

Procurement No. GCA-PR-22-183

CALL FOR RESILIENT INFRASTRUCTURE SENIOR EXPERTS

Roster	Reference Number	Title
1	GCA-PR-22-183-1	Engineering for Resilient Infrastructure
2	GCA-PR-22-183-2	Systems Modelling for Resilient Infrastructure
3	GCA-PR-22-183-3	Finance for Resilient Infrastructure
4	GCA-PR-22-183-4	Nature for Resilient Infrastructure

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1. INTRODUCTION

1.1 Introduction to GCA

The Global Center on Adaptation (GCA) is an international organization that works as a solutions broker to catalyze action and support for adaptation solutions, from the international to the local levels, in partnership with the public and private sector, to ensure we learn from each other and work together for a climate resilient future. Adapting to the impacts of climate change provides a “win-win” for livelihoods, food security, water supply, Infrastructure, health, security, and economic growth. The work of the GCA elevates the visibility and political importance of climate adaptation and facilitates solutions, such as smarter investments, new technologies and better planning to become more resilient to climate related threats. GCA is a rapidly growing organization with offices in Abidjan, Beijing, Dhaka, Groningen, and Rotterdam.

GCA’s global strategy is implemented under three pillars of Knowledge, Programs, and Advocacy. Under programs, GCA works in five global programs, including Infrastructure and Nature-Based Solutions, Water and Urban, Climate Finance, Food Security, and Youth. Each program is managed by a Global Program Lead, based in Rotterdam under the overall supervision of the Director of Global Programs. Through its global, regional and country programs, GCA has developed unique advantages to push forward action on the adaptation agenda globally, focusing more on the Africa region where the need for adaptation is severe.


1.2 Africa Adaptation Acceleration Program

GCA and the African Development Bank (AfDB) launched the Africa Adaptation Acceleration Program (AAP) at the Climate Adaptation Summit in January 2021. At the April 2021 Africa Leaders’ Dialogue, the AAP was endorsed by the continent as the implementation vehicle to realize the vision of the Africa Adaptation Initiative. The African Union-backed program aims to mobilize \$25 billion to drive adaptation on the African continent through four strategic pillars on food security, infrastructure, youth and employment, and climate finance. These results will be delivered through partnerships with Multilateral Development Banks and other leading implementation organizations, stakeholders, political and technical bodies. Within the framework of this partnership, GCA leads upstream activities with the broad goal of leveraging climate finance to mainstream climate risk in infrastructure investments.

Infrastructure activities are delivered through the Africa Infrastructure Resilience Accelerator (AIRA) pillar of AAP, which aims to integrate climate resilience into investments worth over \$7 billion by 2025. Infrastructure assets are exposed to a range of physical climate risks that will be exacerbated due to climate change.

AIRA addresses key barriers to integrating adaptation and innovative Nature Based Solutions (NBS) into infrastructure projects by delivering upstream analysis and support to develop information and metrics on hazards, exposure, and vulnerability. Specific interventions include providing:

- High resolution climate risk assessments for the project assets and the landscape surrounding the assets;
- Adaptation and resilience design and investment options appraisals that price the costs of benefits of potential interventions, including NBS; and
- Transaction advisory support to allocate climate risk within the financing plan for the project.



The AIRA portfolio of projects includes infrastructure investments in assets across the energy sector, including renewable energy projects, transport, water, and agriculture.

1.3 Introduction to this Call for Senior Experts

GCA is looking to build an elite talent resource which it can call upon to surpass global adaptation challenges, who can deliver, know how to cooperate and build on the GCA team ethos, can assist GCA achieve its organizational goals for both the near and medium term perspectives, and who have a substantive history in participating in successfully executed climate adaptation projects. The Senior Experts will provide support to the Infrastructure and Nature-Based Solutions (NBS) Program, helping countries build climate-resilient infrastructure that minimizes ecological impact and leverages NBS.

This Call for Senior Experts intends to create a pool of highly experienced experts across four areas of expertise in resilient infrastructure as described in Table 1. The Senior Experts are expected to have at least 10 years of relevant experience, with particular focus on climate adaptation and resilience, working across infrastructure sectors and countries in Africa and globally.

Table 1 – Description of the four Rosters under this Call for Senior Experts.

Roster	Reference Number	Title
1	GCA-PR-22-183-1	Engineering for Resilient Infrastructure
2	GCA-PR-22-183-2	Systems Modelling for Resilient Infrastructure
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4	GCA-PR-22-183-4	Nature for Resilient Infrastructure

Section 2 presents a description of the submission requirements. Sections 3 to 6 present a short description of the services that experts will be expected to conduct and the selection criteria for each Roster of this Call for Senior Experts.


The selected Senior Experts will be invited to submit proposals based on specific scope of services for individual assignments on a demand basis. GCA will then enter into short-term consultancy contracts.

2. SUBMISSION REQUIREMENTS

If you are interested in participating in this “Call for Resilient Infrastructure Senior Experts” you are requested to submit your application package, including all supporting documents, to procurement@gca.org no later than **Friday, 26 August 2022, 18.00 CET**.

Your submission package must be drafted in English and clearly mark in the email subject title: “GCA-PR-22-183 – Call for Resilient Infrastructure Senior Experts”.

Your submission package should also clearly indicate to which Roster (i.e., ‘Reference Number’ and ‘Title’ in Table 1, Section 1.3) you are applying to and include the relevant documents to describe your qualifications. Experts can apply for more than one Roster, as long as they fulfil the required selection criteria and have the relevant experience to deliver the required services.



Your submission package must be drafted **in English** and contain:

- a) Your comprehensive and tailored CV to demonstrate your applicability to fulfill the Selection Criteria of the Roster(s) you are applying to.
- b) A carefully drafted cover letter in accordance with the variety of skills, abilities and experience required to perform the services required for the Roster(s) you are applying to and relevant experiences to this Call for Senior Experts.
- c) Provide two references concerning your successful role in past projects related to resilient infrastructure and the relevant areas of expertise described for the Roster(s) you are applying to.
- d) Provide at least three case projects examples of similar assignments to the services and areas of expertise described for the Roster(s) you are applying to, and that the expert has either led or directly supported (stating roles) in the last three years.
- e) Provide at least two samples of case studies, reports, publications, presentations, or other relevant materials, that the expert has worked on, and that are relevant to the areas of expertise described for the Roster(s) you are applying to.

Late submission and non-compliance with the above requirements may lead to the exclusion from this Call for Senior Experts.

No approach of any kind in connection with this Call For Senior Experts should be made to any other person within, or associated with, GCA. Failure to adhere to this requirement may result in exclusion from the competition. Please note that GCA will not enter into a detailed discussion on the requested services at this stage.

3. GCA-PR-22-183-1: ENGINEERING FOR RESILIENT INFRASTRUCTURE

3.1 Description of Services

This Call for Senior Experts intends to create a pool of consultants qualified to deliver the following services:

- Appraisal of engineering options for infrastructure resilience across sectors (water, transport, energy) and assessment of thresholds (structural and operational), costs and benefits of implementing these options.
- Analysis of the exposure of infrastructure assets, network criticality, vulnerability and risks due to climate-related hazards, including the assessment of probability and consequences of failure in global infrastructure networks (energy, transport, ICT, etc.).
- Technical advisory on emerging engineering technologies and adaptation solutions for climate-resilient infrastructure, including transport networks, ports, transmission and distribution lines, and other sectors.
- Expert review and technical support on climate risk assessments, adaptation and resilience investment options, and technical guidelines for resilient infrastructure developed under AAAP infrastructure projects.
- Engagement with engineering networks in Africa, South Asia and globally.

Further details for individual assignments will be provided to qualified Senior Experts on a demand basis.

3.2 Selection Criteria

The Senior Expert should demonstrate its strategic, technical and core competencies through:

- Master's and/or Doctorate degree in civil engineering, environmental engineering, or other relevant fields.
- At least 10 years of experience in the field of engineering for resilient infrastructure, including civil engineering systems analysis and design, water resources engineering, environmental engineering, and hydrology. Experience in economics, statistics, remote sensing, geographic information systems, and computer science will be considered an added advantage.
- In-depth understanding of technical and operational thresholds of resilient infrastructure measures and metrics of how physical infrastructure assets respond to the impacts of climate hazards. Experience in research and application of emerging technologies and adaptation solutions for resilient infrastructure will be considered an added advantage.
- Experience working with academia, MDAs, MDBs, private sector, and other relevant institutions.
- Experience in engagement with engineering networks, preferably with registration in professional engineering associations.
- Excellent writing, presentation and communications skills.
- Fluency in English is essential. Working knowledge of French, Arabic and/or Portuguese will be considered an additional advantage.

4. GCA-PR-22-183-2: SYSTEMS MODELLING FOR RESILIENT INFRASTRUCTURE

4.1 Description of Services

This Call for Senior Experts intends to create a pool of consultants qualified to deliver the following services:

- Technical advisory on climate data collection and modelling and geospatial analysis of climate-related hazards (i.e., use of geographic information systems, statistical and big data analysis, and development of visualization tools), including the development of climate data integrity check (i.e., bias assessment).
- Facilitate sourcing of global and local data on climate hazards and infrastructure assets, including through engagement with government departments, meteorological agencies, and research institutes.
- Support to the development of multi-sector, multi-regional infrastructure systems assessment, reflecting impacts of risks to supply chains due to infrastructure network failures, inferring connectivity, interdependence, and attributing users to the assets.
- Expert review of technical outputs on climate risk and impact assessments for infrastructure systems, assets and services developed under AAAP infrastructure projects.
- Development of guidelines and training materials for national infrastructure risk and resilience programs.

Further details for individual assignments will be provided to qualified Senior Experts on a demand basis.

4.2 Selection Criteria

The Senior Expert should demonstrate its strategic, technical and core competencies through:

- Master's and/or Doctorate degree in geography, physics, climate science or other relevant fields.
- At least 10 years of experience in the field of systems modelling for resilient infrastructure, including climate hazard data analysis and modelling, remote sensing, earth observation systems, geospatial tools, and climate science. Experience in economics, statistics, and infrastructure damage assessment will be considered an added advantage.
- In-depth understanding of how climate hazards impact infrastructure systems and the services it provides to people, and on quantifying damages to infrastructure assets and socioeconomic impacts households. Practical experience in the development of national infrastructure programs and delivery of capacity building activities will be considered an added advantage.
- Practical experience in the development of geospatial tools to analyze current and projected climate hazards to infrastructure across multiple scenarios (i.e., RCPs), and in the use of climate hazard datasets and application of modelling techniques, such as to downscale global climate projections.
- Experience working with academia, MDAs, MDBs, private sector, and other relevant institutions.
- Excellent writing, presentation and communications skills.
- Fluency in English is essential. Working knowledge of French, Arabic and/or Portuguese will be considered an additional advantage.



5. GCA-PR-22-183-3: FINANCE FOR RESILIENT INFRASTRUCTURE

5.1 Description of Services

This Call for Senior Experts intends to create a pool of consultants qualified to deliver the following services:

- Development of cost-benefit analysis and financial modelling of adaptation and resilience investment options for infrastructure resilience, including support to infrastructure projects under AAAP.
- Technical advisory and expert review on the development of Nature-Based Solutions investment models for resilient infrastructure.
- Assessment of the landscape of climate adaptation finance and resilience investment options for infrastructure projects, including to support the implementation of adaptation investment options prioritized under national infrastructure risk and resilience programs developed under AAAP.

Further details for individual assignments will be provided to qualified Senior Experts on a demand basis.

5.2 Selection Criteria

The Senior Expert should demonstrate its strategic, technical and core competencies through:

- Master's and/or Doctorate degree in economics, infrastructure project finance, or other relevant fields.
- At least 10 years of experience in the field of infrastructure project finance, including financial and cashflow modelling, asset management, and infrastructure investment structuring.
- In-depth understanding of how to develop financial models to quantify the cost-benefit of adaptation and resilience investment options across the infrastructure project cycle, including through cash-flow analysis, and build the investment case for resilient infrastructure. Knowledge of climate adaptation related financing and funding mechanisms for infrastructure will be considered an added advantage.
- Experience working with MDAs, MDBs, private sector, and other relevant institutions.
- Excellent writing, presentation and communications skills.
- Fluency in English is essential. Working knowledge of French, Arabic and/or Portuguese will be considered an additional advantage.

6. GCA-PR-22-183-4: NATURE FOR RESILIENT INFRASTRUCTURE

6.1 Description of Services

This Call for Senior Experts intends to create a pool of consultants qualified to deliver the following services:

- Assessment of natural solutions to address climate-related hazards, including the costs and benefits they can provide to protect and/or replace infrastructure assets.
- Development of action plans to quantify cost-benefits of priority NBS investment options for infrastructure projects and provide recommendations for implementation.
- Facilitate sourcing of global and local data to develop geospatial mapping of natural assets, and the identification of case studies that demonstrate the potential of NBS for infrastructure resilience.
- Technical advisory support and expert review on the identification and appraisal of adaptation and resilience investment options, with focus on NBS, developed under AAAP infrastructure projects.
- Development of NBS Investment Case models, with focus on the quantification of the benefits of natural solutions for resilient infrastructure.

Further details for individual assignments will be provided to qualified Senior Experts on a demand basis.

6.2 Selection Criteria

The Senior Expert should demonstrate its strategic, technical and core competencies through:

- Master's and/or Doctorate degree in environmental engineering, natural resources management, or other relevant fields.
- At least 10 years of experience in the field of Nature-Based Solutions, including guidelines and standards for NBS, quantification of NBS cost-benefits for climate adaptation and resilience, and implementation of NBS projects. Experience in ecosystems services, natural resources management, remote sensing, and geographic information systems will be considered an added advantage.
- In-depth understanding the costs and benefits of nature-based investment options to address climate risks to infrastructure, with practical experience in the design and implementation of NBS projects.
- Experience working with academia, MDAs, MDBs, private sector, and other relevant institutions.
- Excellent writing, presentation and communications skills.
- Fluency in English is essential. Working knowledge of French, Arabic and/or Portuguese will be considered an additional advantage.