complete blackout across the country. I was in charge of the committee that was formed to look into it. And you know what happened? We had 700 megawatts of wind energy coming into our grid system early in the morning, while some of our circuits were off and the entire country went into darkness. So, if you are going to manage this transition, we will have to

strengthen our grid. We will have to strengthen our transmission system. We will have to manage in order for us to produce reactive energy, all the way from the South to the North with all the energy imbalances in the flows that we have. It is mission critical that we have reactive energy all along this 2,000 kilometres corridor, or however long it is. Therefore, without strengthening the transmission system, and without strengthening the distribution systems, this is just a pipe dream. So, we will have to make a transition. We will have to make a comprehensive plan where we continue to add, continue to go green and continue to strengthen our grid.

This would also help us get a second important thing. As I mentioned earlier that we need to move from gas as a household kind of energising source to electricity. It would also take care of our capacity trap. Our capacity trap exists because in summers, we have 30,000 megawatts of electricity. In winters, this demand drops to 10,000 or sometimes 8,000 megawatts; mostly between 10,000 and 12,000 megawatts. So, there is a difference of 20,000 megawatts that we require in summer, and we have no use for that during the winter, accounts for the big capacity trap. If we go electric in all of the households, water heater systems, and space heating systems and so on and so forth – they went electric, electricity demand would surge. And the difference between summer and winter would shrink. I do not know how much it would shrink but let's assume it becomes 22,000 vs 30,000 megawatts or 25,000 vs 30,000 megawatts. We will get out of the capacity trap. So therefore, managing this transition in the way of capacity trap, in the way of making sure that the cost of electricity goes down because people are not stupid. There is no way you are going to sell PKR 60 a unit to the poor people of Pakistan and expect that they are going to move towards electric water heaters and going to move towards electric cooking ovens or cooking stoves. There is no way. So, you will have to break the elite capture.

This one-third of the gas of Pakistan that goes to five industries will have to be redirected. It will have to be redirected in the way of base load to the most efficient plants that we have. These are GE turbines with 62% electricity. Right now, with LNG, the cost of production alone at these plants is PKR 24 to PKR 26 per unit - just the cost of production, cost of generation. If you use wellhead gas, this number drops to PKR 7. Now, why would we not allocate wellhead gas to these enormously efficient power plants, and create a balance, create a base load, which is then supported by green renewables though it is not clean energy. Gas is not clean energy, but relatively cleaner energy. So, if you create a blend and make the

electricity cost come down, then strategically you can ask people, when the cost of per unit drops down to let's say PKR 10 to PKR 20, then you can ask people to move towards electrification. Short of that, they would not agree with you.

So, these are the challenges of transition that we have. And in that, I have also mentioned the biggest challenge that I have encountered in my 16 or 17 months at the Petroleum Ministry is elite capture. We will have to fight it out. There's no way out. This country belongs to the poor people, and they are far too many. When they rise, these elite people would not have an option. But I think before they rise, it is important from the policy perspective that we stand up to this elite-capture and we move our resources to the most optimal use. The most optimal use is the use that creates employment for the people and that decreases the economic burden of energy for the common person. We need to do that redirection. I am sure we will do that.

What is our path forward? We have listed four or five, very specific renewable projects. So, the project perspective is that things that are already happening, whoever comes next in the government, please let them happen. Because they are good for the country. They are good from all three perspectives. So, let them happen. From the regulatory perspective a lot of work has to be done. No one is going to invest in Pakistan if we do not have the ease of doing business. Even as a member of the cabinet, I cannot get things done. It is that hard. Imagine an investor coming in and trying to go through the rigmarole of the government and getting things done. So, we have to digitise, we have to make things very easy. Just like the way you apply for visas; you cannot upload your application unless all the paperwork is complete. It should be just like that. You only upload your application, once all the requirements are done and then that's that. And there should be specific time frames, that if you do not get an answer in ten days, you can deem this is okay. If you do not get it in 60 days, you can deem the rest is okay? And if you do not hear anything in 90 days, you are getting the license because we need to move the burden towards us, people who sit in these Secretariat Halls. And in order for us to do that, we will have to digitise, we will have to make it transparent, we will have to make it online, and make sure that there is no secondary market in terms of transacting. There should be electronics formats. You only upload the application once everything is complete and then there is no stopping.

I also think the second most important thing is level playing field because there's no way the government is going to subsidise, we cannot subsidise and not

because of the IMF, we cannot subsidise for the sake of our own children, we cannot subsidise saints at the expense of taxpayers. It's just not right. Therefore, we have to create a level playing field and we have to let the competition sort things out what the tariffs rates are going to be. People come, people bid and compete. They bid on tariff and the lowest tariff basically just gets it. So, keep it simple and let's not get into this rigmarole, you know, what kind of risk mitigation the government will provide. What is the government going to do? The government can only improve the risks if its macroeconomic conditions improve. And its macroeconomic conditions are only going to improve if we stop giving subsidies – particularly to the rich. So, one is the ease of doing business. And the second is level playing field and fierce competition. The third is deregulation.

So, these are the three pillars on which we have to move forward. What is the wild card? The wild card is geopolitics, and I close on this. When I was the Minister, I was made to believe that the world is one big Global Village. We are all interwoven into a fabric. And then the Russian-Ukraine War started. The price of LNG went from USD 40 million a cargo to USD 165 million a cargo. We looked at the same world, which was telling us, let's go green, let's go green and let's go green because we are all interwoven into one global fabric. We looked at the world and we said, what about us? They said, what about you? In that moment, we realised that we are not even a patch on that fabric, not even a patch. So, I was quite surprised when I realised that Germany had opened up its coal mines. And Germany had started again the production of its coal-based electricity. Interesting. Our coal was brown. What's theirs? Yellow with orange polka dots? So, this anomaly of geopolitics can hit us anytime. All the more reason why we should depend more and more on our indigenous resources. All the more reason why we should go sustainable, we should go green, and we should go green in our own image, based upon our own assets.

Living Indus: Rethinking Climate Action in Pakistan*

9

Dr Adil Najam, President, World Wildlife Fund (WWF) and Dean Emeritus and Professor, Pardee School of Global Studies, Boston University, USA

I am not the expert and there are people here who know much more about it. I just want to talk and set the scene for your conversation on climate change and food security and the changing world of climate change within the agriculture sector, or any other sector in which we need to rethink. My purpose is to put forth a rather radical set of ideas. I think, radical not in a way that they are disruptive but in a way that they encourage you to rethink about those ideas.

I wish to raise three questions.

What is the climate telling us? I am not talking about what scientists or global organisations are telling us, but I mean literally, what is the situation outside your window telling? I believe the noise in terms of climate change is making us blind to the signal and signs. 70,000 people attending COP is no doubt an achievement, but it does not mean that if more people are giving attention to the subject, we are closer to some resolution. The reality is that as the people responsible to preserve the climate have failed, so they are now telling us to stop doing our work so that they can do their job. Now, everyone thinks and sees climate change as a lucrative solution to access money. So, they all try to sell their solutions.

My second question is what could be an indigenous solution to climate change for Pakistan? Thinking about climate change not because of COP, or international

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pressure, or due to the worldwide debate, but in the context to genuine concern for the climate.

The third question is what can Pakistan tell the world about living in the 'Age of Adaptation'?

This is the context, in which we have to think about agriculture, food, business, etc., rather than the existing narrative. I have a preposition which is that the onset of climate change fundamentally changes the nature of climate policy and climate politics. Let me highlight what I mean by that.

First of all, the change is fundamental and fundamental change in what we mean by climate policy - mainly it refers to 'Carbon Management.' While we've connected it to broader topics like climate finance, climate trade, and carbon trading, the focus remains on one key element: carbon - a crucial molecule that persists in our environment. This is at the core of mitigation efforts. Although mitigation is essential and must continue, it alone does not address the needs of adaptation.

Here I would like to highlight that climate politics is becoming much more contentious, particularly as we saw with the floods last year (2022). Now, the 'Age of Adaptation' is the 'Age of Impacts' - the age of *'you have made this and now you pay for it.'*

So, the reason I like 'Regenerative Agriculture' is we have to think and rethink. It is not just climate, but there are other factors as well. First, just a refresher. Right after the Paris Agreement, a huge amount was pledged. Last year, the world decided that the money had not shown up. So, the developed countries went back to Paris, and they redid their accounts to re-mark the money, and now we will hear in Paris that we have actually spent this amount. If you have seen any of it, please let me know. The reason I mention this is because this is not working.

Do you also remember last year, as many of you were there, what was the amount pledged for floods? USD 42 billion? And how much was received? Less than USD 1 billion. So, who spent the remaining USD 41 billion? The cost ascertained to recover from the devastation of floods was USD 42 billion, USD 1 billion came. So, where did the rest of it go?

This is the fundamental issue – it is the poor who always pay.

So, the guy who lost his house, took the money he was saving for his daughter's wedding and rebuilt the house. Hence, USD 41 billion was spent. The money was reallocated. It certainly was not spent from the government's office. So, USD 100 billion was monopoly money!

The other number that came out of Paris was this, and I will give anything in my life, anything in my life to be wrong on what I am about to say.

'There is no science in the world that can take us to 1.5°C' has been a lie, was a lie at Paris. It has certainly been a lie in the last five or six years. There is just no sign, I hope I am wrong, and I will give anything to be wrong.

This week, in the last three days and on two different days we beat 2°C, so that is also gone. Why does this matter? This matters because of the 'Age of Adaptation.'

Let me share with you about what happened in 2020. Remember 2020?

This is the year like no other. What happened? Two big diseases - COVID and Zoom! The reason I refer to 2020 is that I don't want to give you this year's numbers, which might be dismissed as a fluke.

Let's look at what was happening in 2020. As we adapted to online platforms for meetings, classes, and more, January 2020 was recorded as the hottest January ever. February was the second hottest ever. March and April were also the second hottest since we began recording temperatures. May and June were the hottest on record. By that time, we had even stopped tweeting about it. September was the hottest, October the third hottest, and November the hottest. Finally, in December, we got a bit of a break - it was 'only' the eighth hottest December ever. This is what the climate is telling us.

The climate doesn't listen to our slogans, the climate just keeps moving on. I am recalling my tweet, and this is a tweet that I did on April 29th, 2022. On that day, nearly a billion people - a billion people across South Asia - were seeing

temperatures of over 100°F (37.7°C). We are South Asians. We are used to heat and such temperatures, but not in April and not for a billion people!

The point I'm making is that the climate is sending us a clear message: it's no longer a future issue; it's here and now. This is the agricultural context in which you must decide whether to regenerate or not.

Consider this: the previous world record for the hottest day was on July 24, 2022. Then, just July (2023), the record was shattered repeatedly. On July 3rd, the record was broken, and again on the 4th, 5th, and 6th. By then, it was happening so frequently that we stopped even noticing. For nearly every day until July 22nd, we broke that record again and again.

Now, as we approach the end of November 2023, I can tell you with confidence what you'll read in your newspaper on January 1, 2024. Mark my words: the National Oceanic and Atmospheric Administration (NOAA) will report that 2023 was the hottest year ever recorded. So again, the climate is sending us a clear message, and it's crucial that we listen. The key point I want to emphasise is that climate change is no longer a future issue - it's an urgent reality affecting agriculture, water, and every other aspect of our lives.

Some years ago, I decided that I will no longer put climate change projection graphs in my presentations because these are making people think that we have time. I would like to share some statistics regarding recorded temperatures from the inception of temperature recording. I tell you that the dataset we gathered shows gradual increase in temperature for each place as the year passes. But, it does not mean we have crossed 2°C.

Now, agriculture will have to happen in this scenario, and we cannot take our packaged solutions, whether of climate or of anything else. Again, this is not the future. This is actual recorded temperature for every point on Earth for which we have recorded temperatures.

What does that mean? 1.5°C - no way, no how!

It is crucial that we now focus on a very local reality and elevate that local reality to a global level. I want to share something that I have been personally involved

in, and that the Government of Pakistan has also been actively working on - a different approach to thinking about climate change. This approach doesn't start with the carbon molecule, but rather with the reality of the natural environment that surrounds us. In Pakistan's case, this approach is embodied by initiatives like the 'Living Indus Initiative.'

Now I will commend the work done by the Government of Pakistan with an idea like 'Living Indus Initiative'. This idea is gaining traction, as seen in similar projects like 'Recharge Pakistan,' led by WWF and other partners. The core concept is to begin our efforts by focusing on nature. In this case, the Indus River is central to our identity. For 5,000 years, this basin has sustained what we proudly call our civilisation. The pressing question now, in the age of climate change, is whether we can sustain it for the next 50 years.

Our vision is for an Indus Basin that continues to support a thriving civilisation, from its sources in the mountains to its delta, and ultimately, the ocean. The goal is to restore and repair the Indus, so it remains resilient in the face of climate change.

What does a healthy Indus look like? That's what we must strive to achieve.

What I am proposing here is an alternative, indigenous way of thinking about climate change - one that starts from the reality of our own environment. Why focus on the Indus? Because, in our case, the Indus defines Pakistan. For other societies, it may be different elements, but for us, this river is our lifeline.

What does the Indus provide? 90% of Pakistan's population lives within the Indus Basin, and 85% of our economy is tied to it. All nine of Pakistan's largest cities are within 40 kilometres of the Indus. Our songs, our love stories - there is no 'Heer' without the Indus, no 'Sassi' without it. This is our natural context.

If the Indus could speak, it would remind us that it has sustained our civilisation for 5,000 years. It would tell us that the challenges we face are civilisational, demographic - 90% of Pakistanis live along its banks - and economic, with 85% of our economy dependent on it. But it would also tell us that these challenges are ecological, deeply connected to the health of our environment. Ultimately, the Indus would reveal that this is an existential challenge for Pakistan.

Essentially, the Indus would tell us, *'This is not about me - this is about you.'* If you've ever flown into Pakistan from the West, you've likely seen it yourself: brown land, brown land, and then suddenly, a strip of green – that's the Indus. What we undertook was a relatively short but deeply consultative process, asking ourselves, 'Can we think about climate change from this indigenous Pakistani perspective, centred on the Indus?'

Instead of approaching climate change solely from the perspective shaped by international forums like COP, we asked what insights and actions would emerge if we viewed it through the lens of our own reality - the Indus. This approach aligns with initiatives like 'Resilient Pakistan' and other efforts we're already undertaking.

And again, for the sake of time, I won't go through all the details, but I want to give you a sense of some ideas that emerged from those consultations. We identified about 22 key ideas and quickly assessed them in a back-of-the-envelope, consultant-like manner, asking, 'What would it take to implement these?' For each idea, we explored the practicalities - what would it take, for example, to create 100,000 ponds across Pakistan? If we can envision a billion trees, why not 100,000 ponds? What would it take to transform 20 cities into plastic and pollution-free zones along the river?

This approach is about reversing the usual process - rather than starting with sectors and moving towards climate solutions, we're starting with solutions and then assessing their impact on sectors, costs, and scale. Again, I'm rushing through this due to time constraints, but the core message is this: we need to flip our perspective and imagine climate change as our own issue, one that demands action for our own reasons. If we truly internalise this, what would our actions look like? That's the idea I want to leave you with.

There are at least three challenges. The first is public attention. I've been struck by how deeply people resonate with the Indus in a way they don't with carbon. Carbon feels like someone else's problem; the Indus is in our own backyard. The second challenge is raising global resources based on our specific issues, rather than chasing what we believe is globally fashionable. And finally, in the context of regenerative agriculture, there's the challenge of innovation in policy.

So, my final argument is this: what does it mean if we rethink how we approach climate change? I believe it would lead to four key outcomes:

First, it would mean we have to move from thinking about climate as if it is mostly energy to thinking about climate as if it is nearly everything else.

Second, I would argue we need to rethink from minimising bad behaviour to thinking about maximising good behaviour. What does good climate behaviour look like? Because as a developing country, policies that focus on bad behaviour are not going to last and we have not seen them last anywhere.

The third change it would require is at the global level to move from interest-focused to outcome-focused, or sector-focused to development-focused.

And finally, moving from thinking about adaptation as a problem to thinking about adaptation as a solution.

My apologies to the panel and everyone here for going over time. However, I didn't want to miss this opportunity with such a wonderful audience to not only challenge you but also invite you to rethink climate change from an indigenous perspective. I firmly believe that importing climate solutions won't get us where we need to be - not even in terms of accessing climate finance. The first step must be to think indigenously.

Greening the Loom: Innovations and Challenges in Sustainable Textile Manufacturing*

Syed Naveed Qamar, Former Federal Minister for Commerce, Government of Pakistan

When Pakistan began liberalising its economy, cotton exports were restricted, while yarn was freely traded. This regulatory disparity initially allowed significant profits to be made from yarn exports, fuelling growth of the textile industry. However, as time progressed, international awareness increased, and market adjustments ensued. Buyers like Palmer began demanding prices aligned with global standards, which gradually eroded profit margins. Competition became fierce, not just internationally but also within Pakistan, with companies vying for business over mere fractions of cents. This intense competition underscored the need for the industry to innovate and climb higher up the value chain.

There were some people who adapted to this and some people who did not, and we are still in the state where there are some textiles that are really not necessarily at the cutting edge but nevertheless are more in sync with the world. Many of us tend to focus on day-to-day operations without striving for significant changes. However, in the competitive global market we're part of, it's crucial to recognise that textiles remain Pakistan's largest export sector. Despite ongoing efforts to diversify our export base, textiles will continue to be a mainstay of our economy for the foreseeable future. Therefore, it's essential to adapt and innovate within this sector to maintain our competitive edge.

My predecessor, I know once said, at a Parliamentary Committee that the days of textile are over, and we have to start looking at other avenues. Of course, we have

* Remarks delivered at the Roundtable on 'Weaving Circularity: Rethinking Pakistan's Textile Industry for a Sustainable Future' at the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 21 November 2023 in Islamabad, Pakistan. It has been transcribed by Asim Zahoor and Tayyaba Hanif Maken from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete speech, as delivered, can be accessed at: <<https://youtu.be/-p-h-7Tg8P0>>.

to start looking at other things, but the days of textile are not over. So, we have to make sure that our textile industry is competitive. It will remain competitive only if we meet all the requirements. Now, our biggest markets are the EU or the US. They have started imposing new and more stringent conditions, some related to the subject and some totally unrelated. Areas that are unrelated are from the human rights, labour perspective and a few other things. To address these, one can legislate and move forward.

As environmental protection standards become increasingly stringent, the textile industry faces tougher conditions and mandatory compliance that must be closely monitored. This is a critical area where the industry needs to step up its efforts. For example, the concept of 'track and trace' is still in its early stages in Pakistan. This system requires transparency throughout the production process, from initial cotton cultivation to final garment manufacturing. It encompasses monitoring women's and labour rights, scrutinising processes used, and ensuring proper disposal methods. Such comprehensive oversight is essential as global demands for sustainability and ethical practices continue to rise.

Now, this is becoming a need of the hour. It is not something that you do because it's a nice thing to do. It is something that you do because you know that if you don't do them, if not today then tomorrow, your exports will stop. So, it makes sense for your own bottom line, that you start investing in that area, both collectively and individually. The government is there to offer support, but traditionally, governmental monitoring has been less effective. For influential textile magnates, local labour or environmental inspectors pose little challenge. The real test arises during international export, where markets scrutinise practices closely, not taking anything for granted. In light of this, it's clear that transformative change is necessary.

While experts can outline necessary steps and best practices, the key question is: What actions is the industry currently taking? It is crucial to examine how extensively we are dedicating our energy, efforts, and resources to ensure compliance with international laws. This proactive approach will define our success in meeting global standards.

The discussion we're having is undoubtedly enlightening. The paper '*Sustainable Futures: Prioritising Degrowth for Economic and Social Well-being in Pakistan*' concludes that embracing degrowth is essential for achieving sustainable

economic growth. It identifies key challenges such as political will, education, and a general lack of awareness. I'd like to share my perspective on this issue, noting points of both agreement and disagreement.

Firstly, addressing the textile industry about recycling garments, especially imported ones, may not reach the most receptive audience. This sector focuses intensely on launching new fashions each season to maximise sales, making them less inclined to consider recycling their products. Despite the large market for recycled garments in Pakistan, the current approach of merely encouraging the industry to alter its methods is insufficient. Instead, we should push for a system that traces the lifecycle of garments. What's truly needed is establishment of recycling as a recognised industry driven by market forces, not just regulations. The lack of incentives is a significant barrier; this sector isn't even acknowledged as a formal industry. My experiences in England and California showed me that recycling wasn't always organised, but initiatives have to start somewhere. In Pakistan, it is crucial not only to raise awareness but also to provide the necessary tools and incentives to foster a robust recycling industry.

There is a significant market for waste conversion in our country, including potential uses like energy production and packaging materials. Acceptance of recycled packaging among consumers is already high, and I've yet to see significant complaints regarding the use of products with recycled packaging. For those hesitant to choose recycled options, limiting the market to only recycled products would effectively leave them no alternative but to adapt. This not only supports environmental sustainability but also boosts industry profits.

However, challenges do arise from the government's side, where concerns about the origins of recycled materials and health safety, such as potential infectious diseases from previous users, need addressing. These are legitimate queries that the private sector can tackle effectively by assuming a proactive role in both resolving these concerns and marketing these products. Engaging in this way is not only more cost-effective for manufacturers but also for consumers, enhancing overall acceptance and expanding the market of recycled goods.

As a farmer from one of Pakistan's least developed districts, I can attest that cotton is one of the most water-conservative crops, especially compared to alternatives like rice, sugarcane, and corn, all of which require significantly more water. This is crucial in a water-stressed country like Pakistan, where water

scarcity is an explosive issue. Despite its lower water needs, many farmers hesitate to switch to cotton due to economic and environmental challenges. Cotton crops are highly susceptible to pests, unexpected rainfall, and unsuitable weather conditions, which can devastate yields.

Economic feasibility of growing cotton is hindered by quality of seeds and lack of suitable varieties, areas where academic research is ongoing. However, there remains a disconnect in aligning interests of local growers with global agricultural corporations like Monsanto, and the actual market demand. To address these issues effectively, concerted efforts are needed from the government, All Pakistan Textile Mills Association (APTMA), and other stakeholders to incentivise cotton cultivation and improve support infrastructure for farmers.

The ability to export and import cotton varies widely among stakeholders, and quality of cotton, particularly the less common long-staple variety, is crucial for producing higher-end products like denim. As we aim for finer textiles, need for high-quality cotton becomes even more apparent. Moreover, the era of hoping for cheaper energy has passed; with persistent high energy costs, especially under Pakistan's current economic conditions and the IMF programme, industries must focus on increasing profitability through lower energy consumption. The only feasible solution is to move up the value chain.

Those in the textile industry who are sceptical about reducing energy costs need to adjust their strategies. Adapting is essential not just for survival but for profitability. Additionally, leveraging international trade benefits, such as the Generalised System of Preferences (GSP) schemes offered by the EU, the US, and other countries, is critical. These programmes provide substantial opportunities for the textile industry to thrive on a global scale. Adapting to these realities is not just advisable - it is imperative for success in the current economic landscape.

Over the next three years, new regulatory restrictions will be imposed on industries, and we need to be prepared. European producers, in particular, are beginning to enforce stringent conditions. They will require that industries meet high environmental efficiency standards, manage chemical waste effectively, and implement robust recycling practices. Failure to comply will result in losing crucial export concessions that currently make exporting financially viable.

The responsibility to address these challenges primarily lies with the private sector, though the government should act as a facilitator. Efforts have been initiated, using the Export Development Fund in cities like Karachi and Sialkot, to improve waste management in both the leather and textile industries. However, there is still much to be done. It is imperative that the industry and government collaborate more closely, with the government providing necessary funding and the private sector managing the implementation.

In the end, I just want to say that addressing these issues is not just a matter of goodwill - it is a strategic necessity. By meeting these international standards, we can secure more profitable export opportunities. Let's approach these changes not just because they are required, but because they make economic sense for our future.

Maheen Rehan, Abdullah Khalid & Ahad Nazir**

Abstract

This chapter explores progressing green transition, with a specific focus on South Asia. It examines the regional shift towards sustainable energy solutions amidst the growing challenges of climate change and environmental pollution. Despite significant economic growth in South Asia over the past two decades, the region continues to face severe environmental issues intensified by fossil fuel consumption. This research highlights the critical role of green technology adoption and renewable energy sources in mitigating these challenges. The transition involves moving away from fossil fuels towards cleaner alternatives such as solar, wind, and hydroelectric power, which not only address environmental concerns but also enhance energy security and economic resilience. Just transition, ensuring fairness for workers in fossil fuel industries, and the potential benefits of regional energy trade are of prime importance for this green evolution. Furthermore, it emphasises the need for dynamic institutional frameworks, international cooperation, and strategic investments to achieve sustainable energy goals.

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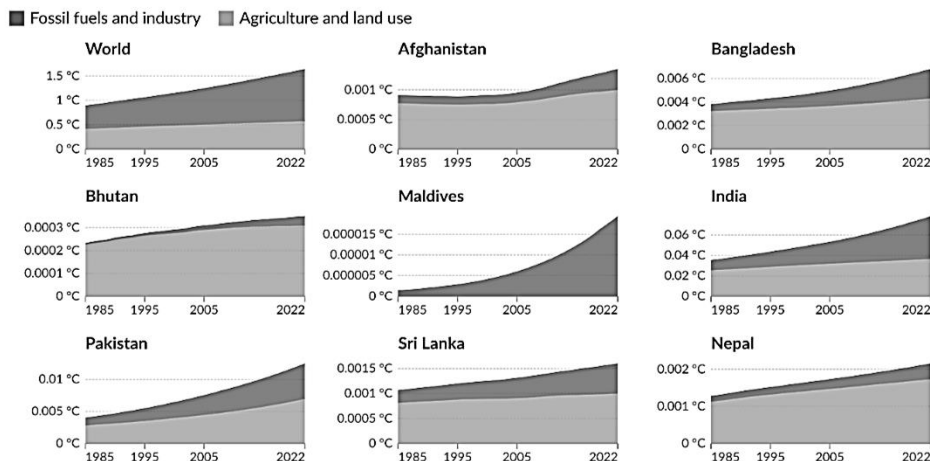
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An Overview of Green Initiatives in South Asia: Transitioning towards Sustainability

Climate change phenomena around the globe have been affecting many lives, marked by shifts in weather patterns and temperatures over the long term. Climate change is a reality currently faced by people, around the world where the developing economies are the most vulnerable at the cost of development and industrialisation in the developed world (Bhargava and Bhargava 2023). Consumption of fossil fuels has been rising sharply imposing a larger ecological footprint and challenging environmental sustainability (See Figure 1). Over the past two decades, South Asian nations have experienced sustained economic growth, which has absolutely raised living standards and facilitated significant reductions in poverty levels (World Bank 2023). However, despite the implementation of various initiatives and programmes, the region continues to face escalating environmental pollution. Climate change exacerbates this issue, imposing substantial adverse effects on health and intensifying poverty (Khine and Langkulsen 2023). To combat climate change and its impacts, adaptation of green technology is crucial. Over the last few years, investment in the field of green technology adaptation has been growing in Pakistan (Mako et al., 2022). The focus has shifted towards the use of environment-friendly technologies by utilising renewable energy resources with less greenhouse gas emissions and other harmful pollutants.

Transitioning from brown or dark energy sources, such as fossil fuels and gas (brown), and petrol and diesel (dark), describes the shift towards green energy. In the majority of South Asian economies, electricity generation primarily depends on fossil fuels. Specifically, fossil fuels account for 15.7% of electricity production in Afghanistan; 98.5% in Bangladesh; 78% in India; 92.9% in the Maldives; 58.7% in Pakistan; and 62.9% in Sri Lanka (Ember and Energy Institute 2024). The shift signifies a move towards cleaner, renewable energy alternatives such as solar, wind, and hydroelectric power. This transition not only addresses environmental concerns but also aims to reduce dependency on limited resources and mitigate the effects of climate change. In South Asia, renewable energy potential presents an opportunity for compounded benefits, including increased productivity, job creation, and reduced reliance on fossil fuel imports. Efforts to capitalise on this potential necessitate a concerted focus on energy efficiency and labour market dynamics.

Figure 1: Change in Global Mean Surface Temperature caused by Greenhouse Gas Emissions from Fossil Fuels, Agriculture and Land Use (1985-2022)



Data source: Jones et al. (2024)

OurWorldInData.org/co2-and-greenhouse-gas-emissions | CC BY

Note: This does not include cooling impacts from sulphur dioxide and aerosols, so the net warming can be lower.

Source: Jones et al., 2024.

Significance of Just Transition and Energy Efficiency in South Asia

Just transition or green transition is critical in addressing climate change by reducing greenhouse gas emissions. With the aim of limiting global average temperature increase to 1.5°C, the transition from all fossil fuels by around 2040 is necessary as reported by the International Renewable Energy Agency (IRENA 2023). This transition should ensure fairness, particularly for workers and communities reliant on fossil fuel industries, by providing retraining opportunities, economic support, and infrastructure development in affected regions.

Figure 2: Annual Temperature Anomalies (1990 to 2023)

Temperature anomaly °C

Country/area ↓	↑↓ 1940	↑↓ 2023	↑↓ Absolute Change	↑↓ Relative Change
Afghanistan	-1.2 °C	1.3 °C	+2.5 °C	+209%
Bangladesh	-0.9 °C	0.7 °C	+1.7 °C	+179%
Bhutan	-1.8 °C	0.7 °C	+2.6 °C	+141%
India	-0.9 °C	0.3 °C	+1.2 °C	+130%
Nepal	-1.6 °C	0.5 °C	+2.1 °C	+131%
Pakistan	-0.7 °C	0.4 °C	+1.1 °C	+161%
Sri Lanka	-1.3 °C	0.3 °C	+1.6 °C	+123%
Other				
World	-0.7 °C	0.6 °C	+1.3 °C	+188%

Source: Our World in Data 2024.

Energy efficiency emerges as a critical component of the transition towards sustainable energy practices (Caragliu and Graziano 2022). Despite significant improvements in energy efficiency within South Asia, further improvements are essential to align energy intensity in the region with global averages. Adoption of advanced technologies by firms is essential, with larger enterprises leading the way in adopting energy-saving measures.

Addressing Barriers to Technology Uptake and Sustainable Growth

Overcoming barriers to technology uptake, including underestimation of cost savings by firms, is vital. Evidence suggests that disseminating information on energy-saving technologies and ensuring a reliable power grid can facilitate widespread adoption (EEC 2022). Policy interventions, including regulatory measures and market-based mechanisms, play a pivotal role in accelerating technology adoption. The latter not only promotes economic growth but also yields dividends in terms of pollution reduction and job creation (Adom et al., 2021). However, attention must be paid to potential labour market disruptions,

particularly in pollution-intensive industries. Proactive measures, including reskilling initiatives, are necessary to ensure a just transition towards a greener future.

Labour Market Dynamics and Transition Strategies

Workers in pollution-intensive occupations exhibit prominent differences from the average worker, necessitating modified transition strategies (Vandeplas et al., 2022). Geographical disparities in exposure to labour market disruptions highlight the need for proactive policies to facilitate workforce transitions. Insights from historical precedents show governments can implement measures to mitigate adverse labour market outcomes and ensure a smooth transition towards a sustainable economy.

Critical Support Initiatives for Community Resilience in Addressing Environmental Challenges and Climate Change

Climate change worsens existing risks within communities, diminishing their resilience. Reduced access to safe drinking water, inadequate sanitation facilities, and poor air quality augments societal vulnerabilities. A community initiative in Islamabad and Rawalpindi (Pakistan) for addressing water and sanitation challenges has enhanced community resilience (WWF 2023). This initiative focuses on two communities: Christians and migrants residing in Islamabad. Basic necessities like access to safe drinking water was prioritised, especially during the COVID-19 Pandemic. Moreover, community-based organisations mobilise funds and ensure consistent maintenance of projects effectively. Collaboration with government organisations like the Capital Development Authority (CDA) and WASA facilitates sustainable outcomes. The five-year project, now in its third year, aims to establish a demonstration model for replication nationwide. Despite not being technologically advanced, the initiative addresses fundamental needs in vulnerable communities. Furthermore, implementation of filtration plants, rainwater harvesting structures, and wastewater treatment are initiatives that are essential in enhancing community resilience. Challenges like inadequate municipal wastewater treatment and lack of proper drainage systems needs to be tackled. Community involvement is emphasised as essential in all actions. Therefore, policies and plans must prioritise community engagement to effectively address the needs of vulnerable populations.

Case Study: Introduction to India's Green Energy Transition

India's total installed power capacity currently exceeds 400 GW, which is equal to 400,000 MW (ITA 2024). However, despite plans to transition India's energy portfolio to a greener one, there is no energy source that is entirely green; hence, sustainability is vital.

India is confronted by two main issues: heavy reliance on coal and the need for an efficient grid system (Policy Circle Bureau 2023). Despite significant investment in green energy plants, coal usage remains high, particularly during peak demand periods. This points to the importance of optimising plant load factors and enhancing grid efficiency.

In the geographical layout of India, coal resources are primarily located in the east, while industrial hubs are concentrated in the west. The diverse regional landscape also adds complexity to the transition process. While some states are highly industrialised, others, like Uttar Pradesh and Bihar, rely more on agriculture. However, even agriculture carries a carbon footprint, complicating efforts to reduce emissions. Moreover, the historical context must be considered, as developing countries argue that developed nations have had a century to address emissions while imposing constraints on their development.

At the core, the transition to greener energy is a comprehensive venture that requires careful consideration of regional disparities and historical legacies. India's aims for a green energy transition are earnest, but they require detailed attention to factors such as plant load factors, grid efficiency, and regional disparities. Collaboration among South Asian countries is crucial to navigating this complex transition and addressing shared challenges effectively.

Source: Based on the presentation by Hridayesh Joshi, a journalist from India, at the 26th Sustainable Development Conference 2023 in Islamabad organised by the Sustainable Development Policy Institute.

Addressing the Challenges of Environmental Pollution and Climate Change through Energy Trade

Significance of Energy Trade in Regional Energy Transition

Within the region, energy trade serves as a basis for facilitating energy transition, an idea civil society has supported extensively over the years (García and Khandke 2019). Initiatives such as the China-Pakistan Economic Corridor (CPEC) have been conceptualised as potential energy corridors, envisioning seamless transfer of energy resources across borders. The CPEC vision proposes that energy generated in one jurisdiction, whether in Pakistan or China, can efficiently serve neighbouring countries like Bangladesh, akin to the cross-border energy exchange between Nepal and India.

Setting Target Benchmarks for Energy Transition

Contemplating the trajectory of energy transition requires crucial considerations regarding the description of target benchmarks, particularly in relation to the degree of transformation envisioned. Integral to this deliberation is an assessment of energy consumption patterns and their alignment with global climate obligations. Recognising existing inefficiencies in energy utilisation against international benchmarks, there is a need for concerted efforts to evaluate the region's contribution towards achieving accelerated targets, such as those set by the United Nations Environment Programme at 1.5°C (UNEP 2024). In December 2024, the UN Climate Change Conference (COP28) concluded the first global stock taking under the Paris Agreement. According to the United Nations Climate Change Conference (COP 2023), effective solutions for key areas include reducing greenhouse gas emissions, developing climate change mitigation strategies, and providing technological and financial support to strengthen vulnerable economies. Progress in these areas was acknowledged as too slow.

Multilateral Development Banks' Role in Regional Energy Transition

Multilateral Development Banks (MDBs) have a role in directing initiatives geared towards regional energy transition (Rockefeller Foundation 2021). Central to this

discourse is the imperative of harmonising standards, promoting technological convergence, and instituting cohesive regulatory frameworks across jurisdictions. Encouraging private sector engagement assumes vital significance, exemplified by initiatives undertaken by entities such as Shell, which transitioned towards solar energy ventures in India, driven by a commitment to carbon mitigation.

Navigating Complexities in Energy Demand Management

Electricity demand across South Asian countries varies significantly, as calculated in terawatt-hours (TWh), which accounts for total electricity generated adjusted for imports and exports. Among South Asian countries, India emerges as the largest consumer with 1857.53 TWh, highlighting substantial energy requirements driven by its large population and industrial base. Pakistan follows with 169.03 TWh, indicating significant electricity consumption similar in scale to that of India but on a lesser scale. Bangladesh positioned next with 110.63 TWh, showing its position as a densely populated country experiencing a rapid industrialisation. Other countries in the region demonstrate comparatively lower electricity demands: Sri Lanka at 17.38 TWh; Nepal at 11.07 TWh; Bhutan at 9.83 TWh; Afghanistan at 6.71 TWh; and the Maldives at 0.85 TWh (Ember and Energy Institute 2024). These figures highlight varying levels of development, industrialisation, and energy infrastructure expansion across the region.

The diversity in electricity demand underscores the necessity for customised energy policies and strategic infrastructural investments to meet present and future energy needs sustainably. Furthermore, these statistics provide a critical benchmark for policymakers and stakeholders aiming to enhance energy security, promote renewable energy adoption, and mitigate environmental impacts associated with electricity generation and consumption in South Asia.

Navigating the complexities of energy demand management requires multi-layered considerations comprised of pricing mechanisms, technological advancements, and infrastructural reliability. Particularly, the transition towards renewable energy calls for a reconfiguration of grid systems and a paradigm shift towards decentralised energy distribution models. Moreover, the concept of intra-provincial energy trading emerges as a viable possibility for optimising resource utilisation and encouraging regional energy integration.

Establishing a Robust Institutional Framework for Energy Transition

The realisation of such determined objectives necessitates a consistent institutional framework, reinforced by collaborative undertakings between Multilateral Development Banks and host countries. The establishment of working groups or pilot projects, facilitated by entities such as the International Finance Corporation (IFC), Asian Infrastructure Investment Bank (AIIB), and the World Bank, assumes key importance in funding developments towards a sustainable energy future. Moreover, considerations surrounding fiscal interventions and regulatory harmonisation emerge as standard prerequisites for adopting a conducive environment for energy transition and regional integration.

Shared Responsibility and Collective Action

The journey towards a green energy future necessitates concerted efforts characterised by technical expertise and political resolve. Collaborative engagement of development partners is of prime significance in navigating the complex landscape of regional energy integration, thereby stressing the concern of shared responsibility and collective action in realising shared goals.

Household and Firm Adaptation Strategies

Transitioning from Local to National: Role of Governance in Green Technology Adoption

Expanding the scale from community to regional, and now to national and sub-national scopes, it is essential to analyse implications of green transition for households and firms. Insights from the Pakistan Country Climate and Development Report (CDR), a collaborative effort between the World Bank and Government of Pakistan, highlight key priorities in sectors such as food, agriculture, and energy. Additionally, importance of governance, aligning institutional frameworks, policies, and incentives to catalyse climate action, is required.

Navigating Cost Considerations: Imperative of Return on Investment (ROI)

A key driver in incentivising green technology adoption resides in ensuring an equitable cost calculated for households and firms. Aligned with the principle of Return on Investment (ROI), users experience a fundamental dilemma of upfront capital outlay in long-term gains. The core of certainty in ROI hinges on stability of policy and regulatory frameworks, characterised by the experience of Pakistan with net metering. A consistent policy landscape ensures user confidence in the viability of green investments, be it in solar panels or electric vehicles.

Infrastructure as Enablers: Encouraging Green Technology Uptake

Another dimension of facilitating green technology adoption lies in provisioning supportive infrastructure. Essential requisites such as charging stations for electric vehicles or grid access for solar power assume pivotal significance. However, inadequacies in infrastructure provisioning impose challenging barriers to the adoption curve. Significantly, lag in charging infrastructure like the growing electric vehicle market emphasises the need for concerted policy interventions to bridge this gap.

Overcoming Financial Hurdles: Enhancing Access to Capital

Amidst a backdrop of elevated policy rates, financial access emerges as a challenging obstacle to green technology adoption. The upfront financial burden associated with green solutions necessitates innovative financing mechanisms to democratise access. Facilitating possibilities such as soft loans or zero mark-up financing schemes can mitigate the prohibitive cost barrier, thus initiating the transformative potential of green technologies (SDPI and GIZ 2022). The requirement for robust financial mechanisms goes beyond sectoral boundaries, extending to domains such as electric vehicle leasing, where untapped market potential awaits. The trajectory towards sustainable energy transitions demands a comprehensive approach, implemented by governance reforms, infrastructural investments, and equitable access to finance.

Gaps and Challenges in Green Transition

Challenges in Government Perception and Policy

Despite the presence of hurdles, the narrative of green transition is primarily advocated by civil society rather than governments. Government agencies often lack adequate understanding or prioritisation of green transition in policymaking, leading to insufficient support and resources allocated to renewable energy initiatives. This gap in perception presents a significant challenge in effectively implementing transition policies hindering progress towards sustainable energy systems.

Double Standards in Transition Policies

Transitioning from existing fossil fuel sources reveals double standards in transfer policies by national governments and international stakeholders (Vogt-Schilb and Hallegatte 2017). Contradictions emerge between declared emission reduction goals and continued reliance on existing, often polluting, power sources undermining credibility of climate commitments. Examples like Bangladesh's projection of reduced emissions alongside plans for continued coal usage highlight these discrepancies and the need for coherent transition strategies.

Global Contradictions and Challenges

Despite global commitments and discussions on transitioning away from fossil fuels, subsidies and investments in fossil fuel production and consumption persist, perpetuating carbon-intensive practices (Wood 2020). The increase in fossil fuel subsidies by G7 and G20 countries highlights a disconnect between rhetoric and action, intensifying climate change impacts. Geopolitical tensions and regional politics further complicate efforts to transition to cleaner energy sources, hindering international cooperation and climate agreements.

Perception and Political Factors

Political leadership may resist transitioning due to concerns about limiting corruption and perceived profitability of renewable energy investments, leading to inertia in policy implementation. Perception and political factors within regions

also hinder collaboration on promoting renewable energy, as economic dependencies and power dynamics influence energy policies. For instance, in regions like South Asia, entrenched interests and geopolitical rivalries could slow down progress towards sustainable energy transitions.

Despite challenges, transitioning to green energy presents comprehensive opportunities beyond climate mitigation, including a cleaner environment, improved public health, and protection of human rights. Transitioning to renewable sources can promote equitable access to energy and safeguard vulnerable communities' land rights and livelihoods, promoting inclusive and sustainable development.

Pathways for Enhancing Energy Efficiency and Adopting Green Transition in South Asia

To effectively address the challenges imposed by a green transition, promoting adaptable opportunities of green energy is crucial. This involves advocacy efforts to shift government perception, enhance international cooperation, and incentivise private sector investment in renewable energy initiatives.

Causal Relationship between Energy Consumption and Economic Growth

There exists a positive causal relationship between energy consumption, particularly power generation and economic growth. This relationship is established through increased industrial activity, improved productivity, and enhanced quality of life due to access to energy services. Energy-intensive industries, such as manufacturing and transportation, often serve as catalysts for economic expansion, driving demand for electricity and fuel.

Environmental Impacts and Policy Response

Greenhouse Gas Emissions in South Asia

Greenhouse gas emissions in South Asia are significantly high, especially emissions intensity relative to product output. This situation results from a

reliance on fossil fuels for energy generation, industrial processes, and transportation. Emissions are particularly evident in countries like Nepal and Southeast Asia, where rapid urbanisation and industrialisation amplify energy demand and emissions.

Trends in Energy Intensity

Energy intensity has been declining across South Asia over time, reflecting improvements in energy efficiency and technological advancements. The decline primarily stems from reductions within sectors rather than shifts from high-intensity to less energy-intensive sectors, indicating the need for sector-specific efficiency measures.

Policy and Regulation for Sustainable Energy

Policies for Efficient and Green Energy

Policies should primarily concentrate on incentivising firms, including household units, to adopt efficient energy practices through a combination of regulatory measures, economic incentives (like tax credits, grants, and preferential tariffs for renewable energy adoption), and technological support (Hesselink and Chappin 2019). This may also involve tailored solutions for different sectors and regions.

Creative Approaches for Green Efficiency Adoption

Direct funding for green efficiency adoption, including measures like low-interest loans, subsidies, or insurance for energy-efficient technologies, could be effective in overcoming financial barriers to adoption. Indirect financial support, such as loan guarantees or input subsidies for green technology adoption, could also be explored to reduce risks and upfront costs for businesses. Non-financial support, like providing information, training, and industry-specific strategic support, is important for raising awareness and building capacity for sustainable energy practices.

Market Dynamics and Collaboration

Market-Based Solutions and Open Trade Policies

Market-based solutions like a cap-and-trade scheme could be explored to incentivise emissions reductions and promote innovation in clean technologies (Peace and Ye 2020). Open trade and investment policies, particularly in energy and energy technology, can facilitate collaboration, technology transfer, and investment inflows, leading to a more diversified and secure energy mix (IEA 2019).

Regional Cooperation in Energy Sector

Cooperation within the energy sector among South Asian countries could lead to a better energy mix and enhanced energy security by expanding complementary resources and infrastructure. Countries like Nepal and Bhutan possess significant hydropower potential, which could be controlled through regional energy cooperation, promoting renewable energy deployment and grid stability.

Regulatory Building and Capacity Building

Regulations and Standards for Environmental Mitigation

Regulations and standards mandating energy efficiency and emissions reductions could play a central role in mitigating environmental harm and driving investments in clean technologies (Mehmood et al., 2024). Reducing or eliminating environmentally harmful subsidies, such as subsidies for fossil fuels, should be a priority to level the playing field and redirect resources towards sustainable alternatives.

Development of National Capabilities

The development of national capabilities for technology adoption, innovation, and monitoring is crucial for achieving long-term sustainability goals. The state should play a central role in facilitating this process by investing in research and development, building institutional capacity, and providing regulatory support.

Financial Mechanism for Energy Transition

Financing the energy transition is fundamental to overcome financial barriers and mobilise investments in clean energy infrastructure (Ayaz and Majeed 2022). Innovative financing mechanisms involving Public-Private Partnerships (PPPs), green bonds, and carbon pricing schemes could help mobilise resources and unlock private sector investments. Engaging the private sector and exploring combined finance options, which combine public and private funding, could further augment funding for a green transition while developing market efficiencies and expertise.

Conclusion

Driven by changing weather patterns and rising temperatures, climate change is a pressing global challenge and threat for the world economy - and to a lesser extent for least developed and developing economies. Climate change worsens the already grave levels of environmental pollution in South Asia. Although the region has experienced economic transformation in the past two decades, poor people continue to pay a heavy price for the poisoned air, water, and soil that taints their existence.

Green technology is imperative for South Asia's effort to steer new capital into renewable energy projects, viewed as a way to significantly shift away from its current leading energy source - fossil fuel-based power. This move comes with benefits like higher productivity, employment opportunities, and less dependence on imports to name a few.

Bringing technology to scale and scaling it to reach the widest possible number of farmers, as well as investments that change mindsets and business models, are more complex and will require a broad policy-based and market-based response. Energy efficiency technologies can boost economic growth, cut greenhouse gas emissions, add jobs, but it will also displace some workers, so countries must look for reskilling pathways to manage transition in the labour market. Moreover, energy trade through institutional frameworks can be effective in facilitating a green transition within the region.

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Decade of BRI and CPEC

Ten Years of CPEC and BRI: Review of Major Financial Trends

Dr Shazia Ghani

Ten Years of Belt and Road Initiative: Trends, Policies and Charting the Way Forward for Green Development

Zainab Babar, Zona Usmani & Ubaid ur Rehman Zia

Ten Years of CPEC and BRI: Review of Major Financial Trends*

12

Dr Shazia Ghani**

Abstract

The Belt and Road Initiative (BRI), announced by Chinese President Xi Jinping in 2013, is considered one of the most transformative socioeconomic developments globally. Through this initiative, China has made substantial investments in various sectors, particularly energy, transport, and infrastructure development. Given substantial developments over the past decade under the BRI, this study provides an overview of the key financing trends, especially focusing on the China-Pakistan Economic Corridor (CPEC). The study uses a mixed-method approach to conduct a qualitative analysis of key instruments related to the integration of global financial markets. Among various instruments, there has been a concerted focus on financial markets, alternate payment settlement mechanisms, bilateral currency swaps, Renminbi (RMB)/Chinese Yuan (CN¥) settlements, and reserve currency arrangements in Pakistan. Furthermore, the study delves into the prospects of digital currency and blockchain networks and explores the potential of green financing mechanisms. Through extensive data analysis, it also provides a roadmap and set of recommendations to address challenges as Pakistan transitions towards CPEC 2.0.

Introduction

In 2013, Chinese President Xi Jinping announced the Belt and Road Initiative (BRI), a grand vision aimed at enhancing China's global integration through development of ports, roads, railways, airways, telecommunications, electricity production and transmission systems, and Special Economic Zones (SEZs) for manufacturing exportable products. As of 2023, this initiative continues to evolve. The BRI was launched as a once-in-a-century initiative to address financing and infrastructure development needs of the Global South – countries that did not

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benefit from the world economic order established after the Second World War. China also aimed to share its prosperity, achieved through years of reforms, innovation, manufacturing, and trade.

As economic history shows, finance often follows trade and development. Therefore, the BRI encompassed not only brick-and-mortar infrastructure projects but also ushered in an era of alternative financial centres (Shanghai and Beijing) and a range of institutions such as the Asian Infrastructure Investment Bank (AIIB), BRICS New Development Bank (NDB) and Silk Road Bank. China began practical implementation of the project in 2014, and in a significant policy development, the International Monetary Fund (IMF) allowed usage of the ‘Renminbi’ (RMB) or Chinese Yuan (CN¥) as an international reserve currency in 2016.

The objective of this chapter is to study the policy trends in finance and financial market integration concerning the BRI in general, and CPEC specifically. Section 1 provides a brief overview of BRI and CPEC. Section II discusses their financial aspects highlighting China’s policy and commercial banks, as well as established global multilateral institutions and commercial financing entities. This includes participation from newly established institutions such as the AIIB, NDB, and Silk Road Bank. Section III, the focal point of this chapter, explores finance and financial integration trends under the BRI and CPEC, analysing how the BRI serves as a catalyst for financial market integration globally. The section covers significant developments such as internationalisation of the RMB, China’s credit and currency swap lines across BRI countries, RMB-based clearance and payment mechanisms, and development of the Digital Yuan (or Central Bank Digital Currency- CBDC). It focuses on how these financial trends and developments under the BRI are emerging within the CPEC, highlighting benefits for Pakistan from these initiatives. Section IV reviews digital currency and blockchain networks, while Section V delves into green finance as one of the emerging areas of the BRI. Based on this analysis, the study presents key recommendations and concludes in the final section.

BRI and CPEC: Ten Years On

In 2023, China commemorated the tenth anniversary of the BRI. Since its inception in 2013, the initiative has encountered numerous challenges at both the international and country-specific implementation levels. According to President

Xi Jinping, 'China will actively promote international co-operation through the Belt and Road Initiative. In doing so, we hope to achieve policy, infrastructure, trade, financial, and people-to-people connectivity and thus build a new platform for international co-operation to create new drivers of shared development.' BRI consists of six transnational land-based economic corridors, i.e., CPEC; India-Myanmar Economic Corridor; New Eurasia Land Bridge Economic Corridor; China-Central Asia-West Asia Economic Corridor; China-Mongolia-Russia Economic Corridor; China-Indochina Peninsula Economic Corridor; and Bangladesh-China-and one-sea corridor, in short, the 21st Century Maritime Silk Road.

Five constituent pillars of BRI - interconnecting infrastructure, trade facilitation, coordination in policymaking, financial integration and human connections, have progressed significantly over the last ten years in BRI members' network.

Some macro numbers will help in better visualising the geographical spread and scale of the BRI: till 2021 alone, BRI Memorandums of Understanding (MoUs) were signed with 140 countries (46 in Africa, 37 in Asia, 27 in Europe, 11 in North America, 11 in the Pacific, and eight in Latin America), along with 32 with international organisations. The initiative, hence, has enormous potential of integrating information and communication technologies (like 5G and space), e-commerce, space, finance, customs, tourism, legal, police, culture, education, and other sectors across many regions. Along with improvements in physical infrastructure and financial integration of member countries, BRI has stimulated trade flows in an unprecedented way.

Commencing its formal implementation, CPEC gained momentum with arrival of Chinese President Xi Jinping in Islamabad in April 2015. During this visit, both sides endorsed a '1+4' framework for economic cooperation, emphasising the central significance of CPEC alongside four primary sectors: energy projects, transportation infrastructure, Gwadar port development, and industrial collaboration. 51 MoUs were signed under the CPEC Framework Agreement. During his visit in June 2024, the Prime Minister of Pakistan and China agreed to further consolidate the economic benefits of CPEC. Both countries agreed to accelerate implementation of ongoing projects and expedite the ML-1 project, as well as the development of SEZs (CPEC 2.0).

Financial Muscle of the BRI

BRI is transforming the global economic policy landscape through alternative financial frameworks and arrangements. The financial size of the endeavour is unprecedented. According to the Fudan University, aggregate funding for BRI's projects amounts to USD 932 billion estimated since 2013 where USD 561 billion went into construction and USD 371 billion in non-financial investments. According to CBER research, BRI may raise world GDP by 4.2% by 2040. Due to its financial muscle, the BRI possesses the potential to increase the global GDP by USD 7.1 trillion annually over the next 20 years through spending via global infrastructure and other related projects. According to some other estimates, BRI outward investments will reach USD 0.3 trillion by 2027. Some forecasts predict that more than 2,600 projects worldwide, valued at USD 3.7 trillion, will be completed through BRI financial frameworks. The predominant financing for the vast majority of the BRI projects is provided by Chinese policy banks, also known as development banks, and China's state-owned commercial banks, such as China Development Bank (CDB), Industrial and Commercial Bank of China (ICBC), and Export-Import Bank of China (EXIM) (Hooi 2019).

China also established the dedicated Silk Road Bank, amounting to USD 40 billion. The CDB has financed approximately 400 projects across 37 countries, totalling USD 110 billion. The ICBC has financed 212 projects amounting to USD 67 billion. Additionally, EXIM has funded 1,000 projects in 49 countries, totalling USD 80 billion. It is worth stating here that EXIM, CDB and ICBC are major financing vehicles of CPEC projects. Other Chinese institutions are Agriculture Development Bank of China, the People's Bank of China (PBoC), and China Construction Bank. Alongside China's state-owned policy and commercial banks, NDB and AIIB are also playing a crucial role in funding BRI projects globally. China contributes half of the subscribed capital of the AIIB (Umbach 2022).

The European Union (EU) is not only attracting FDI under BRI but is also part of multilateral financial institutions or Multilateral Development Banks (MDBs) like the AIIB were established to finance BRI projects. Out of 57 founding AIIB members, 13 were from the EU, including Germany (fourth biggest shareholder of AIIB), France, the United Kingdom (UK), and Italy. EU's other financial institutions like the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD) are also financing infrastructure projects of the BRI. Chinese policy banks are signing MoUs with EU's financial

institutions to finance the BRI portfolio - EBRD signed a MoU with the PBoC in 2015 to strengthen financial cooperation for BRI projects. EBRD is also collaborating on Multilateral Cooperation Center for Development Finance (MCDF) developed by eight international financial institutions, including the EIB. EU's commercial financial institutions especially from Germany and the UK have stepped in since 2016 to capitalise investment opportunities through BRI. Germany's Deutsche Bank set up a team of experts to facilitate BRI projects and also signed a MoU in 2017 with the CDB to the tune of USD 3 billion. Another commercial bank of global repute, Standard Chartered, has finalised 21 financing deals with projects linked with BRI network. Standard Chartered Bank also signed an agreement with China's EXIM Bank to support third-party market cooperation under BRI. Needless to mention that the engagement of renowned EU financial institutions and multilateral development banks will be instrumental to integrate various financial markets/centres and reap dividends of development goals envisioned under the BRI. Along with commercial and multilateral financial institutions, EU's insurance companies and institutions are keen to fill the gaps in lower insurance penetration rate of BRI projects.

Financial Integration Trends under BRI and CPEC

The liberal financial order led a massive wave of financial integration through globalisation of finance and capital. London emerged as a nerve centre of modern finance in the 19th Century, and New York assumed this role in the 20th Century. Several emerging market economies, including China, benefitted immensely from these economic booms. The whole array of financial institutions supported by the liberal ideology cemented political-cum-economic might of established advanced countries, but emerging economies were thrown under the bus due to their own incompetent financial reform agenda. Only China was an exception which was integrated with the global financial subsystem but shielded itself from nasty bubble bursts and debt and currency crisis of the 80s and 90s, and then lastly from the global financial crisis of 2008 (Morrison 2009).

To enhance financial markets integration between China and the global south and China with the advanced economies, special financial vehicles like AIIB and the SRF were established. These vehicles along with China's state-owned policy and commercial banks provided the financial fuel to BRI. Other than these, China has expanded its bilateral currency swap lines enormously since 2009. Other significant developments include internationalisation of the Renminbi (RMB),

establishment of China's Cross-border Inter-bank Payment System (CIPS) as an RMB payment clearing system, and development of the Asian bond market. These initiatives will greatly accelerate financial integration under the BRI, providing much-needed capital support to BRI countries. Needless to state that financial integration will not only allow financial development in BRI countries but also lead to accelerated economic growth. Within three years of the launch of BRI, IMF approved the RMB as one of the international reserve currencies in 2016. Inclusion of the RMB in the Special Drawing Rights (SDR) basket has significantly boosted its internationalisation, paving the way for more integrated financial markets under the BRI.

Financial Markets

China has consistently followed the path of financial reforms since 1979 and is striving to establish its footprint as the nerve centre of finance. After GFC 2008, China consolidated its financial system which largely remained insulated from external financial shocks and with the implementation of BRI. Shanghai has risen to prominence as China's foremost developed financial exchange, catering to a wide array of markets including securities, futures, foreign exchange, gold, currency, insurance, negotiable instruments, and diamonds.

Financial integration being a fundamental factor in the implementation BRI is supported by infrastructure investments through Chinese companies. Chinese leadership has expressed at global forums that China intends to work with G20, IMF and World Bank Group-led institutions to enhance BRI investments. China not only intends to integrate the Global South with modern finance but also supports the strengths of London and New York. London's financial districts are competing to enhance business with Chinese firms and establishment of the UK Centre for Greening Finance and Investment (CGFI) in London will be instrumental to develop a sustainable development project in China and the BRI countries. Big financial institutions of London and New York have signed agreements with Chinese policy and commercial banks to finance BRI projects (Lew and Roughead, 2021).

It is critical to understand that China has invested trillions of dollars in Wall Street and London has emerged as the first western offshore RMB centre since 2013, thus playing very critical role in the internationalisation of Chinese currency Renminbi. London has inaugurated its own dedicated clearing bank, the China

Construction Bank Corporation, specialised in handling transactions in Chinese currency, with the aim of fostering expansion of the Chinese financial market. Capitalising on its extensive legacy and standing as a respected financial hub, London has witnessed the emergence of a cluster comprising 14 Chinese financial and affiliated professional services firms, concentrated within the historic financial enclave surrounding the Bank of England (Hall 2019). London has worked intensively to establish new type of Chinese financial markets like green financing funds and BRI. Along with already established financial centres (North American and Europeans and sovereign governments (Egypt, the Philippines, Poland, Hungary, Portugal, Nigeria, South Africa). AIIB and NDB are also accessing China's capital markets.

BRI has given impetus to China's policy of developing Shanghai as hub of finance. In 2016, the biggest landmark was achieved with the inclusion of RMB in the basket of SDRs. Since then, PBoC is following a path to develop Shanghai at par with London and New York. Pudong area is designated to emerge as the premier global hub for offshore yuan transactions, driving forward internationalisation of the RMB. This strategic plan aims to strengthen availability of yuan-denominated domestic investment financial products overseas, facilitate cross-border flow of yuan funds, and launch pilot trading of yuan foreign exchange futures.

Pakistan, like other BRI countries, is keen to integrate with China's capital markets. The Government of Pakistan (GoP) has long desired to access China's financial markets through the issuance of Panda Bonds (Renminbi-denominated debt instruments) or Green Bonds. Pakistan has traditionally accessed the Western financial markets through Sukuk bonds but due to constrained global financial markets and Pakistan's own economic challenge, the idea to tap the deep and highly liquid China's onshore bond markets is very timely. Several other countries (e.g., Egypt is ready to raise USD 500 million from the Chinese market) of the BRI network are issuing similar instruments in Chinese financial markets. In 2020, Pakistan's Federal Cabinet authorised issuance of renminbi-denominated bonds for the first time to obtain loans from China's capital markets, marking a significant leap forward. Pakistan is working closely with the Chinese institutions to realise this transaction.

Renminbi: The Reserve Currency

Nobel Laureate Robert Mundell famously said, 'Great powers have great currencies.' The Renminbi (RMB or Chinese Yuan) has emerged as one of the most significant players in international finance in the early decades of the 21st Century. This status is directly correlated with China's economic ascent, driven mainly by global trade and financial integration, transforming it from a poor nation into the world's second-largest economy over the past 30 years. RMB's true internationalisation began when in December 2015, the IMF announced that RMB will be given the status of a reserve currency. On 1 October 2016, the IMF awarded the status of reserve currency to yuan/RMB and added the same into its basket of SDR consisting of Euro, Japanese Yen, British Pound, and the US dollar (IMF 2016).

According to the Bank for International Settlements (BIS), the RMB is the eighth most traded currency in the world. It is the 6th most active currency for global payments by value (Nelson and Weiss 2022) and 5th most held currency by central banks, thus constitutes 3% of the global reserves kept by the latter around the globe. When RMB was first included in the SDR basket in 2016, its share was only 1.08%.

According to the 'RMB Internationalization Report 2021', as of the first quarter of 2021, RMB-denominated reserves held by reporting entities surged to USD 287.46 billion, constituting 2.5% of the total official foreign exchange reserves with specified currency compositions, and securing 5th position, marking the highest level since the inclusion of RMB-denominated reserves in the Currency Composition of Official Foreign Exchange Reserve (COFER)¹ survey in 2016. According to available data, over 70 central banks or monetary authorities have integrated RMB-denominated assets into their foreign exchange reserves (IMI 2021). The report further estimates that around 80 central banks of the globe (including BRI countries) have included the renminbi in their foreign reserves. Swift data indicates that utilisation of the RMB in international payments surged

¹ Editors' Note: COFER is a confidential database managed by the International Monetary Fund (IMF) that tracks the composition of official foreign exchange reserves held by central banks of participating countries worldwide. COFER data provides insights into how different currencies are used in the global economy and helps analyse trends in international finance.

to 2.7% in December 2021, surpassing the Japanese Yen (JPY) to become the world's fourth most active payment currency. This trend continued into January 2022, reaching a record high of 3.2%. In May 2022, the IMF elevated the weight of the RMB in the SDR basket from 10.92% to 12.28%, indicative of its increased usability (Global Times 2022).

Western macroeconomic policy management is indirectly supporting RMB's rise. Due to sanctions, tariffs imposed by the United States (US) and its institutions and Federal Reserve's hawkish policies on policy rates, there are chances that the yuan may get more acceptability as an alternative currency and its weight may further increase in the basket of SDRs. Due to higher inflation in post-COVID environment, the US Federal Reserve opted hawkish policies to curtail domestic inflation that has negatively impacted the economies of emerging markets. The major blow was constrained liquidity for the Emerging Market Economies (EMEs) in international capital markets and financial instability on the external account. Exports of EMEs became expensive, and due to higher inflation in the West, remittances to EMEs dropped, as did FDI inflows. Persistent conflict between Russia and Ukraine has also given impetus to usage of the yuan as a currency of trade. Furthermore, China's macroeconomic management and its resolve to advance the BRI despite challenges seem to be major forces behind further internationalisation of the RMB in the coming decades.

However, it is critical to understand that the yuan must become a reserve currency of choice first before assuming the role of a truly global currency. RMB usage in the Association of Southeast Asian Nations (ASEAN) countries continues to grow. There are some challenges too to fully capitalise the RMB's internationalisation. China has to further liberalise its capital markets and allow free trading of yuan on the foreign exchange market. Yuan's peg with dollar is another critical area of contention between the US and China.

Morgan Stanley forecasts that the yuan will encompass 5-10% of global foreign exchange reserve by 2030, surpassing the US dollar, Euro, and Japanese Yen. Morgan Stanley contends that achieving this growth target is feasible, given China's ongoing financial market liberalisation, increasing cross-border capital market integration in equities and fixed income, and a rising proportion of cross-border transactions denominated in RMB. Consequently, this trend implies that central banks worldwide will need to accumulate more RMB reserves (Cheng 2020).

China being fully cognizant of the above stated facts is consistently moving on and without going into full-fledged financial liberalisation of its system, China can speed up the process of RMB internationalisation by capitalising the settlement of trade invoices in RMB, swap lines, and offshore renminbi markets.

Although RMB may not overtake the US dollar and other currencies in the near future, it has potential to come at par with it. China, being a marathon player, believes in small but incremental changes; this seems to be the approach for its policy of RMB internationalisation as well. Currently, the yuan represents approximately 2% of global foreign exchange reserve assets (Cheng 2020).

Alternative Payment Settlement Mechanism

China is not only financing BRI projects but also providing alternative frameworks and mechanisms to settle and transfer cross-border financial inflows and outflows through the Cross-Border Interbank Payment System (CIPS). CIPS, which uses ISO 20022 international messaging standards, was launched in 2015 as a pipeline to clear and settle transactions in renminbi and facilitate use of the currency in international business.

The PBoC hailed CIPS as a pivotal achievement in the development of financial market infrastructure in China, marking significant progress toward establishing a modern payment system. CIPS is fast establishing itself as a potential competitor to Society for Worldwide Interbank Financial Telecommunication (legally S.W.I.F.T. SC) and has grown tremendously since 2015. As reported by Reuters, in 2021, CIPS facilitated approximately ¥ 80 trillion (USD 12.68 trillion), marking a substantial 75% increase from the previous year. By the end of January 2022, CIPS had established connections with 1,280 financial institutions spanning 103 countries and regions.

Notably, among these connections are 30 banks in Japan, 23 banks in Russia, and 31 banks from various African nations, which are utilising CIPS for yuan transactions related to infrastructure projects under the BRI (Reuters 2022). Additionally, recent strategic economic agreements between China and Saudi Arabia, along with previous significant agreements with Iran, suggest a growing trend towards utilisation of Chinese payment and clearing mechanisms for settlement and transfer (Vaisi 2023).

Bilateral Currency Networks/Swap Lines

After the US, the biggest Bilateral Swap Lines (BSL)² network is maintained by China. Between 2009 and 2020, China has engaged in bilateral currency swap agreements with 41 countries across the globe, with the combined value exceeding RMB 3.5 trillion (USD 554 billion). Noteworthy swap lines have been established with key Asian partners, such as Singapore (RMB 150 billion or USD 24 billion), South Korea (RMB 180 billion or USD 29 billion), Malaysia (RMB 80 billion or USD 13 billion), Indonesia (RMB 100 billion or USD 16 billion), and Thailand (RMB 70 billion or USD 11 billion) (Tran 2022). In 2021, the PBoC's currency and credit swap line with the European Central Bank (ECB) was extended up to 2025 to the tune of RMB 350 billion. The first bilateral swap agreement with the ECB was concluded in 2013 and was extended in 2016 and 2019 with bilateral consent. PBoC has active bilateral swap line with Russia too (ECB 2022; McDowell 2019).

China and Pakistan signed a bilateral Currency Swap Agreement (CSA) to the tune of ¥ 10 billion (PKR 140 billion) in 2011. The currency swap was for three years and the same could be extended with mutual consent (SBP 2011). Since 2011, both countries have mutually consented to extend the CSA several times. In 2021, purchases under the CSA increased from PKR 475 billion in 2020 to PKR 731.7 billion (Ahmad 2021).

RMB/ CN¥ Settlement and Arrangements in Pakistan

Under CPEC, the State Bank of Pakistan (SBP) and China's Central Bank (PBoC) signed a MoU in November 2022 to establish RMB/CN¥ clearing arrangements in Pakistan. This critical decision will enhance utilisation and boost RMB-based cross-border transactions between Chinese and Pakistani financial institutions

² Editors' Note: Bilateral Swap Lines (BSL) are agreements between two central banks to exchange currencies. These arrangements allow central banks to provide liquidity to each other in their respective currencies, which can help stabilise financial markets and support international trade and investment. They are often used during times of financial stress to ensure that there is adequate foreign currency available to meet the needs of domestic banks and businesses.

and businesses. Ultimately, bilateral trade and investment will be promoted and facilitated too.

Pakistan is facing challenges on external account stability due to a mismatch between imports and exports, thus trade structure is heavily import oriented and China has emerged as Pakistan's biggest import partner over the last decade or so. RMB clearance arrangements will help diversify some import exposure from USD to CN¥, support currency reserves maintained in USD, and lower pressure on the PKR. Another aspect is providing protection against increases in the US federal funds rate.³

In a move aimed at fortifying trade routes and facilitating inflow of CN¥ into Pakistan, in 2022, the SBP and PBoC inked an agreement to establish a local CN¥ settlement and clearing mechanism within the country (PBoC 2022). Through this system, Pakistani traders and businesses can greatly benefit. A CN¥-based transaction settlement system will reduce transaction costs, enhance market liquidity, and encourage flow of trade and investment between the two countries. All these measures may release pressures on Pakistan's current account when some of the exposure will be allowed in renminbi instead of the dollar. Needless to highlight that all these policy measures will bring long-term stability and financial integration under CPEC 2.0 cooperation. Pakistan and China must work out further facilitation measures to settle Pakistan's imports from China in CN¥.

Digital Currency and Blockchain Networks

At the forefront of global competition, China is spearheading development of Central Bank Digital Currencies (CBDCs), which resemble digital banknotes. The BIS innovation hub is actively conducting trials of CBDCs, and the IMF has stated that over 100 economies worldwide are exploring, researching, testing, or deploying CBDCs at various levels, with China being at the most advanced stages. Along with BIS, SWIFT is also working on a Global Central Bank Digital

³ Editors' Note: The US federal funds rate is the interest rate at which depository institutions, such as banks and credit unions, lend reserve balances to other depository institutions overnight on an uncollateralized basis. This rate is set by the Federal Reserve and serves as a benchmark for various short-term interest rates. Changes in the federal funds rate can influence overall economic activity, including borrowing, spending and inflation.

Currency Network, and it has successfully carried out transactions between different blockchain networks using both fiat currencies⁴ and CBDCs.

Although the Chinese E-CN¥ (digital yuan/Renminbi) is primarily focused on promoting financial inclusion by lowering the cost of financial transactions in domestic markets, it also has the potential to significantly transform the existing international financial and monetary system. E-CN¥ is gradually progressing and is under trials in selected cities of China.⁵

China's journey towards having digital currency commenced with initiation of BRI, it was formally commenced in 2014 when the PBoC set up a taskforce to examine digital fiat currency, encompassing research into its issuance framework, key technologies, issuance and circulation environment, and international precedents. The PBoC inaugurated its Digital Currency Institute in 2016, culminating in development of the first-generation prototype of digital fiat currency in the same year. In 2017, the State Council of the China began collaboration with commercial institutions in developing and testing digital fiat currency, i.e. E-CN¥ (PBoC 2021). According to Reuters (2022), transactions using China's digital yuan surpassed ¥100 billion (USD 13.9 billion) as of 31 August 2022. Along with China's state-owned banks, digital yuan wallets for Android/iOS and apps like TenPay, Alipay and WeChat are very powerful tools and the PBoC has issued more than 20 million digital wallets to facilitate transactions. China is also exploring options to launch cross-border CBDC transactions with Hong Kong.

President Xi Jinping supports development of digital currency and blockchain technology and has urged the global leadership to cooperate in jointly formulating rules, regulations, standards, and principles for the global usage of digital currencies. At the G-20 forum in 2020, the Chinese President highlighted the need for member nations to adopt an open and accommodating attitude towards CBDCs, while properly handling the associated risks and challenges.

⁴ Editors' Note: Fiat currencies are types of money that are issued by governments and are not backed by a physical commodity, such as gold or silver. Instead, their value is derived from the trust and confidence that people have in the issuing government. Examples of fiat currencies include the USD, EUR, JPY and RMB.

⁵ Editors' Note: E-CNY refers to the digital version of the Chinese Yuan, also known as the digital Renminbi or Digital Currency Electronic Payment (DCEP). It is issued by the People's Bank of China (PBoC) and aims to facilitate digital transactions and enhance the efficiency of the payment system in China.

This approach, he noted, would collectively push for advancement of the international monetary system (Crypto News 2020). As China is rolling its digital currency consistently in its domestic financial market, cross-border digital currency transactions will be critical for the financial markets' developments in the BRI countries. China's digital yuan can leverage the BRI, though so far China has not made any formal communication about usage of digital currency in the BRI.

BRI and Green Finance

In the backdrop of carbon emissions and climate challenges, China has emerged as a strong voice and is promoting green finance internationally and regionally. Officially, the pioneering Chinese government policy aimed at 'Green Finance' was issued by the PBoC in 1995 titled as '*Notice on Credit Policy for Environmental Protection*' (GBRIC 2022). China played a pivotal role in placing green finance on the G20 agenda during its Presidency Forum in 2016. Additionally, China co-chairs the Green Finance Study Group with the UK. Addressing the United Nations General Assembly on 21 September 2021, President Xi declared China's commitment to refrain from constructing new coal-fired power plants abroad. Additionally, he pledged to enhance support for developing green and low-carbon energy initiatives in developing nations.

China has not only made announcements at global forums but has also taken practical steps to address this issue. PBoC introduced various measures and regulations to promote green financial development through a combination of macro-prudential and monetary policy. 'China's banking system regulator, CRBC, released the 'Green Credit Guideline' in 2007 'encouraging banks to promote environmental objectives and considering environmental risks in their lending'. In 2016, the 'Guidelines for Establishing the Green Financial System' were published with endorsement of China's State Council, the highest governing body' (Larsen n.d.). The National Development and Reform Commission (NDRC), as the apex regulator of the Green Finance System in China, published the 'Guidance on Green Bond Issuance' for corporate issuance (Ibid.). Additionally, the PBoC published the 'Green Bonds Endorsed Project Catalogue' for Chinese banks' bond issuance (Ibid.,; Wang 2022).

SINORSURE (China Export & Credit Insurance Corporation) has sped up its processes for approving renewable energy projects and set up a team to analyse

the risk controls. In 2017, the PBoC began integrating green finance into the macro-prudential assessment system. This included providing positive incentives for commercial banks to expand their portfolio of green credit and increase green deposits to complement green credit. Another significant step was the issuance of the 'Green Credit Performance Evaluation Plan' for banking deposit financial institutions (PBoC 2018), which further refined the evaluation criteria for the green credit performance of banking institutions.

China also has issued separate guidelines for the green development of BRI and Silk Road projects. Green development guidelines for the BRI gave criterion for the classification and a screening system of the projects based on their potential environmental impacts. China's policy and commercial banks, the main financing vehicles for the BRI/Silk Road projects, are separately earmarking their green financing portfolios. For instance, the EXIM Bank recently released USD 425 million (3 billion yuan) in green bonds designated for investment in clean energy. These funds aim to finance the development of renewable energy ventures, including solar, wind, and hydropower projects (Chen and Wei 2022). Concurrently, the China Development Bank has entered into a MoU with both the Green Climate Fund and the United Nations Development Programme (UNDP) to support funding for climate action initiatives.

President Xi Jinping at the Leaders' Summit of G20 in April 2022 announced that China will strictly control coal in the next five years and phase it down during implementation period of the 15th Five-Year Plan. Chinese policymakers, financial institutions, and project builders have all geared up to not only halt financing coal power projects but will not invest in coal mining outside China, Hong Kong, Macau and Taiwan (Jialing 2021). Furthermore, Chinese financial institutions have not only made separate provisions for green finance but have also cancelled several BRI projects that were in progress following President Xi's announcement. At least 15 overseas coal-based power plants were either shelved or cancelled between September 2021 and April 2022. These projects, which were in the pre-financial closure and pre-construction stages, were shelved or annulled. Almost all of them already had financial commitments or EPC (engineering, procurement, and construction) support (Chen and Wei 2022). As a responsible economic power, China has shown its resolve to tackle challenges of climate change and attain carbon neutrality through green finance.

Conclusion and Policy Recommendations

Announced in 2013, the BRI and CPEC completed ten years of implementation in 2023. During the decade, both faced several challenges. The BRI has consistently faced criticism from Western capitals, being labelled as a debt trap and viewed as China's foreign policy tool to expand its sphere of influence in Africa, Asia, and other parts of the world. COVID-19 too dampened implementation. However, China is very consistent in its policies and its leadership is determined to take on all the challenges and keep on implementing the once in a century initiative.

China has learnt a lot and BRI's role in the integration of global financial markets is profound. New financial mechanisms and frameworks, such as CBDCs, alternative payment and settlement systems, and green financing, are being introduced along with the BRI and are consistently progressing. Keeping this in view, the key policy recommendations proposed in the study are:

- Pakistan must consolidate the gains of the initial success of CPEC and devise a comprehensive strategy for CPEC 2.0.
- Within the BRI, financial markets, policies, and products have played a crucial role. Pakistan can learn a lot from China under the BRI/CPEC mechanism about new financial products, digital payments, etc.
- Pakistan may consider settling payments through Alipay and WeChat. This will particularly enhance the country's trade and commerce relationships not just with China but also with other BRI countries.
- Pakistan is interested in CBDCs, and China, with its technical expertise, is financing one of the biggest CBDC projects, MBridge. Pakistan can benefit greatly from China's technical capacity in development and usage of CBDCs. Similarly, China has excelled in blockchain technology. Since CBDCs and blockchain are the future of financial market infrastructure, Pakistani financial institutions need to coordinate with China and other BRI countries to understand and acquire this technology.
- The initial phase of CPEC focused on the construction of road and power projects. The next phase must prioritise financial integration with China and other BRI countries.
- Industrial cooperation and relocation of industry from China are other areas where Pakistan must focus on creating an enabling environment.
- Chinese financial institutions are globally prepared to finance climate-friendly, clean, and green energy projects. Pakistan must utilise the green

financing platforms being developed under BRI. The country is eager to develop new energy projects, focusing mainly on renewables.

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Ten Years of Belt and Road Initiative: Trends, Policies and Charting the Way Forward for Green Development *

Zainab Babar, Zona Usmani & Ubaid ur Rehman Zia**

Abstract

The Belt and Road Initiative (BRI), launched by President Xi Jinping in 2013, has emerged as one of the most transformative socioeconomic developments globally, with investments expected to exceed USD 8 trillion. While there has been an increasing focus on greening BRI investments to align with global climate action, further opportunities exist to assist partner countries in building more sustainable, green economic structures. This chapter analyses the BRI's transition towards green development and low-carbon initiatives, drawing on recent trends. By examining investment patterns, policy frameworks, and potential challenges, the chapter outlines key reform priorities essential for integrating green principles into Chinese overseas investments. Using a mixed-method approach, the study identifies several key challenges hindering low-carbon development within the BRI region. These include limited fiscal capacity in some BRI countries to mobilise local finance; inadequate financial institution capabilities; market imbalances for green financing; low compliance with climate protocols; rising debt portfolios; and a tendency to prioritise short-term economic gains over long-term sustainable

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growth. Overcoming these challenges will require robust stakeholder collaboration to prioritise green growth in development plans, particularly within the energy sector. The principles of a just transition must be upheld not only by project developers but also by the financing institutions involved. The chapter also highlights the critical role of alternative financing mechanisms, such as Just Energy Transition Partnerships (JETPs) and the Green Investment and Finance Partnership (GIFP), in mobilising the necessary funding for climate action.

Introduction

Background

Socioeconomic development across the world, particularly over the past 30 years owes a significant contribution from China. While there have been various initiatives, the key and most substantial milestone for this industrial and societal development came through President Xi Jinping in 2013, named as the ‘Belt and Road Initiative’ (BRI).

BRI is estimated to make USD 1 trillion to USD 8 trillion worth of investments that will positively impact around 30% of the global population (Hillman 2018). Developments under the BRI are already underway and have undoubtedly brought various opportunities to the countries that are downstream of industrial development and need investments to boost their infrastructure and productivity. BRI is a dynamic concept that is evolving in accordance with the need of time. From Asia, Europe, and Africa, 146 countries and 32 international organisations have signed contracts with China under BRI, with five pillars as depicted in Figure 1:

Figure 1: Key Development Pillars of the BRI

Source: Zaman et al., 2024.

Overview of the data around BRI depicts considerable success of the BRI strategy. In 2012, overseas Foreign Direct Investment (FDI) by China was USD 82 billion; and by 2022, it witnessed a massive surge, reaching USD 154 billion. This substantial increase in FDI's solidified China's stature as a major global investor. In emerging economies, BRI has made huge investments in developing infrastructure, surpassing USD 1 trillion (Ye 2022).

Ten years of the BRI mark a decade of transformative global cooperation and development. The lessons learnt highlight advancements in sustainable development, creation of numerous job opportunities, and a growing commitment to greener, more environmentally friendly initiatives. However, while BRI investments have contributed significantly to positive outcomes, there has been some debate—driven by host countries—regarding development of coal-based power projects, particularly in nations like Pakistan. As climate action and community well-being become central pillars of global progress, it is crucial to assess the impact of existing initiatives and explore how Chinese engagements can better align with global climate goals and the Paris Agreement.

Objectives and Methodology

Against the backdrop of China's support for BRI countries and the prospects for future development, this chapter aims to highlight key reform priorities that should be integrated into the investment portfolio of Chinese overseas ventures. The key objectives are as follows:

1. Examine China's investment trends in BRI countries, with an emphasis on green developments.
2. Analyse China's policies and regulations, particularly those focused on green initiatives.
3. Propose a strategic way forward for promoting green developments, specifically in the context of the China-Pakistan Economic Corridor (CPEC).

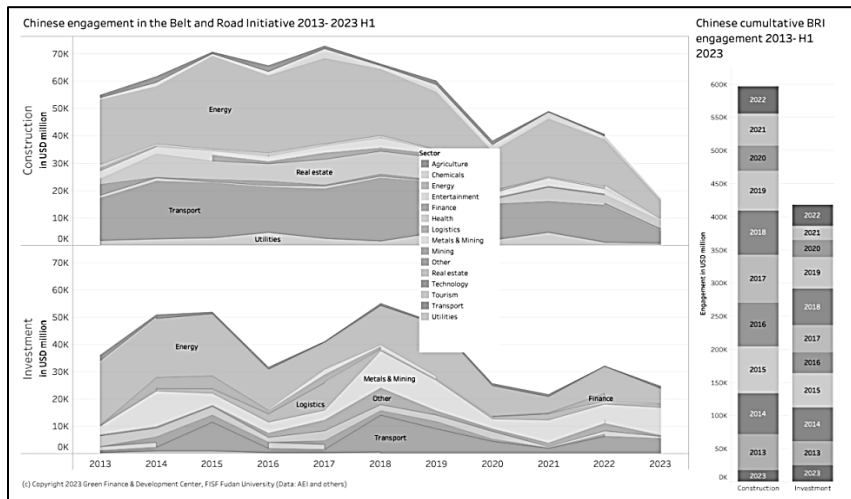
To analyse the key objectives outlined above, this chapter adopts a mixed-method approach. In addition to data analysis and a comprehensive overview, it draws recommendations from a high-level policy dialogue titled 'Ten Years of BRI: Lessons Learnt and Charting a Way Forward for Green Development' (SDPI 2023), conducted by the Sustainable Development Policy Institute (SDPI) and the Pakistan China Institute (PCI) under the auspices of the Green CPEC Alliance in November 2023.

Policies and Investment Trends for Low-Carbon Development

Investment Trends under the BRI

In 2023, Chinese investments under the BRI reached a value of nearly USD 1.03 trillion, encompassing both non-financial investments and construction contracts. Figure 1 illustrates growth of these investments across various sectors. In 2023 alone, Chinese engagements resulted in approximately 212 deals worth USD 92 billion, marking an 18% increase from 2022. Despite the challenges posed by COVID-19 and the global economic recession, total investments since 2020 have shown steady growth (Wang 2024).

Up until 2021, the top five recipients of Chinese investments were Pakistan (USD 27.4 billion), Angola (USD 22 billion), Ethiopia (USD 13.7 billion), Kenya (USD 7.4 billion), and Sri Lanka (USD 7.2 billion). However, in 2023, Indonesia became the largest recipient of BRI investments, receiving USD 7.3 billion, followed by Hungary with USD 4.5 billion. Chinese investments in Pakistan, however, saw a significant drop of around 74% in 2023 (Wang 2024).

Figure 2: Investment Trends under the BRI

Source: Wang 2024.

Among different sectors that received these investments, energy and transport have been leading the portfolio as shown in Figure 2. In 2020, energy and transport accounted for almost 64% of the total investments, followed by real estate (10%) and metals (8%). In 2022, share of these two sectors dropped down to 57%, however, cumulative investments in 2023 from these sectors was back to around 64%. During the first half of 2023, agriculture and real estate grew by 271% and 269% as compared to the first half in 2022 (Wang 2024).

Green Development: Policies, Regulations and Financing Trends

In the wake of global net zero transition, China has underscored its growing commitment to environmental concerns by expressing its determination to develop 'Green BRI'. In 2019, after the second Belt and Road Forum, many policy developments were observed. These policies were developed in response to global anxieties about the rapid development of coal-fired power plants supported by the BRI in different countries. From 2013 to 2020, more than 50 GW capacity from coal power plants was added in different BRI countries. Several environmental concerns also rose regarding large-scale infrastructure projects which lacked environmental oversight. Chinese financial institutions and

regulators primarily adhered to national environmental regulations and licenses, raising concerns, particularly in countries with weak governance and inadequate environmental policies. In such countries, global best practices are typically followed to understand and mitigate risks to both the environment and the population.

In 2020, China made significant regulatory changes to address such concerns. The Belt and Road Initiative Green Development Coalition (BRIGC), with support from different Chinese ministries, published the 'Green Development Guidelines' that emphasised the significance of following global standards in managing environmental risks and a comprehensive framework known as the 'Traffic Light System' was implemented. This framework establishes rigorous criteria for evaluating the environmental impact of various overseas projects, particularly focusing on climate, pollution, and biodiversity considerations. Projects involving coal and other fossil fuels have been classified under the red category within this system. Furthermore, the China Council for International Cooperation on Environment and Development (CCICED) is actively supporting efforts to phase out coal usage and promote adoption of international environmental standards in projects under the BRI. In 2021, China announced it would stop building new coal-fired power plants overseas, and the Ministry of Commerce updated its policy guidelines for overseas projects. The BRI is now not only focusing on greening energy-related investments but also actively engaging in industries critical to the global transition, such as battery manufacturing and the lithium metal industry. Figure 3 illustrates the improving policy and regulatory landscape in China for greening its BRI investments.

Progress around Green Financing Instruments

The past few years have seen a major improvement in green financing instruments across China. Such instruments include green bonds, green loans, green leases and insurance, green funds, carbon finance, and transition funds. In year 2023, China's green loan balance increased to USD 4.26 trillion depicting an increase of 36.5% over 2022. As of total, green loans constitute around 12.7% of China's total loan balance, an increase from around 8% in 2021. Similarly, the green leasing market of Chinese investments have also observed a growth. In 2022, financial leasing firms injected roughly USD 46.23 billion into investments, marking a significant upturn of USD 28.63 billion compared to the previous year, representing a surge of 162.8%. This surge contributed to a 12% rise in

cumulative green leasing assets, amounting to approximately USD 120 billion by June 2023. Similarly, between 2018 and 2022, the sum of green insurance coverage reached approximately USD 14.39 trillion, denoting an average yearly growth of 27.5% (Zhang et al., 2024).

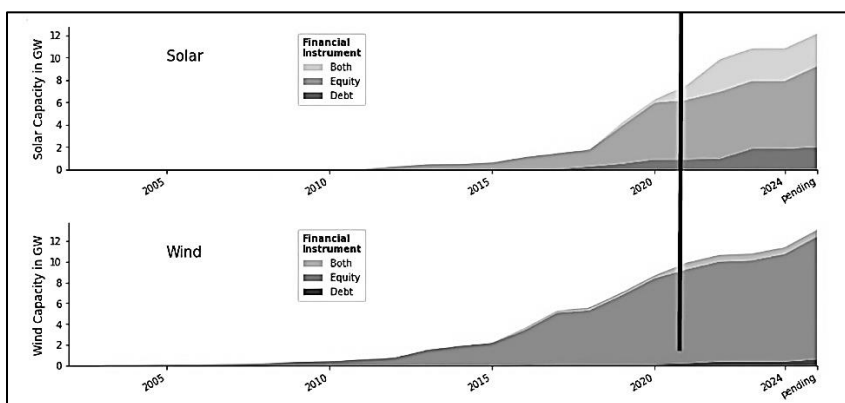
Issuance of green bonds, however, did not observe a rapid upward trend, mainly because of COVID-19 imposed restrictions and the economic slowdown. As of 31 December 2023, the collective scale of green bonds had surged to approximately USD 495.25 billion. Post-COVID-19, there were two notable years of growth in green bond issuance, with a 180% increase in 2021 and a 44% rise in 2022. The number of issuances similarly saw substantial growth, soaring by 123% in 2021 and by 6% in 2022. However, the pace of expansion in the green bond market decelerated in 2023. With 475 issuances, down by 8.8%, and valued at RMB 836 billion (USD 118.29 billion), a decrease of 4.4%, China retained its position as the second-largest green bond market globally in 2023. In terms of its share in the overall bond market, green bonds constituted 1.17%, declining from 1.5% in 2022 but improving from 1% in 2021, within a total bond volume of approximately USD 71.2 trillion. Furthermore, they represented 0.93% of the total issuances in 2023, comprising around 51,000 bonds (Zhang et al., 2024).

Figure 3: Overview of China's Green Development Policies over the Years

Source: Wang 2023.

The data highlighted above clearly indicates continuous development and improvement of green financing in China, with similar trends expected to be reflected in BRI countries. As a result, low-carbon development, particularly in the renewable energy sector, is being accelerated. In addition to being a global leader in solar and wind energy, China is also spearheading the development of these technologies in other developing countries. Figure 4 illustrates the cumulative installed capacity of Chinese-financed solar and wind projects (in GW).

Figure 4: China's Support for Wind and Solar Growth following the 2021 Announcement to Aid Developing Countries



Source: Myllyvirta et al., 2024.

The Third Belt and Road Forum, held in 2023, stands as a testament to key developments and China's support for green infrastructure. In his speech at the Forum, President Xi Jinping emphasised the importance of transparency and the need for a monitoring and evaluation framework that is publicly accessible for BRI projects. He underscored the necessity of a framework that allows for the assessment of various initiatives, with their outcomes made available to the public.

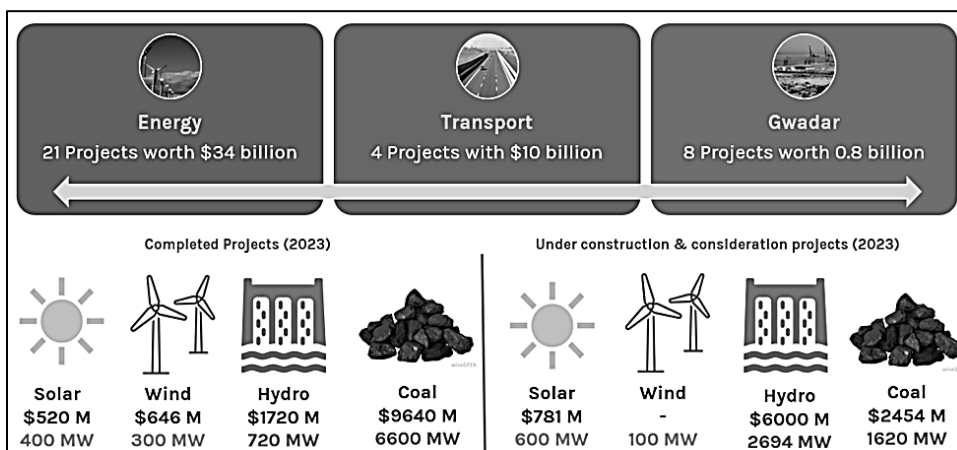
China has also committed to a significant initiative in Artificial Intelligence (AI), with a growing consensus to foster international cooperation in this domain. At the BRI Forum, President Xi Jinping introduced an Eight-Point Plan, with a strong focus on AI. This plan highlights establishment of a global AI governance

framework under the legitimacy of the United Nations, aiming to unite nations in preventing the weaponisation of AI. President Xi urged the principle of building together, planning together, and benefitting together as the path forward. The plan calls for green development, a global AI regulatory framework, and the modernisation of all sectors of the economy, based on partnerships and meaningful collaboration.

Case of the China-Pakistan Economic Corridor (CPEC)

The landmark initiative of the China-Pakistan Economic Corridor (CPEC) was launched in April 2015 in Pakistan under the framework of the BRI. Since its inception, CPEC has progressed at an accelerated pace, expanding into various sectors, including energy, infrastructure, agriculture, transportation, and industrial development. A key focus of CPEC is the development of Special Economic Zones (SEZs), with both countries expressing a shared commitment to sustaining economic growth while prioritising environmental sustainability.

As BRI's flagship project, CPEC has not only attracted investment but has also facilitated technology transfer, knowledge sharing, capacity building, and skill development. A cumulative investment of USD 62 billion has been pledged under CPEC, with Pakistan receiving approximately USD 34 billion in energy investments and USD 10 billion in transport investments to date (BoI 2023). CPEC has also created around 155,000 skilled and unskilled jobs in Pakistan (The Express Tribune 2023). Figure 5 illustrates the investment portfolio of CPEC in Pakistan:

Figure 5: Investments and Developments under CPEC

Source: Designed by authors based on data collected from CPEC Authority.

Evolving Opportunities for CPEC under ‘Green BRI’

While CPEC has contributed significantly to Pakistan’s economic development and growth, during this transformative journey, some challenges have appeared which debilitate successful outcomes of CPEC. Given that CPEC serves as a role model for China’s overseas engagements, and as a flagship project of the BRI, CPEC has the potential to elevate the geopolitical and economic status of Pakistan. In the past decade, focus has globally shifted from ‘development’ to ‘green development’ - the world is transitioning towards net zero or low-carbon development. In wake of this global transition, both China and Pakistan aspire to shift towards green transition. Both countries have set ambitious goals and targets, which manifest their enthusiasm for collaborative efforts for promoting green initiatives. The global landscape is highly conducive for such collaborations, with an expanding array of financing initiatives for sustainable energy transitions worldwide. These initiatives include mechanisms such as the green bonds, concessional financing, and Just Energy Transition Partnerships (JETPS).

President Xi Jinping also announced a substantial commitment of USD 100 billion to be allocated to the Silk Road Fund, China Development Fund, China Development Bank, and the EXIM Bank for funding green projects and

opportunities. The aim for Pakistan is to identify viable green projects that can be financed, utilising the allocated funds. This presents a significant opportunity for the next phase of CPEC, as the 'Green Investment and Finance Partnership' emerges as a substantial avenue for investment and growth. Also, as Pakistan ventures into the next phase of CPEC or 'CPEC 2.0', it needs to explore more such mechanisms that can expedite the flow of finance while moving from G2G to B2B arrangements.

Furthermore, in context of new investments in Pakistan, Chinese stakeholders are actively involved in discussions to outline specific measures for decarbonisation of these initiatives. The focus is on establishing comprehensive criteria that Chinese enterprises must adhere to, ensuring their investments align with low-carbon standards. The goal is to create a framework where low-carbon investments are not only encouraged but also incentivised and appreciated. This approach aims to foster a commitment to environmentally friendly practices, distinguishing and promoting investments that meet the specified low-carbon criteria, such as:

Diversification of Financing Mechanisms: Diversifying financing mechanisms is of paramount importance. Relying solely on securing projects from the USD 100 billion initiative might be limiting. It is crucial to recognise that China's banks offer instruments to finance projects in RMB. Despite this, the usage of available instruments remains underutilised by businesses. There is an opportunity to promote the extensive use of the Renminbi (RMB) in Pakistan's financial transactions. Encouraging businesses to utilise RMB instruments can help diversify financial pressures on the current account deficit. Moreover, the emphasis has traditionally been on Euro-denominated Sukuk bonds issued in Europe. In contrast, Western European companies and some Eastern European national banks have successfully raised substantial funds through Dim Sum and Panda Bonds. Pakistan needs to broaden its perspective and consider tapping into China's capital market. When it comes to green bonds, Pakistan does not have to limit itself to issuing them exclusively in Europe. The focus can shift towards RMB-based Dim Sum Bonds and Panda Bonds.

China's financial markets offer significant liquidity, and Pakistan's hesitation may stem from a lack of understanding or reluctance to navigate potential regulations. It is crucial to overcome these challenges, understand the regulatory landscape, and explore opportunities within the Chinese capital market. This shift in mindset

is vital for diversifying Pakistan's financing options and leveraging the ample liquidity available in Chinese financial markets

Exploration of Green Metals: Conventionally, discussions on alternative energy have centred around solar, wind, and hydropower. However, the new rule of business now includes copper, nickel, and other green metals crucial for electric vehicles (EVs), semiconductors, and future fuel. To be part of this evolving supply chain, Pakistan has an opportunity to explore the potential of these green metals within the broader framework of BRI and CPEC. Despite the global supply chain challenges in the multipolar world, Pakistan can position itself as a significant player in the supply chain for green technologies, especially amid the trade tensions between China and United States of America.

Modernisation of Electricity Grids: Pakistan needs to adopt smart grids and work on modernisation of existing grids, as it is a prerequisite for effectively harnessing energy from renewable projects. It should adopt an approach that involves taking incremental steps. This could commence with investments in creating Build-Operate-Transfer (BOT) and Public-Private Partnership (PPP) models for upgrading grids. It is crucial to establish attractive tariffs to incentivise investors to contribute to the modernisation of outdated grids. These aging grids contribute to ongoing power outages, not due to a lack of electricity but due to leakages in the grid. The absence of smart meters and smart grids exacerbates this issue. This transition should prioritise wealth creation and not solely rely on borrowing funds to finance new grids or allocating them to the Public Sector Development Program (PSDP) from the government's limited budgets. Instead, fostering PPPs can serve as a sustainable and effective means of achieving this crucial goal.

Green Diplomacy and Effective Communications: In terms of the BRI, effective communication is of prime importance. Addressing gaps in communication is essential. In this context, the pursuit of green diplomacy demands a holistic approach that harmonises geopolitical strategies with geoeconomics. This entails fostering collaborations in climate diplomacy, emphasising green initiatives, and striking a balance between economic interests and environmental responsibilities. Pakistan needs to embrace a green agenda, encompassing policies, infrastructure development, and public investments. An exemplary initiative in this regard is establishment of the Sustainable Financial Bureau and the Climate Private Investment Management Assessment initiatives by the Government of Pakistan. These efforts signify a commitment to integrating

sustainability into financial practices and evaluating private investments through a climate-focused lens. Such initiatives are pivotal for steering the country towards a more environmentally conscious and sustainable future.

Frontiers of BRI's Green Transition: Challenges, Opportunities and Way Forward

Global efforts to mitigate and adapt to climate change are at a crossroads due to the ongoing economic crisis and the slow progress made in recent years. Moving forward, any development pathway that does not align closely with climate goals is likely to encounter long-term sustainability challenges. As a result, the transition under the BRI has entered a phase that demands robust policy and regulatory support to reinforce a low-carbon pathway.

Challenges in Low-Carbon Development

Green transition under the BRI, while significant, faces challenges not only from China but also from the host countries. Some of the major bottlenecks are identified below:

Limited Engagement of Key Actors: Despite the potential influence of academia, civil society, and international platforms, their access to major BRI decision-makers is restricted, impeding the integration of diverse perspectives crucial for effective decarbonisation strategies. Non-Governmental Organisations (NGOs) and research institutes encounter obstacles due to their limited understanding of China-specific dynamics and lack of effective channels to influence decision-making processes within the BRI. This gap impedes their ability to advocate for sustainable practices and policies effectively.

Limited Voice of RE Companies: A comparatively lower voice among Chinese renewable energy (RE) companies poses a significant challenge. Without cohesive collaboration, these companies struggle to leverage their collective strengths and innovations to drive meaningful change within BRI projects, hampering the transition towards sustainable infrastructure and practices. Despite robust private sector interests in fossil fuels, clean energy companies face challenges in scaling up and investing in RE projects within the BRI. This disparity in scale and capacity limits the transition towards cleaner energy sources.

Lack of a Significant Share of Fossil Fuel Plants: Currently, China-financed coal power plants emit approximately 245 Mt of CO₂ annually. However, the emission potential of power plants yet to come online is estimated to reach around 350 Mt. There are also considerable challenges in phasing out fossil fuels and ensuring a just transition, due to vested interests and institutional barriers.

Additional Challenges for Climate-Vulnerable Countries with Limited Fiscal Space: In regions most vulnerable to the impacts of climate change, communities face significant challenges in responding effectively. The pace of decarbonisation lags behind rapid population growth, with pressure to decarbonise even before full industrialisation. A major hurdle is limited investment, driven by high capital costs and a looming debt ceiling that restricts access to additional financing. Moreover, repeated and fragmented investments in RE lack coherence and long-term sustainability. Constrained by limited fiscal space, these communities often prioritise infrastructure-led development, regardless of environmental consequences. Compounding the issue is absence of robust feasibility assessments and project evaluation capabilities, further hindering the implementation of sustainable initiatives. Along with this, various other challenges exist as depicted in Figure 6:

Figure 6: Bottlenecks in Expediting Low-Carbon Development under BRI

Financing	Regulatory Compliance	Capacity
❑ Limited incentives for green over fossil fuels ❑ Market imbalances in green financing instruments	❑ Complex channels and managerial systems for environmental disclosure ❑ Undefined taxonomies and standards ❑ Mismatch between rewards and risks	❑ Limited development and understanding around carbon trading ❑ Financing institutions and their weak capacity to meet diverse market needs

Source: SDPI 2023.

Policy Recommendations and Way Forward

The challenges for low-carbon development may be multifaceted, but so are solutions. These require concerted efforts from both China as well as host

countries (like Pakistan) and also devising mechanisms that ensure participation of academia and civil society in the decision-making processes. Based on the trends and policy provisions highlighted in the previous sections and stakeholder consensus during consultative dialogues (SDPI 2023), this chapter highlights the following recommendations under different reform priorities:

Building Stronger Environmental Compliance

- Under the broader framework of BRI, there is a need to develop a ‘Country-Specific Classification System’ for projects based on local resources. Environmental and socioeconomic conditions should be developed for the host governments to use as a reference.
- To identify potential environmental risks for mitigation measures, there is a need to develop ‘Robust Monitoring and Evaluation Frameworks’ that are readily available to the public. These frameworks should outline clear metrics and indicators against which progress of various initiatives under BRI can be systematically assessed and their outcomes tracked to identify potential risks.
- Project developers should engage in securing an independent Environmental Impact Assessment (EIA) of each project, with oversight from the financial institutions involved in project finance to align with internationally recognised best practices such as the World Bank Environmental and Social Standards (ESS) or International Finance Corporation (IFC) Performance Standards. These standards should encompass elements such as disclosure, public participation, and industry-specific EIAs, ensuring thorough assessment and mitigation of environmental impacts.

Financing Low-Carbon Development under BRI

- To improve the financial viability and efficiency of BRI projects, it is recommended to prioritise financially sustainable ventures while minimising losses in non-profitable endeavours. This entails a strategic focus on smaller-scale projects that are both easier to finance and quicker to execute, both within China and internationally. Particularly in the domains of infrastructure and energy, emphasis should be placed on

scalable solar and wind investments, leveraging local conditions conducive to renewable energy grid integration.

- Expedite support for partner countries with limited fiscal space and debt crisis by introducing debt-repayment schemes such as debt swaps or nature-performance bonds.
- In response to non-performing investments within the BRI, it is imperative to develop socially and environmentally conscious phase-out strategies. Of particular concern is the significant proportion of announced coal-fired power plants that have been delayed, posing reputational, social, and environmental risks. To address these challenges, collaborative efforts involving financial institutions, insurance companies, developers, local governments, and relevant Chinese authorities are essential.
- To enhance effectiveness of carbon emissions trading and promote liquidity in the market, it is advisable to expand the scope of the carbon market to encompass additional industries. Financial institutions should actively engage as intermediaries to facilitate efficient carbon trading, fostering innovation in carbon financial products.

Expediting Just Energy Transition

- Implement tailored incentive schemes for financial institutions, aligning with the primary goal of fostering growth of green financial markets and the secondary goal of promoting green economic growth. These schemes should be risk-adjusted and policy-adjusted, offering varied incentives to ensure sustained progress towards green objectives.

Greening of CPEC

- Prioritise modernisation of outdated grids by investing in its modernisation through B2B engagements and PPP models between Pakistan and China.
- Pakistan should broaden its bond issuance strategy by exploring opportunities in China's capital market, particularly through RMB-based Dim Sum and Panda Bonds, as the Chinese market offers access to substantial liquidity.
- As Pakistan embarks on the journey of CPEC 2.0, there is a need to diversify investments particularly in the energy sector to further explore:

- i) off-grid RE based solutions; ii) localisation of Renewable Energy Industry across the SEZs; iii) exploring green minerals; iv) localisation of EV supply chain; and v) actively engage in fostering cooperation in digitalisation, and AI.
- Explore alternate financing mechanisms such as debt swaps with China to address ongoing financial challenges and debt crisis of Pakistan. Further, to bring consistency, there is a need to establish policy frameworks with constitutional guarantees to prevent retrospective changes, foster stability and gain trust.

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Food Security and Sustainable Agriculture

Feeding the Future: Vision for Sustainable Food Security in Islamic Nations

Dr Masoud Jarallah Al-Marri

Sustainable Agriculture: Pakistan's Path to Food Security

Zafar Masud

Sustainable Development, Climate Change and Options for Regenerative Agriculture in Pakistan

Dr Kashif Majeed Salik & Mobeen Ali Khan

Transforming Pakistan's Agricultural Sector: A Comprehensive Approach to Sustainable Practices and Food Security Enhancement

Zafar Masud

Feeding the Future: Vision for Sustainable Food Security in Islamic Nations*

Dr Masoud Jarallah Al-Marri, Chairperson Executive Council,
Islamic Organization for Food Security (IOFS)

Your Excellency Dr Arif Alvi, President of the Islamic Republic of Pakistan; Your Excellency Ms Mushaal Hussein Mullick, Special Advisor to the Prime Minister on Human Rights and Women Empowerment, Government of Pakistan; Your Excellency Ambassador Shafqat Kakakhel, Chairperson, BoG, SDPI; Your Excellency Dr Abid Qaiyum Suleri, Executive Director, SDPI; Distinguished Experts and Colleagues; Ladies and Gentlemen and Dear Participants, Assalam-o-Alaikum!

It is with extreme joy and delight that I stand before you on behalf of the Islamic Organization for Food Security (IOFS) to share a few words on the theme of this important gathering, at the Twenty-sixth Sustainable Development Conference - a beacon of hope in the challenging times we face. The theme, '*Light at the End of the Tunnel: Hope in Times of Despair*', underscores the pressing need for innovative solutions to the unprecedented global challenges that confront us. Before starting on the critical topic of food security, allow me to extend a word of thanks and appreciation for being here today to share our vision on such critical topic. The presence of H.E. Dr Arif Alvi, is testimony of the commitment of the higher authorities of this country on the matter at hand.

The Islamic Organization for Food Security (IOFS) is a specialised agency of the Organisation of Islamic Cooperation (OIC), dedicated to ensuring food

* Keynote Address delivered at the Inaugural Plenary of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 20 November 2023 in Islamabad, Pakistan. It was transcribed by Asim Zahoor from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete address, as delivered, can be accessed at:
<[<https://www.youtube.com/embed/cXKYBR4pAYU?si=a6GU0z3lyMGUNi4x/>](https://www.youtube.com/embed/cXKYBR4pAYU?si=a6GU0z3lyMGUNi4x/)>.

accessibility to millions even during challenging times. It is not an overstatement to say that the IOFS serves as a beacon of hope for many in the Islamic geography. The IOFS has been at the forefront of addressing three essential aspects of food security: Availability, Accessibility, and Adoptability. These pillars are the foundation of our quest to secure food for all, even as we face complex challenges.

In a world that is constantly changing with challenges like climate change, conflicts, natural disasters, and changing consumer preferences, the IOFS stands as a paragon of transformative solutions. I take note that it is important to promote and enhance technology and trade, to utilise a local resource to create a more secure and sustainable food future.

Amidst global turbulence, the IOFS has not only advocated for change but also implemented it. The organisation has introduced several programmes designed to manage the complexities of food chain crises and ensure food security within the IOFS's Member States. These programmes take a comprehensive approach, encompassing Prevention, Mitigation, and Adaptation, as we navigate the intricate landscape of food security challenges.

The IOFS recognises the power of collaboration. It works in harmony with the OIC Member States, OIC's relevant Member States, and international organisations to:

1. Generate data and craft strategies grounded in science and data.
2. Promote synchronised strategies and integrated, multisectoral approaches to address the multidimensional nature of climate change.
3. Enhance the resilience of farmers by advocating for climate-smart agricultural practices, sustainable water resource management, and increased agricultural productivity.

To address this complex issue, the IOFS calls for global action and encourages the launch of diverse programmes and initiatives within its mandate. Notable examples include the 'Africa Food Security Initiative' and the 'Afghanistan Food Security Program', both reflecting an unwavering commitment to sustainable solutions within the Muslim majority countries.

Furthermore, the IOFS recognises the importance of financial resilience. It actively forges partnerships to ensure debt sustainability, a critical factor in maintaining agricultural practices and food availability, especially during challenging times.

The IOFS excels in political coherence and development, bridging political divides and fostering cooperation among Member States. It stands as an exemplary model of how collaboration can transcend political differences for the greater good.

As we engage in the discussions and sessions of this Conference, let us reflect on our past experiences, drawing valuable lessons to shape more resilient economic, foreign, and social policies that safeguard food security. By working in unison, we can find the 'Light at the End of the Tunnel' ensuring that hope persists even in times of despair.

In conclusion, the IOFS, with its unwavering commitment to food security and sustainability, offers hope in these challenging times. Its achievements and efforts inspire us to join hands and create a more sustainable, resilient, and food-secure South Asia and beyond. It is through collective efforts that we can illuminate the path towards a better future.

Sustainable Agriculture: Pakistan's Path to Food Security*

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Zafar Masud, President and CEO, The Bank of Punjab, Pakistan

It's a privilege for me to be a part of this illustrious panel on agriculture and climate. Both are technical, complex and diverse subjects. One can't consider him or herself to be an expert on the subject especially with luminaries of agriculture and climate around you like we have today in this discourse.

Given the expertise on the stage, I would like to try and contribute to the dialogue on how finance and economics, which I know relatively better, can assist in achieving sustainable agriculture and eventually, food security. Since climate and agriculture are bosom buddies, so both these topics will be covered interchangeably and synonymously by me during my talk, and you may have to excuse me for confusing you on this at times.

Let me start with a few facts on the topic.

There are many facts about the topic, but I've confined myself to only five. There is a myth and Mr Kazim Saeed talked about that myth last week in his very enlightening article in *Dawn*. It's about the real contribution of agriculture in the economy. I won't narrate it because Mr Kazim has covered it very well last weekend. I'll just give you a few facts about it.

A distorted narrative has been constructed over the past two to three decades, primarily benefitting the services sector, which I am also a part of. According to this narrative, agriculture's direct contribution is merely 23%, justifying fiscal concessions to the industry. We have done research at Bank of Punjab jointly with PIDE and the Planning Commission and we deduced a conclusion (which was also quoted by Mr Kazim in his article) that the indirect contribution of agriculture

* Special Remarks delivered at the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 22 November 2023 in Islamabad, Pakistan. The remarks were transcribed by Maheen Rehan from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete remarks, as delivered, can be accessed at: <<https://youtu.be/JTPJQqBrs8>>.

is 45% towards the economy and this is based on the backward and forward linkages that has been devised by ADB between agriculture and the other sectors. The agricultural sector holds significant potential, particularly in crop production, where there's a real opportunity for import substitution and boosting exports. Combined, these factors could positively impact our current account by approximately USD 15 billion. With the right policies, we could effectively address and potentially correct this situation.

The second one is aquaculture. Pakistan has a coastline of 1,046 km and we barely export any fish. Current annual exports are close to USD 500 million which has been stagnating since 2017, however, the potential is over USD 2 billion in exports as per the BOP and SDPI joint research on blue economy. Meat exports' contribution towards total exports is merely USD 350 million whereas it is estimated to have a potential of over USD 10 billion with the right investment in a committed fashion for the next five years. Fruits and vegetables have less than USD 500 million in exports, and it is mainly wasted due to lack of supply chain infrastructure and branding. Export potential could be another USD 5 billion if not more.

The third fact is that the sector is a victim of four levels of inflation. Firstly, it suffers from both direct and indirect imported inflation through its inputs, such as energy, making it particularly vulnerable to external price increases. Secondly, due to the essential nature of agricultural products, demand remains robust regardless of price changes, leading to persistent demand-pull inflation. Thirdly, there is 'greed inflation,' which is particularly relevant here. In an environment of rising prices, wholesalers and retailers often exacerbate the situation for consumers by increasing their profit margins. Lastly, 'shrink inflation' occurs when sellers reduce quantity of goods while maintaining prices, effectively diminishing the value for money received by consumers. These factors collectively impact the sector, especially noticeable in how food quantities are adjusted to preserve profit margins.

The fourth fact concerns the deep connection between food insecurity, human development, and the economic security of the country. Notably, livelihood, nourishment, and gender participation are all significantly influenced by food security. According to the Ministry of Health and UNICEF's National Nutritional Survey from 2018, a concerning 36.9% of households in Pakistan are considered food insecure, with 18.3% facing severe food insecurity. Given recent challenges,

it's highly likely that these figures have worsened, and I'll explain the reasons for this deterioration

Firstly, population dynamics play a critical role, and while you are likely familiar with these, it's worth noting that Pakistan's population growth rate is 2.55%, significantly higher than the global average of 1.12%. Sustainable agriculture, which is crucial for livelihoods, faces challenges particularly from smallholder farmers. These farmers, who constitute 63% of the population and own five acres of land or less, experience severe resource constraints and increased vulnerability to climate change. Additionally, about 67% of rural women employed in this sector face similar challenges. Another major concern is food wastage. Globally, nearly 30% of agricultural land produces food that is ultimately lost or wasted, a statistic underscored in the latest United Nations report. Given Pakistan's specific eating habits and food storage dynamics, this percentage is likely even higher locally and expected to grow in the future.

The last and most crucial point I want to discuss is the mismanagement of subsidies in the agriculture sector. Allow me to share an observation that might surprise you: under the guise of supporting agriculture, this sector is arguably the second largest recipient of government subsidies annually, second only to energy. These subsidies are administered in various forms - whether directly or indirectly, explicitly or implicitly. They range from indirect support through the fertilizer sector to direct assistance via electricity and gas subsidies, not to mention concessional financing. There are many pockets from where the sector gets the support and rightly so. I personally am a big supporter of extending subsidies to the sector in line with global trends.

In Pakistan, the allocation of subsidies in the agriculture sector is notably inefficient, with the intended benefits often lost in transaction. According to the 2021 PIDE report, the fertilizer sector alone receives PKR 200 billion annually in subsidies intended to support agriculture. Similarly, the stock of commodities is burdened with a circular debt of PKR 1 trillion at both the provincial and federal levels. Despite these substantial subsidies, there is no corresponding improvement in agricultural productivity. In fact, productivity has been faltering, suggesting that these subsidies are mismanaged and detract from, rather than enhance, productivity. For instance, excessive subsidies encourage overuse of fertilizers, degrading soil quality and adversely affecting the climate. Additionally, they contribute to the use of substandard seeds, which directly impacts

productivity. If time allowed, I would go deeper into this issue, using Ireland as an example, where over-fertilization has severely damaged land quality - a situation that could very well mirror our own and further exacerbate climate issues.

Let's explore potential actions that can advance sustainable agriculture and food security. Our primary goal should be to enhance productivity levels. I propose four main actions:

The first action calls for homegrown, tailored solutions. Agriculture and climate are among the most dynamic sectors, yet they present more unknowns and uncharted territories than any other. The environment and conditions can vary dramatically from one plot of land to another, regardless of their size or proximity. These variations occur seasonally and depend on the type of cultivation or the nature of business during the plantation cycle. Much like in climate change and decarbonisation, or even in sectors like education and healthcare, while the challenges may be widespread, the solutions must be local. What works in one location may not be effective in another, and this principle is particularly applicable to our situation.

Generally speaking, when we talk about our economic policies, innovations at the forefront have to be adapted and sometimes transformed to suit the peculiarities of the place in point and because place-specific conditions are constantly changing, local adaptation rarely comes to an end. This ongoing adaptation of innovation to the economic social and political circumstances of a particular place should be contextualised as very rightly said by Sabel and Victor in their book *'Fixing the Climate'*. This is the starting point for finding any effective and efficient specific tailor-made solution to the problems at hand at both macro as well as micro level in this sector.

A second solution to the problem is that these solutions should be all inclusive and fully encompassing. Given the fact that sectors are all interlinked as I talked about climate as well and the other sub-sectors too. Sustainability of climate and agriculture needs 360-degree inclusivity and collaboration starting from government's direct intervention, to giving leeway to private sector, to create markets, to provincial and federal government, to recognition of the role and contribution of the middleman. I think they are very much part and parcel of the equation, and we can't just totally ignore them. Research institutions, academic

advisors and experts are all essential in achieving a breakthrough in sustainable agriculture. Collaborative and cooperative effort is the name of the game.

Furthermore, human development needs to become a major driver of policymaking in the food security context. Each sub-sector – livestock farming, aquaculture – requires specific attention and policies for nurturing of this sector and contribution to the overall economy.

The third solution is to control food wastage - something in our control. Efforts to control food wastage can be practical and actionable through establishment of community level storage facilities and distribution networks coupled with educational campaigns to promote responsible consumer behaviour. This approach ensures that the food produced reaches its intended consumers, reducing wastage and enhancing overall food security through the use of technology as in the United Kingdom and European Union. However, it's important to recognise that while science can make strides, changing human behaviour remains a challenge. We need a similar campaign within our societies and communities desperately and I am starting it today with this address.

Last but not least, the most important perhaps and my favourite, is the review and fixing of subsidies transmission. We need to give immediate attention to fix this flaw. Moving away overall from trickle-down to a bottom-up approach in the transmission of subsidies.

Targeted subsidies using the NSCR's scorecard is the name of the game and that is also based on using quality inputs, time bound and performance-driven to make the whole subsidy offering agile and effective. With this paradigm shift in subsidy allocation, agriculture by default becomes the biggest beneficiary as the most poor and vulnerable are attached to the sector whether it's agriculture or aquaculture. It has one of the biggest potentials for import indigenisation and exports enhancement including livestock and fish as I had mentioned earlier. The subsidies should be aimed at providing advice to farmers, and then following through on the right amounts and qualities of chemicals and inputs, particularly seed in the case of crops, and dietary in the case of livestock, with the aim of achieving the best productivity from each and every farm to the maximum extent possible. Concessional financing facilities and insurance offering at the provincial and the federal levels must be revisited and restructured in consultation with stakeholders to make it more effective and efficient than the way it's being

currently offered or packaged. Budget allocation towards R&D is an absolute must, for better seed production and other inputs like liquid chemical injection through drip irrigation based on biogas production.

At the end, let me conclude by saying that climate issues and, to a significant extent, agriculture and its various sectors are often viewed through a socialist lens. However, as we grapple with prevailing capitalist ideologies, my stance is clear: I am indifferent to whether a solution is labelled socialist or capitalist. The best solution, in my view, is the one that most benefits my country.

Addressing climate issues effectively requires embracing them as part of a socialist agenda, whether we like it or not. This is not just a local issue - it's a global reality we need to acknowledge. For a developing country like ours, relying solely on market dynamics isn't sufficient - these issues are deeply intertwined with the welfare of our people and nations. Agriculture and climate impact us on both a national and international level, more so than perhaps any other sector. I strongly urge you to read Piketty's 'Time for Socialism,' where he explores this argument in detail.

Government support and subsidies are essential for enhancing productivity and contributing to the overall economic wellbeing. The government should not hesitate to provide support, but it must do so intelligently and strategically through a PPP framework. While these efforts should align with a socialist agenda to ensure equitable benefits but if the government lacks the capacity to implement these measures alone, a robust PPP framework must be established. This approach will help us advance sustainable agriculture and food security in the future.

Sustainable Development, Climate Change and Options for Regenerative Agriculture in Pakistan *

Dr Kashif Majeed Salik & Mobeen Ali Khan**

Abstract

This chapter explores the imperative of integrating regenerative agriculture (RA) practices within Pakistan's agricultural framework to combat the multifaceted challenges posed by climate change and sustainability concerns. With in-depth analysis of existing agricultural sustainability issues, the study emphasises the transformative potential of RA in enhancing soil health, biodiversity, and ecosystem resilience, thereby promoting sustainable and productive agricultural practices. Through a literature review and insights from a plenary session at the 26th Sustainable Development Conference (SDC) of the Sustainable Development Policy Institute (SDPI), the discussion outlines the current landscape of agricultural practices in Pakistan, global perspective on RA, and stakeholder views on transitioning towards regenerative methods. It culminates in offering strategic recommendations aimed at fostering RA adoption, enhancing policy support, and stimulating collaborative Research and Development (R&D) efforts to ensure food security, environmental sustainability, and economic viability in the face of escalating climate threats.

* This chapter has been approved as a *Policy Brief* by the referee.

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Introduction

Ensuring sustainable development is a daunting challenge, particularly in developing countries like Pakistan. Rapid rise in climate change and environmental degradation around the globe has highlighted the importance of incorporating a sustainability approach in all sectors of the economy. In particular, environmental sustainability has been linked to an ever-increasing demand for green growth practices, primarily to reduce environmental damage through resource-efficient approaches for better ecosystem health and restoration, in turn, supporting a human well-being outlook. In this regard, social, human, economic, and environmental concerns of sustainability require concerted efforts that work for all, at different scales and across economic sectors.

Sustainability ideas have evolved over time on the premise of conserving natural resources and minimising environmental damage for future human utility and consumption, without which human well-being may deteriorate. The sustainable development approach ensures that human-ecological support systems such as agriculture, are sustained for future growth through incremental changes (Gibbons 2018). In this regard, Regenerative Development (RD), that goes beyond sustainable approaches and provides system-wide techniques for a variety of development strategies, offers a transformational approach to global development issues, growth, and outcomes. RD outlines development as a 'system of developmental technologies and strategies that work to enhance the ability of living beings to co-evolve, so that the planet Earth continues to express its potential for diversity, complexity, and creativity through harmonising human activities with the ongoing evolution of life, even as we continue to develop our potential as humans' (Mang and Reed 2020).

The essence of RD is integration of existing socioeconomic and ecological approaches to understand complex system interplay through co-creating frameworks for actions. For this, Mang and Reed (2020) provide three key phases for regenerative practices. The first is concerned with the evaluation of the whole system's actors and enabling conditions, i.e., how human activities within a set of cultural, economic, geographic, climate, and ecological systems are evolving and how they become a part of it rather than controlling it. Second, how to translate such assessments into integrated plans and designs for regenerative activities creating ecosystem synergies for increased productivity. Third, how to foster a culture of co-evolution as stakeholders become aware of integrated social,

economic, and environmental opportunities that have emerged over time. Thus, RD approaches place more emphasis on qualitative assessment of sustainable development opportunities rather than quantitative alone.

How RD can be extended to safeguard social equality, diversity for farmers, and consumers and better natural resource management in agriculture is a big question. Linked to this are the ethical considerations about how devise sustainable policies and plans to uphold societal norms and values under which they are operating. Likewise, how the RD approach can help the agriculture sector avoid risks, transform environmental actions, and build better relationships among stakeholders for better sustainability is a challenge as well as an opportunity. This chapter aims to introduce and elucidate the concept of RD, an approach transcending traditional sustainable development methods, offering a holistic, transformative strategy for global development issues. In this context, the aim is to:

1. Introduce and highlight the importance of regenerative development for the agriculture sector in Pakistan.
2. Employ a case study approach in showing how small-scale initiatives by the private sector can contribute to regenerative development in agriculture in Pakistan.
3. Provide key recommendations that can trigger regenerative agricultural approaches in Pakistan.

Apart from the introduction, the chapter consists of a brief section on the methodology and understanding sustainability issues for agriculture in Pakistan. The next section briefly describes the regenerative idea and approach, while the subsequent section provides the stakeholders perspectives on climate change, regenerative agriculture's current and potential practices, and approaches. The last section furnishes conclusions and recommendations.

Methodology

This chapter is based on a literature review as well as discussion derived during the plenary session on 'Sustainable Development, Climate Change, and the Options for Regenerative Agriculture in Pakistan – A Hope in Despair' organised

at the Sustainable Development Conference held in Islamabad in November 2023.¹

Understanding Sustainability Issues for Agriculture in Pakistan

The agriculture sector in Pakistan is facing many emerging challenges, including increased cropping intensities and the use of poor quality groundwater, which leads to waterlogging and salinity issues. These factors contribute to decreasing soil fertility, rising desertification, and inefficient use of fertilizers and pesticides, all of which have adversely impacted farm income and profitability over time. This has also rendered serious challenges to meeting ever-rising food requirements of the country. Some other sustainability challenges to agriculture in Pakistan are worth mentioning:

Land Use Change Dynamics: Land use change is a key impediment in enhancing crop production in the country. Currently, the total cultivated land in Pakistan is around 24.1 million hectares (ha), which is mainly stagnant (GoP 2022). In the last two decades, demographic changes, industrial and urban development, deforestation, and desertification of agricultural land (triggered due to declining surface and groundwater availability) have altered land use patterns dramatically, all of which endanger the country's already meagre food security situation (Aziz 2021).

Soil Fertility Challenges: Soil and land degradation are also critical for agriculture in Pakistan. Estimates show that out of a total of 18 million ha of irrigated cropped area, 7.2 million ha are saline or water-logged. The management of soil fertility for such lands is a difficult proposition amid rising and severe arid and semi-arid climate conditions, population pressure, and cropping intensities, besides other factors (Aslam 2016).

Declining Total Factor Productivity: Agriculture Total Factor Productivity (TFP), which measures the ratio of total agriculture outputs (crops and livestock) to total production farm inputs (such as fertilizers, machinery, land, capital, labour, and so

¹ Plenary session during the Sustainable Development Conference organised by the Sustainable Development Policy Institute, Islamabad, November 2023, <<https://sdpi.org/sdconference/Light-at-the-End-of-the-tunnel-Hope-in-Times-of-Despair>>.

on), is decreasing in Pakistan, compared to other countries of the region (IFPRI 2018). Inefficient fertilizer and pesticide use has resulted in environmental issues (such as soil fertility, water quality, ecosystem, and food safety) on the one hand, but has also resulted in higher production costs, lower yields, and lower farm product quality on the other (Abedullah 2020).

Small-scale Farming and Shrinking Landholding Sizes: Small-scale farming and shrinking landholding sizes are important issues in Pakistan's agriculture. According to the Agricultural Census of Pakistan in 2010, there are 8.26 million agricultural farms in Pakistan, with an average farm size of 2.6 ha. Many of these farms are still owned and cultivated by landowners. It is argued that small farms are unviable, which either leads to subsistence farming, which creates challenges for adopting new technology, and access to human and financial capital, and thus impacts productivity and profitability, or compels farmers, particularly rural youth, to leave farming and land and migrate elsewhere.

Geography, Climate and Cropping Patterns: Agriculture in Pakistan varies with geography and climate, making it complex to comprehend and plan. There are about ten agroecological² zones that differ in topography, climate, soil, land cover and use, cropping patterns, surface and groundwater availability, agronomic practices, crop varieties, and yield patterns. Many issues are emerging because of climate change, such as shifting crop suitability zones, land degradation, declining soil fertility, quality, and quantity of water for irrigation and drainage, and so on (Ahmad et al., 2019; Saeed and Salik 2022).

Climate Change Adaptation and Mitigation Needs: Climate change extremes are widely experienced in Pakistan. This requires efforts not only to identify localised adaptation needs for the agriculture sector to climate change but also to contribute to global efforts to mitigate Greenhouse Gas (GHG) emissions. Currently, GHG emissions from agriculture account for 223.45 Mt CO₂e (46%) from the total 489.87 Mt CO₂e at a national scale (GoP 2021).

Social Integration and Change: Agriculture in Pakistan, like other developing countries, is not purely an economic activity but has a mix of social and economic dimensions. In rural Pakistan, land ownership is the key source of wealth, social status, and (political) power, which shape the structure of rural society as well as

² Farming practices suited to local agriculture.

agricultural activities. Farming is either a prestigious activity carried on for generations or a subsistence practice to maintain household earnings and food security, with limited opportunities (such as rural-to-urban migration) to transition to other livelihoods. There is a need to consider the agriculture sector in Pakistan within the broader frame of social, cultural, and economic dimensions, rather than only as a production-maximising economic activity.

Regenerative Agriculture: Idea and Approach

Many ideas are being debated among researchers and policymakers around the world about ‘alternative’ versus ‘conventional’ agricultural approaches (Sumberg and Giller 2022). Conventional agricultural practices that emerged during the Green Revolution in the mid-nineteenth century focused primarily on the use of high-yielding crop varieties, intensive use of fertilisers and agrochemicals, farm mechanisation, and artificial irrigation to maximise food production. This has increased environmental concerns, particularly regarding soil fertility with rising waterlogging and salinity, desertification, and agro-based GHG emissions.

To address these challenges and promote agricultural sustainability, alternative approaches such as conservation agriculture, organic agriculture, precision agriculture, climate-smart agriculture, regenerative agriculture, and others have emerged over time. However, these approaches are not intended to replace one another, but rather to augment efforts to ensure agroecological and livelihood diversity, as well as socioeconomic viability to avoid negative externalities of conventional agriculture (Sumberg and Giller 2022).

In this regard, RD offers some pragmatic opportunities for unleashing a productivity surge and inclusive growth in the agriculture sector. The foremost principle of regenerative agriculture is related to soil management. Under the climate change adaptation and mitigation perspective, the IPCC Sixth Assessment report recognised the importance of such a practice for its holistic principles of promoting soil management through agroforestry, growing nutritious crop varieties, and developing regenerative culture and ethics among growers to ensure food security (IPCC 2022). In scientific literature, regenerative agriculture has the following characteristics:

Thinking beyond Sustainability: Regenerative agricultural methods require using natural resources in ways that go beyond sustainability. For example, approaches

to sustainable agriculture primarily concentrate on maintaining soil fertility and managing agroecosystems at a level that can be used for further cultivation in the short- and long-term periods. Regenerative agriculture methods, on the other hand, emphasise building soil quality and agroecosystem capacity so that the land is better off after harvest through a variety of methods, including manuring and mulching, perennial and intercropping techniques, etc. Thus, these techniques regenerate ecosystems and minimise environmental externalities, whilst improving human health and economic outcomes (Schreefel et al., 2020; Gabel 2015).

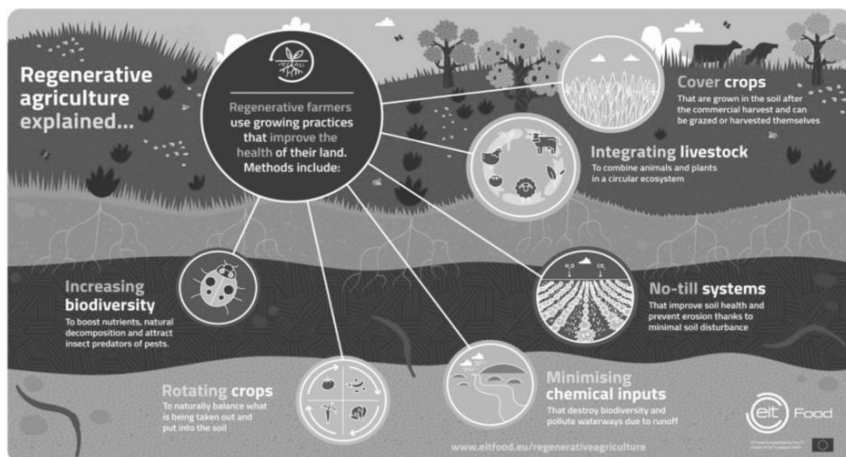
Promoting Holistic Management and Systems Thinking: By taking a holistic approach to complex socioeconomic and environmental problems, regenerative agriculture approaches are designed for diversity and inclusivity. These approaches, with a nexus of planet-soil-people-profit, strongly focus on improving soil quality and health by minimising external inputs (such as fertilizers, pesticides, etc.), mixed farming, crop rotation, less or zero tillage, and perennials. This results in improved ecosystem services, improved water quality and availability, reduced effects of climate change, and improved nutrient cycling, all of which help to regenerate the planet. As a result, such activities improve human health and food security while increasing farm profit (Schreefel et al., 2020; Francis et al., 1986; Rhodes 2017).

Improving Biodiversity: Improving agrobiodiversity is a critical challenge in the context of rising monoculture and declining agricultural genetic resources on a global scale, which has resulted in increased pest and disease attacks and a decrease in soil organisms (Giller et al., 2021). Aside from focusing on soil fertility, another important goal of regenerative agriculture is to promote plant and species diversity, Integrated Pest and Disease Management (IPM), agroforestry and alley cropping systems, and livestock integration to improve soil and crop biodiversity and ecosystem health (Elevitch et al., 2018).

Adapting and Mitigating Climate Change: Many regenerative agriculture practices focus on soil management with a special emphasis on increasing soil carbon (C) to increase crop yields, showing the potential to mitigate climate change (Giller et al., 2021). According to recent research from the Rodale Institute, regenerative agriculture has the potential to be 'zero carbon farming,' offsetting GHG emissions targets from other sectors (Hawken 2017; Moyer et al., 2020). A recent study in China found that soil C-sequestration through crop

rotation and other agronomic practices reduced GHG emissions by 10% to 30% (Gao et al., 2018).

Figure 1: Regenerative Agriculture



Source: Karim 2022.

Nestlé: Case Study for Regenerative Agriculture Promotion in Pakistan

Nestlé, one of the first companies to sign the United Nations' 'Business Ambition for 1.5°C' pledge, is working to achieve net zero emissions by 2050. Following a timeline, the company intends to reduce its emissions by 20% by 2025 and 50% by 2030 from its total 92 million tonnes of GHG emissions in 2018 - a benchmark year (Nestlé 2023). One potential source of the company's efforts to reduce emissions is the promotion of RA.

Nestlé is currently collaborating with 500,000 farmers and 150,000 suppliers around the world to implement incentive-based regenerative agricultural practices such as improving soil health and restoring ecosystems. The company offers farmers a premium for their farm produce, buys in bulk, and co-invests with farmers on their necessary capital expenditures (Nestlé 2020a). It is also ramping up its reforestation efforts, with a goal of planting 20 million trees per year for the next ten years to promote alley cropping systems. The company planted

95,000 trees in 2021 as part of its afforestation drive. These include 35,000 trees planted around its facilities and 60,000 moringa trees planted with farmers through agriculture services.

Nestlé Pakistan, in collaboration with the University of Agriculture, Faisalabad, is promoting agricultural Research and Development (R&D) for climate smart, regenerative solutions by signing an MoU in 2021 (Nestlé 2020b). The goal is to identify ways to improve soil health and fodder varieties that have the potential to reduce GHG emissions through improved carbon sequestration. Furthermore, the project seeks regenerative practices for soil C (above ground and soil carbon) sequestration potential for fodder, moringa plantation, and others to build capacities for measuring carbon emissions, methane, and nitrous oxide.

Conclusion and Recommendations

In Pakistan, regenerative agricultural practices are currently limited. Farmers have yet to fully understand its benefits and how soil regeneration, ecosystem restoration, and biodiversity can trigger yields, farm profits and human health. For example, due to a lack of outreach, deployment, and adoption strategies, no-tillage systems - planting crops directly into the land without ploughing or cultivating the soil - are not gaining much-needed traction. For this, the research-policy-practitioners (farmer/farm labour) nexus needs to be developed, co-acting as an integrated system to create an enabling environment for regenerative agricultural practices. In this regard, the following recommendations may help promote regenerative agriculture in Pakistan:

- The status of regenerative agricultural practices in Pakistan is limited and unknown. In this regard, a comprehensive review of current regenerative solutions for the agriculture sector that are applied in the Pakistani context should be carried out. Such baseline assessments provide an understanding of the feasibility and scalability of such practices. This can be achieved through investment in R&D.
- Promotion of partnerships between academic institutions, research bodies, and the private sector to launch comprehensive capacity-building programmes aimed at farmers, agricultural extension workers, and policymakers will both assist in deepening their understanding of regenerative agriculture practices and foster innovation techniques and technologies.

- Co-develop and test regenerative agricultural solutions at the local scale based on innovative holistic principles. Assess their feasibility financially, technologically, from a farmer-centric perspective, effectiveness in terms of adoptability ensuring inclusiveness across gender and vulnerable groups. Additionally, explore their potential to maximise synergies and minimise trade-offs with conventional agricultural practices.
- Strengthen agricultural services through training programmes, workshops, and on-farm demonstrations. These services should be provided by universities and research institutions to facilitate effective knowledge transfer and encourage adoption of regenerative agriculture among farmers.
- Develop a longer-term vision for institutional, incentives and multi-stakeholder analysis to identify capacity requirements, existing gaps and the suitable measures and incentives required to fill the gaps for the adoption of viable, inclusive, effective, and integrated regenerative agricultural solutions. Frequent engagement with relevant stakeholders will help in build broad-based support for relevant initiatives and consequently lead to establishment of robust monitoring and evaluation mechanisms to efficiently track both adoption and outcomes.
- Integrate regenerative agriculture concept and approaches into longer-term national agricultural planning such as the Pakistan Agricultural Transformation Plan. This integration will help mainstream regenerative agricultural practices throughout Pakistan.
- Financial incentives such as subsidies or tax breaks need to be offered to farmers who choose to adopt sustainable practices like no-till farming, cover cropping and crop rotation. This can be integrated into the Pakistan Agricultural Plan and supported at the provincial level. Furthermore, a regulatory framework needs to be introduced that supports the use of organic methods and integrated pest management.
- The private sector should collaborate with agricultural universities to augment R&D initiatives to bridge information gaps and spark innovative practices for regenerative agriculture. These activities should include capacity strengthening (e.g., workshops, training, sharing events, co-learning opportunities, networking) with researchers, practitioners, decision-makers, and farmers to build ownership and put research into use. A certification scheme that labels regeneratively produced agricultural products that allows consumers to make informed choices needs to be introduced. This should be coupled with public awareness

campaigns designed to educate the general public and consumers about its environmental and health benefits. Such initiatives will help build consumer demand for regeneratively produced products.

- Prioritising research on adapting to and mitigating climate change impacts through regenerative agriculture practices, emphasising soil carbon sequestration and crop yield resilient under varying climatic scenarios, is necessary to ensure alignment with the economic, environmental, and social goals of Pakistan's agricultural development. This, coupled with economic and social impact studies to evaluate, costs, benefits and cultural receptivity to such practices, will be essential for informed policymaking and securing stakeholder commitment.
- Enhancing Pakistan's agricultural resilience through prioritising certain regenerative agriculture practices for research is crucial. Practices such as cover cropping and crop rotation can improve soil fertility and carbon sequestration. Additionally, prioritising research on effectiveness of water-saving techniques such as drip irrigation and mulching to address water management challenges in arid regions is essential for creating a roadmap for successful adoption.

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Transforming Pakistan's Agricultural Sector: A Comprehensive Approach to Sustainable Practices and Food Security Enhancement*

Zafar Masud**

Abstract

Food security, as defined by the 1996 World Food Summit, refers to having consistent access to safe, nutritious, and stable food supplies that meet people's dietary needs for an active and healthy life. This comprehensive concept requires supply of high-quality food, access to resources, proper nutrition and healthcare and the ability to withstand disruptions. In Pakistan, the agriculture sector contributes 24% to the GDP and employs 37.4% of the workforce. However, it faces significant challenges, including policy inefficiencies, ineffective subsidies, and infrastructure limitations. Despite these obstacles, recent progress—such as a 6.25% growth in the sector and advancements in crop production—reflects the government's commitment to enhancing mechanisation and improving food security. However, climatic variations and natural disasters continue to pose serious threats to the sector's sustainability and resilience.

Overcoming environmental and resource limitations in Pakistan's agriculture requires implementing key practices such as drip irrigation for water conservation, precision agriculture for resource management, crop diversification for soil health, and cultivating drought-resistant varieties. Use of biofertilizers, variable rate technology, and improved land management can also enhance sustainability and productivity. However, challenges such as untapped export opportunities, rising prices, food shortages, and ineffective subsidies hinder progress. Addressing these issues through customised farming methods, stakeholder cooperation,

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reduced food waste, and restructured subsidies, backed by research and inclusive planning, is essential to boost agricultural development and ensure food security.

Introduction

To ensure food security, individuals must have consistent access to sufficient, safe, and nutritious food that meets their dietary needs and preferences, as defined by the 1996 World Food Summit. According to the Food and Agriculture Organization (FAO 2006), food security encompasses several critical dimensions including food availability, accessibility, utilisation, and stability.

For food availability, supply of high-quality food from domestic production or imports, including food aid, must be sufficient to meet the population's needs. Food accessibility is access to resources (entitlements) necessary for a healthy diet. Entitlements include commodity bundles individuals can control based on their community's legal, political, economic, and social systems, including traditional rights to communal resources. Then, utilisation is about achieving appropriate diet, clean water, sanitation, and healthcare for meeting all physiological needs. Non-food inputs play a vital role in overall food security. Stability ensures that populations, households, or individuals have reliable access to food and are not adversely affected by unexpected shocks (e.g., economic downturns or climatic disasters) or seasonal variations in food availability.

In Pakistan, the agriculture sector plays a pivotal role in the economy, contributing 24% to GDP and providing 37.4% of employment (GoP 2024). Despite its significance, the sector's full potential is hindered by policy misalignment, inefficient subsidy allocation, and infrastructural challenges. Recent data from Pakistan Economic Survey 2023-24 highlights a robust growth of 6.25% in the agricultural sector, with notable improvements in crop production and a substantial rebound in cotton ginning. Key developments include a promising Kharif season with strong export growth in rice and decreased cotton imports due to enhanced domestic output. These gains are attributed to effective credit facilitation, certified seeds, fertilizer use, and advanced on-farm management techniques. Several areas including food security, provision of targeted subsidies, and farm mechanisation are the government's focus for strengthening the agriculture sector for economic growth and development.

However, as a result of climate change and unprecedented natural disasters, the agrarian sector is under serious threats, which demands mitigation and adaptation strategies that are effective as well as urgent. In this chapter, current issues and targeted actions are proposed for ensuring food security and sustainable agricultural growth in Pakistan.

Sustainable Agricultural Practices for Food Security in Pakistan

Due to environmental and resource constraints, resource-intensive methods in agriculture have become unsustainable. To feed a growing population, the country needs to adopt sustainable agriculture as these methods enhance food production with a primary focus on resource conservation and environmental protection. After a detailed examination of relevant research, the following are the sustainable practices that can be employed in the agriculture sector in Pakistan:

Drip Irrigation: In this method, the water is used sustainably by delivering directly to the roots of plants, which will ultimately reduce evaporation. According to research by the International Water Management Institute, around 50% of water can be conserved by using drip irrigation as compared to the frequently used traditional method of flood irrigation (IWMI 2009).

Precision Agriculture: Precision agriculture is a technology-driven approach that refines and manages water applications by using tools like sensors, data analytics and satellite imagery based on the real-time moisture of the soil. Moreover, precision agriculture reduces the consumption of water while using resources efficiently (Padhiary et al., 2024).

Crop Diversification: Cultivating a uniform crop over extensive areas depletes soil nutrients and increases risks of pests and diseases. While to improve the soil's health and fertility crop diversification allows the cultivation of multiple crops like vegetables, legumes plants and other rotational crops that reduces the use chemicals on the produced crops (Ijaz et al., 2019).

Drought-Resistant and Heat-Tolerant Varieties: Climate change adaptation requires choosing crop varieties that can withstand drought and high temperatures. The International Centre for Agricultural Research in the Dry Areas

(ICARDA) suggests using climate crops like chickpeas and lentils which require less water and are well suited to dry conditions (ICARDA 2023). Moreover, conservation farming methods such as tillage and mulching help retain soil moisture; and improve resistance to unpredictable rainfall patterns.

Variable Rate Technology: In addition to water management, precision agriculture utilises rate technology to apply fertilizers and pesticides, in specific areas of a field. This targeted approach minimises waste and contamination.

Biofertilizers and Organic Farming: Another sustainable practice includes use of fertilizers that are manufactured from the organic substances called 'biofertilizers' along with organic farming practices to improve soil health and reduce reliance on harmful synthetic fertilizers. A 2019 study in *Environmental Science and Pollution Research* highlighted the efficacy of biofertilizers in improving crop yields and soil fertility while minimising environmental impacts (Kumar et al., 2022).

Holistic Land Management: A comprehensive approach to land management not only sustains soil health but actively enhances it through practices such as cover cropping, composting, and rotational grazing. The Rodale Institute reports that these regenerative practices positively affect soil health, water infiltration, and overall crop productivity.

Key Constraints in Sustainable Agricultural Development: From the Perspective of Pakistan's Economy

Economic Contribution and Misconceptions

The agriculture sector's direct contribution to Pakistan's GDP is commonly cited as 24% (Finance Division 2024). However, a collaborative research effort by the Bank of Punjab revealed that the sector's direct and indirect contribution is approximately 46.4% (Ali et al., 2021). This figure considers the significant backward and forward linkages between agriculture and other economic sectors, as identified by the Asian Development Bank (ADB). Specifically, the agricultural sector's value chain supports industries such as food processing, textiles, and services, significantly amplifying its overall economic impact. Misconceptions

about the sector's contribution stem from a narrow focus on primary production, neglecting these extensive linkages.

Export Potential

Pakistan has significant potential in food product exports. Below are some key competitive food items that can boost Pakistan's trade sector:

Crops: There is significant potential for import substitution and export enhancement in crops like wheat, rice, and cotton. For instance, rice exports alone contributed USD 2.2 billion in 2023 (Finance Division 2024). Enhancing the productivity and quality of these crops could reduce the current account deficit in billions annually.

Aquaculture: Despite Pakistan's 1,046 km coastline, fish exports are stagnant at USD 500 million annually, far below the potential of USD 1 billion (The Nation 2023). Introduction of modern aquaculture practices and infrastructure could boost production and exports.

Meat: With current exports at USD 507 million, the meat sector could potentially contribute more with targeted investments over the next five years (Business Recorder 2024). Key interventions include improving animal health services, enhancing feed quality, and establishing cold chain facilities.

Fruits and Vegetables: Exports in this category were USD 550 million approximately in 2023, largely due to inadequate supply chain infrastructure and branding (Finance Division 2024). Potential export value could exceed USD 800 million with investments in storage facilities, processing units, and global marketing campaigns (FPCCI 2024).

Moreover, food wastage is another critical issue, with nearly 30% of agricultural land globally used to produce food that is ultimately lost or wasted. In Pakistan, post-harvest losses in fruits and vegetables are estimated at 35-40%, highlighting inefficiencies in the supply chain (Ahmad et al., 2021).

Inflation

Imported Inflation: The sector is heavily reliant on imported inputs, including energy, fertilizers, and machinery, leading to increased production costs. For example, the import of agricultural machinery increased by 27% in 2023, reflecting rising dependency (Finance Division 2024).

Demand-Pull Inflation: As agricultural products are essential, demand remains high regardless of price increases, contributing to inflationary pressures. This is particularly evident in staple foods like wheat and sugar, where price spikes directly impact household budgets.

Greed Inflation: Middlemen and retailers inflate prices to maximise profits, exacerbating the impact on consumers. The fragmented nature of the supply chain allows for price manipulation, particularly during periods of shortage.

Shrinkflation: To maintain profit margins, sellers reduce product quantities, effectively increasing the price per unit. This practice is common in packaged foods, where reductions in net weight are not always apparent to consumers.

Food Insecurity and Human Development

According to the Ministry of Health and UNICEF's National Nutritional Survey of 2018, 36.9% of Pakistani households are food insecure, with 18.3% experiencing severe food insecurity. This situation is likely to be worsened by a high population growth (2.55% annually) compared to the global average (1.12%) leading to more pressure on existing resources and domestic producers. Smallholder farmers, constituting 90% of the farming population, and rural women, 36% of whom are employed in agriculture, face significant resource constraints and are highly vulnerable to climate change (IFAD 2023).

A study identified mixed impact of financial stability on agricultural productivity, as the output increased by 1.404% under positive financial conditions whereas it decreased by 11.441% under negative conditions. It concluded financial stability as a key component for productivity of farmers (Khurshid et al., 2024).

Subsidy Mismanagement

Agriculture is the second-largest recipient of government subsidies, second only to the energy sector. However, these subsidies are often misallocated, failing to enhance productivity. In 2023, fertilizer subsidies amounted to PKR 200 billion, yet productivity gains were minimal (Abedullah 2021).

Poor subsidy management encourages overuse of fertilizers, degrading soil quality and impacting the climate. Excessive use of urea, for example, has led to soil nutrient imbalances and reduced crop yields over time.

Circular debt in the wheat sector, resulting from delayed payments to farmers and inefficiencies in procurement processes, further undermines productivity. This debt has reached PKR 90 billion, burdening the sector with financial inefficiencies.

Proposed Actions

Tailor-made Solutions

Develop Context-Specific Agricultural Practices: Around 40% of the productivity gap between outputs from the average farm and those using modern practices can be fulfilled by enhancing farm productivity through technology adoption and credit accessibility (ZTBL 2020). In order to address regional constraints along with improving farm yield, farm mechanisation, quality seeds and crop insurance are essential. According to the Pakistan Agriculture Coalition (PAC 2021), deployment of machinery increases rice yields by 20%, reduces water consumption by 15%, and hence minimises post-harvest losses by up to 50%. To support small farmers, efforts should focus on scaling mechanised farming by introducing rental and leasing schemes.

Implement Localised Interventions: Access to high-quality seeds is essential for farmers. Currently, approximately 88% of the seeds used for cotton production are unbranded and of low quality, negatively impacting yields (Ali et al., 2021). This issue can be addressed by modernising seed regulations and incentivising the private sector to invest in seed production through subsidised credit for seed companies. These interventions could significantly improve crop output and support smallholder farmers in the region.

Inclusive and Collaborative Efforts

Promote Multi-Stakeholder Engagement: Collaborative partnerships between the public and private sectors, including think tanks and private companies, can drive innovation and improve access to farming technologies. Offering tax incentives for private sector investments in modern farm machinery manufacturing and warehousing could significantly boost productivity and reduce post-harvest losses.

Empower Middlemen (Arti) and Smallholders: Supporting smallholders, particularly through improved access to credit, can unlock significant productivity gains. Of the 8.3 million farmers in Pakistan, only 18% currently have access to formal credit (PAC 2021). Programmes like *Kamyab Kissan*, which offer interest-free loans, enable small farmers to adopt new technologies and boost yields, helping to bridge this gap and enhance agricultural productivity.

Control Food Wastage

Establish Community-Level Storage and Distribution Networks: Investments in cold storage and modern warehouse facilities can reduce post-harvest losses by 20% and increase farmers' income by 23% (USAID 2020). Expanding credit facilities for private investment in storage facilities and exempting tax duties on necessary equipment will encourage the establishment of these networks.

Promote Responsible Consumer Behaviour: Additionally, introducing Electronic Warehouse Receipts (EWRs) and a USD 5 million risk mitigation fund for warehousing can improve food security by ensuring access to storage for smallholders and reducing spoilage (Ali et al., 2021).

Reform Subsidy Allocation

Adopt Performance-Driven Subsidy Models: Implementing performance-based subsidies can encourage farmers to adopt better farming practices. Furthermore, subsidies on high-yielding fruits and vegetables, aligned with Punjab's Spatial Strategy 2047, could lead to a 54% increase in farmer incomes by promoting higher-yield crops like citrus and potatoes over lower-yield grains (Punjab Urban Unit 2016).

Review and Restructure Financing: Expanding the scope of crop insurance schemes, such as the proposed Area Yield Index Insurance (AYII), can mitigate risks from pests and extreme weather. This scheme offers comprehensive protection by paying farmers if yields drop below 70% of the area's average, making farming more sustainable (Ali et al., 2021).

Enhance Research and Development

Strengthen Collaborative Research: Public-Private Partnerships (PPPs) for Research and Development (R&D) can fast-track adoption of advanced technologies and practices, ensuring that the agricultural sector evolves alongside technological advancements.

Invest in Advanced Agricultural Practices: Encouraging R&D in disease-resistant seeds, precision agriculture, and water-efficient practices like drip irrigation is crucial. Seed regulation reform will enable development of higher-yield hybrids, benefitting small-scale farmers.

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Social Equity and Empowerment

Empowering Change: Women at the Heart of Sustainable Development

Mushaal Hussein Mullick

Empowering Communities through Poverty Graduation in Pakistan

Ahmed Awais Khaver & Dr Vaqar Ahmed

Private Healthcare Provision in Pakistan: Is it Straying into Uncharted Territory?

Dr Safdar Ali Sohail

Empowering Change: Women at the Heart of Sustainable Development*

Mushaal Hussein Mullick, Former Special Advisor to the Caretaker Prime Minister on Human Rights and Women Empowerment, Government of Pakistan

First of all, I am honoured and grateful to be here among such esteemed people, especially H.E. Dr Arif Alvi, President of Islamic Republic of Pakistan, grateful to the organisers of this event and to H.E. Dr Masoud Jarallah Al-Marri.

It is truly an honour and privilege to be standing here amongst all of you at the Twenty-sixth Sustainable Development Conference hosted by the esteemed Sustainable Development Policy Institute. Allow me to extend my heartfelt gratitude and thanks to Ambassador Shafqat Kakakhel Saheb, Chairperson, Board of Governors, Dr Abid Qaiyum Suleri, Executive Director, and the entire team of SDPI for their tireless efforts in organising this flagship annual Conference.

This Conference serves as a beacon of collaboration where diverse minds converge to explore innovative solutions, share invaluable insights and forge partnerships that will shape the trajectory of sustainable development.

Today, as we stand here at this pivotal moment in history - where the choices we make can shape the future course of the world - it is no mere coincidence that sustainable development and women's rights are intertwined. True progress cannot be achieved without the empowerment of over half of the global population.

In our pursuit of sustainable development, we must recognise that women are not just beneficiaries but catalysts of change. This empowerment is not a choice, it is

* Speech delivered at the Inaugural Plenary of the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference titled '*Light at the End of the Tunnel: Hope in Times of Despair*' on 20 November 2023 in Islamabad, Pakistan. It was transcribed by Dur E Nayyab and Asim Zahoor from the Sustainable Development Policy Institute; and subsequently edited for clarity. The complete speech, as delivered, can be accessed at:
<<https://www.youtube.com/embed/cXKYBR4pAYU?si=a6GU0z3lyMGuNi4x/>>.

a necessity. As we look towards the future, fostering partnerships becomes a cornerstone of our efforts and in the 2030 Agenda and its 17 Sustainable Development Goals, achieving gender equality and women empowerment is integral and puts women's role in the spotlight. First, due to its gender parity and second, because women play an instrumental role in the partnerships delivering the 2030 Agenda of the UN.

Studies have also shown globally that greater political participation of women results in higher investments in social protection, healthcare, and education policy because women, unfortunately, are starkly underrepresented all over the world in decision-making platforms. So, partnerships that transcend boundaries, borders, ideology, and sectors, are the driving force behind sustainable development in this era of globalisation. Governments, non-profits, businesses, and individuals must all come together pooling resources and expertise to address the multifaceted challenges that hinder progress.

When we specifically talk about women's rights, these partnerships become even more critical. It's not just about giving women a seat on the table, it's about ensuring that they have an equal voice and a say, equal opportunities, and equal representation. It's about dismantling the barriers that have held back generations and stifled the potential of half of humanity.

Education and empowering women are an investment in the sustainable development of communities and nations. It is a catalyst for economic growth, social progress, and environmental sustainability. No society can claim true development if it leaves its female force behind. Let us forge partnerships that go beyond rhetoric, collaborations that translate into meaningful action, support initiatives that educate girls, provide economic opportunities for women and challenge societal norms that perpetuate gender inequality.

In conclusion, the path to sustainable development and gender equality is one we must walk together. It requires a collective effort, a shared commitment, and fostering partnerships that will not only uplift women but uplift humanity as a whole. As we embark on this journey, let us be guided by the understanding that empowering women is not just a goal - it is the very foundation upon which a sustainable and equitable future stands.

Empowering Communities through Poverty Graduation in Pakistan*

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Ahmed Awais Khaver & Dr Vaqar Ahmed**

Abstract

The chapter aims to shed light on the current state of poverty in Pakistan and steps being taken to alleviate it. Research questions explore the work of organisations like Pakistan Poverty Alleviation Fund (PPAF), Akhtar Hameed Khan Foundation (AHKF), Rural Support Programmes Network (RSPN) and its partners. The discussion provides insight on how effective their strategies of poverty graduation are and how they can be sustained and aligned with the United Nations Sustainable Development Goals (SDGs). Evidence reveals that to scale these poverty eradication programmes, there is a dire need to motivate and involve the community at every level. It has been noticed that economic interventions like one-off unconditional cash transfer lose their impact after a certain time if they are not paired with employment opportunities such as teaching or enabling individuals to set up small-scale businesses. To sustain poverty graduation programmes, monitoring and recognition of the work by Third-Tier Organisations (TTOs), known as Local Support Organisations (LSOs) or Union Council Development Organisations (UCDOs), involved at the grassroots level is required at regular intervals. Lastly, there is a need to institutionalise current interventions like the Poverty Graduation Program to achieve long-lasting

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impacts. To achieve this goal, deeper collaboration is required between government and non-government partners. Microfinance institutions have been instrumental in providing financial services to impoverished communities and should continue to collaborate with the government for policy support, capacity building, monitoring and evaluation, and community engagement as well.

Introduction

As of 2023, poverty levels in Pakistan were estimated to reach 37.2%. Accounting for population growth, this means there would be 3 million more poor people in the country compared to the last observed measure in 2018 (The World Bank 2023). Table 1 refers to poverty indicators in Pakistan with 6.3% unemployment rate and 2.4% employed population surviving on a wage of USD 1.90 per day. Successive governments have struggled to address poverty related challenges despite being supported by non-government institutions and development partners (Ahmed and Qadir 2018).

Table 1: Poverty Indicators in Pakistan

Poverty Indicators: Pakistan	
21.9% Proportion of Population Living Below Poverty Line 2018	2.4% Proportion of Employed Population below USD 1.90 PPP a day 2022
6.3% Unemployment Rate 2021	63 Per 1000 Live Births Under 5 Mortality Rate 2021

Source: ADB 2024.

There are many reasons for poverty and one of those is the rural-urban divide. Statistically, poverty is more prevalent in rural areas of Pakistan. Rural poverty rates tend to be higher than in urban areas (Iqbal et al., 2018; Hussain et al., 2021). Similarly, Pakistan experiences significant regional disparities in poverty. The province of Balochistan and parts of Khyber Pakhtunkhwa and Sindh tend to have higher poverty rates compared to Punjab and urban areas like Karachi and Lahore. The growing population of Pakistan is also an undeniable factor with a relatively young population, with a median age of around 22 years. According to the 7th Population and Housing Census 2023, Pakistan’s population is 241.49

million (Malik 2024). A large population exemplifies a population paradox where there are many people to care for, but insufficient resources, leading to substandard living conditions and widespread poverty.

Income inequality also contributes to poverty index with a small portion of a population holding a disproportionate share of wealth, while many others struggle with limited access to resources. Undernourishment has increased in recent years (Table 2) due to hunger, poverty, and a lack of accessibility to food (ADB 2024). Due to growing inflation, people struggle to acquire balanced and healthy diets.

Table 2: Undernourishment Statistics (2024)

Statistics	Year	Value
Prevalence of undernourishment	2020-22	18.5%
Prevalence of stunting among children under 5 years of age	2022	34.0%
Prevalence of malnutrition(Wasting) among children under 5 years of age	2019	7.1%

Source: ADB 2024a.

Gender disparities are pronounced in Pakistan, with women and girls facing numerous challenges including limited access to education and employment opportunities (Tabassum et al., 2019). Gender inequality in education especially leads to a negative impact on rural poverty (Rahman et al., 2018). Access to healthcare services is limited in many parts of Pakistan, particularly in rural areas, which can lead to disabilities that can exacerbate poverty (Manzoor et al., 2016). At present, the health sector is only getting 0.7% of the GDP and most healthcare facilities lean towards diagnostic treatment instead of preventive measures (Habib et al., 2021). A significant portion of Pakistan's workforce is engaged in the informal economy which often lacks job security and social protection, making it difficult for people to escape poverty. Finally, Pakistan is prone to natural disasters, such as floods, earthquakes and droughts, which can push vulnerable populations deeper into poverty due to loss of livelihoods and assets as witnessed in the 2022 floods (Shahzad et al., 2021).

Every civilised society envisions a hunger-free state, and Pakistan has consistently prioritised poverty alleviation. Numerous short- and long-term programmes have been aimed at enhancing earning capacities of the masses. The general belief behind these poverty graduation strategies is well encapsulated by the quote from the Chinese philosopher Lao Tzu: ‘Give a man a fish, and you feed him for a day; teach him how to fish, and you feed him for a lifetime.’

Many prominent organisations in Pakistan are dedicated to addressing poverty and promoting socioeconomic development. A key initiative in this effort is the poverty graduation approach, which aims to uplift the lives of the most vulnerable and marginalised populations at the grassroots level (Hussain et al., 2021). The poverty graduation approach is a multifaceted poverty reduction strategy that provides comprehensive support to impoverished households to help them graduate out of poverty. This approach typically involves a combination of interventions, including financial support, skills training, access to resources, and mentorship. The goal is to empower beneficiaries to build sustainable livelihoods, increase their income, and ultimately break the cycle of poverty. This study aims to focus on the following research questions:

1. What are the overarching strategies and optimal methodologies for expanding poverty graduation programmes to guarantee enduring sustainability and sustained empowerment of marginalised communities post-project completion?
2. What is the role of community institutions in fostering grassroots democracy, building trust between the state and citizens, and promoting local governance? How can these roles be utilised to augment the effectiveness of poverty alleviation endeavours and harmonise them with governmental policies and initiatives?
3. How effective are poverty graduation approaches in altering economic preferences among households at the grassroots level?

Methodology

This research builds upon insights gathered from a panel discussion held on 21 November 2023, as part of the Sustainable Development Policy Institute’s 26th Sustainable Development Conference titled ‘Light at the End of the Tunnel: Hope in Times of Despair.’ The discussion was organised by the Pakistan Poverty Alleviation Fund (PPAF) and SDPI. The session was an effort to present endline

study results on the role of community institutions in fostering socioeconomic empowerment and to broadly generate a debate on poverty graduation in Pakistan.

The sources for this research include Key Informant Interviews (KIIs) and presentations from experts such as the CEO of the Rural Support Programmes Network; a Senior Research Fellow at the Lahore School of Economics; CEO of the Akhtar Hameed Khan Foundation; a former Economist at The World Bank; Acting CEO of PPAF; and a Professor of Economics at University College London. These discussions were supplemented by a comprehensive review of Third-Tier Organisations' (TTOs) census studies conducted by PPAF in collaboration with the London School of Economics, Duke University, and the University of Oxford (Ahmed et al., 2016).

The research employs a qualitative analysis of the discussion content, focusing on the four pillars of the poverty graduation approach: *Social Protection*, *Financial Inclusion*, *Livelihood Enhancement*, and *Social Empowerment*. It also provides a comparative analysis of cash transfers and asset transfers. The findings are grounded in the real-world application of poverty graduation strategies in Pakistan, as demonstrated by PPAF's programmes across 23 districts and 386 Union Councils. The transformative impacts of these interventions, evidenced by significant increases in consumption, income, and wealth among treated households, form the empirical basis of the research.

Discussion

Investing in poverty alleviation requires consideration of several key factors drawn from experience. Sustainable poverty alleviation hinges on fostering local economic development and leveraging local resources. This calls for localising value chains to enhance community involvement in economic activity and to sustain these projects for a longer period. There is a need to cultivate a shared sense of belonging and purpose through initiatives promoting social cohesion, civic engagement, and communal bonding. Local governance and empowering citizens with a greater voice in the decision-making process is crucial as well.

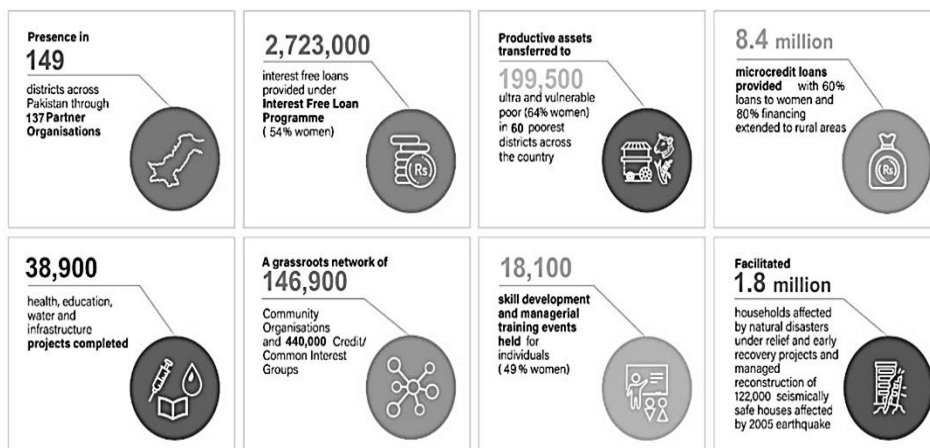
Policy Context for Poverty Alleviation

Pakistan's poverty alleviation strategy is driven by evidence-based policies within the Sustainable Development Goal framework, focusing on grassroots empowerment and asset transfer programmes to uplift communities and promote sustainable development.

The Government of Pakistan (GoP) has developed an overarching Sustainable Development Goal (SDG) Framework to prioritise national goals and targets and create a guiding document for future development strategies. Nationwide stakeholders have identified seven key pillars as indicators that resonate with the SDGs and serve as a critical guidepost for all Non-Governmental Organisations (NGOs) (MoPDSI 2023). The seven key pillars are as follows:

- Pillar I Developing Human/Social Capital
- Pillar II Achieving Sustained, Indigenous and Inclusive Growth
- Pillar III Governance, Institutional Reform and Modernisation of the Public Sector
- Pillar IV Water, Energy and Food Security
- Pillar V Private Sector and Entrepreneur-led Growth
- Pillar VI Improvement of National Competitiveness through a Cluster-Based Approach, Value Chain Development and Technology Innovation
- Pillar VII Modernising Transportation Infrastructure and Greater Regional Connectivity (MoPDSI 2023).

Figure 1: PPAF Experience: Contributions to Protecting and Empowering Vulnerable Populations



Source: PPAF 2023.

The National Poverty Graduation Approach is a flagship initiative of PPAF supported by the International Fund for Agricultural Development (IFAD) and the GoP and is based on evidence-driven strategies. This programme is designed to uplift impoverished communities by fostering grassroots change through social mobilisation, livelihood development and financial inclusion. It aims to decrease reliance on social aid by assisting families in transitioning from consumption support to asset transfer, interest-free loans, and microfinance (PPAF 2018).

Validation of outcomes of this approach through a global research study published in 2015 was a key milestone. The study relied on randomised trials in six countries, including Pakistan. In 2010, PPAF scaled up asset transfer programmes with the support of a World Bank grant which benefitted over 90,000 households across 44 districts (Banerjee et al., 2015). A value for money analysis indicated that asset recipients experienced incremental incomes up to USD 1,300 annually. During 2013, ongoing assessments by the Centre for Economic Research in Pakistan (CERP) focused on comparing the impacts of asset and cash transfers.

Community Involvement

There is no denying that community involvement is crucial for sustaining poverty alleviation strategies, with recognition, monitoring and auditing being essential components to ensure effectiveness. This practice is also mandatory to prevent projects from becoming inactive or 'ghost' projects.

Addressing the second research question on sustaining poverty alleviation strategies, the most important pillar is community involvement. (Vyborny et al., 2023) from the World Bank, along with others, conducted research with NGOs and TTOs in Pakistan. These included organisations at the village and Union Council levels. The research indicated that if TTOs are recognised for their hard work from time to time, they are more likely to sustain themselves and not become inactive in the longer run. However, it was noted that if community organisations are encouraged to report their data and results, it had better results. Finally, it was also found that recognition alone, without any sort of monitoring and auditing yielded no results as well. Additionally, after the initiation and implementation of any project, it is vital for its survival to be looked after by motivated people. This also helps in addressing broader policy questions even after project funding ends.

Shift in Economic Attitudes

It is evident that following financial interventions such as cash or asset transfers, the economic conditions of households undergo significant changes. Recipients of these economic interventions tend to exhibit shifts in economic preferences, often becoming more pro-market. However, these effects have been observed to lack persistence over time.

Rasul and Khan (2016) found that when the poor received any form of intervention, their social standing also changed. Their research revealed that, in most cases, households opted for livestock when given the choice of an asset to help them graduate out of poverty. Additionally, it was concluded that 95% of households preferred cash to asset transfers. It is understandable that after receiving the intervention, the ranking of households would change, and they would exhibit a better lifestyle (Ibid.). The question arises: does this impact their informal relationships and alter the social fabric of the village they live in?

The answer is yes. While the overall gains and noticeable interventions made it easier for the treated poor to graduate out of poverty, their relationships also changed. The reduction in economic inequality translated into people's attitudes and was studied along three dimensions:

1. Redistributive preferences
2. Pro-market beliefs
3. Trust in neighbours

Cerkez et al. (2024) found that big push interventions lead the treated poor to be less in favour of wealth redistribution, more pro-market, and exhibit greater trust in their neighbours. However, the study also confirmed that while these interventions can shift economic preferences, the impacts do not last. To test the hypothesis that voting is the best way to secure policy changes, the study examined the voting patterns in local elections.

From this discussion, it can be concluded that despite having a positive impact on poverty alleviation, every organisation faces the challenge of sustainability. A change in approach is required, adopting a holistic strategy that not only provides productive assets but also includes mandatory skills training to create income-generating opportunities (Suleri et al., 2014). Capacity-building programmes can enhance beneficiaries' skills and knowledge (Khan et al., 2016). There is also a need to facilitate access to microfinance or savings mechanisms to promote financial inclusion for investment (Javed et al., 2021a). To enable individuals to graduate out of poverty, ongoing guidance and support are vital to ensure their successful transition. Lastly, the monitoring and evaluation aspect cannot be ignored by organisations involved in any poverty alleviation programme. Rigorous monitoring mechanisms need to be implemented to track progress and measure impacts (Toru et al., 2019).

Conclusion and Recommendations

The most significant takeaway from this study is that community support is instrumental to the survival of any social service programme (Padda and Hameed 2018). NGOs play a crucial role in strengthening urban communities, particularly in preventing Third-Tier Organisations (TTOs) from becoming inactive after the initial two years. The involvement of non-political actors, such as district administration and think tanks working on social accountability, can help regulate

these programmes effectively (Abbas and Ahmed 2016). Members from poverty alleviation organisations emphasised the need to institutionalise the Poverty Graduation model. Additionally, there is a need to break gender stereotypes, as TTOs run smoothly when managed by women, who often track expenditures, record activities, and hold regular meetings efficiently.

It was also recognised that, on average, the impact of interventions begins to reverse after four years, underscoring the importance of developing sustainable plans. Simply transferring assets is not enough; there is a need to revamp the education and health sectors. This effort requires multiple inputs and sequential planning. The GoP must take ownership of this programme and assist organisations in implementing an outcome-based agenda to achieve greater results. The study offers the following recommendations:

1. Institutionalise the Poverty Graduation Model

- The Ministry of Poverty Alleviation and Social Safety should develop a comprehensive framework to ensure the sustainability of the Poverty Graduation model.
- The government should actively support and collaborate with organisations to implement an outcome-based agenda for more substantial and lasting results.
- Utilise digital technologies like the NADRA database for collecting data, geospatial technology for small-scale farmers, and e-learning platforms for small business owners to improve access to financial services, market information, and education among impoverished communities.
- Implement results-based financing mechanisms to ensure accountability and effectiveness of poverty alleviation programmes.
- Advocate for supportive policies and a conducive regulatory environment that facilitates the scaling of successful models and interventions (Javed et al., 2021b).

2. Strengthen Community Support and TTOs

- Promote community-based approaches by including Union Council and Tehsil level representatives in poverty elimination strategies to empower local populations in decision-making and project implementation.
- Support the development and scaling of TTOs to bridge the gap between initiatives of NGOs and grassroots implementation.

- Foster partnerships between TTOs and local governments for broader impact, using quantitative data to identify those in need of poverty alleviation programmes (Javed et al., 2020).
 - Encourage collaborations between local communities, social services organisations, and government officials to address interconnected challenges affecting poverty.
3. Develop Sustainable Plans
 - Recognise that the impact of interventions may reverse after four years, necessitating long-term and sustainable planning.
 - Adopt an integrated development approach that combines various interventions, including transferring assets, cash, and interest-free loans for a holistic poverty graduation strategy.
 - Explore innovative financing models such as social bonds, impact investing, and blended finance to mobilise additional resources for poverty graduation projects.
 4. Promote Gender Inclusivity and Revamp Education and Health Sectors
 - Encourage both men and women to manage and sustain poverty graduation projects by enhancing capacity-building programmes for acquiring new skills and running small-scale businesses.
 - Address the need for multiple inputs and sequential planning to support asset transfers with improvements in education and health.
 5. Support Social Innovations: Promote social innovations that address specific local challenges in poverty-stricken areas (Ahmed et al., 2019), such as the Ehsaas Programme, Benazir Income Support Programme, and *Kamyab Jawan* Program, which have been instrumental during tough times like the COVID-19 Pandemic (Rizwan et al., 2023).
 6. Reinvigorate Role of Provinces: Provinces can play a crucial role in this process by implementing targeted policies and initiatives aimed at addressing the root cause of poverty and uplifting disadvantaged populations. Here are few of the ways provinces can contribute to this cause:
 - Establish social safety nets for targeted assistance.
 - Invest in education and skills development programmes.
 - Improve access to quality healthcare services.
 - Support agricultural development and modernisation.
 - Facilitate access to microfinance and credit for small businesses.
 - Invest in infrastructure projects for rural and underserved areas.

- Empower women and marginalised groups through targeted initiatives.
- Promote community participation and ownership in development projects.
- Prioritise good governance and anti-corruption measures.
- Foster partnerships and collaboration for effective poverty alleviation efforts.

Policymakers and the Federal Government must ensure that poverty graduation strategies are aligned with national development goals and priorities. Achieving this goal requires constant collaboration between social welfare organisations, NGOs, and the Ministry of Poverty Alleviation. Common targets, such as Pakistan Vision 2025, should be maintained in focus to achieve the ultimate prosperity of the masses and the country.

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Private Healthcare Provision in Pakistan: Is it Straying into Uncharted Territory?*

Dr Safdar Ali Sohail**

Abstract

Private healthcare in Pakistan plays a pivotal role amid challenges in the public health sector and rising healthcare costs. This chapter underscores the need to understand dynamics of private sector involvement to address issues of healthcare access and equity. Although private providers serve a large portion of the population, persistent challenges related to service quality, accessibility, and financial burdens remain.

Pakistan's healthcare system faces severe challenges, including inadequate policies and governance, which negatively affect the labour market. Out-of-Pocket expenditures, primarily in the private sector, dominate healthcare spending, reflecting historically low public investment. The profit-driven approach in private healthcare exacerbates inequalities, particularly for vulnerable populations. Health sector liberalisation has led to excessive profit margins and weak regulatory frameworks, as seen in regional comparisons with India. To improve healthcare access and quality, several policy options are proposed: integrating public health with social security institutions; enforcing regulations on private healthcare; reforming medical education to include sociocultural perspectives; and prioritising primary care as a state responsibility. Targeting impoverished segments, investing in social determinants of health, and strengthening healthcare systems to prioritise marginalised populations are essential steps. It is also crucial to challenge neoliberal health policies that deepen inequities. Healthcare professionals should advocate for policies promoting health equity and societal well-being, moving beyond narrow professional interests to foster a more inclusive and sustainable healthcare system in Pakistan.

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Introduction

Private healthcare providers in Pakistan play a pivotal role at the intersection of public health challenges and financial constraints. With a lack of adequate public health infrastructure and rising healthcare costs, it becomes important to understand how the private sector fits into this challenge of ensuring improved access to healthcare as well as equity.

One major cause of financial hardship and poverty is excessive personal expenditure on health among those living in low- and middle-income countries. Pakistan's public health system coverage is insufficient and therefore necessitates increased involvement of private healthcare providers. Here, presence of private healthcare providers offers opportunities for growth as well as threats to the sector. Similar to many other low- and middle income countries, this group serves a large proportion of Pakistani people from different social backgrounds providing an array of services ranging from hospitalisation and traditional or paramedical remedies. Nonetheless, concerns regarding service quality, accessibility equity and financial consequences remain pressing (Datta and Chaudhuri 2022).

A growing global consensus recognises that in low- and middle-income countries (LMICs), private healthcare facilities are widely utilised, making it crucial to involve the private sector in the pursuit of Universal Health Coverage (UHC). The primary goal of UHC is to ensure that individuals and communities have access to essential healthcare services without facing financial hardship. In a study by Khalid et al., (2021), it was found that economically poor families and those with higher number of children spent less on healthcare than wealthier households with fewer family members. This suggests that families with limited resources may opt for sub-optimal healthcare or avoid costly treatments altogether, leading to a significant gap in meeting healthcare needs. This underscores the need for addressing financial barriers to access among marginalised groups in order to realise the aspirations of UHC and guarantee universal quality healthcare accessibility services.

The Problem

Provision of health services in Pakistan is in a dire state. Closer examination of the broader landscape, particularly in the most severely affected areas, reveals that the labour market bears the heaviest burden from poor policies and

misgovernance within the health sector. Overlooking the detrimental effects of these policies on the labour market would come at the nation's own peril. Furthermore, the pursuit of excessive profits within the health sector imposes disproportionately high social costs. Notably, the research community has yet to offer a comprehensive explanation for these critical issues.

In Pakistan, Out-of-Pocket (OOP) expenditures constitute 58% of the overall health expenditure. A breakdown of these OOP expenses reveals that 81% is utilised in the private sector, while 19% attributed to users of public health facilities (Khalid et al., 2021). Historically, Pakistan has consistently underinvested in healthcare, with public health spending amounting to less than 1% of its GDP and less than 5% of government expenditure allocated to health. According to the National Health Accounts (NHA) report for 2015-16, Pakistan heavily relies on the private sector for healthcare services, with approximately 85% of the total health expenditure occurring in private facilities. Among these expenditures, 58% are in the form of OOP payments, 1% contributed through private voluntary health insurance, and 35% is government expenditure on health (Khalid et al., 2021).

Drawing conclusions from the above, it is evident that health notions need to remain organically rooted in the deep sociocultural settings of a society. Pakistan's health paradigm is far removed from its own sociocultural context of healing. The focus on disease rather than healing, coupled with a profit motive leads to a system failure. The private health sector tends to cater to the wealthy and avoid difficult cases as well as the poor, exacerbating inequalities in access to healthcare.

Analysis

The disability-adjusted life years (DALYs) and healthy life expectancy in Pakistan paint a grim picture. Health social protection, a subset of the broader social protection system, is severely lacking. Pakistan's social protection system, which primarily relies on cash transfers, has proven inadequate in the wake of the recent spike in inflation. For example, in 2018, the Benazir Income Support Programme (BISP) was accessed by 7.2% of the populace, and 31% of Pakistanis were reported to be living in poverty. Ehsaas emergency cash transfers were received by 16.9 million families despite government predictions indicating that the COVID-19 epidemic would cause an estimated 18.5 million job losses (Gul 2021).

Monthly income transfers that are being given to the so-called poor households, without going into the details of exclusion and inclusion errors, are simply not sufficient to put food on the table, even for one-third of the month for a poor household.

The plight of Persons with Disabilities (PWDs) and the elderly has received little attention. There has also been no serious effort to prioritise employment within the social protection framework. Despite this, there remains a tendency to label income transfers as a comprehensive social policy and social protection system. Alternatively, one could liken the current income transfer system to a technologically advanced replica of Bait-ul-Maal, a traditional and outdated welfare institution. In the short-term, addressing social protection issues primarily through the lens of health is imperative. Such action would provide a crucial lifeline to individuals, enabling them to reduce their reliance on costly healthcare expenditures.

This task has proven more challenging than anticipated due to the persistence of outdated analytical frameworks, which rely on private health service providers to bridge the accessibility gap. There is a need to study healthcare as part of the services sector, particularly in the context of its liberalisation. While the liberalisation of goods has been a long-standing process, the liberalisation of services in Pakistan is relatively new, though rapidly expanding. Conceptually, the liberalisation of both goods and services markets promotes a profit-driven market civilisation, with fast-moving consumer goods and services reaching every corner of the country. However, policymakers are advancing along this path without fully recognising that the dynamics and consequences of service liberalisation, especially in the public sector, differ significantly from those of goods liberalisation.

In the context of healthcare, neoliberalism emphasises decentralisation to local levels, which can potentially lead to inconsistent availability and quality of healthcare across different regions. It also advocates for the privatisation of healthcare, shifting it from a public good to a private one. This individualist approach results in unequal access, as healthcare becomes dependent on income levels rather than being recognised as a basic right (McGregor 2008). As the global labour market undergoes structural changes, rising underemployment in affluent countries and economic instability in other regions are likely to exacerbate health disparities over time (Labonté and Stuckler 2016). Regrettably,

Pakistan has not exercised sufficient caution or attention to these critical distinctions. Consequently, the nation has proceeded to liberalise its health sector, albeit to its own detriment. Unlike the prevailing discourse among most health professionals, the focus has shifted towards examining the pricing and regulation of health service provision in South Asia. Pakistan's performance in regulating the health sector has made it a focal point for scrutiny, serving as a quintessential example of the neoliberal paradigm in the region.

In prominent research and discussion, various figures regarding OOP expenses, typically ranging from 55% to 80%, are frequently cited (Saeed et al., 2021). However, this issue is rarely approached from the perspective of private sector pricing practices. A recent study conducted in India uncovered a profit margin ranging from 1/3 to 2/3 between the total incomes of the health sector and the actual operating costs, suggesting that operating costs represent only 1/3 while profits constitute 2/3. There is an estimation at the Social Protection Resource Centre (SPRC) that this situation may be even more pronounced in Pakistan, with the ratio potentially ranging from 1/4 to 3/4 in certain cases.

Digging deeper into the Indian case, the average total operating cost for the entire health sector compared to total incomes is six times higher. The narrative surrounding profits in Pakistan's context amounts to blatant price gouging. Unfortunately, in a sector purportedly designated as a public service, the presence of an excessive profit motive is unmistakably evident. Collaboration with other research institutes to further investigate claims made in an article that medicines are being sold at significantly high prices by the private sector would be beneficial (Junaidi 2023). For instance, in India, the private sector charges up to 2.5 times more for the same medicine in various contexts.

Key factors considered for regional analysis include the quality of health regulations, with attention to the balance between voluntary standards and mandatory regulations. Another factor is effectiveness of regulatory coverage across different segments of the health system. For example, the Punjab Health Commission's website showed minimal complaints, raising concerns about the functionality of the regulatory system. In contrast, India experienced significant patient activism after the extension of Consumer Protection Laws to the health sector in 1995. Other aspects include effectiveness of implementation and the robustness of regulatory infrastructure, where Pakistan lags behind countries like

Bangladesh, Sri Lanka, and India. A citizen-centric view of health service provision reveals that Pakistan performs poorly within South Asia.

Policy Options

The idea that every impoverished person has an unalienable right to health can act as a foundational idea for healthcare policy. This aim underscores the duty of the government to guarantee that everyone has the chance to live a healthy life and emphasise the significance of equity in healthcare access. Targeted interventions to address health disparities, investments in social determinants of health, and fortifying healthcare systems to give marginalised communities' needs first priority, are examples of policies that are in line with this objective. It is important to:

1. Integrate employees' social security institutions with public health institutions and infrastructure. The government can streamline resources and expertise by combining these groups, which could increase the efficacy and efficiency of healthcare delivery. This may result in improved service coordination, employee access to healthcare, and possibly less administrative redundancy.
2. Address the domestic market for public services alongside the private sector's delivery of healthcare services. This strategy involves strict enforcement of relevant regulations from outside the healthcare sector, such as consumer protection laws, competition regulations, and limits on excessive profit margins. By applying these rules, the government can ensure fair competition, protect consumer rights, and curb monopolistic practices in the healthcare industry, ultimately enhancing the accessibility, affordability, and quality of healthcare services.
3. Start and expand primary care institutions, outreach programmes in underdeveloped communities, and supporting activities related to preventive care. The government may address health issues at an early stage, lessen healthcare inequities, and eventually enhance population health outcomes by concentrating on primary care.

The widespread belief that poverty and poor health are unavoidable leads to a risky complacency about the state of the health of those who are economically disadvantaged much too frequently. This complacency endangers not just people's well-being but also the country's long-term development and

competitiveness. Any progress gained thus far would be jeopardised if this trajectory were to continue for another 15 to 20 years, since it would surely create a labour market and economic landscape full of risks.

Expanding upon policy option 3, it is important to consider the consequences of continuing with neoliberal health policies that put deregulation and privatisation ahead of fair access to healthcare. Furthermore, it is imperative to tackle the fundamental conceptual misconceptions pertaining to the relationship between health, poverty, and social trust. In the absence of a clearly defined framework that directs policy decisions, one runs the risk of fostering damaging ideas that threaten the fundamental tenets of Pakistan's healthcare system.

Targeted interventions that go beyond conventional healthcare delivery methods are needed to address these inequities. Investing in socioeconomic determinants of health, like secure work, cheap housing, good education, and access to nutrient-dense food, can significantly improve health outcomes for vulnerable people. Policymakers have the ability to break the cycle of poverty and enhance the general health and well-being of society by tackling these fundamental social and economic determinants.

Furthermore, ensuring equal access to healthcare depends on fortifying healthcare systems to give marginalised groups' needs top priority. This entails making certain that healthcare services are sensitive to the particular requirements of various groups, culturally competent, and geographically accessible. It also necessitates removing obstacles that prevent people from accessing healthcare, such as social stigma, language hurdles, lack of insurance, and transportation problems. A significant barrier to successful regulation and reform is weakening of state capacity under neoliberal models. As the government's ability to provide emergency care and oversight diminishes, the population becomes increasingly vulnerable to health emergencies and the unchecked influence of market forces. Strengthening state capacity is, therefore, essential to ensuring effective healthcare regulation and safeguarding public health.

Healthcare workers also have a responsibility to extend their focus beyond their immediate field and recognise their broader social duties in light of the challenges outlined in this chapter. By actively engaging in efforts to address the structural determinants of health and advocating for policies that prioritise health equity,

they can play a crucial role in shaping a more inclusive and sustainable healthcare system.

Conclusion

To conclude, the pursuit of a neoliberal agenda in healthcare is not only shortsighted but also perilous. It is time to change to a more holistic strategy that prioritises the health and well-being of all citizens, regardless of financial background. Only through concerted efforts to dismantle existing barriers to access and address the root causes of health inequities can Pakistan truly fulfil the promise of Universal Health Coverage and ensure a healthier, more prosperous future for generations to come.

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Governance and Policy Conundrums

Towards Sustainable Consumption and Production: Assessing Pakistan's Progress on SDG 12

Ali Rehmat, Dr Shafqat Munir, Salman Danish, Muhammad Awais Umar & Ramsha Mehboob Khan

Effective Implementation of Carbon Markets in Pakistan

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State of Conflict and Collaboration among Diverse Stakeholders on Solid Waste Management: Reflections from Nepal

Dr Bishnu Raj Upreti

Towards Sustainable Consumption and Production: Assessing Pakistan's Progress on SDG 12*

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Abstract

Pakistan actively participates in the implementation of the 10YFP - 10 Year Framework of Programmes on Sustainable Consumption and Production Patterns, emphasising collaboration with developed nations leading such efforts. In 2016, the country formulated a National Action Plan (NAP) on Sustainable Development Goal (SDG) 12, focusing specifically on Sustainable Consumption and Production (SCP), aligning its national agenda with Agenda 2030 for Sustainable Development and strategically guided by the national policy document 'Vision 2025'. To assess the status of SCP in Pakistan, a methodological approach combining primary and secondary information sources was employed. This involved an examination of country-specific Voluntary National Reviews (VNRs), monitoring frameworks, and Ten and Five-year Plans. This chapter also reflects the discussions and recommendations provided by experts in a panel discussion titled 'Sustainable Consumption and Production in

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the Context of Circular Economy and Climate Agenda' held on 22 November 2023 during the 26th Sustainable Development Conference organised by the Sustainable Development Policy Institute. The study aims to provide insights into the current state of SCP in Pakistan, highlight existing challenges, and offer policy recommendations for further enhancement in this crucial domain.

Introduction

The idea of Sustainable Consumption and Production (SCP) is formally acknowledged in the Johannesburg Plan of Implementation, which was adopted in 2002 during the World Summit on Sustainable Development (WSSD). This signifies a global recognition of the importance of promoting practices that are environmentally friendly and socially responsible in the production and consumption of goods and services (Korcheva 2023). In line with this commitment, the South Asia Co-operative Environment Programme (SACEP) took a significant step in 2013 through the Governing Council Decision 10.2.2 aimed to actively promote SCP within the policymaking mechanisms of South Asian countries (Castro-Hallgren 2017). SCP focuses on the use of services and related products that meet basic needs and provide a better quality of life while minimising the use of natural resources, toxic substances and the emission of waste and pollutants during its useful life or the life cycle of the product so as not to jeopardise the needs of future generations (UNEP 2023).

SACEP aligns its efforts with the 'Asia Pacific Roadmap' outlined in the Rio+20 '10YFP - 10 Year Framework of Programmes on Sustainable Consumption and Production Patterns' which is currently involved in various activities and projects. These initiatives contribute to broader global efforts to integrate sustainability principles into the economic and policy frameworks of countries, ensuring a more responsible and environmentally conscious approach to consumption and production.

With the endorsement of the 10YFP in Rio 2012 and subsequent integration of SCP principles into the SDGs, cooperative frameworks have been firmly established. SCP is now acknowledged as an integral component of the 2030 Agenda for Sustainable Development. Specifically, it has been designated as a standalone Sustainable Development Goal (SDG 12) and recognised as a central element in numerous other goals and targets within the broader framework of 17 goals and 169 targets. This acknowledgement emphasises the

significance of SCP in fostering sustainable development across various facets of the global agenda (UNEP 2014).

Pakistan is actively implementing the '10YFP on Sustainable Consumption and Production Patterns', emphasising global collaboration with developed countries leading the efforts. The country has formulated the National Action Plan (NAP) on Sustainable Development Goal 12 (SDG 12), specifically focusing on Sustainable Consumption and Production (SCP). Adopted by the National Assembly on 19 February 2016, Pakistan integrated Agenda 2030 for Sustainable Development into its national agenda, with the NAP-SCP serving as the Secretariat for the 10YFP.

Led by the Government of Pakistan (GoP) and the Ministry of Climate Change (MoCC),¹ in collaboration with United Nations Environment Program (UNEP), European Union's SWITCH-Asia Programme, and support from the 10YFP Secretariat, the NAP-SCP aligns with specific sectors prioritised to address SDG 12. These sectors include Climate Change, Energy, Sustainable Food Systems, Sustainable Buildings and Cities, Sustainable Transport, Water, Land Ecosystem, Marine Ecosystem, Industry, and Education.

The formulation of NAP-SCP is strategically guided by the government's 'Vision 2025', providing a robust foundation for aligning national efforts with SCP practices. Serving as a critical roadmap, the NAP-SCP positions Pakistan to make significant strides in achieving the SDGs (SWITCH-Asia 2017).

Methodology

As a methodological approach both primary and secondary level information was used to assess the status of Sustainable Consumption and Production (SCP) in Pakistan. The process commenced with a thorough examination of country-specific Voluntary National Reviews (VNRs), monitoring frameworks, and Ten and Five-year Plans. In addition to these, other pertinent documents were reviewed to create a comprehensive map of SCP landscape in the country. The analysis considered the role of various policies in facilitating and implementing SCP, emphasising the involvement of Public-Private Partnerships

¹ Editors' Note: Now called the 'Ministry of Climate Change and Environmental Coordination.'

(PPPs), local organisations, and, where applicable, the role of local governments.

State of Sustainable Consumption and Production (SCP) In Pakistan

Pakistan, like many other countries, has recognised the importance of SDG 12 and has been making efforts to implement measures that align with its targets outlined in the SDC Agenda. The following indicator-wise steps have been taken by Pakistan for the implementation of the ‘Sustainable Consumption and Production Agenda.’

SDG Target 12.1: Implement the 10-Year Sustainable Consumption and Production Framework

The National Assembly of Pakistan unanimously adopted a resolution on 19 February 2016 to adopt Agenda 2030 for Sustainable Development as its own national development agenda. The formulation process of NAP-SCP was led by the GoP and the MoCC in collaboration with UNEP, the EU SWITCH-Asia Programme, and support from the 10YFP Secretariat. To address the 12th SDG targets, stakeholders prioritised specific sectors out of the 17 SDGs. The formulation of NAP on SCP was guided by the government’s ‘Vision 2025’ providing a strategic base for aligning national efforts with SCP practices. The NAP-SCP serves as a critical roadmap for Pakistan in achieving its SDGs (Fatima et al., 2020).

SDG Target 12.2: Sustainable Management and Use of Natural Resources

In 1992, Pakistan established the National Conservation Strategy (NCS) to confront environmental challenges and advance sustainable management of natural resources within the country. The primary focus of this strategy was on addressing issues related to biodiversity, water resources and other natural assets. The NCS provided a comprehensive framework, serving as a guide for the conservation and sustainable utilisation of these resources. The NCS advocated for systematic efforts to instigate meaningful change, placing a

strong emphasis on the significance of sustainable development within the specific context of Pakistan's environmental challenges. The strategy aimed to promote thoughtful and enduring solutions that would address the country's unique environmental issues while fostering long-term sustainable development (Banuri 1993).

The strategy outlined three overarching objectives: 1) conservation of natural resources, 2) sustainable development, and 3) improved efficiency in the use and management of these resources. To prioritise implementation efforts, 14 core areas were identified, leading to the design of 68 programmes that involved various sectors and partners. The NCS, therefore, played a pivotal role in shaping strategies and actions for the preservation and sustainable use of Pakistan's natural resources (IUCN 2000).

National Climate Change Policy

In 2012, Pakistan developed its 'National Climate Change Policy' (NCCP) with a primary focus on climate-resilient development and adaptation due to the country's vulnerability to climate change. Following the 2015 Paris Climate Accord, Pakistan committed to global emissions reduction. The updated 2021 NCCP equally emphasises adaptation and mitigation, with a significant emphasis on nature-based solutions. The NCCP includes objectives to address climate change challenges, including building resilient infrastructure, monitoring and mitigating impacts on water, food, and energy security, and addressing extreme weather events. The policy promotes inter-ministerial coordination, seeking financial optimisation and proposing economic incentives for climate action. It also aims to enhance awareness, skills, and institutional capacity for effective climate response. With a focus on environmental conservation, the policy advocates for tree plantation, nature-based solutions, and sustainable practices. Overall, Pakistan's NCCP is a comprehensive framework designed to holistically tackle climate change and establish a resilient and sustainable future (MoCC 2021).

Pakistan has embarked on several impactful environmental initiatives to address pressing issues such as deforestation, climate change, and water management. The 'Ten Billion Tree Tsunami' project represents a significant effort to combat deforestation by aiming to plant ten billion trees nationwide. This initiative not only contributes to reforestation but also aligns with global climate change

mitigation strategies. Additionally, the 'Protected Areas Initiative' focuses on the protection and conservation of natural areas in Pakistan, highlighting the importance of preserving biodiversity and maintaining ecological balance. Complementing these efforts is the 'Recharge Pakistan' project, which targets the enhancement of water management and conservation practices across the country. Together, these initiatives demonstrate Pakistan's commitment to sustainable environmental practices and the conservation of its natural resources (Ullah et al., 2021).

National Water Policy

To address the critical importance of water resources, Pakistan enacted the updated 'National Water Policy' in 2018. This policy aims to tackle the emerging water crisis by providing a comprehensive framework and guidelines for SCP patterns throughout the water sector, from exploitation to utilisation. Given Pakistan's federal system, where provinces enjoy autonomy under the 18th Amendment to the Constitution, this policy serves as a national framework. It allows provinces to develop their master plans for sustainable water resource development and management. While water resources are a national responsibility, the policy recognises that irrigation, agriculture, rural and urban water supply, and related sub-sectors fall under provincial jurisdiction (MoWR 2018).

National Biodiversity Strategy and Action Plan (NBSAP)

In 1999, Pakistan formulated its initial 'Biodiversity Action Plan' (BAP) to align with the 2010 Biodiversity Targets. This strategic document underscores the country's commitment to fulfilling the objectives of the Convention on Biological Diversity (CBD), including conservation of biodiversity, sustainable use of its components, and fair and equitable sharing of benefits derived from the utilisation of genetic resources (GoP 1999). The second 'National Biodiversity Strategy and Action Plan' (NBSAP) for the period 2017-2030 was developed in accordance with the Aichi Biodiversity Targets (ABTs) for 2011-2020 and the SDGs. The primary objectives of the strategy revolve around two main goals: firstly, conservation of biodiversity at priority sites, emphasising in-situ site-specific conservation efforts, prioritising ex-situ conservation, and addressing issues such as wildlife trafficking and illegal timber trade. Secondly, the strategy

aims to integrate biodiversity as a fundamental element of human development. This involves raising awareness about how biodiversity and ecosystem services contribute to human well-being, support development outcomes, and foster integration across various sectors, including agriculture, poverty alleviation, climate change, health, democracy and governance, economic growth, and trade (GoP and FAO 2017).

SDG Target 12.3: Halve Global Per Capita Food Waste

According to government data, 30% of vegetables/fruits are wasted due to negligence and lack of processing facilities. This waste could be minimised by converting them into non-perishable forms, allowing for efficient transportation and storage. The Ministry of National Food Security and Research (MoNFSR) is dedicated to ensuring food security, recognising agriculture's significant contribution to this goal. Since its inception, the ministry has focused on enhancing and coordinating agricultural Research and Development (R&D) activities in the country (MoNFSR 2023).

SDG Target 12.4: Responsible Management of Chemicals and Waste

In 2015 and 2020, Pakistan fully adhered to the 'Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal', as well as 'Montreal Protocol on Substances that Deplete the Ozone Layer.' The country's compliance with international multilateral environmental agreements, particularly indicator 12.4.1, assesses its commitment to fulfilling obligations during this period (MoCC 2022). The policy instrument empowers Pakistan to fulfil Basel Convention obligations, positioning it to meet the SDGs. It further supports extension of the European Union's GSP+ status beyond 2023.

Pakistan has put in place a multifaceted environmental regulatory framework comprising a range of rules, regulations, and standards to promote sustainable practices and reduce environmental degradation. The 'Pakistan Biosafety Rules, 2005' prioritise implementation of biosafety measures to safeguard human health and the environment.

The 'Pollution Charge for Industry (Calculation and Collection) Rules, 2001' levy charges on industries based on their pollution levels, encouraging them to reduce pollution. The 'Self-Monitoring and Reporting by Industries Rules, 2001 (Amended)' requires industries to monitor and report their emissions and effluents, ensuring transparency and accountability in environmental management. The 'Environmental Samples Rules, 2001' draws protocols for collecting and analysing environmental samples to assess pollution levels accurately. The 'Single-use Plastics (Prohibition) Regulations, 2023' prohibit production, sale, and usage of single-use plastics, while the 'Pakistan Environmental Protection Agency Ban on Polythene Bags Regulations, 2019' outlaws manufacturing, import, sale, purchase, storage, and usage of polythene bags.

The 'National Environmental Quality Standards (Certification of Environmental Laboratories) Regulations, 2000' set standards for certifying environmental laboratories, ensuring the reliability of environmental testing and analysis. The 'Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulations, 2000' (PEPA 2000) govern the review process for Initial Environmental Examinations (IEE) and Environmental Impact Assessments (EIA), ensuring that development projects are assessed for their environmental impacts and appropriate mitigation measures are enforced. Pakistan has established National Environmental Quality Standards (NEQS) to regulate various aspects of environmental quality, including ambient air, drinking water, noise, motor vehicle exhaust and noise (MoCC 2001); revised 'National Environmental Quality Standards for Municipal and Liquid Effluents', and NEQS for gaseous emissions. These standards are necessary for maintaining environmental quality and promoting sustainable development in Pakistan (PEPA 2023). These standards, aimed at maintaining environmental quality and promoting sustainable development in Pakistan, are important. However, their implementation is equally important for achieving intended benefits. To ensure effective implementation, there must be robust enforcement mechanisms and widespread compliance. This can only be achieved with collective effort from governmental bodies, regulatory agencies, businesses, and the public.

SDG Target 12.5: Substantially Reduce Waste Generation

In Pakistan, implementation of waste minimisation techniques and the adoption of the 3Rs (Reduce, Reuse, and Recycle) are overseen through a collaborative

effort involving both public and private institutions. Key public bodies play a significant role in providing support for 3R initiatives. The Ministry of Climate Change, alongside the Pakistan Environmental Protection Agency (Pak-EPA) and Provincial EPAs, spearheads national efforts in this regard. Additionally, the National Cleaner Production Center Foundation (NCPC) and the National Productivity Organization (NPO) contribute to the promotion and execution of waste reduction strategies.

At the local level, city-wide solid waste management companies, such as Lahore Waste Management Company, Faisalabad Waste Management Company, and Gujranwala Waste Management Company, play an important role in implementing 3R practices and managing waste effectively (LG&CDD 2024). These entities work in collaboration with Provincial Waste Management Boards, which further coordinate and regulate waste-related activities. Furthermore, the Provincial Water and Sanitation Departments play a crucial role in ensuring integration of environmentally sustainable practices and waste management strategies across the provinces. Together, these public institutions form a network aimed at fostering responsible waste practices and advancing the cause of environmental sustainability in Pakistan.

Currently, Pakistan faces a significant challenge in managing its solid waste, generating a staggering 48.5 million tonnes annually, with major cities like Karachi and Lahore contributing the majority. The average nationwide waste generation ranges from 0.24 to 0.65 kg per capita per day, and this has been steadily increasing at a rate of 2.4% each year. Unfortunately, Pakistan lacks an organised and well-structured institutional mechanism for waste collection, sorting, treatment, and disposal, leading to a deficiency in modern waste management techniques.

Over the years, several policies have been introduced in Pakistan to address the issue, emphasising the 3Rs principle of waste reduction. These policies advocate for implementation of mechanisms to enhance efficiency of waste management across the country. However, despite these efforts, absence of a comprehensive and integrated approach, compounded by budgetary and institutional constraints, has hindered successful implementation of these policies, failing to bring about lasting changes to the country's waste management landscape.

Several key policies have been established to promote sustainable waste management in Pakistan. These include the 'Pakistan Environmental Protection Act, 1997'; 'National Environment Action Plan (NEAP), 2001'; 'Draft Guidelines for Solid Waste Management, 2005'; 'National Environment Policy, 2005'; 'National Sanitation Policy, 2006'; 'National Climate Change Policy, 2012', 'National Development Strategy, 2012', 'Hospital Waste Management Rules' 2005 and 2014; 'Punjab Environmental Policy, 2015'; and 'Draft Hazardous Waste and Hazardous Substances Rules, 2016'. Despite the existence of these policies, their efficacy remains constrained by challenges posed by inadequate budgets and institutional limitations (Shafique and Clark 2022).

SDG Target 12.6: Encourage Companies to Adopt Sustainable Practices and Sustainability Reporting

The corporate sector in Pakistan has a well-established tradition of exhibiting social responsibility through philanthropic contributions and endowments. Despite this commendable practice, a notable observation is that only a fraction of the listed firms, precisely 50 out of 540, currently provide dedicated standalone reports on sustainability issues. This indicates a gap in the widespread adoption of sustainability reporting practices within the Pakistani corporate landscape. Furthermore, there is significant variability in the content and methodology of these disclosures, demonstrating differences across companies and sectors.

Among the firms actively engaging in sustainability reporting, there is a noteworthy commitment to addressing key aspects such as upgrading labour standards, contributing to the protection of biodiversity, and providing health facilities to local communities. This proactive approach underscores a positive trend toward incorporating Environmental, Social, and Governance (ESG) considerations into business practices. However, existing disparity in reporting and diverse nature of disclosures highlight the need for standardised guidelines to ensure consistency and comparability. Overall, while a substantial portion of the corporate sector in Pakistan embraces social responsibility, efforts to enhance transparency and standardisation in sustainability reporting could further elevate the impact of these initiatives and contribute to a more responsible and sustainable business environment (Hasan et al., 2022).

In response to the global emphasis on sustainable growth and the pivotal role of 21st Century corporations in sustainable development, the Planning Commission of Pakistan has initiated the development of a 'National Responsibility Framework'. This framework aims to engage institutional stakeholders systematically and effectively in facilitating the corporate sector's contributions to sustainable development, aligning with the SDGs (Waheed 2019).

The World Wildlife Fund (WWF) and the Association of Chartered Certified Accountants (ACCA) started Environmental Reporting Awards in 2002. The primary objectives of the Awards are to endorse and advance best practices in environmental and sustainability reporting within Pakistan. These aims encompass recognition and rewarding of organisations that actively report and disclose their environmental, social, or sustainability performance. Furthermore, the Awards seek to foster a culture of best practices in reporting across these dimensions, encouraging companies to continually improve their environmental, social, and sustainability reporting methodologies (Zamir et al., 2012).

In 2007, the Programme for Industrial Sustainable Development (PISD) initiative was launched through collaboration between the Cleaner Production Institute (CPI) and the Embassy of the Kingdom of the Netherlands. PISD aimed to provide technical services to industries. These services encompassed various areas, including energy efficiency, cleaner production technology, wastewater treatment, environmental management systems, and corporate social responsibility. The specific objective of PISD was to empower major industrial sectors in Pakistan to align with both national and international environmental standards. Additionally, the initiative sought to encourage adoption of best practices in energy efficiency within these sectors.

Various organisations in Pakistan are actively engaged in promoting corporate sustainability reporting. Among them are CSR Pakistan, Asiatic Public Relations (APR), Global Compact Pakistan, Responsible Business Initiative (RBI), and the Pakistan Centre for Philanthropy (PCP). These entities contribute to shaping and advancing sustainability reporting practices within the country.

The regulatory and structural environments within the country have, however, resulted in a situation where there is a notable absence of expectations and pressures from internal stakeholders. In essence, while external organisations

play a crucial role in advocating for and fostering sustainability reporting, the internal regulatory landscape in Pakistan may not currently exert significant influence or set explicit expectations for corporate sustainability reporting among domestic companies (Hasan et al., 2022).

Disparity in sustainability reporting between private and public limited companies in Pakistan is a result of regulatory gaps, resource constraints, and limited awareness. To address this issue, policymakers must adopt a multifaceted strategy. Clear and standardised reporting guidelines should be introduced for public companies, coupled with incentives to encourage reporting. Additionally, there is a crucial need for providing training and resources to private and sole proprietors, enabling them to enhance their understanding of sustainability reporting and actively engage in the process. This comprehensive approach is essential to bridge the gap and promote more uniform sustainability reporting practices across different types of companies.

SDG Target 12.7: Promote Sustainable Public Procurement Practices

Pakistan has established the Public Procurement Regulatory Authority (PPRA) to promote sustainable public procurement practices aligned with national policies and priorities. The Federal Government initiated establishment of the PPRA in 2002 through a Presidential Ordinance. Subsequently, in 2004, the government formally notified the Public Procurement Rules (PPR). Building upon this regulatory foundation, the first set of public procurement regulations was introduced in 2008, further solidifying the framework. In 2010, the government extended its regulatory reach by enunciating consultancy services regulations. This chronological development underscores the government's commitment to continually refine and strengthen the public procurement framework, ensuring its effectiveness in promoting sustainability and adhering to national policies and priorities (Hussein and Najib 2021). The PPRA is tasked with formulating regulations and procedures governing public procurements conducted by public sector organisations under the Federal Government. The overarching aim is to enhance governance, improve management practices, ensure transparency and accountability, and elevate the overall quality of public procurement processes for goods, works, and services. In addition to prescribing regulations, the PPRA has the crucial responsibility of monitoring procurement

activities carried out by public sector agencies and organisations. This oversight function is integral to maintaining compliance with established regulations and fostering a culture of accountability and transparency within the public procurement domain.

Despite having established procurement regulations, the PPRA has not yet developed specific regulations pertaining to sustainable public purchases. While existing regulations may address various aspects of public procurement, there appears to be a gap in addressing sustainability considerations in the procurement process (Zaidi et al., 2023).

Public Procurement Regulations

The PPRA has instituted a comprehensive set of regulations governing various aspects of public procurement. These regulations include specific provisions for the procedure of filing and disposing of review petitions under Rule 19(3) in the year 2021. Additionally, Regulations 2008, 2009, and 2011 are in place, covering diverse facets of public procurement without detailed specifications. Regulation 2010 is specifically tailored for procurement of consultancy services. Regulation 2015 focuses on the tax compliance of eligible bidders. There is also a regulation delineating the transaction of business through board meetings of the PPRA, encompassing statutory orders from 2021. Furthermore, regulations for the manner of advertisement, declaration of beneficial owners, and national standard procurement documents have been established. Notably, an 'E-Pak Procurement Regulation', outlined in S.R.O 296(I)/2023, governs electronic procurement processes, adding a modern dimension to the regulatory framework (PPRA 2023).

SDG Target 12.8: Promote Universal Understanding of Sustainable Lifestyles

Pakistan has taken significant strides to inform and educate the public about sustainable development principles, urging them to adopt lifestyles in harmony with nature. Numerous events are regularly organised to raise awareness among grassroots-level public officials and parliamentarians, emphasising prioritisation of SDGs in legislative matters aligned with local needs. Collaboration with civil society and academia has been robust, reflecting their

full support of the government's efforts to achieve these sustainable development targets.

In alignment with the inclusive nature of the 2030 Agenda, Pakistan is actively developing communication platforms tailored to its cultural, linguistic, and geographic diversity. This initiative aims to ensure that the principles of 'no one left behind' are upheld. Since 2016, the country has approved and promulgated several policies and laws to further these objectives. In specific regions, such as Gilgit-Baltistan, various organisations are working diligently to strengthen Local Support Organisations (LSOs) and community-based organisations (CBOs). This involves engaging citizens from diverse ethnic, linguistic, and economic backgrounds in discussions related to the global SDG framework, fostering a comprehensive approach to sustainable development at the community level (MoPDR 2019).

SDG Target 12.9: Support Developing Countries' Scientific and Technological Capacity for Sustainable Consumption and Production

Pakistan has taken several initiatives to strengthen its scientific and technological capacity and promote sustainable patterns of consumption and production. Some key initiatives include:

National Science, Technology, and Innovation (ST&I) Policies

Pakistan's first 'National S&T Policy' was ratified in 1984 which was followed by the 'National Technology Policy and Technology Development Plan, 1993'. In 2012, Pakistan established the 'National Science, Technology, and Innovation (ST&I) Policy' to foster scientific research, technological innovation, and sustainable development. (MoST 2022). In 2022, Pakistan developed the 'National Science, Technology, and Innovation Policy 2022'. The main objective of the policy is to harness the potential of science, technology, and innovation; and to foster sustainable societal development through targeted need-based research initiatives. The policy emphasises adoption of a 21st Century approach to governance and management within the realms of science, technology, and innovation, to enhance operational efficiency and effectiveness. The policy aims to utilise knowledge at all stages of the innovation process, from its creation to

product development, job creation, and wealth generation. This will ensure a balanced and inclusive growth trajectory. Policy statement 10 requires establishment of smart cities in phases. According to the policy, these smart cities will use emerging technologies to provide citizens with a healthy lifestyle by ensuring e-governance, green energy, efficient transport systems, sustainable infrastructure development and modern security systems (MoST 2022).

Renewable Energy Development

According to the National Electric Power Regulatory Authority's (NEPRA) 2021 yearly report, Pakistan's total installed power generation capacity stands at 39,772 MW. The energy mix comprises 63% from thermal sources (fossil fuels), 25% from hydro, 5.4% from renewable sources (wind, solar, and biomass), and 6.5% from nuclear. Recognising the potential of renewable energy (RE) resources, the current government has shown a strong inclination towards them. In response to this commitment, the Ministry of Energy recently revised the 'Renewable Energy (RE) Policy, 2019.' The updated policy reflects the government's ambitious target to derive 60% of the country's energy from renewable sources, including hydro, by the year 2030. This strategic shift aims to reduce Pakistan's dependence on imported fuel products and emphasises a sustainable energy future. The move aligns with global efforts to transition towards cleaner and more environmentally friendly energy sources (ITA 2024).

National Electric Vehicles Policy (NEVP)

Pakistan has approved a forward-looking 'National Electric Vehicles Policy' (NEVP) with ambitious targets and incentives. The policy outlines a vision for electric vehicles (EVs) to constitute 30% of all passenger vehicle and heavy-duty truck sales by 2030, increasing further to an impressive 90% by 2040. The NEVP also sets even more ambitious goals for two- and three-wheelers, as well as buses, aiming for electric models to comprise 50% of new sales by 2030 and an overwhelming 90% by 2040. This policy reflects Pakistan's commitment to fostering sustainable transportation and reducing carbon footprint of the automotive sector in the coming decades (Uddin 2020).

E-Mobility Initiatives

The road transport sector in Pakistan heavily relies on fuel imports, which has led to an increase in pollution levels in major cities. Currently, Pakistan is facing a power surplus crisis. However, increased penetration of electric vehicles (EVs) could help meet the power demand and achieve an adequate level of utilisation of the existing power capacity, which could bring down the unit cost of electricity (Raza 2021). Electrification of transportation is an effective way to reduce energy intensity in the road transport sector. In addition, EVs offer lower operational and running costs, as well as lower tailpipe emissions. All these factors make a strong case for EV adoption in Pakistan.

SDG Target 12.A: Develop and Implement Tools to Monitor Sustainable Tourism

In 2022, the travel and tourism sector made a total contribution of 5.9% to Pakistan's GDP, supporting around 4.2 million jobs. Despite the country's diverse range of tourist sites, this contribution is considered sub-optimal. In the same year, Pakistan witnessed approximately USD 16 billion in visitor spending, a figure projected to increase significantly to around USD 30 billion by 2033. This substantial growth potential highlights the attractiveness of Pakistan as a tourist destination (Khan 2023).

Following the lifting of COVID-induced travel restrictions, Pakistan experienced an unprecedented surge in domestic tourism. Notably, in 2021 and 2022, Khyber Pakhtunkhwa province alone welcomed over 1.2 million domestic and international tourists. This surge underscores the resilience and appeal of Pakistan's tourism sector, presenting an opportunity for further growth and development in the coming years (Amin 2023).

Pakistan has undertaken various initiatives to encourage sustainable tourism within the country. The 2010 tourism policy featured multiple clauses underscoring the significance of sustainable tourism practices in Pakistan. However, the landscape shifted after the 18th Amendment, which led to the abolition of the federal tourism ministry, creating a void in overseeing tourism sector affairs at the national level. Despite these changes, Pakistan's commitment to promoting sustainable tourism remains evident through past

policy considerations, reflecting a dedication to fostering responsible and eco-friendly tourism practices in the country (Ullah et al., 2021).

Pakistan has also introduced the 'Pakistan Online Visa System', an online platform for visa issuance that is accessible to citizens from 192 countries. This system facilitates both tourist and business visa applications, aiming to simplify and secure the overall visa application process. Specifically, the tourist visa category is open to citizens of 64 countries, allowing them to apply online through the system. The system provides various visa categories, including those tailored for pilgrim tourism, enhancing accessibility and convenience for potential visitors (Mol 2023).

SDG Target 12.B: Remove Market Distortions that Encourage Wasteful Consumption

The advantages of fossil fuel subsidy rationalisation (FFSR) are widely recognised. However, despite the known benefits, governments often face various political and economic challenges when attempting to curtail spending on subsidies in practice (Cottrell 2023). According to the International Monetary Fund (IMF), Pakistan allocated USD 28 billion in implicit subsidies and USD 17 billion in explicit subsidies in 2022. Among the implicit subsidies, the most substantial portion, accounting for USD 17 billion, was directed towards petroleum, with diesel and gasoline receiving USD 8.4 billion and USD 6.9 billion, respectively. Additionally, under explicit subsidies, the country expended a significant USD 12.8 billion on consumer subsidies for natural gas. These figures illustrate the substantial financial commitments made by Pakistan in the form of both implicit and explicit subsidies in 2022, particularly in the energy sector (Dawn 2023).

Furthermore, signalling a commitment to sustainable energy practices, the government took a significant step by approving the Framework Guidelines for Fast Track Solar Initiatives on 18 October 2022. The key pillars of this initiative involve the substitution of costly imported fossil fuels with solar photovoltaic (PV) energy, the implementation of solar PV generation on 11 kV feeders, and the solarisation of public buildings. This strategic move reflects a shift towards renewable energy sources and underscores the government's efforts to enhance energy efficiency and sustainability in the country (GoP 2023).

In April 2022, the government prioritised sustainable macroeconomic stabilisation rationalising expenditures by eliminating unproductive subsidies to alleviate budgetary strain, implementing substantial expenditure cuts to reduce the budget deficit, increasing government revenues through taxes and non-tax means, and adopting a stringent monetary policy to combat inflation.

In the first nine months of the fiscal year 2023 (July-March), the government effectively reduced subsidies, with expenditures amounting to PKR 524.4 billion, marking an 8.8% decrease from the previous year's PKR 575.2 billion. The reduction is attributed to lower subsidies in the power sector, which decreased by 24.2% to PKR 388.9 billion during July-March FY2023, down from PKR 512.8 billion in the same period the previous year (GoP 2023).

Challenges

Pakistan is currently experiencing rapid urbanisation, which is making it the fastest urbanising country in South Asia. According to the 7th Population and Housing Census 2023, urban population has gone up at the rate of 3.67% compared to rural population (1.88%) (Malik 2024). However, the UN Population Division predicts that by 2025, almost half of the country's population will be living in cities, which will worsen existing urban challenges such as drainage issues causing urban flooding, traffic congestion, unemployment, and lack of sufficient housing and basic services like health, water, and sanitation. In addition, there are emerging urban issues that require special attention, such as the increasing volumes of electronic waste, plastics, used oils, and chemicals. These issues need to be effectively addressed as they pose a threat to the environment. There is, however, a concern about the current capacity of relevant institutions to handle these future challenges (Artaza 2019).

The rapid pace of industrial and urban growth has resulted in environmental issues such as toxic air and water pollution, as well as hazardous solid waste. Energy scarcity is also hindering Pakistan's sustainable socioeconomic development. Electricity shortages are causing an annual loss of 4-7% in GDP and a 2% reduction in real GDP growth. Inefficient energy infrastructure, energy theft, transmission, and distribution losses are major contributors to the widening gap between energy supply and demand (Tao et al., 2022).

Governance issues further compound these challenges, with overlapping institutional mandates, absence of concrete targets, and ineffective enforcement hindering implementation of master plans and legislation. This governance deficit also contributes to difficulties in attracting much-needed investment into 'green' technologies and industries. According to a report by the Pakistan Bureau of Statistics, 16% of the population faces moderate or severe food insecurity. This issue is particularly pronounced in rural areas, affecting 20% of the rural population compared to 9.2% in urban areas. Additionally, three out of five households are experiencing food insecurity (Amir, Khan and Ahmad 2023). Addressing these multifaceted issues requires comprehensive strategies, institutional strengthening, and sustainable development initiatives to ensure a more resilient and prosperous future for Pakistan.

Conclusion and Recommendations

The global recognition of SCP as an important component of the 2030 Agenda for Sustainable Development has encouraged significant initiatives at the regional and national levels. SACEP aligns with the 'Asia-Pacific Roadmap' and the 10YFP on SCP, showcasing a collective effort to integrate sustainability principles into policy frameworks. The incorporation of SCP principles into the SDGs, particularly as a standalone goal (SDG 12), underscores the central role SCP plays in achieving broader development objectives.

Pakistan has emerged as a committed participant in promoting SCP, exemplified by the formulation of the National Action Plan (NAP) on SDG 12. The strategic alignment of NAP-SCP with key sectors, guided by the 'Vision 2025' policy document, positions the country for substantial progress in meeting its SDGs. Collaborative efforts involving the government, relevant ministries, and international partnerships reflect a comprehensive approach to address the 12th SDG targets. However, Pakistan's commitment to sustainability extends beyond SCP, as evidenced by initiatives in climate change policy, water management, and biodiversity conservation. The 'National Climate Change Policy' and environmental projects like the 'Ten Billion Tree Tsunami' and the 'Protected Areas Initiative' exemplify a holistic approach to environmental conservation.

While progress is evident, challenges persist, particularly in waste management. Despite policies emphasising the 3Rs principle, Pakistan faces difficulties in effectively managing solid waste due to the absence of an

integrated approach and institutional constraints. Ongoing efforts to address these challenges, coupled with sustained international collaboration, will be crucial in realising Pakistan's vision for SCP, contributing significantly to global sustainability objectives.

Pakistan also faces challenges related to rapid urbanisation, environmental issues, energy scarcity, and governance deficits. Comprehensive strategies, institutional strengthening, and sustainable development initiatives are essential to overcome these challenges. The following steps need to be considered:

Prioritise Sustainable Consumption and Production

The SCP initiative currently falls within Tier III priority in Pakistan, but it is imperative to reconsider and elevate its status to either Tier I or Tier II. This re-evaluation is particularly crucial in the context of budget allocation, with a specific emphasis on prioritising SDG 12. By revising the priority status of the SCP to Tier I or Tier II and allocating resources accordingly, the government can re-affirm its commitment to sustainable development. Establishment of a comprehensive coordination mechanism will facilitate effective collaboration among stakeholders, ensuring that initiatives such as boosting clean energy production and water conservation are efficiently designed, implemented, monitored, and reported.

Integrate 'Waste to Energy' and 'Energy to Wealth' in SDGs

Policymakers should prioritise development of a comprehensive policy framework to drive integration of waste to energy and waste to wealth into global SCP practices. This framework should emphasise collaboration between governments, private sectors, industries, academia, and local communities, ensuring diverse perspectives and expertise are considered.

Establish Comprehensive Facilitation Mechanism

The GoP must establish a comprehensive mechanism to facilitate coordination among relevant stakeholders involved in the design, implementation, monitoring, and reporting of SCP-related initiatives.

Manage Water Resources

It is crucial to implement effective measures for managing and reducing excessive water consumption. This includes adopting sustainable practices and technologies to align with the objectives of SCP. Implementing water conservation strategies and technologies will contribute significantly to achieving these goals.

Prioritise Sustainable Growth over Unrestricted Development

While economic growth is essential for development, there is a need to prioritise sustainable growth. Consideration of long-term environmental and social impacts should guide development policies. This involves adopting strategies that ensure economic progress while minimising adverse effects on the environment and society. Policies should emphasise sustainability over unrestricted growth.

Adopt Comprehensive Approach for Sustainable Development

To achieve sustainable development, a comprehensive and holistic approach is essential. This involves addressing the interconnected social, economic, and environmental factors. Policymakers and stakeholders should work collaboratively to develop and implement strategies that encompass all aspects of sustainability, promoting a balanced and inclusive approach to development.

Balance Deregulation with Strategic Regulation Alignment for SDGs

While deregulation is important for fostering innovation and economic growth, a balanced approach is needed. This involves rationalising regulations to align with and effectively meet the SDGs. The aim is to maintain a streamlined and efficient regulatory framework that supports sustainable practices, economic development, and achievement of broader societal and environmental objectives.

Enhance Consumer Education and Promote Sustainable Marketing Practices

It is recommended to focus on consumer education regarding consumption patterns. Both private and industrial sectors should improve marketing and packaging practices to align with sustainability goals. This involves creating awareness among consumers about sustainable choices and encouraging businesses to adopt eco-friendly practices in their marketing and packaging strategies.

Promote Voluntary Initiatives for Circular Economy Adoption

Advocates for a shift towards a circular economy suggest initiating voluntary initiatives instead of mandatory exercises. Recognising the crucial role of food and resource management, circular economy principles should be introduced voluntarily in both industrial and private sectors.

Assess Individual Consumption and Foster Public Engagement

Countries should initiate a comprehensive process to assess individual consumption levels and their environmental impacts. Fostering public engagement is crucial for achieving sustainable consumption within a circular economy. This can result in direct benefits for local communities striving for improved livelihoods. Governments should prioritise and support initiatives that involve the public in SCP.

Address Carbon Footprint in CSO/Humanitarian Agencies

Ensuring sustainability in the emerging Civil Society Organisations (CSO) and humanitarian agencies sector requires addressing their substantial carbon footprint. Emphasising green procurements and engaging with stakeholders, including vendors, to educate them on SCP practices is essential. Individual responsibility for citizens, with targeted goals, is crucial for promoting sustainable practices in this sector.

Make Sustainable Changes 'Fashionable' for Mainstream Adoption

To achieve SDG 12, it is recommended to modify prevailing business, industry, and consumption models. Making these changes more fashionable and aligning them with societal norms and preferences can accelerate their adoption. This involves promoting sustainable practices in a way that resonates with mainstream trends and propensities.

Optimise Production Pathways and Implement a Holistic Approach

Optimising production pathways and enhancing intermediary systems is imperative for SCP. The applicability of a circular economy relies on optimising production and synchronising resources. Coordinating relevant ministries requires a holistic approach, integrating scientific evidence for effective implementation of sustainable practices in the production and consumption cycle.

Inculcate Individual Responsibility and Promote Success Stories

Inculcating individual responsibility through small steps is essential for fostering a collective commitment to sustainability. Recognising that green production and consumption are pivotal ingredients for a circular economy, it becomes crucial to work out incentives that promote sustainable processes. Furthermore, promoting success stories, such as declining cigarette smoking as a fashion trend, is an inspirational model for encouraging SCP practices.

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Effective Implementation of Carbon Markets in Pakistan*

22

Saleha Qureshi & Dr Khalid Waleed**

Abstract

Carbon markets offer a promising avenue for reducing emissions and promoting sustainable practices. However, Pakistan's carbon market is still underdeveloped due to regulatory and infrastructure challenges, including the country's lack of participation in the Clean Development Mechanism. The importance of carbon markets for sustainable development and economic growth underscores the need for inclusive regulations, transparent pricing mechanisms, and active stakeholder engagement. Pakistan's Ministry of Climate Change and Environmental Coordination is leading efforts to establish a functional carbon market aligned with international climate action goals. Key objectives include creating an independent regulatory body, providing incentives for emissions reduction, and fostering Public-Private Partnerships. The focus is on developing a robust regulatory framework, collaborating with international partners, and implementing sector-specific reforms in industry, agriculture, and transportation. These consistent policies and necessary infrastructure reflect Pakistan's commitment to sustainable growth and global climate action, boosting investor confidence.

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Introduction

Amid global climate change and growing concerns over energy security, pursuit of green and sustainable development has become a key priority for developing countries. Addressing this challenge requires mobilising green finance to support the transition to a low-carbon economy while promoting economic growth. In this context, market-driven solutions offer economic incentives and provide a policy framework to incorporate climate change externalities. Carbon markets, as a crucial component of green finance, present a structured mechanism to incentivise emission reductions, promote sustainable practices, and facilitate the transition towards a more sustainable economy.

Carbon Markets and Trading: The Basics

In accordance with Article 6.2 of the Paris Agreement,¹ countries can participate in emission reductions and removals exchange via bilateral or multilateral agreements. These transactions involve carbon credits known as Internationally Transferred Mitigation Outcomes (ITMOs).

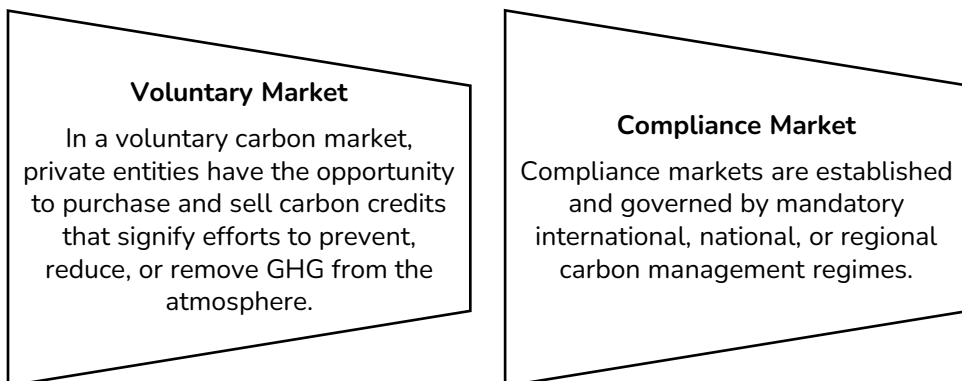
- a. **Definition of Carbon Markets:** A market is a platform where economic agents come together to facilitate the exchange of goods and services. In a carbon market, carbon emissions are treated as a tradable commodity, allowing for the efficient exchange of carbon credits or allowance.
- b. **Economic Agents in Carbon Markets:** There are four key actors or agents involved in the carbon market. The first is *Project Developers*. They develop these carbon projects to reduce or avoid carbon emissions. Then, there are *Regulators*, registries, evaluators, and monitors whose role is to assess and verify carbon credits or carbon-generating certificates. These entities typically adhere to set criteria, often established by the government. However, this study is advocating for the establishment of an expert body comprised of technical experts. Such a body would ensure efficiency and contribute to the overall benefit of the market. Third, there are intermediaries in carbon

¹ United Nations Climate Change 2016, 'Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015. Addendum. Part two: Action taken by the Conference of the Parties at its twenty-first session', 29 January, <<https://unfccc.int/documents/9097>>.

exchange, such as *Brokers* and *Traders*. Their responsibility lies in providing liquidity in the market and facilitating distribution from project developers to buyers. Lastly, there are *Buyers* - they could be international buyers, regional buyers, industries, governments, institutions, and so on. Therefore, there are four key agents in the market: Project Developers, Regulators, Brokers/Traders, and finally, Buyers.

- c. **Types of Carbon Markets:** There are two types of carbon markets: i) Voluntary Markets: The voluntary carbon market facilitates the trading of carbon credits by private entities, which signify efforts to prevent, reduce, or eliminate greenhouse gas (GHG) emissions from the atmosphere; ii) Compliance markets, on the other hand, are established and overseen by mandatory international, national, or regional carbon management frameworks (Figure 1). The key distinction between compliance markets and voluntary markets, as well as how they are regulated and treated, is explained in Table 1.

Figure 1: Types of Carbon Markets



Source: Michaelowa et al., 2023.

Table 1: Key Distinctions between Compliance Markets vs Voluntary Markets

	Compliance Markets	Voluntary Markets
Is participation mandatory or optional?	Mandatory. Carbon emitters (countries and corporations) are legally required to participate.	Participation is voluntary, allowing corporations, governments and individuals who willingly aim to surpass the mandatory market requirements in reducing their carbon footprint to take part.
How is it regulated?	Oversight of compliance markets is administered through diverse international, regional, or sub-national carbon reduction initiatives, as demonstrated by mechanisms such as the ITMO trading system under the Paris Agreement, the European Union Emissions Trading Scheme (EU-ETS), and the California Carbon Market.	Voluntary markets are regulated by voluntary carbon offset registries, such as the American Carbon Registry, Verified Carbon Standard (Verra), Gold Standard Impact Registry, and Climate Action Reserve.
What types of units can be traded?	Primarily carbon credits are utilised, although carbon offsets may occasionally be allowed.	Carbon offsets only.

Source: Ahonen et al., 2022; Michaelowa and Sacherer 2022.

Carbon trading involves exchange of carbon credits, with Certified Emission Reductions (CERs) and Verified Emission Reductions (VERs) being the primary types. CERs are allocated within the Clean Development Mechanism (CDM) framework of the Kyoto Protocol, while VERs are granted within voluntary emissions reduction schemes. Market dynamics dictate the pricing of carbon credits, with supply and demand being key determinants. As emissions reduction targets intensify, the demand for carbon credits escalates, leading to a corresponding increase in their market value.

How Do Carbon Markets Work?

Origins of the carbon market can be traced back to the establishment of the Kyoto Protocol in 1997, an international treaty aimed at addressing GHG emissions in industrialised countries. This pioneering agreement introduced mechanisms that allowed developed countries to meet their emission reduction commitments through carbon trading markets, thereby promoting flexibility. Concurrently, developing countries stand to gain access to crucial technologies and financial resources. The Kyoto Protocol initiated three market mechanisms with the overarching objective of reducing emissions, representing a significant advancement in the global pursuit of environmental sustainability. These mechanisms include:

1. **Clean Development Mechanism (CDM):** Within the framework of the Kyoto Protocol, countries with emission reduction obligations leverage the Clean Development Mechanism (CDM) to execute projects in developing nations, thereby accruing Certified Emission Reduction (CER) credits. These credits function like units, allowing the investing country to meet its emission targets by offsetting one tonne of CO₂ per credit.
2. **International Emissions Trading:** The Kyoto Protocol mandates emission reduction objectives for countries, permitting those with surplus emission allocations to vend their excess capacity to countries surpassing their prescribed limits. This mechanism has engendered creation of the 'carbon credit' commodity, which is monitored and exchanged like other commodities, thereby establishing the 'carbon market' within the Protocol's emissions trading scheme. Diverse trading units, extending beyond tangible emissions, are actively transacted within this market.
3. **Joint Implementation:** Under Article 6 of the Kyoto Protocol, 'Joint Implementation' permits countries obligated to reduce emissions to finance projects in other participating countries. This results in the acquisition of emission reduction units (ERUs), each representing abatement of one tonne of CO₂ emissions, thereby aiding the investor country in achieving its Kyoto target. Renowned for its flexibility and cost-effectiveness, this mechanism enables nations to meet their commitments by directing investments into projects overseas. Simultaneously, the host country gains from foreign

investment, technology transfer, support for sustainable development, and emissions mitigation efforts.

As discussed, carbon markets are mechanisms designed to reduce GHG emissions by assigning a price to carbon, using carbon credits or allowances. Companies must hold enough credits to cover their emissions, and if they exceed their limit, they can purchase additional credits from companies that have emitted below their cap. This system creates a financial incentive for companies to reduce their emissions.

Credits can be generated through various methods, such as investing in renewable energy or energy efficiency projects. These projects generate credits that can be sold in the market, allowing companies to offset their emissions while supporting initiatives that reduce GHGs. Additionally, companies can participate in carbon offsetting programmes, where they fund verified projects—such as reforestation or methane capture—that further reduce or remove emissions.

The carbon market operates by establishing a cap on GHG emissions and using market mechanisms to allocate emissions among regulated entities. This system encourages companies to adopt cleaner practices by trading credits based on their emissions levels, ultimately reducing overall GHG emissions. Engaging in high-quality carbon offset projects ensures that emission reductions are both real and additional to what would have occurred without the investment.

Difference between Carbon Credits and Carbon Offsets

Carbon Credits

A single carbon credit represents the mitigation of one metric tonne of carbon dioxide, or its equivalent in other GHG such as carbon dioxide equivalent (CO₂-eq). These credits are traded via various channels including international brokerage firms, online marketplaces, and specialised trading platforms. Specifically, one carbon credit equates to 1,000 kilograms of CO₂, as standardised across markets (Niczyporuk 2024).

Types of Carbon Credits

To effectively address carbon emissions and combat climate change, a comprehensive approach that includes reduction, protection, and removal strategies is essential. This approach targets emissions at their source, protects existing carbon sinks, and actively removes carbon from the atmosphere. Different types of carbon credits align with these strategies: reduction credits are earned by lowering emissions, protection credits come from preserving carbon sinks like forests, and removal credits are generated by projects that extract carbon from the atmosphere. Table 2 highlights this multifaceted approach to achieving meaningful reductions in carbon emissions:

Table 2: Multifaceted Approach to Reduce Carbon Emissions

	Reduction	Protection	Removal
Purpose	To reduce carbon emissions and sell the reduced quota to organisations/individuals that are unable to reduce or are exceeding their emission cap limit	To protect/preserve existing carbon sinks	To remove carbon emissions from the atmosphere
Compliance/ Voluntary Market	Can be found in both compliance and voluntary carbon market	Voluntary carbon market	Voluntary carbon market
Environmental Uplift	MINIMUM	MEDIUM	HIGH
Why	As an organisation or individual reduction efforts may not directly correlate to a decrease in overall macro CO ₂ output	As it can support reduction of carbon emissions and prevent any release of carbon emissions	As it focusses on absorbing additional CO ₂ back from the atmosphere
Example	Regulatory carbon, emission allowance, energy efficiency	Reforestation, ocean conservation	Carbon capture, utilisation and storage, direct air capture afforestation

Source: Duane et al., 2020.

Carbon Offsets

A carbon offset indicates the avoidance or permanent removal of one metric tonne of CO₂ or equivalent GHG from the atmosphere. Unlike carbon credits, carbon offsets quantify the amount of carbon that has been prevented from entering or has been permanently sequestered within the atmosphere. These offsets can originate from two primary sources:

1. Avoidance or reduction initiatives, such as renewable energy projects or methane capture facilities.
2. Removal or sequestration endeavours, including reforestation efforts or direct carbon capture projects.

The predominant demand for carbon offsets emanates from entities that have voluntarily established targets for reducing GHG emissions. These targets may be achieved through direct emission reduction measures or by financially supporting initiatives that mitigate GHG emissions. While carbon offsets are typically traded within voluntary markets, specific offsets may be utilised as an alternative means to meet GHG emissions caps within compliance markets, conditional upon approval by the relevant regulatory bodies. Some of the key distinctions are described in Table 3:

Table 3: Comparing Carbon Credits and Carbon Offsets

	Carbon Credits	Carbon Offsets
What do they represent?	Carbon credits represent the entitlement to emit a specified quantity of GHG emissions, usually equivalent to one metric tonne of CO ₂ . Operating similar to authorisation documents, carbon credits grant carbon emitters the privilege to continue their CO ₂ emissions within a designated threshold, typically subject to gradual reductions mandated by the compliance regime	Carbon offsets imply elimination of a specific quantity of GHG emissions from the atmosphere, typically equivalent to one metric tonne

How are they created?	Carbon credits are assigned to carbon-emitting entities, such as countries and corporations, by a regulatory authority responsible for overseeing a specific compliance market	The initial emissions reductions leading to a carbon offset are generated through projects aimed at preventing, reducing, removing, or sequestering carbon from the atmosphere. These offsets are subsequently issued by accredited organisations tasked with certifying and monitoring such emission reduction initiatives
Are they transferable?	Yes	Yes
How are they used or traded?	Credits are employed by carbon emitters under regulatory mandates to constrain their emissions. Carbon emitters operating below their allocated caps have the option to sell or exchange their credits with those whose emissions surpass their prescribed limits	Entities including corporations, governmental bodies, and individuals aiming to mitigate their carbon footprint have the opportunity to acquire, exchange, and trade carbon offsets
Where are they used and traded?	Carbon credits are exclusively tradable within compliance markets	Carbon offsets are primarily exchanged within voluntary markets, although specific offsets can function as an alternative means to fulfil GHG emissions limits within compliance markets

Source: Balmford et al., 2023.

Carbon Markets in Pakistan²

In 2005, Pakistan ratified the Kyoto Protocol. The protocol meant that Clean Development Mechanism (CDM) project activities in developing countries generated certified emissions reductions. Developed countries could then use credits from these activities to meet their emissions targets.

In 2010, Government of Pakistan (GoP) allocated funds for carbon trading in its annual budget. However, by 2012, Pakistan's share of CDM projects was less than 1% while China and India accounted for 60% and 30% of global CDM projects, respectively. In the budget for FY 2015-16, PKR 34 million (approximately USD 340,000) was allocated for carbon-neutral projects to help the industrial sector sell and buy carbon credits in a local market. In the same year, the government wrapped up the CDM Cell in the Climate Change Division due to its poor performance. The 'Pakistan Climate Change Act, 2017' provides the legal and institutional framework for climate change policy in Pakistan. The Act envisioned delegating the Cell's responsibility to the then-Ministry of Climate Change (MoCC) for designing and establishing a national registry and database on GHG emissions.

In 2018, the National Committee on the Establishment of Carbon Markets (NCEC) was established to evaluate the country's potential for implementing domestic carbon markets and participating in international carbon markets. The MoCC published a draft report on the introduction of carbon pricing instruments in Pakistan. The report recommended implementing a domestic emissions trading scheme (ETS) in Pakistan that would initially cover large emitters from the power and industry sectors accounting for 168 Mt of CO₂ equivalent emissions.

Carbon markets would allow Pakistan to meet its Nationally Determined Contributions (NDCs) targets. Pakistan's goal is to reduce emissions by up to 20% below Business as Usual (BAU) by 2030. By making its own market compatible with that of China, Pakistan would greatly benefit through a positive ripple effect, as Chinese markets start to develop. Pakistan could explore how the outcomes

² Based on outcomes/discussions during the *High-Level Policy Dialogue* on 22 November 2023 at the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference (SDC) titled 'Light at the End of the Tunnel: Hope in Times of Despair.' See *Acknowledgements* section.

of projects like the ‘Ten Billion Tree Tsunami’ could be developed into a commodity that can be sold in international carbon markets. Sustainable forestry management projects in Indonesia have already secured carbon credits with a monetary value that benefits their developers. By applying lessons learnt from Indonesia’s experience with sustainable forestry management, Pakistan can replicate these strategies.

Pakistan can also tap into alternative carbon markets such as voluntary emissions trading schemes. These schemes, with impact quantification by independent certified bodies such as the Gold Standard, would enable the country to unlock private finance via carbon credits. Private sector organisations and countries seeking to meet their emissions reduction targets under the Paris Agreement can finance a quantifiable impact on climate change.

Carbon markets are becoming an indispensable tool in the global climate fight, with carbon pricing instruments now covering over 20% of global GHG emissions, generating USD 53 billion in revenue at the end of 2021, according to the Carbon Pricing Leadership Coalition. In February 2024, the Prime Minister’s Office stated that the government was in the process of drafting a comprehensive policy framework for the establishment of its first carbon credits market.

According to Bilal Anwar, CEO of NDRMF, ‘carbon pricing’ is a broad term that includes mechanisms such as taxes, levies, or a cap-and-trade system. In an interview with *Arab News*, he explained that a cap-and-trade system sets a limit on total emissions from a group of emitters by establishing a cap on maximum allowable emissions. This market-based approach is designed to reduce overall pollutant emissions while encouraging businesses to invest in fossil fuel alternatives and improve energy efficiency.

Pakistan’s carbon market is set to be primarily based on a cap-and-trade system, as it is considered the most appropriate and feasible approach for the country. Despite contributing less than 0.1% to global GHG emissions, Pakistan ranks as the 8th most vulnerable country to climate change. In 2022, the country faced significant socioeconomic losses due to a polycrisis, including climate change, inflation, the aftermath of COVID-19, and regional conflict. These challenges highlighted the importance of placing environmental priorities at the core of development and national sustainability efforts.

While Pakistan has made progress in several areas, its carbon market remains underdeveloped and lacks the capacity for effective implementation. Drawing inspiration from successful initiatives like the Danish 'State of Green', Pakistan has the opportunity to bridge its gap in the global carbon market. Establishing an efficient trading system for GHG emissions is crucial for achieving economic and environmental sustainability, contributing to global emissions reduction, and fostering green economic sectors.

At this critical juncture, the development of an effective carbon trading system in Pakistan requires collaborative efforts from both public and private stakeholders, collectively guiding the country towards a cleaner and greener future.

Significance of Carbon Markets for Pakistan

In recent years, Pakistan has found itself crossing through a complex web of challenges, including the impact of climate change, COVID-19 Pandemic, and prevailing regional turmoil. This polycrisis has cast a profound shadow over livelihoods, spanning household incomes, businesses, and various commercial activities. Faced with the urgency to strengthen its economy with foreign exchange, the government sees the carbon market as a strategic avenue to attract much-needed foreign currency. The imperative for Pakistan lies in economic growth and environmental sustainability, offering a compelling proposition for corporates, industries, and project developers. Carbon markets emerge as a hub in this endeavour, providing a viable pathway for economic ascent while ensuring a commitment to environmental sustainability.

The global landscape has shifted, with the introduction of initiatives such as the European Union's Carbon Border Adjustment Mechanism (CBAM). It places increased pressure on countries like Pakistan to reduce the carbon footprint of their exports. This becomes especially pertinent given that a substantial 44% of the country's exports find their way to Europe. With the CBAM deadline looming within seven years, Pakistan faces the challenge of aligning its exports with global carbon reduction standards.

While sectors like textiles are making strides in response to consumer demand for green products, the narrative is different for hard-to-abate sectors such as cement or iron and steel. The high costs associated with alternative solutions hinder decarbonisation efforts in these industries. Here, carbon markets emerge

as a catalyst, providing an economic engine to fuel decarbonisation endeavours in sectors where external pressures are crucial.

The significance of carbon markets extends beyond economic considerations. They can also become instrumental in achieving Pakistan's Nationally Determined Contributions (NDCs) and facilitating the nation's energy transition. Carbon markets not only offer flexibility to economies through a stick-and-carrot approach but also facilitate capital mobility, economic value, and incentivisation. Furthermore, they usher in spill-over benefits, including biodiversity recovery and support for indigenous communities. In this regard, Pakistan's Ministry of Climate Change and Environmental Coordination (MoCC&EC) is at the forefront of efforts to develop the country's carbon market, working closely with key public sector institutions such as the National Disaster and Risk Management Fund (NDRMF), Finance Division, Ministry of Commerce, Securities and Exchange Commission of Pakistan (SECP), the Pakistan Stock Exchange, and the State Bank of Pakistan (SBP).

A critical collaboration with Verra (the world's biggest certifier of voluntary carbon offsets) is focused on building the capacity of private sector stakeholders and project developers involved in voluntary carbon markets (VCMs). The Ministry's role in VCMs is not regulatory; instead, it allows the market to function independently, intervening only when corresponding adjustments are required. To further strengthen Pakistan's position in VCMs, the MoCC&EC, in partnership with Verra, is developing a framework to guide the country's approach to both corresponding and non-corresponding adjustments. While not legally binding, this framework signals Pakistan's openness to various market mechanisms. The Ministry also acknowledges the absence of a Measurement, Reporting, and Verification (MRV) system and is actively working to address this gap, particularly in relation to the NDCs.

Additionally, the Ministry is assessing marginal abatement cost curves to explore the potential for carbon pricing and is collaborating with the World Bank Group to develop a carbon registry, laying the foundation for future carbon trading on a global scale.

Potential of Carbon Market (Reduction) in Pakistan³

The carbon market in Pakistan offers significant opportunities for reducing GHG emissions across various sectors. By implementing targeted strategies, the country can not only meet its emission reduction goals but also generate economic, social, and environmental co-benefits. The following section briefly outlines key areas where Pakistan can leverage its natural and economic resources to contribute to global carbon reduction efforts, while promoting sustainable development and green employment opportunities:

- i. **Forest Management:** Forest management encompasses strategies for Deforestation Control and Management, presenting opportunities for enhanced natural carbon sequestration. Additionally, it yields potential co-benefits such as creation of green employment, preservation of habitats and biodiversity, and is conducive to a country rich in both labour and land resources.
- ii. **Livestock:** Methane capture initiatives address emissions from livestock, mitigating the release of high-potency GHG. This approach not only reduces environmental impact but also offers ancillary benefits like improved air and water quality, alongside potential economic and energy opportunities for agricultural communities.
- iii. **Energy:** Diverse approaches including energy efficiency measures, fuel switching, and adoption of renewable energy sources like solar, wind, and hydropower, contribute significantly to emission reduction targets. Moreover, low-carbon energy solutions represent a substantial investment opportunity, estimated at USD 10 billion annually.
- iv. **Households:** Addressing emissions from inefficient domestic activities, particularly widespread use of firewood, mitigates significant emissions. Apart from reducing the carbon footprint, such initiatives can enhance air quality and support local ecosystems.
- v. **Agriculture:** Agriculture offers substantial potential for carbon storage through measures like waste heat recovery and conservation practices. These efforts yield multiple benefits, including access to conservation

³ Based on outcomes/discussions during the *High-Level Policy Dialogue* on 22 November 2023 at the Sustainable Development Policy Institute's Twenty-sixth Sustainable Development Conference (SDC) titled 'Light at the End of the Tunnel: Hope in Times of Despair.' See *Acknowledgements* section.

- funding, creation of green employment, and conservation of habitats and biodiversity.
- vi. **Direct Air Capture:** This presents a viable option for long-term carbon storage with associated benefits such as job creation and technological advancement.
 - vii. **Mangroves in the Sindh Delta:** These notably contribute to natural carbon sequestration, with added advantages such as job creation and conservation of marine ecosystems. Additionally, they offer benefits like marine restoration and adaptation services.

Implementation of Carbon Markets in Pakistan

Since the 18th Amendment, the landscape of carbon markets in Pakistan has experienced a major transformation, redefining the roles of both federal and provincial governments. With provinces now enjoying greater autonomy over resources, including climate change strategies, the Federal Government's role has shifted to providing overarching guidance.

At the federal level, establishment of a domestic carbon market has become a priority. A comprehensive policy framework has been drafted, signalling the imminent launch of the market. The Federal Government is also responsible for crafting regulations around pricing mechanisms and carbon credit allocation.

Provincial governments are tasked with executing carbon market policies at the local level, aligning their climate action plans with national directives. Many provinces have set up dedicated climate change departments to ensure effective policy implementation.

Collaboration between federal and provincial authorities is critical, especially for building capacity in carbon markets and trading under Article 6 of the Paris Agreement. The SPAR6C (Supporting Preparedness for Article 6 Cooperation) programme, led by the UNEP Copenhagen Climate Centre, is a key initiative providing technical support and capacity building, with a roadmap for assistance extending until 2027.

Post-18th Amendment, Pakistan's Federal Government is focused on establishing a carbon market and regulatory frameworks, while the provinces are working on

policy implementation and localised climate action. Both tiers of government are working together to strengthen the country's carbon market capabilities, aligning with international commitments. To successfully implement carbon markets, regulatory bodies and organisations must be established to oversee, regulate, and manage the system. The design of the carbon market will determine the specific entities involved in this process:

- **Ministry of Climate Change and Environmental Coordination (MoCC&EC):** The Ministry can play a central role in formulating policies and regulations related to carbon markets in Pakistan. It can provide overall strategic direction for climate change and carbon trading activities.
- **Environmental Protection Agency (EPA):** EPA can be responsible for monitoring and enforcing emissions limits and regulations within the carbon market. It ensures that industrial facilities comply with emissions targets and report their emissions accurately.
- **Carbon Market Regulatory Authority:** A dedicated regulatory authority could be established to oversee functioning of the carbon market, including emissions allowances, trading, and compliance. This authority can set the rules, standards, and verification processes for carbon credits.
- **National Carbon Trading Office:** It is a specialised office or agency set up to manage the logistics of the carbon market including the registration and issuance of emissions allowances, maintaining a carbon credit registry and facilitating emissions trading.
- **Financial Institutions:** Banks and financial institutions may become involved by providing financing for emissions reduction projects and facilitating carbon credit transactions.
- **United Nations Framework Convention on Climate Change (UNFCCC):** Pakistan's UNFCCC liaison office may work with international agencies to ensure compliance with international climate agreements and standards.
- **Advisory and Stakeholder Committees:** Advisory committees could be established that include representatives from various sectors and stakeholders, such as businesses, environmental organisations, and community groups. These committees can provide input and feedback on market design and implementation.
- **Project Developers and Offsetting Organisations:** Organisations specialising in carbon offset projects such as afforestation, reforestation,

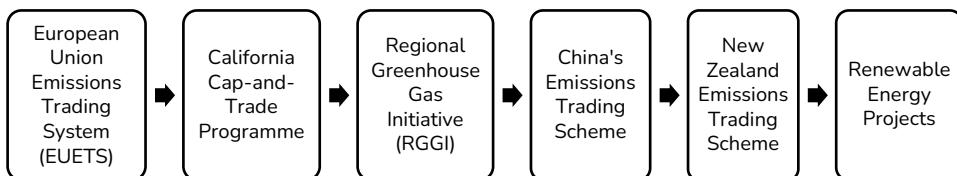
renewable energy, and sustainable agriculture can take part in the carbon market by generating and selling carbon credits.

- **Regulators Regional Exchange:** Regional carbon exchanges are instrumental in carbon markets as they serve as a hub for trading carbon allowances and credits. They enable the exchange of carbon assets, aiding companies, and governments in fulfilling their carbon reduction commitments efficiently. Additionally, these exchanges foster price discovery and market transparency, empowering participants to evaluate climate transition risk and make well-informed decisions regarding carbon investments.

Successful Projects under Carbon Markets in Pakistan

In Pakistan, a number of successful projects have emerged under carbon markets, demonstrating the potential for reducing emissions while generating economic and environmental benefits. They are discussed here:

Figure 2: Global Best Examples under Carbon Markets



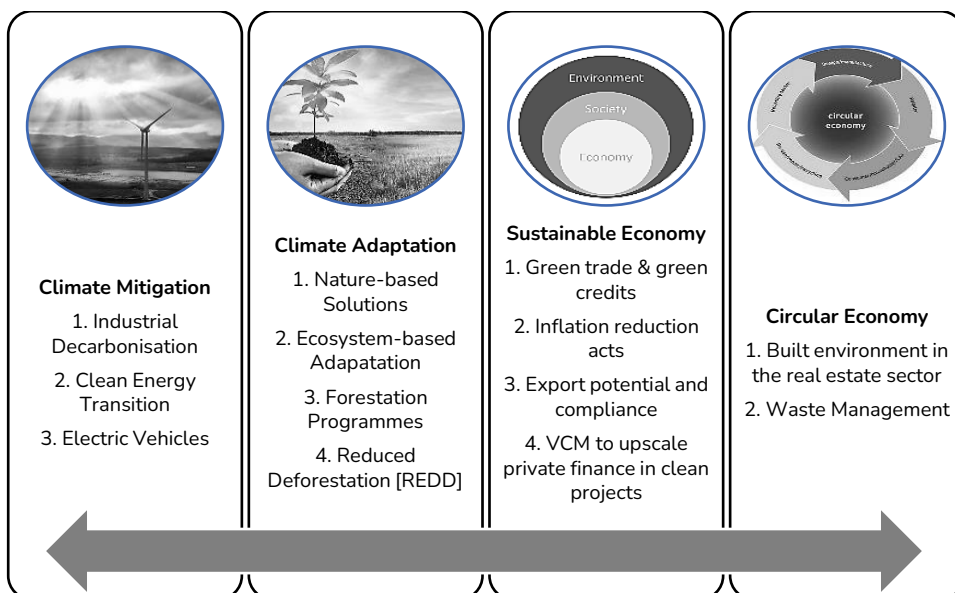
Source: Pollitt 2019.

- a. **Clean Development Mechanism (CDM) Projects:** Pakistan has implemented numerous CDM initiatives targeting emissions reduction and carbon credit generation across diverse sectors such as renewable energy, energy efficiency, and waste management.
- b. **Renewable Energy Expansion:** Pakistan's efforts to enhance its renewable energy capacity, particularly in wind and solar power, indirectly contribute to emissions mitigation and environmental sustainability.
- c. **Afforestation and Reforestation Initiatives:** Pakistan has initiated projects aimed at increasing forest cover and reducing carbon emissions

through afforestation and reforestation efforts, crucial for carbon sequestration.

- d. **Hydropower Development:** The establishment of hydropower projects reduces reliance on fossil fuels, leading to decreased carbon emissions, aligning with government objectives.
- e. **Energy Efficiency Programmes:** Government-led initiatives targeting enhanced energy efficiency in industrial and building sectors play a pivotal role in emissions reduction efforts.
- f. **Policy Framework Establishment:** The GoP has formalised supportive policies to foster carbon market development, including creation of the Pakistan Climate Change Fund to finance climate-related initiatives. Furthermore, the country has devised a 'National Carbon Market Framework', encompassing establishment of a domestic carbon market and potential linkage with international counterparts.

Leveraging carbon markets can enable Pakistan to access international climate finance, offered by multilateral organisations and developed countries, by monetising emissions reductions achieved through various projects. However, despite availability of significant opportunities, Pakistan has not been able to harness the potential of carbon markets (potential avenues are identified in Figure 3). Unfortunately, no local/national carbon trading mechanism currently exists that can be utilised by private sector entities to lower its emissions.

Figure 3: Potential Areas for Scoping of Carbon Markets in Pakistan

Source: NDRMF 2023.

Even with Pakistan's minimal contribution to global GHG emissions, reducing these emissions could have a significant positive impact on air and water quality, provide additional energy, and create new economic opportunities for farmers. The energy sector is one of the largest emitters in Pakistan, responsible for around 220 million tonnes of CO₂ emissions annually. Mitigating these emissions could generate an estimated USD 10 billion per year. As Pakistan is currently under an International Monetary Fund (IMF) programme, which restricts the provision of subsidies, revenue generated from carbon markets could be utilised to enhance climate resilience through targeted subsidy programmes. According to NASA, one carbon credit is equal to 100 kilograms of CO₂, generated by activities that reduce or prevent emissions. Pakistan has the potential to establish carbon credits through forest management to reduce deforestation. For climate equity, it is essential that initiatives are cost-effective, innovative, and environmentally sustainable.

Challenges and Policy Recommendations

Challenge 1: The absence of a well-established ecosystem, infrastructure, and policy framework for carbon markets in Pakistan poses a significant challenge for the country's sustainable development. Unlike many other nations, Pakistan missed the opportunity to participate in the Clean Development Mechanism (CDM) regime, leaving a gap in its efforts to address environmental concerns and capitalise on carbon market opportunities. The lack of early involvement in CDM and the subsequent delay in establishing a robust framework have hindered Pakistan's ability to leverage carbon trading mechanisms effectively.

Policy Recommendation: The Ministry of Climate Change and Environmental Coordination (MoCC& EC) should develop and implement a comprehensive 'Carbon Market Policy', drawing from successful international models. This policy should establish an independent regulatory body to oversee carbon trading, resolve federation versus provinces issues, incentivise carbon reduction efforts, promote PPPs, facilitate technology transfer, engage stakeholders, foster international collaboration, and ensure continuous monitoring and evaluation for effective implementation and equitable development.

Challenge 2: Effectively communicating the significance of carbon pricing and elucidating its crucial role in driving low-carbon development and fostering a resilient market presents a paramount challenge. Despite its potential benefits, the obstacle lies in surmounting barriers to widespread adoption and mobilising support for a comprehensive carbon pricing strategy on an international scale.

Policy Recommendations

- The MoCC&EC should prioritise implementation of a policy aimed at establishing a predictable and transparent carbon pricing mechanism. This mechanism should be designed to align with ambitious climate goals by setting a carbon price commensurate with the desired level of emissions reduction. To achieve this, the Ministry should engage in comprehensive stakeholder consultations, leverage international best practices, and ensure robust enforcement mechanisms to promote compliance.

- The National Energy Efficiency and Conservation Authority (NEECA), entrusted with the mandate of overseeing carbon markets, should spearhead development of a robust Monitoring, Reporting, and Verification (MRV) framework. This framework must prioritise transparency, credibility, consistency, and accuracy in data reporting. NEECA should collaborate with international partners and experts to establish standards and protocols for MRV processes, ensuring harmonisation with global reporting mechanisms. Additionally, NEECA should invest in strengthening institutional capacity through training programmes, technical assistance, and deployment of advanced monitoring technologies to enhance the quality and reliability of data collected. This concerted effort will bolster confidence in the integrity of carbon market mechanisms and facilitate informed decision-making by stakeholders.

Challenge 3: In Pakistan, a significant obstacle in the implementation of carbon markets is insufficient awareness and understanding of their functioning among both the public and private sectors, particularly within industries with the potential to leverage this opportunity. This lack of awareness not only impedes adoption of carbon market mechanisms but also hampers the ability of industries to showcase their efforts on international platforms, limiting their participation in global carbon trading initiatives and climate mitigation efforts.

Policy Recommendations

- The government should develop and implement policies that prioritise stakeholder engagement, fostering a coalition of support, and employ effective communication strategies to articulate the benefits of carbon markets while addressing concerns and misconceptions. This entails cultivating a collaborative approach that involves all relevant stakeholders, including government entities, industry representatives, civil society organisations, and academia. By fostering open dialogue and soliciting input from diverse perspectives, policymakers can ensure inclusivity and legitimacy of carbon market initiatives. Additionally, leveraging innovative communication channels and educational campaigns can help demystify the complexities of carbon markets, enhance public awareness, and build trust in the process.

- The MoCC&EC should promote international best practices and standards to ensure transparency, fairness, and integrity in carbon trading activities. Policymakers should collaborate with regulatory bodies, industry experts, and international partners to develop comprehensive guidelines that clarify the rights and responsibilities of market participants, establish mechanisms for monitoring and enforcement, and address potential risks and challenges. By creating a conducive regulatory environment, policymakers can instil confidence in carbon market mechanisms and promote investor certainty and participation.

Challenge 4: The absence of clear and consistent government policies for the industrial sector, coupled with delayed establishment of essential infrastructure, poses a significant impediment to progress in carbon markets. The susceptibility of the carbon market to signals and information underscores the critical need for consistent and sustainable government policies to facilitate long-term planning.

Policy Recommendations: Recognising the diverse opportunities across sectors, it is imperative for the GoP to prioritise strategic interventions to capitalise on the potential for carbon reduction and energy efficiency enhancements. Specifically:

- Implement targeted policies and initiatives within the industrial sector to promote energy efficiency and process optimisation, aligning with international best practices and standards.
- Foster innovation and investment in sustainable agricultural practices to unlock the promising potential for carbon reduction in the agriculture sector, while ensuring alignment with international sustainability goals.
- Develop comprehensive strategies and incentives to drive emissions reductions and promote sustainable mobility solutions within the transport sector, leveraging global expertise and partnerships.
- Modernise energy distribution and generation infrastructure, incorporating state-of-the-art technologies and renewable energy sources to optimise efficiency and reduce carbon emissions, in line with international standards and commitments.

Challenge 5: The challenge at hand revolves around the necessity for investors to obtain clarity regarding the pricing of carbon assets to rationalise their investments effectively.

Policy Recommendation: To facilitate effective functioning of carbon markets, the federal and provincial governments should prioritise establishment of essential infrastructure, including a robust registry and corresponding adjustment mechanisms. Furthermore, it is crucial to implement price differentiation mechanisms within the carbon market based on factors such as technology, geography, sector, and the perspective of project registration.

Challenge 6: Prevailing economic uncertainty, coupled with the escalating GHG emissions emanating from the energy and industrial sectors, constitutes a pressing concern for Pakistan.

Policy Recommendation: Leveraging carbon markets, credits, and offsets offers Pakistan a robust economic strategy to advance its environmental sustainability goals. By actively participating in carbon trading mechanisms and utilising carbon credits and offsets, Pakistan can stimulate green investments, promote renewable energy adoption, and foster sustainable development across various sectors. This approach not only facilitates emissions reductions but also enhances economic resilience and competitiveness in the global market. Implementing supportive policies and incentives to encourage private sector engagement and investment in carbon markets will also further amplify the benefits and effectiveness of this strategy.

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Advancing Strategies for Preventing and Countering Violent Extremism: Bridging the Gaps in P/CVE Research and Practice*

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Abstract

Violent Extremism (VE) and Countering Violent Extremism (CVE) are closely linked. VE involves using force to achieve ideological, political, or religious goals, requiring a deep connection to CVE. Effectively Preventing and Countering Violent Extremism (P/CVE) demands a comprehensive strategy, relying on political will, strong leadership, and diverse stakeholder engagement. This chapter sheds light on Pakistan's shift from counterterrorism to Preventing Violent Extremism (PVE), underlining the importance of proactive strategies.

Strategies proposed encompass a human-centred, state-centred, and culturally rooted approach to comprehensively tackle the complex issue of violent extremism. Authors advocate soft strategies for P/CVE, such as peace and resilience building, awareness and understanding, involving mothers and fathers in peace efforts, integrating peace education, recognising teachers as contributors

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to peace, and understanding the media's role in P/CVE. Each of these strategies plays a vital role in a well-rounded, multifaceted approach aimed at fostering peace and preventing the spread of violent extremism in diverse contexts. The research employs a qualitative approach based on literature, research articles, and relevant websites in line with the panel discussions at the Sustainable Development Policy Institute's 26th Sustainable Development Conference to understand P/CVE dimensions and its challenges.

Introduction

In recent years, the global landscape has witnessed an alarming rise of violent extremism, necessitating a comprehensive and dynamic response to prevent and counteract its proliferation. In Pakistan, issues like aggression, anger, and discrimination based on thoughts and beliefs have led to non-acceptance and marginalisation. Intolerance towards differing viewpoints and religious beliefs has fuelled extremism, eventually transforming into violent extremism. Significant research has been conducted in the realm of Preventing and Countering Violent Extremism (P/CVE) in Pakistan. There was previously a scarcity of literature on this subject.

P/CVE presents a multifaceted challenge that demands a holistic strategy. Successful P/CVE efforts necessitate a thorough comprehension of the underlying drivers of violent extremism, with strategies tailored to the specific nuances of the local context. Embracing a comprehensive and inclusive approach becomes paramount in preventing and countering violent extremism, fostering the development of more resilient and inclusive societies. Through this method, it becomes possible to address complexity of the issue and work toward sustainable solutions (Feve and Dews 2019).

Reports indicate that religious biases, even at Higher Education Institutions (HEIs), are contributing to the rise of religious extremism in Pakistani society. To address escalating radicalisation and extremism, Pakistan has implemented various measures, including anti-terrorism laws, National Action Plan 2014, and Paigham-e-Pakistan initiative, promoting a narrative of peace and harmony. The government has established a dedicated Countering Violent Extremism (CVE) Wing at the National Counter Terrorism Authority (NACTA) and a CVE-focused Media Cell at the Press Information Department (PID), under the Federal Ministry

of Information and Broadcasting. These initiatives aim to raise awareness about violent extremism and implement preventive and countering measures.

The Sustainable Development Policy Institute (SDPI) has also played a crucial role over the past five years by conducting extensive research on the state of violent extremism in Pakistan and related P/CVE actions. Through 54 research studies, policy papers, and synthesis studies, SDPI has addressed key themes related to CVE in the Pakistani context, focusing on evidence-based indigenous literature. These themes encompass religion, gender, social factors contributing to extremism, measures to counter extremism, promoting the narrative of CVE among youth, and institutional approaches and educational policies to counter violent extremism. Alongside SDPI, other institutions have also been engaging in research efforts. The newly established CVE Wing at NACTA is set to contribute to this body of research. This ongoing research endeavours to enrich existing literature and enhance understanding of P/CVE in the Pakistani context.

This policy brief advocates various soft strategies aimed at preventing and addressing violent extremism. The identified approaches encompass understanding the issue and its root causes, role of education, building community resilience, amplifying the role of women in peacebuilding, and understanding the role of media in P/CVE. Each of these strategies contributes to a comprehensive and multifaceted approach to promoting peace and prevent the spread of violent extremism in different contexts.

Methodology

The chapter draws from the discussions held at the 26th Sustainable Development Conference organised by the Sustainable Development Policy Institute. In addition to expert discussions, secondary data, and literature have also been utilised to further enrich understanding of the topic. This complementary approach allows for more comprehensive analysis and ensures that insights gathered from existing research are considered in the discourse.

Root Causes of Violent Extremism

Individuals can radicalise toward violent extremism in several ways and to different extents. Numerous institutional, psychological, and socioeconomic

elements have an impact on violent extremism. 'Push factors' include being marginalised, experiencing inequity, prejudice, feeling persecuted, lack of knowledge, violation of rights, and other issues that lead individuals to turn to violent extremism.

People are drawn to violent extremism by 'pull factors' as well through well-organised violent extremist groups that provide employment, income, and services. Furthermore, extremist organisations assert that they offer 'a place to belong' and a supportive atmosphere that helps radicalise individuals. Extremist organisations attempt to radicalise and exploit since they are often part of and interact with communities. In addition, the education system, criminality, corruption, and difficulties with rule of law are a few examples of contextual factors that support development of violent extremism and organisations (Zeiger and Aly 2015).

Violent extremism poses a significant threat to both peace and sustainable development as it is a critical issue from sociological and developmental perspectives (El-Amraoui and Ducol 2019). Many experts have analysed and discussed the issue, stressing the importance of tackling its root causes and actively fighting against it. However, it's clear that despite these discussions and efforts, a comprehensive long-term strategy is still required to effectively counter it.

Despite the severe impact of violent extremism on society, certain segments endorse extremist tactics, necessitating focused redirection through alternative narratives, economic opportunities, and education. Violent extremism undermines developmental objectives and leads to economic consequences by compromising growth, reducing investment, tourism, and educational access. As extremism rises, states often prioritise security over essential services, requiring a concentrated effort to prevent violent extremism while avoiding neglect of broader extremism issues. PVE has potential but requires careful support and guidance to navigate challenges associated with terrorism discussions. Ethical and diligent approaches are vital for addressing its root causes, reducing factors contributing to its rise and dissemination. Addressing underlying causes, such as marginalisation and extremist ideologies, is crucial to prevent minor issues from escalating into violent events and counter hate speech effectively.

Pakistan's Context

The primary factor contributing to destabilisation of state and societal frameworks is proliferation of extremism and militancy across various levels. Exacerbation of ethnic, sectarian, and religious intolerance has resulted in widespread violence, undermining the rule of law. Terrorism and extremism stand out as the most critical challenges to Pakistan's national security, demanding effective policymaking and diligent implementation (Ahmar 2011).

Over the past two decades, Pakistan has grappled with the persistent challenge of terrorism. Between 2001 and 2022, the nation endured a profound human toll, with the loss of 83,000 lives, and suffered significant financial setbacks, amounting to more than PKR 35 trillion. Because of this prolonged struggle against terrorism, there has been notable escalation in levels of violence, extremism, and intolerance within society (NACTA 2023).

This wave of terrorism has not only inflicted severe damage on the country's cultural and religious values but has also given rise to various detrimental consequences. Among these consequences, the menace of violent extremism emerges as the most formidable threat to both the state and broader society of the country (Basit 2015).

Pakistan has taken various steps to tackle the issue of violent extremism and terrorism. The national stance against terrorism and extremism encompasses key elements of Paigham-i-Pakistan. Issued in 2018, this consensus decree (*fatwa*) bears signatures from over 1,800 religious scholars representing diverse Muslim sects in Pakistan. Its international credibility is further affirmed by endorsements from the Imam-i-Kaaba and Al Azhar University in Cairo. The Paigham-i-Pakistan aligns with the teachings of the Quran and Sunnah, adheres to the principles of the Constitution of Pakistan, and encapsulates collective perspective of the Pakistani people (NACTA 2023).

However, it is imperative to concentrate on soft approaches aimed at P/CVE. These methods include building resilience, enhancing awareness and comprehension of the issue, tackling mental health problems, incorporating mothers as educators and promoters of peace, involving fathers as advocates for peace, integrating peace education into educational curricula, acknowledging

teachers as contributors to peace, and understanding the role of media in this context.

Community Resilience Building: Soft Approaches to P/CVE

Resilience is 'the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances' (Ellis and Abdi 2017). It is a multidisciplinary concept evolving from different perspectives, including psychology, sociology, biology, engineering, and sustainability (Doorn et al., 2019).

The concept of a 'resilient individual' orientation, as illustrated by various theories and approaches, envisions development of individuals endowed with strength, critical thinking abilities and adaptability (Stephens et al., 2021). This proactive strategy is designed to discourage individuals from being enticed by violent extremist ideologies or affiliating with extremist groups.

The term 'community resilience' describes a web of interconnected systems, such as the built, ecological, and socioeconomic surroundings, that have an immediate influence on human civilisation locally. Communities have long been understood to be critical to violence prevention across a spectrum of violence types. Community resilience is known as the capacity of a community, state, people, or area to adopt new procedures, ways of living, and social structures in reaction to violent shock or an increase in violence and brutality to avoid, lessen, or recover from violence. With community participation, community resilience can be achieved. Social connection is at the heart of resilient communities, and any efforts aimed at strengthening community resilience should actively leverage and strengthen these existing social bonds without causing harm or weakening them. Academia has a fundamental role to play in this process by conducting community-based participatory research. This approach, which emphasises collaboration and partnership between researchers and community members, serves as a blueprint for establishing potential partnerships and encouraging meaningful community engagement (Ellis and Abdi 2017).

Exclusion and marginalisation often drive individuals towards violent extremism and terrorism. This trend worsens with the gradual decline of community spaces for festivals and interactions. Addressing these challenges requires a deep

understanding of marginalisation factors and collaboration with both supporters and instigators of extremism.

To achieve resilience within communities, it is crucial to create a positive community environment and bring cohesion and inclusivity, especially in marginalised regions. Incorporating local knowledge and languages in counter-extremism efforts is vital, yet often overlooked at the state level. PVE requires a holistic, gender-sensitive approach, with poverty as a key driver of radicalisation. Empowering women in peacebuilding efforts is essential but often overlooked. Embracing culturally aligned, innovative approaches are necessary, bridging gaps between researchers and policymakers for effective strategies grounded in human-centred, state-centred, and cultural contexts to address extremism comprehensively.¹

Social cohesiveness has weakened in Pakistani communities due to violent extremism. Policymakers must work to promote cohesion by fostering bonding, bridging, and linking connections across society. Communities can be strengthened and made resilient by promoting social justice and rule of law and by addressing socioeconomic, political, and regional issues. Using peace dialogues and discussions with communities is crucial in addressing violent extremism. Promoting resilience requires dialogues among different communities, involving provincial authorities, local government officials, and political leaders. These dialogues can address grievances and initiate socioeconomic uplift programmes for affected communities as well as ensure comprehensive security (Adnan 2023).

Establishing security is often the initial step in mitigating violent extremism, but this approach is not sustainable. While P/CVE is commonly linked with the security paradigm, its significance extends to the realms of politics, policy, and governance, forming an interconnected framework. Certain actions, such as preventive measures, involve addressing root causes of crises and transitioning from reactive to proactive policies and initiatives for potential conflict resolution. Community engagement with academia plays a pivotal role in achieving this.

¹ Expert panel 'Advancing Strategies in Preventing and Countering Violent Extremism' recommendations at the 26th Sustainable Development Conference, <<https://www.youtube.com/watch?v=aFehOSN4VsU>> [Accessed 23 November 2023].

Sustainable peace and development necessitate a people-centric strategy, diverging from the traditional security-focused approach (Khan 2023).

Enhancing P/CVE Strategies

Given the ongoing threat to Pakistan's peace, stability, security, and sustainable development, it is imperative to raise awareness and understanding of the problem. Since disarming radicalisation is key to preventing violent extremism, sources of radicalisation must be identified and addressed. Preventative measures should receive greater attention than counteraction approaches. Community engagement also means establishing trust, strengthening social cohesion, and empowering local leaders and organisations to challenge extremist narratives (Hook 2021). Promoting critical media literacy is another important strategy for countering extremism and terrorism. Media literacy entails developing programmes to help individuals analyse and interpret media messages, particularly online content, to identify and reject extremist propaganda effectively (Grizzle et al., 2016). Nobody is born an extremist, yet there may be underlying causes for such behaviours. By concentrating on preventive measures, it is possible to pinpoint the factors that led someone to become a violent extremist and treat the problem before it escalates.

While there is abundant information on P/CVE, consensus on the most effective strategies remains elusive. To enhance our understanding and application of this knowledge, it is necessary to review existing research. This involves engaging diverse stakeholders, including researchers, practitioners, and survivors of extremism, in order to identify gaps in knowledge and action. Involving survivors in research also offers valuable firsthand insights into the challenges they face, informing more effective P/CVE policies. Prioritising well-being of survivors during research is crucial. Strengthening the network of P/CVE researchers and policymakers facilitates sharing successful prevention strategies and turning research into practical actions.²

² Expert panel 'Advancing Strategies in Preventing and Countering Violent Extremism' recommendations at the 26th Sustainable Development Conference, <<https://www.youtube.com/watch?v=aFehOSN4VsU>> [Accessed 23 November 2023].

Successful P/CVE requires a stable political context and a well-defined model, focused on fostering a sense of belonging among individuals. Comprehensive security creates inclusivity and a sense of belonging. Evaluating impact is crucial for understanding efficacy and identifying necessary adjustments. When assessing CVE initiatives, a holistic perspective on individual efforts is also needed. Local reform is integral, requiring contextual information and expertise. Addressing fundamental concerns, incorporating a foundation for peace education into the curriculum, and considering long-term implications are paramount in this endeavour.

Role of Parents and Women

Parents have a critical role in both preventing and propagating violent extremism, particularly when it comes to the way women shape their children's perceptions of society and extremism. Families are important, but sometimes underutilised, partners in P/CVE activities. They may help shape attitudes toward non-violence and function as a 'front line' player in seeing potential indicators of radicalisation to violence, stopping it before it starts, and intervening in the radicalisation process (El-Amraoui and Ducol 2019).

The role of women in preventing violent extremism is crucial, particularly in the role of motherhood. According to Pakistan Social & Living Standard Measurement Survey (PSLM) 2019-20, 32% of children are out of school in the country, and ratio of females (37%) is greater than that of men (27%). In all provinces, Punjab (24%), Khyber Pakhtunkhwa (32%), Sindh (44%), and Balochistan (47%), females are out of schools more than males. Both parents must have an education, particularly the mother (PBS 2021).

Mothers are often in the greatest position to recognise, anticipate, and address possible VE vulnerabilities since they are positioned at the centre of the family. They are frequently in a good position to provide insightful counter-narratives as well. For example, they may humanise the effects of terrorism or draw attention to the financial and other challenges. Women's voices must be heard more loudly. Informed and empowered women may make a big difference in prevention both at home and in the larger community. Mothers may recognise a developing VE risk, but they might lack the resources or assistance to prevent their kids from committing crimes (Giscard d'Estaing 2017).

Embracing sustainability means acknowledging women's vital role in society, particularly in fostering lasting peace. Empowering mothers intellectually, financially, and emotionally is crucial for sustainable development. It is time to grant them autonomy in decision-making, prioritising their aspirations and choices. Mothers' ideas should be respected equally, reflecting the value given to fathers. Children benefit from seeing their parents' express appreciation, cooperation, compassion, and kindness which fosters confidence and security. Prioritising mothers' roles in homes contributes to fostering peace and tranquillity.

Children raised by educated women are more likely to be inspired and motivated, developing compassionate ideals. Women with higher education levels contribute to social order, community resilience, and children's emotional well-being. They are better at recognising and responding to unconventional behaviour in their children, with a deeper understanding of their mental health. Compared to less educated women, they exhibit higher self-confidence, possess valuable skills and knowledge, demonstrate autonomy, and make better decisions. Additionally, they have transformative perspectives, strong social skills, and excel in conflict resolution.

Effective parenting requires both mothers and fathers to actively participate in raising their children for emotional stability. Parenting is a shared responsibility that begins with both parents, shaping children's values and worldviews. Children should be taught love, compassion, tolerance, and conflict resolution, rather than negative attitudes. While mothers traditionally serve as primary caregivers, fathers' contributions are essential as providers, protectors, and role models. Stressful environments may lead to extremist tendencies in women, risking their children adopting similar perspectives and endangering society. Fathers must be mindful of the atmosphere they create for their children, as families built on mutual respect foster positive generational shifts in values.

To counter extremist narratives, fathers, brothers, and other males in the community can do several things, such as highlighting culturally appropriate, non-violent principles of family protection and providing or pointing out the fallacy of VE propaganda. Fathers are the missing piece in the support systems for mothers acting as P/CVE actors. They should have access to the same resources and training that assist mothers in developing their abilities and competencies, particularly concerning childrearing (Ranstorp et al., 2016). Research shows that

children who experience trauma in childhood may be more susceptible to extremist tendencies.

Creating an equitable environment both at home and in school is important for the overall well-being of every child. This entails not only recognising the significance of academic development but also acknowledging and addressing often overlooked aspects of psychological and emotional growth. Parents and teachers shoulder a significant responsibility in understanding child psychology and fostering a supportive atmosphere. Parental counselling plays a crucial role in adopting a holistic approach towards a child's development, dispelling misconceptions about support systems that could otherwise lead to adverse effects. It is imperative to acknowledge and address the challenges faced by children from broken families, while also recognising the detrimental impact of corporal punishment. To mitigate these issues, preventive strategies should target root causes, emphasise teacher training, and prioritise parent counselling, which includes active listening to mitigate extremist tendencies.³

Inclusion of Peace Education in Curriculum and Role of Teachers

To foster lasting peace in society, a local focus is crucial, but achieving this requires prioritising advanced skills, sustainable planning, and peaceful education. A strategic shift in the education system towards inclusivity and understanding can reduce susceptibility to extremist beliefs.

Empowering students with insights into diverse cultures, religions, and perspectives is essential for an enlightened and open-minded society. Teachers are key in this transformation, and continuous professional development is crucial to enhance their techniques. Equipping educators with the necessary tools enables them to identify and address signs of radicalisation among students, a proactive approach vital in preventing the spread of extremist ideologies (Khan and Aijaz 2023).

³ Expert panel 'Advancing Strategies in Preventing and Countering Violent Extremism' recommendations at the 26th Sustainable Development Conference, <<https://www.youtube.com/watch?v=aFehOSN4VsU>> [Accessed 23 November 2023].

Addressing violent extremism and terrorism requires promoting positive attitudes and behaviours in educational curricula. However, despite curriculum adjustments, some elements may not effectively translate to the classroom. There is a growing concern about extremism embedded in educational materials, urging a thorough review and re-evaluation of curriculum content. It is crucial to scrutinise portrayals of historical figures and narratives that may propagate intolerance and extremism. By identifying and modifying such content, we can create a more inclusive and tolerant educational environment, fostering societal harmony and understanding. Reforming the education system is vital to instil values of tolerance, justice, patience, love, and empathy. A comprehensive policy framework is needed to enact necessary changes in the curriculum effectively.⁴

Schools and education are crucial for fostering resilience against violent extremism (VE), serving as widespread channels for imparting values essential for societal control and transformation. However, it is crucial to acknowledge the dual role of education in post-conflict environments. While education can contribute to social cohesion and children's development, it also has the potential to exacerbate marginalisation, inequalities, and spread of harmful ideologies. Consequently, education policymakers and school administrators must be highly cognizant of structural problems, dominant voices, and social contexts that shape the learners' experiences (Saraiva and Erfe 2023).

Investing in resources that empower instructors to recognise at-risk pupils and collaborate with them is a key component of averting extremism. By offering support and guidance, educators can create a positive impact on students, steering them away from radicalisation. This collaborative effort between educators, students, and the educational system contributes to creating a safer, more harmonious learning environment (Naseer and Shaheen 2023).

Teaching peace education is vital as a long-term solution to conflict resolution without resorting to violence. It not only prevents conflicts but also addresses their underlying causes, fostering counter-narratives based on respect, empathy,

⁴ Expert panel 'Advancing Strategies in Preventing and Countering Violent Extremism' recommendations at the 26th Sustainable Development Conference, <<https://www.youtube.com/watch?v=aFehOSN4VsU>> [Accessed 23 November 2023].

tolerance, and acceptance of diversity. Incorporating peace education into curricula at all educational levels, from elementary to tertiary, is essential. Qualified educators with strong capacity-building abilities are crucial to prepare students for conflict resolution through language skills and activities promoting cooperation and acceptance (Khan and Aijaz 2023).

To develop school-based CVE-relevant measures, it is necessary to increase teacher involvement with parents on VE concerns. Additionally, new, or pre-existing information products on radicalisation to violence and prevention for families should be created or shared (Ranstorp et al., 2016).

Educational initiatives in P/CVE literature often assume that equipping students with specific information and moral principles can guard them against violent extremist recruitment and propaganda. These initiatives focus on methods like civic and historical education, promoting citizenship, inclusiveness, tolerance, and historical awareness. However, an effective educational system fosters information seeking, deep understanding, and contributions to a country's future. Prejudice has no place in education; every student should receive equal treatment in their learning and personality development. In peace education, teachers are pivotal in shaping a peaceful society, but challenges like potential manipulation and conflicts arising from misinterpretations must be addressed. To promote peace, teaching strategies need improvement, emphasising positive knowledge and cultivating critical thinking skills. Successful outcomes hinge on addressing teaching deficiencies, underscoring the crucial role of teacher training. Screening faculty members and having psychologists in institutions aid in interpreting student behaviour, offering targeted assistance for a peaceful society rooted in issue recognition and optimal solutions (Khan and Aijaz 2023).

Role of Media

The media works as a bridge between the government and society. Adopting a mature and constructive approach can contribute to the cultivation of a harmonious and healthy societal environment. By bringing attention to and emphasising controversial issues within conflicting societies, the media can facilitate transformation toward peace. This can be achieved by presenting a controlled and positive image, effectively projecting a softer/balanced perspective that fosters understanding and promotes peaceful co-existence within society (Ali et al., 2020).

The media plays a pivotal role in conflict creation, necessitating the implementation of 'Impact Rating Points' to enhance public awareness and knowledge. These impact-based rating systems can transform the media landscape into a responsible, informed, and socially conscious platform. By assessing the broader impact of content, such systems contribute to positive societal influence, fostering a media environment aligned with the values of a diverse and interconnected world. It is crucial to regulate media content to prevent the support of violence, recognising that violence begets violence within a society.

Addressing the issue of online radicalisation is also crucial in the contemporary age dominated by the Internet. Online platforms have evolved into fertile grounds for recruitment and radicalisation of extremists, making it imperative to implement comprehensive programmes that raise awareness about the associated risks. Integrating digital literacy and online safety instruction into the education system is essential for effectively combatting online radicalisation.

To achieve this, schools must play a central role in imparting the necessary skills to students. Digital literacy programmes should equip students with the ability to critically evaluate online sources of information, distinguishing between fact and fiction. Moreover, students need to develop an awareness of manipulative techniques employed online. By instilling these skills, schools contribute to the empowerment of students to navigate the digital landscape securely (Naseer and Shaheen 2023).

Recommendations

- Given prior identification of problem areas and potential solutions in the National Action Plan (NAP) and National Internal Security Policy (NISP), it is imperative to prioritise implementation of non-kinetic aspects. Despite their recognition, these non-kinetic measures have seen limited execution.
- There is a need to address gaps in literature and research on violent extremism by allocating resources to acquire a thorough comprehension of the field and its diverse aspects.
- Transition from the limitations of a counterterrorism paradigm to a more targeted approach centred on Preventing Violent Extremism (PVE). This shift entails moving away from strategies predominantly focused on warfare and terrorism towards preventive measures and addressing root causes more proactively.

- It is vital to promote adoption of 'impact-based rating systems' among media outlets. These systems assess the broader societal impact of media content, fostering a more responsible, informed, and socially conscious media landscape. Additionally, consider implementing regulations to limit media content that contributes to societal violence. By compelling media to refrain from producing content that exacerbates violence, the state can work towards reducing its spread and influence in society.
- To address the needs of individuals facing imminent danger, it is imperative to implement robust methods that facilitate timely assistance and support. Additionally, prioritising the cultivation of resilience among students is crucial to empower them in overcoming various problems and challenges and incorporating resilience-building components into civic education programmes.
- Partnerships between educational institutions and the community are necessary for interventions to be broad and effective. Since extremism is a dynamic phenomenon, collaboration with academic institutions is crucial for developing policy.
- Building community resilience is essential to reducing the communities' susceptibility to violent extremist threats.
- To tackle root causes of various societal issues, it is key to promote awareness of children's rights, emphasising their right to survival, development, and education. There is a need to ensure a comprehensive understanding and implementation of these rights, recognising the profound impact they have on a child's overall well-being.
- Acknowledging that a child has the right to a nurturing upbringing, policies should focus on fostering environments that support positive child-rearing practices, laying the foundation for responsible citizenship.
- There is a need to specifically target the issue of traumatic childhood experiences and their correlation with extremist tendencies. Implementing programmes that provide support and intervention for children who have undergone trauma is essential to mitigate the risk of radicalisation.
- Recognising the detrimental impact of violent extremism on learning, we need to strive to create equal and inclusive environments for every child, both at home and in school. This approach aims to counter the negative effects of extremism on a child's educational journey.
- There is a need to incorporate a deeper understanding of child psychology, with a focus on providing resources for parents and teachers.

- Beyond academic development, there is a need for parental counselling programmes to support the emotional and psychological well-being of children, ensuring a holistic approach to their growth.
- It is important to recognise the misunderstanding and misinterpretation of a child's support system. Efforts should be made to educate parents about potential harm within circles of support.
- Integrating positive behavioural components into educational curricula can contribute to shaping a child's outlook and fostering positive attitudes from an early age.
- High levels of trust and participation are seen in resilient communities across racial, religious, and generational divides in society. Therefore, participation and involvement of the community are essential for more robust and lasting results.
- It is important to emphasise the acceptance and respect of diversity, urging educational institutions to include the study of minority groups, various civilisations, and comparative religions in their curricula. Creating a society where individuals mutually respect one another, pay attention to diverse narratives, and share knowledge with an open mind will not only instil confidence but also contribute to transparency, forming the foundation for a peaceful and harmonious community.
- Accurate and balanced reporting is important for fostering understanding and unity, particularly in the face of increasing online radicalisation. Collaborative efforts are needed to effectively curb dissemination of harmful ideologies. To achieve this, media outlets should adopt sensitivity in reporting on P/CVE issues.
- Encouraging media outlets to involve local communities in content creation is essential. Community-driven storytelling can serve to highlight positive narratives and showcase resilience against extremism. Active promotion of counter-narratives through media channels is crucial, emphasising stories of individuals and communities rejecting extremism while underscoring the values of peace, tolerance, and unity that align with Pakistani society.
- Launching public awareness campaigns is required to address the dangers of extremist propaganda. Utilising various media channels, these campaigns should educate the public on recognising and reporting extremist content, empowering communities to actively participate in countering violent extremism.

- Advocating for increased diversity in leadership roles within media organisations is essential. Ensuring representation from various ethnic, religious, and cultural backgrounds fosters a more inclusive media landscape that accurately reflects the diversity of Pakistani society.

Conclusion

The shift in focus from ‘counterterrorism’ to ‘preventing violent extremism’ reflects acknowledgment by the state of the necessity for a proactive strategy. In this study, addressing root causes of violent extremism, including socioeconomic, political, and ideological factors, emerged as a key consideration. The gendered nature of PVE, poverty as a root cause, and the role of women in peacebuilding were underscored. Contextual analysis of Pakistan reveals the profound impact of terrorism on society, necessitating effective policymaking and implementation.

While Pakistan has taken steps such as the Paigham-i-Pakistan, this study highlighted the importance of soft approaches in P/CVE, focusing on addressing root causes, community resilience, and children’s well-being. It also underscores the pivotal role of families, particularly mothers and teachers, in shaping attitudes and preventing radicalisation as well as inclusion of peace education in the curriculum.

Furthermore, it highlighted the critical contribution of media in promoting a positive societal environment and addressing online radicalisation. Additionally, it is necessary to involve victims/survivors, strengthen the network of P/CVE researchers, and engage communities in a conducive environment in a comprehensive effort to combat violent extremism.

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State of Conflict and Collaboration among Diverse Stakeholders on Solid Waste Management: Reflections from Nepal*

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Abstract

This chapter draws from six years of research on Municipal Solid Waste Management (MSWM) in South Asia. Waste management in urban areas has not only become a growing concern but also a source of conflict and confusion. As waste impacts all levels of society on a daily basis, it is increasingly clear that cooperation is essential. This chapter examines both the conflict and cooperation aspects of urban waste management. Using qualitative methods for data collection and a descriptive-analytical approach for analysis, the study highlights waste-related conflicts in urban environments, identifies underlying drivers, and proposes a framework for cooperation. It concludes that while conflict in urban waste management is prevalent, it can also serve as a catalyst for collaboration.

Introduction

This chapter draws on six years of research from two regional projects: (a) 'Challenges of Municipal Solid Waste¹ Management (MSWM): Learning from Post-Crisis Governance Initiatives in South Asia' (2018-22), implemented in India,

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¹ Municipal solid waste is commonly defined as garbage (food wastes, plastics, paper, glass, metals, construction debris, etc.) thrown away by households, restaurants, shops, offices as well as waste generated in public spaces like streets and parks. The definition excludes excreta, biomedical, industrial and e-waste, although these sometimes end up in the municipal waste management stream and cause additional environmental and health concerns. Municipal Solid Waste Management (MSWM) refers to the collection, transportation, treatment, and disposal systems of waste (Veron et al., 2018).

Nepal, and Sri Lanka, and (b) 'Transformation of Waste Management Practices and Policy in South Asia during and after the COVID-19 Pandemic: Impacts on Gender Equality and Sustainability,' implemented in Nepal and Sri Lanka.

Globally, SWM is becoming a major concern and source of conflict due to increasing population; economic growth; complexities in consumption patterns; rapid urbanisation; industrialisation (Mirmotalebi et al., 2024; Cave 2014; Hoornweg and Bhada-Tata 2012); diverse interests; inadequate knowledge to implement integrated programmes incorporating public environmental concerns and cleaner technologies' and ill practices of mixing hazardous materials in municipal solid waste (Mmereki et al., 2016). Due to growing urbanisation, worldwide urban residents generate 1.3 billion tonnes of solid waste annually (Hoornweg and Bhada-Tata 2012). Therefore, its management is becoming more complicated. Further, global solid waste generation is likely to increase two-fold by 2025 where lower and lower-middle-income countries are predicted to produce 53% (Dangi et al., 2017) of waste, which will not only add environmental concerns but also provide fertile ground for potential conflict and collaboration.

In South Asia, common problems of municipal SWM include inadequate institutional mechanisms to proactively respond to social tensions and conflict; lack of proper legislation; and constraints of human and capital resources (Visvanathan and Glawe 2006; Veron et al., 2018). Growing consumption of processed food products use of plastics and electronic devices has added more complications and increased demand for more landfill sites, which are often a strong source of conflict. Finding appropriate landfill sites in urban areas is a daunting task, and even when they are available, there are strong oppositions and protests (Upreti et al., 2022). In addition, even when landfill sites are accepted, they become a constant source of conflict between municipal authorities and communities surrounding the landfills (Bharadwaj et al., 2020).

In Nepal, waste-related conflict is quite common not only because of environmental and social concerns but more importantly due to politicisation (by political parties for their vested interests). About 50% of waste from municipalities of Kathmandu Valley is generated by households; 43% from commercial sector; 6% from the other institutions; and relatively little (1%) from parks and gardens, street sweeping, and neighbouring villages (Das et al., 2018).

Conflict related to SWM in the municipalities inside Kathmandu Valley² is mounting because of problems in managing large volumes of waste generated in the Valley.

The Kathmandu Valley occupies only about 0.5% of the total land area of Nepal, yet 10% of the population resides there. These residents not only produce a huge amount of waste but are also engaged in numerous conflicts related to SWM (Upreti et al., 2020). Therefore, management of conflict in solid waste is a major challenge experienced by the municipalities of Kathmandu Valley. In Kathmandu Valley, conflict is frequently observed during collection, transportation, and disposal. Furthermore, there is a lack of public consciousness regarding how to deal with conflicts related to SWM (Khadka et al., 2021).

In Nepal, SWM has been a municipal responsibility for a long time (Adhikari et al., 2013). Municipal SWM has become a major concern for municipalities due to population increase and fast urbanisation (Shrestha et al., 2020). Every day, at least 200 waste vehicles, belonging to both private entities and the Kathmandu Metropolitan City (KMC), deposit 1,200 metric tonnes of rubbish from the Kathmandu Valley at a landfill site.³ The Environment Division of the KMC is responsible for overall management of solid waste in Kathmandu Valley. It also looks after day-to-day affairs concerning SWM.

The KMC is taking lead in managing waste of 17 municipalities of the Valley because 75% of total waste is produced by the KMC alone (Machamasi 2021). Every day, approximately 200 waste-carrying vehicles from private waste management companies and the KMC arrive at the Sisdol landfill site, contributing to noise pollution, traffic congestion, and unpleasant odours (Black et al., 2019; Devkota et al., 2004; Maharjan et al., 2019) and they are becoming source of conflict.

² 17 municipalities of Kathmandu Valley and 5 out of Valley dispose solid waste in the Bancharedanda landfill site (27km away from Kathmandu).

³ Until 2022, Sisdol was the landfill site, but the government closed it and Bancharedanda was opened in mid-2022.

Objective and Methodology

The main objective of this study was to document solid waste-related conflicts in urban areas, analyse the causes of these conflicts, and identify key drivers that foster collaboration for more effective municipal solid waste management.

Different approaches have been used for collecting information while developing this study with information collected in six years from the two research projects (one ongoing and another completed in 2022). During the research period, primary data were collected using Key Informant Interviews (KIs), Focus Group Discussions (FDGs), in-depth interviews with selected knowledgeable individuals, household surveys, roundtable discussion and field visits. Secondary data was collected through a literature review.

The information on conflict and cooperation was derived from the projects' data for preliminary analysis and organised through the lens of conflict and cooperation. Although the research sites included Colombo Metropolitan City; Kathmandu Metropolitan City (KMC); and Thiruvananthapuram Metropolitan City in Sri Lanka, Nepal, and India respectively, the primary data utilised in this chapter was collected from KMC.

Main Conflicts in MSWM

In this section, synthesis of major conflicts documented over the past six years of research on urban Solid Waste Management (SWM) is presented. A brief summary of the key conflicts is outlined below:

Landfill Site Conflicts

One of the most frequent conflicts observed in SWM was the selection, development, and management of landfill sites (Bijay and Kumar 2011; Upreti et al., 2020). SWM in Kathmandu faced a perennial problem of finding undisputed landfill sites. All major landfill sites (Gokarna, Sisdoile, and Bancharedanda) in Kathmandu faced the same issues of public opposition and conflict between the municipality (developer) and the local community. When the government announced the plan to identify an appropriate location for a landfill site in 2011, some people suggested Bancharedanda (originally named Kudule) as the most

suitable location. The then-Local Development Minister (current President Ram Chandra Poudel) and the Mayor of KMC (P.L. Singh) visited and observed the site, deciding to build the landfill there. However, the local people were unaware of this decision. When they learnt about the plan to construct a landfill in their area, they began protesting. The issue became highly politicised, which significantly delayed construction (Tamang Lama 2015).

It was frequently observed that developing landfill sites on land used or owned by local people was always difficult and often became a source of conflict. Politicisation (support or opposition guided by party lines), the 'Not in my backyard' attitude of local residents, environmental injustice (unjust effects of waste on people who did not produce it), garbage collection at landfill sites, as well as issues related to odour, leachate, and their impact on communities were perennial sources of conflict in SWM (Abhiyan Daily 2020). Residents near landfill sites often opposed waste disposal (Naya Patrika Daily 2020) by obstructing transportation (Ghimire 2021), despite government efforts to resolve the issue (Nuwakot Express 2022), citing various negative effects of waste on their health, local economy, and environment.

In Kathmandu Valley and its surrounding areas, whenever SWM infrastructure was planned and developed, there were always protests and opposition. For example, conflict arose during the development of the landfill site at Gokarna (which later had to be halted), construction of a compost plant in Teku (near the bank of the Bagmati River) (Dangi et al., 2015), establishment of the landfill site in Sisdoile, and planning and construction of the landfill site in Bancharedana (Online Khabar 2020). In all of these locations, there were significant protests and opposition, with concerns raised about public health, environmental pollution, and the disruption of community cohesion.

The systematic use of landfill sites in Kathmandu began with the Gokarna Landfill, which became operational in October 1986. The government initially expected it to accommodate the solid waste of the Kathmandu Valley municipalities for 200 years (Dangi et al., 2015). However, once the landfill site began operating, serious conflicts emerged. Local residents protested, citing foul odours and disturbances to their community. As a result, the government was forced to close the site in 1998 (Anderzen and Blees 2004). Environmental concerns also contributed to the closure, including the failure of composting technology to properly decompose waste, lack of segregation of organic

materials, insufficient aeration, and the presence of glass hazards in the compost (Khanal 2007; Dangi et al., 2015). After the closure of the Gokarna site, waste from the Kathmandu Valley was dumped along the riverbanks of the Bagmati, Bishnumati, Manohara, and other smaller rivers in the city (Pokhrel and Viraraghavan 2005). The dumping initially began at Teku Dobhan and expanded to Sundarighat and other parts of these rivers. This practice triggered strong protests from both residents and environmentalists (Upreti et al., 2020), becoming a long-term source of conflict.

Conflict between Municipalities and Waste Workers

In Nepal, local municipalities are responsible for the governance and management of urban waste, while waste workers handle daily management tasks. These waste workers include collectors, transporters, scavengers, pickers, and segregators. In managing urban waste, multiple and often contradictory interests and concerns emerge among key stakeholders in SWM. Municipalities, frequently neglecting their responsibilities, often led to conflicts (My Republica 2021). Numerous conflicts have been observed in addressing the issues and concerns of waste workers (Pokhrel 2022). For example, conflict arose when informal waste workers (IWW) were compelled to collect contagious waste from hospitals (Taylor 2022). Such conflicts are common in SWM globally as well (Cave 2014).

Conflict between Environmentalists and Municipalities

Environmental concerns have become one of the major issues in SWM and a frequent source of conflict (Véron et al., 2018; Adhikari et al., 2013; Dangi et al., 2017; Das et al., 2018; Dhakal 2013; Upreti et al., 2020). Inappropriate handling of public environmental concerns often led to issues of environmental injustice (Hickey 2006). This study showed that municipalities in South Asia, particularly in Nepal, frequently undermine environmental aspects when identifying, developing, and managing landfill sites, as well as during the transportation of wet waste, which frustrated environmentalists and triggered opposition. Conflicts between environmentalists and municipalities were observed frequently at the study sites (Fernando and De Silva 2023; Véron et al., 2018; Upreti et al., 2022). Environmental factors such as pollution in rivers and public spaces, along with environmental degradation, has contributed to growing

complications in solid waste management (Das et al., 2018; Khadka et al., 2021; Shrestha et al., 2020; Adhikari et al., 2013; Dangi et al., 2015).

Conflict between Different Tiers of Government

When responsibility of the same work is assigned to different actors, confusion, contradiction and conflict is common (Chudal et al., 2019; Upreti et al., 2020). Enactment of the Local Self-Governance Act in 1999 for the first time assigned waste management responsibilities to municipalities. Prior to this, waste management was under the jurisdiction of the central government (Bijay and Kumar 2011). The mandates and responsibilities outlined in the Solid Waste Management Act of 2011 (Nepal Law Commission 2011) differed from those defined by the new Local Government Operation Act of 2017 (Nepal Law Commission 2017), which subsequently became a source of conflict.

With implementation of the federal system, the Local Government Operation Act of 1974 granted local governments the mandate to manage waste. However, certain responsibilities were also assigned to provincial and federal governments, leading to poor coordination. This lack of alignment caused conflicts between the central and local governments. Additionally, contradictory and overlapping roles and responsibilities for SWM among the three tiers of government further furred conflicts. The constitutional provisions for power-sharing among local, provincial, and federal governments are detailed in schedules 5-9 (Nepal Law Commission 2015).

In general, these concurrent powers frequently created serious conflicts between the three tiers of government (Upreti et al., 2020, Upreti et al., 2022; Paudel and Sapkota 2018). Some aspects of SWM, such as acquiring landfill sites, fell under the responsibility of the federal government, while others were assigned to local and provincial governments. This role contradiction became a persistent source of conflict between the three levels of government, severely impacting SWM. The Mayor of Kathmandu Metropolitan City (KMC), who was independently elected, strongly opposed the federal government, citing various instances of non-cooperation on SWM and other issues. In protest, he ordered cessation of waste collection from Singha Durbar, the complex housing federal ministries and the Prime Minister's Office. As an example, one popular news outlet reported: 'Mayor of Kathmandu Metropolitan City (KMC) Balen Shah has said that he has stopped collecting garbage from Singha Durbar due to the irresponsibility and negligence

of the federal government in coordinating with the KMC' (Ghimire 2023). His strong opposition stemmed from repeated, unaddressed requests to the federal government to resolve policy and legal issues, frustration with bureaucratic attitudes, and his own sense of authority from having independently won the election by defeating major political parties.

Conflict between Municipalities and Waste Generators

Local communities often felt that SWM was solely the responsibility of municipalities, as they paid service charges, yet the municipalities did not always meet expectations. Appeals from municipalities to segregate waste at the source in households were frequently ignored by community members. It was often reported that in some areas, people were still not taking waste segregation seriously, despite constant efforts by municipalities and the private sector (Upreti et al., 2022). Some households discarded waste in streets, parks, and other public spaces while attempting to conceal their actions (Ghale et al., 2023; Upreti et al., 2020). This behaviour became a growing source of conflict between municipalities and waste-generating communities.

Dumping Garbage and Litter in Public Places

It was frequently reported during fieldwork that in some communities, waste was dumped in nearby public places by certain members and opposed by others (Ghale et al., 2023; Upreti et al., 2022). Littering in parks without adhering to the municipalities' instructions to use waste containers was also common. Dumping of waste in public places became more frequent during times of crisis, such as the COVID-19 Pandemic (2020-22), earthquake (2015), and the Indian blockade (2015-16) (Upreti et al., 2020; 2022; Ghale et al., 2023). This behaviour led to conflicts within communities.

Conflict between Waste Transporters and Local Communities

Communication plays a crucial role in either escalating or minimising conflict (Upreti 2014). The most frequent conflicts occurred between waste workers collecting waste from individual households and the communities they served. Local residents often complained that waste was not collected properly or on time, with workers coming only at their convenience, failing to collect all waste,

and ignoring specific requests. Conversely, the waste collectors reported that households did not segregate waste, and that waste was often contaminated with other materials.

Residents living near roads used for transporting waste to landfill sites frequently complained that waste transporters ignored their requests to control foul odours, prevent leachate leakage from vehicles (trucks and tractors), reduce loud music, minimise horn honking, and prevent accidents (Upreti et al., 2020; 2022). As a result, local households and communities often obstructed waste transportation, blocked roads, manhandled staff, and refused to allow waste to be transported through their areas.

Contradictory Policies, Laws and Regulations

Nepal's public policy landscape is full of contradictory laws, policies, and regulations (Rijal and Upreti 2022) and becoming a perennial source of conflict. This is especially evident in SWM, where numerous contradictions exist within and between different policies, laws (related to the environment, local government operations, forests, etc.), and regulations. As a result, those responsible for implementing these laws and policies often act based on their own interpretations or choose to skip or avoid action altogether. This inconsistency not only hinders smooth implementation of laws and regulations but also becomes a continuous source of conflict among key stakeholders in SWM.

Vested Interests of 'Professional Troublemakers'

In every society, some individuals deliberately behave disruptively and play dual roles for their own benefit, often labelled as 'professional troublemakers.' It was frequently reported that certain individuals and small groups manipulate issues by using tactics such as misinformation, disinformation, or creating confusion and tension. These 'professional troublemakers' often act with both parties involved, playing one side while simultaneously positioning themselves as intermediaries in resolving SWM issues. As a result, solving SWM problems becomes increasingly challenging, leading to prolonged conflicts.

Each year, the KMC allocates a substantial budget to address the concerns of local residents. Initially, the yearly budget was 7 million Nepali rupees, later increasing to 10–20 million. However, a significant portion of this budget does not fully reach the intended recipients. Instead, much of it is consumed by networks of these troublemakers, directly or indirectly, turning the budget into yet another source of conflict.

Trade Unionism and Political Manipulations

The politicisation of bureaucracy, security, and society is widespread in Nepal (Rijal and Upreti 2022), and the waste management sector is no exception. Waste workers, municipal officials, and even federal ministry officials often align themselves with particular political parties, either supporting their activities or hindering them through inaction, delays, or outright rejection. All major political parties maintain active trade unions within SWM, which at times create problems based on the vested political interests of the party or personal agendas. As a result, conflict among these actors becomes inevitable.

Precarious Condition of Informal Waste Workers

Before the 1970s, solid waste was primarily managed at the household level, with no involvement from informal waste workers (IWW) (Dhakal 2013). Waste management was a joint effort between city residents and municipalities (Pokhrel and Viraraghavan 2005). Hiring of IWW began after 1980, following establishment of the Solid Waste Management Resource Recovery Mobilization Centre in 1987 (Chudal et al., 2019). Since then, conflicts between municipalities and IWW have arisen.

The SWM sector is dominated by formal waste workers, while IWW remain a marginalised minority. IWW receive no support or benefits from the government, with no provisions for insurance, personal protective equipment, regular salaries, healthcare benefits for their children, separate toilets for women, or facilities for washing. As a result, they are exposed to heightened health risks (Black et al., 2019). Their working conditions are precarious (Karki et al., 2018). Professional troublemakers and political manipulators often exploit the precarious conditions of IWW, using them in protests and agitations, or pretending to advocate for their rights and benefits for personal gain.

Informal Waste Workers from India

Though estimates vary, approximately 10,000 to 18,000 IWW are employed in SWM in the Kathmandu Valley, with around 20% of them being from India. Indian IWWs typically work in Nepal for 6 to 9 months each year. When Nepali IWWs demand minimum benefits from municipalities, these demands are often rejected, with municipalities citing the large number of Indian IWWs, who are not legally entitled to the benefits granted to Nepali citizens under the constitution. This disparity leads to conflicts between Nepali IWWs and the municipalities.

Legal Recognition of Informal Waste Workers

Nepali informal waste workers have been demanding legal recognition, primarily to receive the same benefits provided by the government to formal waste workers. However, this issue has not been taken seriously by the relevant authorities, who either cite limited mandates, claim it is not their responsibility, or shift the responsibility to other bodies. This has become a source of protracted conflict between IWW and municipalities in the field of SWM (Upreti et al., 2020).

Encroachment of Municipality Land by Informal Waste Workers

Informal workers involved in SWM in Kathmandu have a history of engagement spanning two generations. In the past, during a German-funded SWM project, some of these workers were allowed to use municipal land for their residences. As a result, many IWWs constructed temporary shelters, despite lacking legal ownership. Over time, however, the number of IWWs increased significantly, leading to conflicts over access to municipal land; and more IWWs began encroaching on such land.

This issue became particularly serious during Nepal's political transition, when the Communist Party of Nepal-Maoist (CPM-M) entered mainstream politics following the peace agreement. The CPM-M encouraged more IWWs to encroach on public land. When the municipality eventually demanded that the occupied land be vacated, the IWWs, supported by the radical faction of the CPM, refused to leave. In response, the KMC resorted to force and coercive measures to evict them, leading to heightened confrontation.

Analytical Framework and Conflict Analysis in SWM

This section presents a conflict analytical framework, offering a conceptual roadmap and pathway to analyse the various conflicts observed in SWM. The framework aids in explaining why and how these conflicts emerged and unfolded as they did. Figure 1 illustrates the key components of the analytical framework:

Figure 1 Conflict Analysis Framework for SWM



Source: Author's own.

Why these conflicts in SWM occurred in that particular way has been analysed and explained in the following sections:

Access to Resources and Benefits

Conflicts often arise when key actors attempt to inappropriately access resources or acquire additional benefits (Upreti 2002; Cave 2014). Field data found that key actors in SWM frequently sought to secure their access to and benefits from the system. As a result, these actors opposed, resisted, delayed actions, or manipulated SWM concerns or issues to gain advantages or control extra

resources. Consequently, many issues related to landfill sites, waste collection, transportation, and disposal have hence, become perennial sources of conflict.

Control of Power and Position

Access to and control of power is a consistent source of conflict (Upreti 2002). The frequent and severe conflicts in managing SWM were driven by the vested interests of key actors—government bureaucrats, the private sector, informal waste workers (IWWs), and elected representatives—seeking to accumulate power or strengthen their positions. Protests at landfill sites, the actions of professional troublemakers, encroachment on public land, discriminatory responses by municipalities to IWW issues, and the use of coercion all stem from these vested interests.

For instance, municipal authorities sought to demonstrate their power over the IWWs by withholding benefits they were entitled to. Similarly, federal authorities created hurdles for the Mayor of KMC to assert their own power. In response, the Mayor displayed his authority by halting waste collection from the federal secretariat.

Attitude, Behaviour and Intentions of Key Actors

Conceptually, the attitude, behaviour, and intentions of key actors are crucial in either escalating or resolving conflict (Upreti 2002; Cave 2014). Individuals in influential roles within SWM, such as mayors of municipalities, chairs of rural municipalities, heads of municipal Environment Divisions, or government administrative authorities, play a pivotal role. When these actors' attitudes, behaviours, and intentions are supportive of effective solid waste management, conflict tends to decrease and cooperation increases. However, when their attitudes, behaviour, and intentions are unfavourable, conflict arises.

It was observed that many conflicts related to landfill sites (e.g., Gokarna, Sisdoile, and Bancharedanda), tensions between mayors and federal ministries, disputes between municipal officials and IWWs, and public protests against garbage transportation to landfill sites were driven by these factors. SWM is not a priority for political decision-makers and senior bureaucrats, leading to its neglect in political and policy agendas.

Misinformation, Disinformation and Wrong Information

One of the most common causes of SWM conflict identified in the study was the widespread influence of misinformation, disinformation, and incorrect information disseminated among stakeholders. Professional troublemakers actively spread partial, confusing, or false information to create opportunities for personal gain. Their typical strategy involved deliberately creating tension between key stakeholders, then positioning themselves as facilitators or mediators to resolve the conflict, thus benefiting from the situation.

Contradictory Policies and Regulations

Respondents frequently highlighted the inefficiency of policies in ensuring effective implementation. They noted that these policies were often contradictory, unclear, or ambiguous, which contributed to the conflicts discussed in the previous section.

Non-responsive SWM Institutions (Organisations)

In nearly all meetings and discussions, respondents expressed complaints that the institutions responsible for managing solid waste were either inactive, unresponsive to SWM concerns, or playing a dual role. As a result, many conflicts arose related to these institutions. The Mayor of the capital city was compelled to write to the Prime Minister and even halted waste collection from the Singha Durbar area, where the Prime Minister's office and federal ministries are located, citing lack of response from various federal ministries to his requests.

Framework for Collaboration in SWM

In the preceding section, the synthesis of different types of conflict observed in SWM was presented. In this section, collaboration in SWM is discussed. Conclusions drawn from six years of research in SWM (Véron et al., 2018; Upreti et al., 2020; Upreti et al., 2022; Ghale et al., 2023) indicate that the nature and effects of conflict in the SWM sector, particularly in urban areas, are distinct as they directly impact people's lives. Consequently, even in conflict situations, people find ways to manage waste. Thus, conflict presents an opportunity for collaboration among key actors. Previous studies have shown that crises can also

lead to cooperation. For instance, the city of Thiruvananthapuram experienced a severe garbage crisis in 2012 due to politicised, party-led protests by local residents, which forced closure of the main waste processing (composting) plant in Vilappil village. This crisis, in turn, compelled the municipality to develop an innovative, decentralised, community-based municipal solid waste management (MSWM) system (Véron et al., 2018). Figure 2 presents the collaboration framework, which explains the factors driving collaboration in SWM:

Figure 2: Framework for SWM Collaboration



Source: Author's own.

Public Expectation and Needs

Nature of waste management is inherently an individual concern, as it directly and immediately affects each person if not properly handled. Common practices observed in other conflicts—such as inaction, denial, suppression, or confrontation—are counterproductive for all stakeholders, as they face the immediate consequences. The public's expectations from elected leaders also create further pressure to effectively manage waste.

Constitution, Laws and Procedures

In many federal systems, collaboration between different tiers of government is integral to the federal principles of ‘self-rule’ and ‘shared rule’ (Upreti et al., 2009). In Nepal, the constitution envisions cooperation, collaboration, and coordination among the three levels of government. Various aspects of waste management fall under the mandates of these tiers. Collaboration in SWM is constitutionally promoted, and corresponding laws and procedures have been designed in line with this mandate. As a result, governments and SWM stakeholders are legally bound to collaborate.

New Mandates and Accountability

When people elect their ward chairs, mayors, and members of provincial and federal parliaments, these leaders not only gain access to power but also take on responsibilities and obligations. In Nepal, the recently elected leaders of local, provincial, and federal governments in the Kathmandu Valley have committed to addressing the significant SWM challenges. As a result, various leaders have initiated different efforts to tackle these issues. The independently elected Mayor of KMC has also pledged to resolve the chronic SWM problem and is working diligently to fulfil that promise.

Private Sector Engagement

One of the new phenomena in SWM is the emergence and meaningful engagement of the private sector (Bharadwaj et al., 2020; Bhele 2019). A range of actors is actively promoting a circular economy based on solid waste. Various private companies are involved in collection, storage, segregation, transportation, and handling of solid waste. Energetic youth are establishing and operating innovative enterprises that use waste as raw materials, producing a variety of goods, from digital solutions to furniture and decorative materials. The cost-effective operations of the private sector are exerting positive pressure on public institutions, particularly municipalities, to collaborate. As a result, many joint initiatives between the private sector and local governments have begun in the Kathmandu Valley (Upreti et al., 2022). The private sector’s involvement in SWM is shifting from previous donor-funded projects to private investment (Dangi et al., 2015).

Economic incentives encourage innovative entrepreneurs to explore new opportunities. Currently, many young entrepreneurs have successfully launched waste-based businesses that are widely recognised by the media, society, and, to some extent, the government.

Conclusion

In SWM conflicts, collaboration is an integral component due to the immediate negative effects of waste in the absence of cooperation. The extent of collaboration is often determined by the degree of conflict. As discussed in this chapter, numerous interrelated conflicts arise in SWM, including disputes over landfill sites, conflicts between municipalities and waste workers, environmentalists, social activists, and waste generators, as well as conflicts between different tiers of government and between waste workers, transporters, and local communities. Conflicts also emerge from contradictory policies, laws, and regulations, vested interests, and the marginalisation of informal waste workers.

As demonstrated throughout the chapter, key conceptual reasons for the emergence and escalation of conflicts include access to resources and power; negative attitudes and behaviour of key actors; misinformation; and most importantly, contradictory policies and practices. These conflicts are not only interrelated and interconnected but also form the basis for collaboration. The primary reasons for collaboration in SWM include the urgent need to resolve issues for mutually beneficial solutions, public pressure on elected representatives to resolve conflicts through cooperation, constitutional duties requiring different tiers of government to manage waste effectively, and new innovations in SWM and the rise of a waste-based circular economy. These factors are the key determinants of collaboration.

From a policy perspective, collaboration is the optimal approach for addressing the waste crisis exacerbated by population growth, rapid urbanisation, and the limited availability of landfill sites. Therefore, the policy focus of municipalities and the federal government should remain promotion of the ‘three R’ principles—Reduce, Reuse, and Recycle—and foster a circular economy through the involvement of the private sector and local communities.

This chapter concludes that the drivers of cooperation in SWM are stronger than the drivers of conflict due to the nature of the problem. The perceived high risks of non-cooperation, which could lead to serious negative consequences for key SWM actors, are incentivising cooperation. Furthermore, numerous opportunities in solid waste management are being generated by innovation and new technologies.

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ANNEXURES

About the Sustainable Development Policy Institute

About the Sustainable Development Conference Series

Acknowledgements

SDC 2023: Panels at a Glance

About the Sustainable Development Policy Institute

Charting the Course of Research Excellence

Established on 4 August 1992 in the heart of Islamabad, the Sustainable Development Policy Institute (SDPI) started from humble beginnings within a modest office space, nurtured by a committed group of visionaries. Fast forward to today, and it is heralded as one of Asia's premier non-partisan policy research entities, amplifying the voice of Pakistan and the surrounding region on the global development stage. For more than three decades, SDPI's dedication to its foundational mission has remained steadfast, championing the cause of sustainable development:

To catalyse the transition towards sustainable development, defined as the enhancement of peace, social justice and well-being, within and across generations.

SDPI, registered under the Societies Registration Act, XXI of 1860, holds the distinction of being one of the few organisations in Pakistan consistently featured in the Global Go to Think Tank Index since 2016. In a testament to its global impact and relevance, the United Nations Economic and Social Council (ECOSOC) granted SDPI the 'Special Consultative Status' in 2022. This recognition underscores SDPI's crucial role in guiding sustainable development policies both within the region and on the international stage.

Where We Come From

The Institute's genesis lies in the Pakistan National Conservation Strategy (also known as Pakistan's Agenda 21), which approved by the Federal Cabinet in March 1992, outlined the need for an independent non-profit organisation in the country to serve as a source of expertise for policy analysis, evidence-based research and training services.

What We Do

SDPI functions in an advisory capacity by carrying out robust research, policy advice and advocacy; and in an enabling capacity by strengthening other individuals and organisations with resource materials and training. Specifically, the Institute's broad-based yet holistic mandate is to:

- Undertake research, advocacy, and training grounded in evidence and approached from a comprehensive multidisciplinary perspective.
- Advocate adoption and execution of policies, programmes, laws, and regulations anchored in sustainable development principles.
- Fortify civil society's role and foster synergistic collaborations between civil society and government, partnering with other organisations and activist networks.
- Share research insights and foster public education through diverse channels, including media, conferences, seminars, lectures, publications, and curriculum development.
- Dedicate efforts to enhancing national research capacity and infrastructure.

How We Do It

Over the past 32 years, SDPI has immersed itself in a diverse spectrum of projects and programmes. These span from promoting inclusive economic growth and fortifying institutional governance, to delving into realms like trade, regional connectivity, energy economics, climate change, food, water and human security, education, sustainable industrial growth, hazardous waste management, religious tolerance, peace, and gender equity. This broad range of engagements underscores SDPI's core activities, which include:

1. Offering strategic policy advice to the government.
2. Organising and hosting platforms for robust policy dialogue.
3. Empowering a global community of academics, students and researchers through support and collaboration.
4. Producing and disseminating pivotal research tailored for both the public and private sectors.

5. Serving as a nexus for both North-South and South-South exchanges and dialogues.
6. Cultivating an ecosystem conducive to knowledge dissemination and skill-enhancement training.
7. Spearheading initiatives for regional advocacy and fostering expansive networks.

Why We Do It

The Institute continues its steadfast journey as a recognised Centre of Excellence for sustainable development policy research, capacity building and advocacy, not just in the country but across Asia. Our commitment to producing knowledge that empowers informed policymaking strengthens the state's capacity while fostering meaningful engagement with civil society and academia on pressing public issues. Together, we are shaping a brighter future for current and future generations, driving impactful change through knowledge and collaboration.

How We Reach Out

Since its inception, SDPI has organised innumerable seminars and national and international conferences. The Sustainable Development Conference (SDC) series has become a flagship event of the Institute that not only provides a forum for highlighting SDPI's own research, but also offers space to other academics from Asia in particular and across the globe in general, to share their work and engage in constructive dialogue with fellow intellectuals, movers and shakers from the public and private sector, students, and the general public. To date, SDPI has organised 26 annual conferences.

About the Sustainable Development Conference Series



Introduction

Since 1995, the Sustainable Development Policy Institute (SDPI) has championed intellectual discourse by hosting a succession of Sustainable Development Conferences (SDCs).

The SDC is a flagship event of the Institute that not only provides a forum for SDPI's own research but also invites other researchers, practitioners, policy makers and academia from the region to share their work and engage in a dialogue with fellow panellists and audience. This annual event has been established as a prime Conference in South Asia with a major focus on Asia and beyond. It is one of SDPI's many efforts in tackling sustainable development challenges through mutual and collaborative knowledge sharing, critical analyses and best practices. Each event culminates in the publication of an anthology - a testament to the rigorous peer-reviewed research inspired by the conference. These anthologies encapsulate the rich dialogues, insights and pioneering discussions from their respective SDC.

Here's a glimpse into the legacy of past SDCs and the profound impact of their outcomes:

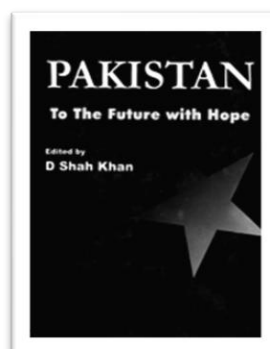
First SDC (1995)

The First SDC titled **The Green Economics Conference** focused on the interaction between economics and environment. It included research papers on trade, fiscal policy, Environmental Impact Assessments (EIAs), green accounting, forestry, energy, industry, and urban environment. After this conference, an anthology titled *Green Economics* was published.



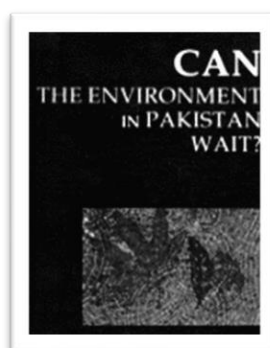
Second SDC (1996)

The Second SDC highlighted the broad theme of sustainable development, including pollution abatement, resource management, conservation of biodiversity, the transfer and use of technology, trade and environment, human development and poverty alleviation, and social capital and governance. The conference was successful in highlighting key issues facing Pakistan and bringing out the latest thinking and analysis to identify solutions. The anthology produced as a result of the conference is titled *Pakistan – To the Future with Hope*.



Third SDC (1998)

The theme of the Third SDC was **A Dialogue on Environment and Natural Resource Conservation**. The conference focused on stimulating dialogue on practical policy options for key environmental challenges being faced by Pakistan. The two broad thematic areas of Urban Environment and Natural Resources concentrated on urban pollution, water resource management, deforestation and sustainable agriculture with presentations by experts from Pakistan and South Asia. The anthology produced as a result of the conference is titled *Can the Environment in Pakistan Wait?*



Fourth SDC (2000)

The Fourth SDC titled **Discourse on Human Security** mainly focused on the changes and improvements in government policies and practice with regard to human security. The conference was designed to create awareness among senior policymakers, key federal and provincial government officials and civil society groups like the media and Non-Government Organisations (NGOs) on security issues.

Fifth SDC (2002)

The Fifth SDC titled **Sustainable Development and Southern Realities: Past and Future in South Asia** re-examined the conceptualisation and implementation of sustainable development in its multiple dimensions: economic, political, social, and moral. The delegates scrutinised and consolidated some of the ideas presented at the World Summit on Sustainable Development in Johannesburg, and resituated debates in the South Asian context. The anthology produced as a result of the conference is titled *Sustainable Development and Southern Realities: Past and Future in South Asia*.



Sixth SDC (2003)

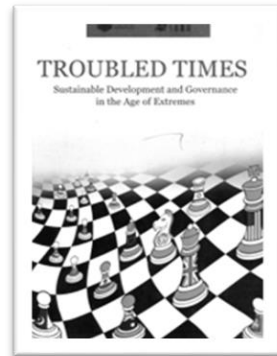
The overarching theme of the Sixth SDC was **Sustainable Development: Bridging the Research/Policy Gaps in Southern Contexts**. It focused on the problematique of knowledge production in the South. It explored policy/research gaps in two directions: in some places policy needs to be fed by better research; while in others, policy needs to take better account of existing solid research. It focused on the ways and means for translating this knowledge into effective policy initiatives locally, nationally, regionally and internationally by identifying the multiple gaps



between research and policies in different sectors. The anthology which came out as a result of this SDC is titled *Sustainable Development: Bridging the Research/Policy Gaps in Southern Contexts*.

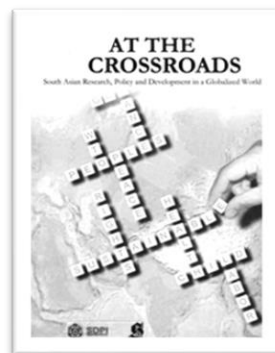
Seventh SDC (2004)

Troubled Times: Sustainable Development and Governance in the Age of Extremes was the overarching theme of the Seventh SDC that took up the key questions such as whether there is sound governance around development and whether this is ensuring just development? Whether there is more sharing of resources, including natural and institutional? Is there a strengthening of regional and international institutions? How much progress has been achieved in South Asia vis-à-vis governance? Is government more transparent today than it was a decade ago? Have governments kept their promises to the marginalised, whether the poor, women or minorities? The anthology that came out as a result of this SDC is titled *Troubled Times: Sustainable Development and Governance in the Age of Extremes*.



Eighth SDC (2005)

The Eighth SDC titled **At the Crossroads: South Asian Research, Policy and Development in a Globalized World** examined the multiple facets of sustainable development in the context of South Asia. The speakers discussed how problems and issues in South Asia could be dealt effectively at various levels based on prior experience of successful policy interventions. The anthology that came out as a result of this SDC is titled *At the Crossroads: South Asian Research, Policy and Development in a Globalized World*.



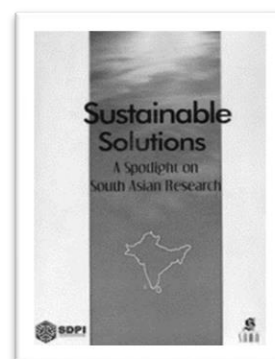
Ninth SDC (2006)

The Ninth SDC titled **Missing Links in Sustainable Development (SD): South Asian Perspectives** aimed at identifying the missing links in sustainable development for South Asia and proposed fillers for those. The region's pool of cutting-edge academics was tapped and top researchers invited together with policymakers, activists and other relevant stakeholders for a vibrant three-day debate. The anthology that came out as a result of this SDC is titled *Missing Links in Sustainable Development (SD): South Asian Perspectives*.



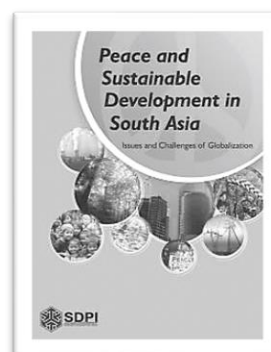
Tenth SDC (2007)

The Tenth SDC titled **Sustainable Solutions: A Spotlight on South Asian Research** explored sustainable solutions to problems such as poverty, illiteracy, mortality and morbidity, environmental degradation and disaster management, gender inequality, insecurity, violence and history. It focused on looking at both innovative solutions, as well as indigenously developed alternatives that have survived generations of development. The anthology that came out as a result of this SDC is titled *Sustainable Solutions: A Spotlight on South Asian Research*.



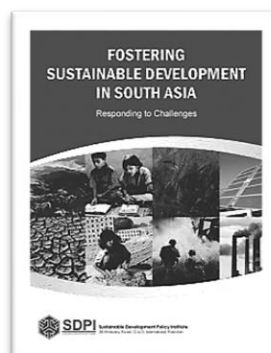
Eleventh SDC (2008)

Peace and Sustainable Development in South Asia: Issues and Challenges of Globalization was the theme of the Eleventh SDC which discussed various issues such as where we stand in solving the dilemmas of inequality, poverty, climate change and energy scarcity, natural resources degradation, trade liberalisation policies, food insecurity, violence and conflict, re-writing history, and poor governance. The conference aimed to explore how resolving some non-conventional security threats may turn into added dividends for peace. The anthology that came out as a result of this SDC is titled *Peace and Sustainable Development in South Asia: Issues and Challenges of Globalization*.



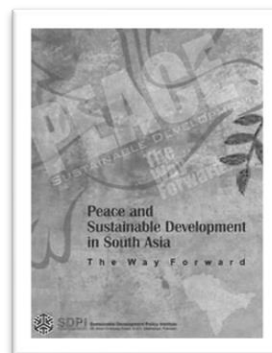
Twelfth SDC (2009)

The Twelfth SDC titled **Fostering Sustainable Development in South Asia: Responding to Challenges** focused on the six 'Fs' crises - issues related to food, fuel, frontiers, functional democracy and the fragility of climate. Scholars from South Asia and other regions were invited to delve further on these issues and shared with the audience where South Asia stands today vis-à-vis coping with the six 'Fs' crises facing the region. Gender remained a crosscutting theme. The anthology that was published as a result of this SDC is titled *Fostering Sustainable Development in South Asia: Responding to Challenges*.



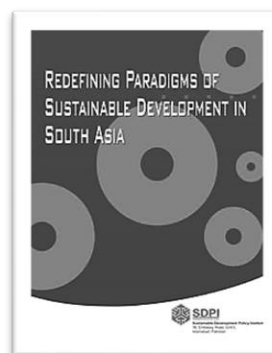
Thirteenth SDC (2010)

The Thirteenth SDC titled **Peace and Sustainable Development in South Asia: The Way Forward** deliberated on how economic challenges could be handled with positive results in terms of natural resources, while at the same time increasing the capacity and effectiveness of institutions. The panels covered themes such as post-flood situation in Pakistan, food insecurity, energy and financial crisis, the issue of land acquisition, trade and financial liberalisation, social protection, the eradication of violence against women, the role of think tanks in peace and sustainable development, sound management of chemicals, climate change, religious diversity, labour issues, etc. The anthology published as a result of this SDC is titled *Peace and Sustainable Development in South Asia: The Way Forward*.



Fourteenth SDC (2011)

The Fourteenth SDC titled **Redefining Paradigms of Sustainable Development in South Asia** featured a broad spectrum of themes: livelihood, governance, literature, Sufism, poverty, geopolitics, forest management, REDD+, social accountability, 18th Amendment, land rights, food security, education financing, feminism, economic non-cooperation, water governance, and, energy and sustainability. The anthology published as a result of this SDC is titled *Redefining Paradigms of Sustainable Development in South Asia*.



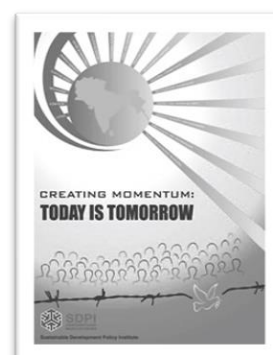
Fifteenth SDC (2012)

The Fifteenth SDC **Sustainable Development in South Asia: Shaping the Future** analysed how things will look 20, 30 or even 50 years from now, threw light on issues that will be looming large, made concrete suggestions on how to overcome future challenges, and, gave practical policy recommendations about a sustainable South Asia. The anthology published as a result of this SDC is titled *Sustainable Development in South Asia: Shaping the Future*.



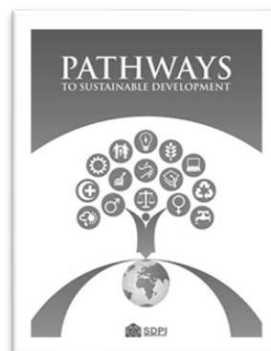
Sixteenth SDC (2013)

Creating Momentum: Today is Tomorrow was the theme of the Sixteenth SDC, which highlighted our present position and inclination to forecast and potentially modify our decisions that may improve our tomorrow. Under various sub-themes, the conference brought to attention that failure to act urgently is premised on the argument that waiting for another tomorrow for action will result in wasting opportunities that may not be available ever again. The anthology published as a result of this SDC is titled *Creating Momentum: Today is Tomorrow*.



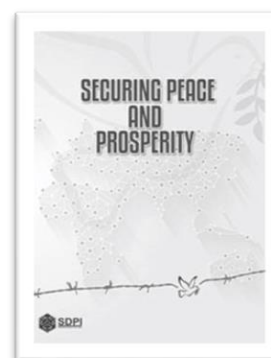
Seventeenth SDC (2014)

The Seventeenth SDC titled **Pathways to Sustainable Development** looked at leadership change in China, Pakistan, Iran, Bangladesh, India, and Afghanistan that could hold the key to shaping development pathways in South Asia. The region needs political and executive leadership that has a commitment to strategise for peace and human security and raise tangible safeguards for the political economy of the region, while engaging with the primary stakeholders, i.e. the people. In this backdrop, issues of climate change, migration, sustainable and inclusive economic growth, sharing energy resources across the region, environmental challenges, food security, human rights, women in the peace process, and regional connectivity were discussed and published in its peer-reviewed anthology titled *Pathways to Sustainable Development*.



Eighteenth SDC & Eighth SAES (2015)

The Eighteenth SDC titled **Securing Peace and Prosperity** had a thinkers' agenda, a gathering of regional think tanks working closely with policymakers of their respective countries and representatives of existing and potential South Asian Association for Regional Cooperation (SAARC) member countries - a congregation of visionaries in Islamabad. It focused on understanding regional integration and the attempt of SAARC countries at various forums in 2015 to establish new corridors to achieve sustainable development in the region and beyond. Simultaneously, the Eighth South Asia Economic Summit (SAES) - the premier regional platform for debate and analysis of politico-socio-economic issues and problems facing South Asia, was also held. The Summit brought together stakeholders to review and reflect on issues facing South Asian countries. The overarching theme of SAES was *Regional Cooperation for Sustainable Development in South Asia*. The anthology published as a result of the SDC and SAES is titled *Securing Peace and Prosperity*.



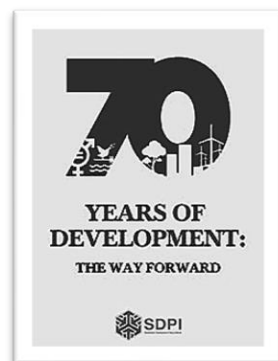
Nineteenth SDC (2016)

The overarching theme of the Nineteenth SDC was **Sustainable Development: Envisaging the Future Together**. It focused on cooperation between developed and developing countries for sustainable development, Sustainable Development Goals (SDGs), and human centredness. The themes highlighted in this conference included conflict recovery, SDGs, trade, economic growth, environment, sustainable energy, regional economic integration, minority rights, disaster management and preparedness, climate change, youth employment, gender and demography, gender and democracy, etc. The anthology published as a result of this SDC is titled *Sustainable Development: Envisaging the Future Together*.



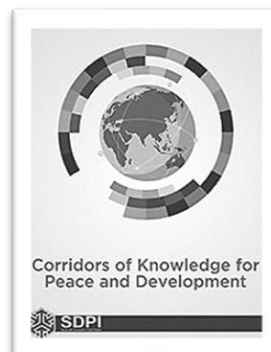
Twentieth SDC (2017)

The Twentieth SDC titled **Seventy Years of Development: The Way Forward** will be remembered within and by the development sector of Pakistan and the region for some time as one of the largest congregations of the best and brightest minds coming together in 40 panels, roundtables and podium discussions, many of which were concurrent, including four plenary sessions. It examined 70 years of development in Pakistan and the region with participation from around the world. A total of 269 panellists representing 16 countries became part of this mega event from Afghanistan, China, Ethiopia, Finland (via Skype), France, Germany, India, Italy, Nepal, Pakistan, Thailand (via Skype), the Philippines, Sri Lanka, Switzerland, United Kingdom and the United States of America. An audience of over 3,000 attended the three-day flagship event. The edited volume published as a result of this SDC is titled *Seventy Years of Development: The Way Forward*.



Twenty-first SDC & Eleventh SAES (2018)

The Twenty-first SDC and Eleventh SAES on **Corridors of Knowledge for Peace and Development** discussed not only economic corridors, but also corridors of connectivity and knowledge and how they could steer the region towards peace and development. During the 40 concurrent sessions, it was highlighted that while a few regional organisations and processes may have stalled, the road to development must go on. This growing trend should not be allowed to impact research and development efforts and learning from each other's best practices. In fact, new collaborative partnerships need to be established on knowledge sharing and building bridges, while simultaneously strengthening old ones. 261 delegates attended these two joint events from 20 countries including Afghanistan, Australia, Belgium, Brazil (via Skype), Canada, China, Germany, Kenya, Maldives, France, India, Nepal, Sri Lanka, Switzerland, Tajikistan, Thailand, Pakistan, the Philippines, United Kingdom and the United States of America. While 204 delegates came from within the country, 57 represented the rest of the countries listed. An audience of over 4,000 attended the four-day proceedings. The peer-reviewed edited volume produced is titled *Corridors of Knowledge for Peace and Development*.



Twenty-second SDC (2019)

The overarching theme of the Twenty-second SDC **Sustainable Development in a Digital Society** was inspired by the Fourth Industrial Revolution and an era of digitalisation which has changed how human beings interact with technologies. It brought together scholars, researchers, policymakers, game changers, and members of civil society to deliberate on ideas how to benefit from the Fourth Industrial Revolution in which Artificial Intelligence is playing a key role. Then-President of the Islamic Republic of Pakistan Dr Arif Alvi inaugurated the conference which was attended by 223 panellists from 17 countries. Apart from 192 panellists from Pakistan, 31 speakers came from Afghanistan, China, Finland,

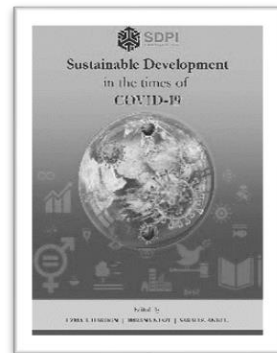


France, Germany, India, Iran, Italy, Maldives, Nepal, the Philippines (via Skype), Sri Lanka, Thailand (via Skype), Türkiye, United Kingdom and the United States of America. 150 male panellists, 69 female panellists, and 4 transgender panellists presented their ideas and views. The anthology which came out as a result of the deliberations and research presented is titled *Sustainable Development in a Digital Society*.

Twenty-third SDC (2020)

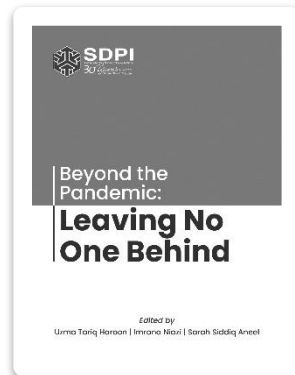
SDPI's Twenty-third SDC titled **Sustainable Development in the Times of COVID-19** specifically focused on the impact of COVID-19 and a changing world order since the outbreak of the Pandemic. Dr Arif Alvi, then-President of the Islamic Republic of Pakistan, shared his viewpoints online at a Special Plenary from the Presidency. All the sessions of the conference were held online from 14-17 December 2020. A total of 45 sessions were organised of which nine were plenary sessions and 36 concurrent sessions. The conference was attended by 235 panellists from 25 countries.

Apart from 174 from Pakistan, 61 speakers joined from Afghanistan, Australia, Austria, Bangladesh, Brunei, Canada, China, Ecuador, Germany, Hong Kong, India, Kenya, Nepal, Nigeria, Saudi Arabia, South Africa, Singapore, Sri Lanka, Sweden, Switzerland, Thailand, the Netherlands, United Kingdom and the United States of America. Over a span of four days, the conference was attended by an online audience of over 6,800 from 84 countries. The subsequent peer-reviewed anthology is titled *Sustainable Development in the Times of COVID-19*.



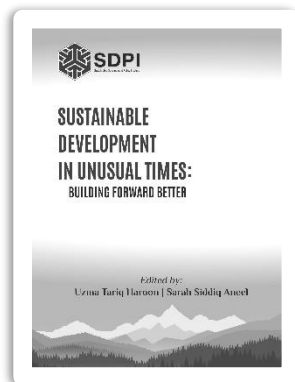
Twenty-fourth SDC (2021)

SDPI's Twenty-fourth SDC was held in a hybrid format from 6-9 December 2021 in Islamabad, Pakistan. The overarching of this conference was **Beyond the Pandemic: Leaving No One Behind**. Dr Arif Alvi, then-President of the Islamic Republic of Pakistan, inaugurated the conference at the Aiwan-e-Sadr. A special message was also delivered by the former Prime Minister, Imran Khan, focusing on inclusive development. A total of 38 sessions were organised, of which ten were plenary sessions and 28 concurrent sessions. It was a forward-looking conference and a reflection on the two years since the COVID-19 Pandemic. A total of 2,365 in-person and online audience were in attendance. There were 250 speakers from 20 countries over a span of four days. Besides Pakistan, speakers joined from Afghanistan, Bangladesh, Bhutan, Canada, Ecuador, Fiji, Germany, India, Malaysia, Maldives, Nepal, Peru, Sri Lanka, Sweden, Switzerland, Thailand, the Netherlands, United Kingdom and the United States of America.



Twenty-Fifth (Silver Jubilee) SDC (2022)

SDPI held its Twenty-fifth SDC from 5-8 December 2022 in Islamabad, Pakistan. The overarching theme of the Silver Jubilee Conference was **Sustainable Development in Unusual Times: Building Forward Better**. The mega event was held in a hybrid format where speakers/audience were able to join in person as well as online. Alongside the SDC, SDPI also hosted UNESCAP's Sixth South and South-West Asia Forum (SSWAF) on the SDGs. This mega-event was jointly co-hosted by SDPI and the Ministry of Planning Development & Special Initiatives, Government of Pakistan. The SDC and SSWAF were attended by 345 panellists from 21 countries. Speakers joined from Afghanistan, Bangladesh, Bhutan, Cambodia, Canada, China, Hong Kong, Germany, India, Iran, Italy, Malaysia, Maldives, Nepal, Pakistan, Singapore, Sri Lanka, Thailand, Türkiye, United

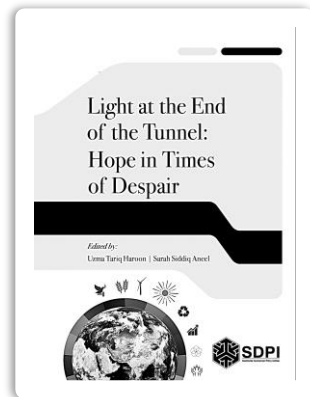


Kingdom, and the United States of America. Then-President of the Islamic Republic of Pakistan, Dr Arif Alvi, was the Chief Guest at the Special Plenary on the last day of the Conference. Altogether a total of 46 sessions were organised of which 11 were plenary sessions and 35 concurrent sessions. An audience of over 5,000 attended the four-day hybrid events.

Twenty-Sixth SDC (2023)

The overarching theme of SDPI's Twenty-Sixth SDC was **Light at the End of the Tunnel: Hope in Times of Despair** inaugurated by Dr Arif Alvi, then-President of the Islamic Republic of Pakistan. A total of 40 sessions were organised, of which nine were plenary sessions and 31 concurrent sessions. Over 300 speakers represented 19 countries: Australia, Bangladesh, Canada, China, Germany, Italy, India, Kenya, Nepal, Norway, Pakistan, the Philippines, Qatar, Singapore, Sri Lanka, Switzerland, Thailand, United Kingdom and the United States of America. It was attended by an audience of over 3,000 people.

For the first time, alongside the SDC, a 'Sustainability Investment Expo' was held along with a 'Food Security Hackathon.' The Expo aimed to bring together both public and private sector players in the design, production, and management of sustainability products, services, and initiatives while the two-day Hackathon focused on innovative initiatives to address food security challenges confronted by Pakistan and Afghanistan. The anthology you hold - or have digitally accessed on your device encapsulates the deliberations and research showcased during the conference, serving as a testament to the thought leadership and insights generated at this landmark event.



Note:

You can explore and freely download our past anthologies at the following link:
<https://sdpi.org/sdc-Anthologies/publications>.

Acknowledgements



The Sustainable Development Policy Institute (SDPI) is grateful for the support provided by donors and partners during the Twenty-sixth Sustainable Development Conference (SDC) 2023 titled ***Light at the End of the Tunnel: Hope in Times of Despair***. They included:

Donors:

1. The World Bank (TWB)
2. U.S. Soybean Export Council (USSEC)
3. Pakistan Poverty Alleviation Fund (PPAF)
4. Friedrich-Ebert-Stiftung (FES), Pakistan
5. Nestlé Pakistan
6. World Food Programme (WFP)
7. Climate Action Network South Asia (CANSA)
8. The Bank of Punjab (BOP)
9. Human Development Foundation (HDF)
10. Department of Foreign Affairs, Trade, and Development (DFATD)
11. Packages Limited
12. Vital Strategies
13. Cargill Worldwide
14. Embassy of the People's Republic of China
15. Private Financing Advisory Network (PFAN)
16. Renewable Energy and Energy Efficiency Partnership (REEEP) International
17. National Disaster & Risk Management Fund (NDRMF), Government of Pakistan
18. German Agency for International Cooperation (GIZ), Pakistan
19. Tetra Pak, Pakistan
20. National Endowment for Democracy (NED)
21. Friedrich Naumann Foundation for Freedom (FNF), Pakistan
22. Global Alliance for Improved Nutrition (GAIN)
23. Embassy of Denmark

24. Alliance for Health Policy and Systems Research (HPSR)
25. World Health Organization (WHO)
26. Heinrich-Böll-Stiftung (HBS)
27. Institute of Urbanism (IoU)
28. United Nations Development Programme (UNDP)
29. Foreign, Commonwealth and Development Office (FCDO)
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31. Adam Smith International (ASI)
32. COMSATS University, Islamabad
33. Pakistan-China Institute (PCI)
34. Roshan Packages Limited

In Collaboration With:

1. United Nations Economic and Social Commission for Asia and the Pacific: Sub-regional Office for South and South-West Asia (UNESCAP SSWA)
2. United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), Thailand
3. United Nations Environment Programme (UNEP)

In Knowledge Partnership With:

1. Unilever
2. The Aga Khan University
3. Asian Development Bank (ADB)
4. National Counter Terrorism Authority (NACTA), Government of Pakistan

SDC Anthology Review Panel

SDPI takes pride in producing research that is both valuable and credible. Central to ensuring this standard is our blind peer review process, which rigorously assesses the quality and validity of the research published in the annual anthology. This year's book features peer-reviewed papers presented at the Twenty-sixth SDC, reflecting our commitment to maintaining the highest academic standards.

As our Panel of Referees continues to grow each year, we remain fully aware that the careful selection of reviewers is just as vital as the review process itself. Each reviewer is chosen based on their reputation and expertise, ensuring integrity of the process. While the review work often goes unseen by the public, its importance cannot be overstated. We deeply value the unbiased, timely, and constructive feedback provided by our reviewers, whose contributions have been instrumental in maintaining the rigour of this publication.

The Institute, along with the editors, extend sincere thanks to the distinguished academics, researchers, and professionals for their fair, thoughtful, and insightful critiques of the submissions this year:

Dr Ahsan Abbas is Assistant Professor at the National Defence University, Islamabad. Prior to his current position, he worked as a Senior Research Fellow at the Centre of Excellence China-Pakistan Economic Corridor for four years. His professional experience as a researcher, analyst, trainer, and faculty in several public and private sector organisations ranges over 21 years. He has presented and published his work in the areas of Theoretical and Applied Economics in various prestigious forums/organisations, recognised/reputed journals, newspapers, and books/policy documents of distinguished publishing agencies. He holds a PhD in Economics from Pakistan Institute of Development Economics (PIDE), Islamabad.

Dr Babar Shahbaz is Professor and Director at the Institute of Agricultural Extension Education and Rural Development, University of Agriculture Faisalabad, Pakistan. He has also served as a Consultant for United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP) and is a Visiting Fellow at the Sustainable Development Policy Institute (SDPI).

Dr Hina Aslam is the Andre Hoffmann Fellow on Circular Economy Policy with the World Economic Forum. She is also a Visiting Research Fellow at the Sustainable Development Policy Institute (SDPI). Her research and management experience spans several regions, including South Asia, the Asia-Pacific and West Asia. She has led, managed and delivered research-based programmes in the field of environment and climate change policy, renewable energy policy, governance, technology, climate finance, sustainable development goals, e-waste management, natural resource management, and sustainability

assessments. She carries a strong understanding of regulation related to circular economy, supplier responsibility, waste management, raw materials classification, and/or cross-border value chains, including trade and investment law. She has an educational background in Environmental Sciences and Climate Change with a doctorate in Ecology from the Chinese Academy of Sciences, Beijing, and Masters in Environmental Engineering and Sciences from the Beijing Institute of Technology, China.

Dr Khalid Waleed is currently serving as Research Fellow at the Sustainable Development Policy Institute (SDPI). He has a doctorate in Energy Economics with a specialisation in Financial Markets. With more than ten years of experience in Pakistan's energy sector and China-Pakistan Economic Corridor (CPEC), his expertise includes energy markets, energy poverty, energy transition (macro and micro level) sustainable future resources, emissions trading, long-term macroeconomic sustainability, and econometrics.

Dr Muhammad Arif is a passionate teacher, an enthusiastic social worker, a resilient social entrepreneur, a curious researcher, and an accomplished public speaker.

Dr Muhammad Idrees is a tenured Professor at the School of Economics, Quaid-i-Azam University in Pakistan. His research areas include poverty, income inequality, social sector and consumer behaviour.

Dr Muhammad Usman is a Senior Assistant Professor at Bahria Business School, Bahria University, Islamabad. His research interests include open innovation, digital transformation, entrepreneurship, green ecosystems, and start-ups. He completed his PhD from Hasselt University, Belgium with a focus on open innovation in Small and Medium Enterprises.

Mr Qasim Ali Shah, Deputy Executive Director (Operations), Sustainable Development Policy Institute (SDPI) is an experienced development practitioner. At SDPI, he leads resource mobilisation, programme design and implementation, monitoring, evaluation and quality assurance of research outputs beside supervising the core units. Previously, he has worked with the United Nations World Food Programme, United Nations Development Programme and ActionAid International in managerial capacities. He has also worked with Pakistan's Federal Government and headed the Poverty Reduction Monitoring

Cell at the Planning & Development Department in Punjab. His research focuses on agriculture, climate change, food security, livelihoods, social protection, humanitarian development nexus as well as analysis of local governance and policies.

Dr Sadia Nasir is an independent researcher and Adjunct Faculty at Bahria University and Quaid-i-Azam University in Pakistan. She is the author of *'Extremism and Counter-Extremism Narratives in Pakistan: An Analysis of Narrative Building'* published by Routledge in 2023. Her areas of interest are extremism, counter-extremism, terrorism, narrative building and regional integration. She has previously worked at the National Defence University and FAST National University as an Adjunct Faculty. She is a UNESCO/Keizo Obuchi Research Fellow and Regional Centre for Strategic Studies (RCSS) alumni.

Dr Saqib Nasir is Director (Planning and Development) of Science, Technology, Engineering and Mathematics (STEM) / Financial Support to Scientific Societies in Pakistan (FSSSP) projects at the Pakistan Science Foundation (PSF) responsible for the appraisal, execution, and implementation framework and monitoring and evaluation of the Public Sector Development Programme. He is an active member of various joint working groups at the Ministry of Energy (Petroleum Division), Ministry of Planning, Development and Special Initiatives and Ministry of Industries and Production for policy formulation, action plans and third-party validation of mega development projects. He has diverse experience of knowledge-based economy and emerging technologies with hands on experience of planning, policy formulation, institutional development, organisational reforms, fund management and multilateral negotiations skills. He has done his PhD in Chemistry with specialisation in Low-Rank Coal (Lignite) Combustion and Utilisation Processes.

Dr Shafqat Munir Ahmad works with the Sustainable Development Policy Institute as Deputy Executive Director (Policy). He has extensive experience in education, climate change, health, Sustainable Development Goals, human rights, Countering Violent Extremism (CVE), strategic and policy development.

Prof. Dr Tariq Mukhtar is a distinguished Plant Pathologist, educator, and researcher, who excels in academia, research, and professional leadership, significantly impacting plant pathology, agriculture and academic communities with numerous accolades.

Dr Waseem Iftikhar Janjua holds a PhD in Peace and Conflict Studies from the Center for International Peace and Stability, National University of Science and Technology (NUST). His areas of research include tobacco control, refugees and migrant studies, environmental issues, international relations and philosophy.

Key Contributions

Apart from the leadership and ‘firefighting’ skills of SDPI’s Executive Director, Dr Abid Qaiyum Suleri; Former Joint Executive Director, Dr Vaqar Ahmed; cooperation of thematic session organisers; rapporteurs; late nights and weekends of IT/Admin/Social Media teams; and the entire SDPI staff, the Twenty-sixth SDC would not have been possible without the oversight of Uzma Tariq Haroon supported by:

Tayyaba Hanif Maken, Coordinator of the Sustainable Development Conference (SDC). Her contributions, including facilitating peer reviews of the chapters, standardisation of references, along with other formalities, have been pivotal for this anthology. An asset to SDPI since 2017, Ms Maken has a Masters’ degree in Gender & Women Studies, a Bachelors’ degree in History and Political Science, and 15 years of expertise in communications and coordination.

Romila Qamar, Associate Editor at the Sustainable Conference Unit, she also manages SDPI’s *Journal of Development Policy, Research & Practice*. She led rapporteurs at the Sustainable Development Conference to help generate policy recommendations and press releases. With an MPhil in Economics and Finance, she has ten years’ experience in research publishing and editorial management services.

Asim Zahoor provides consultancy services in event administration, database management, and other freelance work during the Sustainable Development Conference. Depending on the job’s requirement, he streamlines operations, enhancing database systems and delivers customised solutions for various clients. He holds a degree in Commerce.

***SDPI's Twenty-sixth Sustainable
Development Conference (SDC)***

Light at the End of the Tunnel: Hope in Times of Despair

20-23 November 2023

Islamabad, Pakistan

Monday, 20 November 2023 - 2:30pm – 4:00pm SDC - Sustainability Investment Expo Awards Plenary	
<u>Fostering Partnerships for Sustainable Development</u>	Moderator: Ms Zainab Naeem, Associate Research Fellow, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Welcome Remarks: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Guest of Honour: Mr James McNee, First Secretary, Canada's High Commission to Pakistan Special Remarks: Mr Joshua Setipa, Senior Director, Strategy, Portfolio, Partnerships and Digital Division, Commonwealth Secretariat Awards Ceremony: 1. Sustainability Awards 2023 2. Awards for Food Security Hackathon Winners Book Launch: <i>Sustainable Development in Unusual Times: Building Forward Better</i> Plenary Organisers: Ms Zainab Naeem, Mr Asif Javed & Dr Vaqar Ahmed, SDPI Rapporteurs: PR: Mr Huzaifa Rehman PRs: Ms Dur E Nayyab Video Link: https://youtu.be/74-ibNBWEpU

Monday, 20 November 2023 - 6:00pm – 8:00pm Inaugural Plenary	
<u>Navigating the Roadmap to Recovery, Resilience and Optimism</u>	
Master of Ceremony: Dr Vaqar Ahmed, Joint Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Host: Ambassador Shafqat Kakakhel, Chairperson, Board of Governors, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Welcome Address and Introduction to the 26th SDC: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Special Remarks: Dr Masoud Jarallah Al-Marri, Director General, Islamic Organization for Food Security, and Director, Food Security Department, Ministry of Municipality and Environment, State of Qatar	
Guest of Honour: Ms Mushaal Hussein Mullick, Special Advisor to the Caretaker Prime Minister on Human Rights and Women Empowerment, Government of Pakistan	
Address by the Chief Guest: H.E. Dr Arif Alvi, President of the Islamic Republic of Pakistan	
Group Photo with the Chief Guest	
Plenary Organisers: Mr Hassan Murtaza & Mr Asim Zahoor, SDPI	
Video Link: https://youtu.be/cXKYBR4pAYU	
Dinner - 8:00pm	

Day 1 Tuesday, 21 November 2023 Opening Plenary 1.1	
Registration 9:30am –10:00am	
Plenary: 10:00am-11:30am	
Balancing Geostrategic and Economic Diplomacy	
Master of Ceremony: Ms Khansa Naeem, Research Associate, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Welcome Remarks: Ambassador Shafqat Kakakhel, Chairperson, Board of Governors, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Distinguished Speakers: • Ambassador Mumtaz Zahra Baloch, Spokesperson and Additional Foreign Secretary (Strategic Communications Division & Public Diplomacy), Ministry of Foreign Affairs, Government of Pakistan • Mr Haroon Sharif, Former Chairman, Board of Investment, Government of Pakistan • Dr Moeed Yusuf, Vice Chancellor, Beaconhouse National University (BNU), Lahore (Online)	
In Conversation with: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Book Launch: <i>Sustainable Development in Unusual Times: Building Forward Better</i>	
Plenary Organisers: Dr Kashif Salik & Ms Khansa Naeem, SDPI	
Rapporteurs:	
PR: Ms Naima Akram	
PRs: Ms Huma Arshad	
Video Link: https://youtu.be/-v1SSZAQpMk	
Refreshments - 11:30am – 12:30pm	

Day 1 Tuesday, 21 November 2023 - 12:30pm - 2:00pm			
Thematic Session A-1	Thematic Session A-2	Thematic Session A-3	Thematic Session A-4
Roundtable: Weaving Circularity: Rethinking Pakistan's Textile Industry for a Sustainable Future <i>In collaboration with UNEP</i> Moderator: Ms Zainab Naeem, SDPI Chair: Mr Syed Naveed Qamar, Former Federal Minister for Commerce, GoP Speakers: 1. Ms Adriana Zacarias, UNEP, Nairobi (Online) 2. Mr Basit Ali, IPRI & Dr Aneel Salman, IPRI Presentation: Sustainable Futures: Prioritising Degrowth for Economic and Social Well-being in Pakistan 3. Ms Nazish Shekha, PBC 4. Mr Rehan Bharara, Faisalabad Garment City 5. Ms Mehrak Masood, Artistic Milliners 6. Ms Farheen Zahoor, AGI Denim 7. Ms Azka Abdur Rehman, Sapphire Finishing Mills Limited 8. Mr Rafah, Sapphire Finishing Mills Limited Panel Organisers: Ms Zainab Naeem, SDPI SDC Unit Reporters: PR: Mr Huzaifa Rehman PRs: Ms Dur E Nayyab	Policy Dialogue: Prosperity for Pakistan: Policy Agenda for the Incoming Government <i>In collaboration with UNDP</i> Moderator: Dr Abid Qaiyum Suleri, SDPI Welcome Remarks: Ms Ammara Durrani, UNDP Opening Remarks: Mr Samuel Rizk, UNDP Panellists: 1. Dr Hafiz A. Pasha, Former Federal Minister for Finance, GoP (Video Message) 2. Senator Dr Musadik Masood Malik 3. Dr Aisha Ghaus Pasha, Former Minister of State of Finance & Revenue, GoP 4. Mr Mian Iftikhar Hussain, ANP (Online) 5. Senator Saleem Mandviwala, PPP 6. Mr Zafar ul Hasan, Planning Commission, GoP 7. Mr Rana Ihsaan Afzal Khan, PML-N (Online) 8. Ms Shaza Khawaja, Former SAPM Youth Affairs, GoP 9. Mr Najib Benhassine, TWB 10. Senator Taj Haider, PPP 11. Senator Syed Faisal Ali Subzwari, MQM 12. Dr Reza Baqir, Former Governor, SBP (Online) 13. Dr Asad Sayeed, CSSR (Online) 14. Mr Mehtab Haider, The News 15. Mr Ali Khizar, Business Recorder	Tobacco Taxation – Light at the End of Health and Poverty Tunnel <i>In collaboration with the Vital Strategies</i> Moderator: Syed Ali Wasif Naqvi, SDPI Special Remarks: Dr Syed Kaleem Imam, Former Fed. Sec. MNC, GoP Speakers: 1. Dr Waseem Iftikhar Janjua, SDPI 2. Ms Blanca Llorente, Fundacion Anaas, Colombia (Online) 3. Mr Asif Iqbal, SPDC, Karachi 4. Dr Muhammad Ashtiaq Ahmed, Former Chairman FBR Vote of Thanks: Mr Khurram Hashmi, Vital Strategies Panel Organisers: Syed Ali Wasif Naqvi & Dr Waseem Iftikhar Janjua, SDPI Reporters: PR: Mr Alamgir Khan PRs: Mr Javeria Malik Video Link: https://youtu.be/QbzHRYvJISQg	Policy Review Exercise: Gender and Disaster Resilience Lens: Recommendations and Way Forward <i>In collaboration with ReMIT and FCDO</i> Moderator: Ms Gulalai Khan, REMIT Pakistan Co-Moderator: Ms Naghma-e-Tehniat, FCDO Chair: Ms Sandra Baldwin, Deputy Development Director, FCDO, British High Commission in Pakistan Scene Setting: Dr Fareeha Armughan, SDPI Panellists: 1. Mr Hamed Yaqoob Sheikh, ReMIT Pakistan 2. Ms Ambreen Iftikhar, BOI, GoP 3. Mr Riaz Nazarali Chunara NIBAF, SBP 4. Mr Rafi Ullah Kakar, Planning Commission, GoP Concluding Remarks: Dr Vaqar Ahmed, SDPI Panel Organisers: Dr Fareeha Armughan & Mr Naimat Wazir, SDPI Ms Gulalai Khan, ReMIT FCDO Reporters: PR: Ms Anam Malik

Video Link: https://youtu.be/-p-h-7Tq8P0	Panel Organisers: Dr Sajid Amin Javed, Ms Arooj Waheed Dar & Ms Aqsa Naveed, SDPI Mr Umer Akhlaq Malik, UNDP Rapporteurs: PR: Ms Umber Azeem PRs: Ms Aqsa Naveed Video Link: https://youtu.be/YKpS8_3k36o	PRs: Mr Naimat Wazir Video Link: https://youtu.be/t56o52SLBns
Lunch - 2:00pm – 3:00pm		
Tuesday, 21 November 2023 - 3:00pm – 4:30pm		
Thematic Session A-5		
Thematic Session A-6		
Thematic Session A-7		
Thematic Session A-8		
Empowering Communities: Poverty Graduation in Pakistan <i>In collaboration with PPAF</i> Moderator: Ms Uzma Nomani, PPAF Chair: Ms Shandana Humayun Khan, RSPN Presentations: 1. Mr Nadir Gul Barech, PPAF Presentation: <i>Poverty Graduation as PPAF</i> 2. Dr Kate Vyborny, South Asia Region Gender Innovation Lab, TWB, USA (Online) Presentation: <i>Role of Community Institutions in fostering Social and Economic Empowerment at the Grassroots Level</i> 3. Prof. Dr Imran Rasul, University College London, UK (Online) Presentation: <i>Big Push Pro-poor Policies and Economic Preferences: Evidence from a Partial Population Experiment</i> Panelists:	Towards Affordable and Resilient Food Systems in Pakistan <i>In collaboration with GAIN Pakistan</i> Moderator: Ms Rabia Tabassum, SDPI Chair: Prof. Dr Tariq Mukhtar, Dean, Faculty of Agriculture, PMAS-AAUR Opening Remarks: Mr Faiz Rasool, GAIN Pakistan Panellists: 1. Dr Lawrence Haddad, GAIN International (Online) 2. Dr Jamie Morrison, GAIN International 3. Dr Ghulam Sadiq Afridi, PARC 4. Dr Shaheen Ashraf Shah, WFP Panel Organisers: Mr Qasim Ali Shah, Ms Rabia Tabassum & Mr Salah Ud Din, SDPI Ms Maryam Mirza, GAIN Pakistan Rapporteurs: PR: Mr Alamgir Khan PRs: Mr Salah Ud Din Video Link: https://youtu.be/zLnPBtO6czA	Envisioning Universal Health Coverage in Pakistan – How to Make it Possible? Moderator: Prof. Dr Zafar Mirza, Former Minister for Health, GoP Co-Moderator: Dr Razia Safdar, SDPI Chief Guest: Lieutenant General Nigar Johar Khan, HI(M) (Retd.) Speakers: 1. Prof. Dr Zafar Mirza, Former Minister for Health, GoP 2. Dr Abdul Ghafoor Shoro, PMA (Online) 3. Dr Safdar Ali Sohail, SPRC, Islamabad 4. Dr Raza Zaidi, UHC, MoNHSRC, GoP 5. Dr Sonia Omar, UoP, Lahore (Online) Panel Organisers: Dr Razia Safdar & Ms Misbah Khan, SDPI
Roundtable: Green Transition in South Asia <i>In collaboration with The World Bank</i> Washington, D.C. Time Zone: 5:00am Moderator: Mr Abdullah Khalid, SDPI Co-Moderator: Ms Maheen Rehan, SDPI Opening Remarks: Dr Abid Qaiyum Suleri, SDPI Presentation: • Dr Margaret Triyana, Office of the Chief Economist, South Asia, TWB (Online) Speakers: 1. Mr Hridayesh Joshi, Journalist, India 2. Md Shamsuddoha, CPRD, Bangladesh 3. Dr Posh Raj Pandey, SAWTEE, Nepal		

1. Ms Shandana Humayun Khan, RSPN 2. Dr Hamna Ahmed, CREB, LSE, Lahore (Online) 3. Dr Ayesha Khan, AHKF, Islamabad Panel Organisers: Mr Ahmed Khaver, SDPI Ms Raabiya Babar, PPAF Rapporteurs: PR: Mr Mohsin Ali Khan PRs: Ms Javeria Malik Video Link: https://youtu.be/k0rJlHFvA6MM		Rapporteurs: PR: Mr Muhammed JahanZaib PRs: Ms Amina Qazi Video Link: https://youtu.be/7evgOKgzFmA	4. Ms Rija Tayyab, Roshan Packages Limited 5. Mr Ali Tauqeer Sheikh, Climate Change and Development Expert 6. Dr Imran S. Khalid, WWF 7. Mr Bilal Khalid, TWB Panel Organisers: Engr Ahad Nazir, Mr Abdullah Khalid & Ms Maheen Rehan, SDPI Dr Zoe Leiyu Xie, TWB Rapporteurs: PR: Ms Zainab Baloch PRs: Mr Hammad Nadir Video Link: https://youtu.be/v0duCpY0JZA
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Day 1 Tuesday, 21 November 2023 - 5:30pm – 7:00pm Evening Plenary 1.2
Annual State of Renewable Energy 2023: Unlocking Private Sector Finance <i>In collaboration with PFAN & in Knowledge Partnership with Unilever</i> Moderator and Technical Presentation: Engr. Ahad Nazir, Head, Center for Private Sector Engagement, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Presentation: <i>Unlocking Private Finance to Achieve Nationally Determined Contributions (NDCs) in Pakistan</i> Chief Guest: Senator Dr Musadik Masood Malik, Senate of Pakistan Keynote Speaker: Mr Amir Paracha, President, Overseas Investors Chamber of Commerce & Industry (OICCI) & CEO, Unilever Pakistan Opening Remarks: Mr Michael Williamson, Section Chief, Energy Division, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), Thailand (Online) Special Remarks: Dr Hina Aslam, Hoffman Research Fellow, World Economic Forum & The Australian National University, Australia Distinguished Panellists: 1. Mr Ahmed Ammar Yasser, Chief of Party, Private Financing Advisory Network (PFAN) 2. Dr Amiera Sawas, Head, Research and Policy, Fossil Fuel Non-Proliferation Treaty Initiative, UK 3. Ms Rabia Bukhari, Program Management Specialist, Energy Office of Climate and Sustainable Growth, USAID – Pakistan Concluding Remarks: Mr Shah Jahan Mirza, Managing Director, Private Power and Infrastructure Board (PPIB), Ministry of Energy (Power Division), GoP Panel Organisers: Dr Khalid Waleed & Mr Ubaid ur Rehman Zia, SDPI Rapporteurs: PR: Ms Zona Usmani PRs: Ms Zainab Babar SM: Ms Saleha Qureshi & Mr Ubaid ur Rehman Zia Video Link: https://youtu.be/p0QIz_p2bs4

Day 1 Tuesday, 21 November 2023 - 6:45pm – 8:00pm Evening Plenary 1.3	Sustainable Development in Troubled Times (with a focus on Pakistan) Moderator: Dr Fareeha Armughan, Research Fellow & Head-Center of Evidence Action, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Introductory Remarks: Prof. Dr Zulfiqar Ali Bhutta, Founding Director, Institute for Global Health and Development, Aga Khan University, Pakistan (Online) Keynote Speaker: Professor Dr Jeffrey David Sachs, Director, Center for Sustainable Development, Columbia University, USA (Online) Special Remarks: Ms Esther Perez Ruiz, Resident Representative in Pakistan, International Monetary Fund (IMF), Islamabad, Pakistan Vote of Thanks: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Plenary Organiser: Dr Fareeha Armughan, SDPI Rapporteurs: PR: Mr Ayesha Ahmed PRs: Mr Muhammed JahanZaib & Mr Naimat Wazir Video Link: https://youtu.be/RWlF92GP1eg
	Dinner - 8:00pm

Day 2 Wednesday, 22 November 2023 - 10:00am – 11:30am			
Thematic Session B-1	Thematic Session B-2	Thematic Session B-3	Thematic Session B-4
Climate-Smart Food Systems: Enhancing Sustainability, Supply Chains, and Consumer Welfare <i>In collaboration with USSEC</i> Moderator: Mr Saram Bokhari, Cargill Worldwide Co-Moderator: Dr Vaqar Ahmed, SDPI Distinguished Panelists: 1. Dr Akmal Siddiqui, MoNFSR, GoP 2. Ms Farzana Altaf Shah, PEPA 3. Ms Nazish Shekha, PBC 4. Dr Thushara Wickramarachchi, HORDI, DoA, Sri Lanka Closing Remarks: Mr Shakeb Elahi, USSEC Panel Organisers: Ms Fatima Muzammil & Mr Yahya Gulraiz, SDPI Mr Shakeb Elahi, USSEC Rapporteurs: PR: Ms Naima Akram PRs: Mr Muhammad Daniyal Masood Video Link: https://youtu.be/cV3vPkhcgGU	Sustainability in the Digital Age: Potential of AI in Pakistan Registration Time: 9:15am Start Time: 09:30am to 11:30 am Moderator: Mr Parvez Iftikhar, Consultant ICT Policy and Regulation & former CEO, USF Chair: Major General Hafeez Ur Rehman, HI(M), (Retd.), Chairman, PTA, GoP Opening Remarks: Brig. Mohammad Yasin (Retd.), Senior Advisor Emeritus, SDPI Special Remarks: Mr Nasruminallah Mian, Lead – Digital Sector Program, ADB Speakers: 1. Mr Muhammad Aslam Hayat, LIRNEasia (Online) 2. Dr Yasar Ayaz, NUST 3. Mr Tahir Ahmed Masood, Transworld Associates, 4. Mr Waqas Burney, @Google APAC, Singapore (Online) Closing Remarks: Dr. Abid Qaiyum Suleri, SDPI Panel Organiser: Ms Sadia Satti, SDPI Rapporteurs:	Report Launch Human Security in Pakistan <i>In collaboration with FES</i> Moderator: Mr Abdullah Dayo, FES Opening Remarks: Dr Niels Hegewisch, CD, FES Keynote Speaker & Report Author: Dr Hafiz A. Pasha, Former Federal Minister for Finance, GoP Panelists: 1. Dr Moeed Yusuf, BNU, Lahore (Online) 2. Prof. Dr Aliya Hashmi Khan, QAU 3. Dr Hamza Ali Malik, UNESCAP, Thailand 4. Mr Rana Kaiser Ishaque, UNDP Pakistan 5. Dr Zainab Jehan, FIWU 6. Mr Ali Khizar, Business Recorder Panel Organisers: Dr Sajid Amin Javed, Mr Muhammad Umar Ayaz & Mr Zahid Majeed, SDPI Mr Abdullah Dayo, FES Rapporteurs: PR: Ms Umber Azeem PRs: Ms Aqsa Naveed & Mr Salar Babar	Roundtable: Sustainable Consumption and Production in the Context of Circular Economy and Climate Agenda <i>In collaboration with CANSA & OSF</i> Moderator: Mr Arif Rahman, Co-founder and CEO, Climate Chain Chair: Mr Amir Khan Goraya, Assistant Resident Representative, UNDP Pakistan Opening Remarks: Dr Shafqat Munir Ahmad, SDPI Special Remarks: Dr Abid Qaiyum Suleri, SDPI Topic: SCP and Climate Policy Framework in Pakistan Scene Setting: Mr Sanjay Vashist, CANSA, India Keynote Speaker: Mr Ali Kemal, SDGs Taskforce, GoP Speakers: 1. Mr Hridayesh Joshi, Journalist, India 2. Ms Shabnam Baloch, IRC 3. Mr Aftab Alam Khan, Resilient Future International Pvt Ltd 4. Engr. Memon Abdul Jabbar, Member, BoGs, SDPI 5. Dr Amiera Sawas, Fossil Fuel Non-Proliferation Treaty Initiative, UK 6. Dr Saqib Nasir, P&D, PSF

	PR: Ms Farwa Gohar PRs: Mr Mohsin Ali Khan Video Link: https://youtube.be/A829Lso45Tk	Video Link: https://youtube.be/mj0R03aTCAE	Panel Organisers: Dr Shafqat Munir Ahmad, Mr Salman Danish, Mr Ali Rehmat, SDPI Mr Sanjay Vashist, CANSA Rapporteurs: PR: Mr Ali Rehmat PRs: Ms Ramsha Mehboob Khan Video Link: https://youtube.be/7nbkAP90Dxw
Refreshments - 11:30am – 12:30pm			
Wednesday, 22 November 2023 - 12:30pm – 2:00pm			
Thematic Session B-5		Thematic Session B-7	
Thematic Session B-6		Thematic Session B-8	
Policy Forum: Sustainable Agriculture: Pakistan's Path to Food Security <i>In collaboration with BoP</i> Moderator: Dr Fareeha Armughan, SDPI Technical Presentation: Mr Zafar Masud, CEO/President, BOP Welcome Remarks: Dr Abid Qaiyum Suleri, SDPI	Climate-resilient and Low-carbon Health Systems: Strengthening Partnerships for Impact <i>In collaboration with Alliance for Health Policy & Systems Research (HPSR)</i> Moderator: Ms Rabia Tabassum, SDPI Chair: Prof. Dr Zafar Mirza, Former Minister of Health, GoP	Closed Door Celebrating a Legacy: HDF's 25 Years of Transforming Communities <i>In collaboration with HDF</i> <i>Dedicated to Dr Pervez Tahir</i> Moderator: Ms Zainab Naeem, SDPI Chair: Dr Adil Najam, President, WWF International Opening Remarks: Mr Mehboob Ul Haq, CEO, HDF Pakistan	Study Launch: Domestic Child Labour in Pakistan <i>In collaboration with FES</i> Moderator: Mr Abdullah Dayo, FES Opening Remarks: Dr Niels Hegewisch, CD, FES Keynote Speaker: Mr Iqbal Ahmed Detho, Sindh Human Rights Commission Speakers: - Ms Mehnaz Akbar Aziz, Children's Global Network Pakistan - Barrister Rida Tahir, Gender and Child Rights Expert - Mr Geir Thomas Tonstøl, ILO, Pakistan Office - Ms Khalida Saleemi, SACH-Struggle for Change - Mr Iftikhar Ahmed, Comparative Labour Law Expert
Panellists: - Mr Malik Amin Aslam, Former Minister of State for Environment, GoP - Prof. Dr Muhammad Naeem, AAU, Rawalpindi - Dr Babar Shahbaz, Professor, UoA, Faisalabad - Mr Fouad Bajwa, Agriculture Republic and Digital Dera - Air Commodore Dr Tauseef ur Rehman, SI(M), NASTP - Mr Kazim Saeed, Pakistan Agricultural Coalition	Speakers: - Dr Robert Marten, AHPSP, WHO, Switzerland (Online) - Dr Shehla Zaidi, AKU, Pakistan (Online) - Dr Mahwish Hayee, OPM, Islamabad - Dr Hasan Bin Hamza, HPSIU, MoNHSRC, GoP	Distinguished Speakers: - Dr Muhammad Khalid Riaz, HDF Pakistan (Online) - Lieutenant General Anis Ahmed Abbasi (Retd.), HDF - Dr Nadia Tahir, Independent Economist - Ms Fatima Hussain, HDF North America - Tariq Banuri, University of Utah	Panel Organisers: Dr Sajid Amin Javed, Mr Muhammad Umar Ayaz & Ms

7. Ms Rija Tayyab, Roshan Packages Limited	Reporters: PR: Mr Salah Ud Din & Muhammad Daniyal Masood PRs: Mr Athar Akhtar Video Link: https://youtu.be/SwbCWqBdifo	Concluding Remarks: Dr Abid Qaiyum Suleri, SDPI Exchange of Mementos Panel Organisers: Ms Zainab Naeem, SDPI SDC Unit Reporters: PR: Mr Huzaifa Rehman PRs: Ms Dur E Navyab Video Link: https://youtu.be/PmlulGdsPsQ	Zarmina Aijaz, SDPI Mr Abdullah Dayo, FES Reporters: PR: Ms Umber Azeem PRs: Ms Aqsa Naveed & Ms Javeria Malik Video Link: https://youtu.be/FZlsb95kIPA
Lunch - 2:00pm – 3:00pm			
Wednesday, 22 November 2023 - 3:00pm – 4:30pm			
Thematic Session B-9		Thematic Session B-10	
High-Level Policy Dialogue: Effective Implementation of Carbon Markets in Pakistan <i>In collaboration with the Danish Embassy</i> Moderator: Mr Ubaid ur Rehman Zia, SDPI Chair: Dr Sardar Mohazzam, MD, National Energy Efficiency and Conservation Authority Opening Remarks: Mr Bilal Anwar, CEO, NDRMF Presentation: Dr Khalid Waleed, SDPI Speakers: - Mr Khurram Lalani, Resources Future - Mr Arsalan Ali Faheem, DAI - Ms Sameera Sheikh, MoCC, GoP - Dr Hassan Daud Butt, China Energy Engineering Group Co. Ltd	Policy Forum: Rethinking Public Debt Sustainability Analysis with a Focus on SDGs <i>In collaboration with FES and UNESCAP</i> Moderator: Dr Zainab Jehan, FIWU Co-Moderator: Mr Abdullah Dayo, FES Technical Presentation: Dr Hamza Ali Malik, UNESCAP, Thailand Speakers: - Dr Mohsin Hassan, MoF, GoP - Mr Ali Kemal, SDGs Taskforce, GoP - Dr Muhammad Aman Ullah, Planning and Development Board, GoP (Online) - Mr Adnan Ashraf Ghumman, TWB	Circular Economy in Pakistan – The Untapped Potential of Waste to Resource <i>In collaboration with IoU and HBS</i> Moderator: Mr Asmat Ullah, IoU Chair: Dr Ali Malik, Deputy Sect. PM Youth Program, PM Secretariat, GoP Technical Presentation: Ms Ayesha Majid, IoU Speakers: - Ms Mehrunisa Malik, Saaf Suthra Sheher Pvt Ltd - Ms Li Stephanie Choo, UNESCAP, India - Dr Bishnu Raj Upreti, NCCR, Nepal Presentation: <i>Conflict and Cooperation in Municipal Solid</i>	Socially and Environmentally Compliant Construction Industry in Pakistan <i>In collaboration with NED and SC</i> Moderator: Dr Shafqat Munir Ahmad, SDPI Chair: Mr Geir Thomas Tonstol, CD, ILO, Pakistan Office Speakers: - Mr Khalid Mahmood, LEF, Lahore - Dr Saifullah Chaudhry, Development Impact Solutions Islamabad – Toronto - Mr Malik Najaf Khan, Sindh People's Housing for Flood Affecteds - Mr Mehr Abdul Haq, Brick Kilns Owners' Association Pakistan

Panel Organisers: Ms Saleha Qureshi, Dr Khalid Waleed, Mr Ubaid ur Rehman Zia & Ms Zainab Naeem, SDPI Rapporteurs: PR: Ms Zona Usmani PRs: Ms Saleha Qureshi SM: Ms Zainab Babar Video Link: https://youtu.be/Sr3VXDZrZCIE	5. Mr Murtaza Jafferjee, JB Securities Ltd, Sri Lanka (Online) 6. Mr Waqas Paracha, KP Finance Division Book Launch: <i>Impact of Foreign Debt on Labour Rights in Pakistan</i> Authored by: Zulfiqar Shah and Muhammad Rafique Presented by: Mr Muhammad Rafique Special Remarks on Book: • Dr Sajid Amin Javed, SDPI • Dr Uzma Ashiq, Social Work Dept., Punjab University Panel Organisers: Dr Sajid Amin Javed & Mr Muhammad Umar Ayaz, SDPI Mr Vatcharin Sirimeetham, UNESCO Mr Abdullah Dayo, FES Rapporteurs: PR: Ms Umer Azeem PRs: Ms Aqsa Naveed & Mr Salar Babar Video Link: https://youtu.be/OrDc6L7B1eM	Waste Management: <i>Some Reflections from Nepal and Lessons for South Asia</i> 4. Ms Farah Rashid, Engro Foundation, Karachi Panel Organisers: Ms Zainab Naeem & Mr Huzaifa Rehman, SDPI Ms Samima Durrani, IoU Rapporteurs: PR: Mr Huzaifa Rehman PRs: Ms Dur E Nayyab Video Link: https://youtu.be/2PzcM26tX_8	Panel Organisers: Dr Shafqat Munir Ahmad, Mr Salman Danish, Mr Muhammad Awaiz Umar & Ms Ramsha Mehboob Khan, SDPI Rapporteurs: PR: Mr Ali Rehmat PRs: Ms Ramsha Mehboob Khan Video Link: https://youtu.be/UURwyY7J_L0
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Day 2 Wednesday, 22 November 2023 - 5:00pm – 6:30pm Evening Plenary 2.1	Climate Change & Food Security: Does Regenerative Agriculture Offer Hope in Despair? <i>In collaboration with Nestlé, Pakistan and Cargill</i> Moderator: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Chair: Dr. Van Nguyen, Deputy Resident Representative, United Nations Development Programme, Pakistan Keynote Speaker: Dr Adil Najam, President, World Wildlife Fund Distinguished Panelists: 1. Mr Sheikh Waqar Ahmed - Head of Corporate Affairs & Sustainability, Nestlé Pakistan 2. Ms Dipanwita Chakraborty, Regional Director, Corporate Responsibility & Sustainable Development, Asia-Pacific, Cargill, India (Online) 3. Dr Masoud Jarallah Al-Marri, Director General, Islamic Organization for Food Security: Director, Food Security Department, Ministry of Municipality and Environment, State of Qatar 4. Dr Iqrar Ahmad Khan, Vice Chancellor, University of Agriculture Faisalabad (UAF), Pakistan Plenary Organisers: Dr Kashif Salik & Mr Mubeen Ali Khan, SDPI Ms Aatekah Mir Khan & Ms Namwar Yusuf Rahman, Nestlé, Pakistan Rapporteurs: PR: Ms Ayesha Ahmed PRs: Ms Huma Arshad Video Link: https://youtu.be/A1w_PgdyvQ
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Day 2 Wednesday, 22 November 2023 - 6:30pm – 8:00pm Evening Plenary 2.2	
SDPI's Living Legend Series Award 2023 In Honour of Dr Parvez Hassan	Introduction of the Living Legend Series and Moderator: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Moderator: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Chief Guest: Dr Parvez Hassan, Senior Advocate, Supreme Court of Pakistan Opening Remarks: Ambassador Shafqat Kakakhel, Chairperson, Board of Governors, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan Documentary Screening Distinguished Speakers: 1. Tariq Banuri 2. Syed Babar Ali (Online) 3. Prof. Nicholas A. Robinson (Online) 4. Senator Mushahid Hussain Sayed 5. Mr Abdul Razak Dawood 6. Mrs Nasreen Kasuri 7. Senator (R) Javed Jabbar (Online) 8. Dr Adil Najam 9. Mr Shahid Kardar 10. Mr Shahid Malik 11. Mr Ahmed Bilal Mehboob 12. Mr Ali Kuri Khattak 13. Mr Farid Ahsanuddin 14. Dr Ishrat Hussain 15. Dr Moeed Yusuf 16. Justice Syed Mansoor Ali Shah 17. Mr Omar Hassan Plenary Organisers: Ms Saleha Qureshi & Mr Ubaid ur Rehman Zia, SDPI Mr Asad Ahmad Ghani Rapporteurs: PR: Ms Zona Usmani PRs: Muhammad Daniyat Masood Video Link: https://youtu.be/URlitColvDQ
Dinner - 8:00pm	

Day 3 Thursday, 23 November 2023 - 10:00am – 11:30am			
Thematic Session C-1	Thematic Session C-2	Thematic Session C-3	Thematic Session C-4
Pakistan's SDGs and Policy Crisis: How are we Faring? <i>In Knowledge Partnership with the Aga Khan University</i> Moderator and Host: Prof. Dr Zulfiqar Ali Bhutta, Founding Director IGHD, AKU, Pakistan Chair: Dr Muhammad Anjad Saqib, Chairperson, BISP Presentation: Meeting SDGs in a City Guest of Honour: Senator Seemi Ezdi, Chairperson Senate Standing Committee on Climate Change, GoP Speakers: 1. Dr Jai Das, AKU Presentation: Maternal and Child Health in Pakistan: How did Decentralisation Fare 2. Ms Aisha Khan, MGPO (Online) Presentation: Introduction to the Civil Society Coalition for Climate Change 3. Dr Sameen Siddiqi, AKU Presentation: Sehat Sahulat Program Evaluation Discussants: 1. Dr Abid Qaiyum Suleri, SDPI 2. Prof. Dr Zulfiqar Ali Bhutta, AKU Closing Remarks: Dr Abid Qaiyum Suleri, SDPI	Roundtable: Towards Plastic Circularity in Pakistan: Solutions and Way Forward <i>In collaboration with UNEP and Comsats</i> Moderator: Ms Zainab Naeem, SDPI Opening Remarks: Ms Adriana Zacarias, UNEP, Nairobi (Online) Presentation: Dr Rafi Amir-ud-Din, COMSATS, Islamabad Special Remarks: Mr Khurram Shah, Director Public Policy & Government Affairs – Pakistan & Afghanistan, PepsiCo Speakers: 1. Mr Charles Schneider, IFC 2. Ms Mehak Masood, Artistic Milliners 3. Ms Ayesha Aziz, Packages Limited 4. Mr Kashif Ali Tipu, Fr. DC Larkana 5. Ms Youngran Hur, UNEP 6. Dr Amna Farrukh, FAST NUCES, Lahore 7. Mr Umer Abdul Aziz, WSSC 8. Mr Hafiz Jawad Sohail, UN Sustainable Development Solutions Network	Empowering Women Entrepreneurs through Financial Inclusion and Trade Participation <i>In collaboration with FNF</i> Moderator: Ms Mahnoor Arshad, SDPI Chair: Ms Roshan Khurshed Bharucha, Member BoGs, SDPI Opening Remarks: Ms Birgit Lamm, FNF, Pakistan Special Remarks: Ms Romina Khurshid Alam, Former SAPM, GoP Technical Presentation: Ms Faeyza Khan, World Bank Speakers: 1. Ms Sonia Jahangir Seth, USAID 2. Ms Huma Fakhar, Social Activist & Entrepreneur, Lahore 3. Ms Amala Najeem, FCDO Closing Remarks: Dr Vaqar Ahmed, SDPI Panel Organisers: Ms Mahnoor Arshad & Dr Vaqar Ahmed, SDPI Rapporteurs: PR: Mr Mohsin Ali Khan PRs: Ms Naima Akram Video Link: https://youtu.be/IT4RdFu8QZI	The Governance Approach Moderator: Tariq Banuri, University of Utah, USA Chair: Dr Ishrat Husain, Former Advisor to the Prime Minister on Institutional Reforms and Austerity, GoP Panelists: 1. Dr Naazir Mahmood, Development Expert 2. Dr Ayesha Razzaque, Educationist Presentation: Ailments of the Education Sector 3. Dr Moesed Yusuf, BNU, Lahore 4. Tariq Banuri, University of Utah Panel Organisers: Tariq Banuri Mr Syed Ali Wasif Naqvi, SDPI Rapporteurs: PR: Raja Taimur Hassan PRs: Ms Javeria Malik Video Link: https://youtu.be/CYqE7lkgcO0

Panel Organisers: Dr Zulfiqar Ali Bhutta & Mr Jai Das, AKU Dr Fareeha Armughan & Ms Anam Malik, SDPI Rapporteurs: PR: Ms Anam Malik PRs: Mr Maesum Abbas Video Link: https://youtu.be/dklgMsPg-U	9. Ms Aatekah Mir Khan, Nestle Pakistan 10. Muhammad Bin Shahzad, Tetra Pack Pakistan 11. Ms Rija Tayyab, Roshan Packages Limited 12. Ms Maha Kamal, TWB 13. Mr Sahib Alam Khan, WWF 14. Mr Ali Syed, Ourboros Waste Management Closing Remarks: Dr Asad Hussain, Director, COMSATS Panel Organisers: Ms Zainab Naeem, SDPI SDC Unit Rapporteurs: PR: Mr Huzaifa Rehman PRs: Ms Dur E Nayyab Video Link: https://youtu.be/cWlnhdsulmg		
Refreshments - 11:30am – 12:30pm			
Thematic Session C-5	Thematic Session C-6	Thematic Session C-7	Thematic Session C-8
Impacts of Climate Change on Food and Nutrition Security in Pakistan <i>In collaboration with WFP</i> Moderator: Ms Rabia Tabassum, SDPI Introductory Remarks: Ms Coco Ushiyama, CD, WFP Pakistan Chair: Mr Muhammad Sami Saeed, Caretaker Federal Minister, Ministry of Planning Development & Special Initiatives, GoP Speakers:	<i>Podium Discussion:</i> Ten Years of BRI: Lessons Learnt & Charting a Way Forward for Green Development <i>In collaboration with PCI and Embassy of China</i> Moderator: Dr Khalid Waleed, SDPI Opening Remarks and Launch of Steering Committee on Agriculture: Dr Abid Qaiyum Suleri, SDPI Speakers:	Gender and Climate Change in South Asia: An Intersectional Analysis <i>In Knowledge Partnership with UNESCAP SSWA</i> Moderator: Ms Sadia Satti, SDPI Chair: Ms Mehnaz Akbar Aziz, CEO, Children's Global Network Pakistan Speakers: 1. Dr Bishnu Raj Upreti, NCCR, Nepal	<i>Roundtable:</i> Addressing Pakistan's Inflation Woes Moderator: Dr Waqar Ahmed, SDPI Chair: Dr Waqar Masood Khan, Advisor to the PM on Finance, GoP Panellists: 1. Prof. Dr-Aliya Hashmi Khan, QAU 2. Mr Zafar ul Hasan, Planning Commission of Pakistan 3. Mr Saud Bangash, PBC

1. Ms Lynnada Kiess, Nutrition Division, WFP 2. Dr Friederike Greb, WFP 3. Dr Irfan Ullah, Nutrition International Pakistan 4. Dr Aneela Afzal, PMAS-AAU, Rawalpindi 5. Muhammad Daniyal Masood, NUST Presentation: <i>Unravelling the Food Security Challenges of Pakistan</i> Panel Organisers: Mr Qasim Ali Shah, Ms Rabia Tabassum, Mr Hassan Murtaza & Mr Salah Ud Din, SDPI Rapporteurs: PR: Mr Salah Ud Din PRs: Mr Athar Akhtar & Mr Maesum Abbas Video Link: https://youtu.be/KKuAORYcCGY	1. Senator Mushahid Hussain Sayed, Senate of Pakistan 2. Mr Wang Sita, Embassy of the People's Republic of China to the Islamic Republic of Pakistan 3. Dr Shazia Ghani, Special Projects (CPEC), Prime Minister's Office, GoP 4. Mr Shakeel Ahmed Ramey, AIERD 5. Dr Zhang Jiangyu, BRIGDI 6. Mr Mustafa Hyder Sayed, PCI Panel Organisers: Dr Khalid Waleed, Mr Ubaid ur Rehman Zia & Ms Zona Usmani, SDPI Rapporteurs: PR: Ms Zona Usmani PRs: Ms Zainab Babar SM: Ms Saleha Qureshi & Mr Ubaid ur Rehman Zia Video Link: https://youtu.be/lI-ZsCFrYQo	2. Ms Bharati Chaturvedi, Chintan, India (Online) 3. Ms Li Stephanie Choo, UNESCAP, India Presentation: <i>Gender and Climate Change: Perspectives from South Asia and Beyond</i> 4. Ms Aisha Khan, MGPO, Islamabad 5. Ms Rushati Das, CANSA, India Presentation: <i>Gender and Climate Change</i> 6. Dr Amiera Sawas, Fossil Fuel Non-Proliferation Treaty Initiative, UK Panel Organiser: Ms Sadia Satti, SDPI Rapporteurs: PR: Ms Farwa Gohar PRs: Mr Alamgir Khan Video Link: https://youtu.be/7f6J4DldBI	4. Ms Komal Shakeel, Economist (Online) 5. Ms Hiba Zaidi, IFC 6. Mr Ali Salman, PRIME Institute Panel Organisers: Mr Asif Javed & Mr Yahya Gulzar, SDPI Rapporteurs: PR: Mr Mohsin Ali Khan PRs: Mr Yahya Gulzar Video Link: https://youtu.be/RZRGANLzqo8
Lunch - 2:00pm – 3:00pm			
Thursday, 23 November 2023			
Thematic Session C-9		Side Event 1	Side Event 2
3:00pm – 4:00pm Advancing Strategies in Preventing and Countering Violent Extremism: Bridging the Gaps in P/CVE Research and Practice <i>In Knowledge Partnership with NACTA</i> Moderator: Dr Shafqat Munir Ahmad, SDPI Chair: Dr Muhammad Zafar Iqbal, Dean of Social Sciences, International Islamic University	4:00pm – 5:00pm Report Launch Pakistan's Geoeconomic Pivot: Strategies, Opportunities, and Challenges <i>In collaboration with FES</i> Moderator: Dr Vaqar Ahmed, SDPI Welcome Remarks: Dr Niels Hegewisch, CD, FES	2:30pm – 4:00pm Roundtable: Pakistan's Transformative Digital Future: Growth Strategy and Roadmap <i>In Knowledge Partnership with ADB</i> Moderator: Mr Nasruminallah Mian, Senior Program Officer/ Lead Digital Sector Program, ADB	

Speakers: 1. Dr Dayab Gillani, NACTA Presentation: <i>PVE Research in Pakistan: Pitfalls & Opportunities</i> 2. Dr Sadia Nasir, Bahria University, Islamabad 3. Ms Mossarat Qadeem, PAIMAN Alumni Trust 4. Prof. Dr Hussain Shaheed Soherwadi, University of Peshawar 5. Dr Syed Kaleem Imam, Former Fed. Sec. MNC, GoP 6. Mr Malick Shahbaz Ahmed Tahir, Sungi Development Foundation 7. Dr Tabasum Naz, Federal Directorate of Education Panel Organisers: Dr Shafqat Munir Ahmad, Mr Ali Rehmat, Ms Ramsha Mehboob Khan, SDPI Rapporteurs: PR: Mr Ali Rehmat PRs: Ms Ramsha Mehboob Khan & Mr Muhammed JahanZaib Video Link: https://youtu.be/aFehOSN4VsU	Keynote Speaker: Dr Moeed Yusuf, VC, BNU, Lahore Panellists: 1. Ambassador Aizaz Ahmed Chaudhry, Former Foreign Secretary, GoP 2. Mr Marc Saxer, FES 3. Dr Rabia Akhtar, UoL, Lahore MoU Signing between SDPI & BNU Panel Organisers: Dr Sajid Amin Javed & Ms Zarmina Aijaz, SDPI Mr Hamayoun Khan, FES Rapporteurs: PR: Ms Zarmina Aijaz PRs: Mr Alamgir Khan Video Link: https://youtu.be/vO4JB_8N9YY	Welcome Remarks: Dr Vaqar Ahmed, SDPI Opening Remarks: Dr Yong Ye, CD, ADB Special Remarks: Mr Ali Asghar, Senior Joint Secretary, Ministry of Information Technology and Telecommunication, GoP Discussants: 1. Syed Aftab Haider, Pakistan Single Window 2. Mr Osman Nasir, Former MD, Pakistan Software Export Board 3. Dr Jordanka Tomkova, Innovation Bridge Foundation 4. Mr Parvez Abbasi, AdVenture 5. Ms Jehan Ara, Katalyst Labs 6. Mr Ibrahim Amin, PAFLA 7. Mr Muhammad Bilal Abbasi, Ignite 8. Mr Imran Jattala, NICAT 9. Dr Raja Ali Saleem, Former Civil Servant 10. Mr Muhammad Arif Sargana, PTA 11. Dr Nazim Latif, National Consultant on Export Coordination, ITC (ReMIT)/ 12. Mr Aqeel Khurshid, Chief Technology Officer, Nayatel Pvt. Ltd. Panel Organisers: Dr Vaqar Ahmed & Mr Abdullah Khalid, SDPI Rapporteurs: PR: Ms Maheen Rehan PRs: Mr Hammad Nadir Video Link: https://youtu.be/EYTpPyWLl8	
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Day 3 Thursday, 23 November 2023 - 3:00pm – 5:00pm Evening Plenary 3.1	
Reforms for a Brighter Future <i>In collaboration with The World Bank</i>	
Moderator: Dr Abid Qaiyum Suleji, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Keynote Speaker: Dr Luis Felipe López-Calva, Global Director, Poverty and Equity Global Practice, The World Bank	
Technical Presentation: Mr Najib Benhassine, Country Director, The World Bank, Islamabad, Pakistan	
Chief Guest: Dr Shamshad Akhtar, Caretaker Federal Minister for Finance, Revenue, and Economic Affairs, Government of Pakistan	
Podium Discussion:	
1. Dr Hadia Majid, Economics Department Chair, Lahore University of Management Sciences, Lahore, Pakistan	
2. Mr Ali Khizar, Journalist	
3. Dr Van Nguyen, Deputy Resident Representative, United Nations Development Programme, Pakistan	
4. Dr Fareeha Armughan, Research Fellow & Lead-Center of Evidence Action, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Awards: WB Youth Challenge Awards	
Plenary Organisers: Dr Sajid Amin Javed, Ms Arooj Waheed Dar & Ms Aqsa Naveed, SDPI Mr Tobias Akhtar Haque, TWB	
Rapporteurs:	
PR: Ms Umber Azeem	
PRs: Ms Aqsa Naveed & Ms Ayesha Ahmed	
Video Link: https://youtu.be/mewlgWOZtU	

Day 3 Thursday, 23 November 2023 - 5:30pm – 7:00pm Closing Plenary 3.2	
Pathway to Recovery, Hope and Resilience	
Master of Ceremony: Dr Fareeha Armughan, Research Fellow & Lead -Center of Evidence Action, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Introductory Note: Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Chief Guest: Dr Mohammad Jehanzeb Khan, Special Assistant to the Prime Minister, Special Investment Facilitation Council (SIFC) & Deputy Chairman, Planning Commission, Government of Pakistan	
Guest of Honour: Dr Ishrat Husain, Former Advisor to the Prime Minister on Institutional Reforms and Austerity, Former Dean and Director, Institute of Business Administration, Karachi, Pakistan	
Book Launch: <i>Development Pathways India, Pakistan & Bangladesh, 1947 – 2022</i> by Dr Ishrat Husain	
Awards Ceremony: • SDPI's Outstanding Award in Research: Mr Ubaid ur Rehman Zia, Senior Research Associate, SDPI, Islamabad, Pakistan	
SDC 2023 Recommendations: Dr Vaqar Ahmed, Joint Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Vote of Thanks: Ambassador Shafqat Kakakhel, Chairperson, Board of Governors, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan & Dr Vaqar Ahmed, Joint Executive Director, Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan	
Plenary Organisers: Mr Hassan Murtaza & Mr Asim Zahoor, SDPI	
Rapporteurs: PR: Mr Salah ud Din PRs: Mr Maesum Abbas	
Video Link: https://youtu.be/H8lenVvrWs4	

Abbreviations & Acronyms

ADB	Asian Development Bank
AHK-F	Akhter Hameed Khan - Foundation
AHPSR	Alliance for Health Policy and Systems Research
AIERD	Asian Institute of Eco-civilization, Research, and Development
AKU	The Aga Khan University
APTMA	All Pakistan Textile Mills Associations
APTUF	All Pakistan Trade Union Federation
Asst. Prof.	Assistant Professor
Assoc. Prof.	Associate Professor
BISP	Benazir Income Support Programme
BoG	Board of Governors
BoP	Bank of Punjab
BNU	Beaconhouse National University
BRC-A	Business Renewables Centre - Australia
BRI	Belt and Road Initiative
BRIGDI	BRI Green Development Institute
BZU	Bahauddin Zakariya University
CABI	Centre for Agriculture and Bioscience International
CANSA	Climate Action Network South Asia
CAREC	Central Asia Regional Economic Cooperation
CC	Country Coordinator
CCI	Chamber of Commerce and Industry
CCPS	Center for Critical Peace Studies
CD	Country Director
CEGS	Centre of Excellence in Gender Studies

CEO	Chief Executive Officer
CEI	Climate-Energy Initiative
CERB	Centre of Excellence in Responsible Business
Chintan	Chintan Environmental Research and Action Group
CPEC	China-Pakistan Economic Corridor
CR	Country Representative
CRCC	Climate Resourcing Coordination Center
CREB	Center for Research in Economics and Business
CPRD	Center for Participatory Research and Development
CSD	Center for Sustainable Development, Earth Institute
DAI	Development Alternatives Incorporated
DED	Deputy Executive Director
DG	Director General
DGG Ltd	Development Guarantee Group Limited
DoE	Department of Economics
DPPC	Disaster Preparedness and Prevention Center
DWU	Domestic Workers' Union
ECDPM	European Centre for Development Policy Management
EDD	Environment and Development Division
EFP	Employers Federation of Pakistan
ESG	Environmental, Social and Governance
ETP	Ehsaas Tahafuz Program
EU	European Union
FAO	Food and Agriculture Organization
FBR	Federal Board of Revenue
FCCU	Forman Christian College (A Chartered University)
FCDO	Foreign, Commonwealth and Development Office

FES	Friedrich-Ebert-Stiftung
FJWU	Fatima Jinnah Women University
FKAAB	Faculty of Civil Engineering and Built Environment
FNf	Friedrich Naumann Foundation for Freedom
GAIN	Global Alliance for Improved Nutrition
GCU	Government College University
GFANZ	Glasgow Financial Alliance for Net Zero
GIF	Global Infrastructure Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit / German Agency for International Cooperation
GoP	Government of Pakistan
GRMA	Global Risk Management Alliance
GS	General Secretary
HBS	Heinrich Böll Stiftung
HEC	Higher Education Commission of Pakistan
HRCp	Human Rights Commission of Pakistan
HPSR	Health Policy & Systems Research
HKS	Harvard Kennedy School
HORDI, DOA	Horticultural Crops Research and Development Institute, Department of Agriculture, Sri Lanka
HSA	Health Services Academy
IBA	Institute of Business Administration
IDRC	International Development Research Centre
IDS	Institute of Development Studies
IFC	International Finance Corporation
IGP	InsuResilience Global Partnership
IIUI	International Islamic University Islamabad
ILO	International Labour Organization
INGOs	International Non-Governmental Organisations

IOM	International Organization for Migration
IPRI	Islamabad Policy Research Institute
IRC-Pak	International Rescue Committee-Pakistan
ITC	International Trade Centre
JED	Joint Executive Director
JICA	Japan International Cooperation Agency
KP	Khyber Pakhtunkhwa
LEF	Labour Education Foundation
LMICs	Low and Middle-Income Countries
LSE	Lahore School of Economics
LUMS	Lahore University of Management Sciences
MGPO	Mountain and Glacier Protection Organization
MJIIT	Malaysia-Japan International Institute of Technology
MNA	Member National Assembly
MNC, GoP	Ministry of Narcotics Control, Government of Pakistan
MINFSR, GoP	Ministry of National Food Security & Research, Government of Pakistan
MoCom, GoP	Ministry of Commerce, Government of Pakistan
MoCC, GoP	Ministry of Climate Change and Environmental Coordination, Government of Pakistan
MolTT, GoP	Ministry of Information Technology and Telecommunication, Government of Pakistan
MoNHSRC, GoP	Ministry of National Health Services Regulations and Coordination, Government of Pakistan
MoPASS, GoP	Ministry of Poverty Alleviation and Social Safety, Government of Pakistan
MoPDSI, GoP	Ministry of Planning, Development & Special Initiatives, Government of Pakistan
MoOPHRD, GoP	Ministry of Overseas Pakistanis and Human Resource Development, Government of Pakistan
MPA	Member Provincial Assembly
MPFD	Macroeconomic Policy and Finance Division
NACTA	National Counter Terrorism Authority
NADRA	National Database and Registration Authority

NASTP	National Aerospace Science and Technology Park
NCCR	Nepal Center for Contemporary Research
NCRC	National Commission on the Rights of Child
NCSW	National Commission on the Status of Women
NDRMF	National Disaster and Risk Management Fund
NDU	National Defence University
NED	National Endowment for Democracy
NEECA	National Energy Efficiency & Conservation Authority
NFIS	National Financial Inclusion Strategy
Norec	Norwegian Agency for Exchange Cooperation
NTC	National Tariff Commission
NTDC	National Transmission & Despatch Company
NUST	National University of Sciences & Technology
OPM	Oxford Policy Management
OSF	Open Society Foundations
RSPN	Rural Support Programmes Network
PAGE	Pakistan Alliance for Girls Education
PAFLA	Pakistan Freelancers Association
PAL	Pakistan Academy of Letters
PBC	Pakistan Business Council
PCI	Pakistan-China Institute
PCP	Pakistan Centre for Philanthropy
PDMA	Provincial Disaster Management Authority
PEPA	Pakistan Environmental Protection Agency
PFAN	Private Financing Advisory Network
PIDE	Pakistan Institute of Development Economics
PILER	Pakistan Institute of Labour Education and Research

PMAS	Pir Mehr Ali Shah Arid Agriculture University Rawalpindi
AAUR	
PM	Program Manager
PML-N	Pakistan Muslim League-Nawaz
PNWC	Pakistan Navy War College
PPAF	Pakistan Poverty Alleviation Fund
PPIB	Private Power Infrastructure Board
PPMA	Pakistan Pharmaceutical Manufacturers' Association
PPP	Pakistan People's Party
PPPA	Public Private Partnership Authority
PPPPA	Punjab Public Private Partnership Authority
PRCS	Pakistan Red Crescent Society
PREIA	Pakistan-Regional Economic Integration Activity
PSEB	Pakistan Software Export Board
PTI	Pakistan Tehreek-e-Insaf
PU	University of the Punjab
PWF	Pakistan Workers' Federation
RIHS	Rawal Institute of Health Sciences
Reg. Dir.	Regional Director
RF	Research Fellow
RIS	Research and Information System for Developing Countries
RPC	Regional Programme Coordinator
SAARC	South Asian Association for Regional Cooperation
SANS	South Asia Network on the Sustainable Development Goals
SAPM	Special Assistant to the Prime Minister
SBP	State Bank of Pakistan
SC	Solidarity Center, USA
SDGs	Sustainable Development Goals

SDPI	Sustainable Development Policy Institute
SEC	SAARC Energy Centre
SI	Sitara-e-Imtiaz
SIFC	Special Investment Facilitation Council
SPDC	Social Policy and Development Centre
SPRC	Social Protection Resource Centre
SUDS	Sustainable Urban Development Section
TWB	The World Bank
UMT	University of Management and Technology
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCAP-SSWA	United Nations Economic and Social Commission for Asia and the Pacific: Sub-regional Office for South and South-West Asia
UNOPS	United Nations Office for Project Services
UNOSSC	United Nations Office for South-South Cooperation
UNRCO	United Nations Resident Coordinator Office
UO	University of Oxford
UoF	University of Faisalabad
UoK	University of Karachi
UoP	University of Peshawar
USF	Universal Service Fund
USSEC	U.S. Soybean Export Council
UTHM	Universiti Tun Hussein Onn Malaysia
UTM	Universiti Teknologi Malaysia
VC	Vice Chancellor
VNRs	Voluntary National Reviews
VP	Vice President

WCCI	Women Chamber of Commerce and Industries
WEF	World Economic Forum
WFP	World Food Programme
WHO	World Health Organization
WSSC	Water Services and Sanitation Company
WWA	Women Workers' Alliance
WWF	World Wildlife Fund

About the Editors

Uzma Tariq Haroon is Director of the Sustainable Development Conference (SDC) Unit; and Managing Editor of the '*Journal of Development Policy, Research & Practice*' at the Sustainable Development Policy Institute in Islamabad, Pakistan. She has over 30 years of experience in media and communication and has been the *tour de force* behind SDPI's annual international SDC series since 2003. She is also co-editor of the past 21 SDC anthologies, including this one. Previously, she has worked with the United Nations Development Programme (UNDP)'s project on 'Portrayal of Women in Media'; and *The Nation* newspaper for over ten years where she was editor of a weekly magazine and was also their senior reporter covering the social sector. She holds a Masters in Communications from the University of Hawaii, USA; and Masters in Journalism from the University of Punjab, Pakistan.

Sarah Siddiq Aneel has dedicated over 20 years of her career to Pakistan's development sector with expertise in organisational governance, multi-donor programme coordination, strategy development, evaluation as well as primary research. However, scholarly publishing remains her first passion. She is the *Founding Editor* of several peer-reviewed national journals, the most recent being the '*Journal of Aerospace & Security Studies*.' Beyond journals, she has published over 40 books, encompassing a wide range of subjects such as sustainable development, environmental governance, international relations, defence & security, emerging technologies, and political economy. On the institutional front, she is overseeing the Publications & StratComm work at the Centre for Aerospace & Security Studies (CASS) in Islamabad. A Chevening Fellow and LUMS-McGill Fellow, she is also an alumna of Columbia University's Earth Institute, USA.

Light at the End of the Tunnel: Hope in Times of Despair is a unique collection that proposes contemporary policy pathways from leading experts across Pakistan, Kazakhstan, Nepal, France and the United States. With focus on charting a path toward sustainable and inclusive growth, the volume breaks new ground by presenting innovative solutions integrating local realities with global perspectives. Each chapter outlines actionable strategies that seek to transform the socioeconomic landscape of emerging economies (with special focus on Pakistan) and foster resilience in the face of today's complex challenges. The book is structured around six major themes:

1. **Economic Development and Reform:** This section proposes strategic reforms to address Pakistan's macroeconomic challenges, streamline governance, and foster regional connectivity. From privatisation to comprehensive tax reforms, the authors advocate for long-term planning and investments in human capital, targeting sectors such as SMEs, innovation economy, and services for inclusive growth.
2. **Energy and Environmental Sustainability:** With a focus on transitioning to clean energy, these chapters analyse adoption of renewable energy, green financing, and circular economy principles. Recommendations urge modernising textile industries, managing waste, and reducing reliance on fossil fuels - all while fostering international collaborations and regional clean energy projects.
3. **Decade of BRI and CPEC:** Reflecting on the Belt and Road Initiative (BRI) and the China-Pakistan Economic Corridor (CPEC), this section highlights the economic and geopolitical opportunities they present. Writers pragmatically argue leveraging technology transfer, infrastructure development, and strategic partnerships to drive sustainable economic growth while addressing environmental concerns and regional cooperation.
4. **Food Security and Sustainable Agriculture:** Tackling the urgent issues of food security and climate-smart agriculture, the authors propose modern technological integration and gender inclusivity in agricultural practices. The writings discuss the importance of resilient food systems, better water management, and incentives for private sector engagement to promote sustainable agricultural productivity and combat climate change.
5. **Social Equity and Empowerment:** This theme centres on gender equality, financial inclusion, and social protection. It offers solutions to empower women, integrate gender considerations into economic and environmental policies, and promote inclusive governance. Special attention is given to improving healthcare, education, and vocational training to drive social equity and community resilience.
6. **Governance and Policy Challenges:** With a focus on governance reform, this section explores capacity building, decentralisation, and institutional transparency. The authors from Pakistan and Nepal present a detailed roadmap for enhancing policy continuity, economic stability and accountability in public service while promoting innovative approaches to counter extremism and boost civic engagement.

Light at the End of the Tunnel is a compelling anthology that reimagines traditional policy frameworks and offers practical approaches for policymakers, scholars and practitioners to realign the future trajectory of sustainable development. While acknowledging the enormity of local challenges, the volume makes a compelling call for action, stressing that no country can tackle these issues in isolation. It urges regional and global cooperation to build a more resilient, equitable, and sustainable world for the generations to come.

- Sarah Siddiq Aneel



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