PL-2
Exploring Reduction in the 3Rs: Improving Resource Efficiency in Asia and the Pacific

Keynote

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Recent Trends: Risks and Opportunities

South Chinese Seas, Asian Rivers: Inter-state tensions may turn into wars

New realities in the global energy markets: US returns in oil and gas production

President Obama in Berlin: “Complacency is not the attitude of great nations” – new willingness to act

G8, EU and the US push transparency in raw material markets
Asia's Growth need Resource Initiatives! The Case of India

Source: TERI/GIZ/IFEU 2013

The New Diversity of Players in World Commodity Trade in 2010

Source: UN Comtrade
Note: not all countries are included
The Global Resource Nexus

CASE:
China, an export-oriented economy – needs energy – dam building – increases demand for materials – changes water management – worries downstream neighbors

→ Input (Major or Minor Provision of A needed to produce a service from B)
→→ Substitution (A may substitute B for a certain service)

Reasons to do it:
Orientation and Resilience in Times of Uncertainty

Climate change policy needs support from 3Rs!

Overuse of resources

Source: Own Graph (MaRes AS 3.2, Bleischwitz 2010)

Volatile and high Commodity Prices

Vulnerability of many Systems

Cost Reduction

Resource Productivity

Environmental Risks

Raw Materials Security

Input (Major or Minor Provision of A needed to produce a service from B)

Substitution (A may substitute B for a certain service)
Resource efficiency policy can deliver reductions!
(Modelling for Germany, Scenario 2030, Deviation from a Reference Path)

- Increased and Sustainable Growth: 14.1%
- Reduced National Debt: -11.30%
- Cost-saving, Innovations
- Improved Competitiveness
- Lower Expenditures (Job Effect)
- Increasing Tax Revenue (due to Growth and employment)
- An Increase in Sales creates Jobs
- Focus on Material Costs instead of Staff Costs
- CO₂: - 54% (Basis 1990)
- TMR: - 20-25%

Rise in Employment: 684,000

An Increase in Sales creates Jobs
Focus on Material Costs instead of Staff Costs

Source: Meyer et al. 2010, GWS

What policies? A suggested policy mix for Germany
(Modelling results on previous slide)

- Construction minerals tax
- Dynamic standards
  Green Tech Funds
  Lighthouse projects
- Differentiated VAT
- Metal covenant
  Support for export recycling tech

Reporting requirements + certification, networks

Eco system services
Towards a Resource Efficiency Policy in the EU

Target setting

- RE one (out of seven) flagship projects for Horizon 2020
- National targets, e.g. Germany,
- Aims of lowering use of primary resources and increasing RE

Communication & Awareness

- Roadmap for a resource-efficient Europe
- European Resource Efficiency Platform with key stakeholders

Other Activities

- Eco-Innovation Observatory
- "Beyond GDP“ Activities
- Raw Materials Initiative
- Support for the International Resource Panel

Metabolic rates – overview of scenarios

Table 2.1. Metabolic scales and rates, overview of scenario analysis

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Scenario 1: Business as usual</th>
<th>Scenario 2: Moderate contraction and convergence</th>
<th>Scenario 3: Tough contraction and convergence</th>
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</thead>
<tbody>
<tr>
<td>Year</td>
<td>2000</td>
<td>2050</td>
<td>2050</td>
<td>2050</td>
</tr>
<tr>
<td>World population (Billions)</td>
<td>6.0</td>
<td>8.9</td>
<td>8.9</td>
<td>8.9</td>
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<tr>
<td>World Metabolic rate (Tons/capita/year)</td>
<td>8</td>
<td>16</td>
<td>8</td>
<td>5.5</td>
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<tr>
<td>World Metabolic scale (Billion tons/year)</td>
<td>40</td>
<td>141</td>
<td>70</td>
<td>40</td>
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<tr>
<td>Metabolic rate</td>
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<tr>
<td>Industrialized High density</td>
<td>13</td>
<td>13</td>
<td>6.5</td>
<td>5</td>
</tr>
<tr>
<td>Industrialized Low density</td>
<td>24</td>
<td>24</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Developing High density</td>
<td>5</td>
<td>13</td>
<td>6.5</td>
<td>5</td>
</tr>
<tr>
<td>Developing Low density</td>
<td>9</td>
<td>24</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>
Systemic Eco-Innovation for a Green Economy

Drivers and barriers to a great transformation

Favourable factors
- Resource efficiency revolution
  - Financially viable
  - Changing values towards sustainability
  - Global knowledge networks
  - Potential co-benefit of transformation
  - Cooperates with resource-rich extraction countries

Barriers
- Path dependencies and lock in’s
- Tight timeframe
- Pay-back periods too short
- International market distortions (illicit trade, unfair practices)
- Ecosystem services and resource nexus not figured in
- Easily available cheap supply of unconventional fossil fuels
Conclusions: Why Policies, What Business can do, Why Indicators are Relevant

**Policies**
- To enable overcoming of market distortions towards system eco-innovations
- To counteract international imbalances

**Business**
- To grasp low hanging fruits of cost savings
- To realize a “resource revolution”

**Indicators**
- To allow for a comprehensive monitoring of progress
- To signal risks of burden shifting to the poor
Lessons learned: ...good initiatives exist, but the broader frame is yet to come

- Existing initiatives are not legally binding (exception EITI in combination with US and EU acts).
- Former efforts, such as international commodity agreements, have largely failed.
- Domestic resource efficiency strategies face an uphill battle against international market distortions. Yet, there is no international strategy to deal with structural deficits such as negative externalities, abuse of human rights, huge volatilities, illicit trade.
- A clear orientation aligning human rights, freedom, sustainable resource management, low carbon society, etc. is missing.

Suggested ways forward

From knowledge to action
- Transparency and accountability
- International data hub on SRM
- International Resource Agency
- Multistakeholder Forum for SRM

Key areas of concern
- European and international phosphorus policy
- International metal covenant
- Transform bilateral agreements toward SRM

A sustainable world economy
- Cutting subsidies - introducing resource taxes
- Leveraging finance for SRM
- Rethinking international trade
- New legal mechanisms
Proposal for An International Metal Covenant

• Rationale: material leakages internationally, low recycling standards in many countries.
• Covenant to include industry (recycling, automotive) and target countries.
  • To set long-term goals to increase the resource productivity by high quality recycling of old cars
  • To define the responsibilities of different actors in terms of operation, implementation, and evaluation.
  • Establishes material stewardship internationally.
  • States shall guarantee stable and supportive regulatory framework conditions
  • Going beyond compliance!

Source: Wilts / Bleischwitz 2010

Cases: sustainable construction, sustainable cities

Zero-energy house (Elumaja), Estonia
Construction products made of recycled fly ashes, Spain
Ecological prefab houses, Germany

TWEEWATERS – sustainable and smart city district, Belgium
Strawbale housing, Belgium
and so on...
Proposal: Engage Mining in Sustainable Resource Management

Resource efficiency in industry

- Resource-efficient Mining
  - Reducing mining waste
  - Selective mining for by-products
  - Manage ecosystems (TEEB) and land use

- Establishing MFA Intelligence
  - International recycling for metals
  - Tracing consumer goods
  - Closing loops

- Urban Mining
  - Anthropogenic stocks in products and infrastructures
  - Re-open landfills
  - Prepare for Asia 2.0

Opportunities for resource-extracting countries

Source: Bleischwitz 2011

Transparency as a Catalyst for Sustainable Resource Management

Companies Disclose Payments & Data

- Ownership
- Licensing Information
- Production Data
- Environmental Pressures
- Transit Payments

Government Discloses Receipts & Budgets

- State-owned Enterprises
- Sovereign Wealth Funds
- Transfers to local government
- Social & Infrastructure Investments

National multi-stakeholder group (government, industry & civil society)

- EITI Report
- Public awareness, debates

International Data Hub

National Action Plans
Conclusions and Recommendations

• Resource efficiency can deliver decoupling in all markets in all countries
• Real reductions require additional efforts from business, policy and other actors
• A key is to kick-off early action along process innovations in business, especially SMEs, to allow for capacity building and savings
• Systemic eco-innovation requires active policies stimulating alliances
  • Within countries and
  • Internationally.

Thanks for your attention!

For further information please visit our websites:

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www.wupperinst.org
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