***Environmental Protection Agency***

Pakistan NDC implementation framework template Document

# Background

Pakistan is a lower middle-income country with GDP at USD 284 billion. Pakistan’s contribution to global greenhouse gas emissions is meager however the impacts of climate change faced in the country are abundant. Pakistan has been ranked 8th most vulnerable country to the impacts of climate change[[1]](#footnote-1) and adaptation is biggest domestic climate change challenge faced by Pakistan today. ND-Gain Index[[2]](#footnote-2) has placed Pakistan as the 27th least ready’ country in the world to address the impacts of climate change. The increased temperatures, varied precipitation and monsoon patterns, and increased emissions have resulted in increased frequency of extreme weather events (floods, tropical cyclones, droughts, landslides, Glacial Lake Outburst Floods (GLOFs)); consequently, impacting livelihood and food security. In addition, Pakistan’s air quality has been significantly worsening accounting for PKR 62-65 Billion losses annually. Government of Pakistan (GoP) has lately taken multiple actions to respond to air pollution and climate change in an integrated manner and plans to continue the efforts through focused interventions.

## Paris Agreement and Pakistan’s Contribution

Pakistan ratified the Paris Agreement in 2016 and as an obligation under Article 4 of the Paris Agreement’s Nationally Determined Contribution (NDC) update process, the Ministry of Climate Change, Government of Pakistan (MoCC) submitted Pakistan’s updated NDCs in 2021. Aimed at achieving reduced poverty and ensuring stable economy, the updated NDCs commit to abate overall 50% of Pakistan’s projected GHG emissions by 2030. The enhanced commitment will be contributed by the shift to 60% renewable energy for electricity generation, and 30% to electric vehicles by 2030 and complete ban on the use of imported coal. The success of restoring the forest cover and conservation efforts was corroborated when the latest GHG inventory of 2018 reported an 8.7% decline in projected GHG emissions for the year 2018 (sequestration of 8.4 Mt CO2e). Encouraged by these analytics, Pakistan commits to enhance its reliance on Nature-based Solutions (NbS) underpinned by the fact that Ten Billion Tree Tsunami program (TBTTP) will alone sequester 148.76 MtCO2e if fully implemented.

To achieve these set commitments, it is estimated that transition to renewable energy will cost Pakistan US$ 101 billion by 2030 plus additional US$ 65 billion by 2040 given costs involved in completing in-progress renewable energy projects, building additional hydropower (US$50 Billion by 2030 and US$80 Billion by 2040) and transmission lines (US$ 20 billion), and phasing out coal (US$ 18 billon to buy out Pakistan’s coal power plants and US$ 13 billion to replace the energy production capacity of coal power plants with solar). Pakistan’s adaptation cost ranges of between US$ 7–14 billion per annum to 2050. Financing these initiatives is considered a challenge in NDCs and Pakistan in the NDCs commits to employing the instruments on enhanced ambition provided in Article 6 of the Paris Agreement, public-private partnerships and international climate finance opportunities including Green Climate Fund (GCF), Global Environment Fund (GEF) etc.

# NDC Implementation

## Strategic objectives

It illustrates a pathway for implementing outlined activities and articulates aspects of the enabling environment that may need strengthening to reach the targets set out in the updated NDC. To achieve this goal, following **objectives** are pursued:

* Strengthening enabling environment (e.g., policies, regulations, institutional arrangements) to overcome articulated challenges and barriers to implementing activities committed
* Identify possible sources of funding and Monitoring Reporting and Verification (MRV) for the implementation of the NDC in all economic sectors, with a view to develop a financial investment plan
* Increasing awareness among stakeholders[[3]](#footnote-3) about what is required to achieve the NDC targets by seeking technical expertise, increasing buy-in for action in new areas and building knowledge capital in key institutions

### Provincial Chapters

The 18th amendment to Pakistan’s constitution in 2010 has led to delegating more power to provinces. MoCC being the national entity, is responsible for formulating the national policies and provinces are responsible to adopt these policies into their planning and operations in different economic sectors. Since climate change is a cross sectoral subject and in some cases, provincial and local capacities are limited on climate change concepts, MoCC understands the need for provinces to adopt NDCs in to a form of a roadmap with monitoring and evaluation mechanism. This activity is a subsequent action to “Priority actions, Implementation schedule and Costs” which will essentially provide a good evidence on what actions to prioritize in what sectors based on the costs and logistics and when to implement. The **provincial roadmap formulation** will follow following proposed steps:

* *Taking stock of the NDC sectors at sub-national level which will essentially cover the understanding of what targets are being committed in NDCs and how provincial level policy instruments and actions will be implemented. This will also require identification of gaps for regular stock-taking to report back to UNFCCC.*
* *Assessing the human and information capacities required for NDC implementation for prioritized actions in priority sectors which will help devise a plan to build capacity in both short and long terms.*
* *Assessing the policy instruments and institutional readiness for implementing the NDC which will cover analysis of different mitigation and adaptation policy instruments and deciding most suitable approach to attain desired NDC outcomes. This will also require an overhaul of existing practices in terms of policies as well as roles and responsibilities among different economic sectors based on addressing bottle-necks to NDC implementation.*
* *Assessing the regulatory framework to review regulatory frameworks to ensure that these can help drive NDC implementation and bring about the agreed policy objectives*
* *Mapping the financial support which will then inform national climate finance framework*
* *Monitoring progress and reporting back to MoCC on decided set of indicators consistent and captured within the national inventory, BTR reporting, and feed into the Paris Agreement’s global stocktake*

The proposed steps will require extensive stakeholder consultations to ensure larger political buy-in and ownership among various actors involved in successful implementation of the roadmap. Through literature and data collected during NDC update process, following impacts are recognized in provinces:

**Gilgit Baltistan and Azad Jammu and Kashmir**: Just like KPK, GB and AJK are responsible for the supply of electricity for the entire country from its hydro-power stations. The regions are responsible for the operation and maintenance of these infrastructures and require additional resources to convert these to climate resilient infrastructure. In addition, region is also prone to GLOFs, flash floods, avalanches, heatwaves etc.

Provinces will undergo the stages highlighted under **provincial roadmap formulation** to prioritize areas of intervention for short, medium and long-term. Based on these prioritization, MoCC will be coordinating with provinces and will regularly monitor and evaluate their progress. The quarterly progress reports submitted by provinces will also be a way for provinces to communicate their needs like finances, technical assistance etc. to MoCC to make necessary arrangements. These financial needs will then inform financial framework covered in next section.

Based on the national and sub-national situation analysis, following actions with responsibilities and targets were committed in updated NDCs:

**Table-1: Overarching Mitigation Objectives & Supporting Initiatives**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Objective | Supporting Actions | Lead Organization | Potential Indicators | Goals | Priority by Provinces(H,M,L) |
| Promote 3Rs and improve waste management practices  | Enacting by-laws on land use (landfills, sewage treatment plants and power plants, waste-to-energy schemes and recycling) | Provincial department | Number of laws enacted |  |  |
| Infrastructural development for waste collection, transfer stations and treatment facilities | Same as above/ Provincial Departments | Number of operational waste treatment facilities |  |  |
| Promoting a culture of recycling and reuse | Same as above and Environmental Protection Agency (EPA)/ Provincial Departments | Reduction in waste generation |  |  |
| Installation of hospital and other on-site waste incineration devices  | Provincial department | Number of onsite waste management facilities |  |  |
|  | Material Flow Analysis to generate the evidence on plastic waste management | MoCC / Provincial department | Number of studies conducted |  |  |

## **Template to be completed by Department**

**Table 1: Mitigation Actions**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Objective | Potential Indicators | Priority actions by Provinces(H,M,L) | Immediate Action/ Long term Action  | Activity Cost | Timeframe | Stakeholders/Implementing Organization |
| Promote 3Rs and improve waste management practices  | Number of laws enacted |  |  |  |  |  |
| Number of operational waste treatment facilities |  |  |  |  |  |
| Reduction in waste generation |  |  |  |  |  |
| Number of onsite waste management facilities |  |  |  |  |  |
| Number of studies conducted |  |  |  |  |  |

**Table 2: Adaptation Actions**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Objective | Potential Indicators | Priority actions by Provinces(H,M,L) | Immediate Action/ Long term Action | Activity Cost | Timeframe | Stakeholders |
| Improve waste management and recycling practices | Number of awareness sessions |  |  |  |  |  |
| Number of women represented in decision-making forums |  |  |  |  |  |
| Number of women accessing credit |  |  |  |  |  |
| Number of pilots |  |  |  |  |  |
| Institutionalize gender-sensitive benefit-sharing mechanism | Gendered MRV mechanism to gather data developed  |  |  |  |  |  |
| Number of case studies |  |  |  |  |  |
| Number of funding proposals submitted |  |  |  |  |  |
| Number of research and policy papers |  |  |  |  |  |
| SEIA integrated as part of EIA |  |  |  |  |  |

**Table 3: SDG Objectives:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SDG-13 Targets | Objective | Potential indicators | Priority actions by Provinces(H,M,L) | Immediate Action/ Long term Action | Activity Cost | Timeframe | Stakeholders |
| 13.1 | Strengthen resilience and adaptive capacity to climate-related disasters | Number of capacity building initiatives undertaken for improving disaster risk mitigation and responseNumber of district level multi-hazard assessments in various provinces  |  |  |  |  |  |
| 13.2 | Integrate climate change measures into policies and planning | Integration of climate considerations in PC-I form |  |  |  |  |  |
| 13.3 | Build knowledge and capacity to meet climate change | Number of climate-related studies and risk assessments undertaken  |  |  |  |  |  |
| 13 A | Implement the UNFCC | Development of an action plan for implementation of NDC. |  |  |  |  |  |
| 13 B | Promote mechanisms to raise capacity for planning and management | Number of climate-related capacity development initiatives rolled out |  |  |  |  |  |

# Ministry of Climate Change- Climate Change Implementation Framework

Goal: Streamline the implementation of National Climate Change Policy and Nationally Determined Contribution (Pak-NDC) to ensure that climate change is mainstreamed in the economically and socially vulnerable sectors of the economy and to steer Pakistan towards climate compatible development.

**Objectives:**

The main objectives include:

1. To pursue sustained economic growth by appropriately addressing the challenges of climate change;

2. To integrate climate change policy with other inter-related national policies;

3. To focus on pro-poor gender sensitive adaptation while also promoting mitigation to the extent possible in a cost-effective manner;

4. To build climate-resilient infrastructure;

5. To track impact of climate change on water, food and energy security of the country, and to implement remedial plans to support water, energy and food policies;

6. To minimize the risks arising from the potential increase in frequency and intensity of extreme weather events such as floods, droughts and tropical storms;

7. To develop climate-resilient agriculture and food systems for all agro-ecological zones in the country;

8. To promote country’s transition to cleaner, lower emission and less carbon intensive development;

9. To accelerate the policy coherence and integration to achieve the United Nations’ Sustainable Development Goals (SDGs) in the light of its Sustainable Development Report 2020 (SDR2020) and our Nationally Determined Contributions;

10. To strengthen inter-ministerial and inter-provincial decision making and coordination mechanisms on climate change;

11. To facilitate effective use of the opportunities, particularly financial, available both nationally and internationally;

12. To foster the development of appropriate economic incentives to encourage public and private sector investment in adaptation and mitigation measures;

13. To enhance the awareness, skill and institutional capacity of relevant stakeholders;

14. To promote tree plantation, conservation of natural resources, nature-based solutions and long- term sustainability

15. Improve NDC planning, policy, strategy, and legislation

16. Strengthen an enabling environment for NDC implementation

17. Accelerate the policy coherence and integration to achieve the United Nations’ Sustainable Development Goals (SDGs) in the light of its Sustainable Development Report 2020 (SDR2020)

18. Enhance NDC measurement, reporting and verification, and transparency of climate action.

# Implementation targets and priority objectives

The implementation framework presents the targets and objectives of NCCP and NDC divided under three broad categories of adaptation, mitigation and cross-cutting issues. The framework is informed by the NCCP and NDCs where the localized actions to achieve these objectives and reporting mechanisms will be decided by provinces.

**Sectors:**

1. **Adaptation**
* **Water Resources**
* **Agriculture and Livestock**
* **Human Health**
* **Forestry**
* **Biodiversity**
* **Other Vulnerable Ecosystems**
* **Disaster Preparedness**
1. **Socio Economic Measures**
* **Gender**
* **Youth**
1. **Mitigation**
* **Energy Generation**
* **Energy Efficiency and Energy Conservation**
* **Transport**
* **Urban Planning and waste management**
* **Industries**
* **Agriculture and livestock**
* **Caron Sequestration and forestry**

## **Template to be completed by Department**

|  |
| --- |
| **Legend** |
| Pak-NDC 2021 Stop |
| NCCP 2021Stop |
| Immediate In 2 years |
| Medium-term In 5 years |
| Long-term In 10 years |

| **Sectors** | **Objectives****(NCCP and NDCs 2021)** | **Stakeholders** | **Activities*****(Options for the provinces to select from or they can add more relevant activities )*** | **Indicators** | **Timeline** | **Tentative Cost** |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Immediate** | **Medium-term** | **Long-term** | **Implementation** | **Performance tracking**  | **Reporting** |  |  |  |  |
| **Mitigation** |  |  |  | **IMMEDIATE, MEDIUM-TERM AND LONG-TERM** |  |  |  |
| **Urban Planning & Waste Management** | Mainstream Sustainable Consumption and Production National Action Plan (SCP-NAP) implementation at provincial level Stop | Promote the use of digitalization as a tool for climate change adaptation and sustainable development Stop |  |  |  |  | **Immediate**:* Clean Green Model City (model waste management facility and design of sanitary landfill site)

**Medium-term**:* Promoting proper “Land Use Planning” and vertical instead of horizontal expansion of urban housing projects.
* Undertaking hazard mapping and zoning of areas before construction.
 |  |  |  |
| Integrated waste management, treatment, and disposal systems Stop Stop | Wastewater treatment plants Stop |  |  |  |  | **Immediate**:* Design central sewerage schemes for all large metropolitan areas.
* Deep Tunnel Sewerage Systems
* Set in place waste management (collection, transportation, storage and utilization) system in big cities of the country
* Landfill Management plan for existing landfill sites including waste management techniques and ensure methane recovery

**Medium-term**:* Link sewerage schemes with wastewater treatment plans.
* Designate rivers, lakes and estuaries where this treated water will be deposited.
* Ensure systematic installation so that all wastewater is treated.
* Install water quality measurement equipment near all water reserves to ensure water safety.
* Development of strategies for integrated management of municipal, industrial, hazardous and hospital wastes.
* Appropriate solid and liquid waste treatment facilities should be made an integral part of all development projects.
* Plasma Arc technology be trialed and tested with the support of research institutions for electricity generation from waste
 |  |  |  |
| Plastic waste management tools Stop | Incentivize private sector for designing zero emission buildings Stop |  |  |  |  | **Immediate:*** Plastic management Strategy (Short-and Long-term).
* Review and develop the potential public-private partnerships for pilot business models for reduction of plastics or promoting reuse and recycling.
* Assess the capacity of local SME to conduct the pilot projects of the circular economy.
* Assess the local capacity of local SME for projects on recycling or upcycling of plastic waste.
* Plan to formalize the informal sector involved in waste segregation.
* Development of indicators and monitoring plans for reporting on waste/plastic management strategies

**Medium-term**:* Identify and introduce energy efficient building materials, designs and technologies.
* Develop and obtain technological know-how and its transfer for installing the Near-Zero Emission Technology (NZET).
* Convert tall buildings to solar radiation receptors, where possible, by installing solar panels and making them energy self-sufficient.
 |  |  |  |
| Enacting by-laws on land use and update town planning design principles for lower carbon footprints Stop Stop | Material Flow Analysis to generatethe evidence on plastic wastemanagement Stop |  |  |  |  | **Immediate**:* Undertake studies to determine the future expansion needs of the existing towns.
* Estimate the fuel and energy needs of these expanding cities.
* Undertake emission profile of major urban centers.
* Provide alternative and low-emission fuels for heating and energy in these new settlements and suburbs.
* Upgrade existing public sector buildings to reduce energy demand and encourage private house owners to follow.
* Enhance capacity of urban planning professionals and facilitate researching in low cost energy efficient construction.
* Urban Policy/ Urban Development Policy Guidelines.
* Landfill taxes to encourage recycling.
 |  |  |  |
| Urban forestation Stop | Adoption of “Green Building Code” Stop |  |  |  |  | **Immediate**:* Miyawaki Forest
* Roadside and Canal side plantation

**Medium-term**:* Green building code’s implementation to ensure Livable communities, Energy efficiency, Indoor air quality, Resource conservation and Water conservation
 |  |  |  |

1. GermanWatch Climate Risk Index 2021 Available at: https://germanwatch.org/en/19777 [↑](#footnote-ref-1)
2. ND-Gain Index Available at: https://gain-new.crc.nd.edu/country/pakistan [↑](#footnote-ref-2)
3. Public, private, donors/investors, academia, development banks, etc. [↑](#footnote-ref-3)