Low-carbon urban development in Asia, Africa and South-America: Contributions from Circular Economy
The CE concept

Source: IEA 2015.
European Commission
“…much brighter future for the European economy (...)”, “prospect of sustainable growth that will last (...)

ProgRess II
„Closing material cycles and preventing waste are key in attaining sustainable resource use.”

SDG 12.5 for waste reduction
“By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse”
The Circular Economy provides three different types of dividends:

**Economic Dividend**
- Innovation and reduced material and energy costs can generate competitive advantages for companies and regions.

**Ecological Dividend**
- Reduced consumption of resources and recycled waste in production reduce the environmental impact locally.

**Social Dividend**
- As a result of integrated product cycles, it is possible to reduce negative environmental impacts on the population and decouple economic growth from the use of resources.
Challenge 1: Closing urban dumpsites
3.5-4 billion people without access to controlled landfills

ISWA 2017: If the situation follows the business as usual scenario then dumpsites will account for 8-10% of the global anthropogenic GHG emissions by 2025.

“It’s about people, not about waste!”
Bo City, Sierra Leone

**Step 7:**
Keep itemised records of all service activities costs - and publicise it

**Step 8:**
Establish benchmark indicators and minimum service standards on how waste collection operators must provide services - and publicise them.

**Step 9:**
Enable the private sector (including the informal sector) to participate in service delivery. Utilise the minimum service standards to draft contracts and monitor and enforce in-house (public sector) and private sector operator activities.

**Step 1:**
Authorise a single disposal site (controlled dumpsite / landfill) - and publicise its location.

**Step 2:**
Provide resources to improve the site and ensure the disposal site is controlled and is not a dumpsite.

**Step 5:**
Know where community composting, recovered material markets, and recycling centres can be located - and publicise it.

**Step 4:**
Establish where community bins and waste transfer points will be located, ensure their collection - and publicise it.

**Step 3:**
Ensure all vehicles are properly maintained and operated, including designating vehicles to specific routes and times - and publicise this information.

09.10.2017
Henning Wilts
### Financial affordability of SWM

<table>
<thead>
<tr>
<th>Income Level</th>
<th>City SW budget per capita</th>
<th>City SW budget per capita as % of GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>$75 - 100+</td>
<td>range: 0.03 - 0.40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>average: 0.13 - 0.17%</td>
</tr>
<tr>
<td>Upper-middle</td>
<td>$33</td>
<td>range: 0.14 - 1.19%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>average: 0.6%</td>
</tr>
<tr>
<td>Lower-middle</td>
<td>$10</td>
<td>range: 0.40 - 1.22%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>average: 0.7%</td>
</tr>
<tr>
<td>Low</td>
<td>$1 - 4</td>
<td>range: 0.14 – 0.52%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>average: 0.3 - 0.9%</td>
</tr>
</tbody>
</table>

Challenge 2: A new plastics economy

Source: EMF 2016
Challenge 2: A new plastics economy

**PLASTICS PRODUCTION**

- **2014**
  - 311 MT

- **2050**
  - 1,124 MT

**RATIO OF PLASTICS TO FISH IN THE OCEAN** (BY WEIGHT)

- **2014**: 1:5
- **2050**: >1:1

**PLASTICS’ SHARE OF GLOBAL OIL CONSUMPTION**

- **2014**: 6%
- **2050**: 20%

**PLASTICS’ SHARE OF CARBON BUDGET**

- **2014**: 1%
- **2050**: 15%

Source: EMF 2016

Henning Wilts
Enabling sustainable plastic recycling in the informal sector: simple and effective methods to segregate plastics containing hazardous additives

Hazardous plastic additives include brominated flame retardants (BFRs) and heavy metals, exposure to which can have considerable health effects, such as cancer.
Challenge 3: Waste as a resource

http://www.symbiosis.dk
Eco-Industrial Parks, Vietnam

3 pilot Eco-Industrial Parks

<table>
<thead>
<tr>
<th>Industrial Park</th>
<th>Province</th>
<th>Total Nr. of registered enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khanh Phu</td>
<td>Ninh Binh</td>
<td>38</td>
</tr>
<tr>
<td>Hoa Khanh</td>
<td>Da Nang</td>
<td>205</td>
</tr>
<tr>
<td>Tra Noc 1</td>
<td>Can Tho</td>
<td>101</td>
</tr>
<tr>
<td>Tra Noc 2</td>
<td></td>
<td>46</td>
</tr>
</tbody>
</table>
Moving Industrial Zones towards Eco-Industrial Parks

- Identification of EIPs pilot projects
- EIP pilots in IPs and communities
- Capacity building on EIP
- Policy and guidelines to transform IPs into EIPs
- Monitoring and Evaluation
Thank you very much for your attention!

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