

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



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**IPLA Forum of the Private Sector  
23 February 2012, Nagoya, Japan**



**UNCRD**

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*United Nations Centre for Regional Development*

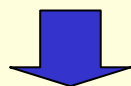
# Challenges faced by Local Authorities (LAs)

## Generation of wastes:

- Estimated quantity of waste collected worldwide is at between 2.5 and 4 billion metric tons.
- Estimated municipal waste collected world wide is 1.2 billion metric tons (2004).
- Global municipal waste generation in 2030 will be 900 million tonnes in OECD, 1 billion tonnes in BRIICS 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.**



Photo courtesy: C. Viengsan, ITC38 Training Course Participant, UNCRD.



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.



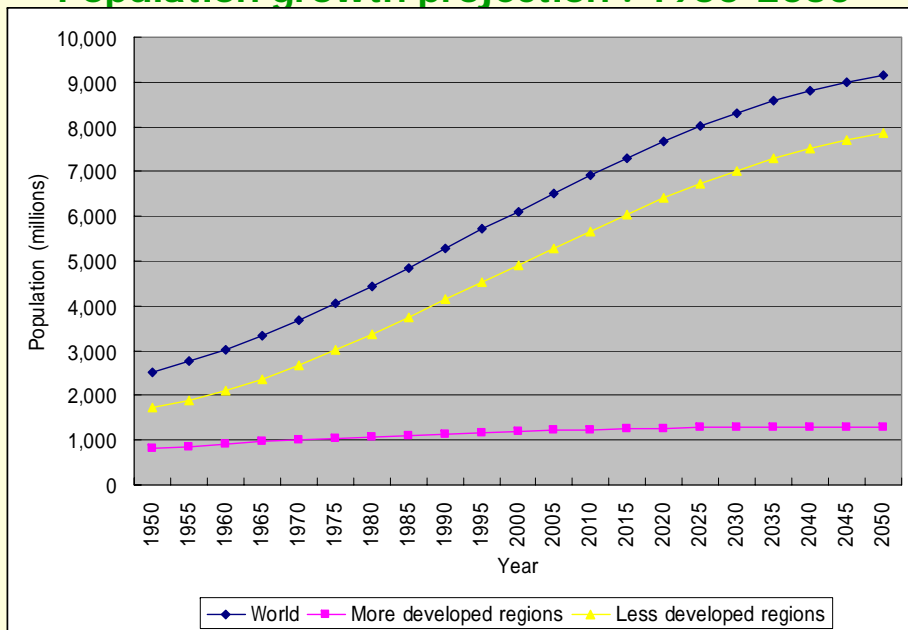
“Moving towards zero waste is inherently a multi-stakeholder process which calls for partnerships within and between communities, businesses, industries, and all levels of government.”



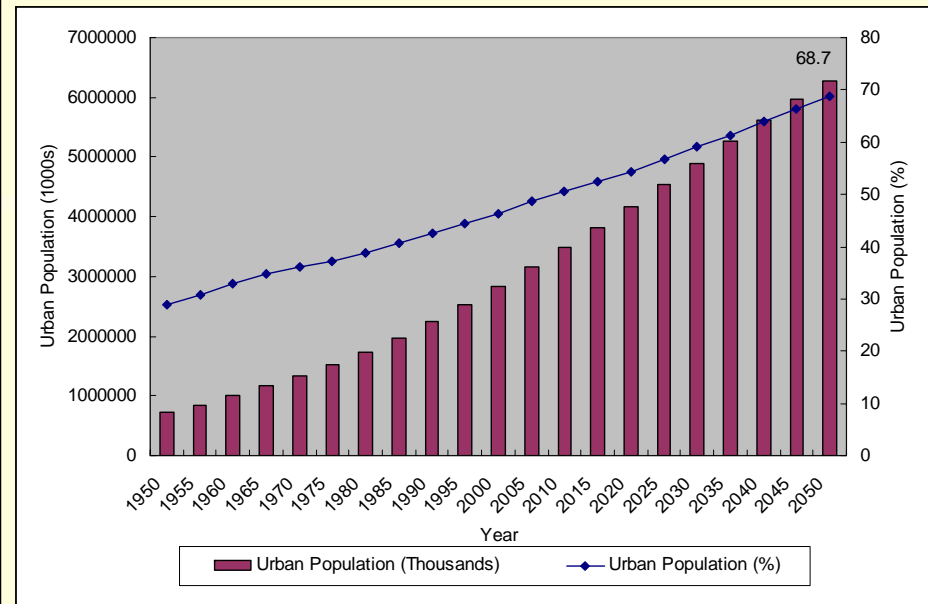
# Population growth & urbanization will continue to compound the waste management issues..

- By 2050, world population is projected to reach 9.1 billion with 99 percent of global population growth is projected to occur in developing nations.
- By 2050, around 70% of the world population is projected to live in urban areas.
- Cities now account for 75% of energy consumption and 75% of carbon emissions (Clinton Foundation, 2009)
- For Asia, the urban population will grow to 2.21 billion by 2020

Population growth projection : 1950-2050



Projected urbanization : 1950-2050



Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2008 Revision, <http://esa.un.org/unpp>

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2008 Revision and World Urbanization Prospects: The 2009 Revision, <http://esa.un.org/wup2009/unup/>

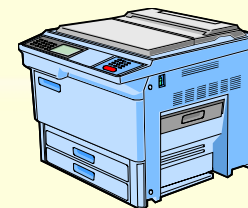


## Diversification of wastes – emerging new waste stream adds another critical dimension to waste management issues & pose the fastest growing challenge for both developed and developing countries

- 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

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.

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





# 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.

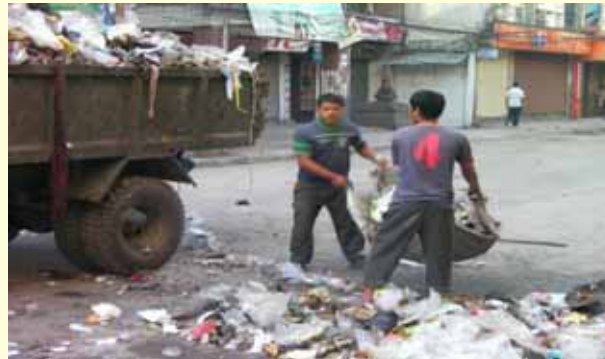


Photo courtesy: B. Paudel, ITC38 Training Course Participant, UNCRD.



Photo courtesy: C. Viengsan, ITC38 Training Course Participant, UNCRD.



## Conventional waste management and the consequences .....

**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.*

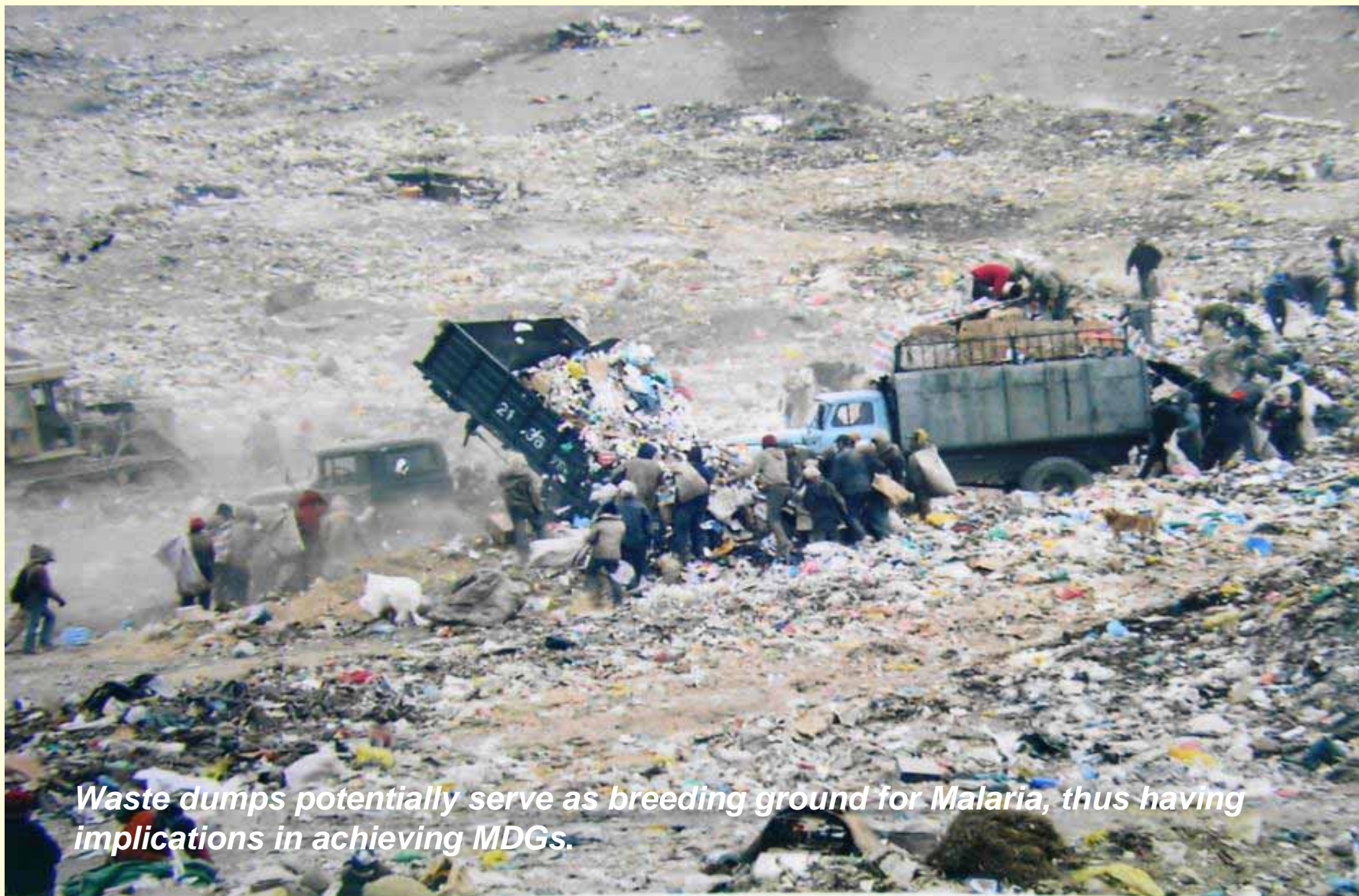


Source: Adapted from ILO (2009), presented at the Inaugural Meeting of the Regional 3R Forum in Asia in November 2009 in Tokyo.





## 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.....



Source: ADB (2004)



United Nations Centre for Regional Development (UNCRD)



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 .....



Source: ADB (2004)

*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!*

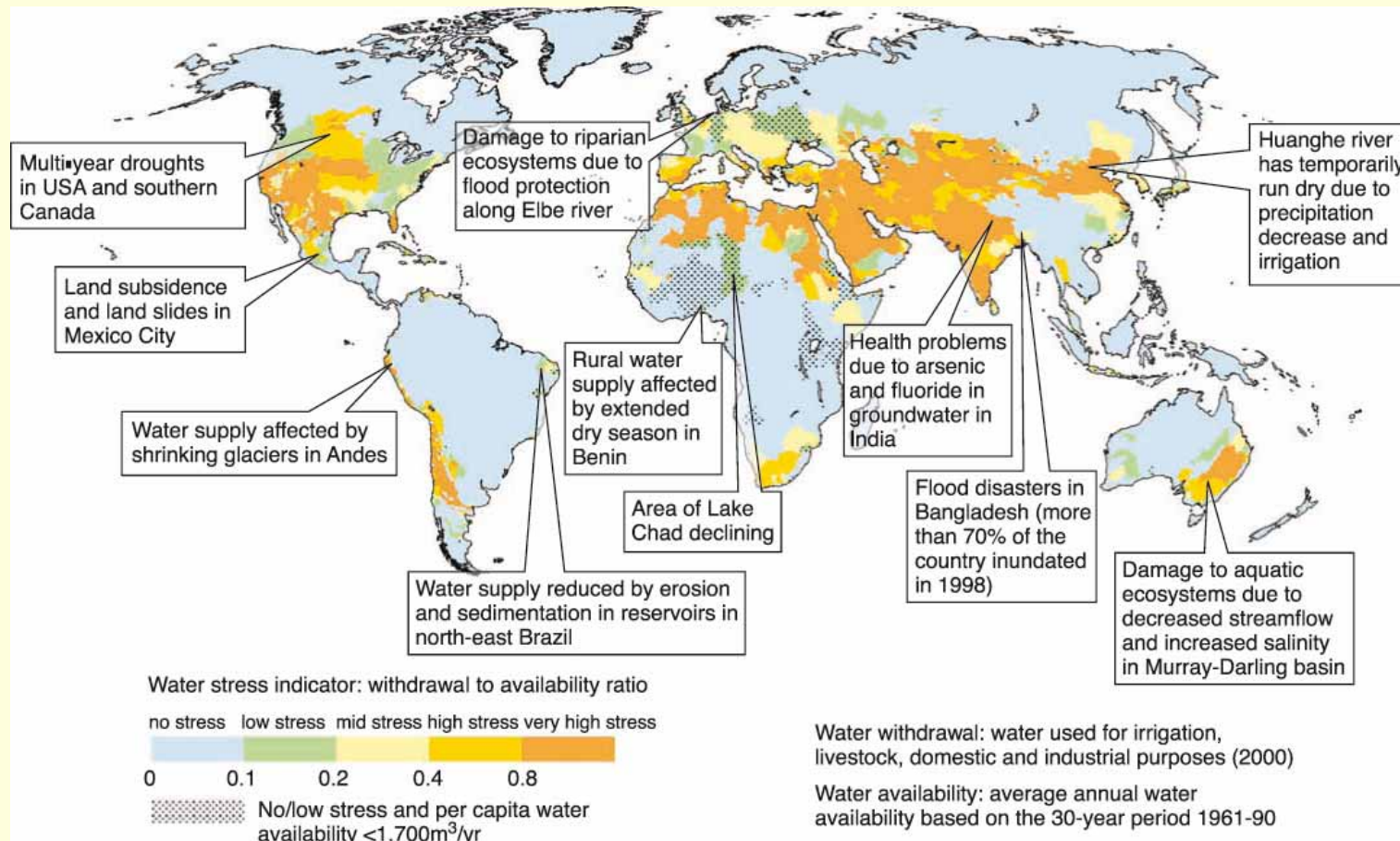




# Selected World Trends on Human activities

## - Degradation of water resources

By the year 2025, as much as two-thirds of the world population may be subject to moderate to high water stress.

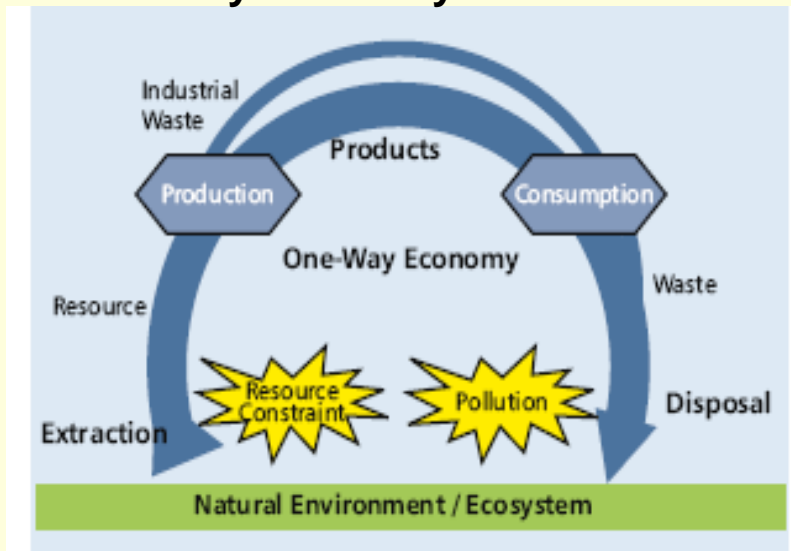


Source: Water Stress Map generated by World Meteorological Organization 2008 based on data available at Alcamo *et al.* (2003)



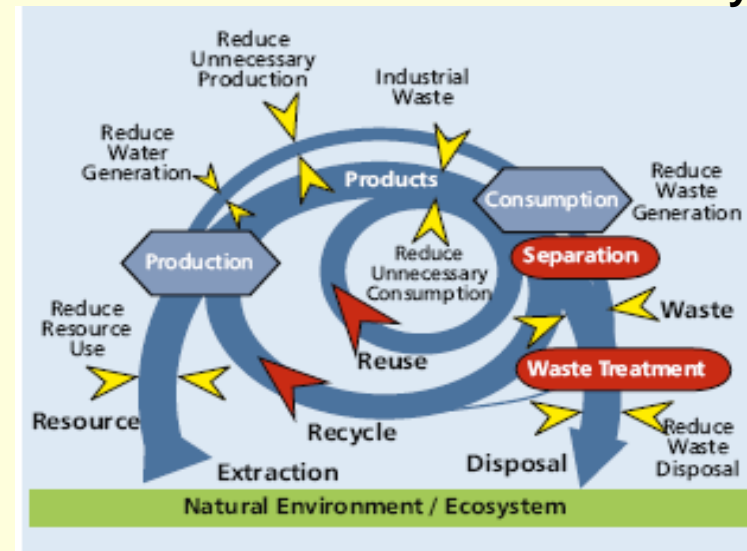
# Transitioning to more resource efficient economy

## 1. One-way Economy



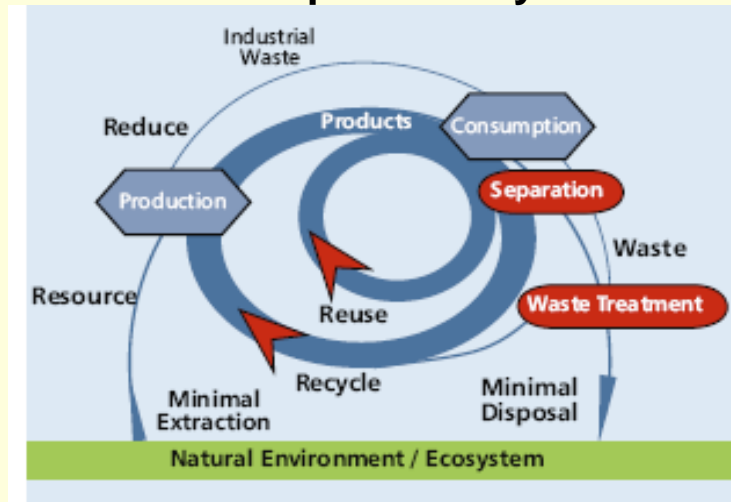
Source: ADB.

## 2. More resource efficient economy



Source: ADB.

## 3. Closed Loop Economy



Source: ADB.

1. In one way economy, a little effort is made to reduce the amount of materials consumed in production and hence the wastes are produced. Also little effort is made to reuse or recycle those wastes which mainly go for landfill.
2. Greater resource efficiency by reducing consumption and waste of materials, and by reusing and recycling by products. By implementing measures on both the production and consumption sides, countries may be able to reduce (per unit of product) both the quantity of the resource extraction stream and the quantity and environmental impact of the residual materials flow that ultimately reaches disposal sites.
3. In closed-loop economy, nearly all outputs either become inputs to other manufacturing processes or are returned to natural systems as benign emissions rather than as pollutants, e.g., a closed-cycle processing plant takes in freshwater and does not discharge any liquid effluents. Rather, the water is constantly recycled and possibly utilized in the final product itself





# Various types of waste and their recycling potentials

Type of waste	Recycled products	Recycling potential
Biomass	Composts	Future of compost depends on its environmental and agronomic quality and the dynamism of its market.
Paper and cardboard	Recovered paper (recycled paper)	Increasing demand in Asia, particularly in PRC.
Plastics	Recovered plastics	Increasingly stringent regulations and growing demand for recovered plastics in Asia, favoring development and internationalization of this market. Cost of collection system and volatile prices are limiting factors.
Ferrous Metals	Steel	In 2004, world production of scrap metal rose to 450Mt and consumption reached 405.5Mt. Can be recovered from MSW, construction waste, etc.
E-wastes	Recoverable materials	Estimated that 10million computers contain 135,000 metric tons of recoverable materials, such as base metals, silicon, glass, plastic, and precious metals.

Source: Extracted from ADB and IGES (2008) p. 125, with modifications.



## 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)



# Size of the informal industry

- Typically 1% of the urban population in developing countries involved in informal scavenging
- Up to 15 million people, with an economic impact of 100s of millions

Country	No. of informal waste collectors
China	10 million
India	Over 1 million
Brazil	Half a million

(Source: Prasad Modak, Environmental Management Centre)





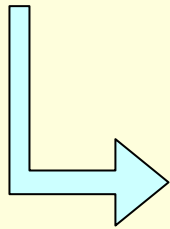
# Selected World Trends on Human activities

## – 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

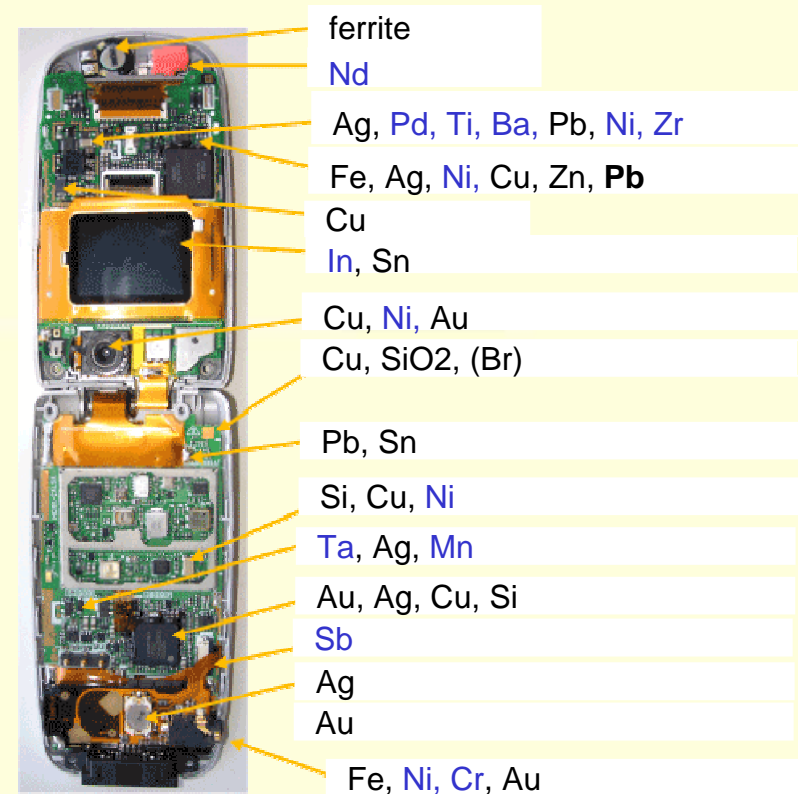
Source: U.S. Geological Survey. Mineral Commodity Summaries 2010.



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**.

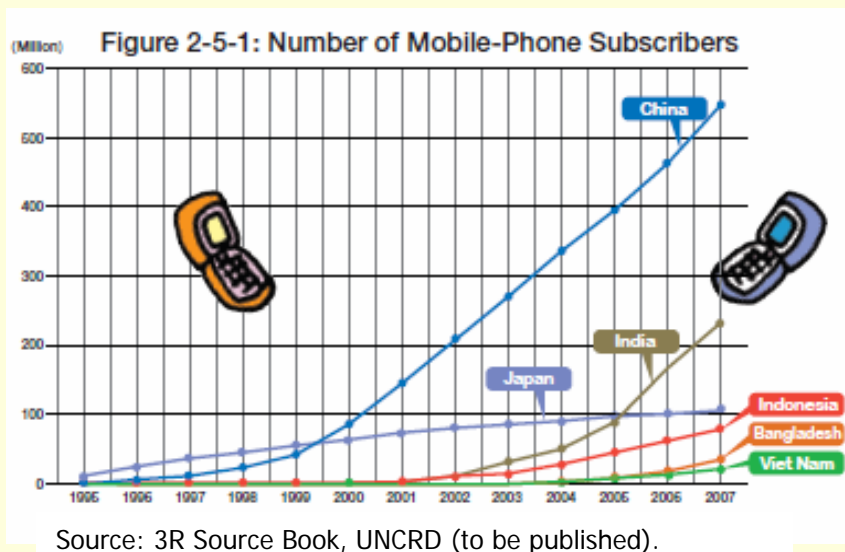
Mobile Phone contains over 50 chemical substances



Source: <http://www.coden.jp/rare-metal/use.html>



## How many mobile phones are used in the world?



## Mobile Phone Subscriptions in 2009

	<i>In millions</i>	<i>Per 100 inhabitants</i>
<b>Brazil</b>	174	89.8
<b>Germany</b>	105	127.8
<b>India</b>	525	43.8
<b>Indonesia</b>	159	69.2
<b>Japan</b>	115	90.4
<b>Russia</b>	231	163.6
<b>USA</b>	298	94.8

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>,





# 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

CSD 18 Side Event: Toward Global Sound Material Cycle Society, May 2010, 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.

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



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

**“Partnership to foster Partnerships”**



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

= UNCSD-registered partnership on waste management which address various needs of local authorities (LAs) in achieving sustainable waste management.

### **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.







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

## Key Features

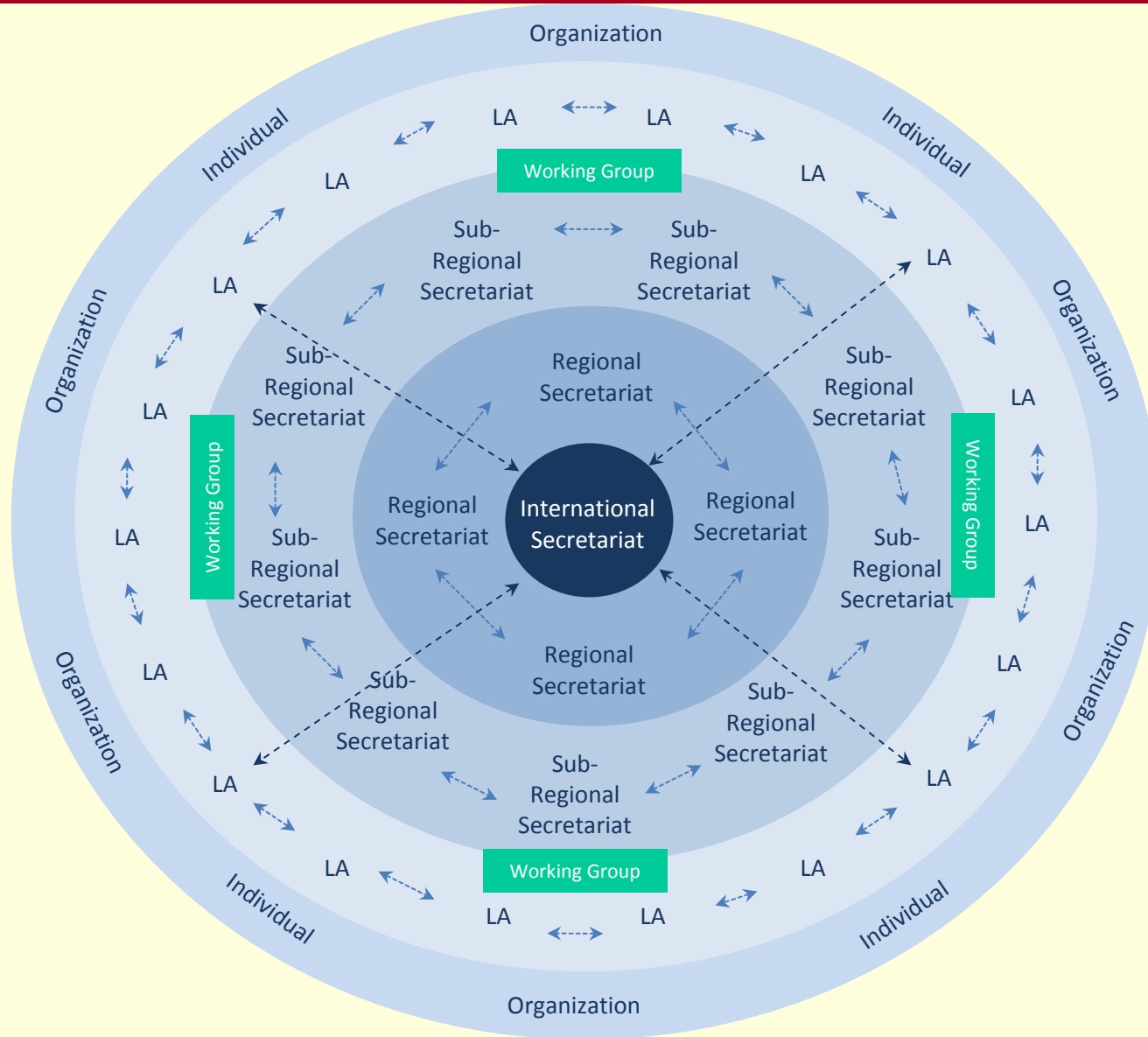
- **IPLA's** core objective is to address "partnerships" as the basis for sustainable waste management, in particular **fostering partnerships** between Local Authorities (LAs), private sectors and other key stakeholders in local level waste management.
- It aims to create a **dynamic interface** between 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 structure





# Core Members (as of January 2012)



Overall Coordination Support



Sub-Regional Secretariat for Northern Latin America



Global Secretariat



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



Regional Secretariat for Africa, Asia and Latin America



Sub-Regional Secretariat for Mashreq and Maghreb Countries



Sub-Regional Secretariat for South Asia



REGIONAL ENVIRONMENTAL CENTER

Sub-Regional Secretariat for Central and Eastern Europe



Sub-Regional Secretariat for the Pacific SIDS



Sub-Regional Secretariat for the Caribbean SIDS



Sub-Regional Secretariat for Southern Latin America







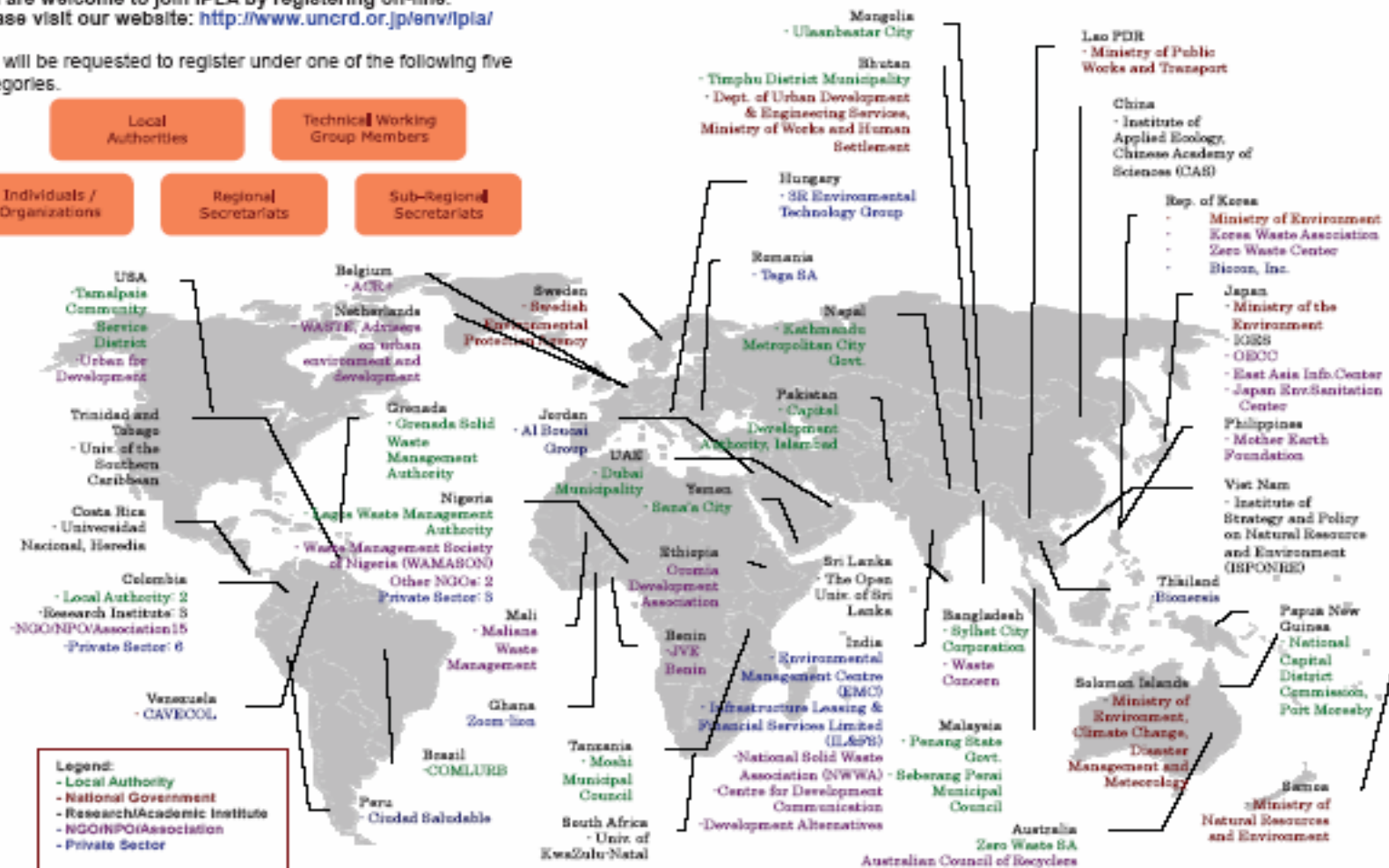
# Official partners round the world

(About 130 members from 48 countries - as of Jan. 2012)

## Registration for IPLA Membership

You are welcome to join IPLA by registering on-line.  
Please visit our website: <http://www.uncrd.or.jp/en/wplia/>

You will be requested to register under one of the following five categories.



**Legend:**  
 - Local Authority  
 - National Government  
 - Research/Academic Institute  
 - NGO/NPO/Association  
 - Private Sector





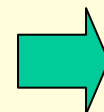
## Stages of IPLA Activities (for 5~10 years)

### Stage 1: Expanding membership and establishing a knowledge platform

- Establishment of a dynamic knowledge platform (including web-portal).
- Identification and expansion of partners, members, national secretariats/focal points.
- Preliminary meetings among partners and private sectors.
- Resource mobilization.

### Stage 2: Implementation of activities through decentralized network

- Capacity building workshops/policy dialogues (Mayors & Municipalities )
- Linkage to regional and international processes/events.
- Training and awareness programmes.
- Pilot and demonstration projects.



*All aiming at supporting the LAs to network with each other and to access the needed policy, technology and other information, as well as financial/investment opportunities through partnerships.*

### Stage 3: Evaluation/Self Sustenance of IPLA

- Evaluation based on pre-determined set of indicators.
- Continuation of main activities.

In course of expansion, IPLA will gradually shift towards the stage where it could self-sustain its operation with minimum financial support.





## 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.







# Third Meeting of the Regional 3R Forum in Asia

5-7 October 2011, Singapore

- **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.





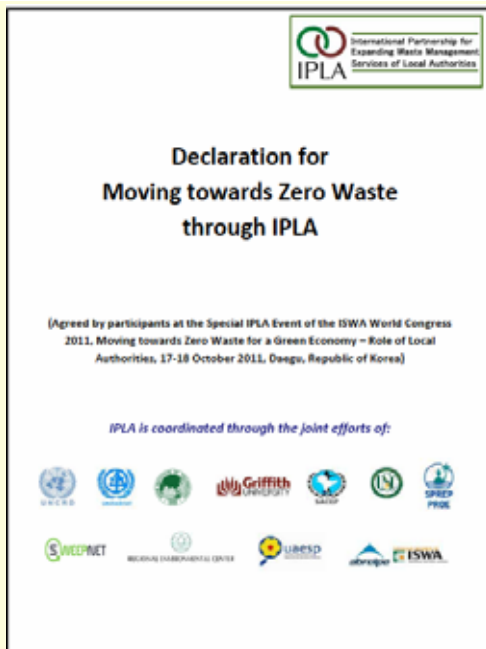
# Declaration for Moving towards Zero Waste through IPLA

18 Oct. 2011, Daegu, Rep. of Korea

## (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;





## Planned Activities for 2012

1. Launch a web-portal.
2. Establish IPLA regional forums in Africa, Asia, and Latin America.
3. Assist Las/cities/municipalities in formulating a roadmap and strategies towards zero waste (e.g., Ahmedabad/India)
4. Strengthen the public-private partnership (PPP).
5. Facilitate LAs access to international financial mechanisms.





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AACSB-accredited MBA Program

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### Choy Lee Scrap Recycle

Collect the wasted electronic goods and  
materials from factories.

[www.choyleerecycle.ecomm.hk](http://www.choyleerecycle.ecomm.hk)

## UN funds study for waste-free city

TNN Feb 15, 2012, 04:35AM IST

Tags: [UNCRD](#) | [Garbage disposal](#) | [AMC](#)

AHMNEDABAD: After carrying out an intensive drive for eff  
disposal, city's civic bosses are now working on a project for  
Ahmedabad.

The project for preparing a roadmap for this purpose will be  
Development (UNCRD). This is for the first time that a UN b  
for a garbage-free city in Gujarat. The Ahmedabad Municipa  
once it is prepared by the UN body.

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# IPLA Web Portal

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Key Ideas

# Landing (Home Page)

Section	Proposed Contents
Home	<ul style="list-style-type: none"><li>• Welcome note</li><li>• Important Events and News</li><li>• Login</li></ul>
Updates	<ul style="list-style-type: none"><li>• Global Events and Press Releases</li></ul>
About IPLA	<ul style="list-style-type: none"><li>• Background, Mission and Objectives</li><li>• Structure of IPLA</li><li>• FAQ</li></ul>
Networking	<ul style="list-style-type: none"><li>• Featured LA, Tender Notices, Discussion Forums, Blog</li></ul>
Resources	<ul style="list-style-type: none"><li>• Guidance Manuals, Tool Kits, Case Studies, Technology Factsheets</li><li>• Searchable Database of Experts and Vendors</li></ul>
IPLA News	<ul style="list-style-type: none"><li>• News items with Subscription options</li></ul>
Join IPLA	<ul style="list-style-type: none"><li>• Benefits and Types of partnerships</li><li>• Registration Details</li></ul>
Activities	<ul style="list-style-type: none"><li>• Current engagements</li><li>• Projects and Programs</li><li>• Achievements</li></ul>
Contact Us	<ul style="list-style-type: none"><li>• Address and Contact for International, Regional and Sub-regional Secretariats</li></ul>
Sponsors	<ul style="list-style-type: none"><li>• Details on various sponsors of IPLA</li></ul>



# Multiple Stakeholder Access

## STAKEHOLDERS

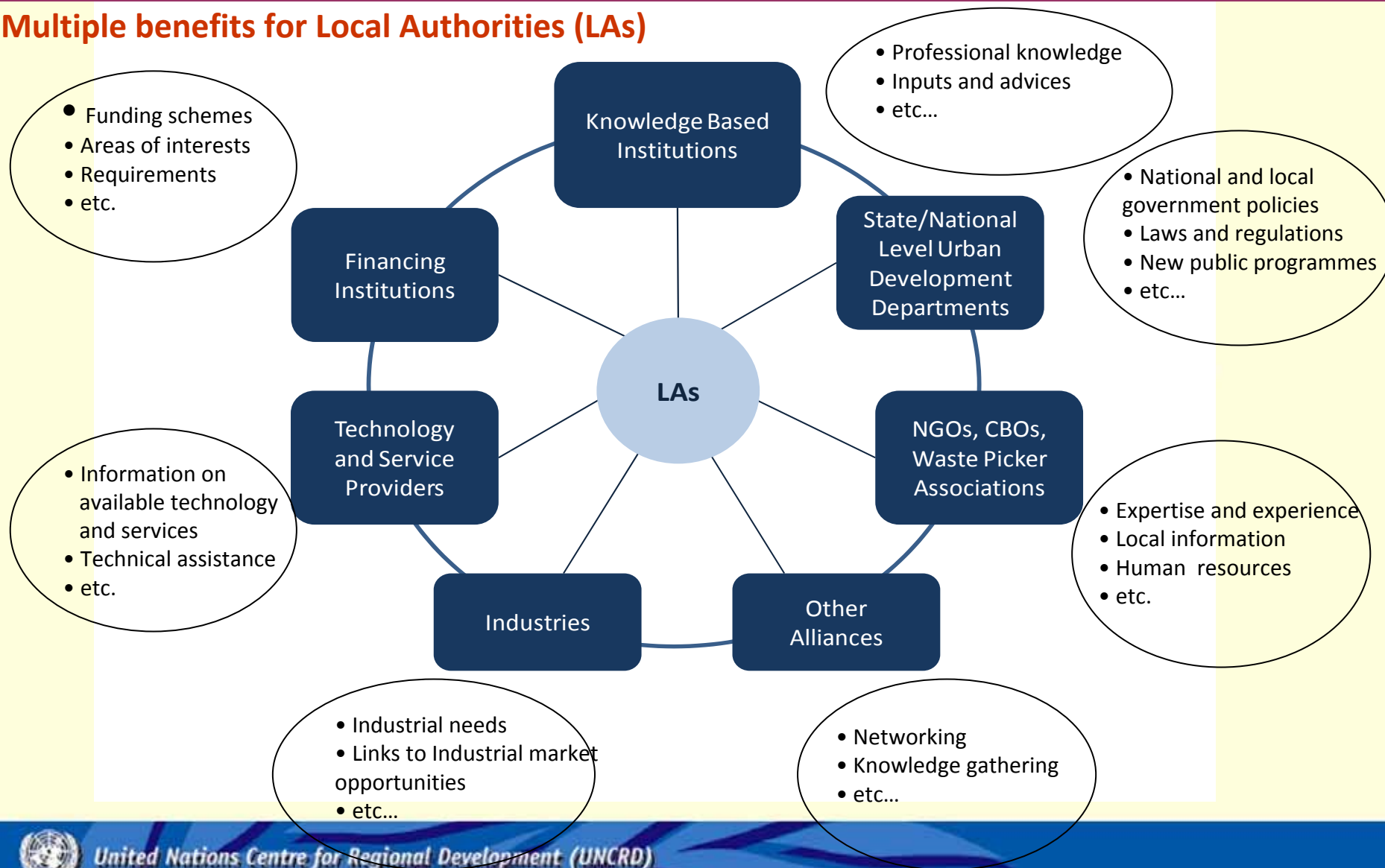
- Local Authorities
- Sub-regional Secretariats
- Regional Secretariats
- International Secretariat
- Technical Working Group Members
- Individuals or Organizations

- Depending on the stakeholder, functions and access to content would be provided
- Both open registration and multiple levels of memberships in closed and open formats would be available
- Control on roles and responsibilities through various levels of engagements with the portal, community ratings and status of the individual in the LA.

# IPLA Web Portal - Knowledge and Interactive Platform

To be launched in March 2012

## Multiple benefits for Local Authorities (LAs)





# 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 130 members from 48 countries are officially registered with IPLA.

**Register with IPLA** : [www.uncrd.or.jp/env/ipla/index\\_form.htm](http://www.uncrd.or.jp/env/ipla/index_form.htm)

**For any inquiry about IPLA, please email:** [ipla@uncrd.or.jp](mailto:ipla@uncrd.or.jp)





# Themes of the UNCSD/Rio+20 Conference



The United Nations Conference on Sustainable Development, Rio+20, will focus on two themes:

1. Green economy in the context of sustainable development and poverty eradication; and
2. Institutional framework for sustainable development.



# 3Rs and Resource Efficiency in a Green Economy

## Green Economy

*While there is no unique, internationally agreed definition of the concept of "green economy," some recent statements and definitions by the UN include the following: the concept of green economy focuses primarily on the intersection between environment and economy (2nd Prep Com of UNCSO/Rio+20, 2010); green economy is "an economy that not only improves human well-being and social equity but also significantly reduces environmental risks and ecological scarcities," i.e., an economy that is "low carbon, resource efficient and socially inclusive" (UNEP 2011).*

## Low carbon

Green economy substitutes renewable energy and low carbon technologies for fossil fuels

## Resource Efficient

Green economy promotes enhanced energy efficiency, material efficiency, closed loop manufacturing and better waste management, etc.

## Socially inclusive

Green economy is central to poverty alleviation and seeks to provide diverse opportunities for economic development and poverty alleviation without eroding a country's natural assets; contribute to create green jobs to offset job losses; address health and labor standards for informal waste sector, among others; .

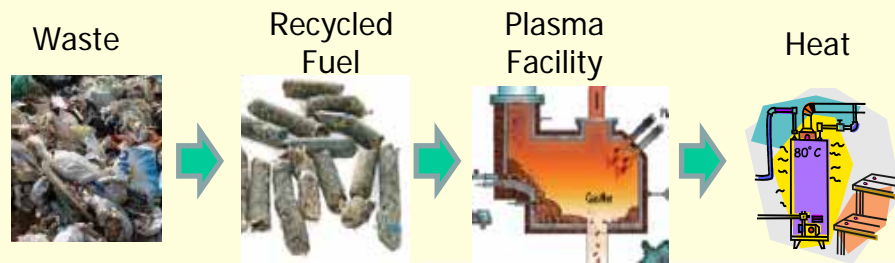


# PPP example: Yeoncheon, Republic of Korea

## Yeoncheon County and GS Platech

Supply clean energy from waste to the industrial park at the lower price than conventional fossil fuels

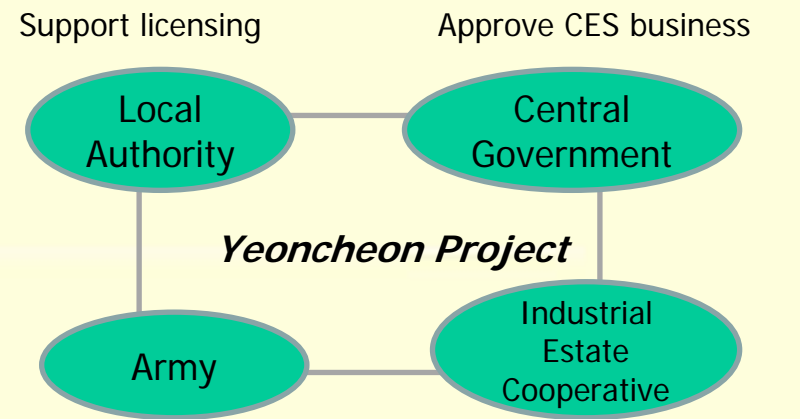
### Yeoncheon Project



- ❑ Supply thermal energy(Steam) to small fabric manufactures in Yeoncheon industrial park utilizing recycled plastic waste
  - Lower price of steam with 80% of fossil fuel
- ❑ Features of facilities
  - Steam 35ton/h (RPF 110 ton/day)
  - Operate eco-friendly by minimizing air pollutants compared with existing RPF boilers

Source: Presentation by Mr. Soon Mo, GS Platech, at the Special IPLA Event for Moving Towards Zero Waste for Green Economy, Daegu, Korea, 17 October 2011

### Public-Private Partnership



Support licensing      Approve CES business

Approve building facilities in a zone of operations      Organize interested parties through occupants

- ❑ Project goes through Private's Investment and Public's active cooperation.
- ❑ Improving cost competitiveness through supplying eco-friendly low cost energy from waste





# PPP example: Delhi, India

## Municipal Corporation of Delhi (MCD) and IL&FS

In May 2007, IL&FS signed a Concession Agreement with Municipal Corporation of Delhi (MCD) to revive establish, finance, design, construct, operate and maintain the compost plant at Okhla as a pilot project.

Plant Capacity: 200 TPD of MSW

Compost production: 40-44 TPD

Technology: Open windrow aerobic composting

Term period: 25 years

Sources of revenue: selling of compost & carbon credits



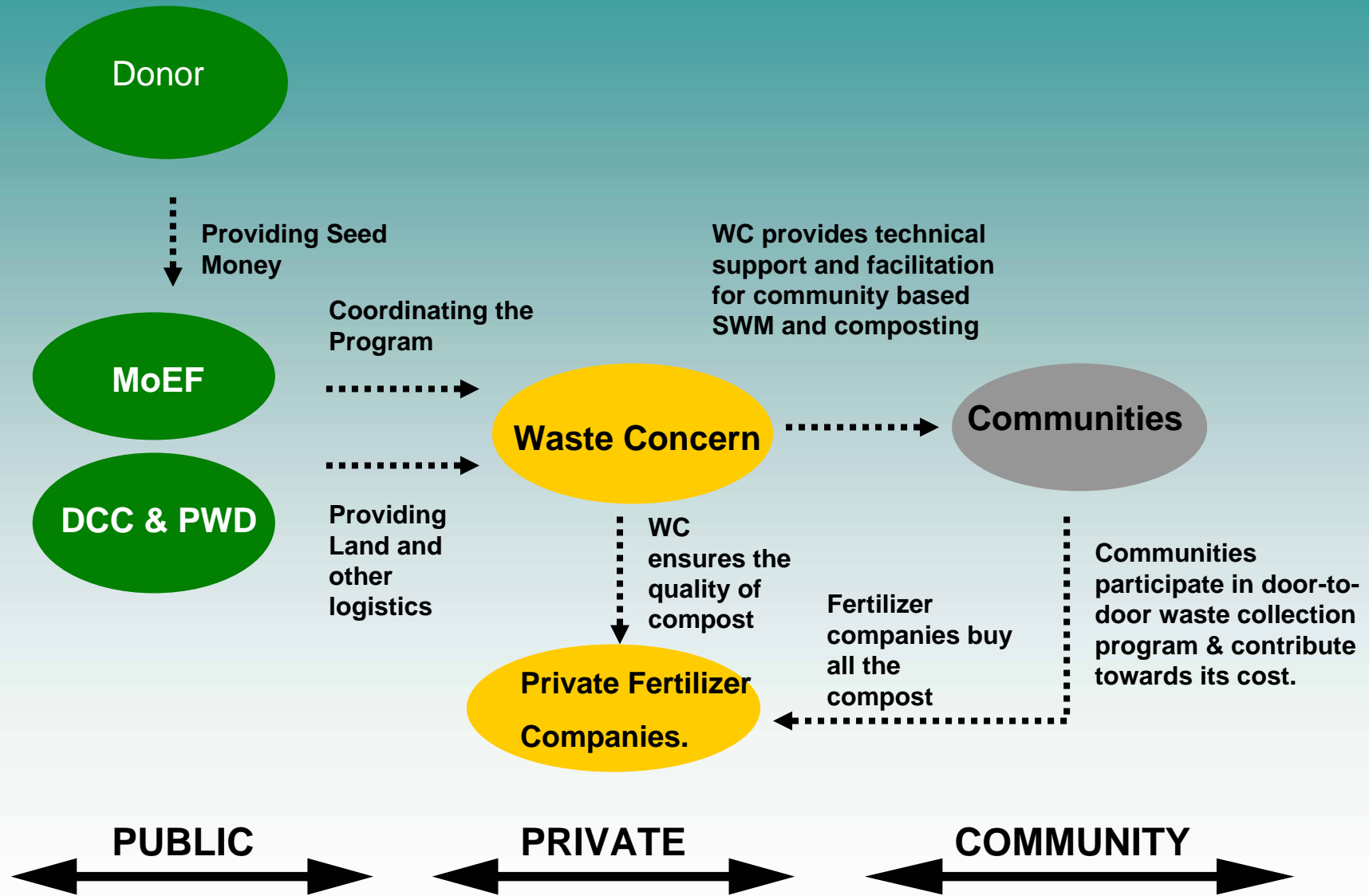
Infrastructure Leasing & Financial Services Limited (IL&FS)

- Infrastructure development and finance companies headquartered in Mumbai, India

Information source: Presentation on Solid Waste Management in Delhi by Mr. Arun Kumar, SE, MCD, INDIA, at the Japanese Venous Industries Forum, Tokyo, 31 January 2012



# PPP MODEL: CASE FOR COMMUNITY BASED COMPOSTING IN Dhaka, BANGLADESH



# PPP example: Biratnagar Municipality, Nepal

## UNDP project on managing solid waste through PPP

Municipal governments in Nepal were solely responsible for all waste management that were limited to street sweeping, household waste collection and waste disposal.



In 1997, the private sector's involvement (BMC-Siltes) was introduced to the city of Biratnagar.



SWM in the city has progressed to involve a variety of methods including:

- Door-to-door collection
- Waste reduction using by-products like briquettes
- Composting green waste
- Resource recovery
- Awareness raising regarding the need and benefits of reducing and reusing waste



Source: UNDP

The project was in line with the goals set in the National Planning Commission's Three Year Interim Plan (2007-10) that aims to provide water and sanitation services to improve the standard of basic services for un-served poor communities.

Information source: UNDP (2010)

[http://www.undp.org/pppsd/files/Project%20Library\\_Stories%20from%20the%20Field\\_Nepal\\_Biratnagar.pdf](http://www.undp.org/pppsd/files/Project%20Library_Stories%20from%20the%20Field_Nepal_Biratnagar.pdf)

