

DEVELOPMENT ADVOCATE **PAKISTAN**

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**Environmental
Sustainability in Pakistan**



DEVELOPMENT ADVOCATE PAKISTAN



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Development Advocate Pakistan provides a platform for the exchange of ideas on key development issues and challenges in Pakistan. Focusing on a specific development theme in each edition, this quarterly publication fosters public discourse and presents varying perspectives from civil society, academia, government and development partners. The publication makes an explicit effort to include the voices of women and youth in the ongoing discourse. A combination of analysis and public opinion articles promote and inform debate on development ideas while presenting up-to-date information.

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Sustaining the Environmental Momentum

Pakistan is one of the few countries to achieve “on track status” vis-à-vis SDG 13 on Climate Change. The achievement of this status is largely, a result of several policies and initiatives by the government, which have been launched with the aim to improve the environment and manage the changing climate. These include among others, ‘Clean and Green Pakistan’, ‘Ten Billion Tree Tsunami’, ‘Protected Areas Initiative’ and “Recharge Pakistan”.

Despite these initiatives and successes, Pakistan remains extremely vulnerable to the impacts of Climate Change. According to the Global Climate Risk Index 2020, Pakistan is ranked fifth in the list of countries most vulnerable to climate change. Between 1999 to 2018, the country witnessed 152 extreme weather events and suffered huge losses equaling USD 3.8 billion. The human impacts of such events, for instance, the heat waves in Peshawar and Karachi, or Lahore’s overwhelming smog, are beginning to have dire health and economic impacts.

Pakistan has paid serious attention to addressing growing environmental challenges in recent times. Several policies and public sector initiatives have taken effect and several Acts have been promulgated. Strengthening of environmental protection agencies (EPA’s) at federal and provincial levels, setting up of environmental laboratories, environmental courts, National Environment Quality Standards, setting up the National Energy Efficiency and Conservation Authority (NEECA) etc., are all significant milestones.

While the government leads and regulates the environmental sustainability agenda of the country, the responsibility for conservation of the environment and its resources rests with all stakeholders, including the public and private sector, as well as individuals. Although several private sector players have piloted numerous initiatives including awareness campaigns, cleaning drives, WASH programs etc., there has been no check and balance on acts that have been harming the environment. These include irresponsible hospital and municipal waste disposal, depletion of forest cover, extensive and unsustainable use of water in agriculture etc. In addition, imprudent individual behaviour, such as irresponsible littering, extensive use of motorized transport, burning of crop residue post-harvest, are all incidences that are having a ripple effect on exacerbating environmental challenges.

Therefore, while a lot is being done towards preserving and conserving the environment, there is still a long way to go. Development of tailored district level sustainability plans that can help revitalize communities and the surrounding environment, are integral, as is ensuring these plans are well aligned with federal plans and policies. The role of both public and private stakeholders is crucial in this regard, in order to ensure availability of human, technical and capital resources. The COVID-19 pandemic has also reimagined how things work and this new normal with increased digitization can help increase sustainability using big data-driven platforms. This can in turn aid transparency and accountability, leading to new ways to govern and improve environmental management. Finally, nudging people towards positive and responsible behaviours, is a micro solution that can have eventual macro impacts.

Jointly with our development partners, we support Pakistan in ensuring environmental sustainability. Through our Glacial Lake Outburst Floods Initiative (GLOF), UNDP Pakistan aims to empower communities to identify and manage risks associated with GLOFs and related impacts of climate change. Similarly, our Pakistan Snow Leopard and Ecosystem Protection Project aims to promote a landscape approach for the survival of snow leopards and associated species within the landscapes, through maintaining their ecosystem balance. UNDP, with support from the Government of Italy and the Gilgit Baltistan Government, is also engaged in promoting the governance of mountain ecosystems in northern Pakistan through its Mountains Protected Areas Project. UNDP, with support from the Government of Japan, has also been working in Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM), to enhance the government’s capacity to reduce disaster risk at the national, provincial and district levels, and to support resilience building for vulnerable communities.

Climate change is affecting every country disrupting economies and affecting people’s lives. The poorest and most vulnerable people are being affected the most. Environment friendly policies and initiatives by the government helped Pakistan to be on track on SDG 13 on Climate Change. However, it is even more important now to mobilize all stakeholders, public, private and individuals, to keep the pace and raise the ambition on mitigation and adaptation, investing in sustainable solutions, in green jobs and in green economy so that the country, communities and people are more resilient, and leave no one behind.

Environmental Sustainability in Pakistan: Challenges, Options and Way Forward

Note: Main Analysis has been conducted by a team from the Sustainable Development Policy Institute (SDPI) including, Dr. Imran S. Khalid (Research Fellow/Head Climate Change Unit) and Dr. Hina Aslam (Associate Research Fellow/Head China Study Center).

Introduction

Pakistan is among those countries that are at the highest risk of environmental catastrophe. The Global Climate Risk Index¹, in its annual report for 2020, has placed Pakistan at fifth spot on the list of countries most vulnerable to climate change. The report also states that the country has suffered economic losses worth USD 3.8 billion and been witness to 152 extreme weather events between 1999 to 2018.

Moreover, it is one of the few nations, which face a disproportionate burden of threats posed by climate change, contributing only 0.90 metric tons of Carbon Dioxide (CO₂) per capita, while being one of the most vulnerable to the impacts resulting from it. Nevertheless, Pakistan is facing a myriad of environmental issues including unsustainable land-use, natural resource degradation, industrial waste, water pollution and above all, unprecedented population growth. The annual cost of Pakistan's air pollution in 2016 was estimated at 2.5 to 6.5 percent of the GDP.²

Meanwhile, the annual cost of not having adequate water sanitation and hygiene infrastructure was approximately 0.9 percent in urban areas and 1.8 percent of the GDP in rural areas.³ These statistics represent a dire situation in terms of Pakistan's environmental sustainability. Addressing this much-overlooked aspect is key to the country's growth and development.

Defining Environmental Sustainability

The most widely used definition of environmental sustainability comes from the United Nations World Commission on Environment and Development (WCED) which defines sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."⁴

Generally, the term sustainability comprises of three dimensions: social, environmental and economic. The human dimension is the social aspect rooted in equity such that future generations are allowed the same opportunity to meet their needs as those who have come before them.⁵ The environmental dimension of sustainability is a reference to the goal of ensuring the resilience of the ecological capacity of planet earth. Finally, the economic dimension alludes to a growing economy that is prosperous yet takes into account ecological and human elements. It is the codependency of each dimension that results in sustainability.

As such, environmental sustainability demands that our development trajectory hinges upon small scale, decentralized development such that social and economic systems pose less of a threat to the ecological well being of the planet. Whether the country is able to achieve environmental sustainability given the plethora of challenges, is the question.

Key Environmental Challenges in Pakistan

Air Pollution

The air quality in most Pakistani cities ranges from very unhealthy to dangerous. During winter when cooler temperatures lead to inversion whereby the pollutants mix stays close to the ground, the air quality can be downright toxic for human health as witnessed across the Punjab Province. However, the situation is equally precarious in other parts of the country.

Most of the air pollution is due to vehicular emissions.⁶ The fact that Pakistan uses Euro2 fuel with diesel fuel high in sulfur content, further augments the problem. However, a recently announced government policy to import Euro5 standard petrol and diesel fuel, is a step in the right direction.⁷ In addition, brick kilns, which use dirty fuel such as used tires and industries, and lack pollution control equipment, further aggravate the issue.

In winter season, stubble burning by farmers contribute to air pollution. Under the China Pakistan Economic Corridor (CPEC) project, Pakistan has embarked on a plan to help meet its energy needs, however, eight of the 17 power projects will utilize coal for this purpose.⁸ Coal is a dirty fuel and is not only a cause of air pollution, but also contributes significantly to greenhouse gases.

Indoor air pollution caused due to burning of animal dung, coal or fuelwood

1. David Eckstein, Vera Künzel, Laura Schäfer, Maik Winges (2020), "Global Climate Risk Index 2020." German Watch.
2. World Bank (2019), "Opportunities for a Clean and Green Pakistan: A Country Environmental Analysis." World Bank, Washington, DC. © World Bank. Available at <https://openknowledge.worldbank.org/handle/10986/32328>
3. Hutton, G., and Varughese M. (2016), "The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene." World Bank. Washington DC.
4. WCED (1987), "Report of the world commission on environment and development: our common future." Oxford University Press.
5. Ibid
6. Food and Agriculture Organization of the United Nations - UNFAO (2019), "FAO report analyzes the causes of smog in Punjab focusing on agriculture." Available at <http://www.fao.org/pakistan/news/detail-events/en/c/1179183/>
7. The News (2020), "Euro-V standards for fuel approved." Available at <https://www.thenews.com.pk/print/667936-euro-v-standards-for-fuels-approved>.
8. China Pakistan Economic Corridor (CPEC) Projects Progress Update (2020). Government of Pakistan. Available at <http://cpec.gov.pk/progress-update>

for cooking, remains a major concern for a large segment of the population, the emissions from which lead to significant health impacts. Moreover, it is a major economic burden with an annual cost of 1 percent of the Gross Domestic Product.⁹ This type of air pollution impacts the poor and the vulnerable segment the most.

Water Pollution

Untreated municipal and industrial sewage is the leading cause of water pollution in Pakistan, in addition to being a major disease contributor. Many studies have shown concerns on the increasing use of untreated wastewater for agricultural purposes, particularly for vegetables' production in peri-urban areas.¹⁰ The contamination results in bioaccumulation (uptake) of contaminants by plants, if used for agricultural purposes. Excessive use of chemical fertilizers and pesticides has also caused surface and ground water pollution.

Invariably, the poor bear the impact of water pollution as they reside alongside polluted drains and canals.¹¹ One such example is Lai stream that flows from the Margalla Hills surrounding Islamabad. It is a fresh water natural stream that turns into a sewer of municipal and industrial waste as it reaches the city of Rawalpindi. This happens despite the fact that Islamabad has a wastewater treatment plant.

The situation is a representation of the state of water pollution across the country. From mega cities such as Karachi and Lahore, to smaller urban and rural locales, wastewater is disposed haphazardly and with virtually no treatment. This is resulting in significant degradation of water quality in rivers, wetlands and even groundwater.

Water Sanitation and Hygiene

Several local initiatives revolve around this environmental issue. Well over 25 million people are without sanitation facilities in the country.¹² In places where these facilities do exist, they are accompanied with soaked pits, with a significant risk of groundwater contamination.

Solid Waste Management

A major environmental concern is the improper management of solid municipal waste across the country. Owing to irregularities in waste pick up times, waste containers are often, over flooded. A significant portion of this waste is recyclable and waste disposal sites are

regularly visited by scavengers to handpick items of value. The lack of engineered landfills means the waste is openly dumped in and around urban and rural centers. These dumping sites are not lined with protective liner, which results in the toxic leachate from the waste contaminating the groundwater.

Hospital Waste

Another major concern, especially during the Covid-19 pandemic, is hospital waste management. Despite having laws and procedures to manage infectious waste in government approved incinerators, hospitals and medical clinics have been found to dispose off their waste with municipal waste, which can be life threatening for municipal workers and scavengers.

Moreover, burning of hospital waste results in toxic fumes which are a major health hazard to communities residing in close proximity to hospitals. At times, hospitals also use contractors to dispose off the waste, who merely dump them in streams and rivers. Another evolving environmental problem in the context of Covid-19, is improper disposal of face masks that also poses great risk to public health.

Forest Depletion and Loss of Biodiversity

Pakistan's natural forests have been greatly depleted and it is one of the countries with least forest cover. The flora and fauna are under significant threat as population expands. The protected areas are under threat from poaching, encroachment and fires. Given that Covid-19 is a zoonotic disease, concern regarding the trade of wildlife in the country should be a major concern. For example, Pakistan has been a known procurement site for Pangolins, which are then illegally shipped to China.¹³

Land Degradation

Agriculture plays an integral role in the Pakistani economy, but it comes at a significant cost. Unprecedented use of fertilizers and pesticides has degraded the soil and results in surface water and groundwater pollution. Large swathes of the country are affected by arsenic.¹⁴ Soil erosion, desertification, salinity and water logging are serious threats to the already vulnerable agriculture sector of Pakistan.

Climate Change Induced Calamities

Faced with riverine floods, glacial lake outburst floods, droughts and heatwaves,

Pakistan is one of the countries most affected by the climate crisis. The 2010 floods affected the country gravely and resulted in over USD 10 billion in losses. Nearly 36 percent of glaciers in the Hindu Kush Himalayan (HKH) mountain range will be eradicated by 2100, if warming is not curtailed to below 1.5°C.¹⁵ This can have grave consequences for Pakistan which is highly dependent on the glacial melt to meet its water and food security needs.

Miscellaneous Issues

Other issues include the case of electronic waste management. Over the past decade there has been a mushroom growth in use of cellular phones, hand held tablets and computers, as well as office electronic equipment. Once they reach the end of their life their disposal becomes a problem.

In addition, the prevalence of chemicals in our environment also poses a threat to environmental sustainability. A large number of household paints have high levels of lead content.¹⁶ Lead paint is a significant health hazard, especially for children, and has been banned across the world. While Pakistan also has laws to curtail the use of lead in paints, they have not seen implementation.

Environmental sustainability measures are not only a national need, they are also part and parcel of some of the key international agreements of which Pakistan is a signatory. In particular, the Paris Climate Agreement as well as the Sustainable Development Goals, remain key. They are briefly discussed in the following section.

Recent Global Commitments: A Quick Refresher

Pakistan ratified the Kyoto Protocol (KP) in 2004 and the Paris Agreement in 2016, both covering some mandatory goals for the country. Through Kyoto Protocol, Pakistan was mandated to cut down its GHG emissions by 5 percent in the 1990s, and was given the option to comply voluntarily. Pakistan ratified the Paris Agreement in 2016 and accepted the Doha Amendment to the Kyoto Protocol.

Through the Paris Agreement, all member states agreed to implement their nationally determined contributions (NDCs) to reduce GHG emissions and bring down the rise in global temperatures from 2°C to 1.5°C by 2020. This

9. Colbeck, I et al. (2019), "Spatial and temporal variations in indoor air quality in Lahore, Pakistan." International Journal of Environmental Science and Technology. Vol 16

10. Khalil, S. and M. K. Kakar (2011), "Agricultural Use of Untreated Urban Wastewater in Pakistan." Asian Journal of Agriculture and Rural Development, 1(1), pp.21-26

11. Khalid, Imran S.; Khaver, Ahmed Awais (2019), "Political Economy of Water Pollution in Pakistan: An Overview." © Sustainable Development Policy Institute. Available at <http://hdl.handle.net/11540/10395>.

12. Khalid, Imran (2020), "Managing Risks to Water and Sanitation amid COVID-19: Policy Options for Pakistan." Sustainable Development Policy Institute.

13. Shah, Shahid (2019), "Pakistan's Pangolins Fall Victim to Chinese Demand." Available at <https://www.dawn.com/news/1485298>

14. Podgorski et al. (2017), "Extensive Arsenic Contamination in High pH Unconfined Aquifers in the Indus Valley." Science Advances. Vol . 3. No. 8

15. Wester et al. (Ed). (2019), "The Hindu Kush Himalaya Assessment: Mountains, Climate Change, Sustainability and People."

16. Khalid, Imran et al. (2017), "Lead in Solvent Based Paints for Home Use in Pakistan." International POPs Elimination Network (IPEN) and Sustainable Development Policy Institute (SDPI). Available at https://ipen.org/sites/default/files/documents/ipen-pakistan-lead-report-v1_5-en.pdf

meant introduction of new laws as well as the revision of existing ones to ensure fulfillment on the global commitments promised through these forums.

Another requirement was the development of a monitoring mechanism to ensure implementation of the Paris Agreement. The National Climate Change Policy of 2012 and the Framework for the Implementation of the Climate Change Policy was revised by the Ministry of Climate Change to align it with international commitments.

Under its commitment to the Paris Agreement, countries are to regularly update their Nationally Determined Contributions (NDCs) or commitments.¹⁷ Pakistan is currently in the process of finalizing its Nationally Determined Contributions (NDC) that are to be submitted this year. However, based on the INDC submitted in 2015, Pakistan intends to reduce up to 20 percent of its 2030 projected greenhouse gas emissions, subject to availability of international grants, to meet the abatement costs of around approximately USD 40 billion. The updated NDC will no doubt reflect the recent addition of not only fossil fuel-based power plants, but also renewable energy initiatives undertaken over the past five years. Moreover, the massive tree plantation under the Billion Tree Campaign, will also determine the country's commitments.

Sustainable Development Goals and Pakistan

The UN SDGs were formally adopted to act as the national development framework in 2016, and since then have formed the guiding principle of many development agendas in the country. Pakistan was ranked 130 globally for the fulfilment of its global sustainable development goals in 2019 and scored a meagre 55.6 on the global index score, indicating that much needs to be done (Figure 1).

Federal and provincial support units have been established in collaboration with the United Nations Development Program (UNDP), to ensure that consideration of SDGs is mainstreamed into local development plans and to harmonize financial flows towards areas of focus. A National SDG framework was established in 2018, whereby the 17 sustainable development goals were categorized into three tiers in order of priority. The first category included SDG 6 and 7 i.e. Clean Water and Sanitation and Affordable and Clean Energy amongst them, while other key SDGs on environmental sustainability such as 'Climate Action', 'Responsible Consumption and Production', 'Life below Sea' and 'Life below Land', will build on the success of the category 1 goals.

National action plans and policies such as the National Energy Efficiency and Conservation Act 2016, National Water

Policy 2018 and comprehensive regulatory framework, the National Action Plan on Sustainable Consumption and Production and the newly minted draft of Alternate and Renewable Energy Policy 2019, have also been aligned with these SDGs to ensure their integration into the country's legal fabric. These policies culminated into projects such as the Billion Tree Tsunami and the Clean Green Pakistan initiative.

A recent report by United Nations Sustainable Development Network¹⁸ highlights that Pakistan is well behind in terms of achieving most of the SDGs before the decade is over. Out of 166 countries evaluated, Pakistan ranks 134. The report however does show Pakistan achieving SDG 13, which focuses on climate change.

While the government's plans for renewable energy use and the tree plantation campaign will ensure that the net carbon emissions are in line with the Paris Climate Agreement, there is a lot more that needs to be done in terms of adaptation, an area which the report did not focus upon. Moreover, given the interdependency of the SDGs on each other, it is imperative that Pakistan makes meaningful progress across each Goal. The climate crisis remains a threat multiplier in the coming years for the country and it will do well to make progress in terms of its climate related

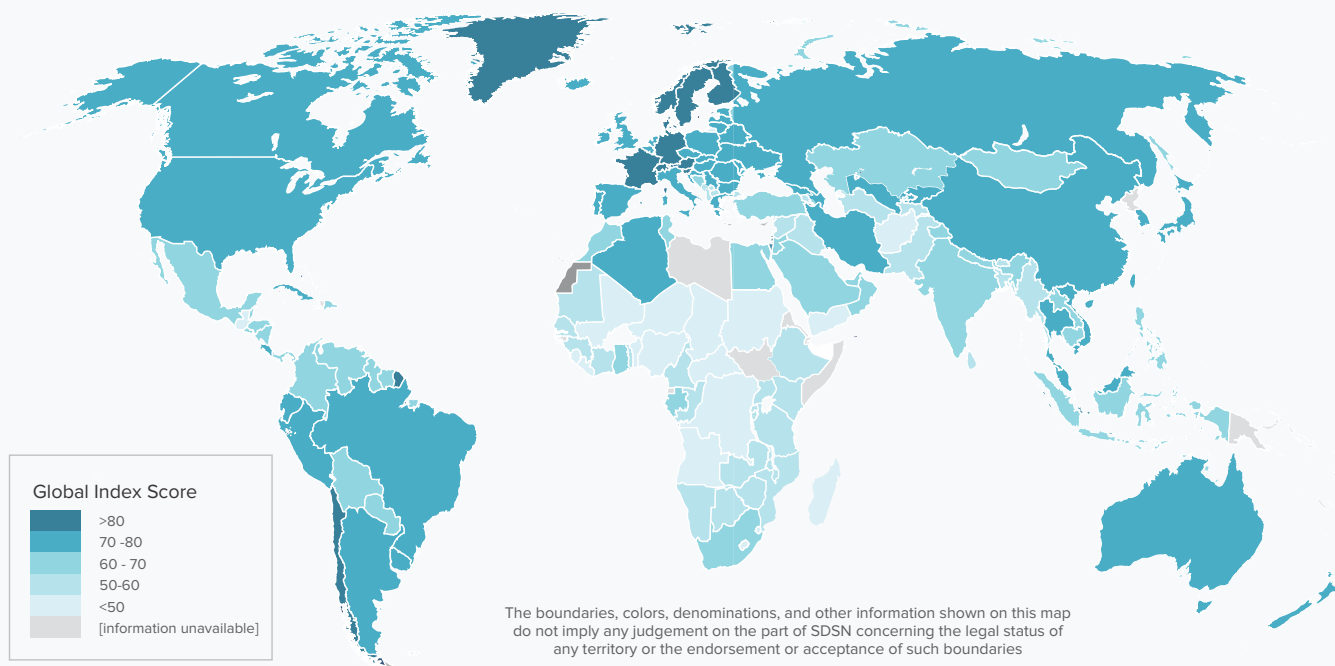
Figure 1: SDG's Global Index Score 2019

Sustainable Development Report Dashboards 2019

Transformations to Achieve the Sustainable Development Goals



BertelsmannStiftung



17. Khalid, Imran S. (2020), "Negotiating the Climate: What's Next after COVID 19." Trade Insight. Vol 1-2. Available at <http://www.sawtee.org/publications/Trade-Insight46.pdf>

18. Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., Woelm, F. (2020), "The Sustainable Development Goals and COVID-19." Sustainable Development Report 2020. Cambridge: Cambridge University Press

policies and plans. (See Box 1).

Given the severity of the environmental and climatic crises faced by Pakistan, it is imperative that the country explores options for green growth through which it could traverse these challenges.

Green Growth in Pakistan: Challenges and Options

Green growth is a strategy that advocates economic growth with minimum environmental impacts. It refers to growth of GDP with sustainable and efficient use of the country's natural resources, with least damage to the environment. Green growth can act as a stimulus to further the narrative towards economic sustainability in the country. While the current government is trying to jump start initiatives and bring forth policies addressing a global green revolution, a lot of ground remains to be covered.

There is a common misconception that economic growth is negatively correlated to environmental sustainability. The UNDP in its Global Sustainable Development Report 2019, dismisses this (See Figure 2). They urge the decoupling of economic growth from environmental impacts while urging a more sustainable and just economy. It is in this context that we can look towards green growth strategies to help resolve complex environmental issues.

Environmental taxation on industries and enterprises based on quantity of pollution they cause is an option, but policy reforms

in this respect remain lacking in the country. With a shrinking economy further exacerbated due to the Covid-19 pandemic, an environmental tax would undermine the competitiveness of the domestic industry. Developing nations often have to compromise on environmental standards to further their domestic production goals, however the importance of such measures in the reduction of pollution and global gains, cannot be undermined.

Similarly, the development of green infrastructure including the promotion of greening businesses and markets through incentivization, remains lacking.

The private sector, particularly export oriented industries, in its limited capacity, has tried to foster customers' green demand and global goodwill. The government could expand these efforts by providing businesses stimulus to innovate towards greener practices and low carbon technologies. Recent plans of introducing solar bikes and rickshaws, the upgradation of vehicles from Euro II to Euro V standards, and electric vehicles policy, are all positive steps in the right direction. Further energy efficiency measures such as standardizations and green labeling, can be effective tools in ensuring better energy management.

Box 1: Climate Change Policies and Plans

The climate change governance domain in Pakistan is informed by three key pillars: the National Climate Change Policy (2012), The Framework for Implementation of Climate Change Policy (FICCP) (2013), and the Pakistan Climate Change Act (2017). The climate change policy has three goals: 1) To protect vulnerable populations against the impacts of climate change; 2) To ensure that pursuit of sustainable development is not affected by climate change; and, 3) To fulfill Pakistan's international commitments on climate change.¹⁹ According to Banuri²⁰ the Policy 'chooses to adopt a very reactive approach and simply compiles a laundry list of issues'. At the same time, the FICCP lacks quantitative and qualitative targets as well as designation of an agency accountable for delivering against the said targets which severely hinders the potential for progress in addressing the challenges.

In 2017 the Pakistan Climate Change Act (PCCA) was enacted. It proposed establishment of a high-level policymaking body, the National Climate Change Council (NCCC), headed by the Prime Minister. To complement the PCCA, the Act establishes a separate body called the Pakistan Climate Change Authority (PCCA), with core tasks of researching, preparing and advising the government regarding legislative, policy and implementation measures related to climate change.²¹ However, the Council has not even met once since its formation and the Climate Change Authority is yet to be notified.

Figure 2: Sustainable and Just Economies: The Facts



Economic growth can be decoupled from environmental impacts



20⁺ countries

Since 2000, have reduced annual GHG emissions while growing their economies



Carbon pricing revenues raised by governments in 2018 were USD 44 billion compared to USD 33 billion in 2017

2017	2018
USD 33 Billion in Carbon Pricing Revenues	USD 44 Billion in Carbon Pricing Revenues



Global primary material use expected to almost double by 2060

2017	2018
89 Gigatons	167 Gigatons



Economies need to generate higher and more equal living standards



In almost three quarters of countries, the share of income paid to workers has declined



On average, women continue to be paid approximately 20% less than men



20% of workers in low-and middle-income countries live in extreme or moderate poverty

19. Banuri, Tariq. (2019), "Pakistan's Climate Agenda." & Bilal Zahoor and Raza Rumi (Ed). "Rethinking Pakistan: a 21st Century Perspective." Folio Books. Lahore

20. Ibid

21. A. Hassan (2018), "Climate Change Legislation in Pakistan – A Road to Nowhere," Courting The Law. Available at <http://courtingthelaw.com/2018/11/19/commentary/climate-change-legislation-in-pakistan-a-road-to-nowhere/> (accessed Jun. 29, 2020).

Provinces play a pivotal role in legislative transformation towards better environmental governance and green investments. In 2010, the 18th amendment devolved a number of subjects to the provinces. More investments to develop internal technical and human resource capacities to address environmental challenges would provide a boost, given provinces have already established relevant institutions in the form of Environmental Protection Agencies (EPAs) and legal frameworks. Although these legal frameworks exist, there are gaps in implementation, such as, limited freedom in terms of financial assistance. However, identification of these gaps is the first step towards solving them.

The laboratories for collection of monitoring data are few and far between, and lack the necessary equipment and expertise. The EPAs lack the resources for evaluating the Environmental Impact Assessments. Decisions are made without necessary visits to project location resulting in grave consequences. Furthermore, the decision-making process is subject to elite capture whereby government officials who outrank EPA officials can either override the EPAs decision or simply ignore them. Similarly, industries understand the constraints of the EPAs and thus do not take into account their concerns.

In this realm, the government of Punjab has recently developed some programs to achieve its environmental goals across different timelines, highlighted in strategic documents such as the Punjab Environment Policy 2015, the Punjab Smog Policy 2017, and the Punjab Climate Change Policy. Through financial support of the World Bank, these initiatives intend to not only tackle issues such as emissions, pollution, lack of green investments etc, but also work on the collection and formation of relevant data sets to effectively measure and record values to establish environmental baselines. Environment Protection Department (EPD) is the main department responsible for ensuring the implementation of these policies, in coordination with relevant line departments.²²

Recent Sustainability Initiatives by the Government

Clean and Green Pakistan

The 'Clean and Green Pakistan' campaign aims to make Pakistan pollution-free and counter the effects of climate change. A flagship five-year campaign of the current government, the Clean Green

Pakistan Movement is a pioneer in terms of environmental sustainability and its large-scale promotion in Pakistan. Initiated in 2018, the national level campaign intends to bring about a behavioural change in the general population as well as strengthen institutions to address five key components:

- Plantation
- Solid Waste Management
- Hygiene
- Total Sanitation
- Safe Drinking Water

Intending to foster healthy competition between cities, universities, institutions and individuals, the initiative can strengthen Pakistan's environmental protection capacities by engaging the public to bring change. The program provides an opportunity to improve the quality and sustainability of services, as well as encourage and promote legislation towards the achievement of SDG 6.

The program is supporting initiatives such as Pakistan Clean Green Index (CGPI): a city/tehsil and neighbourhood-level index which aims to rank cities/tehsils and neighbourhoods according to their cleanliness and greenery, as well as the Clean Green Champions Program: a program designed to seek the participation of citizens voluntarily for keeping cities clean, improving civic amenities and raising ownership towards the communities.²³

Recharge Pakistan Project

The Federal Ministry of Climate Change (MoCC) is also working on 'Recharge Pakistan' project for better management and utilization of flood waters to restore and recharge groundwater. The project is being developed on the successful flood management model of China. Under the Green Climate Fund (GCF), Pakistan is working on transforming the Indus Basin through climate resilient agriculture and water management by increasing resilience among the most vulnerable farmers and strengthening government capacity to support communities to adapt. Pakistan has also secured funding (USD 37 million) for countering Glacier Lake Outburst Floods (GLOF-II) under the Green Climate Fund, particularly targeting the flood vulnerable regions of the upper Indus plain. Another project with the GCF is the National Rural Support Program (NRSP) which is a major project aimed for the planning and execution of climate change mitigation and adaptation initiatives in the country.

Renewable Energy Policy

The 2019 renewable energy policy aims to fill the energy gap by meeting 30 percent of the country's needs from renewable energy and another 30 percent from hydropower, by 2030. This is indeed a very ambitious challenge for the country. However, given the fact that the prices of solar panels and wind turbines are highly competitive, Pakistan will do well to invest in them at the earliest. Pakistani collaboration with China can pay dividends in terms of technology transfer and facilitation of renewable plants.

As the country is further able to meet its energy needs, it will need to start closing down the coal power plants, especially those that are a cause of concern. At present, the country has 400 MW of installed solar energy and 1085 MW of wind energy. Another 960 MW of wind and 400 MW of solar energy has also been committed to come online by 2022, as part of the 30 percent (by 2030) renewable energy target set by the government.²⁴

Ten Billion Tree Tsunami

Initially, Billion Tree Tsunami was initiated in Khyber Pakhtunkhwa (KP) province and through this project, 730 million trees and 300 million seedlings were planted in KP. This project boosted local incomes, generated green jobs and empowered women and youth in the province. In terms of future ambition, the 'Billion Tree Tsunami' has been transformed into a nationwide Ten Billion Tree Tsunami spanning a five year period across the country.

Protected Areas Initiative

The three key objectives of this initiative²⁵ are to, 1) Expand the protected area coverage to at least 15 percent of Pakistan by 2023; 2) Effectively "protect what is notified" by ensuring that management plans and legal support is present in terms of ensuring the protection of national parks, wildlife sanctuaries and game reserves; and, 3) Link this initiative to global standards by getting seven national parks registered under IUCN's Green List of Protected Areas. A National Park Service will be launched to assist in meeting the mandate of this initiative and it is expected that 5000 jobs will be created for the youth.

Electric Vehicle (EV) Policy

The main goal of this ambitious policy is to have 30 percent of all vehicles running on electricity by 2030. The policy is focused on two and three wheelers (motorcycles

22. Shaikh Ahmad Hassan School of Law (2019), "Examining the Pakistan Climate Change Act 2017 in the Context of the Contemporary International Legal Regime." Available at <https://sahsol.lums.edu.pk/law-journal/examining-pakistan-climate-change-act-2017-context-contemporary-international-legal>

23. "Clean Green Pakistan | WaterAid Pakistan." Available at <https://www.wateraid.org/pk/clean-green-pakistan>

24. DAWN (2020), "Power generation needs to triple by year 2047." Available at <https://www.dawn.com/news/1552074>

25. Khan, Malik Amin Aslam (2020), "Pakistan's Protected Area Initiative." The Tribune Express. Available at <https://tribune.com.pk/story/2254293/pakistans-protected-areas-initiative>

and rickshaws) while cars have been left out in stage one. This has drawn criticism from the automobile lobby in the country, in not allowing cars to be included in the Electric Vehicle Policy.²⁶

To make this come about, import duties and general sales tax on electric vehicles have been slashed down to one percent and charging stations will be set up every 10 square kilometers in major cities in the country. Electricity sales rates will also be reduced for EV charging station opera-

tors to incentivize investments in these streams.²⁷

The above initiatives are some of the most ambitious environmental, self-initiated programs developed by Pakistan in the recent past. This agenda is not only expected to cater to the environmental issues that have been discussed above, but will also go a long way in addressing the social justice issues inherent to the lack of environmental sustainability.

Global Examples

Various nations across the globe have embarked on different journeys to achieve a sustainable environment. Table 1 highlights such key initiatives, the likes of which can act as an inspiration for Pakistan in setting up of stringent environment goals, and a way forward towards achieving parity in environmental action to the nation's development goals.

Table 1: Country Case Study Programs and Sustainability Initiatives

Program	Year	Country	Description
EPA Sustainability Program	2019	United States	Through a blanket purchase agreement of renewable energy certificates (RECs) and existing green power contracts, the EPA purchased 13.4 million kilowatt-hours (kWh) of delivered green power and RECs in FY 2018, which was 13.4 percent of its annual electricity use in FY 2018. The EPA has set its own internal waste diversion goal of 60 percent. The agency met that target by diverting 60 percent of its solid waste through recycling and composting in FY 2018 and will focus on incrementally increasing its waste reduction and diversion rates through FY 2020, through its environmental management systems (EMSs) and other facility-level efforts. ²⁸
Five Year Plan	2009	Korea	Korea committed 2 percent of its GDP through 2013 to create a knowledge and technological foundation to sustain a green growth economy. The investment fuels some ambitious goals, including: <ul style="list-style-type: none"> • Developing the world's first nationwide "smart grid" system by 2030; • Increasing the country's renewable energy to 11 percent of energy supplies by 2030; • Reducing its greenhouse gas emissions by 30 percent by 2020; and, • Building 1 million green homes by 2020.²⁹
CESI		Canada	The Canadian Environmental Sustainability Indicators (CESI) program provides data and information to track Canada's performance on key environmental sustainability issues including climate change and air quality, water quality and availability, and protecting nature.
A Green Future: 25 Year Environment Plan	2018	United Kingdom	Its goals are cleaner air and water; plants and animals which are thriving; and a cleaner, greener country for the residents. The actions are: <ul style="list-style-type: none"> • Using and managing land sustainably; • Recovering nature and enhancing the beauty of landscapes; • Connecting people with the environment to improve health and wellbeing; • Increasing resource efficiency and reducing pollution and waste; and, • Securing clean, healthy, productive and biologically diverse seas and oceans.
National Sustainable Development Strategy	2016	Germany	The National Sustainability Strategy is based on inter-generational equity, quality of life, social cohesion and global responsibility. Indicators are laid out in the strategy with medium and long-term objectives to be achieved. Emissions of greenhouse gases are to be cut by 40 percent by 2020. By 2050, renewables are to account for 60 percent of the energy mix, while organic farming is to account for one-fifth of all agricultural activity. ³⁰
Saving the Climate		Sweden	The Swedish government has set ambitious goals for sustainability, including going fossil-free by 2045 and 100 percent renewable energy.

26. Hanif, Usman (2020), "EV Policy Draws Criticism." The Tribune Express. Available at <https://tribune.com.pk/story/2254297/ev-policy-draws-criticism>

27. "Pakistan's National Electric Vehicle Policy: Charging towards the future | International Council on Clean Transportation." Available at <https://theicct.org/blog/staff/pakistan%E2%80%99s-national-electric-vehicle-policy-charging-towards-future>

28. O. US EPA (2015), "EPA Sustainability Plans," US EPA. Available at <https://www.epa.gov/greeningepa/epa-sustainability-plans> (accessed Jun. 29, 2020).

29. World Bank (2020) "Korea's Global Commitment to Green Growth." Available at <https://www.worldbank.org/en/news/feature/2012/05/09/Korea-s-Global-Commitment-to-Green-Growth>

30. "Germany's National Sustainable Development Strategy." Available at <https://www.bundesregierung.de/breg-en/issues/sustainability/germany-s-national-sustainable-development-strategy-354566>

Program	Year	Country	Description
Norway's Action Plan for Sustainable Development		Norway	Norway's electricity production is 97 percent renewable, and by 2020, the government aims to reduce emission of greenhouse gases by 30 percent. With over a third of all new cars sold in Norway being either fully electric or plug-in hybrid, electric cars have a 30 percent market share in Norway, the largest in the world. The goal is that by 2025, all new cars that are sold in Norway will be fossil free. The Norwegian capital is an eco-friendly city working for a green lifestyle, green mobility, green innovations, and green jobs. ³¹
Sustainable Singapore	2017	Singapore	The government plans to see an increase of: <ul style="list-style-type: none"> • 178 percent in sky-rise greenery; • 32 percent in green spaces; • 97 percent in length of cycling paths; and, • 49 percent in green buildings; by the year 2030, while targeting for 50-75 percent reduction in the air quality index ³²
2030 Agenda	2016	Australia	The plan is to improve Australia's energy productivity by 40 percent by 2030. It would help consumers manage their costs, reduce Australia's greenhouse gas emissions and boost the country's competitiveness. This in turn would make significant contribution to Australia's 2030 emissions reduction target. ³³

Way Forward

Pakistan is faced with a myriad of environmental crises. From increasingly contaminated and depleting clean drinking water supplies, poor waste and inadequate industrial waste management, to air pollution, biodiversity loss, depleting forests and poor chemicals management, all issues point to a bleak future unless immediate steps are taken to remedy the situation. These threats will be further exacerbated by the most significant environmental problem facing the world, climate change.

However, these challenges present an opportunity for the government to rethink strategies and enhance current projects towards meeting the sustainability related goals. The government is already taking initiatives to address some of the problem areas. The following measures will however, further strengthen and synergize the response in this regard.

Integrating Natural Capital Accounting into Policy Making and Financing

In response to ecosystem degradation from rapid economic development, Pakistan needs to begin investing heavily in protecting and restoring natural capital, through implementation of eco-payment schemes with funding and government leadership. The forest and grassland cover across the country can create enough carbon sequestration that it

could have a significant impact on climate change, as well as an impact on carbon markets. Increased tree and plant cover also mark a significant milestone towards ending a long trend of expanding desertification, which is a major contributor to rural poverty and catastrophic dust storms. The concept of GEP (Gross Ecosystem Product) in GDP could be incorporated into the government's plan to target investments in environmentally sensitive areas.

Autonomy and Capacity Building of Environmental Institutions

Environmental Protection Agencies across Pakistan are part of the broader bureaucratic set up and not independent. The Director General of any particular Agency, although a senior level person, is still subservient to administrative leadership. As such, the EPAs are prone to capture by vested interests, including political, bureaucratic and private. Having an independent EPA that will be difficult to undermine, is important.

The government needs to enhance the technical and human capacity of environmental institutions in order to address the environmental problems. Moreover, Environmental Departments and Protection Agencies need to have access to adequate and regular funding streams. This will help bridge the policy-implementation gaps that prevail in this regard.

Promoting Social Entrepreneurship

Pakistan was recently ranked 14th in being one of the best countries to be a social entrepreneur in.³⁴ Given the environmental and climatic challenges faced by Pakistan, there are ample opportunities for would be social entrepreneurs to contribute to water sanitation and hygiene related initiatives, waste management and even climate change resilience and adaptation. In this context, the government would do well to facilitate the National Incubation centers in the country in order to encourage entrepreneurs to think about environmental challenges.

Sustainability Leadership in the Industry

If Pakistan is to be successful in meeting its environmental sustainability goals, the industry will have to play the role of a facilitator rather than that of a spoiler. The recent electric vehicle policy was meant to include four-wheel vehicles as well. However, the auto-manufacturers lobby in the country successfully curtailed plans for their inclusion in the current initiative.³⁵ Similarly, the plan to import Euro V standard fuel has met hesitancy by oil marketing companies.³⁶ Industry and the corporate sector in the country need to play a leading role in adapting to newer technologies in terms of sustainability. While dependence on archaic technologies might be financially feasible in the short run, only sustainability led initiatives can ensure long term prosperity of these

31. BI Business School "Creating a more sustainable future." Available at <https://www.bi.edu/content/winter-is-coming/on-the-front-line-for-a-sustainable-future/>

32. L. H. Loong, "Prime Minister, Singapore," p. 15.

33. Australia and Department of Foreign Affairs and Trade, Report on the Implementation of the Sustainable Development Goals. 2018.

34. Ebrahim, Zofeen and Berton, Elena (2019), "Youth, women drive spur social business growth in Pakistan - global poll." Reuters. Available at <https://www.reuters.com/article/us-entrepreneurs-poll-pakistan-exclusive/exclusive-youth-women-drive-spur-social-business-growth-in-pakistan-global-poll-idUSKBN1X11LU>

35. Tribune Express (2020), "Pakistan's EV plan leaves cars in slow lane." Available at <https://tribune.com.pk/story/2252576/pakistans-ev-plan-leaves-cars-in-slow-lane>

36. The News (2020), "OMCs refuse to import Euro-V fuel." Available at <https://www.thenews.com.pk/print/684259-omcs-refuse-to-import-euro-v-fuel>

enterprises.

Redefining Priorities in the Agriculture sector

Agriculture sector in Pakistan remains the largest employer for the country and contributes almost a quarter of the GDP. It is also the largest user of water in Pakistan and consumes 93 percent of the total available water in the country. Slow growth in the agricultural sector combined with an ever-burgeoning population, is a red flag for future food security. Increasing water productivity by encouraging efficient water use, replacing of water-intensive crops such as sugarcane and rice with water efficient cash crops in selected areas, groundwater mapping, modernizing water accounting and infrastructure, subsidy

reforms and good farming practices, are some initiatives that need to be at the forefront of any sustainable agricultural policy.³⁷

Role of Digitization in Environmental Governance

The emergence of digitalization has been reshaping and transforming societies in the form of e-health services, robotics, or emission reduction solutions, that could help individuals, organizations, and nations achieve a more sustainable planet in light of the SDGs. Digitalization can help increase sustainability using big data-driven platforms bearing consequences for transparency and accountability that can open up new ways to govern sustainability and improve environmental management.

Development of District Level Sustainability Plans

Given the fact that Pakistani urban areas are increasingly congested and polluted, there is a need for sustainability plans that can help revitalize communities and the surrounding environment. Moreover, since Pakistan is one of the most affected countries in terms of the climate crisis, adaptation related measures need to be effectively mainstreamed. A proactive approach will necessitate developing district development plans that are holistic, participatory and inclusive. These plans will not only cater to potential disasters but also address the slow onset of climate change.



37. World Bank, Pakistan@100: Shaping the Future. Available at <https://www.worldbank.org/en/region/sar/publication/pakistan100-shaping-the-future>

The Evolution of Environmental Sustainability



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Overview of Key Milestones

In response to a growing environmental movement in the 1960s, some governments enacted legislation and took action to clean the environment within their borders. By the early 1970s, they began to realize that pollution did not stop at their borders. International cooperation was required to tackle cross-border environmental issues. At the Stockholm Conference on the Human Environment (UNCHE) 1972, the main agenda items were urbanization, chemical pollution and A-bomb testing. A salient outcome was the setting up of the United Nations Environment Program (UNEP).

UNEP commissioned the World Conservation Strategy (1980) from the International Union for the Conservation of Nature (IUCN). It prioritized living resource conservation, with particular focus on conserving essential ecological processes, genetic diversity and sustainable harvesting. Though subtitled, 'Living Resource Conservation for Sustainable Development', the latter concept was addressed only in the last

section (Section 20) of the document.

The World Commission on Environment and Development (WCED, 1987), commonly called the Brundtland Commission after its chairperson, did define Sustainable Development (SD) and sought its full integration with environmental management. It proclaimed famously, "Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs." It involves more than [economic] growth; it requires a change in the content of growth, to make it less material- and energy-intensive, and more equitable in its impact. SD must integrate economic and ecological considerations in decision making. Sustainability requires the enforcement of wider responsibilities for the impacts of decisions. This requires changes in the legal and institutional frameworks that enforce the common interest, noted the WCED.

Perhaps because of its extensive consultative process, perhaps because of the media fanfare at WCED launch, the calls for clarification and making SD more explicit came thick and fast. A systems scientist contended that mainstream SD thinking contained significant weaknesses. These included an incomplete perception of the problems of poverty and environmental degradation, and confusion about the role of economic growth and about the concepts of sustainability and participation. He suggested that these weaknesses could lead to contradictions in policy making for international trade, agriculture, and forestry.¹ Several practical minded economists working on policy measures for 'greening' modern economies maintained that it was crucial to first make a policy choice between strong and weak sustainability.² This is the degree of substitutability to be permitted between 'natural' and 'manufactured' capital, and also the degree of flexibility in the implications of global sustainability for

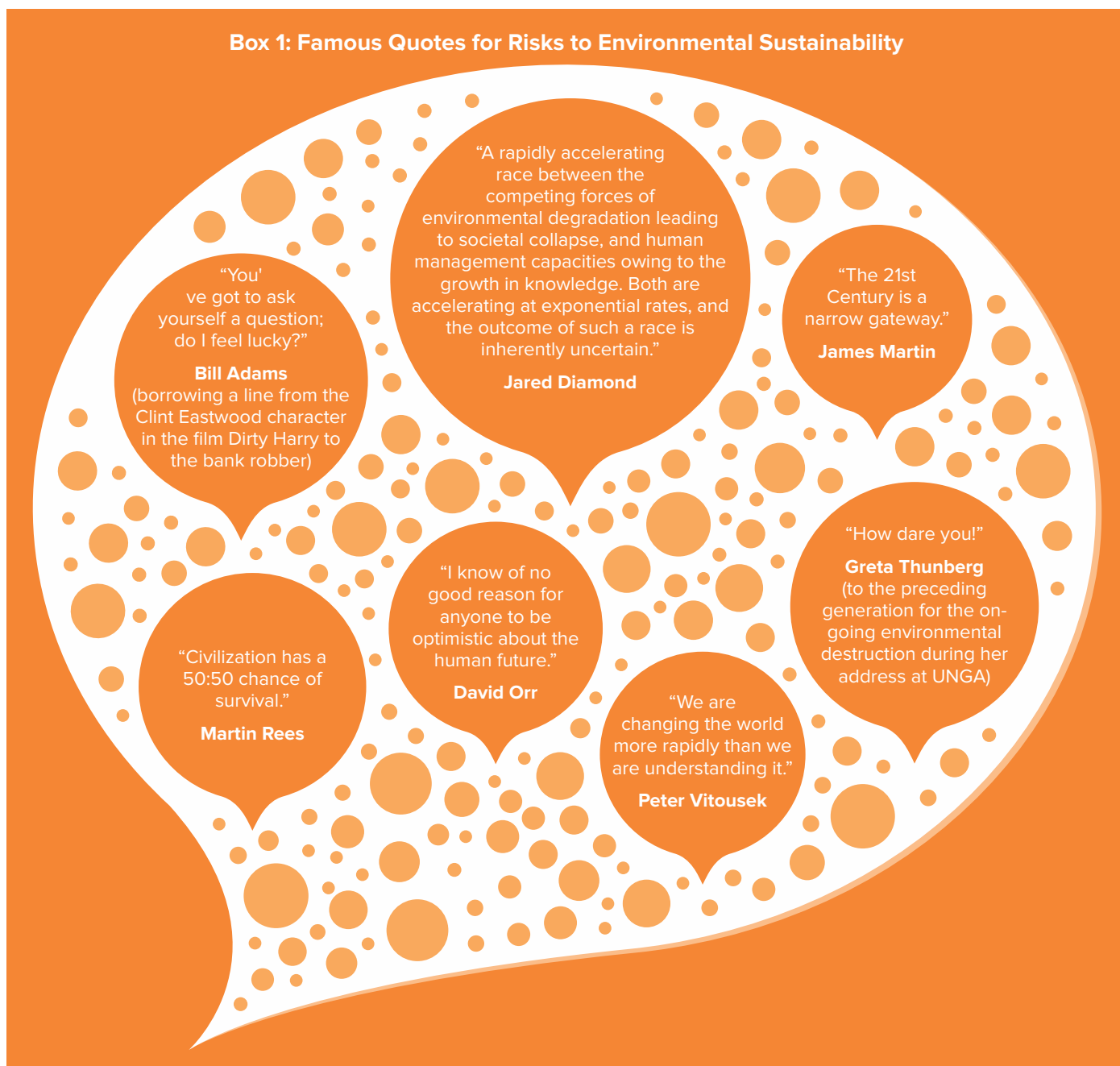
open systems, such as regions and countries. Leading development economists argued that WCED had not adequately addressed the trade-off between intra- and inter-generational equity.³ Mahbub ul Haq called for Sustainable Human Development, with a sequence of investments in Empowerment, Productivity, Equity and then finally in Sustainability.⁴

IUCN's Caring for the Earth (CFTE 1991) highlighted the ethical values that must drive conservation and sustainable living. "An ethic is important because what people do depends on what they believe", stated the CFTE. It sought broad support from organized religions as well as secular groups to engage the deepest individual and community sentiments for respect and care for nature. Several cracks are apparent in the CFTE narrative. It seeks support from business groups because, "Many firms have recognized that caring for the environment is good for business", yet in another section, admits that "...the most powerful influences on popular attitudes in upper income countries-advertising and entertainment-promote over-consumption and waste." The CFTE relies on education as the main instrument for change, but also notes that well-informed people don't necessarily follow up with action. It sets out principles and priority actions for sustainable living, but does not address what some philosophers call the agora (central dilemma) of post-modern humans.⁵ Our reach and impact, (even extending to unseen life-forms in the deepest oceans) far exceed not just the precepts and protections offered by traditional religions (e.g. love thy neighbor) and secular ethics (i.e. the rights of homo-sapiens), but are perhaps also beyond our capacity as a specie to really care about.

The United Nations Conference on Environment and Development (UNCED, 1992) held in Rio was the first truly global process of consultation on the topic. It emerged with Agenda 21 for Sustainable

1. Lele, Sharachchandra M., (1991), "Sustainable development: A critical review," World Development, Elsevier, vol. 19(6), pages 607-621,
2. DW, Pearce & Markandya, Anil & Barbier, Edward. (1989), "Blueprint for a Green Economy."
3. Sudhir Anand and Amartya Sen · Human Development and Economic Sustainability. World Development, 2000, vol. 28, issue 12, 2029-2049
4. Mahbub ul Haq. (1995), "Reflections on Human Development." Available at <https://www.scribd.com/document/360838995>
5. Bauman, Z. (1997), "Postmodernity and its Discontents." New York: New York University Press. ISBN 0-7456-1791-3

Box 1: Famous Quotes for Risks to Environmental Sustainability



Development that segmented the issue into 40 chapters. A Commission on Sustainable Development (CSD) was formed and met annually at UN Headquarters in New York, to deliberate on the items in Agenda 21 for almost two decades. Two longer lasting instruments that were opened for signature at Rio were the United Nations Framework Convention on Climate Change (UNFCCC) and Convention on Biodiversity (CBD), whose conference of parties remain operational till date. A Convention to Combat Desertification that actually emerged from Agenda 21 also remains operational.

The objective of the UNFCCC is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." As

is stated in the article two of the Convention, this "should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner." In 2015, after more than two decades of negotiations and intermittent progress, the Paris Agreement was adopted, governing emission reductions from 2020 onwards through commitments of countries in Nationally Determined Contributions (NDCs), aimed at limiting global warming to less than 2°C, and to pursue efforts to limit the rise to 1.5°C. All countries have to submit NDCs, unlike the predecessor Kyoto Protocol that required emissions reductions from developed countries only. Countries have been given the freedom to ensure their climate change

mitigation and adaptation plans are nationally appropriate. This flexibility, especially regarding the types of actions to be undertaken, allows for developing countries to tailor their plans to their specific adaptation and mitigation needs, as well as towards other needs. The main criticism of the Paris Agreement is that the voluntary approach may not yield the desired aggregate reduction in the emissions of greenhouse gases.

The 2019 report of the Intergovernmental Panel on Climate Change (IPCC) finds that limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society.⁶ With clear benefits to people and natural ecosystems, limiting global warming to 1.5°C compared to 2°C, could go hand in hand with ensuring a more sustainable and equitable society. But the report finds

6. Intergovernmental Panel on Climate Change (IPCC) (2019)

that limiting global warming to 1.5°C would require “rapid and far-reaching” transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide (CO₂) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050. However, the report does not consider carbon sequestration for mitigating longer term impacts.

The Convention on Biological Diversity (CBD) is the international legal instrument for “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources” that has been ratified by 196 nations. Two subsidiary protocols have come into force under the CBD; the Cartagena Protocol for Bio-safety (effective 2003) and the Nagoya Protocol for Access to Genetic Resources and Equitable Sharing of Benefits (effective 2014).

Millennium Ecosystem Assessment 2005 concluded after several years of work, that two thirds of the world's ecosystems ranging from wetlands and coastal areas to forests and soils are either degraded or being managed unsustainably.⁷ This highlights the gamble that humanity is playing with its future. Risk had been recognized as factor earlier, but has been popularized by leading public intellectuals by colorful analogies (Box 1).

Health was added as a major topic to the SD agenda at the Rio+10 Conference in

Johannesburg (2002), while the Rio+20 Conference (2012) focused on a green economy for poverty eradication, and an institutional framework for SD. It identified seven priority areas; decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness. As the result of the networking in the open working groups, and jockeying for position among the sector proponents, including UN agencies, they expanded into the 17 Sustainable Development Goals.

Discussion: The Frame Matters

Environmental Sustainability is among the biggest issues of our times. However, the very act of framing generates systematic and pervasive biases.⁸ The perspectives inherent in the Environmental Sustainability and Sustainable Development literature of recent decades entail different, but systematic, pervasive and persistent biases. This is just like the different views from a car: the rear windshield for looking back, the front for looking ahead, and the side windows for looking at sectors and themes. Also as with car mirrors, some perspectives distort distances.

UNCHE 1972 listed both environmental protection and development objectives in its proclamation, but it lacked a framework for understanding the links between the environment and development. The WCS mentioned SD in its title, but then relegated it to an end section. WCED took in both perspectives and sought to integrate them. The extent to

which the Brundtland Commission succeeded is still open to debate.

Extensive consultations are essential to secure wide ranging perspectives on big issues, but the results still need be organized systematically around a few central themes. There is a likelihood that the 40 Chapters of Agenda 21 were a reason for the ultimate failure of the Commission on Sustainable Development. There will be similar problems integrating the 17 SDGs.

The Working Groups at IPCC bring together highly competent scientists and social scientists. But their work prioritizes the coming decades over the coming centuries, the urgent over the sustainable. In the sweep of history, what difference will it make if the deltas and low lying island states drown in 2200 and not in 2100? If a prolonged mega-drought follows in the wake of repeated mega-floods as the HKH glaciers melt, does it matter that the Third Pole disappears in 2305, and not in 2205?

Conclusion

Conventional sustainability thinking provides ways of talking about the environment as an important policy issue, or about key actors within the world system. It does not suggest the need for any fundamental change in that system. Such an approach is the product of a growing ‘sustainability industry’. It is a bias that carries huge risks. A phase shift to true environmental sustainability is most important.

7. Millennium Ecosystem Assessment (Program) (2005), “Ecosystems and human well-being,” Washington, D.C: Island Press.

8. Kahneman (2011) has demonstrated that the way risks are framed profoundly influence human decision-making. But that is not the subject here.

Transition to Sustainable Economy: Does Covid-19 Offer Hope?



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Every time a crisis unfolds, the hopeful among us point to the possibility that in every crisis, exists an opportunity. Covid-19 has been no exception. Even those who like to see the glass half-full are already pointing to significant improvement in air pollution metrics in the wake of the lockdowns. Others are happy to flag signs of gradual replacement of individualistic consumerist lifestyle with healthy, sustainable, community-based alternatives, in some privileged neighbourhoods. We are told a new dawn may emerge if all of us collaborate to carve a new sustainable future for humanity, as the virus forces us to pause and think while the climate improves as a result of lower economic and social activities.

To be fair, some developments may be read as green shoots of hope-both elsewhere in the world, and in Pakistan. The European Commission, for instance, is toying with a plan called Next Generation EU, centred on the European Green Deal aimed at sustainable growth post Covid-19. The EU is expected to invest up to USD 825 billion into the Covid recovery fund, pegged to green conditions aimed at supporting Europe's pursuit of sustainable logistics, development of sustainable materials for consumer goods, finding alternatives to plastics packaging, exploring the benefits of national circular economies and so forth.

The EU is also using Covid-19 to speed up

the process of sourcing locally or regionally, a trend that began a few years ago. For example, in 2017 Adidas set up its 'speedfactories' in Germany and Atlanta-not Asia-to provide 'nexthour' delivery for customised products. In an October 2018 survey, about a quarter of apparel-sourcing executives in the developed West told McKinsey & Company that more than half of the clothes they will source in 2025 will come from 'nearshoring'.

The transition of sourcing from low labour cost countries to 'nearshoring' countries that offer smart factories, automation, artificial intelligence, skilled labour, and customer proximity, may originally be motivated by corporate profitability. But the trend is expected to gather pace to reduce carbon footprint of long-distance sourcing of raw materials and finished goods.

Meanwhile, Paris is trying to roll out a 15-minute city concept under which work, amenities, and residence would ideally be located within a 15-minute radius. The move is towards reducing carbon emissions. This echoes the growing trend toward work-from-home models being explored by corporations. And if Melbourne has promised to deliver 44-kilometres of cycling lanes in 2021-seven years ahead of planning because of Covid-19-then Milan has pledged to turn over 35-kms of streets to pedestrians and cyclists.

These commitments reflect an increasing urban consciousness where a network of 40 global cities-C40-have united to launch the Global Mayors Covid-19 Recovery Task Force to rebuild their cities and economies in a way that improves public health, reduces inequality and addresses the climate crisis. While the initiative for sustainability has mostly been signed by developed countries, cities from some emerging and developing economies, such as Argentina, Mexico, Republic of Korea, and Philippines, are also a part. To what degree C40 Mayors can really shepherd national economies and societies to meet 1.5-degree pathway, is another matter.

These global developments beg the question: what is Pakistan doing to use Covid-19 as an opportunity to transition to

a sustainable way of doing business and to create a sustainable economy. It is difficult to prove the absence of something. The mere absence of discussion on a subject also does not always prove absence. But eventually any argument to prove absence must largely stem from silence. And silence is exactly what exists in so far as the answer to the question on Pakistan is concerned.

Work-from-home models are not only being explored by corporations outside Pakistan. Pakistani companies are also thinking about new ways of working. Discussions with Pakistan's corporate leaders suggest that at least two Pakistani conglomerates are exploring satellite offices, co-working spaces, and work-from-home options to permanently reduce staff presence at their corporate headquarters by up to 60 percent. These groups do not like to be named because they have various options under consideration at the time of writing this piece. But if this trend catches up in Pakistan, it may have some positive spill over by way of reductions in transport driven carbon footprint.

An electric vehicle (EV) policy has been rolled out by the government in light of the fact that global road transportation (passenger cars and trucks, buses, and two- and three-wheeled vehicles) accounts for 15 percent of the carbon dioxide emitted each year. But in a country that still faces power outages, the success of EV is uncertain at best. And even if it is successful, it is feared to come at a huge environmental cost considering that in nearly all of its proposed scenarios, the latest Indicative Generation Capacity Expansion Plan 2047 prepared by the National Transmission and Despatch Company proposes coal-based generation to have more say in the dependable base load than hydropower in the longer run.

It is also true that some of the Covid-19 related financing facilities offered by the State Bank of Pakistan may be channelled to investments in some environmentally sustainable ventures, such as cold storage facilities, and supply chains that help reduce agricultural losses. But are those Covid-19 financing facilities pegged to environment sustainability? The answer is 'no'. In 2017, the central

bank had issued Green Banking Guidelines. But its adoption is voluntary in nature. And sans one-off exceptions, one is hard pressed to find great examples of those guidelines being followed by the banking community, nor is there a discourse on the subject.

Also missing from government action in Pakistan are concerted efforts towards energy efficiency, solar power production, urban farming, green manufacturing practices, and other measures aimed towards a sustainable economy post-Covid. Au contraire, the government is exploring ways to boost livestock industry to be able to export value added dairy and meat products.

Pakistan already boasts one of the biggest cattle flocks in the world. Trying to further develop livestock industry at a time when world's leading livestock countries are investing in research and development to explore lab grown meat and plant-based meat may not be wrong per se (given Pakistan's economic compulsions). But the fact is that cattle and other livestock account for about 15 percent of global anthropogenic greenhouse gas emissions.

Perhaps the focus on sustainability is seen as a luxury or a rich man's values—those whose bellies are filled with fillet and caviar. Little else explains the silence in public as well as the private sector. In the case of the latter, it is too early to say how and the extent to which Pakistan's private sector is taking Covid-19 as an opportunity to transition towards sustainability. For many corporations, by the time their management dealt with the initial shock of the virus and the ensuing lockdown, they had to begin preparing for their financial year ends (June)—a time period in corporate calendar when boutique ventures, which is how environmental affairs are seen as, take a pause.

It may be so that corporations will announce some measures towards greener sustainable ways of doing business after the upcoming board meeting season. But so far, they have largely been silent on these affairs. No wave of commitments or pledges

towards sustainability or even indications thereof have been announced by the corporate sector; tax cuts and subsidies have dominated the discourse instead.

In fact, some corporations—and there is no point naming or shaming—have either halted or decreased their CSR spending on projects aligned with the UN's Sustainable Development Goals. Not that CSR funds are huge (in relation to the amount needed to be spent towards environment sustainability), but the drop in spending reflects corporate priorities, which in turn may well be read as a spitting image of the priorities of their consumers and the society at large.

On the whole, the Pakistani consumer is not aware of climate change and sustainability concerns; an October 2019 national poll by Gallup Pakistan reported that less than half of Pakistanis claim to know about climate change, of which only a third knew a great deal about it and the rest can only be said to have heard about it.

Anecdotal evidence suggests that those who are aware still choose to ignore it, perhaps because of sheer force of habit or because herd behaviour has not changed yet. The absence of a constituency for climate change is also visible by media silence on these concerns. Sustainability does not make it to political talk shows, whereas business chambers and associations have not made it a part of their core advocacy or lobbying agenda.

Perhaps the biggest positive development on climate change comes from the government. The federal government's 10-billion tree plantation drive initially kick-started as the billion tree tsunami campaign by Khyber Pakhtunkhwa province in 2014, has been given a new impetus during Covid-19 as an instrument of sustainable job creation under a Green Stimulus plan for Covid. That plan also envisages to develop at least fifteen national parks across the country in the first phase. But these pretty much define the limits of serious efforts made towards achieving sustainability.

What seems to be missing from the

collective action of public and private sector stakeholders in Pakistan, and to a degree in many countries outside Pakistan, is the understanding that sustainability is not an accident. That if Covid-19 has had a positive impact on some metrics of environment, it does not mean sustainability. Sustainability must be a well-intended move, one that is democratic in its disposition.

The pathway to 1.5-degree is technically achievable. But the numbers behind it demand a change of Himalayan proportions. All the billion-tree tsunamis, CSR campaigns, cycling paths in Milan, C40 Mayors' commitments, and other efforts combined are exciting green shoots. They may be helpful in generating debate and creating awareness. But on its own they do not really move the needle towards the 1.5-degree pathway.

Unless Pakistan and other countries put environmental concerns and circular economy at the heart of their growth strategies, sustainability measures taken at the periphery may well just be feel good measures and good public relations. Changing the mindset to put environment at the heart of growth, therefore, is one of the biggest challenges elsewhere in the world and especially in Pakistan—a country whose policy influencing corridors are dominated by conventional macroeconomic thinkers.

Equally challenging is to convince the state and society alike that while technology is part of the solution, it is not the panacea given the rebound effect of technology and the gale of conspicuous consumption. Covid-19 presents the opportunity and hope to address these challenges, but neither should be construed as a strategy. Environment sustainability and mitigation of environmental, economic and social losses from climate change isn't yet a defining political question in Pakistan, a rather unfortunate reality for a country assessed to be one of the most vulnerable to climate change. When it becomes a defining political question, that's when hope could truly be had.

The Role of Provincial Governments in Environmental Sustainability



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Pakistan is the fifth largest nation of the world in terms of population size, with varied ecological zones ranging from the mountain ranges and glaciers in the north, to the coastline in the south. It has an abundance of natural resources contributing towards economic development. Balanced qualitative growth, without compromising the environmental consideration in all sectors including agriculture, livestock, energy, and industries, should be an inherent feature of our national and provincial development agenda. Integration of environmental factors in planning and implementation, is an important consideration that should not be ignored by the policy planning departments or the line departments. Strong planning and well-resourced institutions play an important role in ensuring adherence to the philosophy of environmental integrity and its interdependence on the sustainability of resources. With the increase in population, sustainable production and consumption is a fundamental concern that needs to be understood in order to ease the pressure on the country's resources.

Evolution of Policy and Institutional Landscape

Environmental sustainability has evolved as a challenge over the last few decades. Policy responses have also varied during the years. UN Conference on Human Environment (1972) in Stockholm brought the environmental agenda to light, which was previously non-existent. For many years, environment was treated impromptu, without any planned effort. In 1992, the UN Conference on Environment and Development (also known as the Rio Conference or the Earth Summit), was a major landmark that led to a new era where environmental institutions, policies and legislations evolved and took root in numerous countries and matured. Many countries, including Pakistan, started developing their environmental institutions, legislations, and policies.

The Pakistan Environmental Protection Council (PEPC) and Pakistan Environmental Protection Agency (Pak EPA) were created in 1983 by the Pakistan Environmental Protection Ordinance. The ordinance was later replaced by Pakistan Environmental Protection Act (PEPA 1997) that defined the functions of PEPC, Pak EPA, provincial EPAs and Environmental Tribunals, and provided for an integrated system of environmental promotion and sustainability. An Environment section in the National and Provincial Planning department was another milestone that enabled a strong link between environment and development. Pakistan also ratified several multilateral environmental agreements/conventions/protocols including the United Nations Convention on Biodiversity (UNCBD), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention on Desertification (UNCCD) and Convention on Persistent Organic Pollutants (POPs).

The thematic area of environment and climate change has also seen a metamorphosis in terms of institutional arrangements.¹ In 1989, Environment and Urban Affairs Division² was upgraded to Federal Ministry of Environment, Forestry, and

Wildlife. After the 18th amendment, Ministry of Environment was abolished and a new federal Ministry of Disaster Management was established in 2011, which was later changed to Ministry of Climate Change in 2012. It was downgraded to a division in 2013, but was later instituted as a cabinet-level Ministry of Climate Change in 2015. National environmental policy was developed in 2005, which provided guidelines for addressing environmental concerns and effective management of environmental resources. In 2012, the National Climate Change Policy (NCCP) was approved, that provides a framework for addressing the issues due to the changing climate.

18th Amendment and Environmental Challenges

For many years, environment was on the Concurrent List of Pakistan's constitution, but the environment agenda was defined and implemented mostly by the Ministry of Environment. Federal environment protection agency in Islamabad and environment protection agencies in each of the provinces were charged to enforce the provisions of the law. The 18th Amendment (2010) was a milestone in the constitutional history of Pakistan with a hope that with powers devolved to the lower tiers, the issues would get resolved swiftly and at the doorstep. With devolution, the enforcement of environmental issues was further devolved-at least in theory-to the district level. While not all powers and functions of the federal EPA were in reality delegated to provincial counterparts, delegation to districts became even more distant and challenging. Both human and financial constraints, are a barrier in achieving environmental sustainability.

If one looks at the national and provincial environmental landscape, there are numerous policies that exist including the National Environment Policy (2005), National Climate Change Policy (2012), National Forest Policy (2015), National Water Policy (2018), Punjab Drinking Water Policy (2011), Punjab Environment Policy (2015), KP Climate Change Policy

1. Asian Development Bank. Available at <https://www.adb.org/sites/default/files/publication/357876/climate-change-profile-pakistan.pdf>

2. Established in 1974 as a follow-up to Stockholm Declaration June 1972

(2016), Policy on Controlling Smog, 2017, Punjab Forest Policy (Draft 2018), Sindh and Punjab Climate Change Policies (Draft 2018), Punjab Water Policy (2018) and Punjab Urban and Peri-Urban Forest Policy (Draft 2019). Whereas, the progress on the policy and legal fronts may be “satisfactory” for some analysts, the environmental conditions in the country have not changed much for the better. What remains to be seen is active implementation of the policies.

Policies define and provide direction for addressing environment and climate change concerns, but development of action plans with quantifiable and time bound targets, remains. Most importantly, however, creating synergies between different policies and plans is needed to avoid working at cross purposes. Interlinkages, both at sectoral, and provincial to federal, with clear responsibilities, need to be articulated. Institutional capacities at the national, provincial, district, tehsil and union council levels to monitor and manage the environment and to link and mainstream environment, requires strengthening. For reporting on conventions and protocols, action needs to happen at the province, while overall reporting is a federal role. Mechanism for inter provincial coordination for prioritization, data collection, financing, monitoring, and reporting, is the key for reporting on international commitments, ranging from MEAs to SDGs.

Mainstreaming Environmental Sustainability

Environmental agenda is complex; it is beyond one single ministry or department and transcends sectors and geographical boundaries. Air quality, quality of drinking water, industrial effluents, polluted ground and surface water, solid waste management, disease outbreak, locusts, flash floods, Glacial Lake Outburst Flood (GLOF), drought, heatwaves, and sea water rise, are key environment and climate change challenges faced at the community level, but the intensity and frequency determines the priority at the provincial level. No one issue can be ‘the most important issue’, but instead, different provinces have different ecological, economic, and social landscapes that demand tailored approaches and frameworks.

Environment and climate change cannot be seen in isolation from sectoral departments. There is interconnectedness between issues, such as solid waste management and health, energy efficiency and industry, clean drinking water and pollution, and so on and so forth. The Environment and Climate Change Ministry has always had its set of challenges, just like any other ministry, and the allied environment departments at the provincial level often operate in silos with limited human, financial and

technical resources.

Response to the challenge requires multi-sectoral approaches, with environment and climate change mainstreamed. Development, adoption and integration/mainstreaming of climate change in provincial level policies is necessary, but prioritization of issues and action planning in collaboration with sectoral departments, is an equally pressing need. The role of regulator and implementer needs to be clearly discussed and clarified between the federal and provincial environment/climate ministries/department and the sectoral ministries and departments. Environment and climate change are cross cutting challenges, beyond the lone mandate of any single ministry/department to have a meaningful impact. Similarly, inter-provincial learning and collaboration also needs to be strengthened for replication of best practices in environmental sustainability.

At provincial levels, the official set up for environment and climate change is different. In Punjab, Environment Protection Department (EPD) exists, with Environmental Protection Agencies (EPA) as a functional unit. In Khyber Pakhtunkhwa (KP), EPA is placed under the Environment Department. In Sindh, there is an Environment, Climate Change and Coastal Development Department, with EPA as a functional unit. Whereas, in Azad Jammu and Kashmir (AJK), Gilgit Baltistan (GB) and Balochistan, there are Environmental Protection Agencies (EPAs). EPDs can provide policy guidelines and ensure adherence to standards and regulations, but for effective prevention, protection, conservation, rehabilitation and improvement of the environment and adverse impact of climate change, the agenda needs to be led by the provincial Planning and Development (P&D) Departments and EPDs as focal point agencies/departments. P&Ds can ensure that environment and climate change is mainstreamed in sectoral planning and project projects.

Moreover, collaboration needs to be strengthened with academia and research think tanks as knowledge arms, undertaking research on emerging issues and providing evidence base for effective policy making. Mechanism for inter provincial coordination and learning also needs to be encouraged and the federal government can play a strong role in this context. Environment is not a subject limited to a location, district, or province: it transcends boundaries. Hence, collaboration also needs to be viewed from a cross disciplinary and interprovincial lens.

Recent Public Sector Initiatives

The Prime Minister of Pakistan launched the Clean Green Pakistan Movement

(CGPM) in 2018, with the aim to address five important components of environmental sustainability, including plantation, solid waste management, liquid waste management/hygiene, total sanitation, and safe drinking water. Under CGPM, Pakistan Clean Green Index (CGPI) was launched in 2019 as a composite index of the above mentioned five components, with more than 35 indicators for ranking the cities.

The role of city councils and administration working in each city/district coordinated by Local Government Departments is highlighted in the operationalization of the index. Linking and institutionalizing the CGPI agenda in the provincial environment departments could be an opportunity where federal to provincial, and intra-provincial sectoral collaboration could be strengthened. This would also encourage positive competition amongst cities, led by different provincial EPDs/EPAs, hence giving them a mandate and boost for environmental health and sustainability.

Recently, many donors have pledged support to the Ministry of Climate Change (MoCC) on the Green Economic Stimulus package to ‘build back green’ while creating value chains and for spurring economy post Covid-19. Collaboration with provinces, with federal oversight and implementation led by EPDs, will ensure timely and targeted support for providing green livelihood.

Collaborations: The Need of the Hour

The environment and climate change are vast domains, requiring expertise and specialized knowledge, ranging from deforestation, pollution, wetlands, air and water quality etc. It is beyond the reach and capacity of one institution/department. Considering the existing fiscal space, partnerships is the key to ensuring adequate technical expertise for environmental sustainability. Collaboration with research institutions, civil society and private sector can expand the depth and outreach of the provincial governments. Joint research on emerging issues, collaboration with other departments for joint action, and inter provincial coordination on thematic areas can lead to covering a larger spectrum of issues. Expertise of one institution can be utilized and promoted as a center of excellence, rather than spreading thin, and spending time and resources.

Expanding the Fiscal Space

Covid-19 has posed serious resource challenges for the government. Fiscal space is limited, and priority is for Covid-19 responsive activities. Given the constraints, Green Climate Fund (GCF), Global Environmental Facility (GEF), Adaptation Fund (AF), Climate Investment

Fund (CIF), Asian Infrastructure Bank (AIB) and Climate Technology Centre and Network (CTCN), and other such bilateral and multilateral financing windows, can be accessed to support the environment and climate change agenda. Projects, if designed through a bottom-up approach based on local assessments and needs, with provinces taking the lead, can address the challenge from the core.

Post the 18th amendment, the capacity of provinces needs to be strengthened to develop strong proposals, with MoCC guiding the process as the national designated entity. Mechanism needs to be devised by the federal government for solicitation of projects, but more importantly, to develop the projects with the provinces.

From a provincial perspective, EPDs should adopt a sectoral approach to design inclusive projects in consultation with departments. Many funding windows do exist, which provide technical and financial support to

develop projects, these should be accessed so that probability of success in global competitions increases. Similarly, public sector development projects and annual development plans should be climate compatible or climate smart in order to ensure environmental considerations like flood resistance and energy efficiency.

Nationally Determined Contribution (NDC) submitted by Pakistan under UNFCCC in 2016, commits to reduce emissions of up to 20 percent in the projected emission figures for 2030, provided an investment of approximately USD 40 billion is available from the international community. While some resources may be available, but developing investment worthy proposals under climate change mitigation or adaptation is a pre-requisite. In addition, GHG emissions monitoring capacity will need to be developed that will require strong coordination with provinces and sectoral departments.

Finally, the private sector in Pakistan has remained relatively isolated and disengaged by restricting its engagement to providing minuscule support through Corporate Social Responsibility (CSR), that was both fragmented and incoherent. Options for targeted support with environmental benefit needs to be planned and executed, supporting provincial action plans. Efforts have been taken by some industries for energy efficiency and effectiveness, but these have remained localized and large-scale uptake is limited. Insurance and banking industry to support climate risk insurance and green lending needs to be encouraged. Policy and regulatory barriers need to be reviewed in support for private sector investment and equity. Public private partnership not only expands options for federal and provincial government to reach out to donors that encourage such collaborations in view of budgetary constraints, but also holds great promise for provinces to adopt green growth and ensure environmental sustainability.



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COVID and Climate Collaboration: A Civil Society Perspective



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COVID19 exploded on the world scene like a horror movie, with a mysterious virus on a killing spree, and an army of researchers trying to develop a vaccine to contain the life threatening pathogen. The crisis triggered a health and economic crisis, exposing societal fragility and heightening the need for collaboration between different sectors in performing social, economic and environmental functions.

‘COVID and CLIMATE’

The pandemic comes on the heels of the climate crisis at a time when the world is already facing the monumental challenge of global warming.

‘COVID and CLIMATE’ therefore pose a twin threat to human security, as the challenges associated with both will create new stressors and require new ways for managing crises and fragility. At risk are lives and livelihoods of millions, and the danger of many getting mired in a poverty trap from which it may become increasingly difficult for some to emerge without permanent damage.

The high risk of contagion and absence of a cure has compelled governments and citizens alike to take unprecedented mitigating actions. The rapid spread of the disease and its paralyzing socio-economic impact on national and global economies, as well as restriction on

movement, makes it necessary to re-examine existing models of governance. Crises pose a threat not just to economies but also to fundamental values of democracy and human rights, thereby highlighting the importance and need for bringing a shift in the governance model. This can best be achieved by placing citizens at the heart of decision-making for building trust, underpinned by openness, for making society resilient and better prepared to cope with future emergencies and crises.

While many different strategies have been employed to combat COVID-19, the one aspect that has come out strongly is the role of civil society and the need for collaborative approaches in responding to crises and fragility.

Defining Civil Society

In its broader definition, the term civil society applies to debate, discussion and activities in the space left open in liberal democracies by the institutions of state, free market and legislated individual rights. By comparison, in authoritarian models, this space is very narrow. Civil society also has to be a force for good as its acceptance and survival depends on a rational discourse, a positive objective and recognizable performance.

The term civil society and social movements are used interchangeably but conceptually their functions differ. Civil society refers to features of associations in a public sphere or arena and their role in politics and society, whereas social movements refer to processes of mobilization and action. The same normative implications influence our understanding of climate change and environment. The technical definition separates one from the other but the cause and effect merge in ways where change in one has a direct impact on the other. The co-relation between environment and climate change and the role of human activity in exacerbating both, has been brought out in stark relief by the COVID-19 crisis.

Civil Society and COVID-19

We are living in the age of climate change and environmental degradation, where threat of zoonotic disease and health

pandemics are likely to be exacerbated by a warming world. The cascading impacts of these disruptions can only be managed with a “Whole of Society” approach that takes into account and respects the space of civil society and its role as an independent actor. Tackling a social calamity requires participatory governance and informed public discussion, as well as taking into account the importance of a Rights Based approach, especially during times of crises.

Civil society in Pakistan is politically active. In the field of environmental protection and climate change, it lacks a sense of community and collective ownership of the agenda. The few and somewhat sporadic actions are not enough to build pressure or galvanize support to influence policy. This is largely the reason why it has not been able to create a niche space for itself to play a coherent and coordinated role in realizing its full potential.

The flip side of the negative impacts of COVID-19 has highlighted one positive outcome-reduced levels of emissions and environmental co-benefits-like improved air quality indices, cleaner water bodies, thriving wildlife and biodiversity and healing of eco-systems. The positive impact of the lockdown on the environment provides civil society with a unique opportunity to convert the pandemic into a watershed moment for triggering a transformative shift in climate negotiations at the international level, and supporting bold legislations on environmental protection at the country level.

Public Sector Initiatives

The government in Pakistan has taken some positive steps in this regard that deserve credit for recognizing the importance of environment and climate change as a national priority. The Ten Billion Tree Tsunami, a part of the Plant for Pakistan Campaign, is designed to raise awareness and motivate people to make Pakistan greener and inspire communities, businesses, industrial sector, and civil society to work together for a common cause. The Eco-system Restoration Fund created with financial assistance of USD 180 million from the

World Bank and Euro 12 million from Germany, will focus on mainstreaming climate related adaptation and mitigation through ecologically targeted activities and nature based solutions. The World Bank will also provide technical support for Pakistan Hydro-Met and Climate Change Services Project (PHSCP) to strengthen delivery of reliable and timely climate change and hydro-met services.

The index of the Clean Green Pakistan is built on five pillars-safe drinking water, total sanitation, liquid waste management and hygiene, solid waste management and plantation. The latest addition to this list is the Protected Areas Initiative that will strengthen 12 National Parks in the country with the aim of preserving and protecting wildlife, nature and biodiversity. The ultimate goal is to prepare a future generation of sustainably minded, environmentally conscious people who are aware of and accountable for, the impact they have on nature, and using them as catalysts of change for bringing a paradigm shift in how people relate to the environment. All these actions demonstrate political will and strategic vision to trigger a systemic change that promotes a new narrative of opportunity to ease transition to a model of economic growth that is sustainable.

However, these objectives will be difficult to achieve if they are not contextualized in the prevailing socio-economic realities and anchored firmly in principles of social, ecological and democratic equity, that address structural inequalities responsible for creating conditions under which people become vulnerable.

The Situation in Pakistan: Challenges and Opportunities

Pakistan ranks high on the Climate Vulnerability Index (food, water, energy) and low on Human and Institutional Development index (gender education, health, poverty). The country presents a complex eco-system for climate analysis where macro level events can play out in highly differentiated ways at the local level, with multiple factors interacting in dynamic and unpredictable ways.

Pakistan is a country of 208 million with 70 percent working in the informal economy. The economy remains elitist in structure with a top down governance model. The population is growing at an unsustainable rate while the resource base is diminishing fast. There are significant disparities between roles and resources at the national level, and women and youth, who constitute two large demographic groups, are neither equipped nor empowered to play a meaningful role in nation building.

Other conflict drivers and morbid symptoms of climate change include

accelerated melting of snow and glaciers in the Hindu Kush Himalayas (HKH) region. The accelerated melting will cause hydro-meteorological disasters till 2040 and thereafter, flows will decrease and create water shortage issues.

Glacier and snowmelt contribute 40 percent of upstream flows to the Upper Indus Basin. The HKH Mountains provide two billion people a vital regional lifeline via water for food (irrigation), energy (hydropower) and ecosystem services (riparian habitats, environmental flows, diverse cultural values). According to a recent report by the International Center for Integrated Mountain Development (ICIMOD) based in Kathmandu, Nepal, the drivers of water scarcity are largely due to lack of sustainable sourcing of water, failing models of water governance, inequitable distribution of water and the ignored role of women in water governance.

All these issues are interrelated and have a direct co-relation with human security. As the 8th most vulnerable country to climate change and signatory to the Paris Agreement, Pakistan is not sufficiently prepared for the first global stock-take coming up in 2023. The country to date has not finalized its National Adaptation Plan (NAP). The Climate Change Policy of 2012 and the Implementation Framework of 2013 need to be revised and aligned with adaptation and mitigation commitments made in the Paris Agreement as well as the SDGs to achieve goals and targets. The water and energy policies were made without a broad based consultative process and therefore lack ownership from the people.

Water is and will remain a contentious issue. The conflicts around water will most likely be inter-provincial and trans-boundary. As climate calamities increase in intensity and pandemics occur with greater frequency, governments will find it more difficult to address challenges without the collaboration and support of civil society.

It is unfortunate that the National Climate Change Act passed in 2017 to improve coordination between the center and the provinces with a seat for civil society on the table has not yet been operationalized. Similarly the Open Government Partnership joined by Pakistan in 2016 has also not been approved by the Cabinet.

Conclusion

If there is one lesson to be learnt from COVID-19, it is the need to understand that unless government and citizens work together, the ability to fight present and future pandemics or achieve the dream of a green and just future that leaves no one behind, will not be possible.

The lock down strategy has put millions out of work and curtailed opportunities for income generation for many others. Seen from the lens of human security, the pandemic has heightened the need for re-examining the existing development paradigm and seeking pathways to development that take into account future crises and emergencies, in which global warming and its impact stand out as a clear and present danger.

There is also growing recognition of the impacts of climate change in exacerbating crises and contributing to the fragility of an inter-connected world. The discourse on climate and human security is aligned with scientific consensus on the long-term changes in eco-systems, as a result of a rapidly warming world.

The post COVID scenario will expose countries to many different types of threats, including socio-political, structural and economic. The demographic divide, income inequalities, gender disparities, and unequal access to resources will have a disproportionate effect on poor and middle-income groups, pitting vested interest groups against each other for grab of critical resources and thereby setting the stage for strife, tension, destabilization and conflict.

The subtle structural distinctions of inequality, such as race, ethnicity, age and gender create pockets of vulnerability that come to the fore during periods of crisis. This includes the differentiated location of women and men in the economy and difference in their roles and responsibilities, not only in the market economy but also in the reproductive and care economies. The complex nature of the challenge makes a strong case for giving community and citizens space to co-create policy and be part of governance.

Last but not the Least...

Sustainable development cannot be possible without taking society on board, and managing the climate crises will not be possible without the help of civil society. If regulation needs compliance to be effective, then government needs civil society in order to be successful.

It is important to remember that countries in South Asia are interlinked by geography, history, culture and ecology. In order to realize the UN vision of One Humanity and Shared Responsibility, the best way forward would be by strengthening partnerships with civil society within the country, and forging collaborative alliances with all stakeholders in the region.

SDGs and the Green Growth Agenda



Shahid Naeem

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Former Chief/Project Director, National Initiative for the Sustainable Development Goals

The Covid-19 induced global recession has impacted Pakistan more compared to its neighbours in Asia and countries of similar economic standing. The real GDP (Gross Domestic Product) growth of many Asian countries is higher than that of many industrialized countries. The sluggish growth, which started to become visible at the end of 2019, is expected to have impacted the lives of millions. These are those living just above the national poverty line. This pandemic is expected to have pushed many of them below the poverty line.

On the other hand, exploitation of natural resources by industrialized countries in the post-industrial revolution period, has disturbed the ecological balance of the earth to an extent that human existence on this planet is threatened. Global environmental degradation is posing severe consequences to the millions around the globe; droughts, flash flooding, diseases, extreme temperatures, unexpected high volume of rainfalls and landslides, earthquakes etc are destructing livelihoods.

Conscious efforts to save the environment initiated several years ago. The first UN conference-UNCHE (UN Conference on the Human Environment) that entirely focused on environmental issues, was held in Stockholm in 1972. Many global

initiatives followed this conference.

These included the Brundtland Commission report "Our Common Future" in 1987, which defined the meaning of "Sustainable Development." The Earth Summit of 1992 was another major step when the international community reaffirmed its commitment towards environmental conservation in a high-profile international conference held in Rio de Janeiro, Brazil. The UNCED (United Nations Conference on Environment and Development) focused on the international environmental law where three agreements were officially signed.

Post 20 years of the Earth Summit of 1992, UNCED organized Rio+20 that reviewed all the previous agreements and binding and non-binding principles from the implementation perspective. Rio+20 also endorsed the Millennium Development Goals (MDGs) Agenda 2015. One of the major outcomes of the Rio+20 was the introduction of the Sustainable Development Goals to foster the pace of development in a sustainable manner in all countries. In 2015, it was agreed that SDGs should not divert the member states' commitment from MDGs and there was a provision to reconcile the post-2015 MDGs agenda with the SDGs.

The "Green Economy" model of growth framed in the context of Rio+20 is considered a response to the challenge of environmental sustainability. This model has many important ingredients required to save the planet, though it has greater financial implications on developing countries like Pakistan. Adopting this model of sustainable growth may, in its initial phase, depress output and growth till our business and industry fully adapts to the new settings. Use of appropriate technology and innovation is necessary to transform the existing economy towards green inputs and sustainable practices.

Sustainable management of natural resources and control of harmful emissions needs to be focused. The global agenda for sustainable development offers an opportunity to the world community including Pakistan, to transform economic activities into becoming sustainable. Greater coopera-

tion through partnership in terms of technology transfer and capacity building, can offer promising improvements for better air and water quality, etc.

Sustainable consumption and production agenda under the SDGs also stems from natural resource conservation that entails changes in life style and behaviours. Pakistan is making significant progress e.g. in energy sector, the target is moving towards 30 percent of the energy from clean technology by 2030, billion tree tsunami and efforts to improve water use efficiency by use of technology for irrigation.

COVID-19 has revealed many avenues of development that were not planned in the conventional planning model. For instance, developing countries like Pakistan have not chiefly employed information technology tools to carry out their daily activities in the past. COVID-19 has compelled people to adopt a virtual environment for many activities like e-learning, tele-doctors, ordering food online, etc. All these virtual economic activities bear a green impact on the environment that was never thought of before. Hence proven that both economic and non-economic activities can be carried out without harming the environment. This is a new model of green growth that should be aligned with policy and decision-making.

Pakistan is experiencing high rates of deforestation, the loss of biodiversity, land degradation, soil erosion and desertification. The unsafe disposal of agricultural and industrial waste, rapid population growth, rampant urbanization, and unsustainable patterns of consumption and production, are contributing to the deteriorating state of life on land. Coupled with climate change, these factors place extraordinary pressure on Pakistan's natural resources, particularly forests, rangeland and biodiversity. Seepage from canal irrigation systems is responsible for waterlogging, while improper drainage is causing salinity in many areas-both leading to land degradation.

As Pakistan is among the top ten countries in the world most affected by climate change, it has proactively undertaken policy and institutional

initiatives in recent years. These build on earlier steps, including the development of the National Environmental Quality Standards (NEQS) in 1993, the Pakistan Environmental Protection Act 1997, the National Environmental Policy 2005, the Clean Development Mechanism Strategy 2006, National Action Programme to Combat Desertification 2000, the Biodiversity Action Plan for Pakistan 2000 (revised in 2016), and the National Forest Policy 2016 to protect and conserve the country's natural resource base.

In response to the challenge of deforestation, the Billion Tree Tsunami Afforestation Project in 2014 worked to restore depleted forests across 350,000 hectares of land, through tree planting (40 percent) and natural regeneration (60 percent). By fulfilling its goals in August 2017, many months ahead of schedule, Pakistan was the first Bonn Challenge pledge which not only reached its goal, but surpassed its commitment of 348,400 hectares. The project has set up around 13,000 private tree nurseries-safeguarding the environment, boosting local incomes, generating thousands of jobs and empowering women and youth in the province of Khyber Pakhtunkhwa.

Pakistan has revived the Federal Forestry Board to provide strategic direction for the implementation of the 10 Billion Tree Tsunami Programme, which aims to involve all stakeholders in the next five years. The Clean and Green Pakistan Programme is engaging stakeholders in reviving flora across the country by planting 100 million indigenous tree species. The implementation of the Reducing Emissions from Deforestation and Forest Degradation (REED+) initiative has been converted into a national monitoring system for forests. The

conservation and protection of biodiversity has been a prime objective of the National Biodiversity Strategy and Action Plan (NBSAP) 2015, which is being aligned with the strategic plan of the Convention of Biodiversity 2011-2020. Furthermore, the Ministry of Climate Change is implementing sustainable land management projects, focused on halting desertification and land degradation in arid and semi-arid parts of the country.

High population growth is the most serious threat to Pakistan's future environmental outlook and green growth agenda. Challenges are compounded by urbanization, unsustainable consumption and production, and the growing impacts of climate change. There is also a pressing need to curb the unsafe disposal of agricultural and industrial waste, seepage from canal irrigation systems, and poor drainage and waste management. The local government system is key in effectively combating all these challenges as local ownership is important to implement policies and programs.

Pakistan's priority is to implement policies for the sustainable management of ecosystems with the aim to increase forest cover, reduce desertification, protect biodiversity and conserve natural habitats. Pakistan targets to increase forest cover by one percentage point by 2023, (as a percentage of total land area), and introduce environmental quality control measures to monitor air and water quality in line with the strategy to ensure compliance with air and water quality standards.

The target is to reduce greenhouse gas emissions by 20 percent by 2030 with a focus on reducing emissions in the energy and agriculture sectors. Following

the success of the Billion Tree Tsunami in the province of Khyber Pakhtunkhwa, a five-year country-wide 10 billion tree plantation drive is planned as part of the Clean and Green Pakistan program. The objective is to reduce the effects of greenhouse gases, improving oxygen levels, protect and promote thriving biodiversity, and offer greater livelihood opportunities through additional spillover benefits at the local level.

The role of technology, particularly in the supply of clean fossil-fuel, is important for sustainable economic growth. For green growth, the employment sector needs to be transformed by creating decent work and work environment. The green growth agenda also needs to focus on economic productivity through innovation, diversification and technology upgrading. Similarly, green infrastructure using new building materials and employing more reuse, can help achieve greener growth. Creating awareness about greener infrastructure will help develop resilient communities. This requires promoting scientific research, upgrading technology and encouraging innovation. The green growth agenda can effectively address spatial, social, economic and environmental inequalities.

In the end, it is important to mention that without institutional reform, effective partnership and change of behaviour, and effectivity of the green growth agenda cannot be furthered. Strengthening of governance mechanisms is key to promoting rule of law and ensuring accountability and transparency. Better monitoring and evaluation systems will be key in this regard. After all, Covid-19 has taught us that the most promising avenue can be the use of media for behavioural change.

Interview



Shafqat Kakakhel

Chairperson, SDPI Board of Governors

Former Deputy Executive Director/UN Assistant Secretary General, Kenya

In your opinion, is there sufficient awareness regarding environmental sustainability in Pakistan especially among key policy makers? What should be done to further enhance awareness and create and sustain commitment of policy makers in this important area?

The growing awareness of environmental issues in Pakistan is not matched by knowledge about how environmental sustainability can be woven into our developmental policy and decision making processes. Our ranking civil servants are not fully trained in using the tools developed by the international community to direct public sector allocations for implementing environmental policies. Pakistan needs to fill this gap by organizing trainings for its officials in order that they become aware of the best practices in developing countries and replicate those practices in Pakistan, with appropriate adjustments.

Our academic and professional institutions can play an important role in disseminating information on measures suggested by experts and promoted by some countries, to integrate environmental sustainability imperatives into our developmental policy making. The UN Agencies, Funds and Programs, as well as specialized centers established by some countries such as China, Japan, and Germany, can also provide capacity development support.

There is an urgent need to ensure that the scientific and policy consensus achieved by the international community through land mark conferences and agreements like the Agenda 21, the multilateral agreements on climate change, biodiversity, combating land degradation and desertification, sustainable management of chemicals, and climate change, as well as the Sustainable Development Goals defining the 2030 Development Agenda, are fully integrated with our annual budgets and medium and longer term planning frameworks.

Television channels can play a vital role in promoting understanding of the progress made by the international community in evolving sustainable energy policies and practices, protection of air, water, and soil pollution, as well as energy conservation and energy use efficiency.

In your opinion, are environment centric initiatives a priority of Pakistan's overall policy framework and public expenditure? What policy, legal or administrative changes/measures are needed in this regard?

Yes and No. Our leaders participate in most important global meetings on sustainable development and deliver statements declaring their abiding commitment to the objectives and the

say that again

"...There is an urgent need to ensure that the scientific and policy consensus achieved by the international community."

outcomes of the meetings. In the case of the SDGs, our parliament adopted a resolution declaring the SDGs as Pakistan's Development Agenda. Our medium and long term development frameworks such as Vision 2020 contain in impressive rhetoric, Pakistan's resolve to achieving the goals and targets agreed at the global forums.

However, like most developing countries, Pakistan has not been able to establish institutional arrangements for implementing the promises contained in the policy frameworks. The main reasons for the gap between commitment and actions, are resource constraints. Our annual development plans and budget are seldom, if ever, based on the decisions adopted by the world community and they, instead, reflect our meager material and intellectual resources and capacities.

There is no dearth of policies on most environmental issues. Over the years and with the generous support of the United Nations system, we have formulated elaborate policies on climate change, biodiversity and biosafety, combating land degradation and deforestation, etc. But nearly all of them are broad based frameworks which need to be translated into time bound and costed plans of action and executable programs. We have not been able to do so. The most important factor is the availability of technical, financial and human resources, as well as institutional capacities for implementing the projects and programs aimed at achieving the goals outlined in the policies.

Countries caught in a vicious cycle of having to borrow large sums of money every year in order to pay back huge amounts of loans taken decades ago, have to face big challenges in order to evolve and implement ambitious environment- centric initiatives, as compared to the remainder.

COVID-19 has shown several positive impacts as far as the environment is concerned, making the air and oceans cleaner. What does the future of environmental sustainability look like in the background of this pandemic?

The palpable improvement in air quality in most of our cities and towns following the suspension of activities during the Covid-19 lockdown, has highlighted the need for effective management of all kinds of waste, including waste generated by small and medium sized factories as well as markets, butcheries and hospitals.

This, however, was a temporary respite and matters have gone back to pre-lockdown times. Recognizing the importance of clean air, our authorities should prescribe and enforce strict quality standards for the fuels sold and used by all vehicles as sub-

quality fuels by vehicles is a major cause of the contamination of the air in our cities and towns.

Waste management and pollution control should be pursued as the highest priorities of our city and town authorities. Success in this area will also alleviate the intensity of smog during the fall and winter months. Proper maintenance of existing drinking water plants and the building of new facilities to cater to the residents of informal human settlements, will help in reducing water-borne diseases in Pakistan.

What roles can different stakeholders play in ensuring Pakistan maintains and fulfills the environment related SDG indicators?

The 17 SDGs and dozens of targets spelling out each goal along with indicators to track the progress achieved, constitute a comprehensive and highly ambitious agenda. Unlike the MDGs which were aimed at addressing the most serious problems in developing countries, the SDGs are applicable to both developed and developing countries. They cover the entire spectrum of life and conditions on our planet. The SDGs promise an ideal world, a utopia if you like, which will free humankind from the scourges of poverty and hunger, malnutrition and ill health, illiteracy, unemployment and exploitation, climate-induced recurring disasters and diseases, provide access to equal opportunity and justice and equity and so and so forth. The Agenda also envisages a global partnership for facilitating concerted actions by the world community to achieve the goals and targets enshrined in the SDGs.

It is impossible to list the roles of all stakeholders in order to ensure that Pakistan achieves the environment-related indicators. One can barely identify them: governments at all levels, the economic and business sectors, the scientific and academic communities, the media and the civil society. All these stakeholders have to be encouraged and enabled to play their respective roles in the quest for sustainable development.

What needs to be done by the government to enhance inter-ministerial and federal-provincial coordination on issues of climate change?

The effectiveness of climate change-related policies and programs depends on optimum coordination among the major

ministries and departments of the federal government on one hand, as well as between the relevant ministries and departments of the federal and provincial government, on the other.

As far as the federal government is concerned, there are several ways of ensuring communication, consultation and coordination. Ideally, the National Development and Planning Ministry should establish an Inter-Ministerial Committee on Climate Change which can be convened to consider measures that require a whole of government consideration. This Committee may set up sub-committees to deal with specific issues such as energy, water resources, climate change related mitigation or adaptation projects, health impacts of climate change, disaster risk management etc.

I hope that the various provisions of the Climate Bill (2017) such as the Climate Council, the Climate Change Authority, and the Climate Change Fund are fully operationalized, and the procedures and modalities defining their functions, will also take care of coordination and coherence.

Similar institutionalized measures can be established to ensure coordination between the federal and the provincial governments.

It would be useful to enlist the private sector in the formulation, implementation and review of sustainable development initiatives. The Business Council of Pakistan should be encouraged and supported to promote public-private cooperation and coordination on environmental issues in general and the multi-dimensional challenge, climate action, in particular. UN entities represented in Pakistan can play a crucial role in fostering inter-ministerial coordination at both federal and provincial levels.

Interview



Hammad Naqi Khan

Chief Executive Officer
World Wide Fund for Nature (WWF), Pakistan

In your opinion, is there sufficient awareness regarding environmental sustainability in Pakistan especially among key policy makers? What should be done to further enhance awareness and create and sustain commitment of policy makers in this important area?

There is awareness in many sections of society but the common citizen still remains unaware of the impacts of unsustainable environmental management on their life, health and economy. At the decision-making level, the awareness is there, but the technical capacity to guide and plan is very limited. Before promoting awareness, we need to promote field research on environment and ecology so that there is an authentic data bank to refer to.

In your opinion, are environment centric initiatives a priority of Pakistan's overall policy framework and public expenditure? What policy, legal or administrative changes/measures are needed in this regard?

Yes, there are clear and positive steps towards improving the environment. The Ministry of Climate Change (MoCC) has received a good amount of budget for 2019/2020 and there are good projects bearing clear objectives. Implementation is the real question, as bringing the provinces on board has generally been a challenge given environment has become a provincial issue post the 18th Amendment.

COVID-19 has shown several positive impacts as far as the environment is concerned, making the air and oceans cleaner. What does the future of environmental sustainability look like in the background of this pandemic?

There is a huge opportunity to carry this 'carbon-light' way of life

say that again

"...There should be an effort to understand the point of view of each province and ministry as 'one-size-fits-all' approach cannot be employed."

forward, although, there is definitely the risk of returning back to a 'carbon-heavy' economy. We need to collectively convince the government that it takes an environmentally sympathetic approach to bringing back the economy, not an aggressive one

What roles can different stakeholders play in ensuring Pakistan maintains and fulfills the environment related SDG indicators?

It depends on their nature of business. We all need to recognize that in Pakistan, a healthy economy can only be achieved when we have balanced sustainable production and responsible consumption. Businesses need to hold themselves accountable for this, especially with regards to the pollution they produce. CSO's need to convey clear messages to the general public regarding the need to conserve the environment. Policy makers need to ensure they have the right data and information to make correct decisions. Academia needs to ensure they conduct sufficient research and analysis to provide this data.

What needs to be done by the government to enhance inter-ministerial and federal-provincial coordination on issues of climate change?

There should be an effort to understand the point of view of each province and ministry as 'one-size-fits-all' approach cannot be employed here. MoCC has started using this approach for the 10 Billion Trees Afforestation Projects (10 BTAP) and it can be used as an example for rolling out other environmentally driven initiatives in the future.



Shahid Kamal

Adviser

Commission on Science and Technology for Sustainable Development in the South (COMSATS)

say that again

"...There should be a platform at the MoCC for policy dialogue that can bring together relevant stakeholders."

In your opinion, is there sufficient awareness regarding environmental sustainability in Pakistan especially among key policy makers? What should be done to further enhance awareness and create and sustain commitment of policy makers in this important area?

There is increasing awareness among policy makers of the importance of environmental sustainability. However, there is need for greater environmental resilience given the scale of the challenges from climate and disaster related risks.

Since Pakistan is among one of the most vulnerable countries to the impacts of climate change, there is a need to further enhance environmental sustainability awareness. This has to be matched with political commitment on part of the government for environmental resiliency and sustainable development, together with the active involvement of relevant stakeholders.

At the parliamentary level, both federal and provincial, political parties and the Committee on Climate Change in Parliament, need to legislate for more robust protection of the environment. Additionally, communication and education play an important role. Media can generate public awareness on environmental issues by transmitting simple and reliable information through radio, electronic and social media.

Involvement of local authorities, corporate sector, civil society organizations, educational institutions, research institutes and families is crucial for the successful advocacy and awareness raising of environmental responsibility and sustainable development.

In your opinion, are environment centric initiatives a priority of Pakistan's overall policy framework and public expenditure? What policy, legal or administrative changes/measures are needed in this regard?

Realization of the importance of environment centric initiatives is growing. This is manifested in programs such as the "Clean and Green Pakistan", "Clean Green Index", and tree plantation movement. The need to incorporate environment centric initiatives has to be pursued with a broad participation of stakeholders.

Measures required include institutional frameworks to ensure political policies driven by coherence, coordination and consensus between different levels of government, integration of environment at national, provincial and local levels, aligning development strategies to the 2030 Development Agenda and financial flows for the growth of green economy.

There is a need for promulgating regulations that encourage eco-friendly practices, building institutional capacity and human resource development capacity, as well as strengthening monitoring and reporting requirements to improve environmental sustainability.

Local governments should have an integral role in addressing environmental risks as national level policy requires local implementation.

There is also a need for a closer relationship between people and the environment by mobilizing citizens and stakeholders, especially local communities, to take ownership and responsibility for sustainability actions. Community based organizations can make substantive contribution. Building partnerships with those working at the community level, will produce beneficial results.

COVID-19 has shown several positive impacts as far as the environment is concerned, making the air and oceans cleaner. What does the future of environmental sustainability look like in the background of this pandemic?

As a result of Covid-19, the environmental perspective has acquired more attention. This is reflected in the improvement in air quality, importance of cleanliness, waste management and sustainable life styles, work-life balance and appreciation of nature. Remote working has grown exponentially in the Covid-19 era. This has dramatically reduced greenhouse gas emissions.

Importance of "green recovery" is being recognized, as well as the need to integrate economic recovery from Covid-19 with climate action and sustainable development. Covid-19 crisis could be a transformative change towards a sustainable society.

Multiple causes have been attributed to changes in the patterns of vector borne diseases, climate change, land-use change and biodiversity loss. Hence, there will be enhanced interest to consider infectious disease risk as being linked to the impact of climate change. This will lead to building climate resilience through adaptation and mitigation measures.

Air pollution is responsible for increasing the number of serious illnesses and premature death. There will be greater focus after the pandemic subsides on solutions that prevent air pollution levels reaching higher levels, which threaten health and well-being.

We would have to look at better conservation measures for protection of eco-systems and creation of biospheres for climate

resilience.

Another factor will be the need for national governmental response measures during emergencies. This will require strengthening disaster response systems to make for adept management of crises in future.

Sound urban environmental measures will be essential as majority of infected persons are city dwellers and infections spread quickly in densely populated locations. Living in unsanitary and crowded settlements poses serious environmental challenges.

The pandemic has enhanced the importance of environmental sustainability with the growing realization that there is a need for a more resilient and sustainable world in the future.

What roles can different stakeholders play in ensuring Pakistan maintains and fulfills the environment related SDG indicators?

Environmental sustainability is the underlying theme connecting the UN Sustainable Development Goals (SDGs). Climate change and sustainable development are inter-related and mutually reinforcing. UN 2030 Development Agenda identifies climate change as “one of the greatest challenges of our time” and states that “its adverse impacts undermine the ability of all countries to achieve sustainable development”.

Developing countries will be adversely affected by the anticipated shocks to their social, economic and natural systems. Pursuing climate action and sustainable development in an integrated and coherent way, offers the most effective approach to enable countries to achieve the objectives under the SDGs.

Complexity and interrelation of SDGs and targets is challenging and requires effective governance arrangements. There has to be broad participation of all segments of society to align economic, social and environmental dimensions of sustainability policies for informed decision making.

At the federal level, the Planning Commission has the task of ensuring participation of relevant stakeholders, official and non-official, develop integrated and coherent policy frameworks, institutional structures to enhance synergies between policies directed towards sustainable development, and monitoring and reporting systems to evaluate implementation and measure progress on SDG targets. There has to be close consultation and coordination between the federal and provincial governments to ensure a coordinated response.

All the SDGs have a local dimension that is essential to their achievement. Hence local governments and their associations need to be strengthened to engage in the implementation process, as well as to link global goals with local communities. Such a bottom up approach will help to mobilize community

based organizations to assist in delivery services.

In addition to involvement of civil society and the private sector, participation of those non-governmental organizations that are already present and working at the district and tehsil levels, would be beneficial in contributing to the achievement of the SDGs.

What needs to be done by the government to enhance inter-ministerial and federal-provincial coordination on issues of climate change?

In the 18th Amendment to the Constitution in 2010, responsibility for “environmental pollution and ecology” was devolved to the provinces. The National Climate Change Policy (NCCP) was approved in 2012. The Parliament also passed the Climate Change Act in March 2017 with setting up Climate Change Authority, Climate Change Council and Climate Change Fund.

The federal Ministry of Climate Change (MoCC) is the national focal point for implementation of international agreements and treaties related to environment and climate change, and meeting international obligations.

Differing mandates between the federal and provincial governments impede effectiveness in working because sectoral policies require a cohesive and coherent approach.

There is a need for an Inter-ministerial Working Group at the federal level led by the MoCC, in which relevant ministries and all provincial heads dealing with environment are represented to coordinate and draw up programmes and projects for the implementation of the NCCP.

To enhance federal and provincial level coordination, there should be separate Working Groups for specific items such as international climate change related commitments (notably the Paris Climate Agreement), adaptation, mitigation, vulnerability, climate change science and policy issues. This would facilitate interaction and cooperation with a focus that will ensure better coordination and collaboration.

In both houses of Parliament at the federal level, climate change standing committees have been constituted. A forum to create an outreach to parliamentary members through regular briefings by the MoCC would provide for parliamentary engagement and ownership.

There should be a platform at the MoCC for policy dialogue that can bring together relevant stakeholders from local government, community based organizations, civil society, private sector, and specialists on climate change science to aid in providing perspectives on a range of issues such as financing issues, implementation mechanisms and policy making.

What innovative methods can be employed to boost efforts in place for sustaining the environment?



Yahya Saeed

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Real time tracking via a mobile application to track every time an activity happens by a citizen. For instance, each time a tree is planted, the app updates. A list of activities should also be provided in the app so as to give ideas/options on things that can be done.

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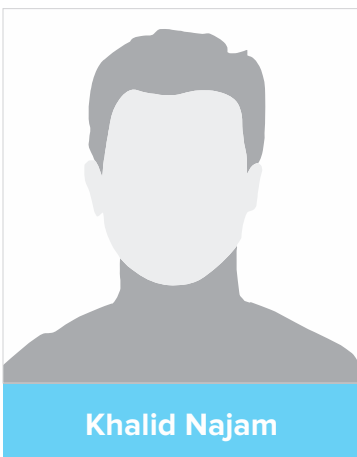
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Complete Lifestyle changes are required if one wants to invest in environmental sustainability. For instance, shifting to a vacuum cleaner completely ensures dust particles are not suspended in the air; not using any air sprays or fresheners will limit aerosol quantity in the air, shifting to more healthy modes of transport such as bicycles at least for nearby places, will limit air pollution, and so on and so forth. Small investments can lead to big returns.

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Bina Shahab



Khalid Najam

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Something similar to the 'Smog Free Project' should be replicated here, where polluted air is sucked in, cleansed and then released again. This can first be tested out small-scale and then broadened.

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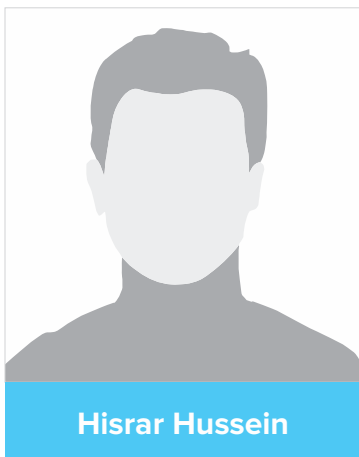
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Focus on using biodegradable plastic that can be recycled, is a must. This itself will reduce tonnes of plastic waste and reduce pollution.

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Ayla Aziz



Hisrar Hussein

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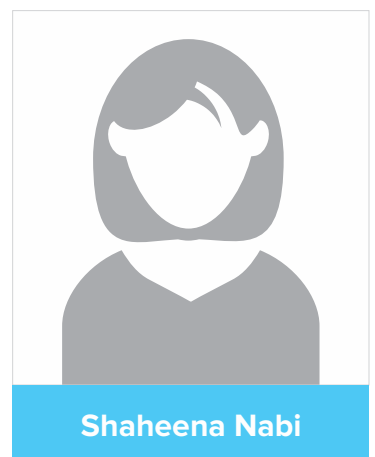
Organic gardening is something that should be focused upon. And this is an activity one can literally do within the confines of their own homes. It will purify the soil and limit the use of fertilizers that are harming the environment and being used large scale in crops and farming.

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Cleaning the oceans is something we must focus on. 'The Seabin' is an interesting project and something along the same lines should be emulated here as well.

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Shaheena Nabi

DEVELOPMENT ADVOCATE
PAKISTAN