Technical Assistance Report

Project Number: 46250-001
Regional—Capacity Development Technical Assistance (R-CDTA)
November 2014

Mainstreaming Air Quality in Urban Development through South–South Twinning

Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
AQM	–	air quality management
CAST	–	clean air scorecard tool
DMC	–	developing member country
MEP	–	Ministry of Environmental Protection
PRC	–	People's Republic of China
RPG	–	regional public good
TA	–	technical assistance

NOTE

In this report, "$" refers to US dollars.

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CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data — **Project Number:** 46250-001

Project Name	Mainstreaming Air Quality in Urban Development through South–South Twinning	**Department /Division**	RSDD/RSES
Country	REG	**Executing Agency**	Asian Development Bank
Borrower	not applicable		

2. Sector

	Sector	Subsector(s)	ADB Financing ($ million)
✓	Water and other urban infrastructure and services	Urban policy, institutional and capacity development	0.50
		Total	**0.50**

3. Strategic Agenda

Strategic Agenda	Subcomponents
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive
Environmentally sustainable growth (ESG)	Environmental policy and legislation Global and regional transboundary environmental concerns Urban environmental improvement
Regional integration (RCI)	Pillar 4: Other regional public goods

Climate Change Information

Climate Change impact on the Project	Low

4. Drivers of Change

Drivers of Change	Components
Governance and capacity development (GCD)	Client relations, network, and partnership development to partnership driver of change Institutional development
Knowledge solutions (KNS)	Knowledge sharing activities
Partnerships (PAR)	Implementation South-South partner

Gender Equity and Mainstreaming

No gender elements (NGE)	✓

5. Poverty Targeting

Project directly targets poverty	Yes
MDG-targeting (TI-M)	MDG7

Location Impact

Urban	High

6. TA Category: B

7. Safeguard Categorization Not Applicable

8. Financing

Modality and Sources	Amount ($ million)
ADB	**0.50**
Sovereign Capacity development technical assistance: Technical Assistance Special Fund	0.50
Cofinancing	**0.00**
None	0.00
Counterpart	**0.00**
None	0.00
Total	**0.50**

9. Effective Development Cooperation

Use of country procurement systems	No
Use of country public financial management systems	No

I. INTRODUCTION

1. Strategy 2020 identifies infrastructure and environment as two of the five core areas of Asian Development Bank (ADB) operations; three of the five drivers of change are good governance and capacity development, knowledge solutions, and partnerships.[1] In line with Strategy 2020, in March 2013 ADB approved Environmental Operational Directions, 2013–2020.[2] Consistent with the directions, ADB seeks to continually improve the management of environmental issues including helping Asian cities improve institutional capacity for air quality management (AQM).

2. The technical assistance (TA), with its crosscutting infrastructure and environment focus, fits well with ADB policy. The TA links with the country partnership strategies of several developing member countries (DMCs) that identify worsening air pollution as a key challenge.[3] The regional cooperation and integration strategy supports ADB's overarching goal of poverty reduction through regional collective actions, and emphasizes ADB's active role as catalyst, coordinator, and knowledge leader of regional cooperation and integration in Asia and the Pacific.[4] The strategy is anchored on four pillars; one is cooperation in regional public goods (RPGs), i.e., the promotion of RPGs through coordinated actions to supply RPGs, such as clean air, control of communicable diseases, and management of natural disasters. The TA addresses clean air and health. The TA design and monitoring framework is in Appendix 1.[5]

II. ISSUES

3. Seven out of 10 cities in developing Asian countries have unhealthy levels of air pollution, given annual measures of particulate matter (not greater than 10 microns). Recent estimates from the 2010 Global Burden of Disease identify outdoor air pollution as a much more significant public health risk than previously known—contributing to 2.1 million premature deaths annually in Asia. Of primary concern is exposure to particulate matter and nitrogen oxide from older diesel engines. Diesel emissions include black carbon, which contributes to global warming. More than 50% of the Asia and Pacific population now lives in cities, where exposure to roadside air pollution is high. Over the next 30 years, another 1.1 billion people are expected to be living in cities. A systematic and integrated AQM approach is necessary to address the growing air pollution problems. Unfortunately, the status of AQM in Asian cities varies widely and cities have not developed quickly enough to respond to the changing urban landscape and evolving challenges in reducing air pollution.

4. Challenges of AQM in Asian cities include
   (i) the need for support in identifying and prioritizing effective AQM measures;
   (ii) poor reliability of air quality monitoring data for several cities because of lack of technical capacity and support to sustain air quality monitoring systems; and
   (iii) the need for TA and guidance in conducting emission inventories and source apportionment, both important inputs to effective AQM.

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[1] ADB*. 2008. Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

[2] ADB. 2013. *Environmental Operational Directions, 2013–2020: Promoting Transitions to Green Growth in Asia and the Pacific.* Manila.

[3] ADB's country partnership strategies for the People's Republic of China, India, Indonesia, Mongolia, Nepal, Philippines, Sri Lanka, Thailand, and Viet Nam, recognize that addressing environmental challenges is integral to sustained growth. The strategies for several countries such as the People's Republic of China, India, and Mongolia highlight addressing air pollution as one of their key challenges in urban development.

[4] ADB. 2006. *Regional Cooperation and Integration Strategy.* Manila.

[5] The TA first appeared in the business opportunities section of ADB's website on 6 October 2014.

III. THE CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE

A. Impact and Outcome

5. The impact will be enhanced capacity of the beneficiary cities to manage urban air pollution. The outcome will be increased application of knowledge and understanding of AQM by beneficiary city governments.

B. Methodology and Key Activities

6. The TA is designed to address these issues and aims to promote evidence-based long-term planning in AQM and selection of appropriate strategies for implementation through south–south twinning. The DMCs in Asia are all at a similar stage of development and face similar challenges in AQM. Effective AQM practices implemented by one country and/or city are likely to be relevant and applicable to others. The TA will assess the current status of AQM in 10 Asian cities with varying population size, and will set up south–south twinning arrangements among three pairs of cities. The TA will identify up to four countries facing significant air quality challenges and provide a platform for exchange of AQM experience and knowledge. The People's Republic of China (PRC) has initiated concerted efforts to develop a long-term AQM strategy and a suitable policy framework for its implementation. It will participate in the TA along with India, Indonesia, Mongolia, Nepal, Philippines, Sri Lanka, Thailand, and Viet Nam.

7. In January 2014, ADB and the PRC's Ministry of Environmental Protection (MEP) signed a memorandum of understanding on ADB support for the PRC government to improve the national AQM framework. Building on existing and past ADB support, the TA will review AQM initiatives in the PRC and provide recommendations on a long-term strategy and improvements in key policy instruments for their effective implementation. This in-depth interaction with the PRC will be helpful for effective sharing of the PRC's learning in AQM with other DMCs participating in south–south twinning.

8. The TA will provide opportunities to promote sharing of experience and knowledge in AQM among up to four countries in the region through workshops and working sessions. The participating countries and beneficiary cities will be encouraged to develop and disseminate policy and project interventions to improve air quality. The TA will make use of the clean air scorecard tool (CAST) to assess the status of AQM and recommend actions for improvement.

9. The TA has six outputs.

10. **Output 1: Selection criteria for participating cities and countries developed and applied.** CAST will be the primary tool used to develop and apply the criteria for selection of participating cities and countries. The CAST air pollution and health index will be applied to the CitiesACT air quality database, including a time series of air quality data for more than 400 Asian cities, to prepare a shortlist of 50 cities.[6] Draft criteria will be developed to select

[6] The CAST is an Excel-based tool incorporating three indexes: (i) air pollution and health, (ii) clean air management capacity, and (iii) clean air policies and actions. The air pollution and health index assesses air pollution of cities using World Health Organization guideline values and interim targets. The clean air management capacity index assesses a city's capacity to (i) determine sources of emissions and their contribution; (ii) assess the status of AQM (includes monitoring, modeling, data analysis, and reporting); (iii) estimate impacts on health, environment, and economy; and (iv) reduce air pollution and greenhouse gas emissions through an institutional and policy framework and financing. The clean air policies and actions index assesses the existence and enforcement of

cities with small, medium-sized, and large populations to participate as mentoring and beneficiary cities in the south–south twinning. Selection criteria may include (i) population size, (ii) recognition of air quality problems by the national environment ministry, (iii) city government commitment, (iv) demonstrable experience in developing and implementing AQM plans, and (v) planned or ongoing ADB projects under the Sustainable Transport Initiative or Clean Energy Initiative. Separate criteria will be developed for national twinning based on advancements in air pollution control policies and their implementation. The draft criteria will be presented for refinement at the Better Air Quality 2014 Conference to be held during 19–21 November 2014 in Colombo, Sri Lanka.

11. The city criteria, including the CAST score on AQM capacity, policies, actions, and indexes (assessed based on secondary data), will be used to reduce the shortlist of 50 cities to 10. The 10 cities will comprise (i) two small-sized cities (with population below 1 million), (ii) two medium-sized cities (with population of 1 million to 5 million), (iii) three large-sized cities (with population of 5 million and above), and (iv) up to three mentor cities. The country selection criteria will be applied to select up to four countries for south–south twinning; a commitment for their participation in the twinning will be secured. A report will be prepared to document the findings of this activity.

12. **Output 2: Recommendations for the People's Republic of China's National Action Plan on Air Pollution Prevention and Control developed.** As part of support to the PRC on AQM, ADB and MEP jointly organized a workshop in July 2014 to recommend measures for air quality improvement. The workshop made five recommendations that could have a far-reaching positive impact on air quality in the PRC. The TA will (i) prioritize implementation of the AQM workshop recommendation in consultation with MEP, (ii) review the PRC's existing legislation and plans for air pollution prevention and control to assess its comprehensiveness, (iii) recommend key actions for inclusion in the PRC's National Action Plan on Air Pollution Prevention and Control for implementing the priority AQM recommendations, and (iv) propose commensurate steps for revising the Law on Air Pollution Prevention and Control. The outcomes will be documented in a draft report to be finalized in consultation with MEP.

13. **Output 3: Cities identified for twinning by applying the clean air scorecard tool for 10 Asian cities.** The CAST will be applied to the identified 10 cities to rank 7 potential beneficiary cities using population categories and to benchmark the CAST score for three mentor cities. Primary data on components of clean air management capacity and clean air policies and actions indexes of the CAST for the 10 identified cities will be collected. The mentor cities will have a high rating of good or excellent in CAST's air pollution and health index and a minimum rating of good for clean air management capacity and clean air policy and action indexes. The beneficiary cities should have a minimum rating of average for these two indexes. Commitment from the higher ranked cities will be obtained to participate in city twinning as mentor cities. The aim will be to have up to three mentor cities, one each representing small, medium-sized, and large cities to assist similar-sized cities in assessing and addressing their air quality challenges. While identifying beneficiary cities, priority will be given to cities with planned or ongoing ADB projects under the Sustainable Transport Initiative or Clean Energy Initiative.

14. **Output 4: South–south city twinning arrangements established and air quality management experiences and good practices shared by twinned Asian cities.** South–south twinning arrangements between six selected cities (three pairs, one mentor and one

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national and local policies and actions to address air pollutants and greenhouse gas emissions from mobile, stationary, and area sources.

beneficiary each from a large, a medium-sized, and a small city) will be established. A letter of agreement or similar agreements between the cities may be drafted to formalize their cooperation. This will include commitment to provide resources (e.g., resource persons, hosting visits) to participate in the twinning. The twinning activities will include (i) a visit from the respective mentor city to the beneficiary city (within their population group) to assess the local AQM challenges, and share experiences to overcome similar challenges; and (ii) a workshop within each city population group (i.e., small, medium-sized, and large cities) to discuss potential solutions and support the cities in developing strategies to achieve better air quality. A report on the city twinning will be prepared and used to provide inputs for national policy and planning exchange under output 5.

15. **Output 5. South–south national twinning arrangements established, and air quality management experiences and good practices shared among participating countries.** The national twinning will aim to provide a platform to share progress and challenges with AQM, and benefit from this knowledge exchange to enhance national AQM plans and policies. Up to four Asian countries with serious air pollution challenges will be covered. Key activities include (i) review status of AQM in the participating countries, including AQM policies and plans; and identify pertinent challenges in reducing air pollution; and (ii) prepare draft recommendations for addressing country AQM issues. Interviews with various stakeholders may be conducted to further understanding of national issues. The recommendations will include a potential role for multilateral development banks, such as ADB, in supporting participating countries in addressing their AQM agenda.

16. Two workshops will be organized for the four participating countries to discuss draft recommendations (preparatory and finalizing workshops) and build upon countries' experience with successful AQM efforts. The country twinning will identify infrastructure and capacity development initiatives for air quality improvement that could be included in country partnership strategies for possible funding by multilateral agencies such as ADB.

17. **Output 6. Study findings summarized in two knowledge products.** Key findings will be summarized as two separate knowledge products (outputs 1 and 2, and outputs 3–5) and disseminated through green bag seminars, the ADB website, and participation in international forums such as Better Air Quality 2016.

18. Major assumptions to achieve the TA impact and outcomes are that the city governments remain committed and allocate adequate financial resources to implement relevant recommendations, and that key individuals from the selected cities who participate in twinning remain engaged in AQM. Major assumptions to achieve the TA outputs are that the participating cities and countries support making data and/or information available to complete the CAST assessment and analysis of policy and plans for AQM; and governments, local authorities, and other key stakeholders buy in and participate. The TA is subject to the risk of not receiving the concurrence of countries selected for twinning in time for the TA.

C. Cost and Financing

19. The TA is estimated to cost $500,000 and will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-other sources). No in-kind counterpart contribution is envisaged under the TA.

D. Implementation Arrangements

20. ADB will be the executing agency. The TA will be implemented by the Regional and Sustainable Development Department, in coordination with other departments and offices and the environment and urban development community of practice. The TA will be implemented over 2 years. A resource person from a renowned organization with international experience in the management of urban air quality will be engaged to peer review the TA reports and knowledge products. The TA will involve the United States Environmental Protection Agency to benefit from their international experience in AQM.

22. The assignments will be divided into two components, i.e., phase 1 to be implemented by a firm engaged through single-source selection and phase 2 to be implemented by a firm engaged through competitive bidding. Phase 1 will require 4 person-months of international and 10 person-months of national consultant inputs; and phase 2 will require 5.5 person-months international and 16.0 person-months of national consultant inputs. All disbursements under the TA will be made in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time). ADB will engage Clean Air Asia, a Philippine-based nongovernment organization using single-source selection for outputs 1 and 2 under phase 1. It will engage a consultancy firm selected using quality- and cost-based selection to achieve outputs 3, 4, 5, and 6 under phase 2. ADB will engage all consultants in accordance with its Guidelines on the Use of Consultants (2013, as amended from time to time). The outline terms of reference for consultants are in Appendix 3.

23. The project officer will monitor the TA, and the environment community of practice and transport community of practice will provide peer review. Good practices and lessons will be disseminated through the TA workshop, postings on the ADB website, and at forums such as the Better Air Quality Conference.

IV. THE PRESIDENT'S DECISION

24. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of $500,000 on a grant basis for Mainstreaming Air Quality in Urban Development through South–South Twinning, and hereby reports this action to the Board.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Enhanced capacity of the beneficiary cities to manage urban air pollution	By 2019: CAST AQM capacity index improved by at least 20% on average in the beneficiary cities (2015 baseline: as assessed during phase 1)	CAST assessment reports	**Assumption** City governments remain committed and allocate adequate financial resources to implement relevant recommendations of the knowledge products.
Outcome Increased application of knowledge and understanding of AQM by beneficiary city governments	By 2016: At least 50% of beneficiary cities indicate willingness to develop and adopt a city action plan for AQM	Event reports, city government websites	**Assumption** Key individuals from the selected cities participating in twinning remain engaged in AQM.
Outputs 1. Selection criteria for identifying participating cities and countries developed and applied	By 2015: 10 cities for CAST application and up to four countries for twinning selected	Project reports	**Assumptions** Participating cities and countries support making the data and information available to complete the CAST assessment and analysis of policy and plans for AQM. Governments, local authorities, and other key stakeholders buy in and participate in applying CAST and implementing twinning arrangements. **Risk** Concurrence of countries selected for twinning is not obtained in time.
2. Recommendations for the PRC National Action Plan on Air Pollution and Control developed	By 2015: Acceptance by the PRC's MEP		
3. Cities identified for twinning by applying the clean air scorecard tool for 10 Asian cities	By 2015: Six cities (three pairs) identified for twinning		
4. City south–south twinning arrangements established, and AQM experiences and good practices shared by twinned cities	By 2016: At least two pairs of cities complete twinning arrangements (four cities) At least 40 professionals share experience and learning in twinning events		
5. National south–south twinning arrangements established, and AQM experiences and good practices shared by twinned countries	At least three countries complete twinning arrangement At least 40 professionals share experience and learning in twinning events		
6. Study findings summarized in two knowledge products	By 2016: Knowledge products peer reviewed as satisfactory At least 100 downloads of each knowledge product from ADB website in first 3 months At least 30 workshop participants		

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	increased awareness of the knowledge product contents through dissemination[a]		
Activities with Milestones: **Phase 1** **1. Output 1: Selection criteria for identifying participating cities and countries developed and applied (9 months)** 1.1 Apply APHI of CAST to 400 cities from the CitiesACT air quality database to shortlist 50 cities. 1.2 Develop draft criteria to select cities with small, medium-sized, and large populations to participate in the south–south twinning as mentor and beneficiary cities and for selection of countries for country twinning. 1.3 Conduct an inception meeting and a consultation workshop at the Better Air Quality 2014 Conference during 19–21 November 2014 in Colombo, Sri Lanka. Apply the selection criteria for cities to the 50 shortlisted cities. 1.4 Apply the selection criteria for countries to identify four participating countries and seek their concurrence. 1.5 Prepare activity completion report and document the findings. **2. Output 2: Recommendations for the PRC's National Action Plan on Air Pollution Prevention and Control developed (9 months)** 2.1 Review the PRC's current legislation and plans on air pollution prevention and control. 2.2 Develop recommendations for the PRC's National Action Plan on Air Pollution Prevention and Control and Roadmap for implementation based on the review and results from the workshop organized by ADB and MEP on AQM in the PRC in July 2014. **Phase 2** **3. Output 3: Cities identified for twinning by applying the CAST for 10 Asian cities (6 months)** 3.1 Conduct assessment of the current status of AQM in 10 cities in Asia using the CAST. 3.2 Prepare CAST city reports. 3.3 Use CAST scores to identify the twinning pair for each population group (large, medium-sized, and small). **4. Output 4: South–south city twinning arrangements established and AQM experiences and good practices shared by twinned Asian cities (6 months)** 4.1 Establish south–south twinning arrangements between selected cities. 4.2 Conduct twinning, including (i) visit from the respective mentor city to beneficiary city (within their population group) to assess local AQM challenges and share their experiences to overcome similar challenges; and (ii) a workshop within each city population group (i.e., small, medium-sized, and large cities) to discuss potential solutions, and support the cities in developing strategies to achieve better air quality. 4.3 Prepare city twinning report. Share experience of city twinning to provide inputs for national policy and planning under in output 5.			**Inputs** **ADB: $500,000**

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
5. Output 5: South–south national twinning arrangements established and AQM experiences and good practices shared by participating countries (12 months) 5.1 Review status of AQM in the participating countries and identify pertinent challenges in reducing air pollution. 5.2 Prepare draft recommendations for addressing country AQM issues, documenting the finding of activity (5.1) and technical inputs from the consultants. Recommendations will include potential roles for multilateral development banks in supporting participating countries in addressing their AQM agenda. 5.3 Organize two workshops among the four participating countries to discuss the draft recommendations (preparatory and finalizing workshops), building upon country experience with successful efforts in AQM. 5.4 Revise and finalize the recommendations based on feedback received during the workshop, including recommendations for consideration of AQM actions in developing country partnership strategies of the participating countries. **6. Output 6: Study findings summarized in two knowledge products (3 months)** 6.1 Prepare a draft report summarizing the key learnings from the study focusing on results of the CAST application and the city and country south–south twinning. 6.2 Present the draft report at a green bag seminar at ADB to receive wider comments on the findings. 6.3 Finalize the report incorporating observations during the green bag seminar, as well as formal review comments by ADB.			

ADB = Asian Development Bank, APHI = air pollution and health index, AQM = air quality management, CAST = clean air scorecard tool, DMC = developing member country, MEP = Ministry of Environmental Protection, PRC = People's Republic of China.

[a] The target audience for the workshop will include civil society organizations that work among the population groups differentially affected by poor air quality, such as elderly, children, asthmatic; professionals working on health-related impacts of air quality; and representatives from major life insurance companies.

Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN

($'000)

Item	Amount
Asian Development Bank[a]	
1. Consultants	
a. Remuneration	
i. International consultants	155.0
ii. National consultants	215.0
b. International and local travel	50.0
c. Per diem	10.0
d. Reports and communications	5.0
2 Training, consultation meetings, workshops	40.0
3. Contingencies	25.0
Total	**500.0**

[a] Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF–other sources).

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. The technical assistance (TA) will address the challenges of air quality management (AQM) in Asia and use South–South twinning as key modality. The assignments will be split into two phases of 9 months and 15 months duration, respectively. Following is a brief description of the tasks the international and national specialists will perform under each phase of the TA.

A. Phase 1

2. **Team leader and air quality policy consultant** (international, 3 person-months). The consultant will supervise the work of the international and national consultants, and coordinate specialist inputs to deliver the TA outputs. Tasks will include the following:

(i) Consult with the Regional Sustainable Development Department of the Asian Development Bank (ADB), which is supported by the regional departments, to determine shortlisted cities for south–south twinning.
(ii) Together with the Regional Sustainable Development Department and relevant regional departments, conduct dialogue with targeted beneficiary countries to secure support for project implementation.
(iii) Oversee TA implementation, including the detailed work plan; interim, progress, and final reporting; and recruitment and management of resource persons and consultants.
(iv) Review reporting on the TA outputs including selection of cities, results of the clean air scorecard tool (CAST) assessment, city visit reports, workshops, and the knowledge product.
(v) Coordinate with ADB and the international experts to develop criteria for selecting cities for the CAST application and city twinning arrangements.
(vi) Facilitate discussions with ADB and city representatives to secure support for project implementation (CAST application and city twinning arrangements).

3. The team leader will have a master's degree in environmental management with a minimum of 10 years of work experience in AQM and environment policy. Working experience in AQM projects in developing Asia is necessary.

4. **Air quality specialists** (international, 1 person-month, 2 positions). Tasks include the following:

(i) Together with the team leader, provide input for the criteria for selecting cities for the CAST application and the twinning arrangements.
(ii) Take the lead in developing policy recommendations for the National Action Plan on Air Pollution Prevention and Control and the proposed revisions of the Law on Air Pollution Prevention and Control based on results of the workshop organized by ADB and the Ministry of Environmental Protection (MEP). This will include (a) conducting interviews with relevant stakeholders including national and city government officials, academics, and development agencies in the People's Republic of China (PRC) to gain their feedback on the national action plan; and (b) present the study findings at a green bag seminar at ADB. This will be implemented together with the PRC air quality specialist.

5. The specialists will have a master's degree in an air quality-related and/or engineering or science field, with more than 15 years of experience working on urban AQM projects. Experience in AQM projects in developing countries, and especially in Asia, is necessary.

6. **People's Republic of China air quality specialist** (national, 1 person-month). Tasks include the following:

(i) Support the air quality specialist (international) in developing policy recommendations on the PRC National Action Plan on Air Pollution Prevention and Control and the proposed revisions of the Law on Air Pollution Prevention and Control based on the results of the workshop organized by ADB and MEP.
(ii) Conduct interviews in the PRC with relevant stakeholders including national and city government officials, academics, and development agencies to obtain feedback on the national action plan.
(iii) Present the study findings at a green bag workshop at ADB.

7. The specialist will have a master's degree in an air quality-related and/or engineering or science field, with more than 10 years of experience working on urban AQM projects or research. The specialist will be a PRC national based in the PRC.

8. **Air quality management specialist** (national, 3 person-months). Tasks include the following:

(i) Prepare interim and progress reports.
(ii) Oversee day-to-day TA implementation, coordinating city schedules with air quality international specialists, and discussing the CAST application with national coordinators, and supervising the work of air quality researchers.
(iii) Provide input on policy recommendations for the National Action Plan on Air Pollution Prevention and Control and the proposed revisions of the Law on Air Pollution Prevention and Control based on results of the ADB–MEP workshop.
(iv) Prepare workshop reports for the interim workshop.

9. The specialist will have a background in environmental management, focusing on air quality, with 5 years of work on urban AQM projects. Experience in conducting AQM assessment through CAST and AQM projects in developing Asian countries will be preferred.

10. **Air quality management coordinator** (national, 2 person-months). Tasks include the following:

(i) Support the PRC air quality specialist in reviewing AQM-related information, legislation, and plans.
(ii) Support the PRC air quality specialist in prioritizing recommendations for AQM and amendments to air quality legislation.
(iii) Support the conduct of a workshop and meetings with MEP.

11. The air quality management coordinator will have a master's degree in environmental management, with a focus on environment, energy, or transport, with a minimum of 3 years of work on urban AQM or related area. Experience in coordinating with MEP on environmental issues will be preferred.

12. **Air quality researchers** (national, 4 person-months, 2 positions). Tasks include the following:

(i) Assist the national coordinator in collecting air quality information necessary to complete the CAST assessment.
(ii) Assist the PRC air quality specialist in conducting and documenting stakeholder interviews.

13. The researchers will have a graduate degree in science or engineering and a background in environmental management, with a focus on air quality work in Asia. One of the air quality researchers will be a PRC national based in the PRC.

B. Phase 2

14. **Team leader and air quality policy consultant** (international, 3 person-months). The team leader and air quality policy consultant will supervise the work of the international and national consultants, and coordinate inputs from the other specialists to deliver the outputs of the TA. Tasks include the following:

(i) Oversee TA implementation, including a detailed work plan; interim, progress, and final reporting; and recruitment and management of the resource persons and consultants.
(ii) Review reporting on the TA, including selection of cities, results of the CAST assessment, city visit reports, workshops, and the knowledge product.
(iii) Facilitate discussions with ADB and city representatives to secure support for project implementation (CAST application and city twinning arrangements).
(iv) Prepare the final TA report ensuring that TA outcomes and indicators have been met.
(v) Prepare, in consultation with ADB, a dissemination plan for the TA, including the interim and concluding workshops.

15. The team leader will have a master's degree in environmental management with a minimum of 10 years of work in AQM and environmental policy. Work experience in AQM projects in developing Asia is necessary.

16. **Air quality specialist** (international, 2.5 person-months, 2 positions). Tasks include the following:

(i) Provide guidance in undertaking the review of national AQM plans and policies and in developing appropriate recommendations to address air pollution issues, during workshops and technical interaction under city and country partnerships.
(ii) Provide inputs and review the knowledge product.

17. The specialist will have a master's degree in an air quality-related and/or engineering or science field with more than 15 years of experience working on urban AQM projects. Experience in AQM projects in developing countries, and especially in Asia, is necessary.

18. **Air quality management specialist** (national, 4 months). Tasks include the following:

(i) Prepare progress reports.
(ii) Oversee day-to-day TA implementation, coordinate city schedules with air quality international specialists, and discuss the CAST application with national coordinators, and supervise the work of air quality researchers.
(iii) Oversee and coordinate development of the CAST city reports, city visit reports, and workshop reports.
(iv) Take the lead in coordinating development of the knowledge product.
(v) Prepare reports for the interim and concluding workshop.

19. The specialist will have a background in environmental management, focusing on air quality, with 5 years of work experience on urban AQM projects. Experience in conducting AQM assessment through CAST and AQM projects in developing Asian countries will be preferred.

20. **National air quality specialists** (national, 3 person-months, 3 positions). Tasks include the following:

(i) Review the status of AQM in participating countries and identify the pertinent challenges in reducing air pollution. Include a review of existing AQM policies and plans in the countries and the status of their implementation.
(ii) Take the lead in preparing recommendations for addressing country AQM issues.
(iii) Organize two workshops for the four participating countries to discuss the draft recommendations (preparatory and finalizing workshops) and build upon countries' experience with successful efforts in AQM.
(iv) Provide inputs for preparation of the city visit reports focusing on providing recommendations on how to address local challenges in AQM based on extensive experience.
(v) Provide inputs and review the knowledge product.

21. The specialists will have a master's degree in an air quality-related and/or engineering or science field with more than 10 years of experience working on urban AQM projects and/or research in the respective participating countries.

22. **National coordinators** (national, 4 person-months, 4 positions). Tasks include the following:

(i) Support the team leader in conducting dialogue with targeted beneficiary countries to secure support for project implementation.
(ii) For the national coordinator for the PRC, support the coordination of the preparation of policy recommendations for the National Action Plan on Air Pollution Prevention and Control and the proposed revisions of the Law on Air Pollution Prevention and Control based on results of the ADB–MEP workshop.
(iii) Support implementation of the CAST in selected cities.
(iv) Conduct data collection for the CAST application in selected cities.
(v) Coordinate a process with representatives from selected cities to secure support for project implementation (CAST application and city twinning arrangements).
(vi) Coordinate city visit schedule of air quality expert and twinning activities.
(vii) Organize workshops (workshop within each city population group, i.e., small, medium-sized, and large) and prepare a workshop report.
(viii) Provide input for the knowledge product.

23. The coordinators will have a master's degree in environmental management and related fields with 7 years of work experience in environmental management in the country. One of the national coordinators will be a PRC national based in the PRC.

24. **Air quality researchers** (5 person-months, national, 2 positions). Tasks include the following:

(i) Assist the national coordinator in collecting air quality information necessary to complete the CAST assessment.
(ii) Assist the PRC air quality specialist in conducting and documenting stakeholder interviews.
(iii) Prepare the CAST city reports.
(iv) Support the organization of workshops (workshop within each city population group, i.e., small, medium-sized, and large cities).
(v) Assist in preparing workshop reports.
(vi) Provide input in the knowledge product.

25. The researchers will have a graduate degree in science or engineering with a background in environmental management, with a focus on air quality work in Asia. One of the air quality researchers will be a PRC national based in the PRC.