Improving City Environment through Urban Environmental Management Network in Southeast Asia

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Abstract

Rapid and uncontrolled urbanization coupled by poor urban planning and management in most cities of Southeast Asia have led to environmental problems such as water and sanitation issues, solid waste and air pollution which have severe impacts to the development and people of the city. This paper highlights the role and contribution of an urban environmental management (UEM) network in achieving sustainable environment among urban areas. The paper also presents mechanisms to encourage stakeholder participation and partnership in improving the three key urban environmental sub-sectors including water and sanitation, solid waste and air pollution. The UEM network serves as a venue for capacity building by collaboration in research and demonstration projects, and sharing of experiences on good policies and practices among members in managing urban environmental issues integrating gender equality as a cross-cutting theme in these activities. It is expected that the network could contribute to city foresight and sustainability of the urban environment.

Keywords: Capacity building, Networks, Sustainability, Southeast Asia, Urban environmental management

1. Introduction

Urbanization in Asian cities is developing at a rapid pace due to migration and population growth. These developments contribute both positive and negative effects to the urban environment. Cities generate more opportunities in terms of employment, lifestyle and technological innovations. Yet they also offer potential shortages of water, environmental pollution, traffic congestion and a proliferation of slums, crime and social alienation (APEC, 2000). Urban growth is also putting pressure on the environment, especially in many cities in Southeast Asia (SEA) where poor urban planning has resulted to the degradation and depletion of natural resources.

According to Leitmann (1999), the key environmental problems that face cities can be categorized into: (1) problems of access to environmental infrastructure and services; (2) problems of pollution from urban wastes and emissions; (3) problems of resource

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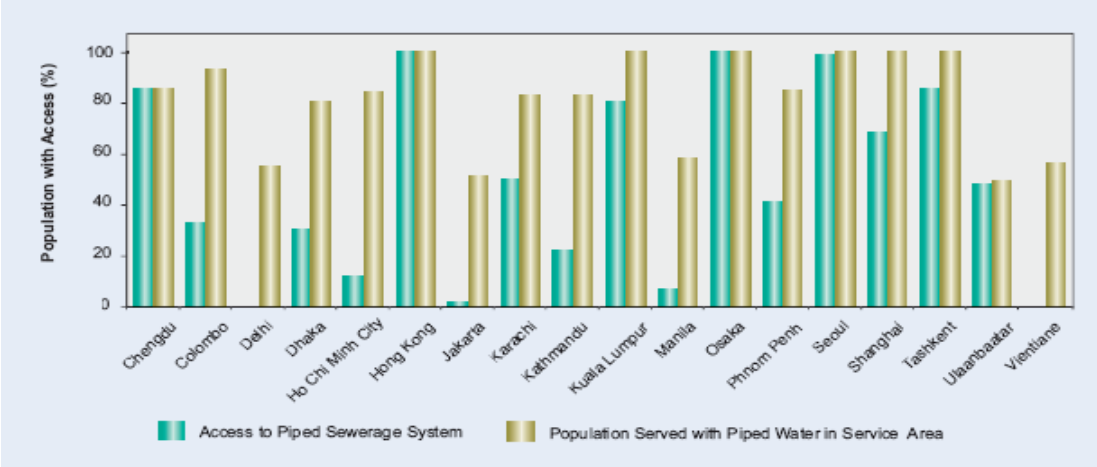
degradation; and (4) problems of environmental hazards. These problems do not occur discretely but can occur simultaneously, and interaction between problem types can intensify existing environmental impacts and even create new ones.

Such situation may have implications for the environment. The Millennium Development Goals (MDGs) Forum in 2007, for instance, reported that almost all countries in SEA are considered as "regressing" for the indicator on deforestation (Ratnayake, 2007). Other conditions have led to problems in the provision of basic services in urban areas. In terms of water and sanitation, it is projected that 2.4 billion Asians will suffer from water stress by 2025 (IGES, 2005) and per capita water availability in 2025 is expected to be 10 to 15 per cent lower than current levels (ESCAP, 2006). It could be noted that most cities in developing countries of Asia are still lack access to basic urban services (Figure 1). Despite of these instances, the MDGs envisions reducing by half the proportion of population without access to water and sanitation by 2015. In terms of promoting gender equality, it was reported that there is progress towards equal enrolment in primary school, but gender inequality in literacy still an issue in the poorest countries (Ratnayake, 2007).

Figure 1: Access to Water and Sanitation Systems in Asian Cities (%), 2001



Source: McIntosh (2003)

Cities in Asia will continue to grow in the future. In the next 20 years, more than 1 billion people will arrive in cities, looking for work, a place to live and services to avail of. Currently, more than half a billion Asians live in slums. One in five urban Asians does not have access to safe drinking water, and one in two does not have access to improved sanitation. By 2015, 55% of global greenhouse gas emissions will come from Asian cities (ADB, 2007). This is an indication that cities need to cope with the impacts of past and current urban growth and needs to adopt a sustainable planning approach to plan for future growth. A new way of looking at the challenges of city environments in Asia is to take a proactive approach including through developing partnerships and formation of a network of environmental advocates that shall serve as venue for sharing good practices and other information relative to improving the urban environment.

According to UNDP (2002), although the experience in one country will not necessarily translate to another, but once it is accepted there is little generic development knowledge – that all knowledge has to be gathered and then analyzed, modified, disseminated and recombined to fit local needs – the source is immaterial. The new motto is: "Scan globally,

reinvent locally." This philosophy can turn networks into an empowering tool of capacity development. An extraordinary sociological transformation over the last two decades has been the rise of networks – formal and informal, in almost all areas of life, information networks are proliferating, as corporations, governments, research institutions, NGOs and millions of individuals collaborate to share ideas, information and knowledge. They can share information nationally, regionally and internationally. These networks offer a striking alternative to the old model of one-way North-South information flows. Now, the flows can be in every direction – within and between countries of both South and North.

This paper presents the role and contribution of the recently developed Urban Environmental Management (UEM) network for sustainable environment among urban areas. Mechanisms to encourage stakeholder participation and partnership in improving the three key urban environmental sub-sectors including water and sanitation, solid waste and air pollution, as the key elements of the network are also highlighted in order to link with the concept and applications of city foresight or futures research (Stevenson and Inayatullah,1998).

2. Establishment and the Role of Network

A network is a structure comprising centers/nodes (whether a team, group or organization) and flows. It is also a social arrangement of organizations and/or individuals linked together around a common theme or purpose, working jointly but allowing members to maintain their autonomy as participants (Pyburn and Guijt, 2006). Networking can be used as a vehicle in disseminating good practices and influencing policies. A network can be characterized as having emphasis on the contribution of special knowledge, competence and experience and having lateral rather than vertical direction of communication. Members among the network facilitate movement of information and exchange between and among the center/nodes. As organizations mobilize their knowledge base through such networks, it becomes possible for all individuals in the organization to utilize the best knowledge the organization has at any given point. They are applied to areas of practice across organizations, allowing best practices in the field to be shared and used (UNDP, 2002).

2.1 Establishment of the UEM Network

The Southeast Asian Urban Environmental Management Applications (SEA-UEMA) Project is a joint collaboration between the Asian Institute of Technology (AIT) and the Canadian International Development Agency (CIDA) in 2003-2008. The project has implemented its various planned activities in pursuit of its goal which is to contribute to the improvement of urban environmental conditions in the SEA region (Figure 2) which covers Cambodia, Indonesia,

Figure 2: SEA-UEMA Project Focus Countries and Cities

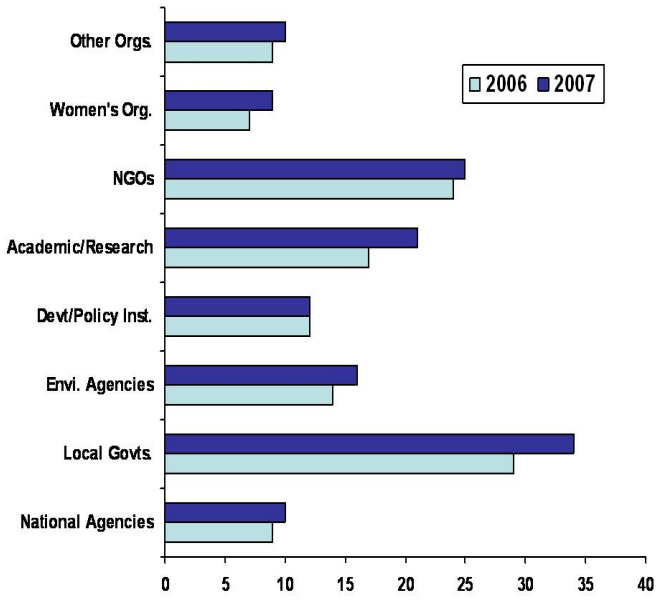
Source of Map: Reliefweb (1997)

Lao PDR, Malaysia, Philippines, Thailand, Timor Leste and Vietnam. The project seeks to attain improved applications and sharing of sound urban environmental management policies and practices in the three key urban environmental sub-sectors (water and sanitation, solid waste and air pollution) in the region with gender equality as the cross-cutting theme. The target beneficiaries of the project are the urban poor men and women in SEA.

Gender equality is important to the project. Women and men face different vulnerability in the face of urban problems; they have different needs and access to urban services, and different levels of control over resources to be able to protect themselves from deteriorating urban environment. At the same time, women and men are expected to play equally important roles in improving their environment. In SEA-UEMA Project, these gender differentiated needs and impacts are taken in consideration in all aspects of project activities.

The major novelty of this project is the focus on the applications of UEM education and implementation of UEM policies and good practices. The project has also identified focus cities in each country for implementing its activities (also included in Figure 2). The number of focus cities in a country is not limited and may increase depending upon network activities. SEA-UEMA project works together with its application components and partnerships with its networks.

Figure 3: UEM Network Members by Institution (2006-2007)



The need for coming up with an environmental networking was established through the UEM Sub-sector Networks and Professional Support Program (SNP), one of the Project components. The SNP Component focuses on contributing to capacity building of UEM professionals and related institutions in SEA, building on network involving the three sub-sectors relating to UEM, and developing partnerships with institutions and networks related to UEM in SEA region. The network membership could be individual or institutional. The following are eligible to be network members (with current status presented in Figure 3):

- Agencies and organizations related to the three sub-sectors (*water and sanitation*, *solid waste*, and *air pollution)* working in the region;
- Agencies and organizations working on other related UEM issues;
- Individuals working in UEM related organizations, development agencies, academic institutions and civil society organizations;
- AIT Alumni of the UEM Field of Study working in Southeast Asia on UEM related issues;

- AIT Alumni from other UEM related Fields of Study (e.g. urban planning, environmental engineering) working in SEA on UEM related issues; and,
- Women organizations working on UEM and related issues.

The network has no membership fee, while this may be changed in the near future based on members' feedback regarding functioning and sustainability of the network. In order to reach out and expand the network members are requested to encourage their local partners and networks in other activities and the relevant local/national organizations that they know to join the UEM Network.

The network is unique, consisting of several types of organizations and different levels of people. The roles of networks are indispensable since they act as 'partners' in implementing UEM projects within SEA. Project implementation requires the involvement of AIT alumni and other partners at the local and national level, and from different types of organizations and agencies, academic and research institutions, women's organizations, community, non-governmental and private organizations, and individuals. The Project partners are expected to be members of one or more of the sub-sector networks. To reach the Project's objectives, the UEM Network works in synergy with other components of the Project. Network members are eligible to participate in a number of Project activities especially Alumni Demonstration Project, Joint Action Research, and Application of Research Results & Lesson Learned. Members can also recommend suitable applicants for the graduate education of UEM.

2.2 Role of the UEM Network

UNDP (2002) cited the following principles to ensure effective development of networks and communities:

- The better defined a network is, and the more focused it is on a specific issue, the more useful the knowledge-sharing will be.
- The higher the level of trust within the network or community, the greater the volume and honesty of knowledge flows.
- Networks and communities need to live, and as such need to be developed from the bottom up and allowed to follow their own agenda, sharing knowledge the individual members need.

The role of the network is to identify the need and create integrated projects. Individual or institutional members identify existing urban environmental problems in their area and initiate activities (also partly supported by the Project through other activities) to solve them. The network fills in the gaps of the situation by coming up with interventions or projects that seek for or demonstrate good practices in managing the environment. Some of these projects serve as good models that could be replicated in other cities (an example given in Figure 4).

The UEM network, through the SNP Component, plays a major role in developing partnerships at various levels – advisory, facilitation and implementation. The advisory panel functions as advisors in project implementation and technical issues while the facilitating partners assist to expand the partnerships to the community level for implementation. The implementing partners help the Project by undertaking demonstration and pilot project, action research, professional training and other related activities. Besides the implementing partners, AIT alumni, particularly UEM graduates are instrumental in carrying out several activities of the project. As such, these networks are unique because they cover also components which are not usually accommodated in other networks, such as national and local governments and

NGOs. Including AIT alumni is also unique as they are bound by the common experience of studying in and experience with AIT while most of them have done well in their career.

The networks could conduct the dissemination and documentation of the project process. Likewise, the existing networks (both at regional and local level) provide some benefits in terms of enriching knowledge, sharing of experiences and good practices across the region and credibility in being a member of this network. The Project relies much on the role of partners/network members especially involving different stakeholders in Project activities including policymakers, planners, women's group and local/community leaders for capacity development. UEM network is also expected to play an active role in local/national intervention through influencing relevant policies. These could be strengthened through developing the capacity of network members in advocating for improved UEM practices.

Figure 4: City Improvement through UEM Network Project

SEA-UEMA Project has supported the Recyclable Waste Bank (RWB) activity in Ayutthaya Municipality, Thailand as a part of the Alumni Demonstration Project. The project is implemented by Ayutthaya Municipality, a project network member in coordination with the eight schools. The primary objective of this project is geared towards reducing the waste disposed at the landfills and recovery of valuables from the trash. The project aims to educate students who would take home the message regarding the importance of recycling and recovery of resources.

3. Functioning and Network Activities

3.1 Network Development and Functions

The UEM network is currently managed by the Project, with a total of 130 institutional members and 120 individual members (as of August 2007). The central network is supported by country nodes or facilitating partners of the member countries. The network seeks to attain improved implementation and sharing of sound urban environmental management policies and practices. The functioning of the networks is participatory and encourages ownership by members. The main function of the network is capacity building through, but not limited to, the following:

- Training programs, including on gender equality, for UEM professionals
- Information dissemination and knowledge building
- Policy forums

UNDP (1997) defines capacity-building as the "process by which individuals, groups, organizations, institutions and societies increase their abilities on: (1) performing core functions, solve problems, and define and achieve objectives, and (2) understanding and dealing with their development needs in a broad context and in a sustainable manner". This should be about the community's *ability to appreciate organizational goals*, and to build and to use its resources to that end. Capacity development needs to be addressed at three levels: individual, institutional and societal.

The Project supports the network in order to build capacity, that is, to encourage long-term learning and lasting mutual support among researchers, policy makers, and other stakeholders, and among institutions and sectors. The network functions to transfer the learning experiences among members to new environments and/or organizations, new research activities or new forms of collaboration. Beyond practical skills, networks are also intended to build a sense of community and commitment among members through: joint training exercises, guided peer review, monitoring of field work, cross-sector or regional exchange and other opportunities for professional engagement. Likewise, the network also provides benefits accorded to members such as (Table 1):

- Opportunity to take part in the seminars / workshops / training programs;
- Dissemination/exchange of information for sharing of good policies and practices;
- Participation in other components of SEA-UEMA project; and,
- Opportunity to recommend applicants for UEM graduate education.

Table 1: Number of Capacity Building and Networking Activities organized by the Project

Activities	2004-2005	2006	2007 (as of Aug 2007)
Professional Training Programs (including gender equality training)	**10**	**8**	**2**
Network Meetings	**3**	**5**	**1**
Policy Forums and Workshops	**1**	**4**	**0**
Policy Dialogs	**3**	**3**	**1**
Dissemination Meetings	**1**	**1**	**0**

Since its inception (as of August 2007), the Project has been able to develop a pool of UEM professionals that could contribute to the strengthening of the UEM network and possible improvement of urban environmental conditions in SEA. These include:

- Completion of 34 UEM master students
- Handling of 9 full-time doctoral students
- Completion of 2 post-doctoral fellows and 1 fellow continuing research
- More than 250 trainees (approx. F:M = 2:3) successfully completing UEM professional training
- More than 130 researchers from various institutions in the region involved directly in conducting JAR projects
- A large number of UEM professionals and graduates in the region engaged or involved directly in implementation of demonstration or pilot projects

However, there are some constraints in building a network such as: in maintaining commitment and trust from the members, preparing and updating of the database and funding issue. There are situations where priorities among the network members may not coincide with those in the Project. The lack of updated database could also constrain members from communicating each other or could also result to delays in disseminating information about their activities.

3.2 Professional Support Programs

Capacity building programs are vital towards improving the professionalism among network members in implementing their activities. A needs assessment is taken up each year (at face-to face meetings, electronically and other means). Training programs with help of the network members are held and are conducted around four times in a year. Aside from professional training programs, trainings on gender equality and other gender issues are also undertaken to strengthen gender awareness and sensitivity among network members in project implementation. Network members are invited to partner on training programmes-hosting, providing case studies, resource persons, and preparation of modules. E-learning programs are also being explored.

The potential of partnership with existing network members and establishing a baseline data for the project activities generates further opportunity of capacity building for them (as an example in Figure 5). Gender situation analysis and training programs as undertaken during the project activities and the visit of site with good practice gives first hand experience to the members.

A survey was conducted in 2006 to determine the effectiveness of the network and the professional support programs among network members. Results showed that most of the members noted that such programs have increased their knowledge and skills as well as having the opportunity to share their experience and knowledge with other colleagues. Trainings and meetings, for instance, allow them to network with other UEM colleagues in SEA. This implies that such activities have contributed towards strengthening the capacities of UEM professionals in implementing activities in their respective cities.

Figure 5: Activities of the UEM Network

(Left) Participants discussing their ideas in UEM training. (Right) Network members get on-sight experience with the beneficiaries in a UEM project in Bandung, Indonesia. The information they generate and apply from these activities could contribute to lasting impacts to their communities in the future.

3.3 Sharing and Disseminating Information among the Network Members

Communication is a key activity in networking. In a network activity, instructions on how to participate effectively, and dissemination and implementation of results involve communication to potential supporters, participants and users. Various tools can be used to promote widespread appreciation of, and participation in, network activities, including:

- Publications and traditional communication tools (databases, newsletters, etc.) aimed at widespread promotion of the activities to be carried out including dissemination of lessons learned and provision of updates in Project activities.
- A remote communication tool has been designed to disseminate information and promote the activities carried out and completed by the network members. The SEA-UEMA Project website is being used to increasingly good effect in network activities, and can provide an important way of reaching people remotely. It also facilitates information exchange and announcement of project activities. Notifications of activities to network members are done by various means including e-mail.
- Initiatives aimed at encouraging participation, such as conferences, workshops, and other meetings. Seminars and workshops are designed to encourage discussion and dialogue and involve a cross-section of stakeholders involved in UEM. Information dissemination and knowledge building also take place through the exchange of expert visits, participation in conferences, policy dialogues and forums.
- Communication for network activities are addressed to the head of the organization, with a copy to members identified in charge of a particular network by their organization. Likewise, participation at network activities within organizations should also preferably be rotated. These may be mainly oriented toward dissemination of decisions already taken and preliminary results, or they may constitute more active consultation as to the aims and activities of the UEM network. They may be tied to the actual work of networking in terms of generating visions and gathering knowledge.
- Illustration of UEM project ‘success stories’ in organizations and/or areas characterized by similar problems and objectives.

As of August 2007, the status of gender equality varies between communities, between areas within a country, between sectors and closely related to the local culture and religion. Gender awareness more or less is already achieved, but might not have been followed up by appropriate policy formulation and implementation action plan. This is yet another challenge for the network.

A core group of members also meets each year to collectively decide on the network operations and activities. These Annual Network Meetings are held to evaluate activities undertaken in the year and evaluate forthcoming activities for the next year. It also serves as venue to share opportunities for networking with other organizations and networks, as well as sharing information on forthcoming activities, meetings, seminars in the region.

Policy forums with participation of policy makers and decision-makers from government organizations and agencies, academic institutions, international agencies, civil society and network members are organized for dissemination of UEM lessons to help translate and integrate UEM lessons into policies. Each forum is interactive and allow for dialogue and discussion.

3.4 Summary of the Network

The following (Table 2) summarizes key issues currently faced by the UEM Network:

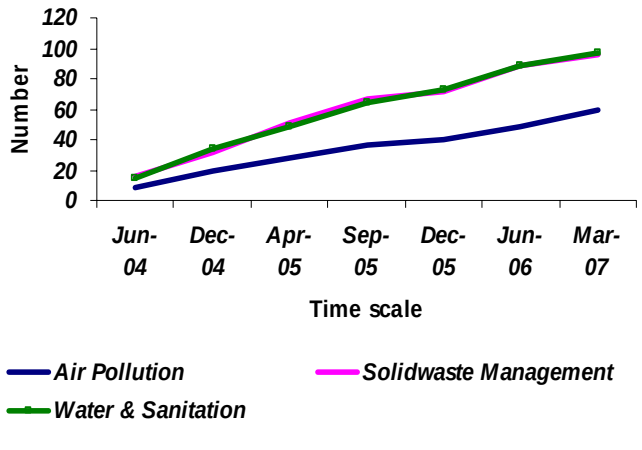
Table 2: Key Issues of the UEM Network

Strengths and opportunities	Weakness and constraints
1. Unique in terms of diversified members from several types of individuals and organizations 2. Highly needed in SEA 3. No membership fee, currently 4. May extend linkages with other networks/collaboration with international organizations 5. Can organize exchange visits with other partners/network members 6. Incorporation of gender-equality in their activities 7. Covering a large pool of networks members from most cities in the region	1. Less decentralized and vertical functioning 2. Less flexible as is within the framework of SEA-UEMA Project involving different and large number of stakeholders 3. Rather loose and informal 4. Only certain percentage of the members are actively participating in network activities 5. Large dependence on SEA-UEMA Project for information dissemination 6. Difficulty in keeping the database updated 7. Less involvement of policy makers especially from city authorities

4. Networking for Future and Urban Sustainability

The potential impact of the Project activities have led to the functioning of the network involving UEM trainees, alumni and regional related networks. On the basis of SEA-UEMA activities, some performance indicators of the Project depict increasing trend of UEM professionals among the three sub-sectors who would contribute towards strengthening the UEM network in SEA (Figure 6).

Figure 6: Development of Institutional UEM Network Members



These indicate that building capacity among individuals and mobilizing them to apply good UEM practices that could possibly lead to improving the urban environmental conditions in Asian cities in the future. While this may be the case, sustaining the network and linking them to urban sustainability pose some challenges in planning for the future.

4.1 Sustaining the UEM Network for the Future

Knowledge networks enable knowledge-sharing and capacity-building. The context in which knowledge arises is often crucial to understanding and exploiting it. Through the connection of practitioners in a knowledge network or a community of practice, a forum is established in which knowledge can be shared, allowing global information and knowledge to be successfully adapted to the local context (UNDP, 2002) and may serve as basis for future planning decisions.

According to UNIDO (2005), foresight involves thinking about emerging opportunities, challenges and trends in the future. It is envisioned that if the UEM network in SEA becomes successful and sustainable, it would serve as a model for replication among other regional networks in other countries beyond SEA. The information and advocacies of the UEM network could also lead to influencing policy decision making actions at the national and international levels. It is also expected in the future that the network could bring together other key agents of change. Another opportunity that the UEM network could look into the future is in terms of partnering with other regional and international networks - such as the Network of Local Government Training and Research Institutes in Asia and the Pacific (LOGOTRI), The Regional Network of Local Authorities for the Management of Human Settlements (CITYNET), International Council for Local Environmental Initiatives (ICLEI), among others. These partnerships could strengthen the credibility among the members of the networks in terms of their expertise in dealing with UEM related problems and would foster a wider dissemination of information among various audiences. All of these future scenarios could be more plausible by improving the current situation. Thus, achieving sustainability among the UEM network entails the following conditions:

- The network has to produce results with a high level of expertise and also provide clear solutions that the network has to address for improving urban environmental conditions;
- The network needs to have a good marketing system: have a speaker who will communicate the message with other people; public relations
- Identify people who have key influence in making decisions and policy development
- The network needs to have a strong capacity building by allowing different levels and categories of institutions and individuals to share inputs and expected benefits

It is a big question that in the future, beyond the Project's lifetime, the network will be able to maintain and sustain itself. Members are expected to interact and work together well in achieving the network objectives by developing sound UEM policy toward a better future. Foresight should be instigated in order to think about possible futures, with a view to changing what we do today for the better. Foresight is therefore about readjustment, in the present, to create more agile organizations, cultures, etc. for the future (UNIDO, 2005). Given this situation, there is a need to strategize the network in order to respond to challenges and scenarios in the future which includes:

- There is a need for sustaining the network at the regional, national, and local levels;
- Network is important and necessary, however, commitment and trust are needed to sustain the network;
- Since network is important to be sustained, as a result, it should be interesting and important for the members thus they will be motivated to take active role.
- It is important for the network to have more than one node in each country.
- It is recommended to identify the key person(s) at local (city) networks to facilitate the community empowerment process

- It is important to develop strategic alliances among local stakeholders to get support and assistance for the project
- An ad-hoc committee, with a small number of members representing key active members from different groups and countries, should be established as soon as possible to develop and communicate with network members the strategies for network sustainability

There are still rooms for improvement in order for the networks to be sustainable. The nature of the network should be more demand-driven, instead of supply-driven, to enable the networks to fulfill the needs and gaps in UEM practices. Based on the recent annual meeting and on-going communications of the networks, the networks need permanent anchor, source of funding and regular communications. It is also important to motivate the members to take a more active role in the network. Updating and maintaining of the members' database, as the main tool for communications, are also important to allow effective communications which should also take place in different modes, both formally and informally, and more horizontally.

4.2 Linking the Network to Urban Sustainability

Urban sustainability is much more than protecting the environment of cities, or constructing new energy efficient buildings, or providing new civic infrastructure, or keeping the city clean, or clearing the streets of garbage. These are important matters, but they are not the full picture. In addition to these and other fundamental, urban sustainability is also about engaging those most affected by life in the city in the process of deciding their own futures.

The network approach to capacity building can truly be demand-driven. For example, the International Budget Project, supported by the Ford Foundation, is a network of NGOs across the world involved in social audits of budgets. The project develops the capacity of network members by providing a forum for exchanging information on experience and ideas, tools and methodologies, training and moral support. The success of the project with such a design will depend on effective demand, and therefore cannot be simply supply-driven (UNDP, 2000). The goal behind this regional networking is that by demonstrating research and sharing knowledge across a range of different geographical, climatic and socio-cultural settings, regional adoption of more sustainable solutions can be accelerated. Community involvement leads to community power. Local initiatives have led to green teams, declaration of community rights, partnerships of neighborhood and city, holistic development and community inventory.

In relation to the UEM Network, for instance, the presence of local networks in Indonesia such as CITYNET, Association of Indonesian Municipalities (APEKSI), Association of Planning Schools in Indonesia (APSI) have contributed towards strengthening the management of environmental problems among the urban areas of the country. Likewise, the formation of Local Governance Forum (LGF) as a local network in Indonesia encourages facilitation and exchange of best practices in sustainable development at the local level through tapping local government cooperation in addressing cross boundary issues of development.

As such, sustainable urban environments in the future could be achieved through:

- Regional/national/local governments, NGOs and other institutions working together to create livable communities;

- Closing the gap between advantaged and disadvantaged, thus enabling social participation;
- Developing an innovative and integrated approach to community development;
- Encouraging the exchange of best practices on urban development projects implemented among the project proponents.
- Fostering greater debate among communities in the debate about livable community, perhaps through a national roundtable or through other platforms such as policy forums and network meetings.

As the UEM network is on its half way of development and in the process of evaluation and preparation of its strategic framework and future activities, considerations of urban futures should be made to ensure the sustainability of the network as well as city environment. This would require good understanding of the needs in terms of urban environment in the future and active participation of stakeholders including through the UEM network.

5. Conclusions and Recommendations

A new way of looking at the challenges of city environments is to take a proactive approach including through developing partnerships and formation of networks of environmental advocates that shall serve as venue for sharing good practices and other information relative to improving the urban environment. The motto of "Scan globally, reinvent locally" can turn networks into an empowering tool of capacity development – well functioning institutions and policies, skilled people and a leadership with vision. The UEM network serves as a venue for capacity building by collaboration in research and demonstration projects, and sharing of experiences on good policies and practices among members in managing urban environmental issues in SEA integrating gender equality as a cross-cutting theme in these activities. The network is unique because it covers also diversified members and components which are not usually accommodated in other networks, such as national and local governments, academic institutes, NGOs and women organizations including AIT alumni and UEM graduates.

It is expected that this network could contribute to city foresight and sustainability of the urban environment. In order to ensure such the contributions, the network faces with a number of challenges and requirements regarding sustainability and impacts of the network. While on-going network functions and activities are being carried out, as part of strategic plan for the SEA-UEMA Project, the strategies for network sustainability with the high possibility of incorporating city foresight are to be urgently prepared involving key partners and selected networks members representing focus countries, cities and major activities.

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References

ADB, 2007. *Environment and Asian Cities: Management and Financing Challenges*. Remarks by Ursula Schaefer-Preuss, Vice President, Knowledge Management and Sustainable Development, ADB at the 40th Annual Meeting of the Board of Governors, Kyoto International Convention Center, Japan.

APEC, 2000. *The Future of APEC Megacities: A Foresight Approach*. Review of Studies by the APEC Center for Technology Foresight 1998-2000, Bangkok, Thailand.

ESCAP, 2006. Enhancing Regional Cooperation in Infrastructure Development Including that Related to Disaster Management. Poverty and Development Division. New York: United Nations.

IGES, 2005. Sustainable Asia 2005 and Beyond: In the Pursuit of Innovative Policies. IGES White Paper.

Leitmann, J., 1999. *Sustaining Cities: Environmental Planning and Management in Urban Design*, McGraw-Hill Companies, Inc., USA.

McIntosh, A., 2003. Asian Water Supplies: Reaching the Urban Poor, Asian Development Bank.

Pyburn, R. and Guijt, I., 2006. Capacity Building in Networks: An Analysis of the Findings from an IDRC Strategic Evaluation (1995-2005), IDRC, November 2006.

Ratnayake, R., 2007. Progress achieved and way forward towards the achievement of the Millennium Development Goals (MDGs) in East and Southeast Asia. Presented during the East Asia and Southeast Asia MDG Forum, 1-7 March 2007, Hanoi, Vietnam. Poverty and Development Division, UNESCAP.

SEA-UEMA Project website, 2007. UEM Sub-sector Networks section, http://www.sea-uema.ait.ac.th/snp.htm, Accessed on 17 August 2007.

Stevenson, T. and Inayatullah, S., 1998. Futures-oriented writing and research. http://www.metafuture.org/Articles/Futures-oriented-research-writing.htm. Accessed on 19 August 2007.

UNDP, 1997. "Capacity Development" in *Capacity Development Resource Book*, Management Development and Governance Division, New York.

UNDP, 2002. *Capacity for Development: New Solutions to Old Problems*. Earthscan Publications, Ltd., UK.

UNIDO, 2005. Foresight Methodologies, Training Module 2, Technology Foresight Initiative.

World Bank, 2007. Millennium Development Goals section, http://ddp-ext.worldbank.org/ext/GMIS, Accessed on 17 August 2007.