



**IPLA – Objectives, Activities, and Call for Private Sectors
to join Boras Declaration for Moving Towards Resource
Efficient and Zero Waste Societies**

2014 IPLA EUROPE FORUM

7-8 May 2014,

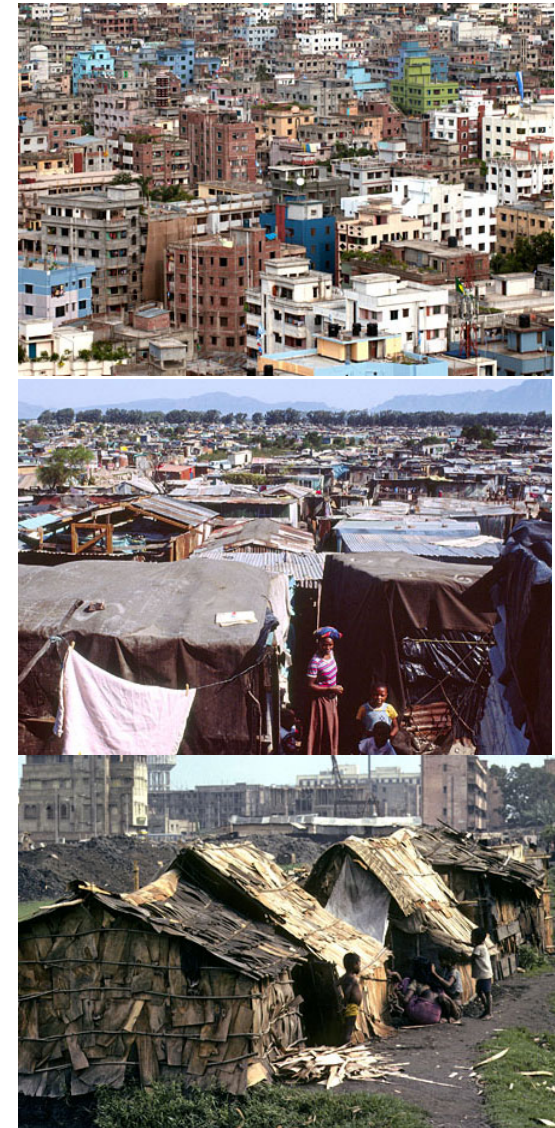
International Congress Centre (ICM), IFAT 2014, Messe Munich

**Choudhury Rudra Charan Mohanty
Environment Programme Coordinator, UNCRD**

Shared issues & challenges - urbanization trend and its impacts

Facts and figures

- ✓ Today > 50% of the world population already live in cities & urban areas; expected to be > 70% by 2050, with almost all the growth occurring in the developing world.
- ✓ 95 per cent of urban expansion in the next four decades will take place in developing world, with Asia and African alone contributing > 86%.
- ✓ Over next four decades, Africa's urban population will soar from 414 million to over 1.2 billion & Asia from 1.9 billion to 3.3 billion
- ✓ Over the next four decades, India will add another 497 million to its urban population, China – 341 million, Nigeria – 200 million, the US – 103 million, and Indonesia – 92 million
- ✓ 828 million people live in slums today and the number keeps rising.
- ✓ The world's cities occupy just 2 per cent of the Earth's land, but account for 60-80 per cent of energy consumption, 75 per cent of carbon emissions, approximately 70% of global GDP, & consume 70% of all resources.
- ✓ Rapid urbanization is exerting pressure on fresh water supplies, sewage, the living environment, and public health.



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Challenges faced by Local Authorities (LAs)

Generation of wastes – one of the most important by products of an unsustainable urban life style and consumption:

- Currently world cities generate about 1.3 billion tons of solid waste per year; the volume is expected to increase to 2.2 billion by 2025
- Globally solid waste management costs will increase from today's annual US\$205.4 billion to about US\$375.5 billion in 2025



(Data Source: World Bank, 2012)

2002	2.9 billion urban residents	0.64 kg/capita/day of MSW generation (total = .68 billion tons / year)
2012	3 billion urban residents	1.2 kg/capita/day of MSW generation (total = 1.3 billion tons/year)
2025	4.3 billion urban residents	1.42 kg/capita/day of MSW generation (total = 2.2 billion tons/ year)

- 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.



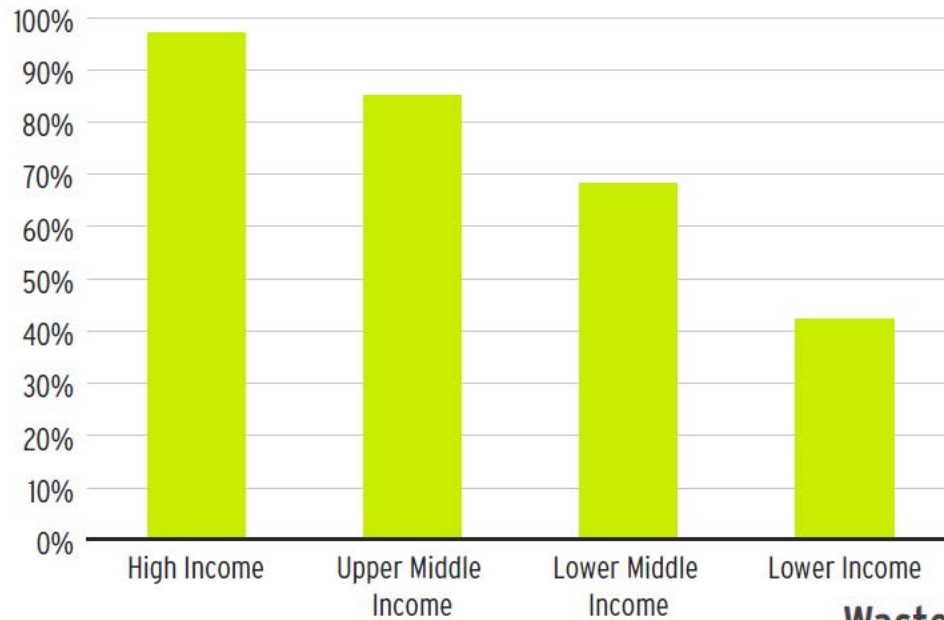
“Moving towards zero waste is inherently a multi-stakeholder process which calls for partnerships within and between communities, businesses, industries, and all levels of government.”

Source: C... and Veolia Environmental Services (2006), OECD (2010), and UNH... (2010).

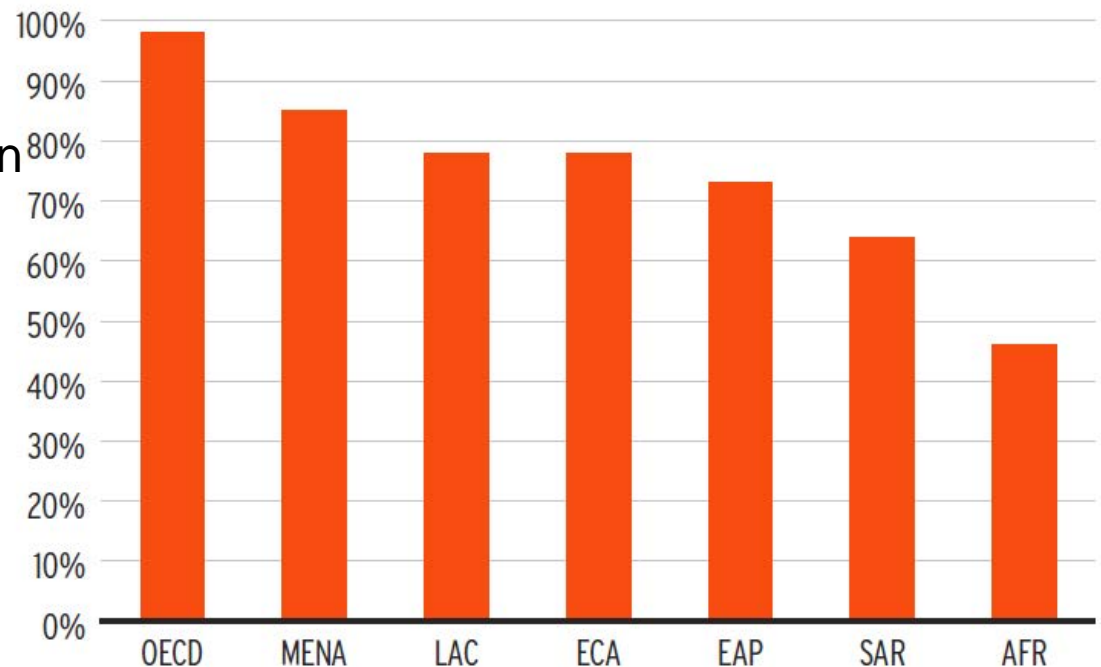
Waste Generation Projections for 2025 by Region

Region	Current Available Data			Projections for 2025			
	Total Urban Population (millions)	Urban Waste Generation		Projected Population		Projected Urban Waste	
		Per Capita (kg/capita/day)	Total (tons/day)	Total Population (millions)	Urban Population (millions)	Per Capita (kg/capita/day)	Total (tons/day)
Sub-Saharan Africa	260	0.65	169,119	1,152	518	0.85	441,840
East Asia and the Pacific	777	0.95	738,958	2,124	1,229	1.5	1,865,379
Europe and Central Asia	227	1.1	254,389	339	239	1.5	354,810
Latin America and Caribbean	399	1.1	437,545	681	466	1.6	728,392
Middle East and North Africa	162	1.1	173,545	379	257	1.43	369,320
OECD	729	2.2	1,566,286	1,031	842	2.1	1,742,417
South Asia	426	0.45	192,410	1,938	734	0.77	567,545
Total	2980	1.2	3,532,252	7,644	4,285	1.4	6,069,703

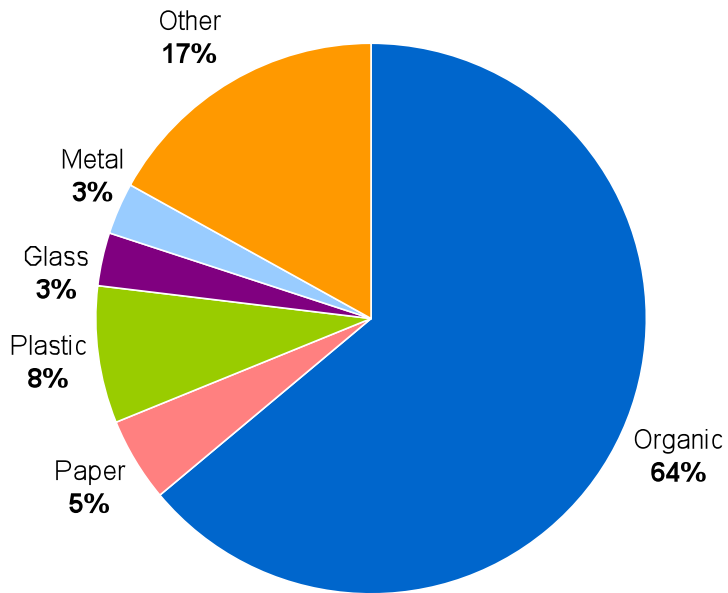
Waste Collection Rates by Income



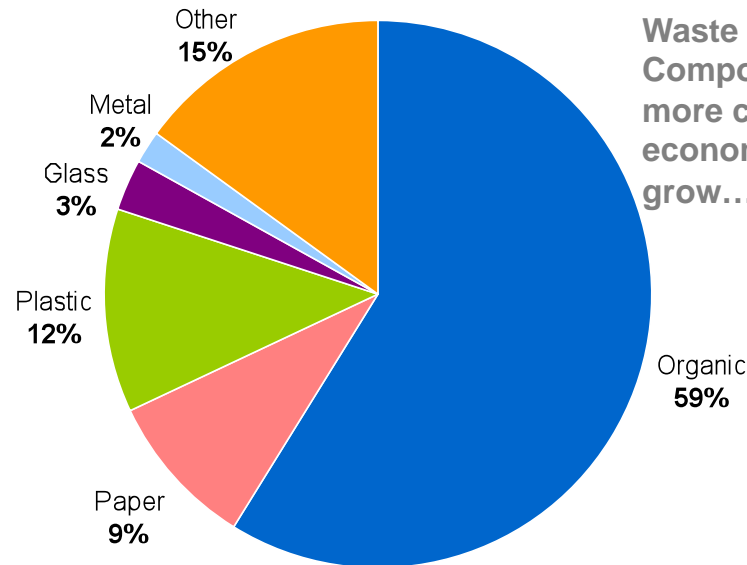
Waste Collection Rates by Region



EAP: East Asia and the Pacific
LAC: Latin America and the Caribbean
ECA: Europe and Central Asia
MENA: Middle East and North Africa
SAR: South Asia
AFR: Sub-Saharan Africa



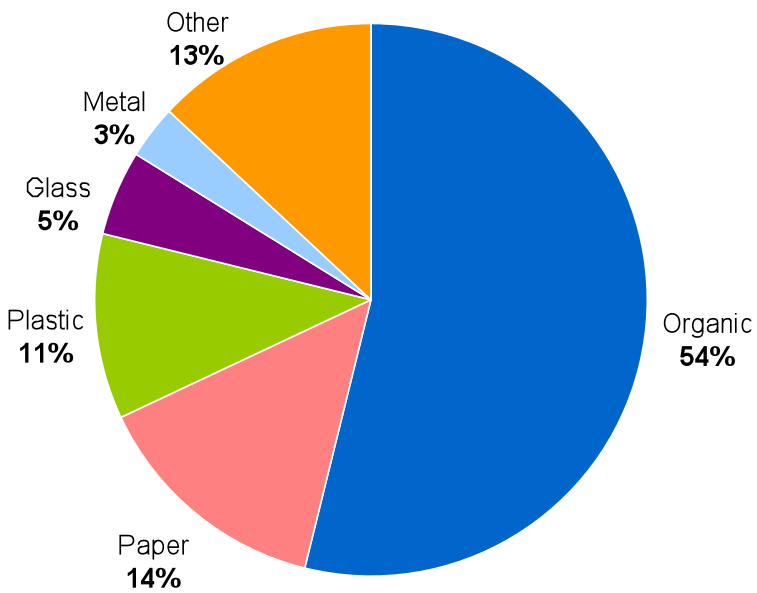
Waste Composition in Low-Income Countries



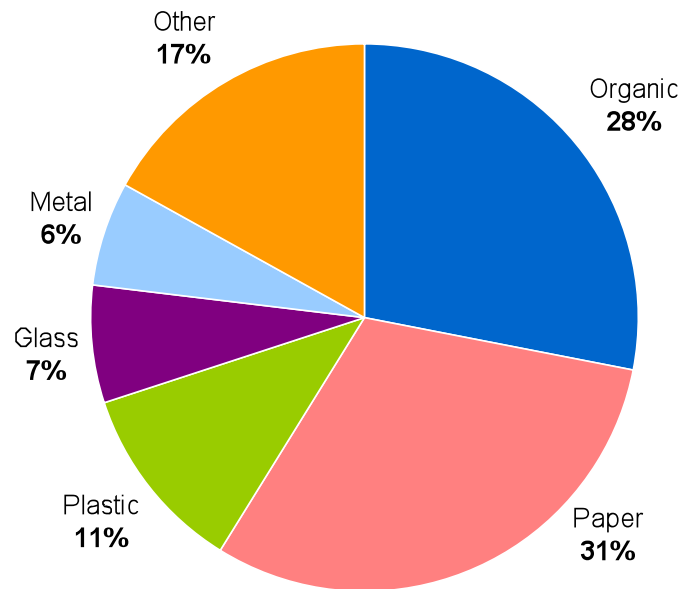
Waste Composition in Lower Middle-Income Countries

Waste Composition by Income - Composition of waste becomes more complicated as the countries economically & industrially grow.....

- New emerging waste streams such as **e-waste, and industrial wastes (including hazardous waste construction and demolition waste, end-of-life vehicles, healthcare waste, etc.)** further compound the pressure to the local environment....

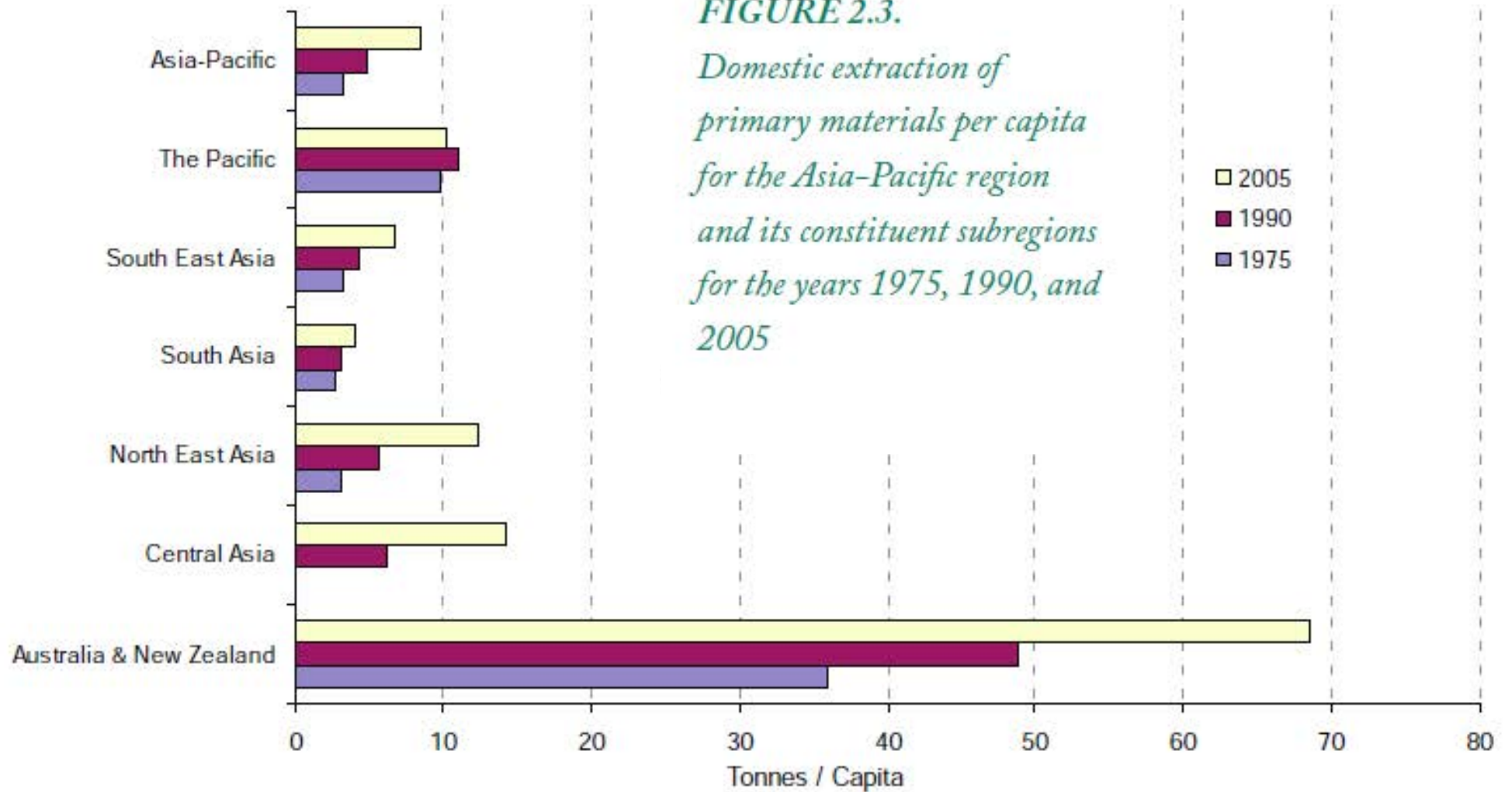


Waste Composition in Upper Middle-Income Countries



Waste Composition in High-Income Countries

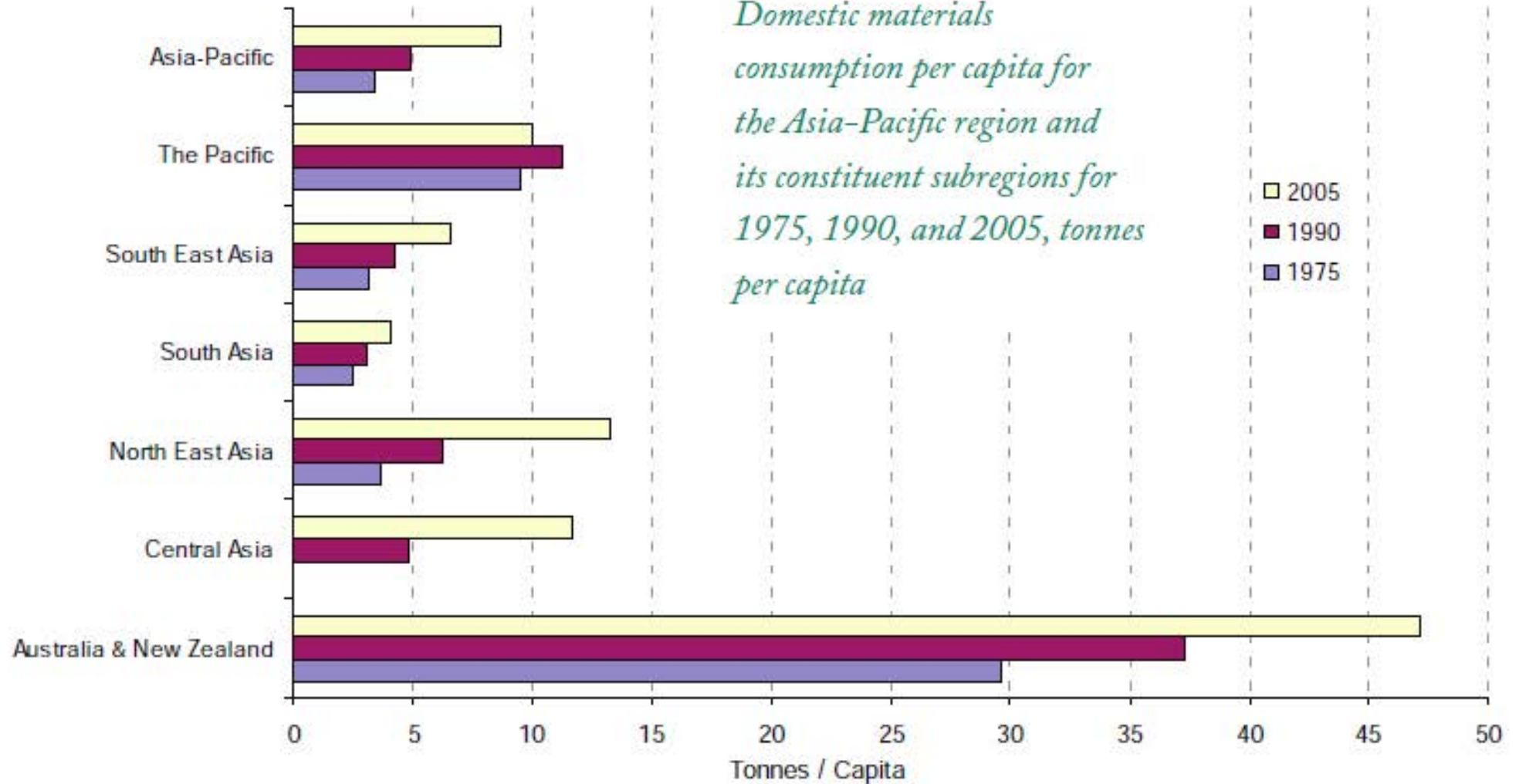
FIGURE 2.3.
*Domestic extraction of
 primary materials per capita
 for the Asia-Pacific region
 and its constituent subregions
 for the years 1975, 1990, and
 2005*



Source: Resource Efficiency: Economics and Outlook for Asia and the Pacific (UNEP, CSIRO, 2011)

FIGURE 2.5.

*Domestic materials
consumption per capita for
the Asia-Pacific region and
its constituent subregions for
1975, 1990, and 2005, tonnes
per capita*



Source: Resource Efficiency: Economics and Outlook for Asia and the Pacific (UNEP, CSIRO, 2011)

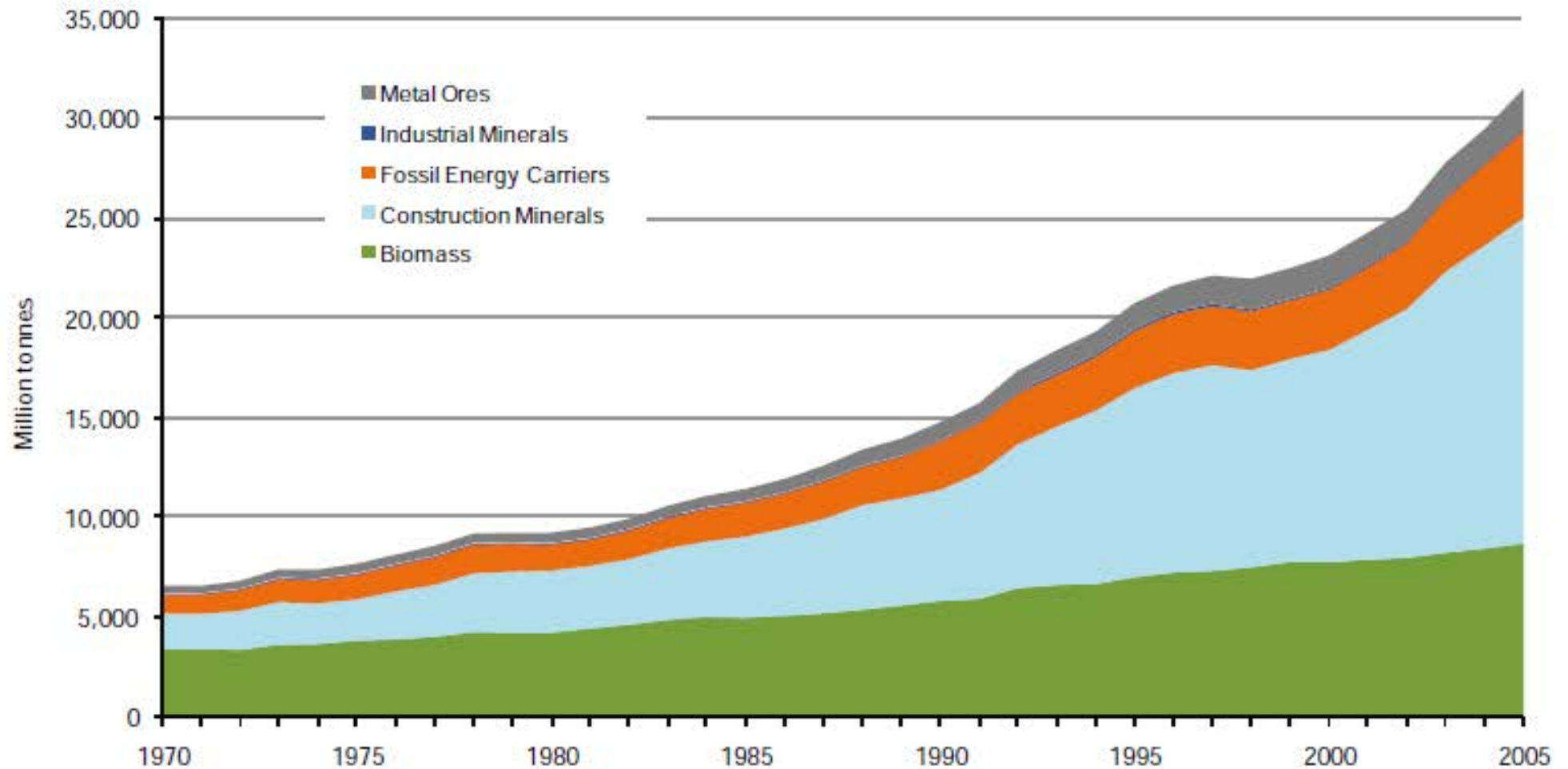
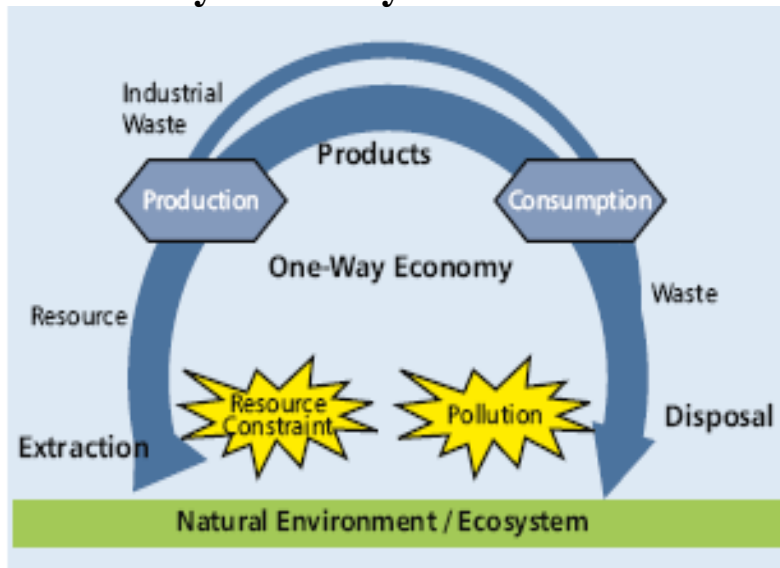


FIGURE 2.6.
*Domestic extraction in the
 Asia-Pacific region by major
 category of material for the
 years 1970–2005*

Source: Resource Efficiency: Economics and Outlook for Asia and the Pacific (UNEP, CSIRO, 2011)

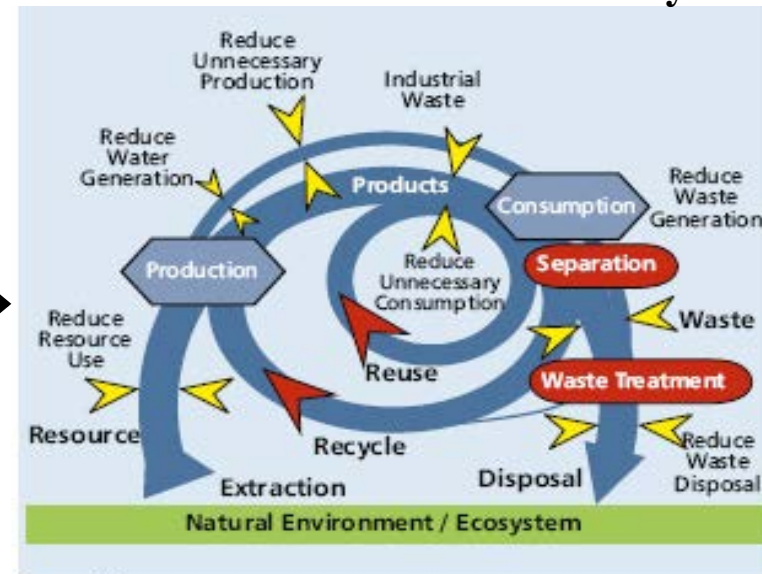
It will be a big challenge to establish a resource efficient society as urbanization & industrialization continue to grow in parallel...

1. One-way Economy?



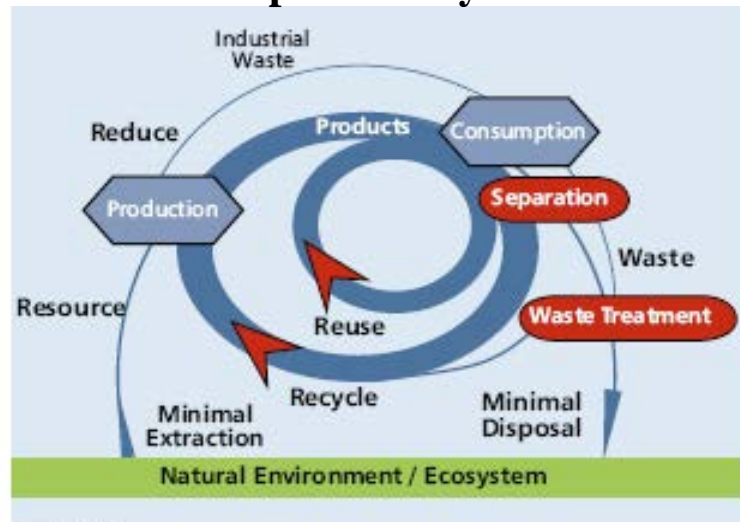
Source: ADB.

2. More resource efficient economy?



Source: ADB.

3. Closed Loop Economy?



Source: ADB.

Resource efficiency => minimize per unit product or services

- Raw material input ↓
- Water input ↓
- Energy input ↓
- Emission, pollution, waste generation ↓

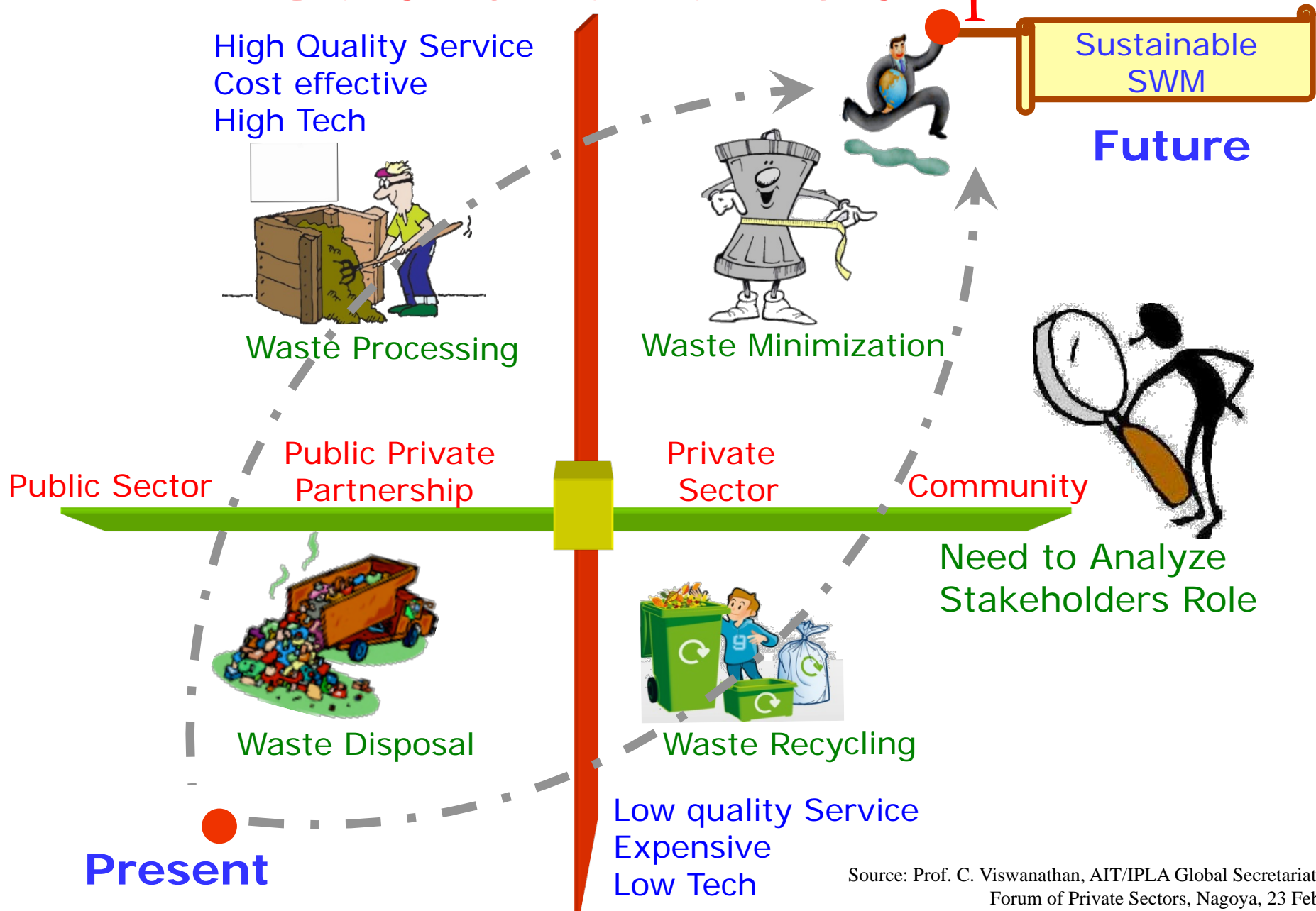
Rio+20 Outcome – The Future We Want

In the “Future We Want”, the States call for:

- **Increasing resource efficiency and reduction of waste** to achieve green economy in the context of sustainable development and poverty eradication to enhance the ability to manage natural resources sustainably and with lower negative environmental impacts
- **development and implementation of policies for resource efficiency** and environmentally sound waste management, including commitment to further **3Rs** as well as to increase energy recovery from waste with a view to managing the majority of global waste in an environmentally sound manner
- development and enforcement of comprehensive **national and local waste management policies, strategies, laws and regulations.**
- continued, new and innovative **public-private partnerships** among industry, governments, academia and other non-governmental stakeholders aiming to enhance **capacity and technology** for environmentally sound chemicals and waste management, including for **waste prevention**



Calls for a Partnership...



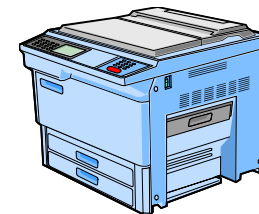
Source: Prof. C. Viswanathan, AIT/IPLA Global Secretariat, IPLA Forum of Private Sectors, Nagoya, 23 Feb 2012.

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, but also provides many business opportunities

- 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.



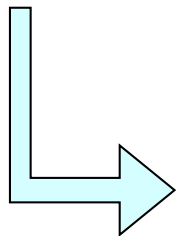
Selected World Trends on Human activities

– 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

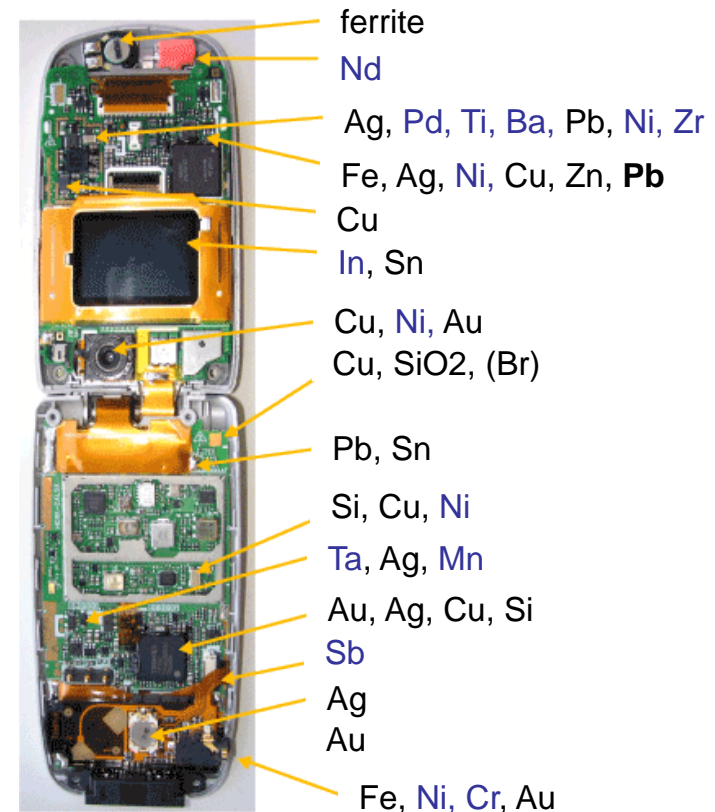
Source: U.S. Geological Survey. Mineral Commodity Summaries 2010.



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>



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





About IPLA

- Launched at the nineteenth session of the United Nations Commission on Sustainable Development (CSD-19) held in New York in May 2011, and subsequently became a Rio +20 partnership in June 2012.
- Aims to foster partnerships which address various needs of **local authorities (LAs)** in achieving sustainable waste management.
- Serve as a **dynamic knowledge platform** and a **decentralized network** among LAs, the private sector, NGOs, academic & research institutions, international organizations, UN agencies, etc.
- Support LAs in moving towards **zero waste** and **resource efficient** societies, ultimately achieving **sustainable and resilient cities**.

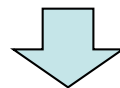


RIO+20
United Nations Conference
on Sustainable Development

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. Waste disposal is expensive – financially and in lost resources (substantial inputs of labour, material, energy, land resources for land filling, etc.)
- **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** (PPP) are indispensable for creating and financing adaptation measures towards resilient cities which in turn are more attractive for private investments.
- **Partnerships** provide 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.



Shifting the roles of 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 actual day-to-day operation.

Each stakeholder can play very important role in promoting zero waste

National Government	Develop policies, programs, and institutions, innovative financing for resource efficiency / 3R infrastructures (eco-towns, eco-industrial parks, R&D facilities (Environment, 3Rs, Nano-Technology, IT, Biotechnology) etc.), create conducive policy framework to encourage PPPs, capacity building programs/facilities for SMEs, awareness programme for citizens, green procurement, develop and institute EPR system, foster triangular cooperation (government-private/industry-R&D/Universities) for , circular economic approach, green growth, technology transfer, information clearing house, etc.
Local Government	Integrate resource efficiency in urban development policy and strategy (energy, transport, water, industry), innovative financing for resource efficient infrastructure (eco-towns, eco-industrial parks, R&D facilities, etc.), realize PPPs, awareness programs for citizens, green procurement
Private / Industry Sector	Develop strategies to commercialize 3Rs, Environmental performance reporting, R&D (3R technologies, green products, waste recycling, waste exchange, green purchasing, PPP, in-house capacity building programs, CSR,
Banks / Financial institutions	Investment/loan schemes for eco-town projects and green industries
Scientific and Research Institutions / Universities	Provide back up for science based policy making at government level, develop dedicated R&D projects on resource efficiency/3Rs in collaboration with government and business/industry sector, create human resources and experts in the field of resource efficiency/3Rs, look for international collaboration (University-University, University-Multi-national corporation), catalyst for decision makers, technology evaluation.
Citizens / NGOs	Promote green consumerism, community awareness raising on house-hold waste segregation and its contribution to resource efficiency/3Rs, knowledge dissemination

Source: C.R.C. Mohanty, 2012



Global, Regional, and Sub-Regional Secretariats



International Coordinating Secretariat



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



Global Secretariat



Sub-Regional Secretariat for Mashreq and Maghreb Countries



Regional Secretariat for Africa, Asia and Latin America



REGIONAL ENVIRONMENTAL CENTER

Sub-Regional Secretariat for Central and Eastern Europe



Sub-Regional Secretariat for South Asia



Sub-Regional Secretariat for the Caribbean SIDS



Sub-Regional Secretariat for the Pacific SIDS



Sub-Regional Secretariat for Russia and EurAsEC countries



Sub-Regional Secretariat for Southern Latin America



Sub-Regional Secretariat for Southern Africa



Sub-Regional Secretariat for Northern Latin America



Sub-Regional Secretariat for Western Africa

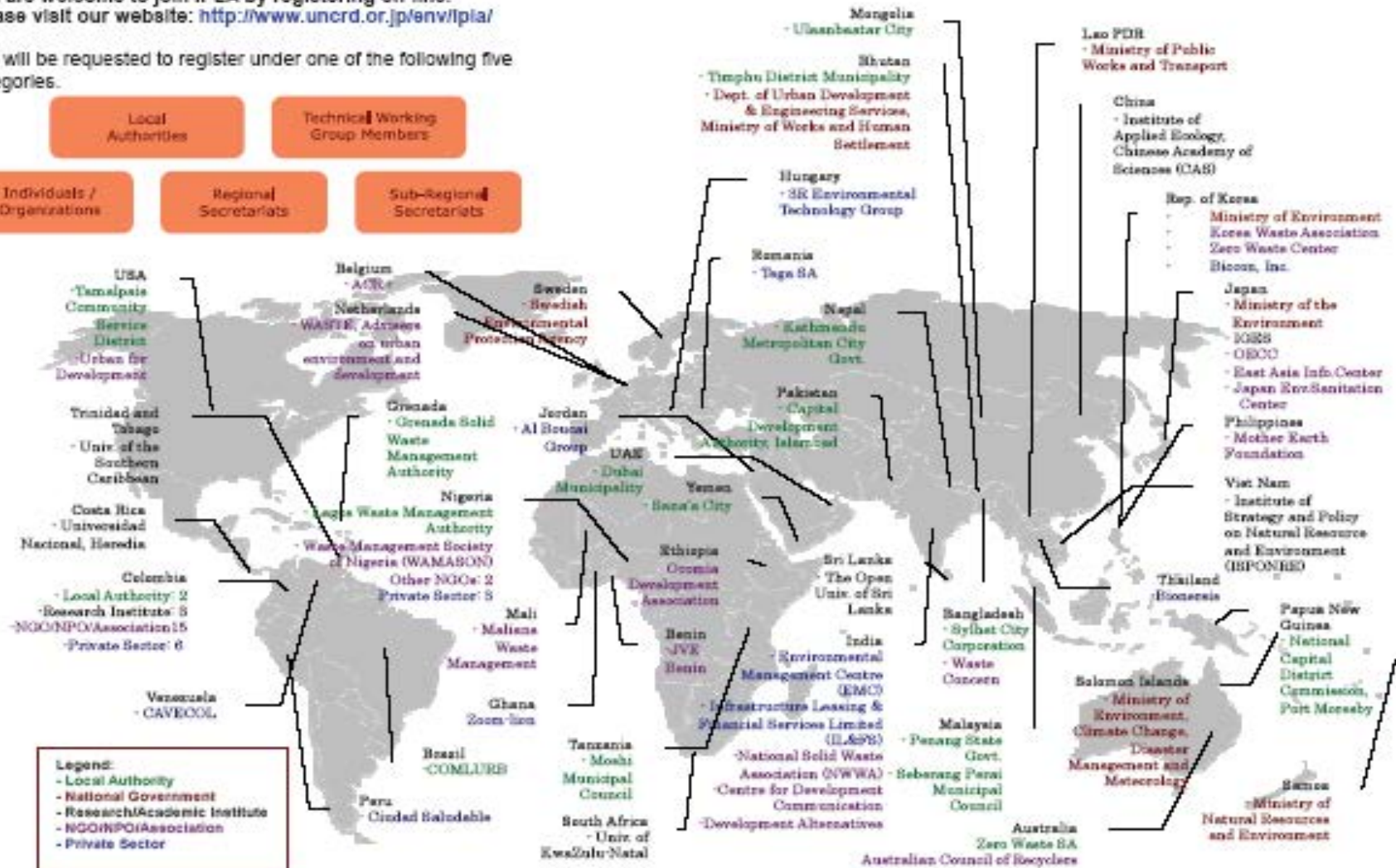


Official partners around the world (Around 240 members from 70 countries - as of March 2014)

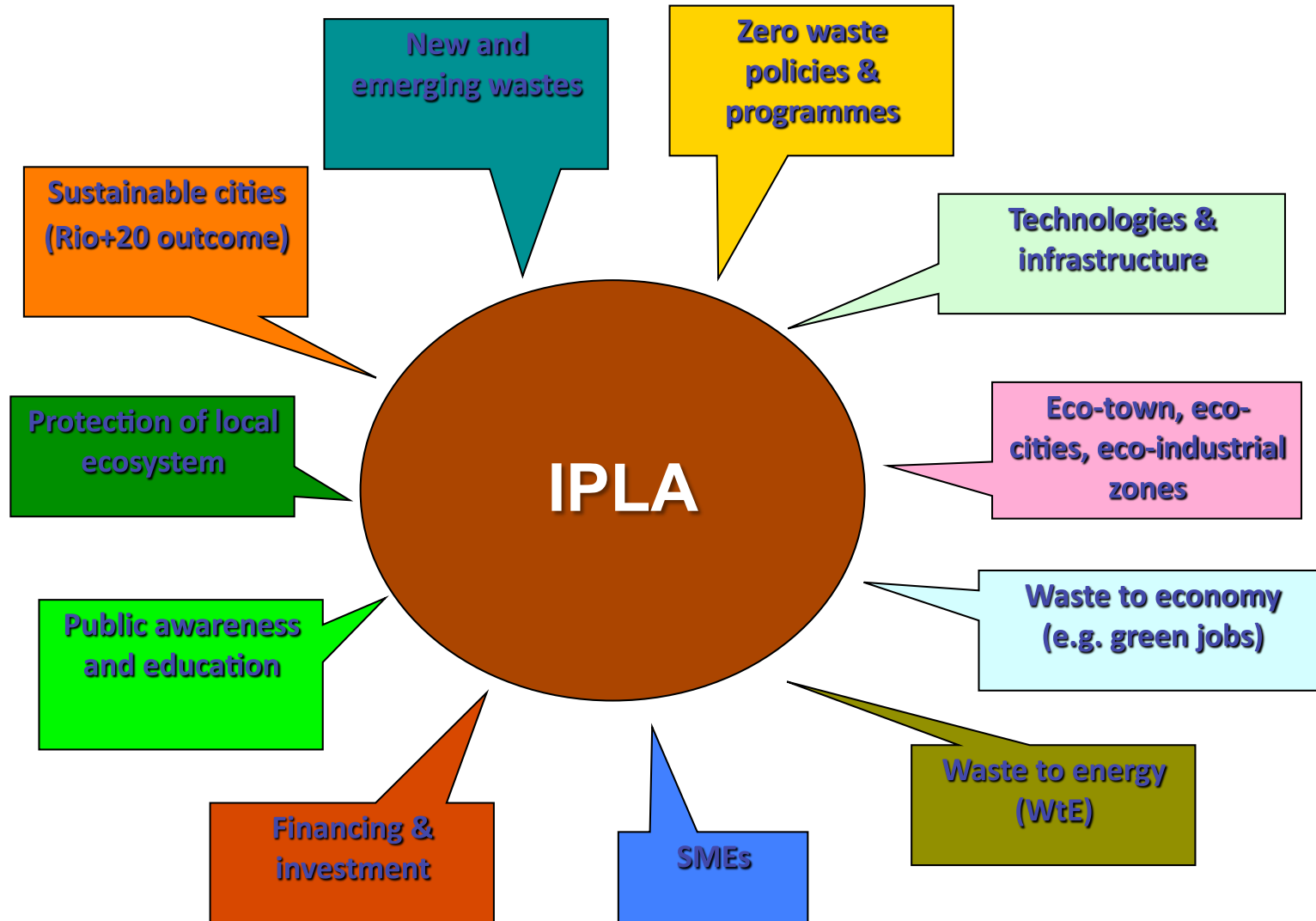
Registration for IPLA Membership

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

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



Thematic Areas and Issues



IPLA Portal: www.iplaportal.org

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Integrated Solid Waste Management



The goal of a Life Cycle Inventory (LCI) for solid waste is to be able to, as accurately as possible, predict the environmental burdens of an Integrated Waste Management system. The hierarchy has little scientific or technical basis. There is no scientific reason, for example, why materials recycling should always be preferred to energy recovery. The hierarchy is of little use when a combination of options is used, as in an IWM system. In an IWM system, the hierarchy cannot predict, for example, whether composting combined with incineration of the residues would be preferable to materials recycling plus landfilling of residues.

Marrakech | Morocco

Ratings: ★★★★★

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- 3Rs
- Decentralized Treatment
- Transport
- Treatment
- Disposal

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Displaying current activity on the International IPLA portal.

Total 2,141 results.

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565 Surveys
624 Discussions
715 Events



22 Jun 2012

★★★★★

New tender has been published by the Mumbai LA at this URL www.ehsdhfsd.com

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Mumbai | India



14 Jun 2012

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To understand waste segregation methods. Done for the Institute of Solid Waste Management Studies

Methods of segregation of waste

- Manual
- Employing machines

Munich | Germany



11 Jun 2012

★★★★★

Ekonnnect series

EVENT: Seminar on waste recycling
WHERE : Mumbai
WHEN : 06/21/2012 at 14:00:00
DETAILS : Waste management business models



05 Jun 2012

★★★★★

Waste Management Services
Links to profile of companies providing waste management services

Please Contribute your links here.

Municipal Solid Waste Treatment - Request for Qualification notice

18 Mar 2014

Municipal Solid Waste Treatment - Request for Qualification notice number.09/2013-14

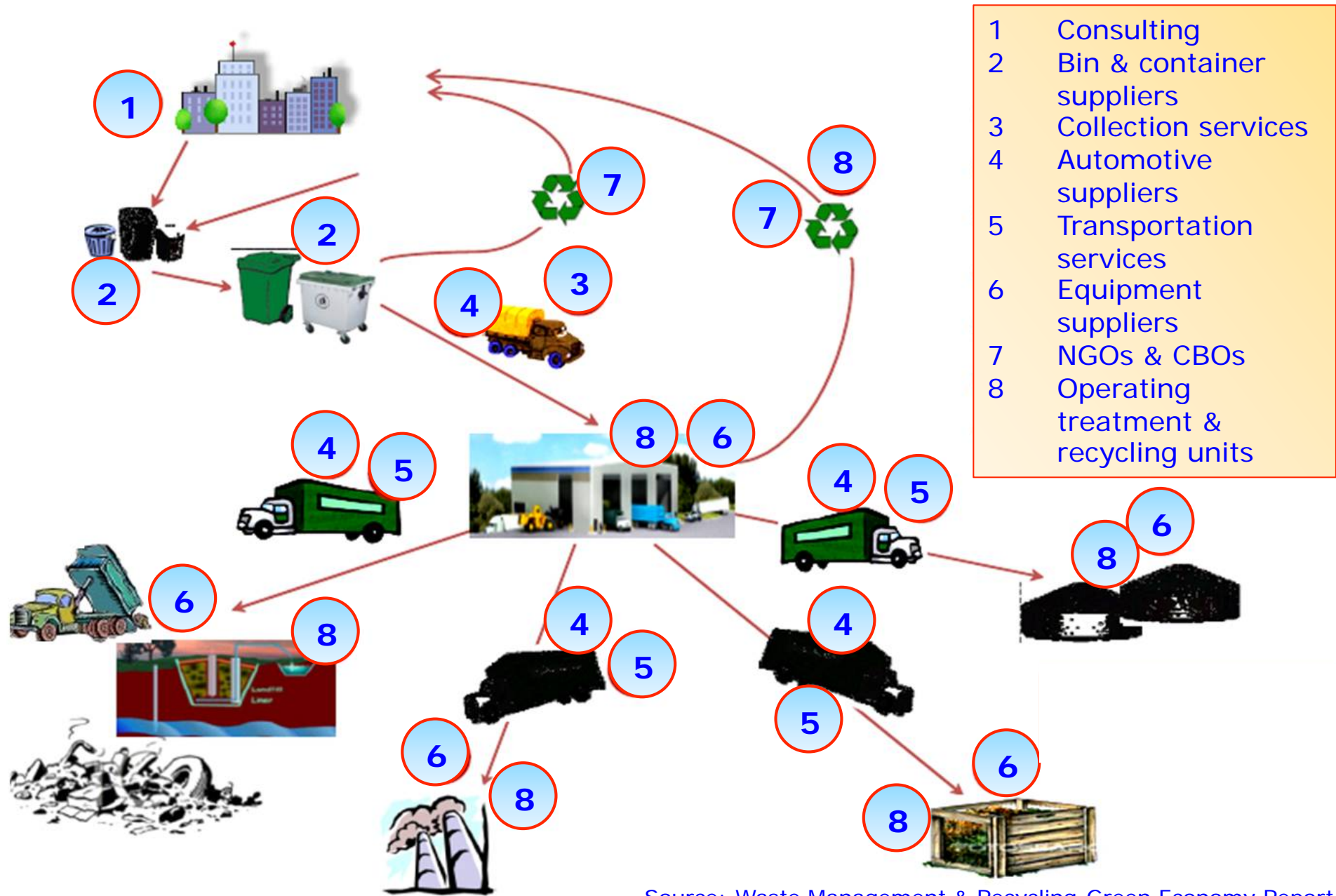
[Download Resource](#)

Ahmedabad Municipal Corporation invites the RFQ for treatment of mixed municipal solid waste (MSW) at ahmedabad on Design, Build, Finance, Own & Operate (DBFOO) basis for 30 years from reputed organization having experience in setting up, operating and maintaining minimum one MSW processing Plant with capacity of at least 250 TPD. Complete RFQ cum RFP details are available on AMC website www.egovamc.com. The last date for Submission of RFQ cum RFP is Dt.15/04/2014 up to 15.00 Hrs Link to view this document: <http://www.egovamc.com/tenders/tender.aspx?tenderid=6726>

Ahmedabad | India →

Prashant Pandya (Member)

Business Opportunities in SWM



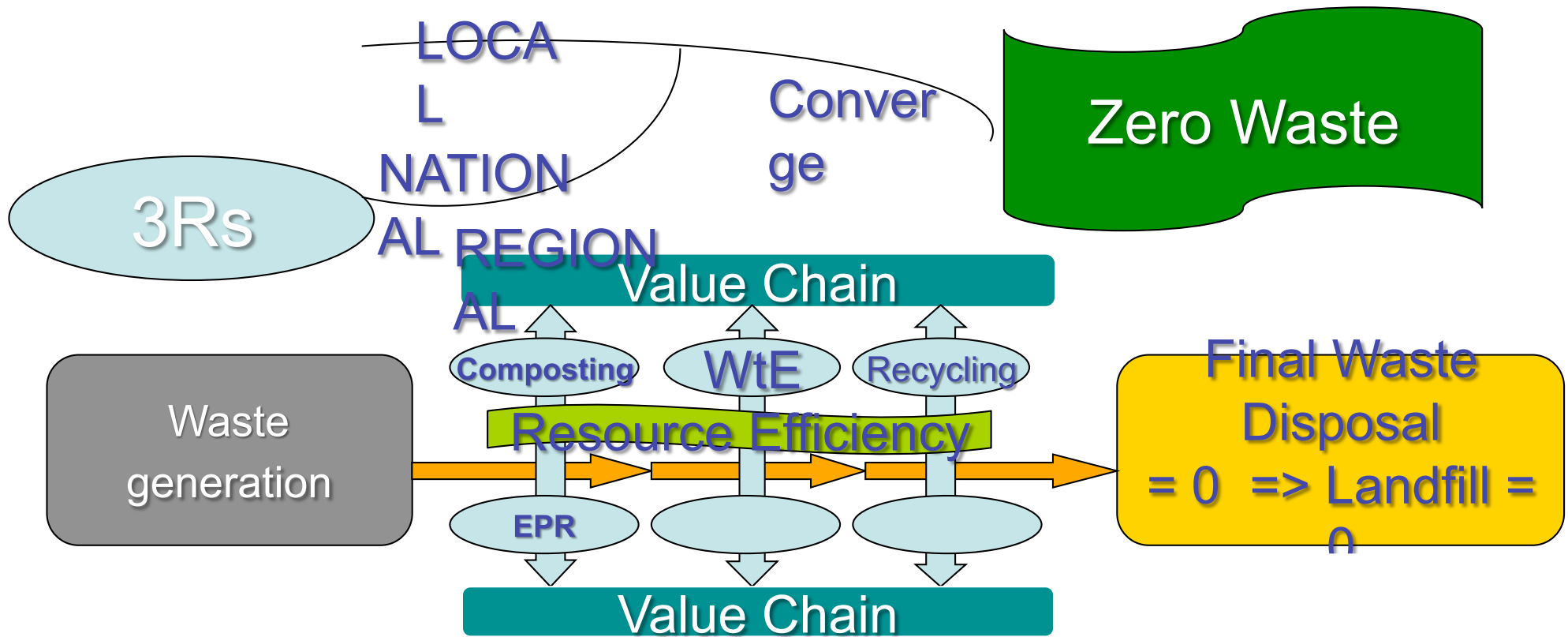
Source: Waste Management & Recycling-Green Economy Report

Moving Towards Zero Waste

- A vision that leads cities towards sustainable future

Zero waste is a long-term vision that ultimately envisages a thriving society that exists within nature's resource constraints and its ability to assimilate waste.

(Chair's Summary of the CSD19 Intersessional Conference on Building Partnerships for Moving Towards Zero Waste, 16-18 February 2011, Tokyo, Japan)





IPLA Global Forums 2011-2012

IPLA Special Event on “Moving towards Zero Waste for Green Economy – Role of Local Authorities”

- 17-18 October 2011, Daegu, Republic of Korea, co-organized by MOE-Korea and UNCRD

IPLA Global Forum 2012 on “Empowering Municipalities in Building a Zero Waste Society - A Vision for the post-Rio+20 Sustainable Urban Development”

- 5-6 September 2012, Seoul, Republic of Korea, co-organized by MOE-Korea and UNCRD



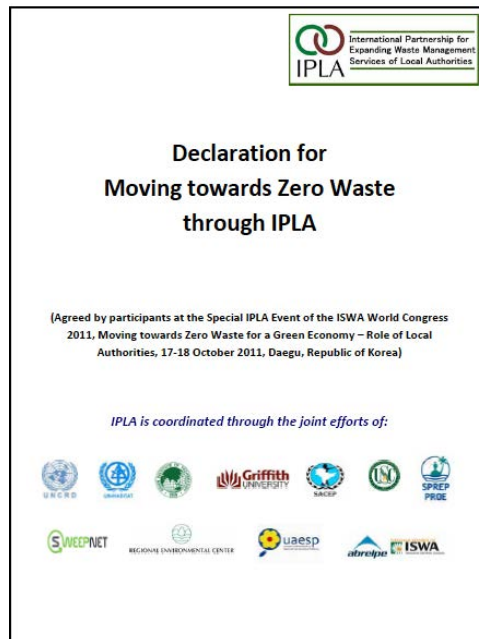
Declaration for Moving towards Zero Waste through IPLA

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;





Marrakech Declaration towards "Greening" the Waste Sector

May 2012, Marrakech, Morocco



Agreed at the SWEEP-Net 2nd Regional Forum on Economic and Ecological Potential of "Greening" the Waste Sector in the Middle East and North Africa Region

- Legal and institutional aspects of SWM
- Financial and investment aspects for "Greening" the waste sector
- Technical aspects
- Media and public awareness, communication, training and environmental education
- Social aspects
- International partnership of local councils in the Middle East and North Africa for the improvement of SWM services
- Development of networks and support of regional cooperation



IPLA forums in Latin America during 2011-2012

First IPLA Forum for Moving towards Zero Waste in Latin America

- Bogotá, Colombia, 17 August 2011

IPLA Forum on Waste Management in Urban Territories

- Lima, Peru, 26-28 October 2011

International Meeting Bogota Zero Waste: Towards a Culture of Utilization

- Bogota, Colombia, 29 February 2012

Forum to advance toward Zero Waste in Colombia

- Bogotá, Colombia, 23 August 2012,

Series of IPLA Forums in Latin America in 2011 and 2012 contributing to increasing motivation of Municipalities/ Mayors for moving towards resource efficient and

zero waste society (e.g., Bogotá City Administration (UAESP) is promoting zero waste strategy)



Side Event (on-site), 19 June 2012

Zero Waste Strategies and Actions towards Sustainable Cities

Organizers: ISWA, IPLA, ABRELPE, COMLURB, and UNCRD

Side Event (off-site), 22 June 2012

Waste Strategies and Actions towards Sustainable Cities

Organizers: IPLA, ISWA, Fiesp, ABRELPE, COMLURB, and UNCRD

Rio+20 Voluntary Commitments made by IPLA

<http://www.uncsd2012.org/index.php?page=view&type=1006&menu=153&nr=267>



RIO+20

United Nations Conference
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Road Map for Zero Waste Ahmedabad

- A Visionary Document to Guide Ahmedabad towards becoming

a 'Resource Efficient and Zero Waste City' by 2031

Road Map for Zero Waste Ahmedabad

- Consists of ten focal areas and thirty four strategic actions

Expected to serve as a visionary document that will guide AMC to:

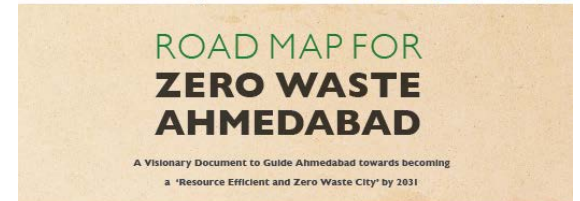
(i) introduce and implement necessary policies and strategies

(ii) sensitize citizens, businesses and industries in Ahmedabad to work together towards achieving a zero waste society.

- involving state government, educational institutions, NGOs, business and industries, community organization, etc.

Multi-stakeholder Consultation on Pre-final draft (Sep. 2012)

Official launch at the Vibrant Gujarat 2013 Seminar on Zero Waste – A Vision for 21st Century Cities, 12 January 2013, Ahmedabad



Jointly financed and commissioned by
Ahmedabad Municipal Corporation and United Nations Centre for Regional Development



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**International Partnership
of Local Authorities**

aaaa



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To understand waste segregation methods. Done for the Institute of Solid Waste Management Studies

Methods of segregation of waste

- Manual
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Munich | Germany



11 Jun 2012

★★★★★

Ekonnnect series

EVENT: Seminar on waste recycling
WHERE : Mumbai
WHEN : 06/21/2012 at 14:00:00
DETAILS : Waste management business models



05 Jun 2012

★★★★★

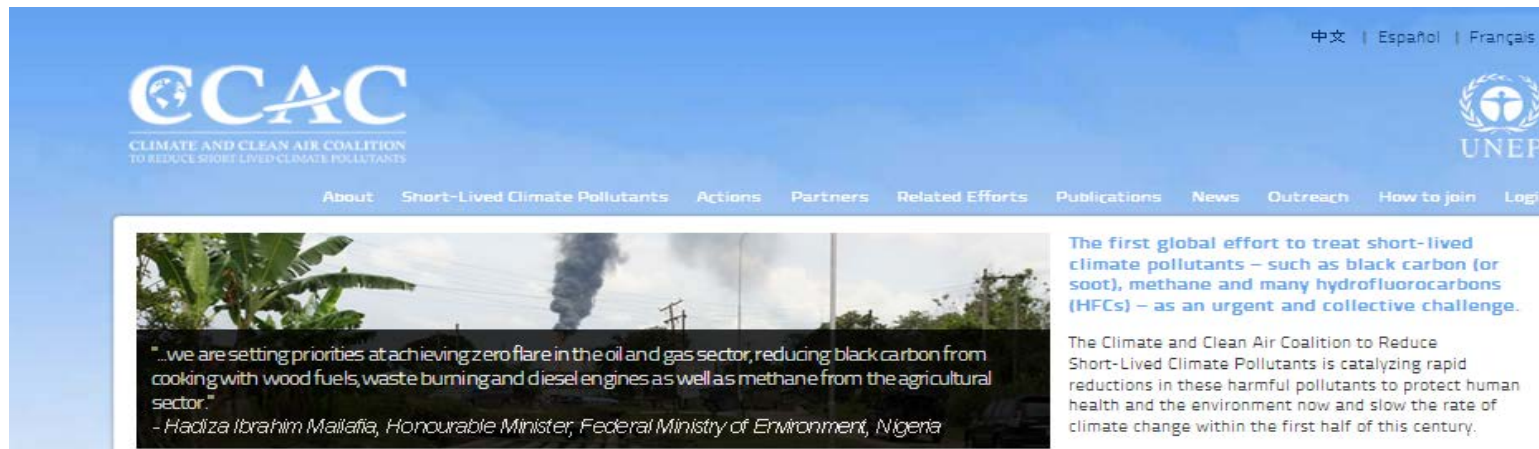
Waste Management Services

Links to profile of companies providing waste management services

Please Contribute your links here.

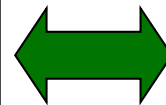


Collaboration with the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) Municipal Solid Waste Initiative (MSWI)



UNCRD has become an official actor of CCAC MSWI in September 2013.

This CCAC initiative will provide a catalyzing force to reduce emissions of short-lived climate pollutants across the municipal solid waste sector by providing and implementing a comprehensive collection of resources for cities, including technical assistance, information exchange, networking, and training.



- Support CCAC MSWI by utilizing its expanding network in providing knowledge networking support for scaling up of actions to reduce/mitigate SLCPs.

- Mobilize support of IPLA member cities/municipalities to contribute towards CCAC MSWI objectives.



IPLA Global Forum 2013 on Sustainable Waste Management for the 21st Century Cities - Building Sustainable and Resilient Cities through Partnership

City of Borås, Sweden, 9-11 September 2013

Borås Declaration of the Private Sector on Moving Towards Resource Efficient and Zero Waste Societies

- Acknowledge a number of benefits of PPP for both local authorities and the private sector.
- Express strong intention to contribute towards IPLA objectives.
- Call on a wide range of stakeholders to collaborate with the private sector in developing and implementing sustainable waste management projects.

Establishment of the IPLA Academic Consortium

- to help guide cities and municipalities to develop effective business models for cooperation (between public, private, and research and scientific institutions) and investment in waste management.



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Major Recommendations of 2013 IPLA Global Forum, Borås, Sweden, 9-11 September 2013

- Sustainable waste management is a critical necessity for realizing 21st century cities (Private Sector Declaration at Borås);
- Regional cooperation, including multilayer cooperation (inter-municipal, industry-industry, government-NGO, government-scientific-industry, etc.) as the basis for expanding waste services;
- PPP should be utilized for eco-innovation (e.g., Borås based business model for closed loop economy/zero land-filling);
- Cities need to introduce/consider social (health & labor) and environmental standards and regulations in the interest of informal sector workers;
- Waste management has strong nexus with resource management, value of biodiversity and ecosystem services;
- Solutions are not limited to technology alone, but a more conducive environment is needed, that allows better packaging and adoption of the technologies coupled with the best models for PPP and financing that create long-term benefits for all stakeholders. Supportive policy and regulation are also much needed to enable this.
- Central governments need to launch appropriate policies and programmes to help cities and municipalities to overcome major challenges and barriers in integrating resource efficiency and zero waste in overall city policy, planning, and development.
- establishment of an IPLA Academic Consortium, to help guide cities and municipalities to develop effective business models for cooperation (between public, private, and research and scientific institutions) & investment in waste management.



IPLA Global Forum in São Paulo, Brazil, Sep 2014

**The City of São Paulo would host the
2014 IPLA Global Forum in São Paulo,
Brazil, in conjunction with the ISWA
World Congress in September 2014.**



IPLA Membership

- ❑ Primary beneficiaries are LAs, mainly (but not limited to) those in emerging and developing economies.
- ❑ 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.
- ❑ IPLA membership is fully free of charge or any fees

Register with IPLA : www.uncrd.or.jp/env/ipla/index_form.htm

For any inquiry about IPLA, please email: ipla@uncrd.or.jp