Green Actions Cardinal for Green Pakistan

Since time immemorial, humans have remained in pursuit of happiness by way of material possession, knowledge, comforts, moral values, and freedom. In quest of all these, human beings have adopted different paths. Some even followed ways that undermined the rights of others. With the advent of industrialization, the longing for material possession took the lead over other causes of life. The shift from an agrarian and labour-based economy to mechanized manufacturing through technological innovations and gradual urbanization brought about economic expansion, rise in living standards, and global development. Such industrialization originally started during the late 18th century. The Industrial Revolution brought economic growth together with interference in nature, its neat and clean atmosphere showing signs of pollution, adversely affecting human health initially, but unchecked contamination developed into a disastrous situation through air, water, and land pollution. This raised awareness and concern for the protection of the environment.

The concept of Green Economy and Sustainability was conceived sometime back in the 19th Century. London smog during December 1952, which killed nearly 12,000 people, shocked the world into the seriousness of protecting the habitat through sustainable development as an international goal, and the United Nations Environment Programme (UNEP) was established in 1972 to monitor the global environment and assist nations in facing challenges under the slogan "Who Cares Wins". During the UN General Assembly in 2008, the term Green Economy was officially adopted as a guideline to protect the environment necessary for sustainability.

Greenhouse Gases — The phenomenon occurs when various gases like carbon dioxide, methane, nitrous oxide, etc., produced through industrial smoke, traffic pollution, crop burning, and fossil fuel usage remain suspended in the atmosphere and trap the sun's heat, warming the earth and increasing the concentration of these gases, thereby disturbing the natural system. It is like a building with a glass roof and walls to grow plants under a controlled warmer environment, where heat is trapped in very cold weather. On the other hand, complete absence of greenhouse gases would reduce the earth's temperature, freezing seas, lakes, and air vapors, again harming the environment. Therefore, a certain amount of natural greenhouse gases is necessary, as their presence through natural occurrence is crucial for life on the planet. It is the excessive accretion of greenhouse gases that harms the earth.

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Pakistan's Sufferings – A country which contributes less than one percent to global greenhouse emissions is carrying the brunt of it and confronting significant domestic environmental challenges through fossil fuel usage, industrial waste, deforestation, and water mismanagement. Pakistan is the 5th most climate-affected country. It faced huge floods during 2022, which killed 1,700 people, resulted in the loss of 6,500 livestock, and displaced 2 million people, with an overall economic loss of over USD 30 billion. Again, during 2025, heavy monsoon floods took 1,000 lives and rendered over a million people homeless. On the other hand, some big cities of the country face serious issues of dense smog every winter, which is worsening with every passing year, leading to hazards and restricting people's mobility. Traffic pollution, industrial smoke, and crop burning are also making air pollution worse. With such a level of impurity, Karachi and Lahore remain among the top most polluted cities at the international level.

Deforestation – Deforestation is yet another critical issue causing floods and soil erosion, bringing forest coverage to less than 4%, an alarming level. Water scarcity due to poor conservation, combined with industrial effluents and untreated sewage, along with poor solid waste management, has deteriorated the atmosphere. With every passing year, the country faces water scarcity, when water availability per year is 940 cubic meters per head (2024) and may reach an absolute water scarcity level of 500 cubic meters per head by the end of 2025 if present water conservation modes persist.

Climate Finance – Pakistan initiated a National Strategy and Approach during November 2024 to deploy resources for climate improvement.

The main idea is to provide funding for climate-friendly projects like renewable energy, reforesting, drip irrigation, waste management, and climate-damaged recovery by encouraging private investment and raising funds through taxes, issuance of green bonds and loans, along with international partnerships like the Green Climate Fund, IMF, and World Bank. To brave climate change, Pakistan needs between USD 200 billion and USD 350 billion by 2030, but could invest about USD 4 billion during 2021. The annual requirement is from USD 40 billion to USD 50 billion for the purpose.

Finances for Greening Pakistan Economy

Pakistan is enhancing its financial systems to support the Green Pakistan initiative. In November 2023, the Climate Finance Wing was established within the Ministry of Climate Change and Environmental Coordination to manage climate finance through both international and local financial institutions, ensuring effective implementation of Green Pakistan Projects. In line with Pakistan's Nationally Determined Contributions under the Paris Agreement, the Ministry of Finance is targeting a 50% reduction in air pollution by 2030 through the issuance of bonds and sukuks.

SDG Investments - The Ministry of Finance, in collaboration with UNDP and recognizing the UN's 17 Sustainable Development Goals, has planned climate-related investments through several initiatives:

- **Green Banking –** The State Bank of Pakistan has issued guidelines promoting green banking, encouraging credit facilities for projects that reduce environmental hazards.
- **Climate Finance Framework –** The government is developing financing schemes to ensure that climate funds are primarily directed toward priority sectors, including power, agriculture, and manufacturing.
- **Green Sukuk –** Pakistan issued its first green sukuk, worth Rs. 30 billion, to fund clean energy projects.
- **International Collaborations –** Pakistan has partnered with Canada for technology exchange in agriculture and with the Global Green Growth Institute for carbon credit schemes.

Renewable Energy

Pakistan is endowed with diverse renewable energy resources, including wind, solar, hydro, and tidal power. The country enjoys abundant sunshine throughout the year and significant wind potential, particularly at Jhimpir, Sindh, estimated at 50,000 MW—exceeding the country's current total energy demand. With over 7,000 glaciers, Pakistan has the largest number of glaciers outside the polar regions, providing an important source of energy and water supply. Additionally, its coastline stretches over 1,100 KM, offering regular tidal energy potential.

The country's installed electricity generation capacity currently stands at 46,000 MW, with nearly 50% produced from renewable sources and the remainder from fossil fuels. Solar generation has grown rapidly over the last three years, rising from just 4% of total generation in 2021 to 25% in 2025, and is expected to reach 50% by the end of 2026 due to strong demand. This fast transition to affordable renewable energy will not only have far-reaching positive environmental impacts but also alleviate economic pressures, particularly high energy costs affecting trade and industry.

Energy Efficiency and Conservation

Energy efficiency and conservation are increasingly important for Pakistan's sustainable development. There are two ways to achieve energy sufficiency: producing more energy through cost-effective means, and using existing energy more efficiently. To support this, the National Energy Efficiency and Conservation Authority was established in 2016 with the mission to save energy. The Authority works closely with all stakeholders, especially the Ministry of Science and Technology and appliance manufacturers, to ensure the availability of high-quality, energy-efficient products. It also promotes public awareness of energy-saving practices, such as using LED lighting, smart thermostats, highly efficient appliances, turning off fans and lights, air-drying clothes, and using cold water.

ESG Adoption and Corporate Governance

Violation of legal and ethical responsibilities of the corporate sector, over time, has reached a level where many nations have had to initiate guidelines, regulations, and compliance measures, with non-conformity inviting punitive actions. ESG adoption is vital, as companies that manage risks related to climate change enjoy better consumer and investor attraction and avoid regulatory actions. The Securities and Exchange Commission of Pakistan has issued regulations and guidelines in this regard, where companies are required to adhere to such instructions, and their Boards must include diverse independent directors, ensure transparency, and provide proper disclosure about their performance and ESG initiatives. In this way, companies not only fulfill their responsibilities to consumers, stakeholders, and society as a whole, but also bring efficiency and sustainability to themselves.

Decarbonizing Industry – It is vital to minimize greenhouse gas emissions, which are the primary cause of air pollution and climate change. This would be a game-changer on many fronts, such as:

Controlling climate change

Reducing the cost of production by shifting to cheap and clean renewable energies, bringing economic growth by being competitive in international markets, improving the environment and public health, and ultimately achieving sustainable growth are all interconnected objectives that demonstrate the multifaceted benefits of transitioning to a green and sustainable economy.

Most small and medium - sized industries are still running on old technologies, causing air and water pollution. There is a dire need to introduce modernization and replacement programs to reduce pollution, improve efficiency, and enhance cost-effectiveness. Such a shift requires huge finances and government policies for easy and affordable funding, along with duty-free import of modern machinery. Industry must also take advantage of the government's policy shift in the light of Green Pakistan.

Writ of the Government – Policies, guidelines, regulations, and schemes are made, but execution is often neglected due to lack of follow-up, commitment, and determination. This is where the writ of the government must be enforced. However, callousness and procrastination have crept into the system, delaying or missing implementation. Thus, no claimed improvements are visible, and it is imperative to have a timeline for the execution of any policy or program. Floods and smog are glaring examples, where government restrictions are ignored, resulting in repeated damages to lives and property. Inordinate delays in implementing schemes, especially on climate change, must be treated as a criminal offense, as they negatively affect human lives and cause damage to property, besides huge cost overruns.

Mitigation and Recovery from Disaster – Causes and effects of climate change arise from human interference with nature, mainly through violations of state regulations. Defiance of laws is often overlooked due to corrupt practices, leading to grave situations. Recently, the IMF issued a report indicating corruption equivalent to 6% of GDP (Rs. 5.3 trillion) during the last two years, and yet it represents only a fraction of total corruption. Under this serious situation of poor governance, confronting climate change remains an uphill task until the government demonstrates will, sincerity, and commitment through strong leadership. Climate resilience is possible only by prohibiting unlawful activities such as deforestation, toxic emissions, untreated effluents into rivers and seas, uncontrolled dumping of solid waste, and unplanned urbanization. This requires proper implementation of law without undermining state authority or yielding to undue pressures from corrupt elements.

Climate change knows no boundaries. It spreads and affects all. Pakistan contributes less than one percent yet suffers greatly. Making plans, policies, and schemes is only part of the solution; the crucial part is ensuring accountability of those responsible for implementation. A lenient attitude toward culprits would defeat any program.

Government Responsibility – Surprisingly, why do we rely on F-16s to kill a cockroach when it could be killed with a slipper? Similarly, climate change could be curtailed by demonstrating responsibility, diligence, and commitment from officials. At the federal level, the Ministry of Climate Change, and at the provincial level, the Department of Forests and Environmental Protection Agency, are accountable for environmental upkeep.

However, the present state of affairs on the climate change front is alarming. If the leadership puts in serious effort, improvements could occur without heavy reliance on foreign aid or loans. Unfortunately, rampant corruption has led officials, who are supposed to prevent calamities, to be complicit with perpetrators, worsening adversities. Ground realities repeatedly prove this, with heavy floods since 2022 causing economic losses of around USD 38 billion, over 3,000 human lives lost, millions displaced, and huge infrastructure damaged. Could we just dismiss this as major natural catastrophes? The main reason for poor system performance is unbridled corruption and gross nepotism. Proper appointments and promotions must be followed by letting officials implement existing laws without political or other pressures to achieve positive results.

Pakistan Green Taxonomy – It is the process of organizing and prioritizing economic activities for the earliest achievement of Green Pakistan, developed with the support of the World Bank. Its purpose is to combat climate change through encouraging environmentally friendly projects in power, agriculture, water, and waste management.

Conclusion

Earth has enough for our needs but not for our greed. Industrial Revolution brought a chain of comforts through economic growth but also widened the gap between rich and poor. Mass production of goods provided some relief in affordability, yet most innovations remained out of the reach of the poor. Technological advancement was never free of environmental damage. Greenhouse gases warmed the planet, polluted air, and melted glaciers. Causes of climate change are manmade, arising from interference with nature. Although sufficient rules and regulations exist to protect against carbon emissions, deforestation, untreated sewage, and uncontrolled solid waste, poor governance has failed to enforce control. Humans created the problem, and humans must solve it to save humanity and leave a better world for posterity.

The problem requires two simultaneous actions by the government. One, recover damages already done through plans and schemes, ensuring funds are used with austerity and responsibility. Two, plug loopholes for floods, smog, soil erosion, water pollution, etc., through strict compliance with existing rules and regulations, otherwise Green Pakistan may remain a dream.

Under the present climate situation, responsible officials act independently and arrogantly. To curb this attitude, the government must implement environmental regulations firmly but tactfully, otherwise all measures will be futile.

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