ABOUT THE COVER

After more than six years of being hosted at the Manila headquarters of the Asian Development Bank, the CAI-Asia Center finally moved to its new office in Ortigas Center, Metro Manila, Philippines. The new office offers a bird’s eye view of CAI-Asia’s former home, as well as a commanding view of the city of Metro Manila. Some days are very hazy, while other days can be clear and serene. This view is a constant reminder of the challenges and possibilities that face other cities in Asia. It is literally a window of opportunity.

PHOTO CREDITS

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Page 9: Clean Air Network Nepal (CANN)
Page 10: Yan Peng
Page 11: Carlos Pardo, GTZ-SUTP
Page 12: Diane Moraleda
Page 13: CAI-Asia / BAQ Secretariat
Page 14: Roelof Wittink (I-CE) / CEPT-ITDP

REFERENCES

References for graphs, tables, data, and external publications are available online at www.cleanairnet.org/caiasia/annualreport
The incorporation of the Clean Air Initiative for Asian Cities (CAI-Asia) Center in June 2007 as an independent legal entity was an important milestone in the struggle for clean air in Asia.

Our thanks go to the ADB and all other organizations and persons who made it possible for CAI-Asia, after 7 years of its establishment as an informal partnership, to take on a more permanent presence in Asia.

The creation of the CAI-Asia Center is a tribute to efforts of the late Mr. Kong Ha of the Hong Kong Environmental Protection Department who, until his untimely death in April 2007, served as the Chairperson of CAI-Asia and who played a key role in establishing the credibility of CAI-Asia.

Through its new status as an independent organization, the CAI-Asia Center is able to take more proactive efforts in facilitating and strengthening the air quality management (AQM) agenda at the local, national, and regional level in Asia. The challenges are still plentiful. More and more people are moving to the city and it is expected that by 2015 more than half of the population in Asia will live in cities. Sustained economic growth has lifted millions of people from poverty but has also resulted in rapid increases in economic growth and motorization. Beijing, China now registers about 1300 new vehicles per day while in Bangalore, India it is 900 new vehicles per day. This rapid development strains the capacity of Asian countries and cities to bring the air quality in their cities to healthy levels. Yet, we see positive signs at the country level, the city level and at the level of individual companies in Asia of new approaches to use the new found wealth to provide for cleaner air and a better life.

2007 was the year in which the international community agreed in Bali, Indonesia to move forward with the formulation of a follow-up agreement to the Kyoto Protocol. CAI-Asia was encouraged by the attention given to the co-benefits approach which links the reduction of greenhouse gases to the simultaneous achievement of other developmental objectives such as the reduction of air pollution. This gives a new impetus to the struggle for clean air in Asia.

The CAI-Asia Center is still a young organization. Its mission to see cleaner air in Asian cities is ambitious and can only be achieved if we all work together. We, in the CAI-Asia Center, will continue to build partnerships between cities and countries, and between government, civil society, academe, private sector and development agencies. We would like to thank our sponsors for their continued support.

Mr. Jiming Hao
Chairman

Mr. Cornie Huizenga
Executive Director
The Clean Air Initiative for Asian Cities promotes and demonstrates innovative ways to improve the air quality of Asian cities through sharing experiences and building partnerships.

CAI-Asia was established as a multi-stakeholder initiative by the Asian Development Bank, the World Bank and the United States - Asia Environmental Partnership (a project of USAID) in 2001, and became formalized in 2007 as the CAI-Asia Partnership, the CAI-Asia Center, and the CAI-Asia Local Networks.

The CAI-Asia Center was incorporated on 20 June 2007 as a non-stock, non-profit corporation in the Philippines. This marked an important step in the struggle for clean air in Asia. Through its new status as an independent organization, the CAI-Asia Center is able to take more proactive efforts in facilitating and strengthening the air quality management (AQM) agenda at the local, national, and regional levels.

The CAI-Asia Center serves as the secretariat of the CAI-Asia Partnership, a non-binding, multi-stakeholder network of government agencies, NGOs, research institutions, international organizations, and private sector firms registered with the UN as a Type II partnership.

To get a stronger involvement of city members in CAI-Asia activities, working with Local Networks is the best strategy. CAI-Asia currently has seven Local Networks in Asia: China, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, Viet Nam. A Local Network will be established in India in 2008.

The CAI-Asia Center is guided by its Business Plan and three supporting strategies: Partnership Strategy, Knowledge Management Strategy and Local Network Strategy. Its work focuses around the following components of an integrated framework to improve AQM in Asian cities:

- **Knowledge Management**: Provide an authoritative, knowledge base on urban air quality in Asia
- **Capacity Building**: Contribute to the generation of adequate capacity for effective urban AQM in Asia
- **Networking and Policy Development**: Expand the CAI-Asia Center’s role as convener of AQM-related policy forums and support the development of policies at the regional, national and local levels
- **Investment and Implementation**: Contribute to the identification of financing models for effective urban AQM in Asia and assist in raising funds for the development and implementation of AQM programs and projects
"Rapid economic growth in Asia has caused one of the highest air pollution levels and the fastest increases of greenhouse gas (GHG) emission in the world. We expect CAI-Asia’s further attention to improving air quality at local level and reducing GHG emission which will become even more important. We are pleased to continue our collaboration with CAI-Asia for the common agenda."
- Nessim Ahmad, Director, Environment and Social Safeguards Division, Regional and Sustainable Development Department (RSDD), Asian Development Bank, Manila

"CAI-Asia has proven to be very effective in bringing stakeholders together which makes the CAI-Asia Center a key partner in UNEP’s efforts in Asia to improve urban air quality and to address climate change."
- Surendra Shrestha, Regional Director and Representative for Asia and the Pacific, United Nations Environment Programme (UNEP)

"Shell and CAI-Asia share a common belief in sound science as the basis for developing air quality management, and in sound frameworks underpinning future regulatory developments governing transport fuels. In this context we find CAI-Asia to be a useful forum where stakeholders from different sectors can meet, exchange experiences and engage in dialogue on urban air quality in pursuit of the mutual goal of improving and evolving the market’s options for meeting tomorrow’s transport challenges."
- Joanna Pedley, GM Fuels Product Management, Shell

"At SEI, we have found that CAI-Asia has been effective in developing a comprehensive network of cities across Asia, linking key professionals in these cities together. CAI Asia has developed an impressive number of research partnerships tackling many of the key air pollution issues facing Asia today. We look forward to developing our joint work related to the activities of the Global Atmospheric Pollution Forum, where we will be able to address important issues such as the co-benefits of considering air pollution and climate change issues jointly."
- Johan Kuylenstierna, Director, SEI York Centre, and GAP Forum Co-convenor

"Civic Exchange, a non-profit think tank, based in Hong Kong, cannot think of a better expert organization to team-up with than CAI-Asia to network and share information and research with a wide audience specifically interested in air quality management. We look forward to a growing collaboration so that Asian cities can learn from each other as well."
- Christine Loh, CEO, Civic Exchange

"CAI-Asia brings together government decision makers with experts, advocates and dedicated NGOs to find joint solutions to the pressing problems of air pollution and traffic congestion related to the rapid growth of motor vehicle use in Asia."
- Walter Hook, Executive Director, Institute of Transport Development Policy (ITDP)

"Air pollution in mega-cities in Asia (particulate matter, oxides of sulphur and nitrogen, air toxics, etc.) has been of concern for decades. Recent increased use of oil and coal, especially in fast developing countries like China and India, is making the situation even worse. Long-range transport of such pollutants and greenhouse gases and their impact on public health and global warming are common topics of concern. With a tradition of a century-of-service to environmental professionals in North America and around the world, the A&WMA is pleased with its collaboration with CAI-Asia in addressing air pollution and global warming issues of mutual interest. A&WMA is looking forward to closer interactions with CAI-Asia in the future, and especially during BAQ 2008."
- CV Mathai, President, Air & Waste Management Association (A&WMA), USA

"I have worked with several international and national organizations in the past on a wide range of environmental issues both at the policy and demonstration levels, but I have never found any organization to be as technically competent and prompt in their support as CAI - Asia. They always ensure the best possible technical support available anywhere in the world is provided to their networks. I do not think many organizations in the world can match that. I have yet to find a more committed bunch of professionals in one organization as in CAI-Asia. I have always found CAI-Asia tenacious in following-up on actions and professional in their overall conduct. In addition, their working relationship with Local Networks has been exemplary."
- Ahmed Saeed, Head, Pakistan Ecosystem and Livelihood Group, World Conservation Union (IUCN)
Air pollution poses a significant threat to the environment, quality of life and health of people living in Asian cities. Urban air quality, however, is more than a local issue. For example, a large share of pollution in Beijing and Hong Kong is attributed to sources outside the city boundaries. In cities like Ulaanbaatar and Kathmandu, indoor cooking and heating causes significant indoor and urban air pollution. Addressing urban air pollution therefore requires tackling indoor, urban, and regional air pollution.

Unfortunately, until now, only a handful of cities have pollution levels below WHO guideline limits. Despite recent improvements, air pollution might worsen in the future due to exponential increases in energy use, vehicle ownership and industrial growth in Asia if no effective action is taken.

Particulate matter smaller than 2.5 microns (PM$_{2.5}$) is of most concern as it penetrates deep into the lungs.

A survey of urban air quality management in 17 countries conducted by CAI-Asia demonstrated that past efforts have contributed to a slow but steady reduction in urban levels of the main air pollutants: Nitrogen dioxide (NO$_2$), Sulphur dioxide (SO$_2$), total suspended particles (TSP) and particulate matter (PM$_{10}$).
Climate change is now recognized as a major global challenge, resulting in an emerging global consensus on the need for mitigation and adaptation, and the pledging of funds to make mitigation and adaptation happen. However, it will take several years for climate change awareness to trickle down to the thousands of Asian cities where local action is needed, and we cannot afford to wait for this.

Many Asian countries give priority to national and local developmental issues like energy security and air quality over climate change. However, many measures that reduce air pollution also contribute to reducing greenhouse gas (GHG) emissions because they have similar causes: energy use, transport, industry. Therefore, addressing urban air pollution provides a unique opportunity to mitigate global climate change through local actions RIGHT NOW.

This "co-benefits" approach is supported by the Intergovernmental Panel on Climate Change (IPCC), which stated in its Fourth Assessment Report (2007) that “Integrating air pollution abatement and climate change mitigation policies offers potentially large cost reductions compared to treating those policies in isolation.”

What are Co-benefits?

Co-benefits from the global climate change perspective are additional benefits beyond GHG reductions resulting from climate change mitigation measures. These benefits include:

- Reduced air pollution
- Associated health benefits
- Improved energy security through reduced energy costs and dependency on oil imports
- Increased access to energy

From the Asian regional/local perspective, co-benefits are additional GHG reductions resulting from measures aimed to address development issues, such as air pollution and associated health problems, lack of energy access and security, and other socio-economic problems.

In 2007, the CAI-Asia Center, US Environmental Protection Agency and the Manila Observatory studied the linkages between air pollution and climate change and assessed how a co-benefits approach can be mainstreamed in Asia.

### Air Pollution
- Low-sulfur coal
- Smokestack controls
- Catalytic converters
- Evaporative controls

### Co-Benefits
- Clean fuels/renewables
- Energy efficiency programs
- Methane gas recovery
- Diesel Particle Filters
- Public transport and land use
- Retirement of older vehicles
- Efficiency standards for new vehicles/appliances
- Inspection and maintenance programs

### Climate Change
- Geological and terrestrial sequestration
- Land use and land use change
- Control of other GHGs (N₂O, HFCs, PFCs, SF₆)
Enhancing Knowledge for AQM

Innovative solutions can only be acquired when knowledge is shared openly and applied by policy makers and AQM practitioners. Effective management of AQM knowledge requires:

- Transformation of sources of information into relevant, user-friendly knowledge products for the right audience
- A streamlined process of capturing and transferring knowledge, making it sustainable, efficient, and cost-effective
- Communication activities to support stakeholders

In support of this, the CAI-Asia Center prepared a new Knowledge Management Strategy, which was also used to develop a specific KM strategy for the Sustainable Urban Mobility in Asia (SUMA) program. The CAI-Asia KM strategy focuses on people and process (i.e., Community of Practice), tools and products, and technologies.

Creating an AQM Community of Practice (CoP)

The CAI-Asia Center and its Local Networks tap into the existing knowledge bases of the CAI-Asia Partnership members and other organizations and bring validated data, experiences, and insights on AQM to a wider, yet targeted, audience.

The main idea behind this process is to create, facilitate, and maintain a community of practice (CoP), which will help balance competing interests and share new ideas.

Knowledge is generated by CAI-Asia partners, Local Network activities and CAI-Asia Center activities, such as the SUMA program, which are explained elsewhere in the annual report.
Getting the Message Out

The CAI-Asia Center interacts with its stakeholders through its website, listserv, and face-to-face meetings and presentations.

Website - www.cleanairnet.org/caiasia

The CAI-Asia website contains over 5,000 documents, news, and weblinks that relate to AQM, sustainable urban transport, energy efficiency, and climate change co-benefits in different Asian countries.

As one of the largest regional websites on AQM, the CAI-Asia Center will further upgrade the website, which will incorporate newer technologies such as RSS feeds, blogs, and wikis. The website receives on average 26,000 visits per month, of which nearly 19,000 are unique visitors.

Listserv: an e-group on AQM

Nearly one thousand messages have been posted in 2007, on average two dozen posts per week. As of 31 December 2007, the listserv has 1,251 confirmed members.

Presentations to the target audience

The CAI-Asia Center staff members are frequent speakers at workshops, seminars and conferences on air quality management. From June to December, there were 31 presentations made, reaching almost 2,000 persons.

How to join the CAI-Asia Listserv:

• To join, send blank email to join-cai-asia@lists.worldbank.org
• Email address to post messages: cai-asia@lists.worldbank.org
• Listserv archive: groups.google.com/group/cai-asia

e-Newsletters

Regular e-Newsletters are produced by China, Nepal, Pakistan, Philippines and Viet Nam. These newsletters contain summaries of and links to newspaper articles, new studies and other AQM-related information for each country. To subscribe to local newsletters, send an email to the Local Network Coordinator.
Integrated Air Quality Management (iAQM) database

In 2007, the CAI-Asia Center, in cooperation with the Global Atmospheric Pollution Forum (GAPF), initiated the process of developing an online AQM database that will provide comprehensive, quantitative data on a wide range of parameters, including country and city demographics, air quality levels and trends, GHG emissions and trends, and impacts of air pollution.

This database will make use of quality assured data sets from a range of organizations. The iAQM database will use the following framework:

- **Drivers**
  - Population
  - GDP (PPP)
  - Energy use

- **Pressure / Status**
  - Focus on AQ levels and GHG emissions
  - PM
  - NOx
  - SO\(_2\)
  - O\(_3\)
  - TSP
  - CO
  - CO\(_2\) equivalent (GHG)

- **Impacts**
  - Health*
  - Environment
  - Economic

- **Responses**
  - Policies
  - Institutions
  - Projects
  - Training
  - Technologies

* The Public Health and Air Pollution in Asia (PAPA) program implemented by the Health Effects Institute (HEI) on behalf of CAI-Asia has been an important source of health impact information.
Providing a Compendium of Organizations, Projects and Training Courses

The CAI-Asia Center promotes several AQM knowledge products. The Country Synthesis Reports (CSRs), which were released in 2006 for 17 countries and which will be updated in 2008-2009, are widely cited in publications and presentations. These CSRs provide an overview for each country of drivers of air pollution, air pollution levels, health and other impacts, as well as policy and other responses.

Another flagship product is the AQM Compendium, which aims to foster coordination and cooperation among organizations, especially within the international donor community, when designing, funding, and implementing new projects and programs. Information for the 2007 Compendium was gathered through a user survey, and saw an increase in the number of organization profiles (87) and project profiles (396) and added new profiles on regular training courses on AQM (28).

Highlights of the 2007 Compendium

• NGOs (32%), government (30%), and academic institutions (20%) represent most of the 87 organizations surveyed, covering countries in Southeast, East and South Asia. Future efforts should focus on improving the effectiveness of individual organizations and enhancing cooperation between organizations.

• Out of the 396 projects in the 2007 Compendium, 102 are new projects that have been added since 2006. This demonstrates that there is increasing acknowledgement that air pollution is a serious issue that must be addressed. Grants (technical assistance) continue to be the dominant type of project funding. An interesting finding is that projects and programs tend to be more easily categorized by the type of response to air pollution (measurement, regulation, and implementation of measures) than by the source of air pollution (transport, industry, and other sources).

• 28 AQM-related training courses are delivered on a regular basis in Asia, and there are probably more. Given that capacity building also has a strong showing as a component of AQM projects and programs, it can be expected that training courses will continue to gain importance in the future of AQM in Asia.

The full Compendium report is available at www.cleanairnet.org/compendium
To advance AQM in Asia, there is a need to build the capacity of individuals as well as of organizations and institutions. In the 2007 Compendium, 28 regular training courses were identified. The number is expected to increase in 2008.

Capacity building efforts should cater to those directly and indirectly responsible for monitoring or managing air pollution, from environmental specialists and urban planners to traffic police. However, in order to reach the thousands of Asian cities with air quality problems, capacity building activities should not focus solely on training of individuals.

The CAI-Asia Center applies this concept in its capacity building activities together with members of the CAI-Asia Partnership; this reduces Asia’s dependence on groups from outside Asia for these services.

Individual Training

The CAI-Asia Center facilitated several capacity building activities aimed at individuals. In Pakistan, the Center together with the Pakistan Clean Air Network (hosted by IUCN), developed a Basic AQM Training Course targeted at government officials and other stakeholders who influence their decisions. The course will be delivered in 2008.

A basic AQM course (10-12 Dec 2007) and an emissions inventory training course (31 Oct to 2 Nov 2007) were delivered in China to six cities with support from the Energy Foundation, the Stockholm Environment Institute, the William and Flora Hewlett Foundation, and the Asian Development Bank.

The Center facilitated city-to-city visits for some of its Local Networks. For example, government and private bus company representatives from Sri Lanka were able to visit their counterparts in Hong Kong and learn from their vehicle inspection and maintenance programs. This visit provided the Sri Lankans with hands-on insights on how to set up a similar system in their own country.

Training of trainers is a more efficient use of limited resources, as each trainer can train many others. Ultimately, AQM training must be embedded in Asian institutions and organizations through improved training systems to maximize the number of individuals and organizations reached, increasing the total capacity in Asian cities to improve AQM.
Training of Trainers

Under the Sustainable Urban Mobility in Asia (SUMA) program, the German Agency for Technical Cooperation (GTZ) is training 10 future trainers from China and 10 future trainers from India. A 10 day initial training course was held in Beijing in November 2007 to all Chinese and Indian future trainers, covering training and facilitation techniques, communication skills development, and ways of presenting complex information.

Training materials were developed for three sustainable urban transport (SUT) courses, which are to be held in 2008:
- Mass rapid transit
- Transport demand management
- Non-motorized transport

The trained trainers will be given ample opportunity to practice what they have learned. In 2008 alone, at least 100 participants will receive training from them. Through workshops and seminars, a total of 800 people will have been exposed to SUT training under SUMA by 2009.

Developing Training Systems

The CAI-Asia Center, together with the State Environment Protection Administration (SEPA), the Air and Waste Management Association (A&WMA), the United States Environment Protection Agency (US EPA), and the governments of Italy and Norway, have developed a model for institutionalized training for China that could also be adapted to other Asian countries, called the Chinese Improved Training System for Air Quality Management (CITSAM) Program.

CITSAM’s guiding principles:
- Training content should have a direct linkage to SEPA’s air quality priorities
- AQM and climate change mitigation can be combined in the co-benefits approach
- Training programs should complement existing training, not replace them
- Emphasis on long-term system development, not short-term, ad hoc training
- Emphasis on strengthening Chinese capabilities to develop and deliver training and further improve the AQM training system
- Attention should be given to strengthening capacity at the provincial and city levels
- Measures to improve air quality should result from an integrated AQM process
- Effective and successful training should be measureable in terms of impact.

Innovative Ways of Learning

Online seminars
Also known as a “webinar” or webcast, the Internet allows distance learning to take place in real time. Participants can attend a workshop thousands of kilometers away without leaving their desks, and speakers can answer questions on the spot. The CAI-Asia Center may provide this in BAQ 2008.

Vlogs
Inexpensive digital video cameras now allow training courses to be recorded and uploaded for the benefit of others. Youtube has made it possible for anyone to post video files effortlessly.

City-to-City visits
In many cases, nothing beats hands-on experience. The cross cultural approach of these exchanges gives participants a unique look into challenges that many Asian cities face every day.
Working Side by Side with Governments and Stakeholders

Long Term Vision on Urban Air Quality

In December 2006, Government officials from 20 Asian countries met at the first Governmental Meeting on Urban Air Quality in Asia, which was held in Yogyakarta and jointly organized by CAI-Asia, UNCRD, UNEP and the Ministry of Environment of Indonesia. The meeting underlined the importance of effective and sustained approaches to improve air quality in Asian cities. In view of this, the meeting welcomed the initiative of UNEP and CAI-Asia to develop a Long Term Vision on Urban Air Quality in Asian Cities. This vision will describe the desired state of AQM in Asian cities and can help inspire Asian cities and countries in the development of their AQM policies and programmes. The draft vision document will be discussed at the second Governmental Meeting on Urban Air Quality in Asia in 2008.

Assisting Policy Development at the National and Local Level

At the national and local level, policies are important to ensure that air quality issues are systematically and consistently addressed, which is something that individual projects or initiatives alone cannot achieve.

Effective policies and programs that address the underlying causes for urban air pollution are needed in Asia. The promotion of sustainable urban transport, clean technologies and energy conservation programs could help prevent significant amounts of GHG emissions but need to be combined with immediate actions to address current air pollution from transport, industry, waste burning and other sources.

The CAI-Asia Center works together with its Local Networks and other partners on policy developments to achieve on-the-ground results. The Center and a partner in Viet Nam, the Swiss-Vietnamese Clean Air Program (SVCAP), assisted the Viet Nam government with its 2007 State of the Environment (SoE) report that has air quality as its main theme. Apart from providing technical input into the report we also worked with the government to identify future AQM priorities, which includes the development of an AQM Plan for Viet Nam.

With support from the World Bank, the CAI-Asia Center, together with its Local Network in the Philippines - the Partnership for Clean Air, drafted administrative orders to implement the Citizen Suit provision of the Clean Air Act, which allows ordinary citizens to sue polluters, such as owners of smoke-belching vehicles and polluting factories, including government officials who fail to perform their lawful duties.
The Importance of Regional Networking

The CAI-Asia Partnership provides networking opportunities that combine and integrate the strengths of its members. To facilitate networking, the CAI-Asia Center organizes a regional Better Air Quality (BAQ) workshop every two years, attended by up to 1,000 policy makers and AQM stakeholders to discuss research, policies and concrete actions. The next BAQ will be held in Bangkok from 12-14 November 2008 (see page 21). Together with UNEP, the Center hosts annual Regional Dialogues with the donor community active in Asia. The purpose of these meetings is to improve coordination among organizations and programs on AQM. Increasingly the focus is on co-benefits of air quality management and climate change mitigation at the regional level in Asia.

Participation in forums and networks has been a main strength of the CAI-Asia Center and it benefits the integration of urban air quality with related issues, such as indoor, national and transboundary air pollution, climate change, energy, and health impacts of air pollution.

Examples of Collaboration with Regional Networks

**Global Atmospheric Pollution Forum (GAPF)**, with CAI-Asia, UNEP, the Stockholm Environmental Institute, the International Union of Air Pollution Prevention Associations (IUAPPA), and the Secretariat of the Convention on Long Range Transport of Air Pollutants (LRTAP) as its main partners. In 2007, the Center under the GAPF umbrella identified AQM data needs and developed a model for an integrated AQM database (IAQM Database).

**Partnership for Clean Fuels and Vehicles (PCFV)**, facilitated by UNEP and focusing on three themes: leaded fuel, sulphur in fuel, and clean vehicles. PCFV and the CAI-Asia Center explore joint activities in countries still using leaded gasoline and high sulphur-fuel.

**Regional Forum on Environment and Health**, coordinated by UNEP and the World Health Organization (WHO). The CAI-Asia Center, together with the Republic of Korea helps to facilitate the sub-group on urban AQM in the thematic working group on AQM, focusing on East and South-East Asia.
Investment and Implementation to make a Real Difference

Knowledge, capacity, policies and networks are all important to build the foundations for AQM improvements. In the end, however, actions are needed to make a real difference, and investments are needed to pay for actions. As a young organization, the CAI-Asia Center is still developing its role in mobilizing actions and investments on a large scale.

One of CAI-Asia’s flagship programs that has a strong focus on implementation is the Sustainable Urban Mobility in Asia (SUMA) Program. Supported by the Swedish International Development Cooperation Agency (Sida) and the Asian Development Bank (ADB), SUMA brings together a range of organizations and experts promoting sustainable urban transportation (SUT). The program went into full speed in 2007 and interim results will be presented at the BAQ 2008 workshop in Bangkok.

BRT Systems

A Bus Rapid Transit (BRT) system works like any rail-based transport system, but without the rails. More and more cities in Asia are opting for a BRT system because it can move thousands of people across the city every day at a fraction of the cost of traditional light rail and a BRT system requires less time to set up. At least 35 Asian cities are constructing or considering BRT systems, such as Guangzhou in China, Ahmedabad in India, Karachi in Pakistan, Bangkok in Thailand, Hanoi in Vietnam, and Metro Manila in the Philippines.

Ahmedabad BRT System

Through the SUMA program, the Institute for Transportation and Development Policy (ITDP) is assisting the Indian city of Ahmedabad in the development of a service plan to complement its BRT technical plan. In 2007, ITDP, together with the Centre for Environmental Planning and Technology (CEPT) conducted major transport demand surveys, including origin-destination information of nearly half the existing bus passengers. These data were analyzed and integrated into a GIS database for further modeling. The service plan for Ahmedabad will be optimized in 2008 and the BRT system will be launched in March 2009. The Social Impact Assessment Guidelines for Urban Transport being developed by Marie Thynell as part of the SUMA program will be tested in the Ahmedabad BRT system.
**Indore BRTS Metro Jet (India)**

EMBARQ-WRI signed an agreement with Indore to assist the city in the planning and implementation of their BRT system. EMBARQ-WRI is also conducting a city survey of about 20 of the 63 cities under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The survey results can assist the Ministry of Urban Development and the Institute of Urban Transport in accelerating the adoption of sustainable transportation in Indian cities.

**Cycling inclusive planning for Pune and Nanded**

The Interface for Cycling Expertise (I-CE), with SUMA support, has fielded its experts to assist the Indian cities of Pune and Nanded to implement a comprehensive network of bikeways.

**SUT developments**

Key developments observed since the start of SUMA are:

- Exponential increase in mobility demand across Asia
- More Asian cities are now planning BRT systems than rail-based systems
- Climate change mitigation measures and “carbon” financing start to play a role in pushing SUT
- Scaling up of SUT solutions to Asia’s larger cities is needed to make real change

The CAI-Asia Center is also working to bring the experience of the European Union CIVITAS program to ASEAN cities, in partnership with the Philippine Department of Transportation and Communications (DOTC). Through the ASEAN Senior Transport Officials Meeting in 2008, which DOTC will chair, implementation of more SUT pilot projects of an ASEAN-CIVITAS project is expected in the future.

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**SUMA in a Nutshell**

The SUMA Program aims to “Accelerate the development of capacity for urban AQM and SUT in Asia through better integration of AQM and SUT in the strategies, policies, programs, and projects of developing countries in Asia and development agencies.”

The CAI-Asia Center manages and implements the SUMA program in partnership with:

- German Technical Agency for International Cooperation-Sustainable Urban Transport Project (GTZ-SUTP)
- Interface for Cycling Expertise (I-CE)
- Institute for Transportation and Development Policy (ITDP)
- The United Nations Centre for Regional Development (UNCRD)
- The World Resources Institute Center for Sustainable Transport - EMBARQ (EMBARQ-WRI)
- Experts: Marie Thynell, a social specialist from Gothenburg University in Sweden, and Christopher Cherry and Jonathan Weinert, transport specialists, who did their dissertation on electric bikes in China at UC Berkeley and UC Davis

Activities under SUMA are implemented under the following categories:

**Knowledge Management**
- Indian City Survey on SUT
- Study 2-3 wheelers
- Social Impact Assessment Guidelines
- Environmental impacts of e-bikes
- Cycling inclusive planning guidelines
- Position paper on role of cycling in Asia

**Capacity Building**
- SUT training-of-trainers courses
- Pre-event courses at BAQ 2008, Bangkok
- Training at seminars, workshops

**Networking & Policy Dialogue**
- SUT in regional policy discussions
- Policy in SUT/AQM initiatives
- National Policy and Action Plan for EST in Philippines
- BRT Network for Asia
- CAI-Asia Local Networks in 8+ countries
- SUT/AQM events

**Pilot Projects**
- Service plan for the Ahmedabad BRT system
- Bikeways pilot project in Pune and Nanded
- New pilot projects
- Specialist advice

[www.cleanairnet.org/suma](http://www.cleanairnet.org/suma)
Jiming Hao  
**Chairman / President**  
Jiming Hao has been involved for more than 20 years in air pollution and climate change, environmental management, hazardous risk assessment, cleaner production, energy and environmental policy. He has written more than 180 academic papers and has published several books. Professor Hao has served as the Director, Guidance Committee for Environmental Science and Engineering Education, Ministry of Education. He is currently a Professor and Dean of the Institute of Environmental Science and Engineering at Tsinghua University, an Academician of Chinese Academy of Engineering (CAE), and a Member of the China Council for International Cooperation on Environment and Development.

Cornie Huizenga  
**Executive Director**  
Cornie Huizenga is the Executive Director of the CAI-Asia Center and Previously the head of the CAI-Asia Secretariat. He has been instrumental in the establishment of CAI-Asia and some of its key activities such as the Governmental Meeting on Urban Air Quality and the Better Air Quality (BAQ) workshops. He speaks on a frequent basis on issues related to strategic approaches to air quality management, integrated vehicle emission reduction strategies, and co-benefits of greenhouse gas reduction and local air pollution management.

Charles Melhuish  
**Treasurer**  
Charles Melhuish was the former Lead Transport Specialist at the Asian Development Bank where he was responsible for developing and leading transport sector policy and knowledge across the organization. He was the focal point for formulating the transport strategy of ADB, responsible for reviewing transport loans and TA grants to improve sustainability, develop institutional capacity in client countries and ensure ADB-wide consistency between regions and across countries. He was the Task Manager in ADB responsible for creating and managing the Clean Air Initiative for Asian Cities until 2004.

Francis Estrada  
**Board Member**  
Francis Estrada is the President of the Asian Institute of Management. For over thirty-two years, Francis has been a prominent international investment banker, financial adviser and financial entrepreneur, specializing in Asia-related financial operations. He has established a number of Asia-related financial institutions and commercial enterprises within and outside the Asian region, advised on numerous turn-around and cross-border financial transactions, and served on the board of over thirty private and public companies based in Asia, United States of America, Australia and Spain.

Elisea Gozun  
**Board Member**  
Elisea “Bebet” Gozun was the former Secretary of the Department of Environment and Natural Resources (Philippines). She was honored as one of the seven Champions of the Earth in 2007 by the United Nations Environment Program (UNEP). She was one of the leaders of the Lead-Free Coalition in the Philippines which was instrumental in the phase out from lead of gasoline. She also served as Chairperson of the Partnership for Clean Air (PCA), a multi-sector forum which promotes better air quality management in the Philippines and which was established with ADB support. PCA is one of the Local Networks of CAI-Asia.

Daniel Greenbaum  
**Board Member**  
Daniel Greenbaum is the President and Chief Executive Officer of the Health Effects Institute (HEI), an independent research institute providing public and private decision makers in North America, Asia, and Latin America with high quality, impartial, relevant and credible science about the health effects of air pollution. HEI has been implementing since 2002 the Public Health and Air Pollution in Asia program (PAPA), a CAI-Asia pilot project, which works with scientists in major cities in China, India, Thailand, and Vietnam to build scientific capacity and provide local science on air pollution and health for better public health decisions. He has over three decades of government and non-governmental experience in environmental health and he holds Bachelor’s and Master’s degrees on City Planning from the Massachusetts Institute of Technology.

Shreekant Gupta  
**Board Member**  
Shreekant Gupta specializes in environmental and natural resource economics, urban economics and public economics. Prior to joining the economics department at the National University of Singapore, he was the Director of the National Institute of Urban Affairs in New Delhi, India in 2005-2006. He received his Doctorate in Economics from the University of Maryland and has been a Fulbright Fellow at the Massachusetts Institute of Technology. He has authored several books and papers on environmental issues ranging from climate change to poverty and environment.
CAI-Asia Center Members and Donors

Individuals and organizations support CAI-Asia Center as Members or Donors. They may apply to be voting or non-voting members. The Center Board of Trustees approves membership applications. The Center’s voting members are the incorporators, stakeholder representatives chosen by members of the CAI-Asia Partnership to represent their sector in the Center, and organizations providing more than $150,000 for any one-year period. Organizations providing funding of $15,000 or more but less than $150,000 for one year are non-voting members. Other organizations that provide support for the Center of less than $15,000 are recognized as Donors.

### Voting members

**Incorporators**

- Jiming Hao
- Cornie Huizenga
- Charles Melhuish
- Francis Estrada
- Elisea Gozun
- Daniel Greenbaum
- Shreekant Gupta

### Stakeholder representatives

- Development agency representative: Roland Haas of GTZ
- Civil society and academe representative: Elisea Gozun of Partnership for Clean Air

### Organizations

- **Sida**
  
  Swedish International Development Cooperation Agency (Sida)

### Non-voting members:

- Shell
- Asian Clean Fuels Association (ACFA)
- Corning

### Donors:

- ADB
- UNEP
CAI-Asia Center Team

Cornie Huizenga
As the Executive Director, Cornie oversees the strategic direction of CAI-Asia Center and identifies opportunities for cooperation with other regional and international organizations.

Sophie Punte
Sophie is the Center’s Deputy Executive Director and manages the talented team in Manila. Her private sector and UN experience on energy and climate change adds a valuable dimension to the Center’s work.

Glynda Bathan
Glynda manages the Center’s local network and policy development activities. A lawyer by profession with an environmental management degree, she was instrumental in the process of incorporating the CAI-Asia Center as an NGO in 2007.

Mike Co
Mike leads the knowledge management activities of the Center and manages the website. His experience with information and communications technology allows the Center to share and promote AQM knowledge more efficiently (and with less paper).

Bert Fabian
Bert heads the Center’s sustainable urban transport projects, including the SUMA program, and is passionate about making a difference at the grassroots level.

May Ajero
May takes charge of the Center’s general AQM projects, promoting strategic linkages between AQM and climate change mitigation.

Art Docena
Art is the head of finance and administrative services. He developed many of the Center’s operating procedures and is in charge of monitoring the Center’s financial budgets and reporting on the Center’s financial overview.

Gianina Panopio
Gianina – “Ja” – is the perfect multi-tasker, with responsibilities ranging from drafting memos to updating the website. As the Center’s administrative assistant, she is extremely organized and always gets the job done.

Jerey Estrada
Jerey is the Center’s accountant, handling payroll, transactions, cash disbursement and many other financial tasks.

Alvin Mejia
Alvin assists the team in projects involving climate change co-benefits, CDM, and data analysis; he was largely responsible for the latest AQM Compendium Report.

Staff movements

Au Ables
Au was CAI-Asia’s transport researcher, primarily involved with the Partnership for Sustainable Urban Transport in Asia (PSUTA) and SUMA, and now works with ADB.

Agatha Diaz
Agatha was the senior administrative assistant of CAI-Asia until late 2007 when she moved to the ADB. She handled meeting and travel logistics and correspondence, especially for the Better Air Quality workshops.
The CAI-Asia Center has actively engaged partners in identifying problems and finding solutions which lead to better air quality management at the regional, national and city levels. CAI-Asia has Local Networks in seven Asian countries to mobilize action at the local level and facilitate the exchange of information and experiences among Asian cities and countries.

The CAI-Asia Center works together with Local Networks, guided by the Local Network Strategy, on the following:

- Development Partners Meetings are held annually in each country where a local network exists, and which involve government agencies, donors and NGOs, with the aim of exchanging information and improving coordination
- Annual Business Plans and Annual Reports are produced to plan and report on activities
- Local Network Summit, which is held annually with all Local Networks to share past achievements and future plans, and to create a stronger collaboration between Local Networks
- Developing regional proposals and proposals for their respective countries to improve AQM
- Better Air Quality (BAQ) workshops, which are held bi-annually and where Local Networks each lead a Country Roundtable to discuss urban AQM issues and priorities in their specific countries

Many of the activities aimed at attaining positive improvements in air quality, whether directly or indirectly, are implemented by the CAI-Asia Local Networks and are described in their separate annual reports.

The following are selected highlights as of December 31, 2007:

- Total support and income revenues amounted to US$ 675.1 thousand of which US$ 492.0 thousand or 73% was the grant for the SUMA project and US$ 172.0 thousand were membership contributions from various private sector members.
- Grant expenses amounted to US$ 461.6 thousand which were mainly for the SUMA project.
- Total general and administrative expenses amounted to US$ 120.2 thousand and represents 17.8% of the total revenues for 2007.

This financial information applies for the period 20 June 2007 (date of incorporation) to 31 December 2007. The Center’s 2007 financial statements were audited by Punongbayan & Araullo (P&A), an independent auditing firm in the Philippines which is a Member Firm of Grant Thornton International. P&A issued an unqualified opinion on the financial statements as of and for the period ended 31 December 2007, which are presented in accordance with Philippine Financial Reporting Standards (using accrual basis of accounting) that were adopted from the pronouncements issued by the International Accounting Standards Board.

General and Administrative Expenses (in thousands)

- Remuneration and benefits ($60.5) 50.3%
- Travel and per diem ($6.3) 5.2%
- Trainings, seminar and workshops ($10.2) 8.5%
- Office rental and utilities ($15.7) 13.1%
- Third party services ($15.5) 12.9%
- Depreciation and amortization ($6.3) 5.3%
- Miscellaneous ($5.6) 4.7%

Support and Income (in thousands)

- Grants ($496.5) 73.5%
  - SUMA ($492.0)
  - SoE ($4.5)
- Membership Donations ($172.0) 25.5%
- Other Income ($6.7) 1%
  (includes interest income and net currency exchange gain)

Grant Expenses (in thousands)

- Remuneration and benefits ($151.5) 32.8%
- Travel and per diem ($10.2) 2.2%
- Trainings, seminar and workshops ($0.8) 2%
- Sub-grants to third parties ($288.5) 62.50%
- Support to local networks ($10.6) 2.3%

Statement of Support, Income and Expenditures
For the period 20 June 2007 to 31 December 2007

<table>
<thead>
<tr>
<th></th>
<th>Unrestricted</th>
<th>Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUPPORT AND INCOME</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grants</td>
<td>$38,653</td>
<td>$457,816</td>
<td>$496,469</td>
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<tr>
<td>Membership Donations</td>
<td>172,000</td>
<td>-</td>
<td>172,000</td>
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<tr>
<td>Other Income</td>
<td>2,863</td>
<td>3,816</td>
<td>6,679</td>
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<tr>
<td><strong>Total</strong></td>
<td>$213,516</td>
<td>$461,632</td>
<td>$675,148</td>
</tr>
<tr>
<td><strong>EXPENDITURES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grant Expenses</td>
<td>-</td>
<td>461,632</td>
<td>461,632</td>
</tr>
<tr>
<td>General and Administrative Expenses</td>
<td>-</td>
<td>461,632</td>
<td>461,632</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$120,204</td>
<td>$461,632</td>
<td>$581,836</td>
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<tr>
<td><strong>EXCESS OF SUPPORT AND INCOME OVER EXPENDITURES</strong></td>
<td>$93,312</td>
<td>-</td>
<td>$93,312</td>
</tr>
</tbody>
</table>

/a Unrestricted funds are those without donor-imposed restrictions and can be used for general operating expenses of the Center.

/b Restricted funds are for projects undertaken under grants and support with donor-imposed restrictions. The Center is restricted from using the fund for purposes other than its intended use.