

KARANDAAZ GREEN CHALLENGE FUND (GCF) 2022

**Terms of Reference
&
Proposal Submission Guidelines**

21st October 2022

Table of Contents

Section 1: Terms of Reference for Green Challenge Fund (GCF)	3
I Company Overview	3
II Introduction	3
II Technical Assistant & Funding Support	4
III Intervention Rationale	5
IV Market Landscape & Opportunity	9
V Process & Project Timeline	12
VI Eligibility Criteria for EOI/ RFP	13
VII Important Dates	14
Section 2: Guidelines for Applicants on Expression of Interest (EOI) and Request for Proposal (RFP)	15
I Introduction	15
II Proposal Template	15
III Proposal Submission Requirements	18
IV Final Presentation	19
Annexure 1	Error! Bookmark not defined.
EOI Form	Error! Bookmark not defined.

Section 1: Terms of Reference for Green Challenge Fund (GCF)

I Company Overview

KARANDAAZ PAKISTAN (KRN), a not-for-profit company established in August 2014 under Section 42 of Companies Ordinance, 1984 (now Companies Act, 2017), promotes access to finance for small businesses through a commercially directed investment platform, and financial inclusion for individuals by employing technology-enabled digital solutions. The company has financial and institutional support from leading international development finance institutions; principally the United Kingdom Foreign Commonwealth and Development Office (FCDO) and the Bill & Melinda Gates Foundation (BMGF).

KRN has four core work streams – Corporate Investment & Credit (CIC) Digital Financial Services (DFS), Innovation, Knowledge Management & Communications (KMC). The **Green Challenge Fund (GCF)** falls under **Karandaaz Innovation (KI)** function. Karandaaz Innovation provides risk capital and concessional financing to partners with an aim to generate innovative yet practicable solutions for solving complex problems in areas of financial inclusion and entrepreneurship. The Challenge Fund is particularly focused on addressing stubborn barriers faced in commercializing technical solutions to mitigate or adapt to climate change risks.

II Introduction

Karandaaz Pakistan is inviting green-techs, cooperatives, corporations, not for profits, financial institutions, medical institutions, academic institutions, and/or any formally registered business enterprise working on green technologies to participate in this year's Green Challenge Fund (GCF) round. Since the commercial viability and long-term sustainability of the solution is key, applicants are encouraged to partner with other entities and apply to the GCF as a consortium. **The GCF-II will fund innovative, commercially viable, and sustainable solutions that support the following focal themes:**

1. **Efficient Water Management:** Support technologies and solutions for efficient management of water in residential, industrial, and agricultural use.
2. **Plastic Waste Management:** Support technologies that enable efficient plastic waste management solutions, improvements in Greenhouse Gas (GHG) emissions, reduce pollution (air or water), reduce the demand for plastics, and facilitate recycling of plastic materials and products.
3. **Medical Waste Management:** Support technologies and solutions to mitigate and manage both hazardous and non-hazardous medical waste in clinics, laboratories, medical universities, hospitals, and other medical institutions.
4. **Improving Air Quality:** Support technologies and solutions to curb and reduce air pollution and improve air quality at the household, industrial, and/or national levels.

The project must have a clear technology angle that will drive improvement in the identified thematic areas. **Solutions selected under the Green Challenge Fund (GCF) must also contribute to the following indicators of FCDO's International Climate Finance¹:**

#1: Number of people supported to cope with the effects of climate change,

#4: Number of people with improved (climate) resilience,

#6: Greenhouse gas emissions reduced or avoided (tCO₂),

#12: Private climate finance mobilized (PKR),

#15: Extent to which GCF intervention is likely to have a transformational impact (scorecard).

Karandaaz will be providing Technical Assistance through concessional finance (debt and/or risk cover or a combination of the two), and/or grant in select cases.

II Technical Assistant & Funding Support

The anticipated timeline for the project starting from the selection of the applicant will be a maximum of **3 years**. Overall funding available through Karandaaz will be purposed into financing categories listed below. Terms and modalities will depend on the proposed solution. Co-investment by the applicant is encouraged (financial co-investment will be preferred, in-kind contribution will also be considered).

i) Funds required for model development or improvement: This includes the cost of a consultant, technical experts, data acquisition, etc. related to developing the solution.

ii) Funds required for operationalizing the project: This includes costs related to project management staff, procurement of any hardware, travel costs, data collection and project monitoring expenses, etc. incurred during the implementation of the project.

iii) Returnable Risk Capital or Concessional Debt to test or scale the model: Based on the proposed methodology, Karandaaz may provide a guarantee to de-risk and commercialize the technical solution. Another option is financing the solution through a concessional debt. The concessional debt will be administered through Parwaaz Financial Services Limited (PFSL), a fully owned subsidiary of Karandaaz Pakistan.

iv) Grant support: Grants may be provided to a solution that creates a public good with clear mechanisms for its sustainability. These entities (universities, not for profit organizations, etc.) do not have the mandate to take on debt but have a solution that can make a significant difference in the selected thematic area (listed above).

¹ Please see: <https://www.gov.uk/guidance/international-climate-finance>

III Intervention Rationale

Climate change and environmental degradation constitute two of the biggest challenges of our time.

Since 1906, the global average surface temperature has increased by more than 1.6 degrees Fahrenheit (0.9 degrees Celsius) - even more in sensitive polar regions². In Pakistan, climate change is adversely affecting the economy, livelihood of the poor, and sustainable development. The growing population, unplanned urban expansion, and dependence on natural resources have put immense pressure on the environment and have triggered the harsh effects of climate change. Moreover, the lack of public awareness of environmental issues and mismanagement across all levels has aggravated the situation further.

A total of 38 billion metric tons of carbon dioxide was emitted globally in 2020, resulting in an average increase of 0.67°C in the global temperature. From this, Pakistan contributed 234.7 million metric tons of carbon dioxide emissions. Certain cities in Pakistan have recorded temperatures of more than 50 degree Celsius, which has claimed lives of more than 2,000 people since 2015. (*World Bank Climate Watch, 2021*)

Consequently, Pakistan continues to suffer from a plethora of natural hazards that threaten the lives and livelihoods of its citizens. The natural hazards include floods caused by irregular monsoon rains, earthquakes, landslides, cyclones, and droughts. Resources are now being mobilized to combat climate change at both the local and regional levels. Additionally, Pakistan has ratified several international treaties to combat the devastating effects of climate change, including the Kyoto Protocol (2005), Paris Agreement (2016), and most recently the Glasgow Climate Pact stemming from COP26 2021, where Pakistan agreed to become a carbon neutral economy by 2050.

Traditional economic development processes are exerting significant pressure on the environment and undermining future development. The Global Climate Risk Index of 2021³ ranks Pakistan as the 8th country most vulnerable to climate change.

Table 1: Global Climate Risk Index 2021

CRI 2009-2019 (1999-2018)	Country	CRI Score	Fatalities per 100,000 Inhabitants	Losses in Million US\$ PPP	Losses per unit GDP in %	Number of Events (2009- 2019)
1 (1)	Puerto Rico	7.17	4.12	4,149.98	3.66	24
2 (2)	Myanmar	10.00	14.35	1,512.11	0.80	57
3 (3)	Haiti	13.67	2.78	392.54	2.30	80
4 (4)	Philippines	18.17	0.93	3,179.12	0.54	317
5 (14)	Mozambique	25.83	0.52	303.03	1.33	57
6 (20)	The Bahamas	27.67	1.56	426.88	3.81	13
7 (7)	Bangladesh	28.33	0.38	1,860.04	0.41	185
8 (5)	Pakistan	29.00	0.30	3,771.91	0.52	173
9 (8)	Thailand	29.83	0.21	7,719.15	0.82	146
10 (9)	Nepal	31.33	0.82	233.06	0.39	191

² <https://www.nationalgeographic.com/environment/article/global-warming-effects>

³ https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_2.pdf

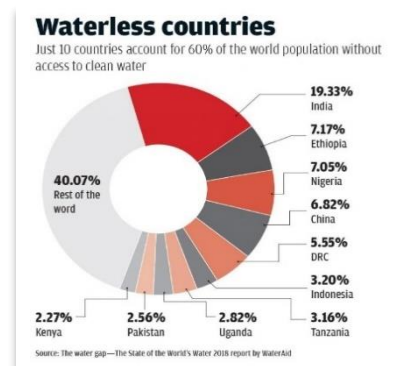
Moreover, Pakistan's economy has now been classified as being highly vulnerable to **climate change-related risks**, and the country's Gross Domestic Product (GDP), which is primarily driven by agriculture, to be under severe threat of increased heatwaves by 2050⁴.

Sovereign	Readiness assessment	Total GDP exposure (wildfire, flood, sea level rise or storms)	GDP exposure based on agricultural land at risk of water stress	Agricultural land exposed to water stress	Population exposure (heat waves)
Bangladesh	4	90%	0%	0%	21%
India	4	52%	10%	62%	40%
Pakistan	5	20%	17%	81%	48%
Sri Lanka	5	5%	5%	73%	100%

Note: Wildfire, flood, sea level rise, or storms--storms exposure taken as baseline only. Region classification based on World Bank data. Data sorted by greatest exposure to acute physical risks (column 3: high to low).

Pakistan is at the risk of running dry by 2025 as water availability has dropped to less than 1,000 cubic meters per capita. Climate change impacts have disrupted the availability of water for agricultural practices. Moreover, the decrease in glacier volumes and snow covers has led to alterations in the seasonal flow patterns of the Indus River System. Additionally, higher frequency and intensity of extreme climate events, as well as increased evapotranspiration rates, have created a higher demand for water and highlighted the need for efficient water management.

The country is in the midst of a humanitarian crisis caused by massive flooding, which has been recognized by the UN as a direct repercussion of climate change. Over one-third of the landmass is under water, 32 million people have been displaced⁵, one-seventh have lost their homes, and the mortality count has crossed a thousand⁶. Additionally, initial estimates suggest that the floods have resulted in PKR 3.7 trillion (\$17 billion) worth of damages to the crops, houses, livestock, and infrastructure⁷.



About 95% of Pakistan's water is used in agriculture, where prevalent practices disregard water conservation or its efficient use⁸. Almost 60% of water is lost during conveyance and application in the field as farmers flood the fields using outdated cultivation practices. This not only wastes water but also results in lower crop yields⁹.

Poor management of solid waste in domestic, industrial, and agricultural sectors is rampant across Pakistan. Solid waste generation in Pakistan ranges between 0.283 to 0.612 kg/capita/day and the waste

⁴ <https://www.spglobal.com/assets/documents/ratings/research/101529900.pdf>

⁵ <https://www.nature.com/articles/d41586-022-02879-2>

⁶ <https://www.aa.com.tr/en/asia-pacific/death-toll-from-pakistan-floods-rises-to-nearly-1-400/2680842>

⁷ Data sourced from NDMA, and respective PDMA's

⁸ <https://pcrwr.gov.pk/wp-content/uploads/2021/07/Water-Scarcity-in-Pakistan-Issues-and-Options-May-18.pdf>

⁹ <https://tribune.com.pk/letter/2253849/water-wastage>.

generation growth rate is almost 2.4% per year¹⁰. This waste, containing household effluent and human waste among others, is discharged either directly to the local sewerage system, a natural drain, a water body, or a nearby field. Municipal wastewater is not subjected to any treatment, even the large urban centers in Pakistan do not possess the necessary treatment facilities to process wastewater before disposal.

Similarly, untreated disposal of industrial waste continues to be a frequent practice for several industries in Pakistan. Pakistan is among 12 Asian countries, out of 15, where industrial pollution is recorded at severe and unacceptable levels. The highest contributors of pollutants include petrochemicals, paper and pulp, food processing, tanneries, refineries, textile, and sugar industries. However, currently, not even 1% of the total wastewater is treated prior to disposal. Industrial effluents are normally discharged into nearby ponds, low-lying areas, municipal waste drains, and major drainage courses such as streams, rivers, and ultimately to the Arabian Sea. It should be highlighted that the Indus River contributes to over 10,000 tons of plastic waste to the Arabian Sea annually¹¹. In total, the annual water-related economic cost of poor sanitation is estimated to be around PKR 16 billion (US\$262.68 million)¹².

Plastic production and waste management also make a significant contribution to GHG emissions. Plastic accounts for 18% of the total Municipal Solid Waste (MSW) produced in Pakistan, with 67% of the MSW being organic waste, 5% paper, and the remainder being glass¹³. This is the maximum percentage of mismanaged plastic in South Asia and is relatively high in comparison to countries with similar populations and income levels. Over 3.3 million tons of plastic are disposed in landfills, unmanaged dumps, or water bodies¹⁴. Since Pakistan lacks the infrastructure and technologies for large-scale management and disposal of plastics, the waste is usually incinerated, causing significant air pollution, and contributing to GHG emissions.

Open burning of solid waste releases substantial amounts of toxic health and climate-damaging pollutants including fine particles and black carbon, an important contributor to climate change. The practice of incinerating solid waste, without any segregation or concern for safety standards, has caused a steady increase in greenhouse gas and toxic fume emissions in Pakistan and has led to the spread of a myriad of diseases, ranging from asthma to cancer, lung illnesses, and heart diseases. All major cities face the enormous challenge of managing solid and sewage waste. Karachi, Pakistan's largest city, generates more than 16,500 tons of municipal waste daily, whereas Lahore and Rawalpindi generate 7,690 tons and 4,500 tons respectively¹⁵. Collectively, the mismanagement of solid and sewage waste is causing around 5 million deaths annually in Pakistan¹⁶.

¹⁰ [Solid waste generation in Pakistan ranges between 0.283 to 0.612 kg/capita/day and the waste generation growth rate is 2.4% per year](#)

¹¹ [Plastic Waste: A Journey Down the Indus River Basin in Pakistan](#)

¹² [The Economic Impacts of Inadequate Sanitation in Pakistan](#)

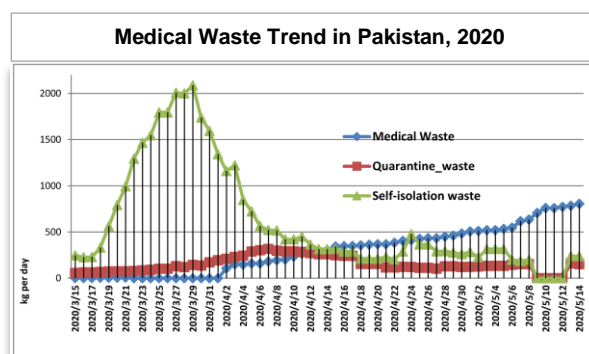
¹³ https://www.researchgate.net/publication/328118104_Plastic_Solid_Waste_Management_in_Pakistan_-_PAKPLAS_Magazine-2018

¹⁴ <https://www.undp.org/pakistan/blog/good-bad-and-ugly-plastics-pakistan>

¹⁵ <https://www.trade.gov/country-commercial-guides/pakistan-waste-management>

¹⁶ <https://tribune.com.pk/story/2361263/sustainable-solid-waste-management>

The Covid-19 pandemic has aggravated Pakistan's waste mismanagement challenge. The use of PPEs,



plastic mask sheets, masks, gloves, protective gear, nasal swabs, and syringes throughout the pandemic has not only increased the quantity of contagious medical waste but has also altered its average density. Additionally, the unsafe disposal of medical waste during and after the pandemic became a major cause for the spread of the coronavirus amongst waste-pickers and municipal staff in-charge of waste management.

Current practices to treat and dispose medical waste involve either incineration of the hazardous waste or dumping it into landfills. In 2016, Pakistan generated about 0.66kg of hospital waste per hospital bed daily. Out of this, about 10%–25% was classified as hazardous waste¹⁷. Owing to poor practices and enforcement of regulations, mismanagement occurs at all levels, from segregation of waste through the collection, all the way to its final disposal, resulting in medical waste being mixed with municipal waste.

COVID-19 increased the amount of hazardous healthcare waste in Pakistan by an average of 3.4 kg/bed/day¹⁸. Additionally, the World Bank reports that around 61.7 million facemasks were used in Pakistan daily in 2021, which contributed to 1,099 tons of medical waste per day. In total, Pakistan mismanaged 1.3 million tons of waste in 2021, most of which ended up in ponds, rivers, and other water bodies.

Pakistan is ranked 3rd worst in terms of air quality by the Air Quality Index of 2021¹⁹. The country experiences the worst air quality in the South Asian region, with 67% of the cities recording PM2.5 concentration levels ten times higher the WHO air quality guideline level of 2021. Air pollution is the 6th leading risk factor for mortality in Pakistan, accounting for around 127,000 deaths in 2017 alone²⁰. Additionally, Pakistan's annual burden of disease due to outdoor air pollution accounts for 22,000 premature adult deaths, while indoor pollution accounts for 40 million cases of acute respiratory infections and 28,000 deaths/year²¹.

Rank	Country/Region	2021	2020	2019	2018
1	Bangladesh	76.9	77.1	83.3	97.1
2	Chad	75.9			
3	Pakistan	66.8	59	65.8	74.3
4	Tajikistan	59.4	30.9		
5	India	58.1	51.9	58.1	72.5

¹⁷ <https://pubmed.ncbi.nlm.nih.gov/26628050/#:~:text=The%20weighted%20average%20total%2C%20general,day/%2D1%2C%20respectively.>

¹⁸ [Global Analysis of Healthcare Waste in the Context of Covid-19](#)

¹⁹ [Air Quality Index, 2022](#)

²⁰ https://www.stateofglobalair.org/sites/default/files/soga_2019_report.pdf

²¹ <https://www.emro.who.int/pak/programmes/environmental-health.html>

Premature Pollution-related Deaths Per Year¹²

1	INDIA	2,326,771
2	CHINA	1,865,566
3	NIGERIA	279,318
4	INDONESIA	232,974
5	PAKISTAN	223,836
6	BANGLADESH	207,922
7	UNITED STATES OF AMERICA	196,930
8	RUSSIAN FEDERATION	118,687
9	ETHIOPIA	110,787
10	BRAZIL	109,438

One in ten deaths in children under the age of five in Pakistan is caused by air pollution. Since 1998, the average annual particulate pollution has increased by 20 percent, cutting almost 0.9 years off the lives of the average Pakistani resident. Furthermore, Pakistan ranked 5th on the list of highest premature pollution related deaths globally, and 1st in the total pollution deaths in the South Asian region in 2020²². On average, air pollution is shortening life expectancy in Pakistan by 4-7 years.

Transportation is the biggest source of air pollution in Pakistan. In Punjab, the second largest province of Pakistan, 43% of particulate emissions are from transportation, while industrial sites, agricultural practices, and power generation constitute 25%, 20%, and 12% of all emissions respectively²³. Seasonal air quality issues also affect Pakistan. Crop burning and winter weather patterns result in temperature inversions that promote air stagnation and trap air pollutants close to the ground. Environmental health researchers at the University of Punjab have found a 40% decrease in lung capacity during Pakistan's smog events, primarily affecting individuals with tuberculosis, asthma, and cardiovascular disease. In addition, lower literacy segments were almost 80% more likely to experience multiple symptoms of adverse health effects, resulting in wage losses and diminished quality of life compared to those with higher literacy levels²⁴.

IV Market Landscape & Opportunity

The proposed solutions to the above-mentioned thematic areas will be driven by market gaps and the ability to develop a commercially viable product that can make a significant contribution to addressing climate change concerns. The discussion below delves into the shortcomings of existing interventions and briefly describes some of the projects supported by Karandaaz under the thematic areas to guide the applicants in preparing their proposals. It should, however, not be taken as a prescription and the applicant may explore solutions that will prove to be more impactful in achieving desired results.

A. Innovative Mechanisms for Efficient Water Management:

Current water-focused interventions primarily include mega public-sector projects that address the supply-side of water scarcity. However, some solutions for efficient water management and conservation have been driven by the private sector. While these have been developed and adapted by multiple agri-techs, green-techs, and farmers, the large-scale commercialization of these projects has been limited.

²² <https://gahp.net/pollution-and-health-metrics/>

²³ <https://www.theigc.org/wp-content/uploads/2021/06/Habib-March-2021-Final-report.pdf>

²⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6391993/>

There are multiple reasons for a lack of market innovation in addressing water mismanagement.

A key factor is that water is a public good and is not priced in Pakistan, resulting in its wastage and inefficient use. There has also been a dearth of funding opportunities which hinders the refinement and customization of innovative products as per the requirement of the farming community and concerned industries. The low uptake and adoption of such technologies is another deterrent

to the growth of alternative methods. Additionally, the solutions present in the market are too complex and the companies providing these technologies do not facilitate or educate the stakeholders on the operations of the product, discouraging its adoption further. Therefore, transitioning towards green practices requires a comprehensive approach, covering the solution, education, and creation of a demonstration effect.

Karandaaz selected two awardees under GCF-I (2021) whose proposals focused on **Efficient Water Management**. These solutions included: i) developing a smart irrigation system for the village of Amanpur in Punjab; and ii) treatment of wastewater effluents of a sugar factory through bioremediation.

B. Plastic Waste Management:

Existing methods of disposing plastics largely focus on incinerating the plastics. Green Tech initiatives have emerged that encourage the segregation of solid waste and recycling, while other small interventions also include the conversion of plastics into other products, such as park equipment (benches, swings, slides, etc.). However, the scale is small, and the technology is basic compared to global practices.

Plastic waste is a product that holds intrinsic value and has the potential to be upcycled.

The opportunity lies in creating a circular system of plastic waste management in Pakistan by engaging with the private sector and other non-traditional partners to develop and refine existing solutions that are commercially viable and scalable. Some examples of innovative solutions to reduce plastic waste include making bricks from plastics in South Africa and Spain,

developing a magnetic additive that creates better air and moisture insulation, and use of Styrofoam straws in Bavaria, etc. Quality waste management in this regard is key, where waste is sorted, graded, and plugged back into the system as a resource. However, access to finance and poor investor interest explains the lack of private sector engagement in plastic waste management technology.

Karandaaz awarded three projects under GCF-I (2021) theme on **Plastic Waste Management**. Solutions included: i) reducing single-use plastics through locally produced dispensing machines; ii) de-inking and demetallizing plastics to produce virgin-like polymer; and iii) converting plastic waste into lifestyle products.

C. Medical Waste Management

Waste Management Rules (2005) dictate how waste, including medical and biohazardous waste, should be disposed. However, these are seldom followed by any of the hospitals in Pakistan.

Additionally, international standards of medical waste management are also largely neglected. The Joint Commission International (JCI) identifies, measures, and shares the best practices for hospital safety, and provides accreditations to those hospitals that follow international standards of safety and waste management. Only four hospitals in Pakistan have received accreditation from the JCI (namely Shifa International Hospital, Agha Khan University Hospital, and Shaukat Khanum Memorial Cancer Hospital

in Lahore, and Peshawar).

The primary concern revolves around a lack of a well-established waste segregation system. Solutions posited for medical waste management are concentrated on collecting and segregating the waste at the source of disposal i.e., clinics, collection labs, and hospitals. However, some companies have utilized the Internet of Things (IoT) and Artificial Intelligence (AI) to make this process more efficient, for example using visual recognition and machine learning to identify types of waste and its quantities and tailoring a waste collection schedule. Other companies have developed waste container devices powered by AI to identify waste and segregate it automatically.

Any solution to medical waste mismanagement requires addressing the issue of segregation, efficient collection, treatment, and disposal of hazardous waste. It will also require partnerships with medical institutions to effectively utilize existing capacity and create a market for expansion. However, access to finance and a lack of incentive for medical institutions have hindered all progress.

D Improving Air Quality

Poor quality of air not only accounts for almost 17% of all deaths in Pakistan²⁵ but also costs the country up to 6.5% of its GDP annually²⁶. Due to unsustainable social and economic practices, not only is the entire population of Pakistan exposed to unhealthy air, but the country has seen an increase of 20% in the disease burden from particulate pollution in the last decade.

Globally, the solutions to combat deteriorating air quality have centered on large-scale initiatives such as carbon credits, ESG-compliant industrial practices, renewable energy, and green transportation system. Smaller businesses have also introduced products and solutions to either improve air quality or mitigate the harmful effects of air pollution, such as introducing Nasofilters in India (a nose-plug that filters out effluents in the air when you breathe), helmets with in-built air purifiers in them (Brazil), roof shingles having smog-reducing granules that offer more protection from UV rays and helps keep buildings cooler (US), and installing large panels covered with tiny plants that mop up carbon dioxide and release oxygen (UK), etc.

In the context of Pakistan, the solutions focus solely on monitoring air quality. Initiatives to combat poor air quality have been mostly concentrated on policy development. Pakistan Clean Air Plan (PCAP) assesses air pollution reduction at the national and local levels to monitor air quality, and Pakistan's Environmental Protection Agency's (EPA) policy limits particulate matter to an annual average PM2.5 concentration. However, despite the federal limit in place, annual average PM2.5 concentrations in Pakistan remain some of the highest in the world. Without enacting source-specific emission standards and emission load reduction targets, it remains unclear how effective any additional policy changes will be.

²⁵ <https://ourworldindata.org/grapher/share-deaths-air-pollution?tab=chart&country=PAK>

²⁶ <https://openknowledge.worldbank.org/handle/10986/32328>

Solutions offered by the private sector have been smaller in number and have mostly revolved around green transportation systems. Startups such as ezBike, Rasai Technologies, Mode Mobility, etc. have primarily used the medium of electric vehicles to reduce the overall carbon emissions in the environment. Other companies are focusing on providing cheaper and affordable products such as air filters, air purifiers, and humidifiers, or implementing low-cost air quality monitoring systems in cities. However, a dearth of funding options for the private sector limits further development and innovation of these products.

V Process & Project Timeline

The project selection and implementation process is explained below. Important timelines are also given.

Stage 1: Solicitation of Applications and Selection of Partners

Timeline: October - December 2022 (3 months)

Expressions of Interest [EOI]: Interested applicants will be required to submit a simple EOI on the format shared by Karandaaz to convey their intent to submit an RFP (See Annex 1). *Potential applicants are required to submit their EOIs by **17th October, 2022**.*

Request for Proposals: Applicants will be invited to submit and present their detailed technical and financial proposals, including a comprehensive business plan. A workshop on proposal development will be held on **21st October, 2022**. The applicant may submit proposals on a maximum of two themes. However, it is encouraged to focus on one theme only. *Potential applicants are required to submit their proposals by **17th November, 2022**.*

Please note that the submission of the RFP qualifies an applicant for document review by Karandaaz. It is by no means a commitment to funding. All costs (time and material) incurred in the submission of the proposal are the responsibility of the applicant alone.

Final Selection: The RFPs will be shortlisted based on the minimum eligibility criterion mentioned below. The shortlisted applicants will be required to present their proposals on **28th November – 2nd December, 2022** to the Advisory Committee for the Green Challenge Fund (GCF). Proposals will be evaluated purely on technical grounds. The Advisory Committee's recommendations will be presented to the Board of Karandaaz, which is the final decision-making forum.

Subsequently, the Innovation team will enter into a discussion with the finalist(s) on intervention costs. Since there are four themes under Green Challenge Fund (GCF) this year, at least four awardees are anticipated. However, this is contingent upon the quality of the proposed solutions. In case the quality of proposals is deemed unsatisfactory under a theme(s), no funding awards shall be made by Karandaaz.

Stage 2: Project Implementation

The anticipated project timeline for Stage 2 is about 2 years. However, this may be extended up to 3 years if the proposed project can justify a longer implementation period.

Market Analysis, Preparation, and Approval of Detailed Implementation Plan of the Intervention

Timeline: January to March 2023 (3 months)

At this stage, the Awardee(s) will conduct a deeper market analysis for the respective theme on which they are focusing. This stage will involve data collection, desk research of other countries/economies with similar mechanisms, structuring key partnerships and mapping commercialization dynamics for their particular theme, and leveraging data flow to ensure robust risk assessment. This will allow the Awardee(s) to make improvements and modifications to their existing solution, refine it further, and make it commercially viable. Resource mobilization for project implementation will also take place at this stage. However, the steps involving research may be skipped, with prior approval from Karandaaz, if the awardee has sufficient market/product information to start implementation.

Launch of Pilot & Implementation

Timeline: April 2023- September 2024 (18 months)

At this stage, the Awardee(s) will test or launch the solution and refine its design/commercial plan. The proposed solution will initially be tested on a limited sample for a period of 6 months and scaled up to a larger market in the remainder period. Applicants that have a tested technology may opt for a short pilot launch and subsequently focus on scale up.

The timelines identified above for Market Research/Mobilization and Pilot/Implementation are indicative and may be revised by the awardee according to project needs, if justified.

Consolidating Results & Learnings

Timeline: October- December 2024 (3 months)

Karandaaz will work with partners to consolidate learnings from the pilot stage. This will be in the form of a Project Completion Report (PCR) submitted by the partner. This stage will also include an independent evaluation of the project to assess the intervention impact on direct beneficiaries as well as overall market development.

VI Eligibility Criteria for EOI/ RFP

- a. A green-tech, cooperative, corporation, not for profit, financial institution, medical institution, or any formally registered entity working in the thematic areas of the GCF with demonstrated experience in the focal sector.
- b. Applicant entity or consortium should be formally registered.
- c. Proposed project team should have demonstrated knowledge in the thematic areas of the GCF.
- d. The proposed project team should be willing to share broad-based learning with stakeholders.
- e. The participating entities should be compliant with relevant regulations of the Government of Pakistan.

VII Important Dates

The table below presents the important dates in the project selection process. Any change in the schedule will be communicated to the applicants.

#	Activity	Date
1.	EOI Submission	17 th October, 2022
2.	Proposal Development Workshop	21 st October 2022
3.	Last Date of Queries	14 th November 2022
4.	Submission of Technical & Financial Proposals	17 th November 2022
5.	Presentation by the Shortlisted Applicants to the GCF Advisory Committee	28 th November – 2 nd December, 2022
6.	Final Decision	December, 2022

VIII. Evaluation Criteria

The Advisory Committee will evaluate the Technical Proposal and Presentation as per the criteria and weightage specified in **Exhibit 1** below.

Exhibit 1: Assessment Criteria

Assessment Metric	Relevant Proposal Section	The weightage (%)
Relevant experience of the Applicant	Section 7 and Annexures	15
Profile of the Project Team	Section 7	15
Quality of the Proposed Methodology for Model Development/Refinement	Sections 2 to 6	20
Approach to Testing of Model	Section 6	15
Innovation & Sustainability of the Approach/Idea	Section 2 and 4	20
Approach to Project Monitoring, Lesson Sharing, and Risk	Section 8 and 9	15
Total		100

Section 2: Guidelines for Applicants on Expression of Interest (EOI) and Request for Proposal (RFP)

I Introduction

To complete the application process for Karandaaz Pakistan Green Challenge Fund (GCF) on **Green Transition Projects**, applicants are requested to:

- a) Submit an **Expression of Interest (EOI)**, in the format provided in Annexure 1, by **17th October, 2022**.
- b) Participate in the **Proposal Development Workshop** on **21st October, 2022**.
- c) Submit **Technical & Financial Proposal** on **17th November, 2022**.
- d) **Present their Technical Proposal** to the GCF Advisory Committee on **28th November – 2nd December, 2022**.

Applicants will be evaluated against an objective selection criterion. These guidelines provide details on the Proposal content and the Evaluation Criteria. The Advisory Committee (AC)²⁷ for the Green Challenge Fund (GCF) is responsible for the selection of applicants and making its recommendations to the Board of Karandaaz who will then make the final selection of the Awardee(s).

At any stage of the application process, Karandaaz reserves the right to request further information and/or clarifications from the applicant in relation to the submitted proposal.

II Proposal Template

The applicants are required to submit a Technical Proposal and Financial Proposal to qualify for a review by Karandaaz. Key requirements from the proposals are described below:

The **Technical Proposal** should be no more than 24 pages if applying for one theme or 35 pages (excluding annexures) if applying for two themes. An applicant can apply for a maximum of two themes. However, it is encouraged to focus on a single theme. The page limit given below for each section is based on a single theme proposal. The applicant can increase it proportionately within the 35-page limit if applying for two themes. The technical proposal must include the following requirements:

Section 1: Executive Summary (*no more than 1 page*): This should focus on the approach being proposed, the results that will be achieved, and the strengths of the applicant(s) in delivering the project.

²⁷The Advisory Committee will comprise of representatives from Karandaaz Pakistan (Board and Staff), the challenge fund sponsor, and private sector and subject experts. The Advisory Committee reserves the right to appoint additional members for the purpose of selecting applicants.

Section 2: Value Proposition (no more than 1 page): Briefly discuss your idea and approach here. Provide an overview of what you are proposing in terms of the thematic area you will be targeting and why. Additionally, clearly state what makes this an **innovation** and its potential impacts if scaled up.

Section 3: Market Analysis (no more than 3 pages): This section should demonstrate your understanding of the respective theme that is being focused on. It is recommended that you discuss the demand side (target market, size of the market, gaps in the market, challenges of the market, etc.) and the supply side (who are the major players, existing products/practices and solutions prevalent by the private and public sector, limitations of current products), regulatory frameworks and policies in the country, key trends, opportunities (for example, new market entrants, the role of technology, macroeconomic developments) and challenges in the eco-system. This Analysis should then be used to position your idea within the selected theme, the gap/challenge it seeks to address, economic viability, and sustainability of the proposed solution.

Section 4: Green Transition Projects - Your Approach (no more than 8 pages): You should discuss your overall approach to developing the model here. This should cover the following:

- a. **Research/Data:** What data will you use on existing practices, market situation, and technology? Is this already available or will you need to access it? How will you gain access? Why do you think this will provide a sound basis for your model/technology? Are there examples of similar models being used or tested elsewhere?
- b. **Resource requirements:** What technical resources will you require? Do you need to procure any hardware or software? Please create a business case for the resources that you will need.
- c. **Project process flow:** This should provide a detailed breakdown of the technical process and link it to key milestones in your project (from R&D to live testing). Discuss how the key deliverables (proof of task completed) are linked to results (in terms of thematic and climate impact) at each stage. Results will be particularly important after the research and mobilization step in the project cycle.
- d. **Innovation in approach:** Discuss why and how this approach is innovative, could be in-terms of technology or processes to achieve the desired results.
- e. **Implementation Plan:** The application must include a realistic time frame for implementation, including performance deliverables, timelines, and milestones. It is recommended that step (c) above and step (e) are kept separate. However, the applicant may merge the two if it supports a better presentation of information.
- f. **Project Management & Governance Arrangements:** Team structure and requisite expertise to manage the project. Roles and responsibilities in delivering the project at various stages. Governance arrangements for strategic direction, quality assurance, and timely delivery.
- g. **Sustainability, Scalability, and Soundness:** Proposals are required to demonstrate potential for scale-up and sustainability after support from Karandaaz phases out. It should meet policy and regulatory standards for safe and sound financial systems, the new market areas to be served by the proposal, and the potential for job creation (where possible).

Section 5: Design and Inception Stage (no more than 1 page): describe the basic elements and/or refinements needed in the model that will be piloted, what the model aims to achieve, and its commercial viability. Also provide information on the model design process, requirements, and key outputs.

Section 6: Pilot Testing Strategy (no more than 2 pages): Lay out your approach to testing the solution/refined model. The GCF Advisory Committee should be able to assess the robustness of your approach as well as its practical feasibility.

Section 7: Applicant(s) Profile (no more than 4 pages): This section should cover two areas:

- a. **Team Capabilities:** Please discuss why you are well positioned to undertake such a project. You should discuss the organizational profiles as well as the expertise of the team that will be executing the project. It should give confidence to the GCF Advisory Committee that the applicants have the required experience and relevant institutional background for this project. Discuss your project team structure here in relation to the key deliverables of the project. If you are working in a consortium, how will responsibilities/activities be divided and managed? CVs of key staff should be included in the technical proposal.
- b. **Commitment of the Applicant:** Given the medium-term nature of the project (24 months with the possibility of extension, if required), the Advisory Committee would assess:
 - whether the project fits with the broader objectives and activities of the applicant
 - buy-in of senior management and BOD of the applicant entities to ensure continuity and commitment over the project's life

Section 8: Measuring Results & Learning (no more than 2 pages): what will be your approach to capturing lessons from the project? How will your proposed green solution contribute to the following results:

- Number of people supported to cope with the effects of climate change
- Number of people with improved (climate) resilience
- Greenhouse gas emissions reduced or avoided (tCO₂)
- Private climate finance mobilized (PKR)
- Extent to which GCF intervention is likely to have a transformational impact

Section 9: Risk Assessment (no more than 2 pages): Please provide a risk matrix here which covers key risks that you foresee in project implementation (regulatory, operational, strategic, compliance, and financial), and the risk mitigation measures. Also provide a risk rating (high, moderate, low) against all risks. Any support required from Karandaaz in managing risks should be discussed in this section also.

The **Financial Proposal** should include a detailed budget covering the full duration of the proposed program. Overall funding requested from Karandaaz should be broken down by:

a) Funds required for model development: This includes the cost of consultants, technical experts, data acquisition, etc. which relates to developing the solution.

b) Funds required for operationalizing the project: This includes costs related to project management staff, procurement of any hardware, travel costs, data collection, project monitoring expenses, etc.

c) Funding Type & Mix Required: Specify the type of funding required to execute the project (technical assistance grant, concessional debt, or risk cover guarantee). **Please refer to Section 1, sub-section II for details on funding options.** However, the terms and modalities offered to the selected project will depend on the proposed solution. Financial co-investment in commercializing the technology/solution is encouraged.

In addition to the above breakdown, the financial proposal should also include a proposed milestone-based disbursement schedule. In the case of a consortium, the proposal should specify the share of each consortium member in the budget as well as their financial/monetized contribution (if any).

All amounts should be in Pakistani Rupee (PKR). Funds will be provided in PKR to the selected awardee(s).

III Proposal Submission Requirements

Documents

The following documents should be provided with the technical proposal. Please note that incomplete documentation may result in the dismissal of the application.

- Copy of Company Registration/Certificate of Incorporation (for all companies in case of a consortium)
- Copy of NTN (for all companies in case of a consortium)
- Letter of Intent from all consortium partners with the specification of the lead entity
- Letter of intent from the financial institution (in the case of a consortium)
- CVs of key personnel (no more than 3 pages per CV).
- Audited Financial Statements for the last 2 years. In case the company does not have audited statements or was incorporated less than two years from the time of proposal submission, management account statements can be submitted.

Proposal Format

It is **strongly recommended** that applicants use the same headings as above for their Proposal. The technical proposal should be no more than **24 pages with 12 font size** (for a single theme proposal) in Times New Roman font. **Applicants interested in applying to more than one thematic area are requested to submit separate proposals for each theme.**

Mailing Address

The proposal and accompanying documents should be emailed to ichallenge@karandaaz.com.pk.

IV Final Presentation

Shortlisted applicants will be required to make a formal 45-minute PowerPoint presentation (15 min presentation + 30 min Q&A) to the Advisory Committee at a date and venue to be communicated after the submission of the Proposal. The presentation should ONLY cover the technical proposal and NOT the financial proposal.

The Presentation will provide the Advisory Committee an opportunity to meet the Applicant(s) to gain further clarity on the methodology/model, gauge team capability, and assess the assumptions used in the proposal.

V Confidentiality

Information relating to the technical proposal and evaluation shall not be disclosed to firms or any other persons not officially concerned with the proposal evaluation process. The information shared by the applicant shall be treated as confidential.