Terms of Reference for engaging Subject Matter Expert 1 (external consultant) under Climate Smart Cities

I. About the Project
The National Institute of Urban Affairs, New Delhi, along with TU Berlin and DIFU, is implementing the Climate Smart Cities Project in India funded by GIZ.

The objective of the project is to anchor climate-friendly solutions for urban infrastructure projects and area-based development in the planning and implementation of projects under the Smart Cities Mission of the Government of India. It focuses on supporting cities through various instruments (technical handholding, training, peer learning) in implementing smart solutions.

The project works with three Indian Smart Cities of Bhubaneshwar, Coimbatore, Kochi and their respective state governments in the planning and implementation of smart and climate-friendly measures for infrastructure and area based development, and measuring and monitoring of their GHG emissions.

In addition to the technical assistance to the 3 partner cities, NIUA is implementing MoHUA’s ClimateSmart Cities Assessment Framework for all 100 Smart Cities. NIUA is currently looking for two subject matter experts to support the ongoing work under the project.

II. Aims
• Contribution to the New Urban Agenda (Habitat III) as well as the Sustainable Development Goals (SDG) 11.
• Promotion of climate-relevant solutions for urban infrastructure and increase the capacities of cities to contribute to reduction of Greenhouse Gas Emissions.
• Developing capacities of urban local bodies with the support of training institutes, in order to undertake climate conscious urban interventions
• Disseminating German & International experiences for including climate aspects into Smart City projects

III. Key Components
The scope of work being undertaken by NIUA under the project comprises of four key components:

1. Setting up a National Help Desk: Establishment of national help desk to transfer know-how and technical inputs for climate relevant measures for selected smart cities under the national mission
2. Capacity building: Development of training modules and working aids including conduction and dissemination, on smart climate relevant solutions
3. Establishment of multi-tier networking platform: City, State and National level networking platform for exchange of experience between Indian Smart Cities and disseminating international experiences for including climate aspects into Smart City Projects
4. Indo-German Working Group: For urbanization support to National Ministries, States and Cities in including climate relevant instruments in planning, implementation and monitoring

IV. Subject Matter Expert (SME)

1. Work Description
The work of the SME directly relates to component 2 of the above, i.e. Capacity building. The project is currently looking to engage two SME’s in the areas of Urban Planning, Green Cover and Biodiversity of the ClimateSmart Cities Assessment Framework.

The Subject Matter Experts will be engaged to develop and disseminate training material in order to build the capacities of Smart Cities to understand and perform better on the CSCAF indicators, such that informed climate actions are taken in the cities. The training will also be provided to select training institutes who can further disseminate the knowledge. The details of the CSCAF indicators can be found on: https://smartnet.niua.org/csc/key-documents.html

The expert is expected to have a clear understanding of the indicators and what is required from the cities to assess themselves on them.

The responsibilities of the SME 1 include the following, but are not limited to:
- Development of training sessions, working aids, Training manuals, ToT manuals other required material; as per topics below:
  a. Rejuvenation and conservation of water bodies and open areas
  b. Disaster Resilience
- Training material on mapping linked to the above topics
- Rollout of training workshop as key trainer/expert

The tasks are divided into 3 main components:

1. Rejuvenation and conservation of water bodies and open areas
2. Disaster Resilience
3. Mapping

2. Target audience:

The training is targeted towards the Smart Cities, specifically the ULB officials involved with work around Urban Planning and Green Cover as well as officials from regional training institutes that provide capacity building around these themes.

3. Deliverables:

The deliverables are divided into three main components as per the topics:

3.1 COMPONENT I: REJUVENATION AND CONSERVATION OF WATER BODIES AND OPEN AREAS

Background: Urban Environment consists of many aspects including water bodies, open spaces and built-up area. From climate adaptation and mitigation perspective all three aspects play a critical role. Rejuvenation of water bodies is significant to combat water crises. Water bodies are essential as reservoirs for drinking, as retention basins for groundwater recharge, for protection in case of floods and for maintaining biodiversity. Having local sources of fresh water decreases the dependence on energy for pumping purposes.

Open spaces, namely recreational spaces, organised green and other common spaces. In any city play a critical role in terms of climate mitigation and adaptation, by decreasing local temperature and helping recharge groundwater.

Increase in built up areas and decrease of water bodies and open spaces lead to an increase in the local temperature within a city.
Purpose: To improve knowledge of the cities on urban biodiversity and equip them to increase the extent (Percentage and area) of rejuvenating and conserving Urban Environment (water bodies and open area) and decrease the heat-island effect.

Following are the expected deliverables under component I:

3.1.1 **Presentations** - Prepare presentations covering the topics under the indicators:

i. **Urban Environment**: To include definition of urban environment, components of urban environment—specifically water bodies and open areas, its link with climate change, challenges in dealing with urban environment, stakeholders involved at various levels (internal and external) and possible ways of conserving and rejuvenating urban environment.

ii. **Rules and regulations**: Legislations, guidelines, bye laws, policies related to urban environment—their key aspects, actions for cities with respect to Indian context.

iii. **Urban Heat Island**: To include definition of Urban Heat Island, its link with climate change, mapping urban heat islands, issues and challenges of urban heat islands, strategies for mitigation of urban heat islands, examples of cities that have successfully demonstrated mitigation of urban heat islands.

iv. **Strategies for rejuvenation and conservation of water bodies and open areas**: Possible strategies and steps to conserve and rejuvenate water bodies and open areas in India, with examples and practical knowledge from projects. Challenges and issues faced, opportunities and solutions derived, stakeholders involved, funding mechanisms. Introduction to mapping of water bodies and open areas.

v. **Budget allocation for urban environment**: Possible mechanisms through which projects of such nature can be implemented by ULBs in a sustainable manner through incorporation of the same within Municipal Budgets and scope for private funding including options for PPP model. Examples of cooperation in funding such as insertion of budget line, Centre/State funding.

vi. **Implementation of strategy**: Measures for successful implementation of conservation strategy—step wise implementation such as committee constitution, by laws formulation, DPR preparation, tender documents, project execution and monitoring, with examples.

vii. **Monitoring and maintenance**: Monitoring, review and maintenance mechanisms for long term sustainability of rejuvenation and conservation actions.

All presentations to have guiding notes, image captions and sources at all places, in addition to the content.

3.1.2 **Case studies** - Document minimum two case studies on the following topics from Indian cities to demonstrate:

3.1.2.1 Successful implementation of projects/strategy,
3.1.2.2 Administrative processes,
3.1.2.3 Community engagement,

Presentation should be in the form of slides, videos, photographs and interviews with involved persons, as long as the intent, process, challenges, solutions are highlighted. Sources of all case studies to be documented.
3.1.3 **Exercises**- Design a set of exercises for joint discussion, group work as well as individual work around the concept of mapping water bodies, open areas, urban heat islands and calculating the areas as per the formula in the indicator (*for details of mapping and calculations, refer to the ClimateSmart Cities Assessment Framework 2.0*). It may start with a joint discussion on issues and challenges faced, solutions and prioritization and also include mapping of stakeholders involved as well as process diagram for carrying out work of this nature. To be conducted over a 1.5-2 hours duration. Identify data sources that are required from the cities and collect some of the data beforehand for some selected cities that are attending.

3.1.4 **Manuals**- *A set of manuals is expected for each topic, which includes*

i. **Training manual**- Document with details of all topics under the session-technical information in detail linked to the presentation, with references to more reading material- to help the participants in following the sessions

ii. **Trainer’s manual**- Document with details of how to conduct the sessions including exercise, tips, material required and additional input to help the trainers in conducting a similar training later. This manual will have references to the training manual as well as other reference material, links to other sources, videos and relevant information

3.1.5 **Reference Material**- A repository of supporting reference material must be provided in a clearly structured folder- to include additional reading material, details of best practices, videos and images, examples of strategy, tender documents, DPRs, ToRs, EoIs relevant to the training content.

### 3.2 COMPONENT II: DISASTER RESILIENCE

**Background:** In urban areas the brunt of any kind of disaster (Human or nature induced) is borne by the urban inhabitants and also by the urban infrastructure. As effects of climate variability leading to extreme events are becoming more severe and frequent, the incidents of damage to urban infrastructure are also increasing. Therefore, it is important that all cities, especially Smart Cities, should not only be able to identify their potential hazards, vulnerabilities and risk but also be prepared for prompt response during disaster situation as well as have robust plans in place to “Build Back Better” including recovery, reconstruction and rehabilitation.

**Purpose:** To improve knowledge of the cities on disaster resilience and equip them to increase the extent to which it is prepared and resilient to tackle natural and man made disasters.

**Following are the expected deliverables under component II:**

#### 3.2.1 **Presentations**- Prepare one or more presentations covering the topics under the indicators:

i. **Disaster Management Plans:** The National Disaster Management Act, 2005, the National Policy on Disaster Management 2009 (NPDM) and the National Disaster Management Authority (NDMA) provide direction and a framework to the government agencies at all levels to prepare for all phases of disaster management cycle i.e. a) mitigation (prevention and risk reduction), b) preparedness, c) response and d) recovery (immediate restoration to long-term betterment reconstruction). In accordance with the provisions of the Disaster Management Act and the policy, a National Disaster Management Plan (NDMP) is prepared. Similarly, each State, District / City has to prepare a plan in line with the NDMA guidelines (2014)
issued by the National Disaster Management Authority. The presentation should cover all aspects of this plan as well as the rules and regulations surrounding them.

ii. **Emergency Management Plan:** Institutional roles and resources, information processes and operational arrangements for specific actors at times of need. It may contain scenarios of possible emergency conditions, to allow envisioning and solution provision.

iii. **Ward-level Hazard Risk, Vulnerability and Capacity Assessment:** participatory process among the community groups and the representatives of ULBs to assess the vulnerabilities and risks to various hazards in their areas- the process, examples, challenges

iv. **Early Warning Systems:** An end-to-end, people-centred system, across sectors and multiple levels with a continuous feedback mechanism for improvement- what does it look like, examples, challenges

v. **Institutionalisation of Disaster Management:** Establishment of dedicated Disaster Management Cell/ Emergency Operation Centre (EOC) within ULB – process adopted, examples of the same, challenges, issues, solutions

vi. **Data collection:** City level data on loss and damage collected, collated and documented over the last 5 years- how to, process, examples

vii. **Mapping:** Map of disaster management plan, ward wise hazard, vulnerability and capacity information across the city- how to prepare, examples, challenges

All presentations to have guiding notes, image captions and sources at all places, in addition to the content.

3.2.2 **Case studies**- Document minimum two case studies on the following topics from Indian cases to demonstrate

3.2.2.1 Successful implementation of plans/systems,
3.2.2.2 Administrative processes,
3.2.2.3 Community engagement

Presentations should be in the form of slides, videos, photographs and interviews with involved persons, as long as the intent, process, challenges, solutions are highlighted. Sources of all case studies to be documented.

3.2.3 **Exercises**- Design a set of exercises for joint discussion, group work as well as individual work around the concept of mapping, plan preparation, participatory processes. It may start with a joint discussion on issues and challenges faced, solutions and prioritization and also include mapping of stakeholders involved as well as process diagram for carrying out work of this nature. To be conducted over a 1.5-2 hours duration. Identify data sources that are required from the cities and collect some of the data beforehand for some selected cities that are attending.

3.2.4 **Manuals** - A set of manuals is expected for each topic, which includes

i. **Training manual**- Document with details of all topics under the session-technical information in detail linked to the presentation, with references to more reading material- to help the participants in following the sessions

ii. **Trainer’s manual**- Document with details of how to conduct the sessions including exercise, tips, material required and additional input to help the trainers in conducting a similar training later. This manual will have references to the training manual as well as other reference material, links to other sources, videos and relevant information
3.2.5 Reference Material- A repository of supporting reference material must be provided in a clearly structured folder- to include additional reading material, details of best practices, videos and images, examples of plans, tender documents, DPRs, ToRs, EoIs relevant to the training content.

3.3 COMPONENT III: MAPPING

Mapping is a key component of data collection and analysis in the theme of Urban Planning, Green Cover and Biodiversity. It helps in a number of ways:

- Since rejuvenation of water bodies can help combat water crises, and open spaces play a critical role in climate-change mitigation and adaptation, mapping them to assess their extent and status becomes important.
- Developing urban heat islands map will assist in informing city actions.
- Mapping the extent to which the city is developing and increasing its green cover, and a comparative analysis on a yearly basis will help to understand the increase/decrease over time.
- Mapping of hazards and vulnerable areas will help plan the city’s disaster resilience.

This module should introduce the concept of mapping the above features to the participants- the kind of data that should be mapped, the tools available for mapping and how it can be done. For this purpose, the deliverables include:

1.3.1 Presentation- A short overview of the concept of mapping in the context of urban planning, green cover and biodiversity, the kind of maps required in the indicators, examples of maps created by Indian and International cities, the tools available for mapping the same and how it can be done.

1.3.2 Exercise- A brief interactive exercise for the participants where they can try a mapping tool during the workshop. This may include a short demo of mapping (in a small area of a city), followed by the exercise and then display of results. Google Earth may be used for the purpose of this.

1.3.3 Manuals- A set of manuals is expected, which includes
  i. Training manual- Document with details of technical information linked to the presentation, with references to more reading material- to help the participants in following the sessions
  ii. Trainer’s manual- Document with details of how to conduct the session including exercise, tips, material required and additional input to help the trainers in conducting a similar training later. This manual will have references to the training manual as well as other reference material, links to other sources, videos and relevant information

In addition to delivering the above content, tasks for the SME also include support in rolling out of the training (for Component I and III) during the workshop- conducting and moderating the relevant sessions; and subsequently finalising the material based on feedback/comments received during the workshop.
4 Deliverables and Timeline

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<tr>
<th>Component I and III</th>
<th>Timeline</th>
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| - Preparation of material  
  o Presentations  
  o Case studies  
  o Exercises  
  o Manuals  
  o Reference material | Draft structure of material- 5 days from contract rollout  
Pre final material- 20 days from contract rollout  
Trial session- 2/3 days (dates TBD)  
Final material- 1 month after contract rollout |
| - Rollout of training  
  o Conducting and moderation of sessions during training workshop and training of trainers | Rollout- 4/5 days (dates TBD) |
| - Finalisation (to include feedback received) and submission of all material linked to Component I and III | 2 months from contract rollout |

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<th>Component II</th>
<th>Timeline</th>
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| - Preparation of material  
  o Presentations  
  o Case studies  
  o Exercises  
  o Manuals  
  o Reference material | 3 months from contract rollout |
| - Finalisation and submission of material linked to Component II | 4 months from contract rollout |

V. Qualification and Experience

The SME must have at least 5-6 years of experience in undertaking research activities and implementation focused on urban planning, biodiversity, climate change and related topics.

- Demonstrate expertise in the following areas: disaster management, water bodies and open area rejuvenation.
- Experience of municipal capacity building, training module and working aid formulation is an added advantage.
- Experience of working on standard benchmarks and tracking/rating systems is an added advantage.
- Experience of organizing and conducting training workshops is an added advantage.
- Excellent writing, moderation and presentation skills- able to communicate clearly, strategically and sensitively with participants.
- Skills in MS-Office, Adobe Suite, relevant planning/implementation tools and mapping tools such as Google Earth.

VI. Application process

- Application should contain detailed CV and a covering letter citing current position and expressing interest and suitability for the role advertised. It should also include a two page write up on the process that will be adopted for the task.
• Mention ‘Climate Smart Cities: Subject Matter Expert 1’ in the subject line of your application.
• Applications should be sent to Ms. Uditi Agarwal at uagarwal@niua.org
• Applications should reach by 31st August 2020
• Only shortlisted applicants will be contacted.

VII. Location of position
It is an external position and may be worked remotely from any location

VIII. Term of position
Short term contract- 40 working days (includes roughly 30 days of non contact hours, 10 days of online contact hours- meetings, webinars, training session)

IX. Remuneration: INR 4 lacs

X. No. of Positions: 1

XI. Last Date to Apply: 31st August 2020

XII. Start Date: Immediate