



21st International Conference on Urban Health



Evaluating Air Quality Governance in Bangladesh through Legal and Strategic Frameworks for Air Quality Management

Conference Theme: Healthy Built Environment: Building Equitable, Climate-Resilient Cities

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The Urgency



Bangladesh is among the world's top-polluted countries

10-20x

PM_{2.5} levels 10–20× WHO limits in Bangladesh.

1st–3rd

Dhaka consistently ranks 1st–3rd among the most polluted cities

80,000+

Air pollution contributes to 80,000+ premature deaths annually (ICCT/WHO).

**NAQMP
2024–2030**

Government targets under NAQMP 2024–2030:

- ✓ Reduce PM_{2.5} by 15 µg/m³ nationally
- ✓ Reduce PM_{2.5} by 30 µg/m³ in Greater Dhaka

NDC 3.0

commits Bangladesh to mitigation across transport, industry, energy, and waste, requiring strong governance and enforcement..

Objectives

01

Assess whether Bangladesh's existing laws align with NAQMP and NDC 3.0 commitments.

02

Examine coherence across five major acts: Environment Conservation Act (1995); Air Pollution Control Rules (2022); Brick Manufacturing & Kilns Act (2013); Forest Act (1927); Motor Vehicles Act (2018)

03

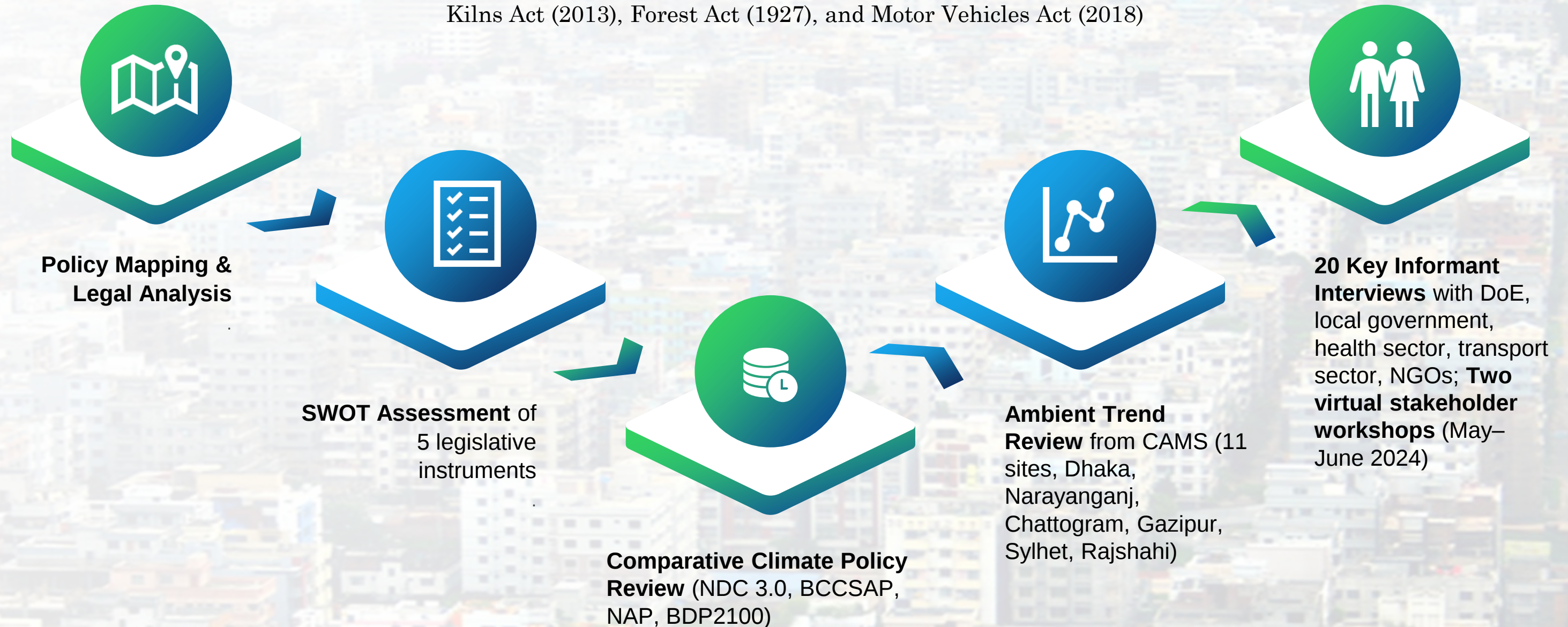
Analyze PM_{2.5} patterns using data from 11 CAMS stations and Integrate evidence from 20 KIIs and 2 workshops

04

Identify pathways to integrate urban health resilience & climate governance.

05 Legislative Document Review

National Air Quality Management Plan (NAQMP) 2024–2030 strategic goals: the Bangladesh Environment Conservation Act (1995), Air Pollution Control Rules (2022), Brick Manufacturing and Kilns Act (2013), Forest Act (1927), and Motor Vehicles Act (2018)



Recent: 3rd Nationally Determined Contribution 3.0

Key Climate Commitments

- ❑ Introduces two pathways: 1. Business-as-Usual (BAU); 2. Conditional (requires international climate finance)
- ❑ Targets mitigation in energy, industry, transport, waste
- ❑ Calls for: Clean transport transition, Renewable energy expansion, Industrial efficiency, Solid waste reduction
- ❑ Highlights co-benefits for urban health but does not specify city-level air-quality targets

NDC 3.0 Weaknesses Relevant to PM_{2.5}

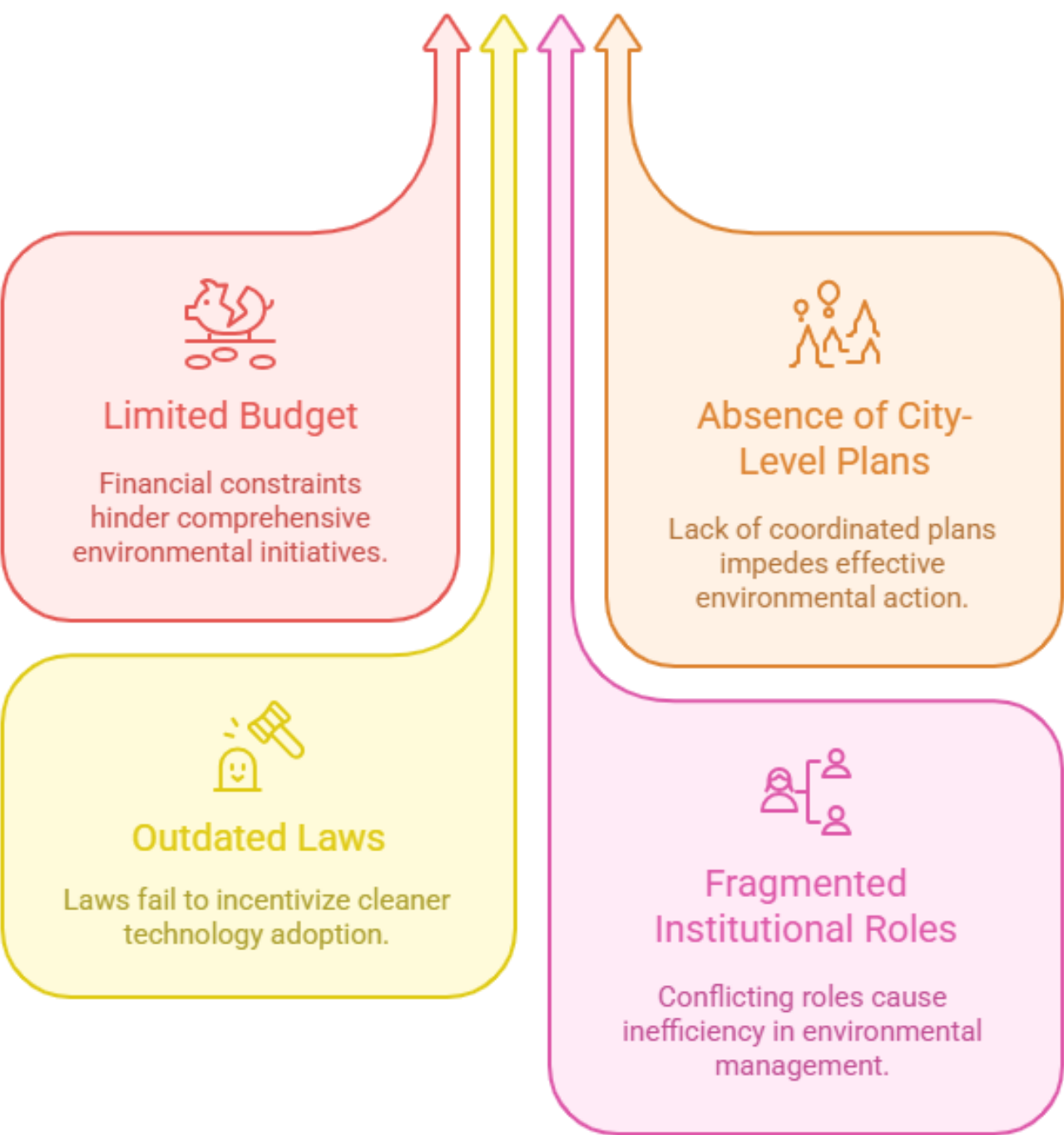
- ❑ Urban air quality not explicitly integrated into sectoral mitigation
- ❑ Transport and industrial actions lack PM_{2.5} reduction metrics
- ❑ No synergy between NAQMP and NDC reporting frameworks
- ❑ Missing alignment with health systems, despite WHO guidance
- ❑ No provisions for real-time monitoring expansion or open-access AQ data

NAQMP 2024–2030: What Needs Stronger Enforcement

NAQMP priorities



Factors for weak execution



CAMS PM_{2.5} Findings

- Persistent exceedances in: Dhaka North & South, Gazipur, Narayanganj, Chattogram
- Winter peaks exceed WHO limit by 14–20×
- Hotspots correlate with: Brick clusters, Construction and transport corridors, Industrial belts with weak inspection

Figure 2.1 Annual Ambient PM_{2.5} at Monitoring Stations in Bangladesh, 2019–21
µg/m³

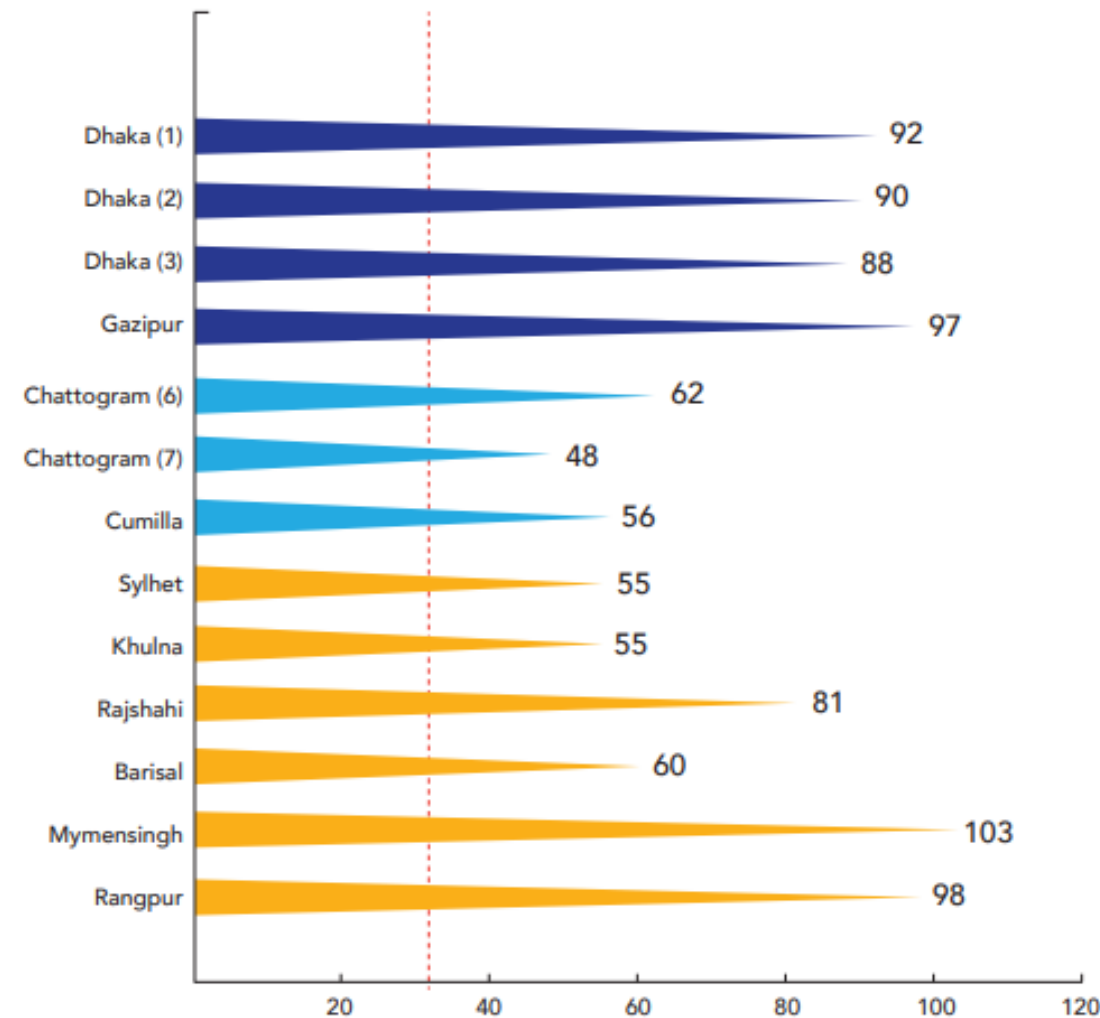
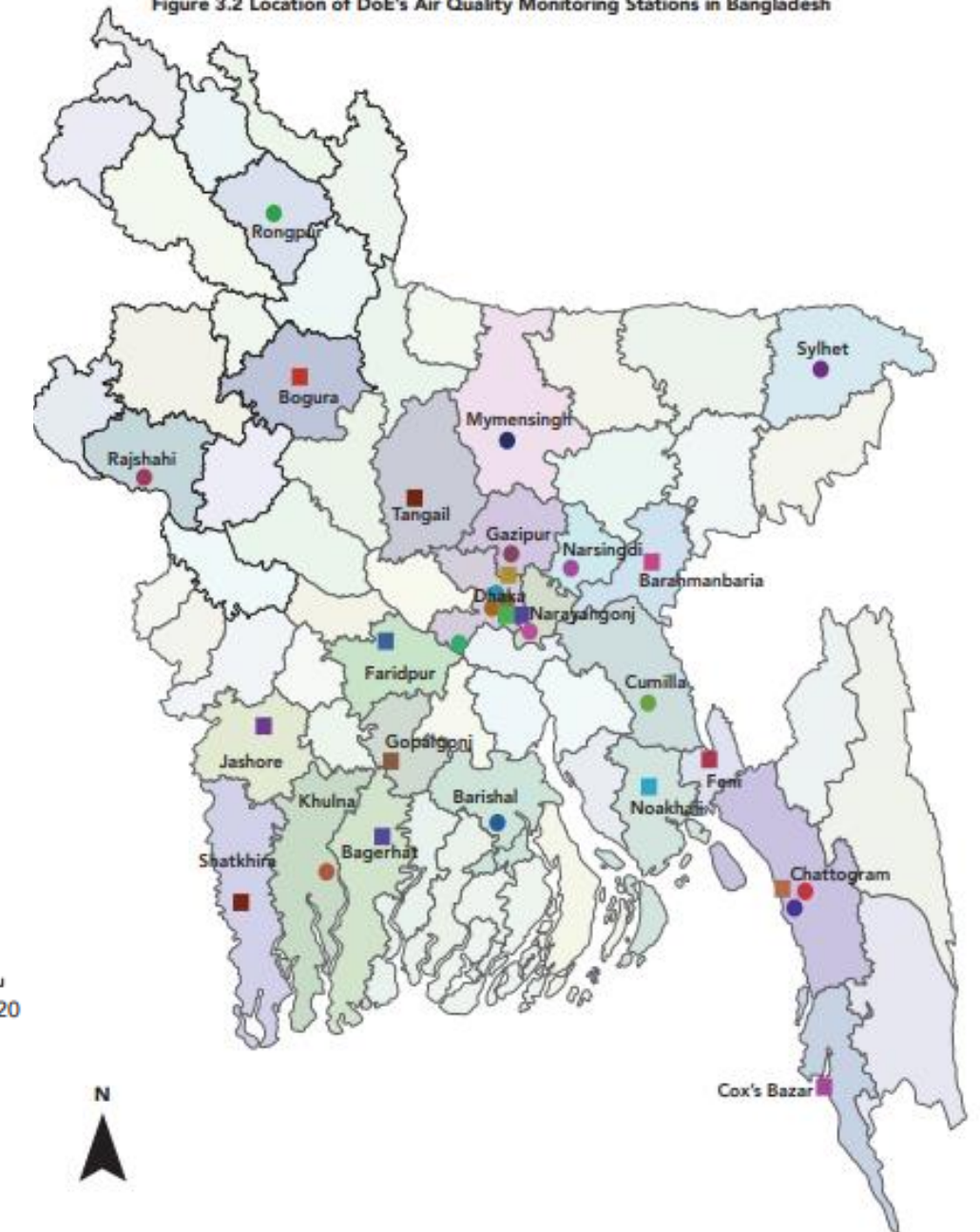
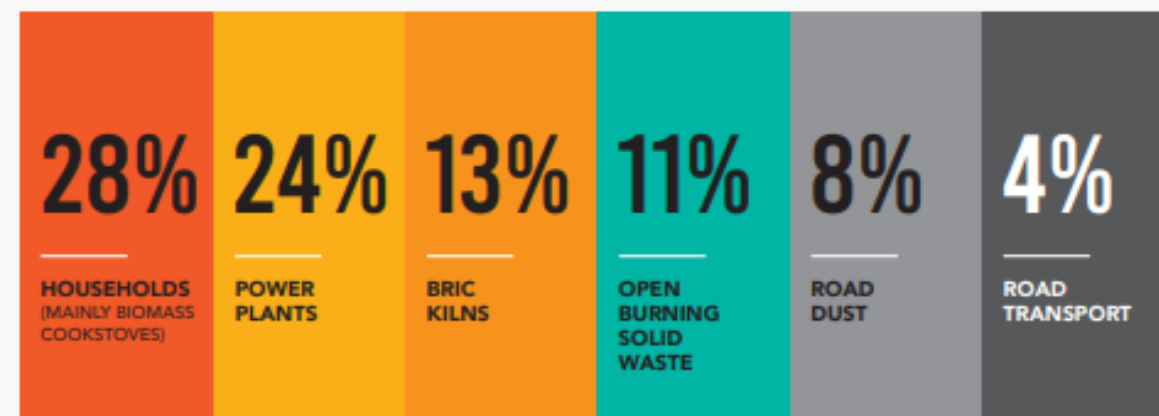


Figure 3.2 Location of DoE's Air Quality Monitoring Stations in Bangladesh



Source: Produced from data reported in the Monthly Air Quality Monitoring Reports by the DoE, Bangladesh.

MAJOR SOURCES OF AIR POLLUTION IN BANGLADESH



- | | | | |
|------------------------|------------------------|---------------------------|----------------------------|
| ● CAMS (DoE) | ● CAMS (BARC) | ■ C-CAMS (Bogura) | ■ C-CAMS (Nasirabad, CTG.) |
| ● CAMS (RCC, Sylhet) | ● CAMS (Darusalam) | ■ C-CAMS (Noakhali) | ■ C-CAMS (Cox's bazar) |
| ● CAMS (DFO, Barishal) | ● CAMS (Gazipur) | ■ C-CAMS (Rampal) | ■ C-CAMS (Faridpur) |
| ● CAMS (DoE, M. Singh) | ● CAMS (Narayanganj) | ■ C-CAMS (Satkhira) | ■ C-CAMS (Feni) |
| ● CAMS (BTV Rangpur) | ● CAMS (Khulshi, CTG.) | ■ C-CAMS (Tangail) | ■ C-CAMS (Gopalganj) |
| ● CAMS (Savar) | ● CAMS (Agrabad, CTG.) | ■ C-CAMS (Tongi) | ■ C-CAMS (Jashore) |
| ● CAMS (Narsingdi) | ● CAMS (Khulna) | ■ C-CAMS (Shampur, Dhaka) | ■ C-CAMS (Dhaka south) |
| ● CAMS (Cumilla) | ● CAMS (Rajshahi) | ■ C-CAMS (B. Baria) | |

Key Findings

Fragmented Legal Architecture

Across five laws

- ❑ Mandates overlap (DoE, LGD, BRTC, BRTA).
- ❑ Environment Conservation Act: broad but weak enforcement.
- ❑ Brick Kiln Act: does not reflect modern low-emission kiln technologies.
- ❑ Forest Act (1927): does not recognize forests as air-quality assets.
- ❑ Motor Vehicles Act: emphasizes penalties but lacks incentives for EV, CNG modernization.

Enforcement Weaknesses

From KIIs (N=20)

- ❑ Insufficient inspectors for >90,000 factories.
- ❑ Weak capacity of city corporations.
- ❑ Informal industries largely unregulated.
- ❑ Low public awareness, limited digital compliance tools.
- ❑ Absence of inter-ministerial monitoring.

Data Gaps Undermine Climate & AQ Governance

Stakeholder consensus

- ❑ Need for district-level CAMS expansion.
- ❑ 2015 baseline data outdated—affects NAQMP & NDC reporting.
- ❑ No unified national AQ data portal.
- ❑ Lack of real-time data obstructs:
 - ✓ Evidence-based enforcement
 - ✓ Climate tracking
 - ✓ SDG 3 & 11 integration
 - ✓ Public warnings & health advisories

Urban Health is Underprioritized

Drawing from Urban Climate Policy Analysis

- ❑ Dhaka & Chattogram lack urban-specific climate adaptation plans.
- ❑ Heatwaves intensify PM toxicity.
- ❑ Informal settlements face triple exposure:
 - ✓ heat
 - ✓ air pollution
 - ✓ unsafe water/waste
- ❑ No integration of air quality into:
 - ❑ Public health surveillance
 - ❑ Emergency health preparedness
 - ❑ Urban planning

Consolidated SWOT Analysis

S

Strengths

- ❑ Strong national commitment (NAQMP; NDC 3.0).
- ❑ Updated Air Pollution Control Rules (2022).

W

Weaknesses

- ❑ Outdated brick & forest laws.
- ❑ Weak enforcement; fragmented mandates.
- ❑ Data gaps across cities and districts.

O

Opportunities

- ❑ Align NDC mitigation with PM_{2.5} reduction.
- ❑ Scale real-time monitoring to 64 districts.
- ❑ Incentivize cleaner technologies & transport.

T

Threats

- ❑ Rapid urbanization & industrialization.
- ❑ Intensifying heatwaves.
- ❑ Rising urban emissions without effective governance

Policy Integration Gaps

Bangladesh currently treats:

Air Pollution → Environmental issue

Health → Social issue

GHG Emissions → Climate issue

But in reality, for Dhaka and major cities:
These are one interconnected crisis.

Needed:

Integrated policy, finance & reporting
frameworks connecting NDC + NAQMP +
Urban Health + Climate Plans.



<https://www.bbc.com/news/world-asia-india-37906246>

Case Study: Air Pollution Snapshot-Dhaka

Air Quality: Hazardous Levels Persist

PM2.5 Concentration: Dhaka's average PM2.5 level reached $124 \mu\text{g}/\text{m}^3$, exceeding WHO's 24-hour standard of $15 \mu\text{g}/\text{m}^3$ by over eight times¹.

AQI Rankings: The city ranked 8th globally for worst air quality on April 11, with an AQI of 149, categorized as "unhealthy for sensitive groups."²

Health Impacts: Elevated air pollution levels increase risks of respiratory issues, cardiovascular diseases, and premature deaths.



Act Now: Dhaka's Health is on the Line!

Dhaka's toxic air—averaging PM2.5 levels over 8 times the WHO limit—ranks it among the world's most polluted cities, driving surges in asthma, heart disease, and premature deaths. Simultaneously, contaminated water and soil from industrial waste are fueling outbreaks of diarrhea, typhoid, and long-term developmental harm in children. With record-breaking heatwaves compounding these threats, urgent policy action is needed to protect urban health through clean air laws, pollution control, and heat-resilient infrastructure.

Recommendations

Align NDC 3.0 with Air Quality Co-Benefits

- Add PM_{2.5} reduction indicators to transport, energy & industry mitigation.
- Create city-level NDC implementation pathways (Dhaka, Gazipur, Narayanganj)

1

Expand Real-Time Monitoring

- CAMS in every division, major industrial belts, and border areas.
- Develop a unified national open-access AQ platform.

3

Modernize Air-Quality Laws

- Update Brick Act for zigzag + HHK + VSBK + electric kiln transitions.
- Amend Forest Act to include ecosystem air-quality services.
- Formalize city-corporation enforcement authority.

2

Finance Alignment

- Green taxes on brick emissions & high-emitting vehicles.
- Incentives for EV, CNG upgrading, cleaner kilns.
- Establish Air Quality & Climate Resilience Fund.

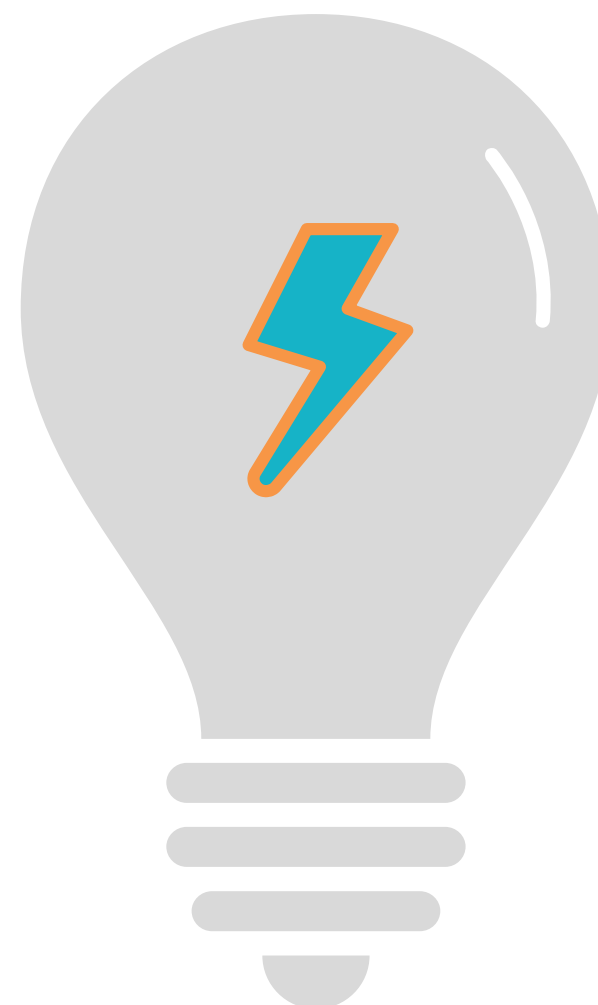
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Integrate Urban Health Systems

- Heat-resilient planning, green corridors, cool roofs.
- Urban surveillance linking air quality to hospital data.
- Special protections for women, children, informal workers.

5

**Air Quality
Climate Integration**

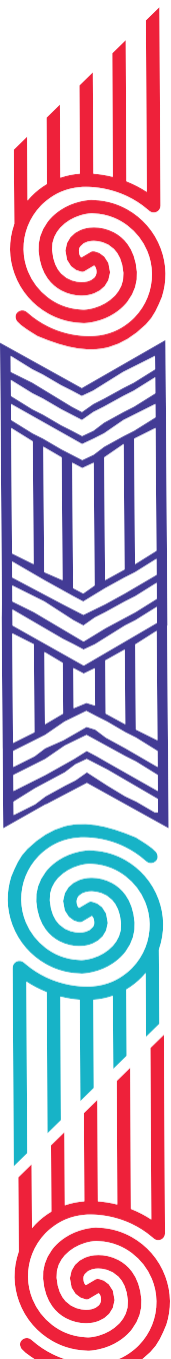




The 2030 Message

Bangladesh can **simultaneously**

- ☐ Achieve NDC 3.0 mitigation goals
- ☐ Reduce PM_{2.5} pollution
- ☐ Build climate-resilient, healthier cities.



The 2030 Message

But this requires

- ☐ Legal modernization
- ☐ Real-time decentralized monitoring
- ☐ Climate–health–air quality integration
- ☐ Stronger city-level governance



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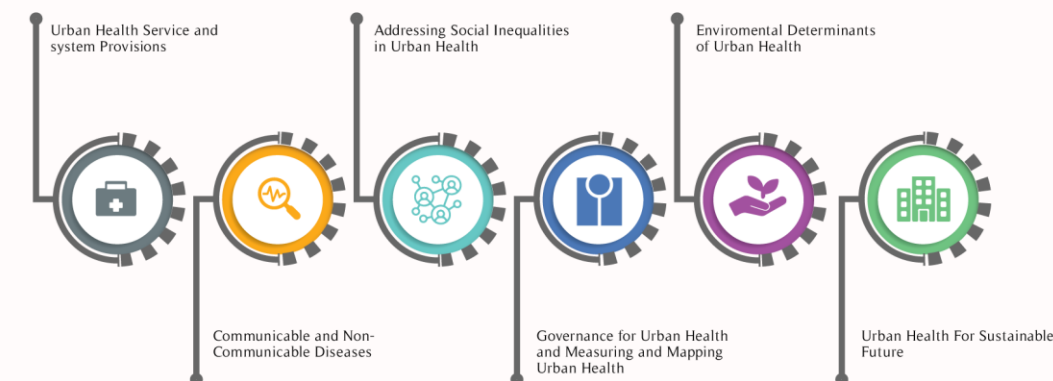
WHO ARE WE

Established in 2009, the **Bangladesh Urban Health Network (BUHN)** is a civil society network dedicated to advancing health equity in urban areas. Secretarial support for Social Development is provided by Eminence Associates, facilitating the network's operations. BUHN serves as a platform that unites diverse stakeholders in the urban health sector, fostering effective collaboration. Moreover, it collaborates with other organizations to host conferences aimed at addressing challenges within the urban health sector and seeking potential solutions.

Affiliated with the International Society for Urban Health (ISUH), BUHN has its well-developed website. The site serves as a comprehensive repository featuring resources, articles, and insights, facilitating information sharing within the community. Additionally, the website includes blogs and monthly e-newsletters to enhance communication and knowledge dissemination among its members.

BUHN Thematic Areas:

The following thematic focus areas are included for the activities of BUHN, but it will not be limited to these, and can extend beyond the following:



For further information, Please contact:

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Thank You

For questions or collaboration

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Organization Overview

Eminence Associates for Social Development is a not-for-profit, public health-based NGO in Bangladesh, dedicated to advancing the country's public health sector for over two decades. Legally registered with the NGO Affairs Bureau (NGOAB), Eminence is recognized as a leading institution, specializing in research, advocacy, and logistics to address critical health challenges. The organization is committed to delivering innovative strategies and evidence-based solutions, particularly in the areas of assessing health care services, inutrition, maternal and child health, gender disparities to improve the well-being of Bangladesh's most vulnerable populations.

Eminence Core Values



Eminence Thematic Areas



➤ Eminence's Network of Partners

Eminence Associates for Social Development collaborates with a diverse range of local and international partners to amplify our impact on health, quality health-care assessment, nutrition, and community development. These partnerships enable us to implement evidence-based strategies that promote health equity and empower marginalized populations. Together, we work toward creating sustainable solutions that address pressing social challenges in Bangladesh and beyond.

