International Partnership for Expanding Waste Management Services of Local Authorities (IPLA)

Choudhury R.C. Mohanty
Environment Coordinator, UNCRD

Third High Level Seminar on Environmentally Sustainable Cities (ESC), 6-8 March 2012
Siem Reap, Cambodia

United Nations Centre for Regional Development
Global Issues in Waste Management

- Increasing waste volumes and complexity
- Differing composition and characteristics in different regions of the world
- More of an urban-centric problem
- Economic value of waste not fully understood
- Adverse Impacts on human health and ecosystem
- Capacity constraints of Municipalities and Local Authorities (LAs)

(Source: Prasad Modak, Environmental Management Centre)

Annual MSW in million tonnes

(Source: UNEP 2011)
Generation of wastes:

• Estimated quantity of waste collected worldwide is at between 2.5 and 4 billion metric tons.

• Estimated municipal waste collected worldwide is 1.2 billion metric tons (2004).

• Global municipal waste generation in 2030 will be 900 million tonnes in OECD, 1 billion tonnes in BRICS and 1.1 billion tonnes in ROW.

• Cities often spend between 5 to 15 per cent of their total budget on solid waste management. In low-income countries, 90 per cent or more of that budget is spent on waste collection alone, while only 45 to 60 per cent of the waste is actually collected.

Providing waste collection to all the people, while raising the environmental standards of waste disposal, is a major challenge for Local Authorities (LAs), which lack required institutional, financial and technical capacity.

“Moving towards zero waste is inherently a multi-stakeholder process which calls for partnerships within and between communities, businesses, industries, and all levels of government.”

Source: CyClOpe and Veolia Environmental Services (2006), OECD (2010), and UNHABITAT (2010).
Growing urbanization will further compound the waste management challenges of local authorities.

- By 2050, world population is projected to reach 9.1 billion. 99 percent of global population growth is projected to occur in developing nations.
- By 2050, 68.7% of the world population is projected to live in urban areas.

**Population growth projection: 1950-2050**

**Projected urbanization: 1950-2050**


Every year 20 to 50 million tonnes of e-waste are generated worldwide.

About 53 millions tons were produced worldwide in 2009 and only 13% of it was recycled.

By 2020 e-waste from old computers in South Africa and China will have jumped by 200-400% and by 500% in India from 2007 levels.

One billion PCs will be in use by the end of 2008 - two billion by 2015 with most growth in emerging Brazil, Russia, India, and China.

Dangerous chemicals and metals, such as mercury, cadmium, lead, are included in e-wastes and may leach into the environment and local ecosystem.

Source: adapted from Sunil Herat (2010), Presented at the International Consultative Meeting on Expanding Waste Management Services in Developing Countries, 18-19 March 2010, Tokyo, Japan.
Selected World Trends on Human activities
– Resource Extraction: Scarcity of virgin materials

Estimated remaining resources:

• Gold (Au): 20 years
• Copper (Cu): 34 years
• Iron (Fe): 70 years
• Nickel (Ni): 50 years
• Manganese (Mn): 56 years


There is an urgent need to...

• **Reduce** the intake of virgin materials in the production process.
• Increase the recycling rate and use “waste” as “resource”.
• Improve **resource efficiency**.

How many mobile phones are used in the world?

<table>
<thead>
<tr>
<th>Mobile Phone Subscriptions in 2009</th>
<th>In millions</th>
<th>Per 100 inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>174</td>
<td>89.8</td>
</tr>
<tr>
<td>Germany</td>
<td>105</td>
<td>127.8</td>
</tr>
<tr>
<td>India</td>
<td>525</td>
<td>43.8</td>
</tr>
<tr>
<td>Indonesia</td>
<td>159</td>
<td>69.2</td>
</tr>
<tr>
<td>Japan</td>
<td>115</td>
<td>90.4</td>
</tr>
<tr>
<td>Russia</td>
<td>231</td>
<td>163.6</td>
</tr>
<tr>
<td>USA</td>
<td>298</td>
<td>94.8</td>
</tr>
</tbody>
</table>

Source: International Telecommunication Union – BDT

What happens to old devices?

- **44 percent of mobile users simply left their old devices unused at homes, while 4 percent of old devices were thrown into landfills** (The survey polled some 6,500 people in 13 countries, including China, India, and Germany).

Source: http://www.nokia.com/environment/recycling/why-recycle/take-back-achievements,
Conventional waste management and the consequences ..... 

What we see...

• Limited efforts on reducing wastes at source

• Lack of segregation, poor collection, illegal dumping, open dumping and burning

• Limited involvement of private sector and communities

• Lack of integrated approach, and conventionally waste being thought of having no value

• Slums are deprived of municipal services

Photo courtesy: C. F. Kura, ITC38 Training Course Participant, UNCRD.

Photo courtesy: B. Paudel, ITC38 Training Course Participant, UNCRD.
Health risks for informal sector workers, local communities living near dumpsites, etc.

How serious is the health risks of waste pickers, who most often operate without any protective measures?

- hospital waste (HIV)
- jagged metal (tetanus)
- smoke (PCBs)
- lead (neural damage)
- violence (knife cuts)
- adult behaviour (premature drinking)
- stress
- skin, gastric, respiratory problems

Waste dumps potentially serve as breeding ground for Malaria, thus having implications in achieving MDGs.

Source: Adapted from ILO (2009), presented at the Inaugural Meeting of the Regional 3R Forum in Asia in November 2009 in Tokyo.
Widespread open dumping has paralyzed many cities ...

Waste dumps potentially serve as breeding ground for Malaria, thus having implications in achieving MDGs.
People living in a place 20 times above safe level of lead, arsenic, nitrogen.....

Many children waste pickers at the highly polluted dumping site...

Health risks of informal waste pickers: hospital waste (HIV), jagged metal (tetanus), smoke (PCBs), lead (neural damage), violence (knife cuts), adult behaviour (premature drinking), stress, skin, gastric, respiratory problems
Conventional waste management and the consequences ..... 

Highly contaminated leachate seeps untreated into groundwater, a source of drinking water....

Water availability is an emerging issue in many countries and some are already heading towards water stress, but water quality deterioration because of industrial discharges and municipal sewage, agrochemicals will further accelerate the issue!
By the year 2025, as much as two-thirds of the world population may be subject to moderate to high water stress.

Resource Efficiency, Informal Sector and Importance of Partnership

- Resource Use
  - Waste
    - Segregation
      - Reuse, Recycle, Recovery
        - Processing
          - Reuse, Recycle, Recovery
            - Disposal

Low Resource Efficiency:
- Manual segregation
- Transfer of materials to formal sector with no value addition
- Low efficiency due to lack of finance and technology knowhow

High Resource Efficiency:
- Mechanized segregation
- Value addition for better income
- PPP and other institutional arrangements to create green jobs

Low involvement of informal sector
- High involvement of informal sector with partnerships
Informal Sector in 3Rs/Waste Management

Major opportunity for win-win solutions through partnership with informal sector

- Build recycling rates
- Move towards zero waste
- Improve livelihoods
- Improve working conditions
- Save the city money

Global estimate of professional waste workers in the community / informal sector: 15 million

Informal sector recyclers are reported to comprise as much as 1 per cent of the world’s population


Photo credits: Enrico Fabian (cited from Wilson, D.C. (2011)).
Partnership is key to expand waste management services of local authorities that lack resources, institutional capacity, and technological know-how...

- **Partnerships** offer alternatives in which governments and private companies assume co-responsibility and co-ownership for the delivery of solid waste management services.

- **Partnerships** combine the advantages of the private sector (dynamism, access to financial resources and latest technologies, managerial efficiency, and entrepreneurial spirit, etc.) with social concerns and responsibility of the public sector (public health and better life, environmental awareness, local knowledge and job creation, etc.)

- **Partnerships** provides win-win solutions both for the public utilities and private sector—if duly supported by appropriate policy frameworks. Such partnerships could lead to savings in municipal budgets where waste management usually consumes a large portion. The private sector, on the other hand, may use this opportunity to convert waste into environmentally friendly products and energy that could also serve as income generating opportunities.
The Waste Market

• 410 billion USD (UNEP 2008)*
• Formal side includes multinationals and smaller industries
• Informal Waste Collectors (door-to-door), rag pickers who collect waste from streets, scavengers who pick waste from dumpsites and informal middlemen such as recycling dealers, brokers, wholesalers

*Value of informal market not estimated

(Source: Prasad Modak, Environmental Management Centre)
Business Opportunities in SWM

1 Consulting
2 Bin & container suppliers
3 Collection services
4 Automotive suppliers
5 Transportation services
6 Equipment suppliers
7 NGOs & CBOs
8 Operating treatment & recycling units

Shifting the Roles of LAs

Municipalities from being a ‘service provider’ to ‘facilitator of service’, by focusing its activity on planning and management,

While a private company takes up the day to day operation.

What is Private Sector up to bring in?

Through Public private partnership (PPP)

• Technical & Management Expertise in SWM
• Improve Operating Efficiencies in the system
• Large Scale Financial Capital Injection

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
Calls for a Partnership...

High Quality Service
Cost effective
High Tech

Low Quality Service
Expensive
Low Tech

Waste Processing

Waste Minimization

Public Sector

Public Private Partnership

Private Sector

Community

Present

Future

Need to Analyze Stakeholders Role

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
LAs on the Look out for the Partnership with Private Sector

Some of the Indian Municipalities adopting PPP basis of Integrated solid waste Management

- Asansol Durgapur
- West Bengal Coimbatore City Municipal Corporation
- Guwahati Municipal Corporation
- Hyderabad Municipal Corporation
- Mudurai Municipal Corporation

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
Private Sector on the Look out for Partnership with LAs

- Unilever’s Sustainable Living Plan launched in 2010, “working in partnership with industry, governments and NGOs to increase recycling and recovery rates on average by 5% by 2015, and by 15% by 2020 in our top 14 countries.”
- In August 2011, under the same plan Unilever looked for partnership arrangement with a local authority by offering financial support for mixed plastics recycling collections (pots, tubs and trays).

Presence of Private Sector – Industry Initiatives

Tetrapak - Leading beverage carton manufacturer

New line of business

Recycling beverage cartons – Enhances profitability and image of company

Apple + Li Tong Group

Take-back program for end-of-life products

Recycling activities to generate secondary raw materials

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
In 2006, the Pollution Control Department (PCD) of Thailand initiated a partnership project with Philips and Toshiba to collect and recycle fluorescent lamp wastes from various establishments. It initiated a household hazardous waste management scheme with large municipalities.

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
Presence of Private Sector – Business Opportunities

Veolia Environmental services is present globally in 31 countries, and in developed Asian countries—China, Singapore, South Korea, Taiwan offering its municipal waste management services.

1) Household waste collection in the district of Wong Tai Sin, Hong Kong. Since May 1, 2006, total turnover of €4 million Euros over the 5 year period.

2) Operations and maintenance contract (O&M*) for a Waste-to-Energy plant for non-hazardous waste in Ilan County, Taiwan. Since January 2006, a cumulative turnover estimated at €44 million Euros over a 20 year period.

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
Presence of Private Sector – Business Opportunity

Windrow Composting
Vietstar Joint Stock Company
Address: Municipal Solid Waste Treatment Complex, Cu Chi District, Ho Chi Minh City, Vietnam
Technology Provider: Lemna International, Inc., U.S.A.

National policies of Vietnam is favorable for FDI. It also has a strong policy on promotion of 3R and is set to achieve a recycling rate of 70% from the total municipal solid wastes by the year 2015.

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
Presence of Private Sector – Business Opportunity

Non-infectious waste incinerator facility (WMS-DOWA) in Bangpoo Industrial Estate, Thailand

- Funded by NEDO Japan to the Industrial Estate Authority of Thailand via Green Partnership Plan (GPP)

- Waste Management Siam (WMS) owned by DOWA Eco Systems Co. Ltd., Japan took up the operation of this incineration plant for 20 years from 2009.
PPP in Philippines

Methane gas recovery project with Italian company in Payatas landfill in Quezon City, Metro Manila
Example of PPP- MSW in Chennai, India

Chennai

- Municipal Solid Waste (MSW) generation increased from 600 to 3500 tons per day within 20 years
- Per capita generation rate 0.6 kg/day

Question Raised on Public Sector Services

- Efficiency
- Quality of services
- Resources required for waste collection

- 4th largest metropolitan city in India
- Divided into 10 zones of 155 wards

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
MSWM in Chennai...Past

Organization Involved in MSWM

Public Sector
Corporation of Chennai (CoC)

Public Sector
Local Municipalities

Community
Some NGOs/CBOs

Operating under framework of MSW rules, 2000

City was divided into 10 zones

Solid waste (tons/day)

Source: www.chennaicorporation.com
MSWM in Chennai...Present

Organizations Involved in MSWM

Operating under framework of MSW rules, 2000

Public Sector
Corporation of Chennai (CoC)
7 Zones
2000 tons/day Solid Waste

Private Sector
Since 1996
ONYX
3 Zones- 6, 8 &10
30% total area of the City
1100 tons/day Solid Waste

Community
CBOs such as Civic Exnora

Collected & Treated

Chennai city – First in India to establish PPP

Open dumpsites at Perungudi & Kodungaiyur
Public Sector Services - Chennai

- Awareness Campaign
- Bin for Source Segregation
- MSWM by CoC
- 10,000 Employees
- 7 Zones
- Door-to-door waste collection
- Waste Transportation

Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat
Private Sector Services

Chennai is the first city in India to contract out MSWM services to a foreign private agency “ONYX” a Singapore based company.

- Since March 2000, it is responsible for zones 6, 8 & 10
- 2,000 employees
PPP Recognized For?

- Improved performance of public sector: by employing innovative operation & maintenance methods
- Reduced & stabilized costs of services: by ensuring work is performed by the most productive & cost effective means
- Improved environmental protection: by dedicating highly skilled personnel to ensure efficient operation & compliance with environmental requirements
- Access to private capital for infrastructure investment: by broadening & deepening supply of domestic & international capital
**But PPP is not a Cakewalk**

- Waste Management is considered as business of Central Government & Municipalities only
- No specific regard is given to the role of citizens, businesses & industries
- Role of formal, informal private sector, communities, waste generators & waste pickers are not recognized
- Lack of incentives & rewards for the supplemental contribution made for reducing burden of municipalities & central government
- Municipalities become prime beneficiaries from the efforts of private sector in terms of reducing burden & saved resources
Consultative Process towards the creation of IPLA

2009

CSD Intersessional Event - Inaugural Regional 3R Forum in Asia, Nov 2009, Tokyo
- contributed towards world wide recognition of 3Rs as the basis for sustainable waste management through CSD

2010

CSD Intersessional Event - International Consultative Meeting on Expanding Waste Management Services in Developing Countries, 18-19 March 2010, Tokyo


- contributed towards world wide recognition of 3Rs as the basis for sustainable waste management through CSD

2011

CSD Intersessional Event - International Conference on Building Partnerships for Moving Towards Zero Waste, 16-18 Feb 2011, Tokyo

Unanimously recommended launching of the International Partnership for Expanding Waste Management Services of Local Authorities (IPLA) at CSD-19 on 12 May 2011, New York

Highlights from CSD-18 Chair Summary:
- Need to move towards zero waste economy;
- 3Rs as the basis for sustainable waste Management;
- Called for international cooperation & Partnerships; and
- Called for special national and International action on emerging new waste streams such as e-waste.
Mission Statement

“to share knowledge, communicate across national boundaries and work to spread best practice in order to accelerate the uptake of waste related infrastructure and services at various stages of waste management such as avoidance, prevention, minimization, segregation, collection, transport, recycling, recovery, reuse treatment and disposal.”
**International Partnership for Expanding Waste Management Services of Local Authorities (IPLA)**

**Objectives**

- Enable LAs **share experience** about institutional, business and financial models in addressing specific waste problems and opportunities.

- Help mainstreaming **integrated and sustainable waste management strategies** such as ISWM and 3R.

- Facilitate expansion of waste management related services and supporting infrastructure that caters to LAs’ needs and meets compliance with applicable regulations; identifies partners and appropriate financial mechanisms, create "green jobs" and stimulate "green investments."

- Encourage **awareness raising and capacity building programs** targeting LAs and other stakeholders; especially to decouple waste generation from economic development and to manage complex and emergent waste streams.

- Help in creating a **practice oriented knowledge network** to help formulate innovative projects, select most appropriate technologies, access expertise, promote waste exchange and waste-resource related opportunities.

- Be instrumental in collation of databases on waste generation, technology performance and standards, benchmarks and Key Performance Indicators for **gap assessment** and **target setting for the LAs**.

- Provision of **guidelines to support local action plans and strategies** for sustainable waste management.
IPLA's core objective is to address "partnerships" as the basis for sustainable waste management, in particular fostering partnerships between Local Authorities (LAs), private sectors and other key stakeholders in local level waste management.

It aims to create a dynamic interface between the local authorities and private sector, thereby facilitating public-private partnerships and creating conducive investment climate for expanding waste management services of local/municipal authorities.

IPLA's operational modalities will rely on decentralized network of activities addressing municipal waste management. For example, regional/sub-regional/national secretariats will take the lead role in operations.

IPLA's knowledge management component exclusively targets empowerment/capacity development of LAs and municipalities by facilitating better access to tools, technologies, investment opportunities, and international financial mechanisms in the area of municipal waste management.

IPLA activities provides an opportunity to further complement city/municipality level efforts for improved urban management towards realizing liveable cities (beautiful, clean, safe, efficient).

In summary, IPLA is a partnership with an objective to foster partnerships with an ultimate purpose of expanding waste management services of local authorities.
International Partnership for Expanding Waste Management Services of Local Authorities (IPLA) - Non-hierarchical & decentralized structure
Core Members  (as of January 2012)

Overall Coordination Support

Global Secretariat

Regional Secretariat for Africa, Asia and Latin America

Sub-Regional Secretariat for South Asia

Sub-Regional Secretariat for the Pacific SIDS

Sub-Regional Secretariat for the Caribbean SIDS

Sub-Regional Secretariat for the region covering Australia and New Zealand

Sub-Regional Secretariat for Mashreq and Maghreb Countries

Sub-Regional Secretariat for Central and Eastern Europe

Sub-Regional Secretariat for Northern Latin America

Sub-Regional Secretariat for Southern Latin America
Official partners round the world
(About 130 members from 48 countries - as of Jan. 2012)
IPLA Membership

- UN Agencies + International Organizations/Donor, 7%
- IPLA Secretariats, 7%
- Private Sector, 18%
- Research / Academic Institutions, 10%
- LAs + National Government, 25%
- NGOs, 33%
Major Meetings during 2011-2012

- First IPLA Forum for Moving towards Zero Waste in Latin America, Bogota, Colombia, 17 August 2011
- Special Event of the ISWA World Congress 2011, Moving towards Zero Waste for Green Economy – Role of Local Authorities, 17-18 October 2011, Daegu, Republic of Korea (co-organized by the Ministry of Environment, Korea, and UNCRD)
- International Forum on Waste Management in Urban Territories, Lima, Peru, 26-28 October 2011
- IPLA Plenary Session during SWEEP-Net Regional Forum, Marrakech, Morocco, 15-17 May 2012
- IPLA Global Forum (possibly in conjunction with the Resource Recirculation Day Event), Seoul, Republic of Korea, September 2012

IPLA Private Sector Meeting
Thursday, 23 February 2012
Nagoya, Japan
- Discuss enabling conditions for the private sector involvement including the public-private partnership (PPP).
- Identify potential areas for the private sector engagement.
• **The Third Meeting of the Regional 3R Forum in Asia** was jointly organized by the National Environment Agency of Singapore, Ministry of the Environment of Japan, and the United Nations Centre for Regional Development (UNCRD).

• The high level policy Forum, represented by twenty three countries from the Asia-Pacific region, unanimously agreed on a set of recommendations - "**Recommendations of the Singapore Forum in Achieving a Resource Efficient Society in Asia**", which aims at strengthening the regional input to the Rio+20 process by addressing the 3Rs in a broader context encompassing integrated approach and resource efficiency towards transitioning to a green economy.

• Below represent some key messages from the **Recommendations of the Singapore Forum** in the context of IPLA and its objectives:

  – Need for policies, programmes, and regulatory measures to ensure decent work and livelihood security of workers in the informal sector.
  – Need for addressing the issues related to new and emerging waste streams through appropriate programmes, multi-stakeholder partnerships and environmentally sound technologies.
  – Effective and dynamic linkage among government, private sector, and scientific community to enhance national and local knowledge base.
  – Support and strengthen local and national networks by effectively linking them with international networks.

...among others.
Some key points:

1. move forward to a resource efficient and zero waste society by promoting effective collaboration and partnerships among national and local authorities, municipalities, the private and business sector, NGOs, scientific and research organizations, and all other related entities;

2. address the need for mainstreaming zero waste and resource efficiency into the political agenda as well as city development strategies or action plans as a pre-requisite to moving towards a green economy, and the required changes in the existing institutional arrangements at the local, regional, and national levels;

5. help mainstream resource efficiency and 3Rs (Reduce, Reuse, Recycle) principles into the local development agenda, including environmental, social, and economic plans, policies, strategies, and programmes;

7. help identify and stimulate potential partners and required financial mechanisms in support of “green jobs,” “green industries,” and “green investments”;

10. encourage awareness-raising and capacity-building programmes targeting the local authorities and other stakeholders, especially to decouple waste generation from economic development and to manage complex and new emergent waste streams;
IPLA Web Portal - Knowledge and Interactive Platform
To be launched in 2012

Multiple benefits for Local Authorities (LAs)

- Financing Institutions
- Knowledge Based Institutions
- State/National Level Urban Development Departments
- NGOs, CBOs, Waste Picker Associations
- Other Alliances
- Industries

- Funding schemes
- Areas of interests
- Requirements
- etc.

- Information on available technology and services
- Technical assistance
- etc.

- Professional knowledge
- Inputs and advices
- etc...

- National and local government policies
- Laws and regulations
- New public programmes
- etc...

- Expertise and experience
- Local information
- Human resources
- etc.

- Industrial needs
- Links to Industrial market opportunities
- etc...

- Networking
- Knowledge gathering
- etc...
List of Private Sector IPLA Members

South America
- Gestion Organica GEO SAS (Colombia)
- Ibicol Ltda (Colombia)
- Plastichem Ltd (Colombia)
- Asomuña (Colombia)
- Utilities SAS (Colombia)
- Gestion Organica GEO SAS (Colombia)
- Ibicol Ltda (Colombia)
- Ciudad Limpia Bogota (Colombia)
- Camara de Integracion Economica Venezolano-Colombiana (CAVECOL) (Venezuela)
- Environmental Management Centre (EMC)

Asia
- Infrastructure Leasing & Financial Services Limited (IL&FS) (India)
- Bioccon, Inc. (Republic of Korea)
- Bionersis (Thailand)
- Al Boucai Group (Jordan)
List of Private Sector IPLA Members cont.

Africa
• Environ-Waste Nigeria Limited (Nigeria)
• Richbol Environmental Services (Nigeria)
• Green Page Integrated Services Ltd. (Nigeria)
• Zoomlion Ghana Limited (Ghana)
• Malians Waste Management (Mali)
• Malians Waste Management (Mali)

Europe
• 3R Environmental Technology Group (Hungary)
• Tega SA (Romania)
IPLA Membership

- Primary beneficiaries are LAs, mainly (but not limited to) those in emerging and developing economies.

- Open to all interested entities that align with its mission of expanding waste management-related services of LAs. e.g., LAs, governments, the private sector and industry, NGOs/CBOs, research institutions, international organizations, UN agencies, among others.

- As of today, about 140 members from 50 countries are officially registered with IPLA.

Register with IPLA: www.uncrd.or.jp/env/ipla/index_form.htm
For any inquiry about IPLA, please email: ipla@uncrd.or.jp
You are welcome to join IPLA

www.uncrd.or.jp/env/ipla/index_form.htm