

AQM 2009 Compendium: An Analysis of AQM Organizations, Projects, and Training Courses in Asia



Prepared by the Clean Air Initiative for Asian Cities (CAI-Asia) Center

October 2009

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About CAI-Asia

The Clean Air Initiative for Asian Cities (CAI-Asia) was established as a joint initiative by the Asian Development Bank, World Bank, and the US United States – Asia Environmental Partnership (a project of USAID) in 2001.

CAI-Asia promotes reductions in air pollution and greenhouse gas emissions from the transport, energy and other sectors by translating knowledge to policies and action. Since 2007, this multi-stakeholder initiative is divided into

- The CAI-Asia Center, a regional, Philippines-based non-profit organization as the implementing arm of CAI-Asia
- The CAI-Asia Partnership, a United Nations Type II partnership, with over 120 member organizations
- CAI-Asia Country Networks in China, India, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, and Viet Nam.

This report was prepared under the Sustainable Urban Mobility in Asia (SUMA) program, which is supported by the Asian Development Bank through a grant from Swedish International Development Cooperation Agency. SUMA is implemented by the Clean Air Initiative for Asian Cities Center (www.cleanairnet.org/caiasia), in partnership with EMBARQ - the World Resources Institute Center for Sustainable Transport (<http://embarq.wri.org>), GTZ Sustainable Urban Transport Project (www.sutp.org), Interface for Cycling Expertise (www.cycling.nl), Institute for Transportation and Development Policy (www.itdp.org), and United Nations Center for Regional Development (www.uncrd.or.jp/est)

1. INTRODUCTION

Air quality management (AQM) is still a major challenge in Asia. The fast growing economies of China and India, and continued urbanization in other Asian countries, have increased the demand for mobility and energy in the region, resulting in high levels of air pollution in cities from mobile and stationary sources. The World Health Organization estimates that about 500,000 premature deaths per year are caused by air pollution, leaving the urban poor particularly vulnerable since they live in air pollution hotspots, have low respiratory resistance due to bad nutrition, and lack access to quality health care.

Several years ago, it was observed that there was little cooperation and coordination among organizations on air quality management projects and programs as many organizations covered similar themes and worked in many of the same countries. For this reason, the Clean Air Initiative for Asian Cities (CAI-Asia) and the United Nations Environment Program (UNEP) convened the managers of these projects and programs in the First Coordination Meeting of Regional Programs and Initiatives on AQM in Asia (Bangkok, June 2004). Participants were able to share information, identify areas of overlap, and work on joint projects. To guide the event, CAI-Asia released the first edition of the "Compendium of AQM Projects and Programs in Asia" that same year (2004 Compendium), which collected 156 different **regional** projects, programs and initiatives related to AQM and sustainable urban transport (SUT). The main aim of the Compendium was to foster coordination and cooperation among organizations, especially within the international donor community, when designing, funding, and implementing new projects and programs. Since 2005 the Compendium also includes **national and local** projects and programs.

The latest Compendium shows another increase in AQM projects and programs compared to previous years:

Compendium year	Total Projects
2004	156
2005	256
2006	338
2007	396
2009 (current)	423

Information for this Compendium was gathered through a user survey consisting of three new questionnaires. While the conclusions of this report are influenced by the responses received, each questionnaire was designed to reflect three significant changes in this year's Compendium:

- Questionnaire 1 - Emphasis on organization priorities (see Appendix A)
- Questionnaire 2 - Streamlined and consistent project profile categories (see Appendix B)
- Questionnaire 3 - Inclusion of training courses (see Appendix C)

The CAI-Asia Center, with support from the Global Atmospheric Pollution Forum, created an online database to bring together data sets from trusted sources. The resulting **CitiesACT** portal (www.citiesact.org) aims to share data and information on **A**ir quality, **C**limate change and energy, and **T**ransport. The Compendium has been fully integrated into the CitiesACT portal and will be expanded in the future:

- Organizations (to be expanded with individual contacts)
- Projects & programs
- Training courses
- Policies (already online but to be included in the 2010 Compendium report)
- Technologies (to be developed)

An analysis report will be released annually reviewing trends and priorities from the information collected on the CitiesACT portal.

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Search
Looking for a quick way to access air quality data at the **countries or cities in Asia**? Want to **compare** air pollution levels in specific cities against established ambient air quality standards or with other cities? Wondering which **organizations** are involved with implementing **projects and programs** related to air quality and sustainable urban transport? CitiesACT can provide this and more.

air quality. climate change & energy. transport.
CitiesACT

What is CitiesACT?
CitiesACT is an online portal that features data and information on **A**ir Quality, **C**limate Change & Energy, and **T**ransport. Since measures to address one problem may have positive benefits in other areas, the CitiesACT portal aims to provide a more integrated perspective for policy makers by using this "co-benefits" approach.

CitiesACT features

- **Country & City profiles** – quick snapshot of general demographics, transport statistics, air quality levels, as well as prevailing standards for vehicle emissions, fuels, and ambient air.
- **Policies** – collection of government actions and legislation at the national and city level to reduce air pollution, mitigate climate change, or promote sustainable transport.
- **Organizations** – list of organizations working in Asia that are involved in air quality-related activities.
- **Projects & Programs** – growing list of air quality-related project and programs in Asia.
- **Training Courses** – regular training courses on air quality and sustainable transport being delivered for stakeholders in the Asian region.

Air Quality News
Curtain Rises on Senate Struggle Over Climate Legislation
E.U. Alone and Lonely on Carbon
Big Polluters Told to Report Emissions
States Can Sue Utilities Over Emissions
Source: New York Times

Climate News
Arctic Has Potential To Alter Earth's Climate: Arctic Land And Seas Account For Up To 25 Percent Of ...
Solar power
IEA calls for massive investments in carbon capture
Copenhagen needs CCS
Source: New York Times

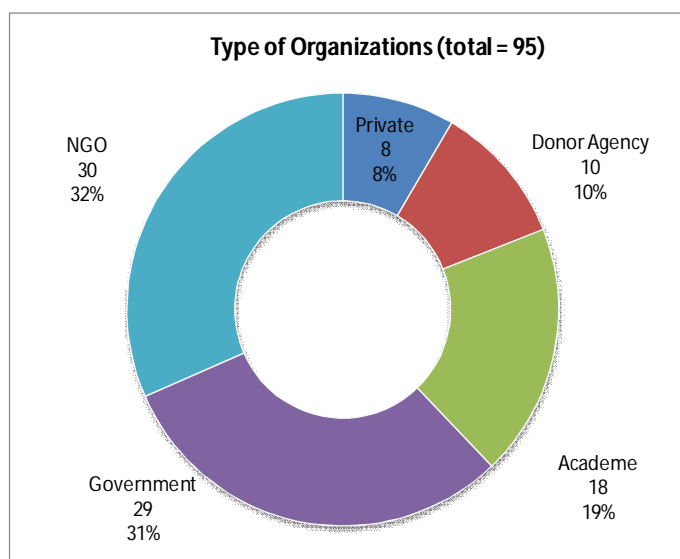
Energy News
Production of energy will be affected by ...

2. ORGANIZATIONS WORKING IN AQM

The Compendium now has a total of 95 organizations.

2.1 Organization type

This year's Compendium is composed of the following classification: NGOs (32%), government (31%), academic institutions (19%), donor agency (10%) and private sector (8%).



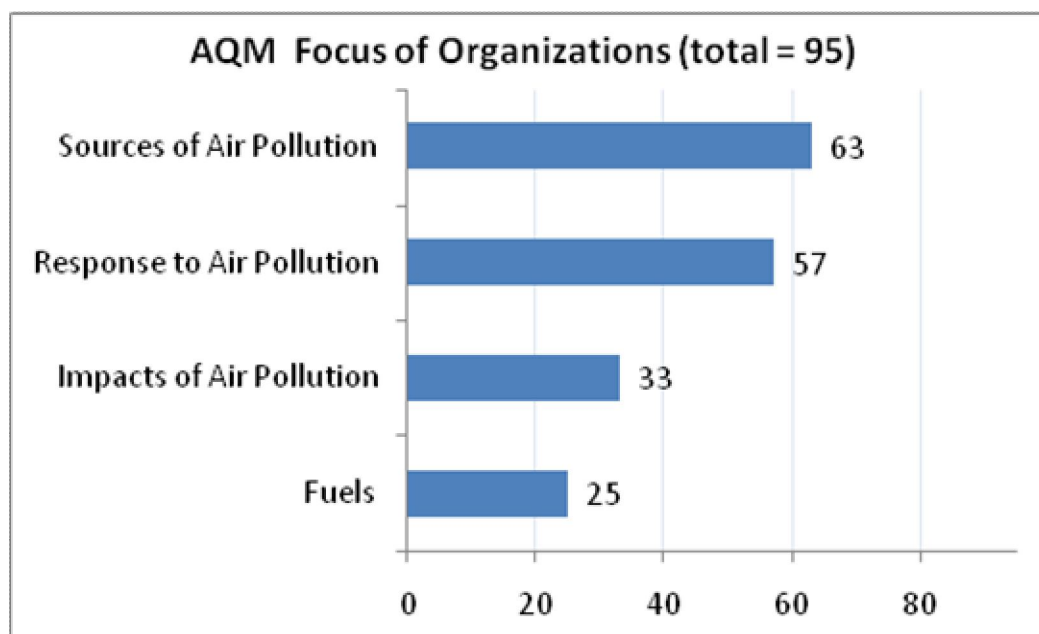
2.2 Geographic coverage

The chart below shows the distribution of the 95 organizations, which are grouped by their coverage of the three sub-regions in Asia. Southeast Asia is well represented with a total of 57 organizations total; South Asia is next with 48, and East Asia is close behind with 42. Several organizations have activities in more than one sub-region, and for this reason there is some overlap. Twenty-seven organizations cover all three sub-regions.



2.3 Thematic focus

Of the 95 organizations in the Compendium, 63 organizations focus on air pollution sources (e.g., transport, industry sources), while 57 organizations focus on responses to air pollution (e.g., modeling, monitoring, policy). The “impacts” and “fuels” categories have 33 and 25 organizations respectively.

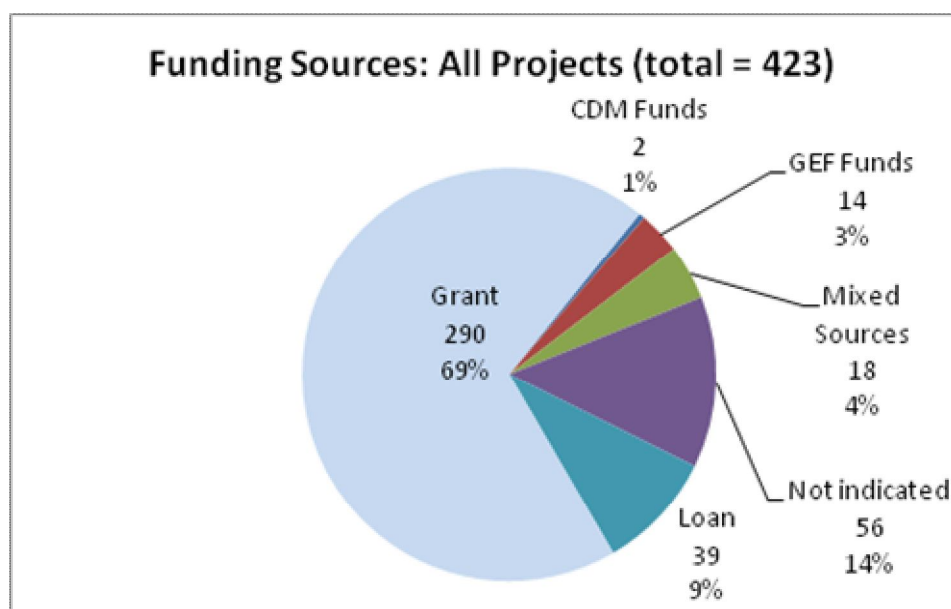


3. AQM PROJECTS AND PROGRAMS

The total number of project and program profiles included in the Compendium is 423.

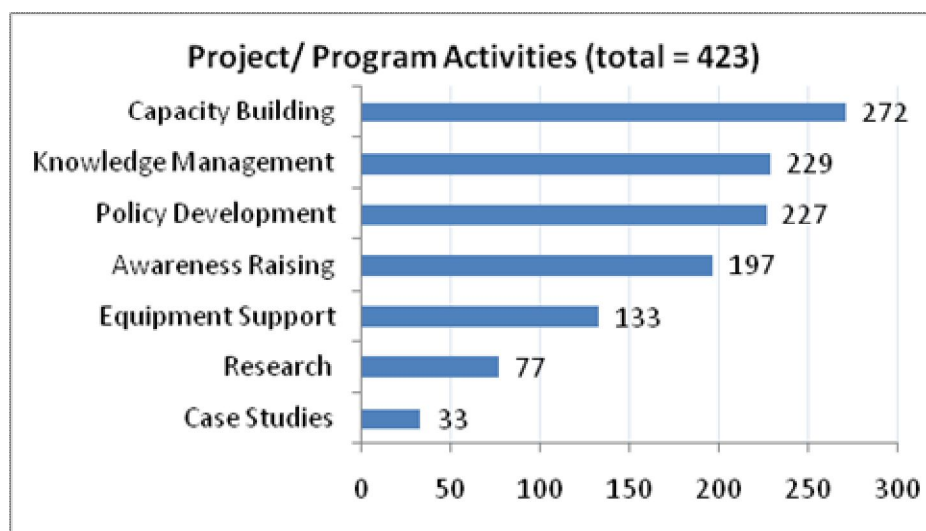
3.1 Project/Program Type

Grants (technical assistance) continue to be the dominant type of project funding with 69%. This is followed by loans (9%), GEF funds (3%), and CDM funds (1%). It should also be noted that 14% of the total projects listed in the 2009 Compendium do not specify the type of funding, but it is likely that the relative proportions of each funding type will not change significantly. Mixed sources of funding is at 4%.



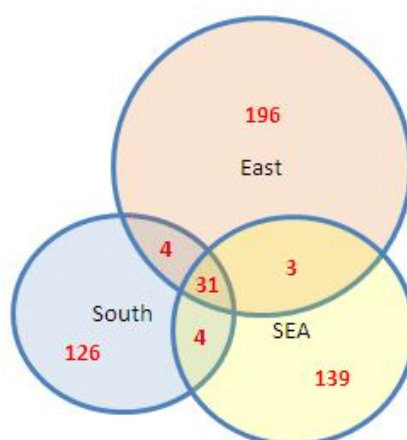
The organizations that submitted the most AQM profiles of projects and programs are the Swiss-Vietnamese Clean Air Program (SVCAP), the United States Environmental Protection Agency (US EPA), the Asian Development Bank (ADB), and the German Agency for Technical Cooperation (GTZ).

Capacity building continues to be the most common project activity with 272. Knowledge management and Policy development are close with each other with 229 and 227 respectively. Other project activities include awareness raising (197), equipment support (133), research (77) and case studies (33).



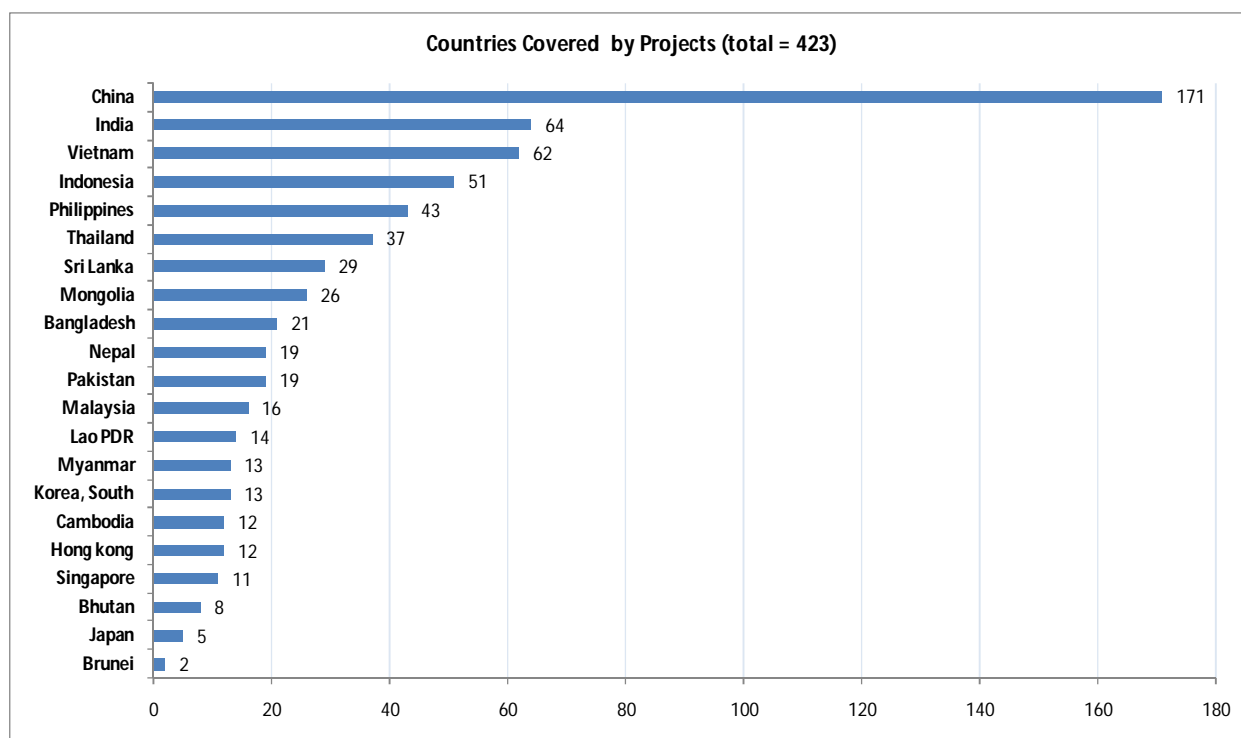
3.2 Geographic coverage

The 423 total projects listed in the Compendium can be broken down according to three sub-regions: Southeast Asia (SEA), South Asia, and East Asia. The graphs below illustrate the points of overlap.



The new projects are fairly evenly distributed across the three sub-regions but East Asia continues to dominate with 196 projects. South East Asia is ranked second with 139 projects. Closely following it is South Asia with 126 projects. Thirty one projects cover the three sub-regions. While eleven projects cover two sub-regions.

China ranks first when viewed on a per country basis with a total of 171 projects. India (64) and Vietnam (62) are close with each other. While Bhutan (8), Japan (5) and Brunei (2) have less than ten projects listed in the Compendium.

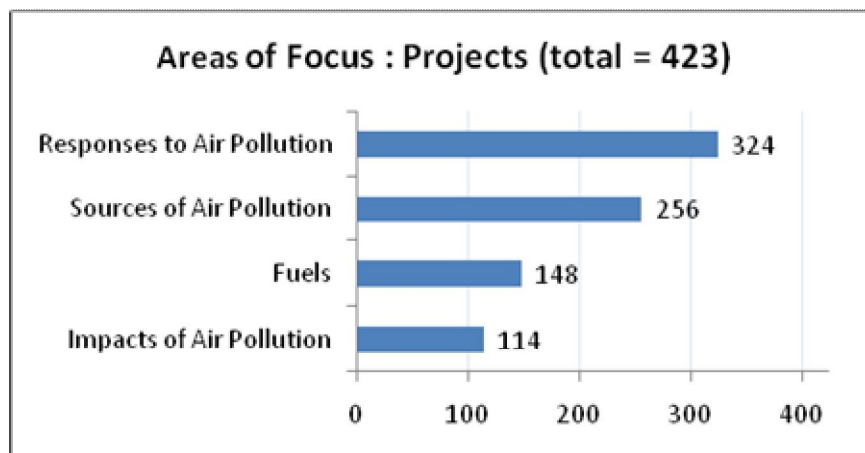


3.3 Thematic focus

Projects are classified according to the following areas of focus:

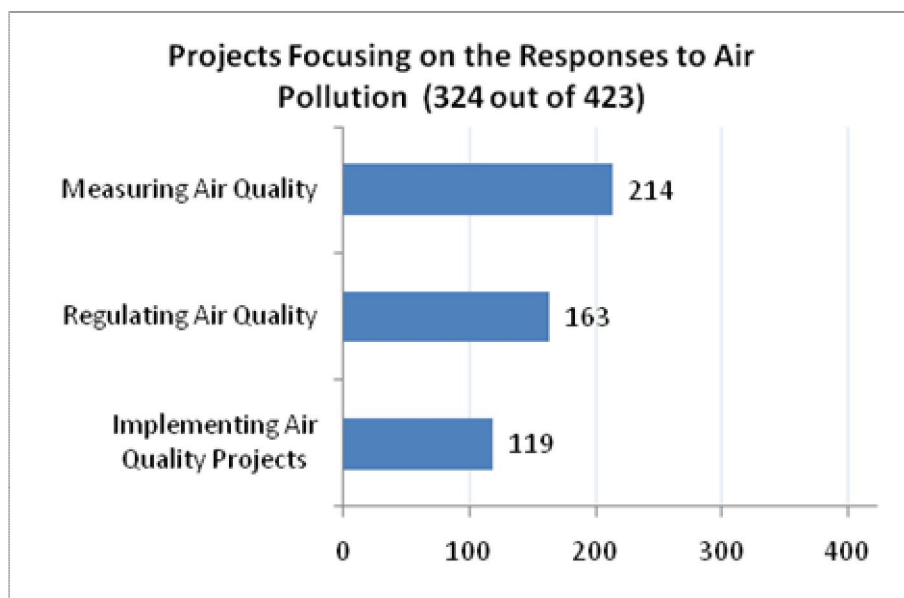
- Sources of air pollution (transport, industry, others)
- Impacts of air pollution (health, environmental, economic, others)
- Fuels (coal, gasoline, diesel, CNG/LPG, alternative fuels, others)
- Responses (measuring air quality, regulating air quality, and implementing air quality projects)

The majority of projects in the 2009 Compendium focuses on “responses” to air pollution challenges (324 out of 423). This is followed by “sources of air pollution” (256); “fuels” (148); and “impacts” (114).



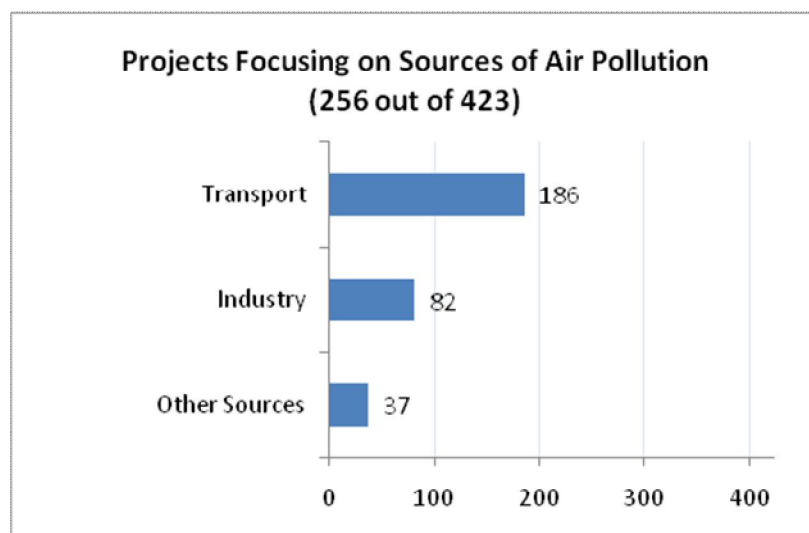
A. Responses to air pollution

Projects involving “measuring air quality” is almost double that of implementation of air quality projects. Differences among the three responses are minimal. This suggests that Asian countries and the organizations that support them are shifting their focus from measuring air quality to also include regulation and implementation. This reflects an increasing maturation of the AQM process. Most of the projects cover a combination of measurement, regulation and implementation, thereby recognizing the importance of integrated approaches to AQM.



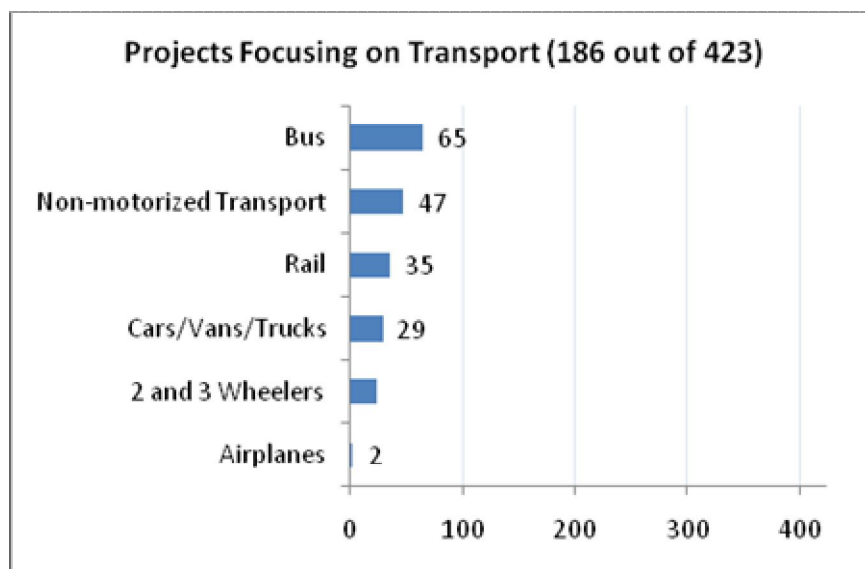
B. Sources of Air Pollution

Transport is the dominating source of air pollution covered by the projects with 186 responses. Next to it is industry sources with 82 responses. Other sources comprised 37 responses.



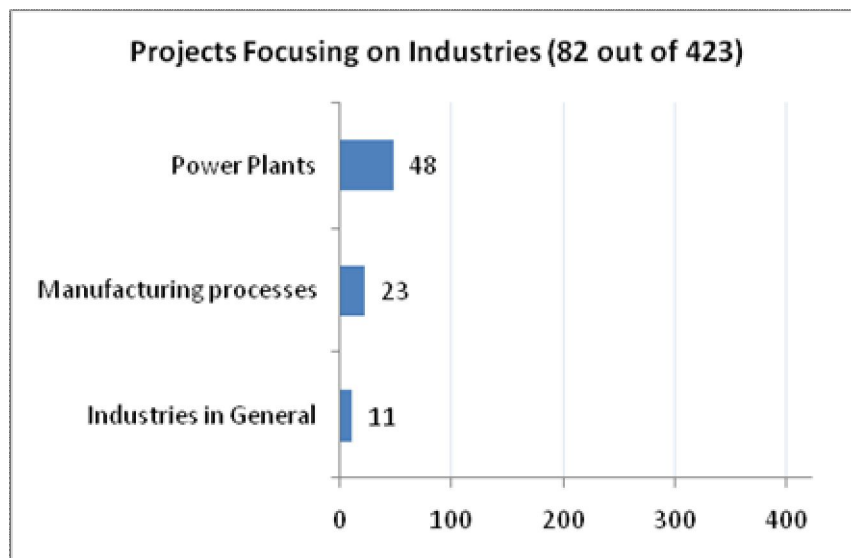
C. Sources of air pollution: Transport

In the chart below, public transportation takes the lead with 65 projects, but it is encouraging to see that there are more projects on non-motorized transport taking second place overall with 47 projects. Interestingly, for this years Compendium two projects were identified in Asia that focuses on emissions from airplanes. There are no project involving emissions from ships.



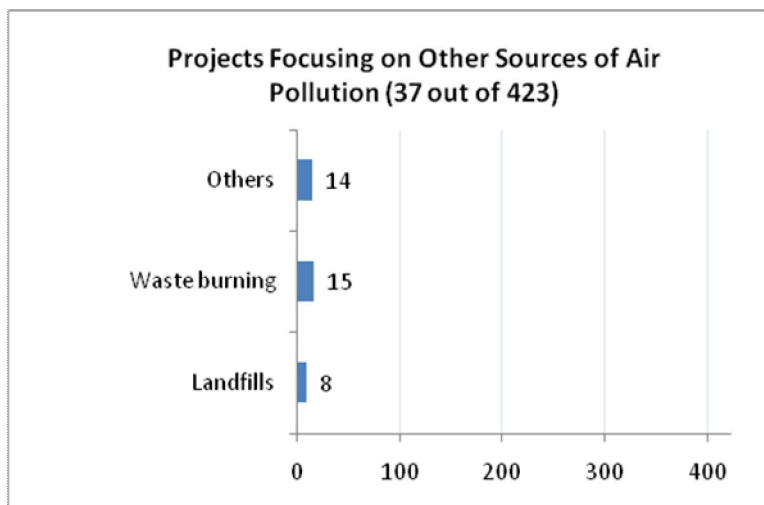
D. Sources of air pollution: Industry

Results suggest that power plants is more than double the number of factories as a source of industrial air pollution.



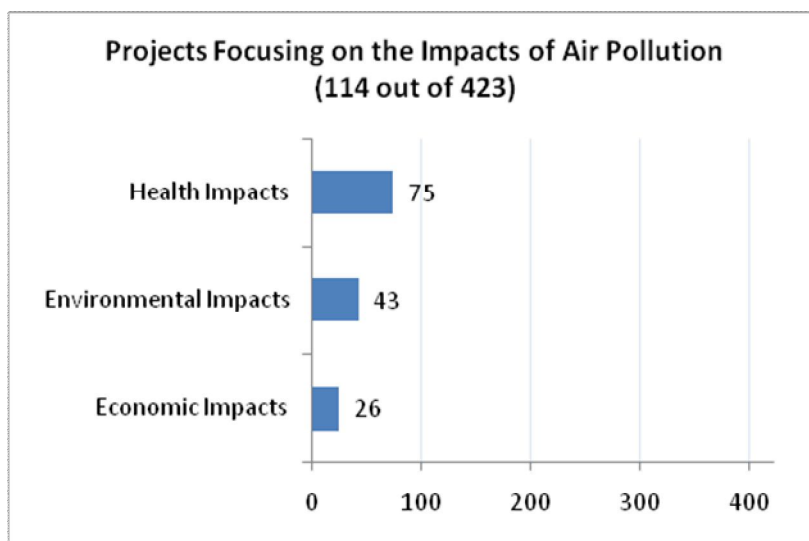
E. Sources of air pollution: Others

It is surprising to see that after four previous editions of the Compendium, waste burning (15) is still the dominant other source of air pollution. This year landfills increased to eight responses.



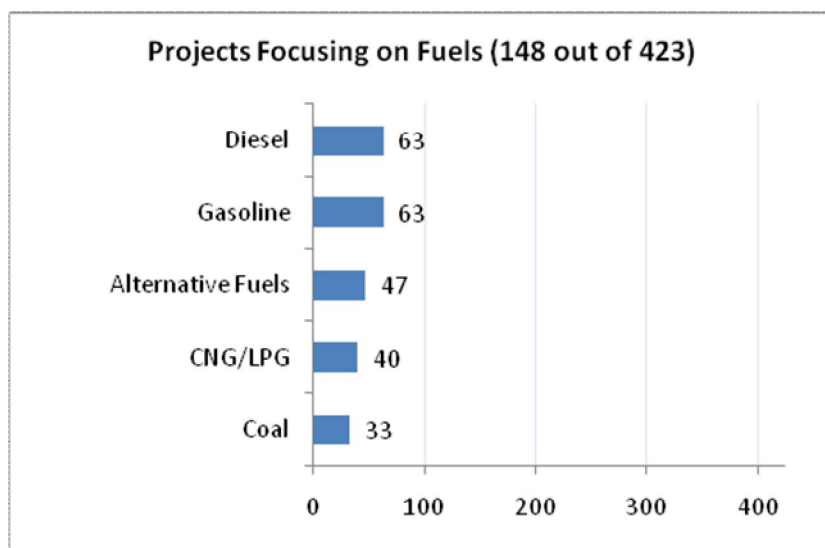
F. Impacts of air pollution

Overall, there are more projects involving health impacts (75) of air pollution when all the projects in the Compendium are considered. Environmental impacts was ranked second with 43 responses while Economic impacts got 26 out of 114 projects.



G. Fuels

While conventional fuels (diesel and gasoline) are still priority areas for projects and programs with 63 projects each. Projects on alternative fuels (47) and natural gas (40) are still in the running. For this year, 33 projects involves coal.



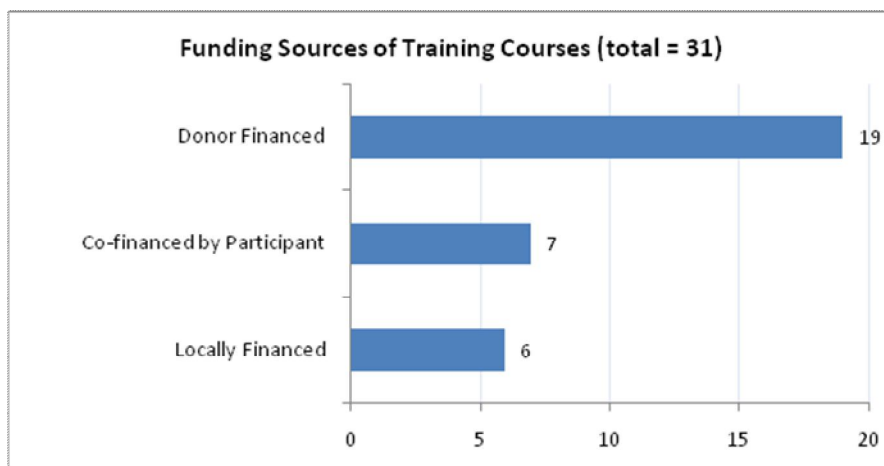
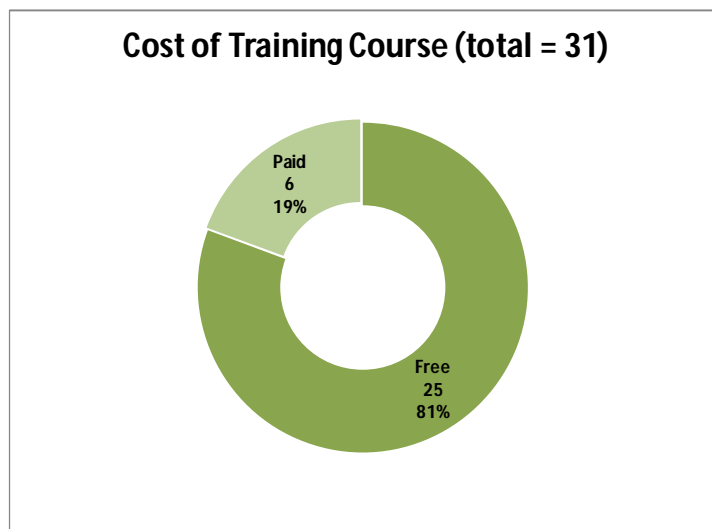
4. AQM TRAINING COURSES

The Compendium survey saw an increase in capacity building activities. In support of this, respondents were asked to submit any regular air quality training courses that they provide. Out of 95 organizations that responded to the survey 31 training course profiles were collected.

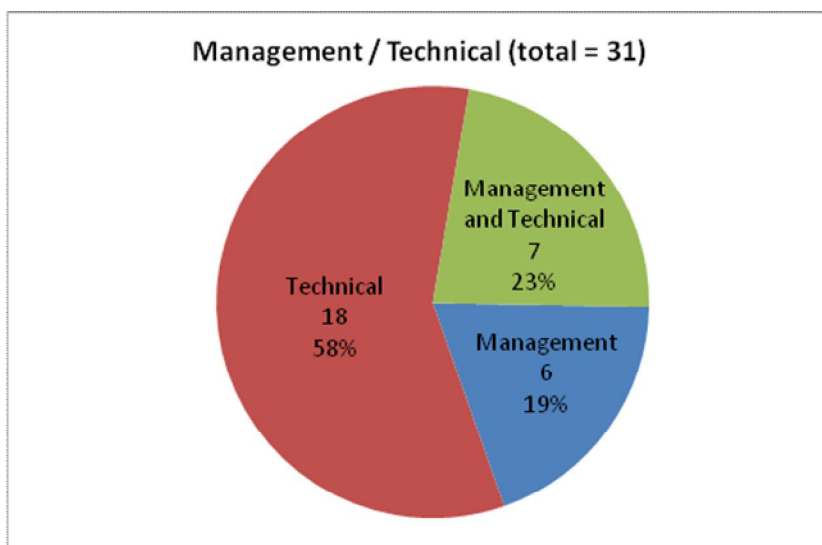
As defined in this survey, a “training course” is one that is delivered with some regularity, covering one or more modules, topics, or themes. These include multi-year academic courses, short-term certificate/diploma courses, training-the-trainers, online/distance learning, and hands-on training. It shall exclude ad hoc “training sessions” that are often delivered as part of conferences, symposia, roundtable discussions, and presentation of results.

4.1 Course Type

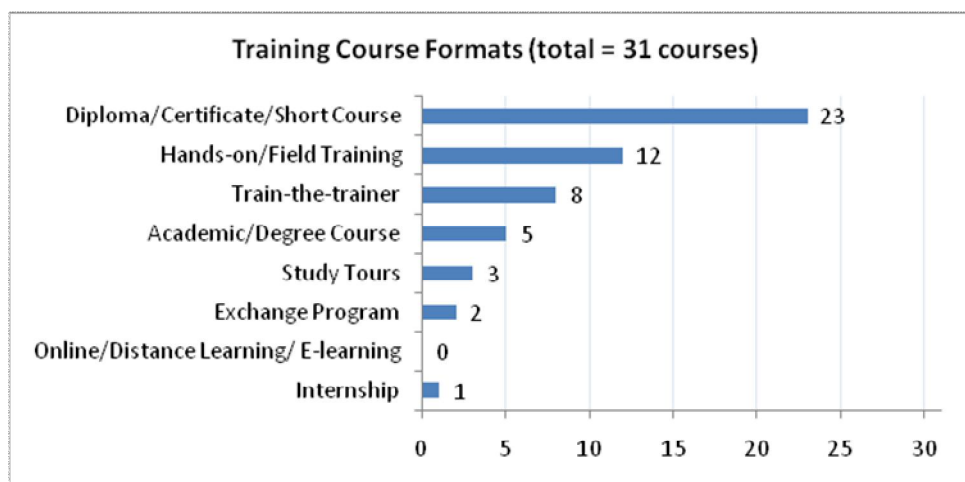
Twenty-five of these courses (81%) are “free” in the sense that participants do not have to pay any course fee. However, most are donor financed (19 out of 31 courses).



A large majority of courses are technical in nature (58%) rather than managerial (19%), although some cover both (23%). Twenty two are specialized courses (71%) while there were four general courses (13%), and some are both (11%). There was also one course that was not indicated as either specialized or general.

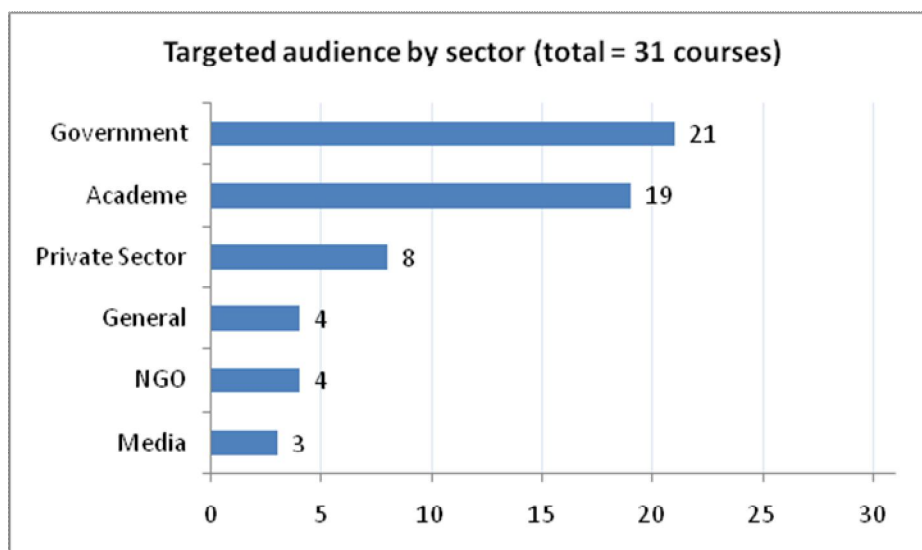


Twenty three out of the Thirty one courses provide participants with a diploma or certificate, which is encouraging as it indicates that air quality is increasingly considered as an issue that Asian countries must manage properly. It is interesting to see that not one of the respondents mentioned e-learning as a course activity. This provides an opportunity for organizations to look into e-learning as a cost effective means of transferring knowledge.

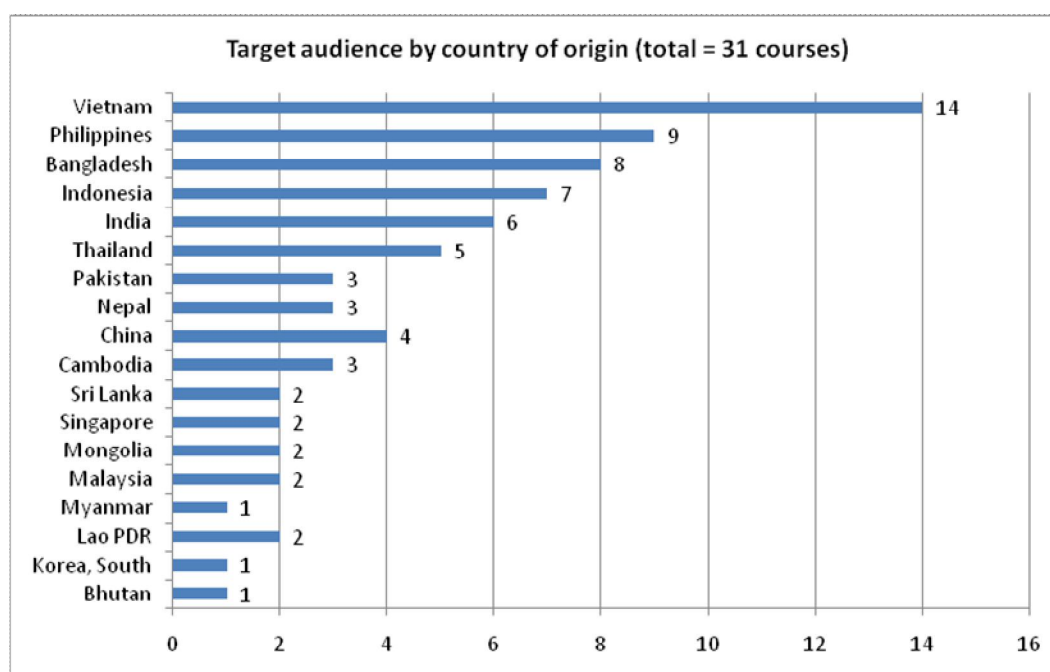


4.2 Target Audience

Government (21) and the academe (19) are the primary participants of these courses, but it is interesting to note that three course profiles submitted include media participants as well.



Many of the training courses are held in Thailand, which could be explained by the central location of Thailand and the presence of donor agencies like the United Nations and respected educational institutions like the Asian Institute of Technology. Participants from Vietnam (14) are the most common target audience. A possible explanation is that Vietnam is a developing Asian country that can be classified in several Asian subregions (e.g. Southeast Asia, Greater Mekong Subregion).



ANNEX – SURVEY QUESTIONNAIRES

ORGANIZATION PROFILE AND PRIORITIES

1.) Name of your organization/network:

2.) Website URL:

3.) Short general description of your organization (max 200 words) vis-à-vis AQM and SUT:

4.) Asian Sub-regions covered: (please mark with an "x" all that apply)
() South Asia () Southeast Asia () East Asia () Others, pls. specify:

5.) Countries covered:

(If more than one country, please use a comma to separate each, e.g., China, India, Thailand, etc.)

6.) Main contact person (a.k.a. focal point):

Name:
Job title:
Tel:
Fax:
Email:

7.) If there is more than one focal point, please provide their contact details below:

8.) Do your activities specifically aim to address climate change, in addition to air quality? () yes () no

9.) Future AQM priorities of your organization/network:

	Priorities	Remarks (optional)
Topics Examples: impact of air pollution on poverty, linkages of air quality with climate, alternative fuels, 2-3 wheelers, transboundary pollution, ports and marine emissions, etc.		
Geographic Scope Examples: increased focus on least developing countries, or focus on China and India only, shift from urban to rural focus, etc.		

(Please mark with an "x" all topics covered by your organization.)

10.) Areas of focus/topics

A. Sources of air pollution

- () Transport
 () Rail
 () Bus
 () Cars/vans/trucks
 () 2 and 3 wheelers
 () Non-motorized transport
 () Ships
 () Airplanes
 () Others, please specify:
 () Industry
 () Manufacturing processes
 () Power plants
 () Others, please specify:
 () Other sources of air pollution
 () Landfills
 () Waste burning / forest fires
 () Others, please specify:

B. Impacts of air pollution

- () Health impacts
 () Environmental impacts
 () Economic impacts
 () Others, pls. specify:

C. Fuels

- () Coal
 () Gasoline
 () Diesel
 () CNG/LPG
 () Alternative fuels
 () Others, please specify:

D. Response

- () Measuring air quality
 () Air quality monitoring
 () Modeling
 () Emissions inventories
 () Source apportionment
 () Others, please specify:
 () Regulating air quality
 () Policies, legislation, standards
 () Strategies and roadmaps
 () Others, please specify:
 () Implementing air quality projects
 () Inspection and maintenance
 () Financing
 () Emission control technologies
 () Fuel Improvements
 () Land use planning/urban development
 () Others, please specify:

PROJECT/PROGRAM PROFILE

***** IMPORTANT: Please accomplish one form for each project/program*****

Object/Program proponent (organization name):

Official project title:

Website URL:

Main objectives and outputs (max 300 words):

Total budget (specify currency):

Funding sources/donors:

Funding type: ☐ Loan ☐ Grant ☐ CDM funds ☐ GEF funds

Status of project: ☐ Planned ☐ Ongoing ☐ Completed

Asian Sub-regions covered:

South Asia ☐ Southeast Asia ☐ East Asia ☐ Others, pls. specify:

Countries covered:

If more than one country, please use a comma to separate each, e.g., India, Thailand, etc.)

Cities/provinces covered:

If more than one city/province, please use a comma to separate each, e.g., Delhi, India, Thailand, etc.)

Implementing agencies:

Main contact person (a.k.a. focal point):

Name:

Title:

Organization:

Address:

If there is more than one focal point, please provide their contact details

Name:

(Please mark applicable activities and topics with an "x")

14.) Project / program activities

- | | |
|--|---|
| <input type="checkbox"/> Research | <input type="checkbox"/> Equipment support |
| <input type="checkbox"/> Data gathering / knowledge mgmt | <input type="checkbox"/> Policy development |
| <input type="checkbox"/> Awareness raising | <input type="checkbox"/> Case studies |
| <input type="checkbox"/> Capacity building / training | |

15.) Areas of focus/topics

A. Sources of air pollution

- | | |
|---|--|
| <input type="checkbox"/> Transport | |
| <input type="checkbox"/> Rail | <input type="checkbox"/> Non-motorized transport |
| <input type="checkbox"/> Bus | <input type="checkbox"/> Ships |
| <input type="checkbox"/> Cars/vans/trucks | <input type="checkbox"/> Airplanes |
| <input type="checkbox"/> 2 and 3 wheelers | <input type="checkbox"/> Others, pls. specify: |

- ☐ Industry
- ☐ Manufacturing processes
- ☐ Power plants
- ☐ Others, pls. specify:

☐ Other sources of air pollution

- ☐ Landfills
- ☐ Waste burning / forest fires
- ☐ Others, pls. specify:

B. Impacts of air pollution

- ☐ Health impacts
- ☐ Environmental impacts
- ☐ Economic impacts
- ☐ Others, pls. specify:

C. Fuels

- | | |
|-----------------------------------|--|
| <input type="checkbox"/> Coal | <input type="checkbox"/> CNG/LPG |
| <input type="checkbox"/> Gasoline | <input type="checkbox"/> Alternative fuels |
| <input type="checkbox"/> Diesel | <input type="checkbox"/> Others, pls. specify: |

D. Response

- ☐ Measuring air quality
- ☐ Air quality monitoring
- ☐ Modeling
- ☐ Emissions inventories
- ☐ Source apportionment
- ☐ Others, pls. specify:
- ☐ Regulating air quality
- ☐ Policies, legislation, standards
- ☐ Strategies and roadmaps
- ☐ Others, pls. specify:
- ☐ Implementing air quality projects
- ☐ Inspection and maintenance
- ☐ Financing
- ☐ Emission control technologies
- ☐ Fuel Improvements
- ☐ Others, pls. specify:

TRAINING COURSE DESCRIPTION

*****IMPORTANT: Please accomplish one form for each training course*****

As defined in this survey, a “training course” should be one that is delivered with some regularity, covering one or more modules, topics, or themes. These include multi-year academic courses, short-term certificate/diploma courses, training-the-trainers, online/distance learning, and hands-on training. For our purposes, we shall *exclude* from our definition *ad hoc* “training sessions” that are often included in the agenda of conferences, symposia, roundtable discussions, and presentation of results.

1.) Training course organizer (organization name):

2.) Official title of the training course:

3.) Website URL:

4.) Are training materials available online: () yes () no

5.) Cost of training course:

() Free

() Paid (if paid, how much per course: _____)

6.) Funding sources:

() Locally financed

() Donor financed (pls. specify name of donor/s: _____)

() Co-financed by participant

7.) Total training course budget (specify currency):

8.) Implementing institutes/organizations:

9.) Main contact person (a.k.a. focal point):

Name:

Job title:

Organization:

Tel:

Fax:

Email:

If there is more than one focal point, please provide their contact details below:

10.) Course delivery

(Please provide a number between the appropriate brackets, e.g. [3] days or [2] weeks)

- **Frequency:** Number of times per year: []
- **Duration (How long does the course last?):**
[] days [] weeks [] months [] years
- **No. of actual deliveries (How many times has this course been delivered?)**
Number of times: []
Since what year: []
What countries have they been delivered in?
- **No. of planned deliveries (How many are planned to be delivered?)**
Number of training sessions that will be delivered in 2008: []

Planned dates and venues: (pls. write in the space provided)

(Please mark applicable components and areas with an “x”)

11.) Type of training course

() Management

(e.g., enforcement, policy development)

() Technical

(e.g., modeling, health impact assessment)

12.) Focus/Key topic(s)

() General course () Specialized course

Please specify topics covered:

13.) Target participants

Region:

() South Asia

() Southeast Asia

() East Asia

() Global

() Others, pls. specify:

Country: (pls. specify or leave blank if not applicable)

City: (pls. specify or leave blank if not applicable)

Sector:

() Government

() NGO

() Academe

() Private sector

() General public

() Media

() Others, please specify:

14.) Course format

() Academic/degree course

() Diploma/certificate/short course

() Train-the-trainer

() Hands-on/field training

() Study tours

() Exchange program

() Internship

() Online/distance learning/e-learning

() Others, please specify: