



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

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# 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

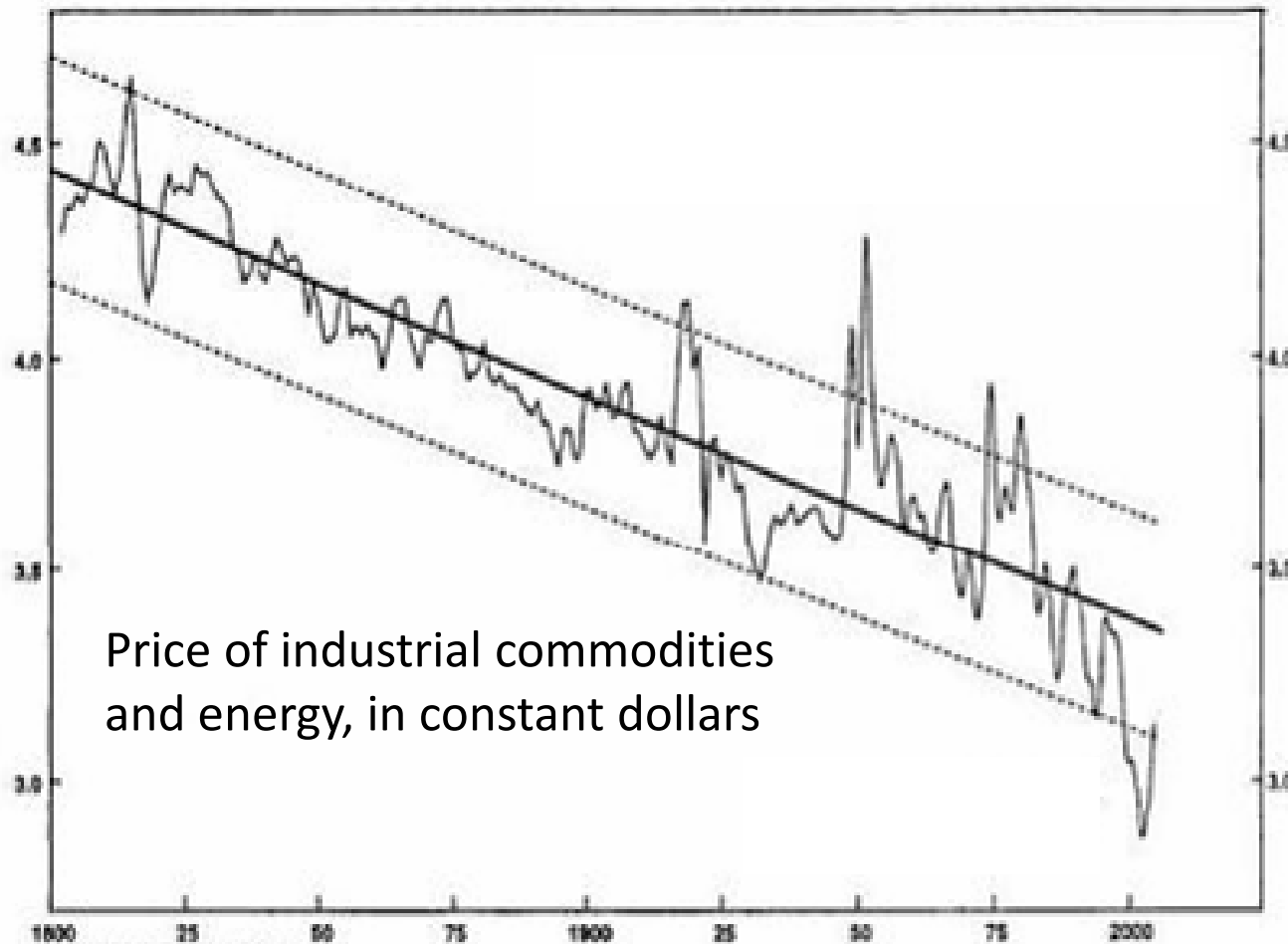
# Industrial Ecology – A Historical Perspective

- Industrial Ecology and recycling of industrial waste is nothing new.
- There are numerous examples from the 19<sup>th</sup> and early 20<sup>th</sup> 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**

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.

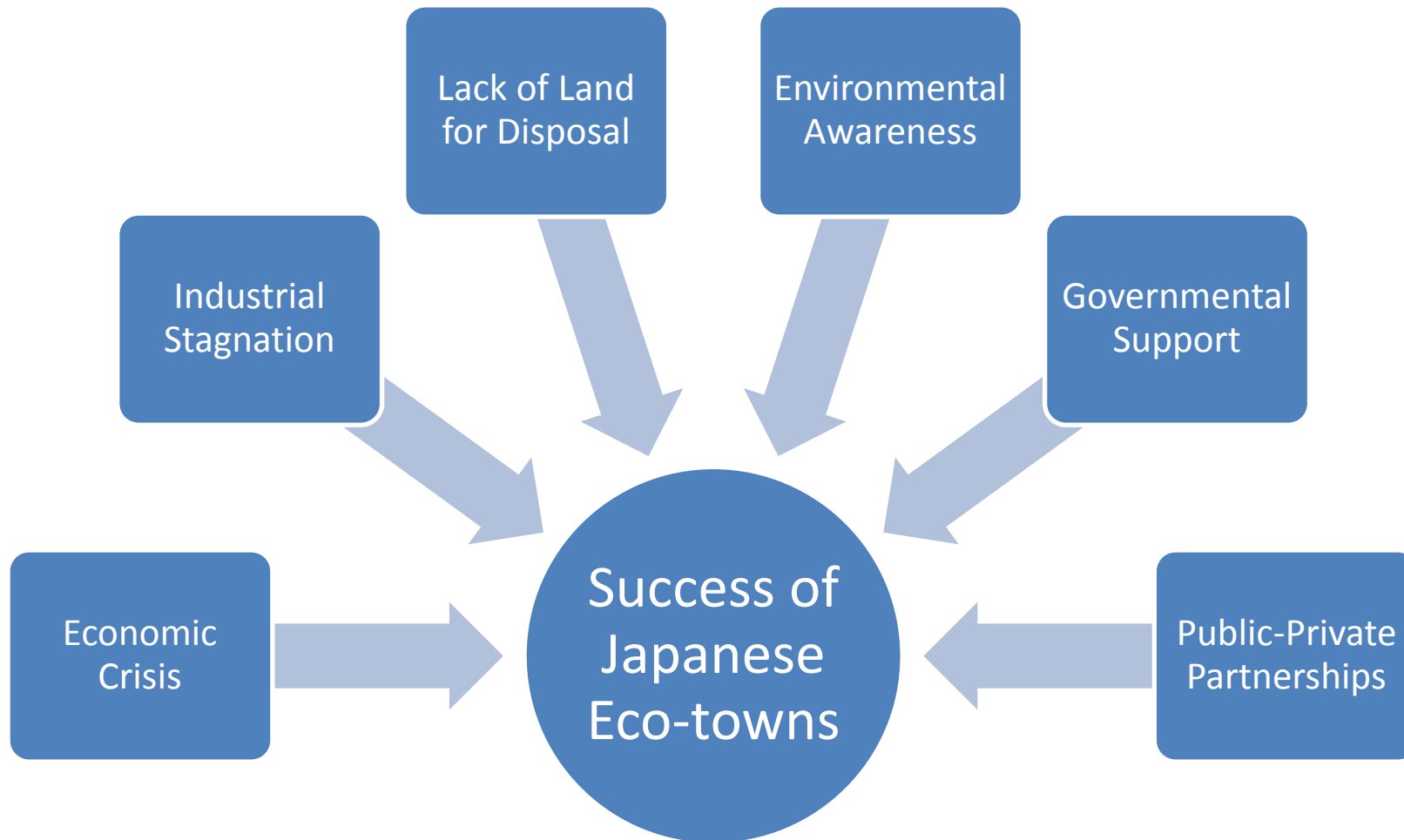
# Reducing Transaction Costs

- 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



## 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*

Strategy dev't and implementation	Demonstration projects	Reduction of GHG emissions (Co-benefits)	3R information and research network	Prevention of inappropriate and illegal trade of waste	Int'l collaborative research
<ul style="list-style-type: none"> <li>• Support national 3R strategy dev't.</li> <li>• Share experiences in national 3R strategy development.</li> <li>• Facilitate implementation of national 3R strategies.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop regional facility to identify demonstration projects.</li> <li>• Support demonstration projects.</li> <li>• Convene Asia Congress for Reduction of Use of Disposable Plastic Bags.</li> </ul>	<ul style="list-style-type: none"> <li>• Support co-benefits projects (reduction of GHG emission + sound waste management).</li> </ul>	<ul style="list-style-type: none"> <li>• Compile/ disseminate 3R knowledge through the 3R Knowledge Hub (3RKH).</li> <li>• Develop/ strengthen regional network among experts.</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate international collaboration under the existing scheme of Asia Network for the Prevention of the Illegal Transboundary Movement of Hazardous Wastes.</li> </ul>	<ul style="list-style-type: none"> <li>• Launch international collaborative research to identify strategic policy options and evaluate their effectiveness towards sustainable resource utilisation.</li> </ul>

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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