



## Authors

Ramya M.A. & Anushri Pundit

## Reviewers

Vivek Vaidyanathan, Mayura Gadkari & Ishita Trivedi

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# Acknowledgements

This document draws upon insights from the first two phases of Artha Global's Clean Air Zones (CAZ) initiative. This project has been shaped by the valuable participation of the organisations, departments, and experts listed below as well as local NGOs, Resident Welfare Associations (RWAs) and other public and private organisations. We extend our sincere gratitude to all those whose contributions and engagement have significantly enriched the project.

## Government Stakeholders



APPCB | Andhra Pradesh Pollution Control Board



VMC | Vijayawada Municipal Corporation



Greater Visakhapatnam  
Municipal Corporation

GVMC | Greater Visakhapatnam Municipal Corporation



Transport Department, Government of Andhra Pradesh



Vijayawada City Police



Visakhapatnam City Police

## Technical Partner



TERI | The Energy and Resources Institute

## Knowledge Partner



TfL | Transport for London





# About The Guidebook



## Purpose of the Guidebook

This guidebook serves as a practical resource to support effective stakeholder engagement in the planning and implementation of Air Quality (AQ) improvement projects. It is designed to help Urban Local Bodies (ULBs), government agencies, and partner organisations navigate the complexities of community outreach, collaboration, and consensus-building. By outlining key strategies, best practices, and lessons learned, this guide aims to foster transparent and inclusive processes that lead to successful project outcomes. It also serves as a replicable framework that can be adapted for similar clean air initiatives in other cities, states, or regions. Ultimately, it aims to empower project stakeholders to work collectively towards cleaner air and healthier urban environments.

## What You'll Find in This Guidebook

-  Importance of Stakeholder Engagement
-  Key Stakeholders and Their Roles
-  Stakeholder Engagement Process
-  Best Practices and Takeaways

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## List of Abbreviations

APPCB - Andhra Pradesh Pollution Control Board  
AQ - Air Quality  
CAZ - Clean Air Zone  
CBO - Community-Based Organisation  
GVMC - Greater Visakhapatnam Municipal Corporation  
ITDP - Institute for Transport and Development Policy  
LEZ - Low Emissions Zone  
NCAP - National Clean Air Programme  
NGO - Non-Governmental Organisation  
PAG - Project-Affected Group  
PCMC - Pimpri Chinchwad Municipal Corporation  
PM - Particulate Matter  
RTA - Regional Transport Authority  
RWA - Resident Welfare Association  
TERI - The Energy and Resources Institute  
TfL - Transport for London  
ULB - Urban Local Body  
VMC - Vijayawada Municipal Corporation

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# 01

# Introduction

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## 1.1 Project Context

In September 2022, the Government of India revised its target for reducing particulate matter (PM) concentration in the 131 non-attainment cities covered under the National Clean Air Programme (NCAP). NCAP requires that state and local administrations take the lead in reducing PM emissions through various sectoral interventions<sup>1</sup>. Because the transportation sector is responsible for a significant share of PM emissions,<sup>2</sup> and it falls under the jurisdiction of state and city governments, it is a natural starting point for air pollution interventions when working at the state or city level. Transportation interventions can include developing and enhancing public transportation systems, improving road networks and reducing congestion, regulating the use of fossil-fuel-driven vehicles, and encouraging the use of zero-emission vehicles.

In this context, Artha Global, with support from partners like Transport for London (TfL) and The Energy Resources Institute (TERI), is working with the state of Andhra Pradesh to help curb its transport emissions by piloting Clean Air Zones (CAZ). Artha has engaged two cities, Vijayawada and Visakhapatnam, for the pilot.

This project is designed to tackle rising urban air pollution in the cities of Visakhapatnam and Vijayawada. The project seeks to pilot CAZ in identified air pollution hotspots through a set of targeted interventions, which could include improved parking management, restrictions on polluting vehicles, migration to cleaner fuels, promotion of electric mobility, and enhanced pedestrian infrastructure.

## 1.2 What are Clean Air Zones (CAZ)?

Clean Air Zones (CAZ) are designated areas where targeted control measures are used to reduce emissions and improve air quality (AQ). Control measures like regulating the movement and directing the operation of polluting vehicles are introduced in a graded manner. CAZ offer an ideal way to help non-attainment cities kickstart the process of combating transport emissions and improving their air quality.

## 1.3 What is Stakeholder Engagement?

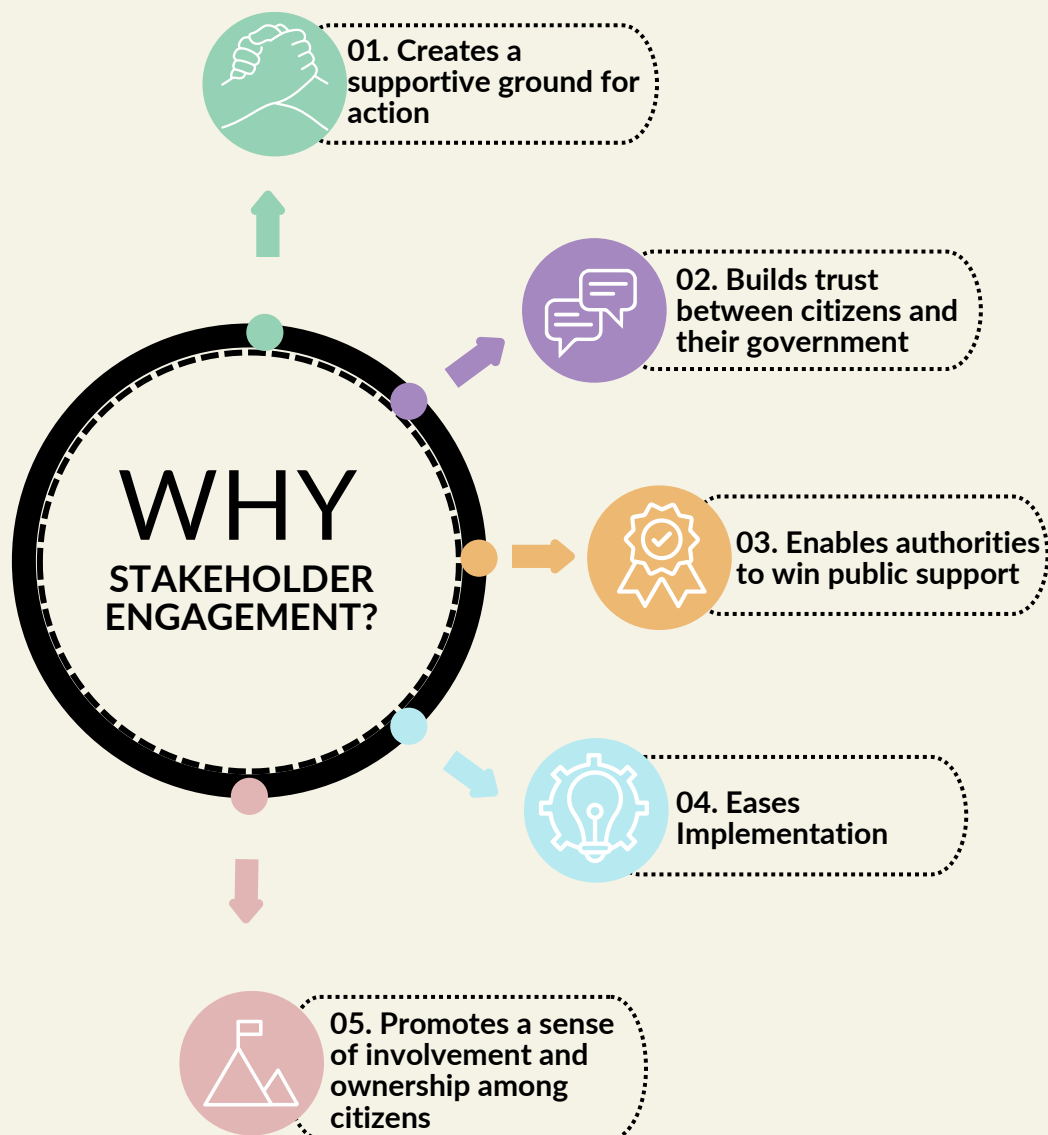
Stakeholder engagement in the context of CAZ refers to the process of systematically involving all relevant parties, such as ULBs, policymakers, residents, businesses, transport operators, health professionals, and others, in the project life cycle. A thorough stakeholder engagement strategy brings in stakeholders at the planning, design, implementation, and evaluation stages of the project.

Stakeholder engagement can be conducted through various methods, including public awareness campaigns, consultative workshops with stakeholders at different levels of government, public meetings, and surveys or discussions with citizens and business owners. These methods are detailed in the following sections of this guidebook.

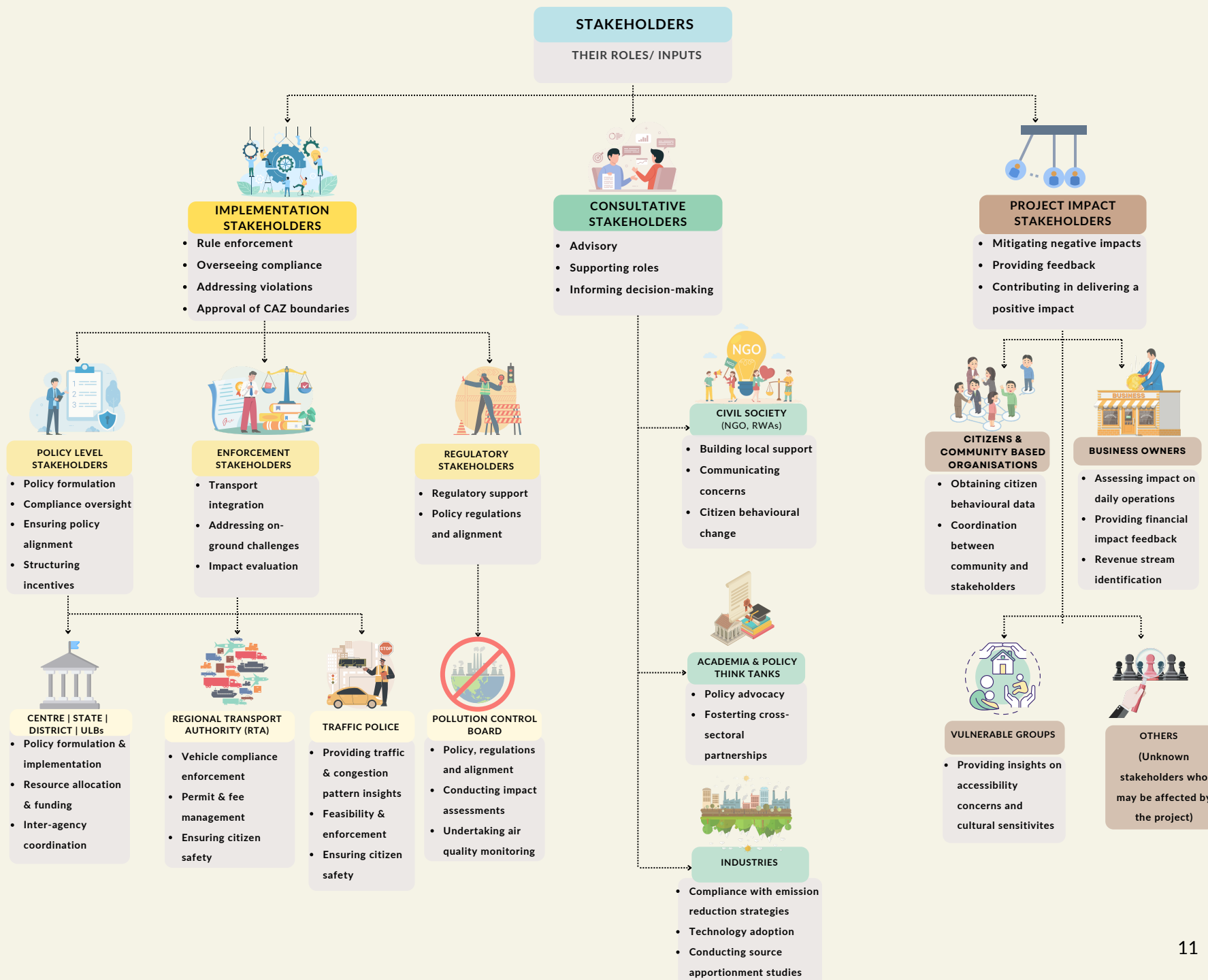
Engaging a variety of appropriate stakeholders is essential for public buy-in to urban initiatives and ensures the project reflects the diverse needs and desires of those it aims to serve.

## 1.4 Importance of Stakeholder Engagement

Stakeholder Engagement provides an organisation with a supportive ground for action. When stakeholders are asked to participate in decision-making processes throughout the course of a project and their feedback is then incorporated into the project design, they have, essentially, given their consent as a community for the project to occur. By taking consent from the various project stakeholders, the implementing organisation, which in many cases can be the government, begins to build a trusting relationship with its citizens. While citizens might be satisfied with the services provided by the government, building a relationship becomes key for mutual trust between society and the government.



# 1.5 Key Stakeholders and their Roles





# 02

## Success Stories

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Source: Chennai Smart City Limited

## 2.1 Chennai's Pedestrian Plaza

In 2013, the Chennai Corporation realised there was a need to improve the sustainable transportation systems in the city. The city set goals such as increasing the number of trips made by walking and cycling, and transforming Chennai's streets into accessible streets where all modes of transport are integrated. One initiative that the city undertook was transforming the Pondy Bazaar pedestrian plaza from a car-centric shopping street into a walkable, livable pedestrian promenade.

Stakeholder and citizen engagement were a large part of the implementation of the pedestrian promenade. This stakeholder engagement was crucial in getting all stakeholders on board with the project and having them understand why the project would be beneficial. At first, the city faced pushback from shopkeepers and merchants who were concerned that reducing space for vehicle parking would cause them to lose out on customers. To address shopkeepers' concerns, the city conducted surveys and demonstrated that the pedestrian-centric design would attract more people to the shopping hub.<sup>4</sup> Further, to address concerns voiced by the traffic police around limiting vehicle movement in the area, the city used temporary, on-ground interventions to conduct trial runs of the pedestrian zone and collected citizen and stakeholder feedback after each trial. This process helped the city understand people's responses to the intervention and helped build support for the project as citizens and other stakeholders were able to see how they would benefit from the project before it was fully implemented. Combining stakeholder engagement with an iterative implementation process was crucial in the project's success, as it helped get stakeholders who were initially concerned about the intervention to support it in the end.<sup>5</sup>

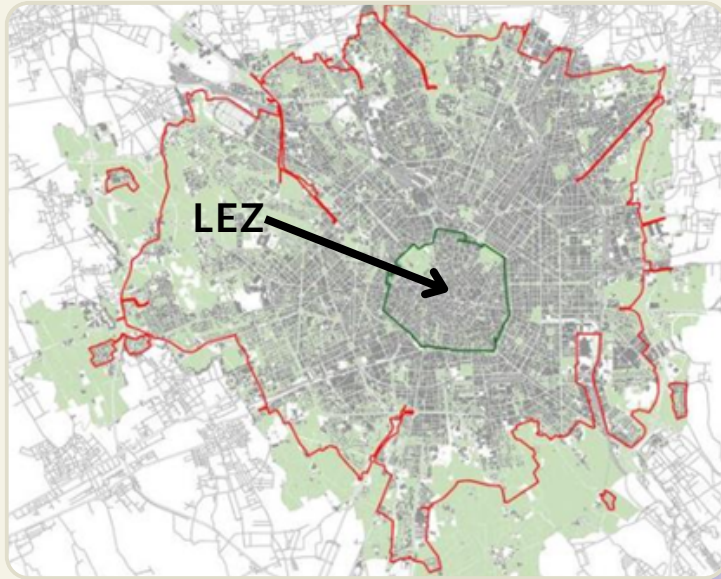


Source: Peru Travel

## 2.2 Lima's Car-Free Days

In 2014, the World Health Organization reported that Lima had the most polluted air of all cities in Latin America. Vehicle emissions were responsible for a large part of this pollution, and the Municipality of Lima launched a public campaign to promote non-motorised transport in the city and build public awareness around the issue of vehicle emissions. This campaign was the Car-Free Days initiative, where every Sunday, cars were banned from moving through Lima's historical city centre. The initiative included several cultural and social activities organised every Sunday by different municipal secretariats in partnership with the central government. Alongside these activities, free urban cycling workshops were offered throughout the year to encourage a shift from cars to cycling, and over 3600 people participated.

Lima's Car-Free Days initiative is a great example of citizen engagement through public awareness-building campaigns. It was Lima's first step in reducing air pollution and showing citizens the kind of environment that is possible when cars are absent and more people cycle. Not only did the initiative result in a much larger awareness of the problem of air pollution and the benefits of non-motorised transport, but the city recorded that particulate levels had decreased by over 50% on a Car-Free Day and that noise levels had also dropped significantly.<sup>6</sup>



Sources: Urban Access Regulations Europe, The Milan Pass

## 2.3 Milan's Low Emissions Zones

Milan's Low Emissions Zone (LEZ) successfully resulted in a significant modal shift from private cars to public transport and a gradual increase in eco-friendly vehicles, alongside a steady decline in the most polluting vehicles. The Milan LEZ would not have achieved its success if it were not for its dedicated stakeholder and citizen engagement efforts and the administration's willingness to make policy changes to meet stakeholder and citizen needs. These efforts ensured wide compliance and minimal opposition to the LEZ. Stakeholder engagement measures included:

- Multiple roundtables with various stakeholders such as residents, logistics operators, retailers and the commuters' association
- Lower ticket prices for retailers, logistics operators and residents of the LEZ
- Gradual introduction of LEZ restrictions to ensure time to raise awareness and draw attention to the well-functioning public transit system
- Ensuring transparency by releasing a monthly report on the project's impacts, including congestion, pollution emissions, and concentrations, as key indicators.<sup>7</sup>

# 03

## Communication & Building Awareness



This document breaks down the stakeholder engagement process into five phases, which will be expanded upon in Section 4. However, there is one aspect of stakeholder engagement that cuts across all five phases and should be ongoing throughout the project life cycle. This is **communication and building awareness**.

### In this section..

- Why awareness building is a crucial part of stakeholder and citizen engagement
- What kinds of topics can be communicated to build awareness around an air quality improvement-related project
- How social media can be used for effective awareness building campaigns
- How and when communication should occur through consultative workshops with stakeholders

## 3.1 Building Awareness Around the Issue & Project

It is crucial that stakeholders—particularly citizens—understand the problem that this project is trying to address. For this reason, it is essential to build awareness around the issue of air pollution and how poor air quality impacts the public.

Awareness building would include education about sources of air pollution, what pollutants are and how they impact human health and economic productivity. Emphasising air pollution's highly negative impact on human health and demonstrating the transport sector's role in poor air quality is crucial in fostering citizen acceptance of the project. With an enhanced awareness of the problem, citizens are more likely to embrace project interventions even if they cause some level of inconvenience.<sup>8</sup>

### Awareness building can be done through a variety of activities:

- Providing information about the issue through the city's website, social media channels and newsletters
- Endorsements of the project by an influential personality
- City-wide events in public spaces where educational content is provided through interactive methods (e.g. car-free days)



Vijayawada has run successful awareness-building campaigns on their social media for the projects they have implemented under the Swachh Bharat Mission.

**Vijayawada Municipal Corporation** @ourvmc · Apr 18  
 Change starts with you!  
 Ditch the plastic — choose a cloth bag.  
 Skip the disposables — carry your own box.  
 Let's protect our planet with simple everyday habits. 🌍🌟  
 #ChooseTheChange #SayNoToPlastic #VMC #Vijayawada #SustainableLiving #PlasticFreeLife

**Vijayawada Municipal Corporation** @ourvmc · Apr 21  
 Small hands, big thoughts!  
 Our little ones have already learned the importance of change — now it's our turn to join them. 🌱  
 Let's support their efforts and be a part of the movement. Start with simple steps like #homecomposting and mindful living. #VMC

**Vijayawada Municipal Corporation** @ourvmc · Apr 5  
 విజయవాడ నగరపాలక సంస్థ కమిషనర్ శ్రీ ద్వానచంద్ర హెచ్ ఎం IAS ఆదేశాల మేరకు తుమ్మలపల్లి కళాక్షేత్రంలో సంగిల్ యూస్ ప్లాస్టిక్ బ్యాగ్స్ అవగాహన కార్యక్రమంలో భాగంగా వివిధ పాఠశాల విద్యార్థులకు పోటీలు నిర్వహించి, గెలిచిన విద్యార్థులకు బహుమతులు అందజేశారు.  
 #ourvmc #SayNoToPlastic #Vijayawada

**Vijayawada Municipal Corporation** @ourvmc · Mar 7  
 Say No to Single use Plastic  
 Use Eco friendly products  
 Replace Plastic covers with JUTE/PAPER Bags 🌱  
 #SayNoToPlastic #ourvmc #Vijayawada #CleanVijayawada

Vijayawada uses the VMC 'X' account to promote and build awareness around projects that align with the Swachh Bharat Mission goals, encouraging citizens to get involved.

Source: @ourvmc X posts

Vijayawada's use of social media in their campaigns contributed to their success in placing third in the nation-wide Swachh Survekshan awards, 2021.

## 3.2 Communication of Ongoing Project Activities



Communication and building awareness should also include sustained communication of ongoing project activities. As the project progresses from one step to the next, stakeholders, including the general public, should be kept informed about what has been achieved thus far and what upcoming project activities are planned. Regularly informing stakeholders decreases the likelihood of pushback against the project, as it ensures that stakeholders do not feel blindsided by any given step of the project.

### Box 1: Consultative Workshops in Visakhapatnam and Vijayawada

Once the technical inquiry stage of our CAZ projects in Visakhapatnam and Vijayawada was completed, consultative workshops were held with key stakeholders to communicate the results of this project activity. Based on the findings of this phase, feedback and suggestions on appropriate control measures were obtained from stakeholder groups. Similar workshops were held with stakeholders after the completion of other project activities, such as after control measures were finalised, before implementation was to begin.



*Receiving feedback on technical findings and proposed control measures from various stakeholders*

The consultative workshops produced important feedback, such as the need to introduce dedicated bus services for schools and college students, and the importance of engaging RWAs for community buy-in.

Having stakeholders on board with the locations designated for CAZ implementation and having their feedback on the control measures heard, the implementation phase of the project can proceed more smoothly with less risk of pushback from stakeholders and a higher likelihood that the project will be successful and fruitful for the local communities in each city.

It will be important to continue to hold more rounds of consultative workshops that communicate the stage of the project as it progresses beyond the pilot to continue the line of communication with stakeholders throughout the various stages of implementation.



Vijayawada news article informing the public about the consultative workshop.

### Importance of this Phase

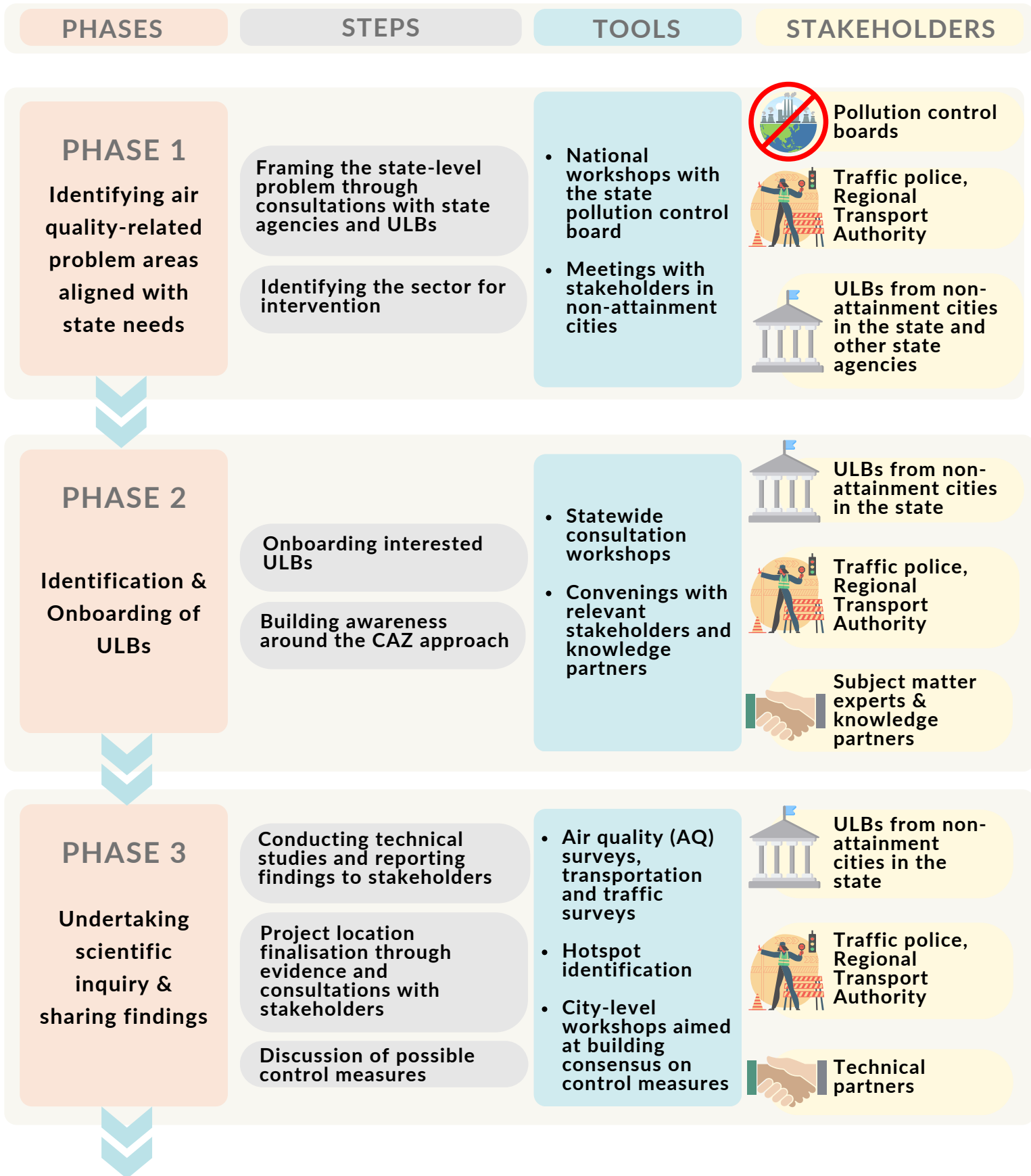
Keeping stakeholders informed throughout the project enhances their acceptance by ensuring they understand the rationale behind each step and feel involved in the planning and implementation process.

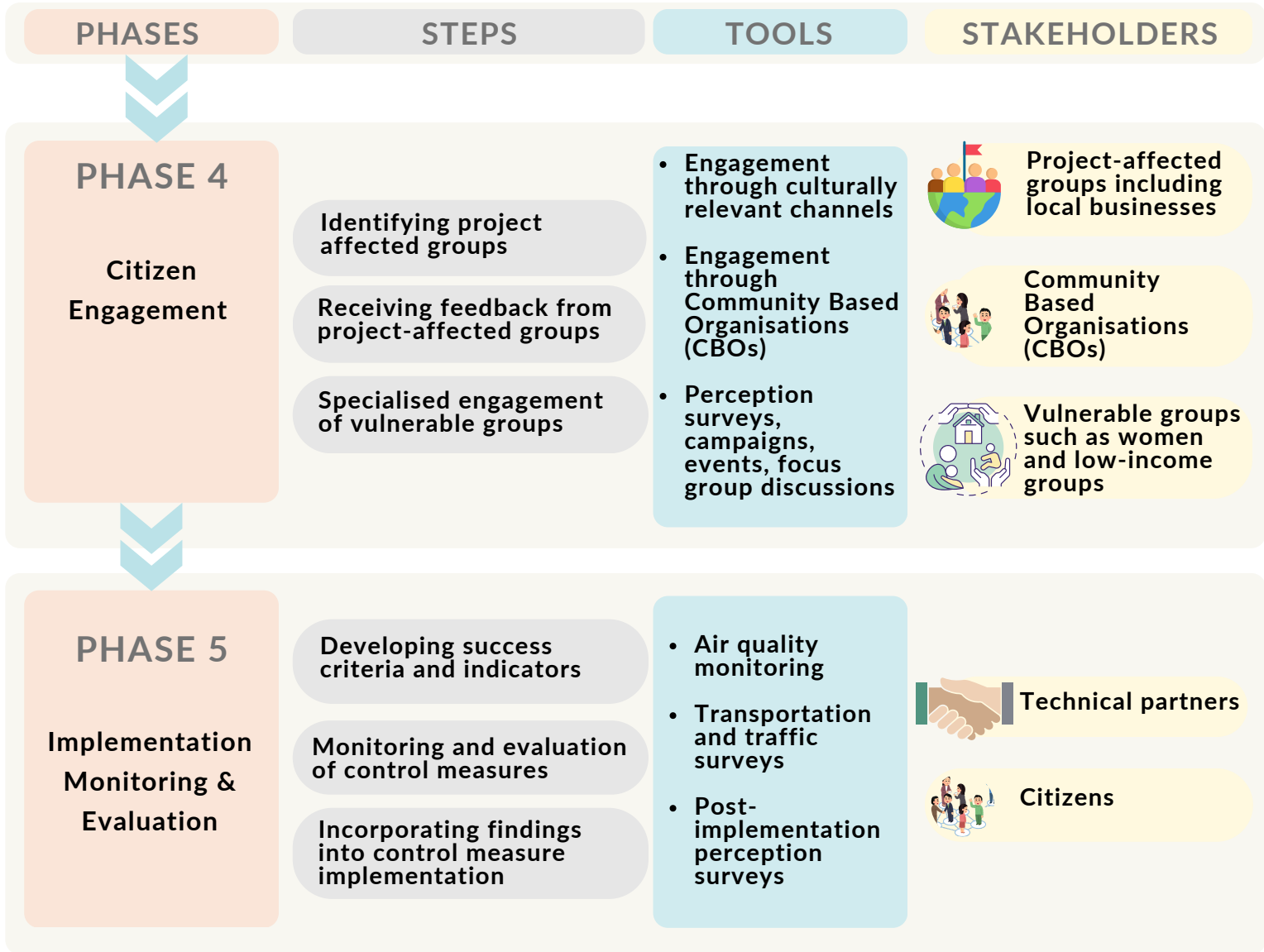
# 04

## Phases of Stakeholder Engagement



# 4.1 Stakeholder Engagement Roadmap





## 4.2 Phase 1: Identifying Air Quality-Related Challenges Aligned with State Needs



### In this section..

- Framing the problem statement through the lens of the state's specific needs
- Identifying sector-specific points for intervention in states and cities that aligns with their goals

### Framing the state-level challenge through consultations with state agencies and ULBs

When working with state agencies, it is imperative to develop a detailed understanding of their specific needs. This requires comprehensive discussions with the respective state stakeholders to gain insight into their concerns. Accordingly, meetings should be conducted with other key stakeholders, such as officials from ULBs in the state and other relevant state and municipal departments.

These engagements will surface the specific issues that lead to air quality problems within the state. The most pressing issues, for example, could be transportation emissions, industrial emissions, citizens' behavioural issues or political coordination, but will differ from region to region. Once these issues are identified, a state-specific problem statement can be developed as a starting point for forming interventions.

For example, in Andhra Pradesh, consultations with state-level stakeholders emphasised the need for the state to address air pollution in its non-attainment cities. It was crucial to consider that the state houses thirteen non-attainment cities, including Vijayawada and Visakhapatnam. The National Clean Air Programme (NCAP) mandates that all non-attainment cities develop a Clean Air Action Plan to reduce their PM10 levels, which will significantly improve air quality.<sup>9</sup> Therefore, excessive PM10 emissions were considered a challenge to be targeted within the state.

## Identifying the sector for intervention

Once a problem statement has been defined, the appropriate sectors for intervention must be identified. To do this, a sectoral emissions analysis must be conducted, and state resources and provisions for carrying out interventions in each sector must be considered.

For Artha's CAZ work in Andhra Pradesh, the transport sector was selected as a starting point for air quality-related intervention. Firstly, the transportation sector contributes significantly to PM10 and PM2.5 emissions, which degrade air quality and have adverse health effects. Furthermore, state and local governments have provisions and resources to implement interventions in the transport sector, with public transit provisions, cycle lanes, and pedestrian infrastructure being in the domain of state and municipal governments. Relevant authorities, such as the Regional Transport Authority and local traffic police, can be engaged through state and municipal governments.

### Importance of this Phase

Engaging stakeholders at this stage enables the identification of high-impact sectors, such as transport, construction, waste management, industry, and energy, where targeted interventions can align with state priorities. Sector-specific knowledge and policy insights are crucial for selecting feasible, context-relevant interventions for air quality improvement.

### Box 2: National Workshop on Clean Air Zones



This workshop was held in Visakhapatnam in November 2023 and was anchored by Artha Global and the Andhra Pradesh Pollution Control Board (APPCB). The workshop aimed to share best practices on CAZ. The participants included senior state government representatives who had implemented CAZ, members of civil society organisations who had helped cities conceptualise and implement CAZ, industry associations, Resident Welfare Associations, as well as members from APPCB. TfL and other civil society organisations shared relevant case studies that demonstrated the roadmap for CAZ implementation.

## 4.3 Phase 2: Identification & Onboarding of ULBs

### In this section..

- Onboarding ULBs within the state that are interested in air pollution interventions
- Actions taken to build awareness around the concept of CAZ as a transport sector air pollution intervention
- Learnings received from stakeholders through this phase

### Onboarding interested ULBs and building awareness around the CAZ concept

Artha conducted a state-level workshop with the Andhra Pradesh Pollution Control Board, with the intention of onboarding interested ULBs within the state. TfL, a knowledge partner on this project, introduced the CAZ approach and shared their experiences implementing a similar intervention in London. Their presence was crucial for building awareness around the relevance and potential of CAZ in improving air quality. This workshop provided an opportunity to gather stakeholder perspectives on the CAZ approach and align the initiative with state-specific priorities. The engagement aimed to build a shared understanding of CAZ as a policy tool and explore its applicability within the identified cities. The following key learnings emerged from this interaction.

1. Inputs on the strategic alignment of the project with state-level priorities and policy readiness.

2. Feedback on sectoral focus areas for intervention

3. Highlighting the need for technical tools to support implementation, such as data systems and monitoring infrastructure

4. Suggestions related to stakeholder engagement, public communication, and capacity building.



### Importance of this Phase

These inputs are important to ensure that CAZ implementation is politically feasible, contextually relevant, and backed by administrative support. Technical inputs enable data-driven decision-making, supporting targeted action at the city level. Emphasis on engagement and capacity ensures broader participation, acceptance, and sustainability of clean air efforts.

## 4.4 Phase 3: Undertaking Scientific Inquiry & Sharing Findings

### In this section..

- Presenting scientific findings to stakeholders
- Results of stakeholder feedback after communication of scientific findings

### Conducting technical studies and reporting findings to stakeholders, project location finalisation and discussion of possible control measures

As part of the project's stakeholder engagement strategy, city-level consultative workshops were conducted in Visakhapatnam and Vijayawada to present technical findings, gather feedback, and collaboratively identify suitable CAZ locations and control measures. These workshops played a key role in aligning technical assessments with local insights, as reflected in the following outcomes:

1. In Vijayawada, stakeholders supported the proposal to prioritise junctions such as Ramesh Hospital, Siddhartha College, and Polyclinic Road for potential CAZ implementation.
2. They provided valuable suggestions for proposed interventions, including paid parking, E-shuttle services, and traffic access management to address congestion and mobility issues.



3. In Visakhapatnam, stakeholders agreed with the proposal to consider the King George Hospital and MVP Double Road as pilot locations, based on their traffic density and pollution levels.

4. Feedback from Visakhapatnam informed proposed measures such as multi-level parking facilities, traffic flow enhancements, and promotion of electric mobility as potential interventions.



### Importance of this Phase

This engagement phase is crucial for shaping realistic, locally informed proposals for CAZ planning. It ensures that future interventions are based on both technical evidence and stakeholder perspectives, improving their relevance and potential for success.



## 4.5 Phase 4: Citizen Engagement

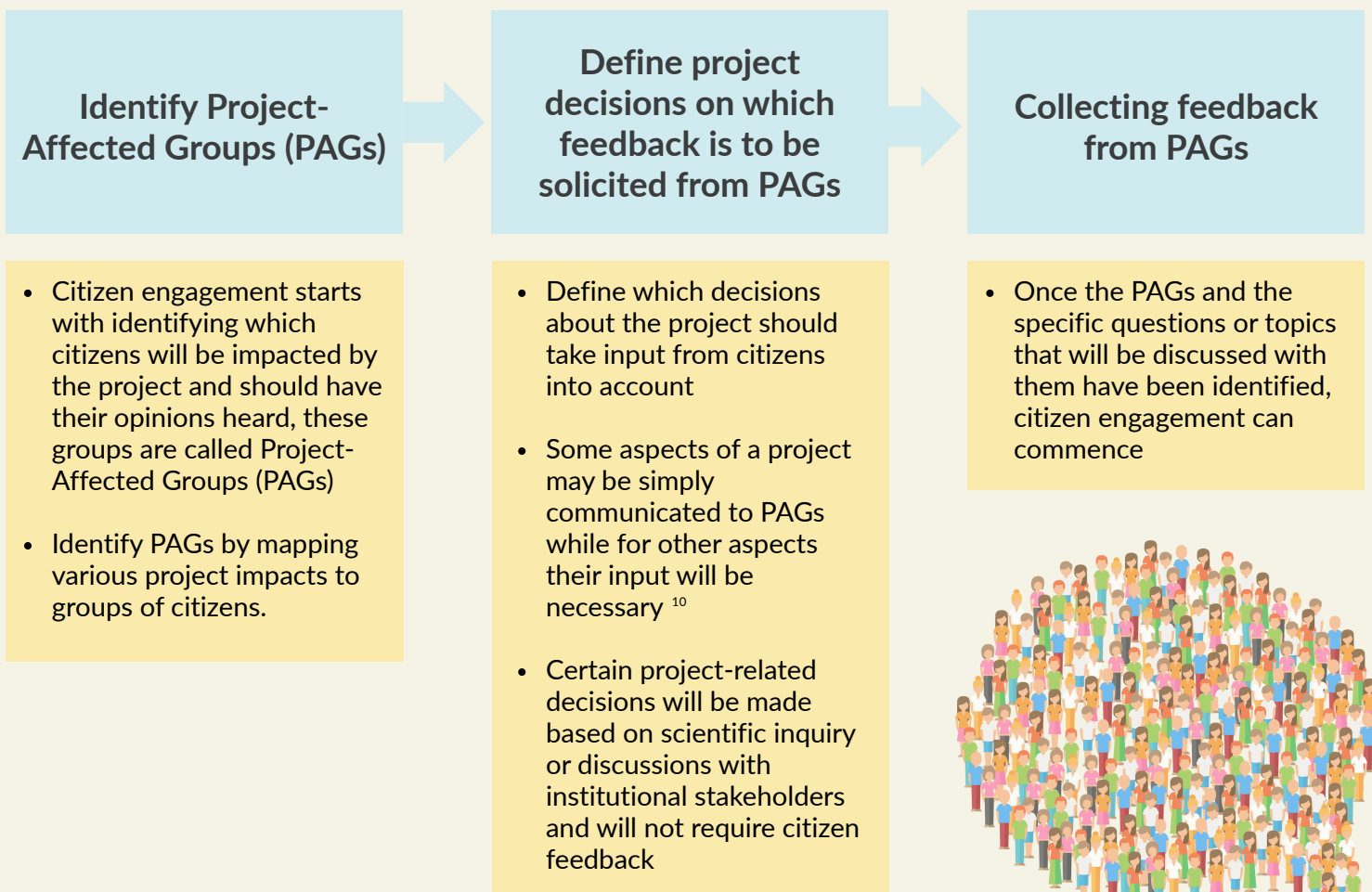
### In this section..

- ◉ Identifying which groups of citizens should be engaged and in what capacity
- ◉ Methods for engaging and collecting feedback from citizens
- ◉ The importance of specially engaging vulnerable citizen groups

### Importance of this Phase

This phase ensures the project serves citizens' needs and reduces any negative impacts that could affect them. It fosters citizen acceptance of the interventions and implementation measures, thereby increasing the likelihood of their success.

### Identifying project-affected groups (PAGs) and deciding which project decisions to solicit their feedback on



### Box 3: Bengaluru Pop-Up Cycle Lanes



*Article communicating information about the cycle lane project*

Source: The News Minute

An example to illustrate the concept of soliciting feedback from PAGs for specific decisions is that of the cycle lanes on the Outer Ring Road of Bengaluru during and after the COVID-19 pandemic. Due to the pandemic, there was a need for safe and physically distanced travel options, so key government stakeholders collaborated to come up with the idea of a pop-up cycle lane. In this scenario, because cycling is one of a few safe and affordable physically distanced travel options, the decision to provide cycle lanes instead of some other transportation solution was made by government stakeholders before consulting with citizens. The aspect of the project that was identified for citizen consultation was deciding where the cycle lanes would be. Citizens who were already used to cycling in the city were asked to mark preferred cycle routes so that the project managers could understand the different needs and demands for prioritisation of routes. In this project, the citizens, or PAGs, were specifically consulted on cycle lane design and location, while other decisions were made without consulting PAGs.

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## Receiving feedback from project affected groups

Once the project decisions which the PAGs will be consulted on have been identified, a variety of methods for engaging and consulting with these stakeholder groups will have to be deployed. Tools such as perception surveys, focus group discussions, events, the use of culturally relevant channels and the help of community-based organisations (CBOs) can be used to engage and garner feedback on the project from PAGs. Depending on the groups that the project managers want to engage, different engagement tools can be used. A larger variety of tools used can help engage a broader range of stakeholders.

### Box 4: ITDP Focus Group Discussions

ITDP took the idea of using focus group discussions for stakeholder engagement and put an innovative spin on it. Instead of conducting focus group discussions through a simple question-and-answer format, ITDP engaged officials from the Pimpri Chinchwad Municipal Corporation (PCMC) through a fully immersive visual experience that simulated two possible futures with different pollution pricing policies. Participants played a card game in which they had to weigh options and reflect on the trade-offs behind each decision about how they would commute in each scenario. Through this activity, ITDP was able to garner opinions and realistic behaviours from the participants in an engaging manner.



*PCMC officials taking part in ITDP's simulation game for a focus group discussion*  
Source: ITDP

An example that illustrates the use of various citizen feedback tools is the implementation of Pune's Smart City Mission. Citizens were heavily engaged in an envisioning exercise so that the various projects under the Smart City Mission could be selected and prioritised according to citizen preferences. Through the variety of engagement tools that were used, 50 percent of Pune households were consulted, making this effort one of the largest civic engagement efforts conducted in India.<sup>13</sup> Pune's success in acquiring feedback from such a large segment of the citizen population was due to the use of a large variety of feedback collection methods. Other citizen engagement projects can learn from Pune's exercises by diversifying the methods used for garnering feedback from citizens.



Offline and online  
feedback forms



Camps in schools,  
colleges, companies  
and organizations



Form filling  
booths in  
government  
offices



Opening computer labs  
in schools and colleges  
to citizens for online  
feedback submission



Form distribution in  
Ganesh Mandals  
during Ganesh  
Chaturthi



Reward system for  
submitting feedback  
through the Pune  
Smart City website



Mass form  
distribution in  
societies



Interviews, panel  
discussions, press  
meets on TV and  
radio

**Pune employed culturally relevant methods, such as distributing forms at large citizen gatherings for Ganesh Chaturthi, to access broader segments of the population. Other citizen engagement projects can learn from Pune's exercises by diversifying the methods used to garner feedback from citizens.**

## Specialised engagement of vulnerable groups

If conscious effort is not made to ensure that vulnerable groups are engaged through citizen engagement efforts, the project will be at risk of elite capture. Elite capture occurs because elites are more able to make their voices heard through participatory channels and tend to capture participatory initiatives for their own benefit, often at the expense of non-elites or vulnerable groups.

CAZ has the potential to produce some negative impact and cause inconvenience for vulnerable groups, such as low-income individuals. When planning a CAZ, mechanisms such as perception surveys, focus group discussions, and communications campaigns should be employed to ensure that all voices of those who will be affected by the project are heard, thereby reducing negative impacts and preventing existing inequalities from being exacerbated by the project.

### Box 5: Impact of Low Emission Zones on Vulnerable Groups in Jakarta, Indonesia

In Jakarta, Indonesia, LEZs were negatively impacting those living in informal settlements, not only because access into the LEZ itself was restricted for them, affecting their livelihoods, but also because vehicles that could no longer enter the LEZ diverted their routes to pass through these informal settlements. This resulted in increased traffic in the community, disturbing residents, depriving children of space to play, and introducing air pollution directly to the community. In fact, in these informal settlements, many low-income women own street stalls outside of their homes where they cook and serve food to other community members to earn their livelihood. These stalls, which were previously strategically placed, became vulnerable to increased air pollution due to vehicles using these alleyways to avoid the nearby LEZ, causing health and economic consequences for the women who work there.



*Discussions around air pollution in Jakarta's informal settlements*

Source: Clean Air Catalyst (2024)

These kinds of unintended consequences could occur when implementing CAZ in Indian cities if vulnerable groups are not consulted. If citizen feedback is only received from elite populations, it is unlikely that problems such as the diversion of traffic through slums or negative livelihood impacts on low-income populations will be raised. For this reason, explicit efforts must be made to avoid elite capture by engaging with vulnerable populations.

One way that elite capture can be avoided is through the help of NGOs or CBOs that work closely with vulnerable groups to create a space for them to take an active role in citizen participation.<sup>15</sup> Furthermore, aspects of the feedback reception channels that may exclude vulnerable groups must be considered, such as: the use of digital channels to receive feedback, door-to-door visits failing to reach informal settlements and lack of background information in vernacular languages leading to knowledge gaps. Mechanisms to receive citizen feedback should take into account differing abilities to give feedback and include methods that will be inclusive to various vulnerable groups.

## 4.6 Phase 5: Implementation Monitoring & Evaluation

### In this section..

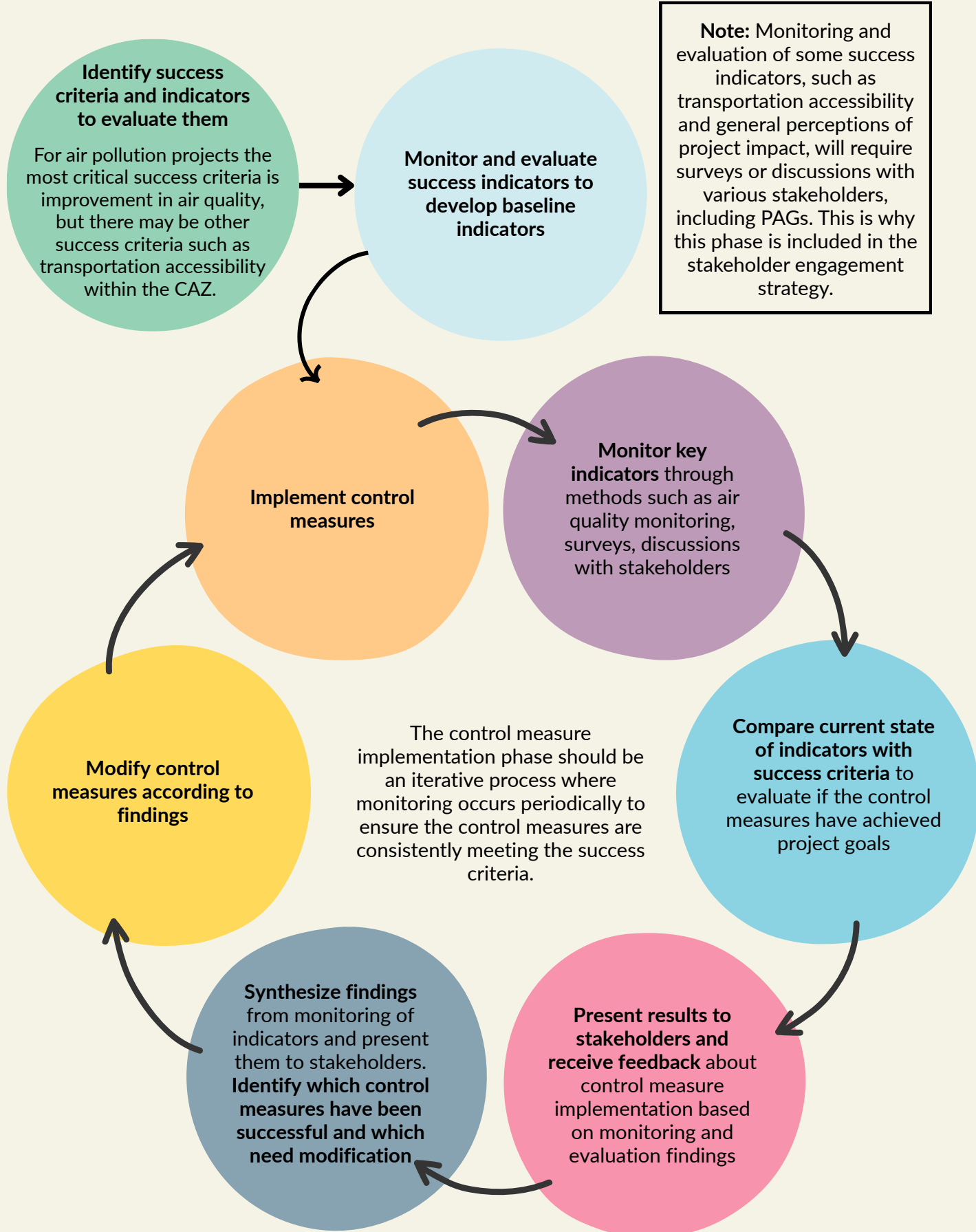
- The importance of continued monitoring and stakeholder engagement after project implementation has begun
- The steps that should be taken to carry out effective post-implementation monitoring and evaluation, emphasising the iterative nature of these steps

### Importance of this Phase

Inclusion of citizens and stakeholders in the monitoring and evaluation process is important because when citizens see the concrete impacts that the project has had, they are better able to view the project as something that has and will continue to benefit them and are less likely to push back on the project moving forward.



Once an intervention has been piloted, methods must be in place to evaluate its success. This is where monitoring and evaluation come in.



## Box 6: Post Implementation Strategy Example – Green Logistics Zones in Shenzhen, China

This iterative process of evaluation and stakeholder consultation is well-illustrated by the case of Green Logistics Zones in Shenzhen, China. Shenzhen was the first city in China to adopt zero-emission freight zones, where all conventional freight vehicles are banned while electric logistics vehicles get all-day access. This scheme was proposed by the Municipal Environment Bureau and the Traffic Police Department following extensive consultation meetings with relevant government departments, local retailers, property owners, public organisations within the zones, logistics service providers, city-wide freight vehicle leaders, and freight vehicle-hailing platforms. Consultation meetings took place before and shortly after the zones were established. Shenzhen took a trial-and-error approach to implementing Green Logistics Zones, focusing on identifying challenges through evaluation of results and holding consultation meetings to address them and course-correct on the issues. In the second round of consultation meetings, after the establishment of the zones, logistics service providers indicated that due to the short battery ranges and increasingly higher charging power of logistics vehicles, a more convenient charging network was needed for the Green Logistics Zones to function better. In response, the city amended its plans so that as the project moves forward, 20% of the kerbside parking spaces in the zones would be equipped with charging<sup>16</sup> facilities. Future plans also may involve the systemic planning of a fast-charging network.

### Takeaways:

The planning of the Green Logistics Zones demonstrates the importance of adopting a trial-and-error approach to implementation, involving iterative consultations with key stakeholders to ensure the intervention is effective for them. If not, the intervention is amended accordingly.

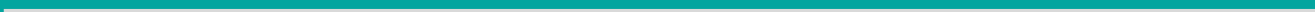
For Artha's CAZ projects in Vijayawada and Visakhapatnam, monitoring and evaluation will be done with our technical partners, TERI, through air quality monitoring, perception surveys and focus group discussions. Low-cost sensors will be deployed before the pilot to monitor local air quality in the area where the CAZ will be implemented. Additionally, perception surveys will be conducted on PAGs in the area to gauge citizens' feelings about air quality. Focus group discussions will also be held with CAZ area residents, local business owners, auto-rickshaw and bus drivers, and college students to gain a deeper understanding of their behaviours and opinions. Second rounds of both the low-cost sensor monitoring and perception surveys will be conducted at the end of the pilot to evaluate its success.

## Box 7: Sample Questions for a Perception Survey on Air Pollution

- On a scale from 1 to 5, how would you rate the current air quality in your neighbourhood?
- Have you or your family members experienced any changes in health conditions related to air quality?
- Have you observed any changes in traffic flow since the implementation of the CAZ?
- Were you aware of the CAZ initiative before its implementation?
- Do you think the CAZ measures have been fair to all groups in the community?
- What additional measures would you suggest to further improve air quality and mobility in your area?

# 05

## Conclusion



## 5.1 Key Takeaways

Stakeholder engagement is crucial for the success of projects tackling poor air quality. It includes a variety of steps such as identifying intervention points that can be used to solve the problem in alignment with the state or city needs, onboarding the city government as an implementation partner, communicating the results of scientific inquiry, citizen engagement, and implementation monitoring and evaluation. Systematically involving relevant parties such as citizens, businesses, transport operators, and government officials allows for the project design and implementation to best serve the communities that it is meant for. If stakeholder engagement is done well, it creates a public perception of the implementing organisation as transparent, honest and inclusive. For public projects such as Clean Air Zones, this positive perception is also extended to the government, creating more trust between citizens and their government.

It is worth noting that additional challenges may arise during the project's implementation that are not addressed in this document and may require further stakeholder engagement. Examples could be engaging with private players to tackle industrial emissions or working with health-related stakeholders on adaptation strategies to deal with the health impacts of air pollution. In dealing with these stakeholders, similar steps around identification, onboarding, communication, monitoring, and evaluation can be taken, and principles of transparency, equity, and inclusion should be followed. The lessons from this report can help to successfully create and carry out a stakeholder engagement strategy for projects addressing air pollution in cities in India and beyond.



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artha.global | +91 22 6902 3333 | [contact@artha.global](mailto:contact@artha.global)

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**Mumbai:** 401, 4th Floor, Construction House 'A', 24th Road, Off Linking Road, Khar West, Mumbai 400 052

**London:** First Floor, 10 Queen Street Place, London, United Kingdom, EC4R 1BE