Promoting the 3Rs in Asia - regional cooperation on resource efficiency

Magnus Bengtsson
Manager
Waste Management and Resource Efficiency
Institute for Global Environmental Strategies
Outline

1. Policies for promoting Eco-Industrial Park (EIP) development
   *Reflections based on an earlier research project*

2. EIPs in the context of societal metabolism
   *Putting EIP development into a broader sustainability framework*

3. Strengthening Asian cooperation on policies for sustainable resource management
   *Presenting a new regional forum on the 3Rs (Reduce, Reuse, Recycle)*
1. EIP promotion – the role of policy
Industrial Ecology – A Historical Perspective

- Industrial Ecology and recycling of industrial waste is nothing new.
- There are numerous examples from the 19th and early 20th century of how industrial waste was recycled.
- Whole industries were formed around the processing of by-products into profitable consumer goods.

WHY DID THIS CHANGE?
Long-Term Trend of Resource Prices

Over the past 200 years natural resources have become cheaper

- Decreasing resource prices have made recycling unprofitable

Price of industrial commodities and energy, in constant dollars

Source: Ernst Ulrich von Weizsäcker
Industrial Symbiosis Emerges in Markets

• Companies are mainly driven by profit and react to price signals.

• Symbiotic relationships are based on social relations. Exchanges between companies are essentially market transactions.

• Governments cannot create symbiotic exchanges directly – their role is to create enabling market conditions under which industrial symbiosis is equal to business opportunities.
Resource Efficiency Requires Increasing Resource Prices

• The trend of decreasing resource prices needs to be broken – *if* we want to increase resource efficiency.

• **Environmental costs** related with all life-cycle stages of materials (extraction, manufacturing, use and post-consumer treatment) must be **fully internalised**.

• **Green tax reform** – lower taxes on labour, higher taxes on resources.
Reducing Transaction Costs

• However, price signals are not fully effective due to transaction costs.

• Governments have an important role in improving markets for by-products by reducing transaction costs.

• A few examples:
  – Investment subsidies, soft loans and tax breaks -> Higher return on investments
  – Matchmaking and information dissemination -> Reduced search costs
  – Quality grade standards and recommended prices -> Reduced “price discovery” costs
  – Public procurement -> Market creation, increasing economies of scale, decreasing resistance to products made from “waste”
Stimulating Market Dynamics

• Symbiosis requires investments and risk taking, and often innovation.

• **Not just a static matching** of supply and demand. Many kinds of waste are not readily useful as input to existing production processes, but innovation can find ways to generate value.

• Need to find a careful balance between:
  
  a. market stability (needed to attract investors within existing systems), and
  b. stimulus for industrial transformation and more radical systemic changes.
The Japanese Experience

- Lack of Land for Disposal
- Environmental Awareness
- Industrial Stagnation
- Governmental Support
- Economic Crisis
- Public-Private Partnerships

Success of Japanese Eco-towns
2. EIPs in the Context of Societal Metabolism
Need to Look Beyond Individual EIPs

• All EIPs are open systems exchanging energy and materials with the outside world.

• Focus should not be only on individual EIPs but on developing regional eco-industrial networks (REIN).

• Also long-distance symbiotic exchanges, including international exchanges, can be very important for resource efficiency.
EIP from a Broader Sustainability Perspective

• EIP and REIN can improve production systems, but sustainability requires fundamental changes not only in production, but also in consumption patterns.

• Need for complementary policies to transform whole consumption and production systems.
3. Strengthening Asian Cooperation
Regional 3R Forum in Asia

• Initiated by the Ministry of the Environment of Japan, UNCRD (UN Centre for Regional Development), ADB and IGES.

• A regional facility for improving regional coordination of 3R activities, and for strengthening 3R implementation.

• 18 countries and a number of organisations are invited.

• Inaugural meeting to be held in Tokyo 11-12 November 2009.
Goal and Objectives

The Goal:

To achieve *low carbon and sound material cycle societies in Asia* through facilitating bilateral and multilateral cooperation for increasing *resource and energy efficiency* through the 3Rs, and for promoting *environmentally sound management of wastes* in the region.

The Objectives:

(a) facilitate *high-level policy dialogues* on 3R issues, challenges, and opportunities;
(b) facilitate *improved dialogue and cooperation* with international organizations and donor communities;
(c) provide a *strategic and knowledge platform* for sharing experiences among Asian countries best practices, tools, technologies, and policy instruments;
(d) provide a platform to develop *multilayered networks of stakeholders* such as governments, academia, scientific and research community, private sector, and NGOs;
(e) generate international awareness on the beneficial aspects of the 3Rs; and to
(f) provide a platform for *proliferation of national 3R strategies* in developing countries.
## Activities under the Regional 3R Forum

*The Forum is an umbrella of existing and new activities*

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<th>Strategy dev’t and implementation</th>
<th>Demonstration projects</th>
<th>Reduction of GHG emissions (Co-benefits)</th>
<th>3R information and research network</th>
<th>Prevention of inappropriate and illegal trade of waste</th>
<th>Int’l collaborative research</th>
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| - Support national 3R strategy dev’t.  
- Share experiences in national 3R strategy development.  
- Facilitate implementation of national 3R strategies. | - Develop regional facility to identify demonstration projects.  
- Support demonstration projects.  
- Convene Asia Congress for Reduction of Use of Disposable Plastic Bags. | - Support co-benefits projects (reduction of GHG emission + sound waste management). | - Compile/disseminate 3R knowledge through the 3R Knowledge Hub (3RKH).  
- Develop/strengthen regional network among experts. | - Facilitate international collaboration under the existing scheme of Asia Network for the Prevention of the Illegal Transboundary Movement of Hazardous Wastes. | - Launch international collaborative research to identify strategic policy options and evaluate their effectiveness towards sustainable resource utilisation. |

IGES is providing support to these processes  
IGES is conducting research on this topic  
IGES is involved in these activities  
IGES is coordinating this research network
Expected Regional Collaboration on EIP Promotion

• Learning from other countries’ policy approaches and experiences.
• Taking joint action to internalise environmental costs into resource prices.
• Supporting technology transfer and innovation.
• Exploring ways to facilitate international symbiotic exchanges.
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