CSD-19 Learning Centre
“Synergizing Resource Efficiency with Informal Sector towards Sustainable Waste Management”
Co-organized by UNCRD & UN HABITAT

Informal Sector in Partnerships for Expanding Waste Management Services

Prasad Modak
Environmental Management Centre

9 May 2011
Structure of Presentation

• Global Issues in Waste Management
• Formal and Informal Sector
• Waste Market
• Informal Sector in Waste Industry
• Health and Safety Issues
• Economics Driving Informal Industry
• Models for Synergy – Case Studies
• Way Ahead
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 at Local Authorities (LAs)

Source: UNEP 2011

Prasad Modak, Environmental Management Centre
Global Issues in Waste Management

- Poor segregation and collection
- Clandestine dumping, open burning & informal recycling
- Deficient waste management infrastructure
- Poor understanding of innovative institutional models and financing mechanisms
- Inadequate enforcement
- Less stakeholder involvement
- Economic value of waste not fully understood as a resource

Photo Courtesy: GYSD 2009, Basel Action Network 2001

Prasad Modak, Environmental Management Centre
Newer Waste Streams

E-waste
- Routinely exported by developed countries to developing ones
- Total e-waste generated worldwide has increased from 6 million metric tonnes in 1998 to 20 to 50 million metric tonnes in 2005

C&D waste
- 10-15% of total waste in developed countries
- High volume waste with relatively low impact as compared to other types of waste.

EoLV waste
- 8-9 million tonnes of waste in EU
- 0.7 million tonnes from Japan

Prasad Modak, Environmental Management Centre
Formal and Informal Sector

Formal and Informal Sector
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

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

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of informal waste collectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>10 million</td>
</tr>
<tr>
<td>India</td>
<td>Over 1 million</td>
</tr>
<tr>
<td>Brazil</td>
<td>Half a million</td>
</tr>
</tbody>
</table>
Economics driving the informal industry

- Cost of recycling is cheaper via informal sector – especially in developing countries
- Minimal or no cost spent on health, safety and environmental safeguards
- Informal refuse collectors in Mexico city earn 7 times the minimum wage!
- In Beijing, some scavengers earn more than college professors!
Barriers and Concerns

- Poor health and safety standards
- Lack of education, training and professional skills
- No access to technology
- Often belong to poorer sections of the society
- Marginalized groups - outcasts, immigrants, minority communities
- Not supported by the government
- Little access to financing
- Susceptible to volatility of the waste market
Health and Safety Issues

Mexican dump scavengers have a life expectancy of 39 years, while that of the general population is 67 years!

- Informal workers often malnourished
- Suffer from general weakness, back aches, coughs, injuries, eye problems, diarrhea, skin diseases
- Respiratory and dermatological problems, eye infections and low life expectancy are common

Steps to Formalize

• Provision for legislations related to manual labor to be applicable for the recycling industry, including regulations related to
  o Industrial relations, Wages
  o Equality and Empowerment of Women
  o Social Security
  o Labor Welfare
  o Accidents, Injuries and Insurance

• Mandatory registration and authorization of small-time and large scale scrap dealers and traders
Supporting Mechanisms

• Ensure benefit sharing between formalized waste pickers and other stakeholders through policy/ institutional measures

• Encourage technological innovation for recycling

• Introducing financial mechanisms to motivate the growth of organized recycling industry. This can include,
  o Soft financing such as providing loans at low interest rates and other concessions
  o Fiscal Incentives, subsidies and depreciation incentives
  o Efficiency dependant taxation

• Encourage communities and industries to recycle waste only through registered formal recyclers
Models for Formalizing

- Cooperatives
- Microenterprises
- Through Public-Public and Public-Private Partnerships

COLUMBIAN CITIES
Municipalities provide infrastructure through PPP and waste collectors

BRAZIL
- 500 waste cooperatives
- 60,000 members

MUMBAI, INDIA
- 400 micro enterprises
- >30,000 members

Prasad Modak, Environmental Management Centre
Zabbaleen Environment and Development Program - Cairo, Egypt

- Zabbaleen, minority community in Cairo
- Informal waste picking from 1930s
- Zabbaleen Environment and Development Program in 1981
- Support from Ford Foundation, the World Bank, Oxfam and others
- Franchise system - paying a license fee to Cairo and Giza Cleansing and Beautification Authorities from 1990s
- Collecting US$ 0.3 to 0.6 fees directly from households
- Primary school, paper recycling project, weaving school, health centre, small industries project established

Two Zabbaleens can collect waste from 350 homes using a horse cart & can earn 3 times the average income of a person

Prasad Modak, Environmental Management Centre

Photo Courtesy: www.treehugger.com
Kagad Kach Patra Kashtakari Panchayat (KKPKP) - India

- Association of waste pickers founded in 1993 in Pune, India
- Secretariat of the National Alliance of Waste pickers in India
- Turnover of US$ 35000
- Works in partnership with municipality to extend services for door to door collection and recycling of segregated MSW
- 6266 members as of February 2007 - 80% women from socially backward communities.
- Annual membership fee – US$ 0.44, small monthly fee paid by households and businesses and the revenue from recycling meet the staff salary.
- Group insurance policies to cover accidental and natural deaths and disabilities, social security covers at an annual premium of US$ 1.55 per member and medical insurance
Recycling Centre in Western Africa

- Recycling Centre in **Ouagadougou in Burkina Faso**
- Managed by 30 women, 2 technicians
- 2000 employees – come from poorest of Ouagadougou communities
- Earning US$69 per month

Special plastic mill provided by the Italian NGO LVIA to granulate plastic waste

Prasad Modak, Environmental Management Centre

Photo Courtesy: 2007 Andrea Micconi/LVIA, Courtesy of Photoshare
Green Exchange Program – South America

- In Green Exchange Program, food is given in exchange for recycled garbage
- Participation rate >70% of households
- 90% of residents recycle 2/3rd of waste daily
- School for children making toys from waste
- Recycling coordinated by workers who were ex-alcoholists and poor

Photo courtesy: http://www.marionkaplan.com/lib/mkbruc163.jpg

Prasad Modak, Environmental Management Centre

http://www.marionkaplan.com/lib/mkbruc163.jpg
Policy Support

**WEEE**
- Sets targets for recycling e-waste in EU, China, California (USA), Saskatchewan (Canada) and Ireland.

**Regulation for recycling batteries**
- EU, USA, Japan, India, Taiwan, Thailand, Turkey

**Voluntary criteria**
- Standard for recycled paper products in Australia, Germany (RAL-UZ 14), Hong Kong Green Label Scheme (GL-001-004), Ecomark in India
Regulatory and Market Instruments

- Take Back Programs
- Deposit Refund Systems

British Columbia Recycling Regulation 2004 -
- Left over paint returned at 100 depots operated by Product Care.
- Eco-fees or eco-taxes collected

- South Korea – Food containers, tires, batteries, lubricants, pesticide containers, and plastics
- Bottle bills in U.S
Way Ahead

• Case studies – More analytical work needed on Waste-Resource Economics and the Drivers

• Pilots that demonstrate Joint Models between Formal and Informal Waste Sectors

• Setting of Recycled Product Standards

• More work needed on CDM – especially on methodologies and Benefit Sharing

Prasad Modak, Environmental Management Centre
Revenue mechanisms such as CDM

• Recently introduced CDM-EB methodology for plastic recycle industry

• AMS-III.AJ- ‘Recovery and recycling of materials from solid wastes – Version 2.0

• Potential to share revenue from CDM with rag-pickers
Resource Efficiency, Informal Sector and Importance of Partnership

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

Low Resource Efficiency
- Low involvement of informal sector
- • 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
- High involvement of informal sector with partnerships
- • Mechanized segregation
- • Value addition for better income
- • PPP and other institutional arrangements to create green jobs

Prasad Modak, Environmental Management Centre

24
IPLA and its benefits

Enable networking between LAs and other supporting organizations on a global basis to

• Share experience
• Connect to all key stakeholders (including waste picker associations)
• Identify partners and appropriate financial mechanisms for appropriate waste management infrastructure
• Create a practice oriented knowledge platform
• Set benchmarks and good practices
• Influence policy frameworks and support laws and regulations

• IPLA will greatly assist in the strengthening the informal sector for more efficient resource management
Thank you

Questions?

pmodak@vsnl.com
www.emcentre.com