

TERMS OF REFERENCE (ToR)

**Institutional Consultancy to design and develop comprehensive, gender friendly and socially inclusive sectoral plans for establishing and effectively implementing Clean Air Zones (CAZ) in three selected sites of Bhutan with meaningful engagement of diverse stakeholders**

ToR

## About ICIMOD

The Hindu Kush Himalaya (HKH) region stretches 3,500km across Asia, spanning eight countries – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. Encompassing high-altitude mountain ranges, mid-hills, and plains, the zone is vital for the food, water, and energy security of up to two billion people and is a habitat for countless irreplaceable species. It is also acutely fragile – and frontline to the impacts of the triple planetary crisis of climate change, pollution, and biodiversity loss.

The International Centre for Integrated Mountain Development (ICIMOD), based in Kathmandu, Nepal, is an international organisation established in 1983, that is working to make this critical region greener, more inclusive and climate resilient. For more information, read our [Strategy 2030](#) and explore our [website](#).

### 1. Background and context

As part of its Strategic Programme, ICIMOD's Action Area on Air supports regional governments in designing and implementing effective policies and technologies to reduce emissions of air pollutants and greenhouse gases. Building on this regional engagement, the Government of Bhutan has prioritised the development of Clean Air Zones (CAZ) as a strategic approach to mitigate pollution in urban hotspots of the country. Clean Air Zones (CAZ) are designated areas where targeted mitigation measures are applied to reduce air pollution and protect public health<sup>1</sup>. As a regional facilitator and technical partner, ICIMOD is supporting this process by initiating an assessment to identify priority zones and design sector-specific CAZ strategies.

Bhutan has made significant progress in environmental protection, maintaining carbon neutrality and safeguarding ecosystems. However, urban air pollution is an emerging concern, particularly in rapidly urbanising areas such as Pasakha, Phuentsholing, and Thimphu. For instance, in Thimphu, the capital city, ambient PM<sub>2.5</sub> levels averaged around 32.5 µg/m<sup>3</sup> (2018–2020), exceeding WHO guidelines by three times (Sharma et al., 2021). Similarly, Bhutan's major industrial town of Pasakha is documented to have among the highest localized air pollution levels<sup>2</sup>. Other key sources include transport emissions, residential cooking, heating, open burning, and transboundary pollution.

Clean Air Zones (CAZ) are clearly defined areas designed in a way to achieve clean air by reducing emissions from multiple sources of air pollution. They are intended to improve air quality while protecting public health. For Bhutan, CAZ are highly relevant, given the country's rapid urbanisation and growing industrial activities. By developing CAZ, Bhutan

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<sup>1</sup> Clean Air Fund. *Clean Air Zone Guidance*. 2022. <https://www.cleanairfund.org/resource/clean-air-zone-guidance/>

<sup>2</sup> Centre for Science and Environment. *Assessment Report of Pasakha Industrial Estate, Phuentsholing, Bhutan*. 2022. <https://www.cseindia.org/assessment-report-of-pasakha-industrial-estate-phuentsholing-bhutan-11378>.

can manage its rising issue of air pollution while ensuring that urban growth aligns with environmental goals.

Bhutan's Low Emission Development Strategies (LEDS) and Long-Term Low Greenhouse Gas Emission and Climate Resilient Strategy (LTS) outline sector-specific measures to reduce air pollution, but a multi-sectoral intervention like CAZ is yet to be piloted, which can accelerate emission reduction in critical hotspots.

To support this, ICIMOD seeks to engage a consultancy team to develop comprehensive CAZ plans in three cities in Bhutan. These plans will:

- Identify at least 10 potential zones (covering dominant sources such as commercial, industrial, and residential) and get a primary feasibility analysis based on emission sources and pollution hotspots.
- From the 10 potential sites, identify 3 priority zones for developing detailed Sectoral Plans in consultation with the Government, each representing a key source sector: industrial, commercial, and residential.
- Develop Sectoral Plans that include financial requirement, policy draft, regulatory instruments, in consultation with the Government.
- Propose interventions that are technically feasible, locally viable in consultation with the Government and diverse stakeholders including women, people with disabilities in the planning process.

## 2. Purpose and objectives

The purpose of the consultancy service is to identify, design, and develop plans of CAZs in three selected urban areas of Bhutan.

The objectives are to:

- Identify at least 10 potential areas (covering dominant sources such as commercial, industrial, and residential) to be developed as CAZ based on pollution hotspots, exposure, and source analysis.
- From the 10 potential sites, identify 3 priority areas for the development of detailed Sectoral Plans, in consultation with the Government, each representing a key source sector: industrial, commercial, and residential.
- Recommend locally viable, socially acceptable, and technically feasible sectoral interventions which include regulations, development of infrastructure like parking lots, incentives and schemes to adopt low-emission practices aligned with Bhutan's environmental and social policies.
- Build capacity of local authorities, community representatives and relevant stakeholders through measures such as targeted training and knowledge sharing

sessions, development of manuals and standard operating procedures (SOPs) to implement and sustain CAZ interventions.

- Conduct at least three workshops with government agencies, local authorities, and relevant stakeholders to validate findings, design interventions, and ensure participatory planning.

### 3. Scope of work

The contractor is responsible for performing the tasks mentioned in the table below:

#### **Main Task 1: Comprehensive review, needs assessment, and site selection for CAZ implementation**

*The consultant shall conduct a preliminary assessment of the 10 potential sites and select three sites as the most suitable for CAZ implementation (each site representing a dominant source sector: industrial, commercial, and residential), in consultation with the Government.*

**Sub-task 1.1:** Conduct a rapid needs assessment of:

- Existing emission sources relevant to each city, including industries, waste burning, transport, diesel generators, and other local pollution sources.
- Current air quality levels, including monitoring station data and satellite-derived data.
- City-level plans and policies, including master development plans, land use plans, and population density maps to understand urban structure, and development strategies.
- International and regional examples of Low Emission Zones (LEZs) and Clean Air Zones (CAZ) to draw lessons applicable to the Bhutanese context.
- Based upon the rapid assessment, propose 10 zones as potential CAZ (covering dominant sources such as commercial, industrial, and residential).

**Sub-task 1.2:** Apply the Analytic Hierarchy Process (AHP) as a multi-criteria decision-making tool (to be discussed and finalised with ICIMOD team) to evaluate and rank 10 sites and their potential for CAZ implementation based on multiple relevant criteria.

- Define a set of criteria that reflect financial, social, environmental, institutional, and technical factors important for successful CAZ implementation, such as (but not limited to):
  - emission reduction potential
  - government and institutional readiness
  - gender and social impact
  - financial feasibility/ availability of funds
  - environmental co-benefits (health, ecosystems)
  - enforcement capacity
  - acceptability of the stakeholders

**Sub-task 1.3:** Use the AHP results to support transparent, evidence-based decision making and justify the recommendation of the three most suitable sites among the 10 sites for CAZ implementation.

- Prepare a comparative assessment report that consolidates analysis across 10 sites.
- Recommend the three most suitable sites for CAZ based on comprehensive multi-criteria analysis, each site representing a key source sector: industrial, commercial, and residential.

**Sub-task 1.4:** Conduct stakeholder workshop to communicate the recommendation of the best three sites for CAZ implementation.

- Incorporate stakeholder feedback and finalise the report that justifies the recommendation of the three most suitable sites among the 10 sites for CAZ implementation; the three sites must cover one dominant emission sector per site, such as commercial, industrial, and residential).

## **Main Task 2: Development and implementation of Sectoral Framework for selected CAZ sites**

*The consultant will establish a robust, actionable, sectoral framework to facilitate the successful implementation of CAZ in three selected sites.*

**Sub-task 2.1:** Develop a sector-specific intervention framework for the three selected sites, clearly outlining regulatory measures, gender-inclusive and socially responsible technological solutions, gender-inclusive infrastructure improvements, and enforcement strategies. Proposed intervention categories to include (but not limited to):

- Introduction of green/buffer zones near industrial zones, redesigning commercial areas, and road network modifications.
- Vehicle access restrictions, promotion of non-motorised transport (NMT), e-mobility integration, traffic flow management, parking strategies, and pedestrian zones.
- Measures to prevent open waste burning.
- Other relevant interventions tailored to the site's specific pollution profile.

**Sub-task 2.2:** Prepare detailed spatial plans illustrating the layout of proposed measures within the CAZ sites using the Geographic Information System (GIS) platform.

- Provide design concepts, drawings, and maps to clearly communicate before and after scenarios.
- Detail technical specifications and rough cost estimates for proposed interventions.
- Identify administrative and regulatory requirements such as permits needed to implement proposed interventions.
- Assess gender and socio-economic impacts (benefits and risks) including:
  - Air quality outcomes
  - Health outcomes
  - Employment and livelihood
- Draft of incentive policies and regulation instruments

**Sub-task 2.3:** Develop an implementation roadmap detailing phased actions, timelines, and responsibilities of relevant agencies for CAZ intervention.

- Prepare short-term, medium-term, and long-term implementation phases along with financial requirement.
- Define clear timelines and sequencing of activities for each sectoral intervention.
- Define clear roles and responsibilities of the relevant stakeholder for each action item.
- Review the existing institutional framework and improvements required to deliver this CAZ plan.

**Sub-task 2.4:** Establish Monitoring & Evaluation (M&E) framework, including (but not limited to):

- Indicators for tracking progress
- Reporting frequency
- Concept design of a dashboard

**Sub-task 2.5:** Organise targeted consultation workshop or meetings with relevant stakeholders to present sectoral interventions and seek feedback.

- Facilitate interactive sessions to address concerns.
- Incorporate stakeholder inputs and prepare finalised intervention report.

## 4. Deliverables

The Consultant will accomplish the following deliverables:

Activity	Deliverable	Description
<b>Main Task 1: Comprehensive review, needs assessment, and site selection for CAZ implementation   Till 15 December 2025</b>		
1.1	Rapid Needs Assessment	Assessment of existing emission sources, air quality levels, city-level plans, international and regional CAZ/LEZ examples, policy measures, institutional readiness, and stakeholder capacity. Propose 10 potential zones (covering dominant sources such as commercial, industrial, and residential).
1.2	Multi-criteria Evaluation	Application of Analytic Hierarchy Process (AHP) to evaluate and rank 10 potential sites based on financial, gender, social, environmental, institutional, and technical factors.
1.3	Comparative Assessment and Draft Recommendation Report	Evidence-based recommendation of the three most suitable sites (covering one dominant source per site, such as commercial, industrial, and residential) for CAZ implementation, supported by AHP results.
1.4	Stakeholder workshop and	Conduct a workshop to present and discuss the recommended sites for CAZ implementation; gather

	Final Recommendation Report	feedback and incorporate to finalise the report that justifies the selection of the three most suitable sites.
<b>Main Task 2: Development and implementation of Sectoral Framework for selected CAZ city   Till 28 February, 2026</b>		
2.1	Sectoral Intervention Framework	Develop a detailed plan outlining sector-specific interventions including regulatory measures, technological solutions, and enforcement strategies tailored to the three selected sites.
2.2	Spatial Plan & Gender and Socio-economic Impact Assessment	Prepare GIS-based spatial plans, design concepts, and rough cost estimates for proposed interventions. Assessment of expected pollution reduction, health benefits, job creation, and gender and socio-economic impacts of proposed interventions.
2.3	Implementation Roadmap	Develop a phased action plan with timelines, agency responsibilities, financial requirements, and institutional strengthening needs.
2.4	Monitoring & Evaluation Framework	Establish M&E framework including indicators, reporting frequency, and concept design of a dashboard.
2.5	Consultation and CAZ Intervention Report	Organise targeted consultation workshops with relevant stakeholders to present sectoral interventions and incorporate feedback into finalised CAZ Intervention Report.

## 5. Qualifications and experience

The consulting team should have:

- Proven experience in air quality assessment, urban planning, policy research, and environmental management.
- Demonstrated capability in performing feasibility analysis and designing or implementing similar air pollution reduction initiatives.
- Strong experience in rapid environmental assessment, stakeholder engagement and socio-economic studies.
- Familiarity with the policy and institutional frameworks related to environmental protection in Bhutan or similar contexts.
- Proven experience in developing actionable, phased implementation roadmaps for environmental or urban projects.
- Excellent communication, report-writing, and presentation skills.

## 6. Duration and timeline

The contract period for this assignment is till February 2026.

## 7. Reporting requirements

The consultant will report to the Intervention Manager for Air Pollution Mitigation and Air Pollution Mitigation Analyst, while providing regular updates on progress and challenges to the Action Area on Air Lead. All deliverables must be submitted as draft for review and approval by ICIMOD team before final submission.

## 8. Proposal

### Technical proposal

Applicants must include the following sections in the technical proposal:

- Technical approach and methodology:

In this section, applicants should explain their understanding of the objectives of the assignment, approach to the services, and methodology to obtain the expected output.

- Organisation and experts

Applicants should propose the structure and composition of their team, mentioning their qualifications and skills as requested in the section team. Applicants should list the main discipline of the assignment, the key expert responsible, and the proposed technical and support staff.

- Relevant past experience

Applicants must include the past experience of their organisation and experts relevant to this request for proposals.

### Financial proposal

The bidder should provide the financial quotations with the breakdown of all the costs including applicable tax in the budget:

- Breakdown of the experts charge, needs number of days and rate
- Breakdown of any other costs, item, unit, quantity, rate

Refer to the table provided along with this ToR for details budget.

### Evaluation criteria

The technical proposal will be evaluated based on the following:

The service provider will be selected on the basis of the highest-ranked technical proposal (60% weightage) and the lowest-cost financial proposal (40% weightage).

The service provider will be selected on the basis of the highest cumulative scores obtained in the technical and financial proposals using the following formula:

- Technical score = Score obtained based on technical proposal (total 100)
- Financial score = Score obtained based on financial proposal (total 100)
- Total score = 60% of technical proposal + 40% of financial proposal

The service provider scoring the maximum score based on the criteria will be awarded. However, the service provider should score at least 60 points in the technical proposal.

## 9. ICIMOD's Core Values

Our core values are integrity, neutrality, relevance, inclusiveness, openness, and ambition. These values are an expression of our culture and are central to the guiding beliefs and principles of our work and behaviour. Our core values will lie at the heart of ICIMOD operations and delivery. They will underpin everything we do and frame how we work with our partners. They reflect our founding intentions and the balances we seek to hold, while equipping ourselves for the future.

### Diversity, equity, inclusion, and safeguarding

ICIMOD's consultant selection process is based on the qualifications and competence of the applicants. As an employer, ICIMOD is committed to promoting diversity, equity, and inclusion, and offers equal opportunities to applicants from all backgrounds and walks of life, including but not limited to gender, age, national origin, religion, race, caste, ethnicity, sexual orientation, disability, or social status. ICIMOD strongly encourages applications from all eligible applicants, especially women, from all parts of the HKH region.

ICIMOD is dedicated to establishing and upholding a safe and nurturing work environment, where all its employees can participate fully and meaningfully without fear of violence, harassment, exploitation, or intimidation. Any type of abuse or harassment, including sexual misconduct [including child abuse], by our staff, representatives, or stakeholders is not condoned or tolerated.

## 10. Method of application

Applicants are requested to apply before **October 15, 2025** (11:59 PM Nepal Standard Time) by sending in the following documents to [consultancy.int@icimod.org](mailto:consultancy.int@icimod.org).

1. A technical proposal demonstrating knowledge, technical skills, experience and capability as required by the nature of the work and understanding of the requisite tasks set forth in the terms of reference.
2. A financial proposal in USD or in Local Currency with a detailed breakdown inclusive of applicable taxes
3. Up-to-date CV of experts
4. Last three years audit reports and tax clearance certificates
5. Valid registration certificates and renewals if any.