Training Packages on Policies of SCP and Circular Economy

Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China (PRODEV)

Jointly prepared by:
UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP)
Policy Research Center of State Environmental Protection Administration China (SEPA-PRCEE)
United Nations Environment Program – Division of Technology, Industry and Environment (UNEP-DTIE)

The project ‘Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China (PRODEV)’ is sponsored by the Commission of the European Communities within the Asia Pro Eco Programme.
Introduction and outline of the training workshop

Policy Reinforcement for Resource Efficiency
Instruments and Approaches to Sustainable Consumption and Production

Prepared by the UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP) in collaboration with the United Nations Environment Programme (UNEP), the Chinese State Environmental Protection Administration (SEPA) and the Municipality of Guiyang, China.

This training program was developed as a component of the project 'Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China (PRODEV)' with sponsorship of the Commission of the European Communities within the Asia Pro Eco Programme.
# Table of Contents

Table of Contents ................................................................. 2

Introducing the CE Training Package ........................................ 3
Background and Objectives of the Training Program ....................... 3
The Chinese Circular Economy Initiative ..................................... 3
Training Workshop Content ...................................................... 6
The Training Workshop in Detail ............................................... 8
Day 1: ‘Thinking Circular Economy – Concepts & Principles’ ........... 8
Day 2 ‘Promoting Circular Economy – Measures & Instruments’ ........ 11
Day 3 ‘Implementing Circular Economy – Methods and Action Steps’ ... 14
Closing… ............................................................................. 16
Workshop Materials .................................................................. 16

Further reading and information sources for trainers ..................... 17
Introducing the CE Training Package

Background and Objectives of the Training Program

The project Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China (PRODEV) aims to improve the policy framework and promote a more integrated decision-making process in local government to foster environmentally sound and socially responsible economic development in China, referred to as the Circular Economy.

A policy framework study was undertaken during March and April 2006 in Guiyang, an industrial city in south-western China, that has been designated by national level authorities in China as a pilot city to develop and implement a Circular Economy. The knowledge and experience gained from the study formed a basis for developing the content of the training package such that key needs and opportunities within the Chinese Circular Economy context are addressed.

This document is intended to provide training specialists with an outline of the resource efficiency training package and key points and objectives of the presentations and exercises. The focus of the training package is to build institutional and technical capacities among policy makers to integrate sustainable development principles into the policy system, and where necessary, to develop policy interventions to forge a path to alternative urban development. Key messages that workshop participants should gain from the training are to provide an understanding of Sustainable Consumption and Production/Circular Economy concepts and principles, leading strategies, measures and instruments and methods and action steps to implement those measures. There should be a well balanced mix of approaches including ‘top down’ measures such as regulatory instruments and bottom up approaches such as information and other supportive instruments.

The UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP) developed the training package in partnership with the United Nations Environment Programme (UNEP), the Chinese State Environmental Protection Administration (SEPA) and the Guiyang Municipal Government. The European Commission provided financial support to the project.

The Chinese Circular Economy Initiative

As an emerging and rapidly developing country China is increasing demand for a wide range of natural resources on world markets. In the past 20 years, China’s consumption of oil has risen by 100%, natural gas by 92%, steel by 143%, copper by 189%, aluminium by 380%. During the last 12 years China has attained on average a 10 per cent economic growth rate per annum. China accounted for nearly 30 per cent of the world’s GDP growth since 1992. The Chinese government has established a development target of quadrupling GDP by 2020 while at the same time improving environmental quality, protecting natural resources and maintaining social progress. It is widely ac-
cepted that employing alternative economic development pathways rather than the conventional industrialisation models adopted by most developed countries is the only way to achieve these ambitions.

China is now at the experimental stage of development of the Circular Economy and many barriers remain including awareness, theory, technology, legislation and policy. Following the recognition at the highest political levels to promote the establishment of a Circular Economy, the leadership role for development of the Circular Economy concept has been transferred to the National Development and Reform Commission (NDRC). Central and local governments have been asked to adopt the principles of a Circular Economy as guidance for making their development plans for the upcoming 11th Five-Year Plan (2006-2010).

At present, legislative work for the “Law on Circular Economy” has been launched by the State. The Environmental Protection and Resources Conservation Committee of the National Peoples Congress (NPC) have established a Leading Group for drafting the “Law on Circular Economy”. Some key elements of the upcoming Circular Economy law include Extended Producer Responsibility requirements, financial supports from government, a strengthening of research and development activities, performance evaluation, information disclosure and public participation.

The Chinese State Environmental Protection Administration (SEPA) has played a pioneering role in the development and promotion of the Circular Economy approach. Pilot work on Circular Economy and ecologically adapted industry has been conducted by SEPA since 1999. The Circular Economy concept focuses on three levels:

- **At the level of enterprises**, the concept of the Circular Economy is being promoted through cleaner production methods within firms and industrial parks. In 2003 a “Law on Promotion of Cleaner Production” was issued in China. Currently there are over 5000 enterprises comprising 20 industries in 20 provinces that conduct cleaner production activities.

- **At the regional level**, SEPA began to promote and support the construction of the ecological industrial park Guiyang, Guangxi Province, in 1999. In 2003, on the basis of summarizing experience and improved theories, SEPA further introduced the concept of the Circular Economy and ecologically adapted industry into further economic development and high-tech zones by targeting high energy consuming and heavy polluting industries in particular.

- **At the municipal and provincial level**, SEPA has named official pilot regions for Circular Economy implementation, including Guiyang Municipality, Liaoning Province and Jiangsu Province, Rizhao Municipality among others. Many more municipalities, provinces and industrial development zones have engaged themselves in this piloting effort. Within these pilot cities China has witnessed the Circular Economy develop from theory into practice. The pilot provinces and cities play a major demonstration role in the promoting the uptake of Circular Economy activities in other regions and enterprises.

The National Development and Reform Committee, SEPA and other relevant ministries have identified a group of pilot industries and areas (units) for Circular Economy implementation. This includes
the steel and iron, metallurgical, chemical and recycled resources industries in 13 industrial parks and development zones at the state and provincial level. Other units for Circular Economy implementation include centralized zones for heavy chemical industries and agricultural demonstration zones in 10 provinces and cities with an identified lack of resources or are burdened with a high density of industrial development. The focus on pilot scale implementation of the Circular Economy is intended to contribute to social, economic and environmental development, but has also to provide invaluable knowledge and experience for further implementation of the Circular Economy concept China.
Training Workshop Content

The training package consists of three training modules. It aims to provide both the broad picture related to resource efficiency, provide knowledge on concrete tools and build capacity in local policy makers to implement these implements on the ground. The different training parts and their specific objectives are:

- **‘Thinking Circular Economy – Concepts & Principles’**
  The first training day introduces the participants to key principles behind the Circular Economy (CE) concept and Sustainable Consumption and Production (SCP) aiming to create awareness and understanding for CE and SCP issues and the “CE/ SCP way of thinking”.

- **‘Promoting Circular Economy – Measures & Instruments’**
  The second training day provides an overview over key measures, instruments and strategies that policy makers can apply to build the framework and foster Circular Economy and sustainable consumption and production patterns.

- **‘Implementing Circular Economy – Methods & Action Steps’**
  The third training day provides key methods and guiding action steps for policy makers to get CE and SCP going by applying principles and existing measures and instruments in a coherent and sound way.

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
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<tbody>
<tr>
<td>Welcome and Introduction</td>
<td>Thinking Circular Economy</td>
<td>Promoting Circular Economy</td>
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<tr>
<td>Concepts &amp; Principles</td>
<td>Measures &amp; Instruments</td>
<td>Methods and Action Steps</td>
</tr>
<tr>
<td>Think 1 – 5</td>
<td>Promote 1 – 8</td>
<td>Implement 1 – 6</td>
</tr>
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The content of the different training parts is organised in different modules. Each module has a **Presentation** focusing on introducing the issues at hand, and an **Exercise** oriented on allowing the participants to discuss presented options and solution-oriented case studies, and to gain direct experience with the content introduced. Through out three days, the training programme strongly builds on the presentation of concrete case studies from Europe, China and other places.
Suggested Schedule

The training is designed for a full three day workshop. A suggested schedule might look as follows:

### Day 1: Thinking CE - Concepts and Principles’

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Note</th>
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</thead>
<tbody>
<tr>
<td>09:00 – 09:30</td>
<td>Welcoming the participants</td>
<td>Welcome</td>
</tr>
<tr>
<td>09:30 – 10:00</td>
<td>Introduction to Training</td>
<td>Introduction</td>
</tr>
<tr>
<td>10:00 – 10:30</td>
<td>Setting the stage: ‘Thinking CE - Concepts and Principles’</td>
<td>Think1</td>
</tr>
<tr>
<td>10:30 – 12:00</td>
<td>World-wide trends and European/Chinese success stories on CE and SCP</td>
<td>Think2</td>
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<tr>
<td></td>
<td>Lunch</td>
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<tr>
<td>13:30 – 16:00</td>
<td>Circular Economy and SCP in China &amp; Key results from the Guiyang policy framework study</td>
<td>Think3</td>
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<tr>
<td></td>
<td>Coffee</td>
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<tr>
<td>16:15 – 17:15</td>
<td>Opportunities: Opportunities for advancing sustainable consumption and production in China</td>
<td>Think4</td>
</tr>
<tr>
<td>16:15 – 17:15</td>
<td>The SCP policy toolbox: Supporting government to address the opportunities ahead</td>
<td>Think5</td>
</tr>
<tr>
<td>17:15 – 17:30</td>
<td>Summary of ‘Thinking CE - Concepts and principles’</td>
<td>Think6</td>
</tr>
</tbody>
</table>

### Day 2: Promoting CE – Measures & Instruments

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Note</th>
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</thead>
<tbody>
<tr>
<td>09:00 – 09:15</td>
<td>Overview on ‘Promoting CE – Measures &amp; Instruments’</td>
<td>Promote1</td>
</tr>
<tr>
<td>09:15 – 10:15</td>
<td>Regulatory Instruments: Setting the rules</td>
<td>Promote2</td>
</tr>
<tr>
<td>10:15 – 11:15</td>
<td>Economic Instruments: Getting the prices right</td>
<td>Promote3</td>
</tr>
<tr>
<td>11:15 – 12:15</td>
<td>Cooperation Instruments: Initiating cooperation initiatives</td>
<td>Promote4</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>13:30 – 14:30</td>
<td>Educational and Research Instruments: Educating and creating awareness</td>
<td>Promote5</td>
</tr>
<tr>
<td>14:30 – 15:30</td>
<td>Informational Instruments: Providing targeted information</td>
<td>Promote6</td>
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<tr>
<td></td>
<td>Coffee</td>
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<tr>
<td>16:00 – 17:15</td>
<td>Bringing the pieces together: Designing a sound policy mix</td>
<td>Promote8</td>
</tr>
<tr>
<td>17:15 – 17:30</td>
<td>Summary of ‘Promoting Circular Economy – Measures &amp; Instruments’</td>
<td>Promote9</td>
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</tbody>
</table>

### Day 3: Implementing CE - Steps for taking successful action

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Note</th>
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</thead>
<tbody>
<tr>
<td>09:00 – 09:15</td>
<td>Overview on ‘Implementing CE - Steps for taking successful action’</td>
<td>Implement1</td>
</tr>
<tr>
<td>09:15 – 10:45</td>
<td>Setting Priorities: Analysis of current production and consumption patterns</td>
<td>Implement2</td>
</tr>
<tr>
<td>10:45 – 12:15</td>
<td>Assessing the Policy Opportunities: Drafting and Analysing Policy Options</td>
<td>Implement3</td>
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<tr>
<td></td>
<td>Lunch</td>
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<tr>
<td>13:30 – 14:45</td>
<td>Implementing the policies: Policy coordination through networks and partnerships</td>
<td>Implement4</td>
</tr>
<tr>
<td>14:45 – 15:30</td>
<td>Following up policy implementation: Indicators, evaluation and corrective action</td>
<td>Implement5</td>
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<tr>
<td></td>
<td>Coffee</td>
<td></td>
</tr>
<tr>
<td>16:00 – 16:30</td>
<td>Summary of ‘Implementing CE - Steps for taking successful action’</td>
<td>Implement6</td>
</tr>
<tr>
<td></td>
<td>Break</td>
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<tr>
<td>16:30 – 17:30</td>
<td>Closing Session, Feedback and Provision of Certificates</td>
<td>Closing</td>
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The Training Workshop in Detail


Key Objectives for Day 1:

- Workshop participants will have good knowledge of the latest state-of-the-art on Circular Economy and Sustainable Consumption and Production (SCP) in China, Europe and other leading regions.
- Workshop participants will have considered and identified major CE and SCP opportunities for their region and will have provided and discussed a number of options for implementation.
- Workshop participants will have a good understanding of the role and importance of governments as well as the necessity of good coordination among different departments and bureaus for setting a sound framework for CE and SCP.

Welcome and Introduction

<table>
<thead>
<tr>
<th>Welcome</th>
<th>Welcoming the participants</th>
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<tbody>
<tr>
<td>Presentation</td>
<td>30 min</td>
</tr>
<tr>
<td>The organisations behind: Introducing SEPA, UNEP and CSCP</td>
<td></td>
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<tr>
<td>The guests: Participants background and expectations</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Welcoming the participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>30 min</td>
</tr>
<tr>
<td>What is Prodev? A short overview on the Prodev project</td>
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<tr>
<td>What is the training about? Introducing the three parts</td>
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<tr>
<td>What will happen? Introducing modules, presentations and exercises</td>
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Think 1

Setting the stage: ‘Thinking CE – Concepts and Principles’

| Presentation | 30 min |
| What it is all about: Presenting the objectives of Day 1 |
| What will come: Introducing the modules in Part 1 |

Think 2

World-wide trends and European/Chinese success stories on CE and SCP

| Presentation | 45 min |
| Structural Change: The case of Germany: This section demonstrates how structural change affect the region of North-Rhine Westphalia in the last decades and reduced resource consumption, environmental impacts and increased quality of life. |
| The case of China: Recent trends and why resource consumption matters: Provides information on the Chinese situation, showing the increasingly high resource use and consequential scarcity arising and the environmental impacts related to this especially in urban areas. Last, it briefly inquires into current growth in consumption levels and the emergence of the ‘global consumer class’ in emerging markets, and especially in China. |
| The decoupling challenge: Opportunities through resource efficiency: This section introduces the concept of resource efficiency and policy frameworks that have been taken up in Europe, Germany and China to implement the concept. It also compares resource efficiency to other environmental policy approaches and shows the potential that national programmes for raising resource efficiency might help, also for promoting small and medium sized enterprises. |

Exercise

Group Brainstorming: “What environmental, economic and social benefits do you expect from implementing Circular Economy in your region?”
### Think3 2:30 hr

**Opportunities for China: The key results from the policy framework study**

- **Presentation 30 min**
  - **Current status of Circular Economy in China**: Provides an overview of the national CE framework in China and envisioned implementation mechanisms.
  - **Main results of a policy framework study**: Presents the main results of the Policy Framework Study undertaken in Guiyang as a pilot city. It includes the main barriers identified and the current state of instrument application and stakeholder involvement.

- **Exercise 45 min**
  - **Individual brainstorming**: “Consider the main barriers identified in Policy Framework Study and write down possible solutions to overcome the barriers on cards”
  - Identified solutions will be clustered on clip chart

### Think4 1:30 hr

**Opportunities for advancing sustainable consumption and production in China**

- **Presentation 45 min**
  The presentation introduces opportunities in the areas of Finance, Partnerships, Technology and Capacity Building. For all areas, brief case studies from Europe and other regions are provided that illustrate the principles described.
  - **Funding and financing**: Shows how a mix of public and private funding can be used to implement SCP policies. Examples for this include eco-taxes, international finance mechanisms like the Clean Development Mechanism, or initiatives by private financial institutions like the Equator Principles.
  - **Technology transfer and development**: Shows some opportunities to overcome the lack of access to appropriate technologies and/or the lack of ability to develop these. Options presented here include technology transfer, the building up capacities for local technology development and assessment and institutions for promoting the spread and uptake of technology.
  - **Engagement and partnership**: While single actors unable to move due to internal and external constraints, this can be overcome through partnerships and network building. This section describes how resources and capabilities of different partners can be pooled to make SCP projects happen; how knowledge and information for policy and project implementation can be created and exchanged; and how demands for SCP products and services can be joined to develop markets for SCP.
  - **Awareness raising and capacity building**: Awareness and knowledge of SCP sometimes stand in the way of implementation efforts. Options to address this challenge include internal programmes to strengthen the capacity of government institutions, personnel and decision makers; external programmes that target businesses, consumers, organisations, etc. and general programmes to integrate SCP into education.

- **Exercise 45 min**
  **Group exercise**: Look onto one of the presented opportunity fields respectively (partnerships, capacity building, finance, technology) and come up with suggestions for improving resource efficiency.
**Think5 1:00 hr**

**The SCP policy toolbox: Supporting governments to address opportunities**

**Presentation 30 min**

The importance of governments:
- This module highlights the importance of policy makers in setting the right framework for CE and SCP so that existing opportunities can be successfully seized and implemented.
- It introduces the participants to the “SCP Policy Toolbox”. The toolbox contains different policy measures and instruments that policy makers can apply to set a sound framework for CE and SCP.
- It provides the changeover to the next day in which selected measures and instruments of the policy toolbox will be looked onto and discussed more in detail.

**Presentation in brief:**
- **How governments can steer societies towards SCP:** Shows how governments can promote SCP through frameworks and specific actions targeted at businesses and consumers.
- **Cooperation needed for policy sound making:** Describes how the complexity of SCP implementation needs to the need for coordination between different government departments and between different levels of government (local, regional, national).
- **Opportunities for SCP along the policy cycle:** Implementing SCP policies requires looking at the whole policy cycle, with specific implications for agenda setting, policy formulation, policy implementation and policy evaluation.

The SCP policy toolbox:
- Provides an overview of key policy instruments.
- Contains a quick overview on the instrument categories (Regulatory, Economic, Cooperation, Information, Education, Support) and provides an idea to the participants what they will get to know in detail the following day.
- Strategies to take for sanctioning or supporting enterprises:
  - **Reward / penalise:** Governments can provide incentives and sanctions towards SCP.
  - **Support:** Governments can support societal actors to contribute to circular economy.
- Factors that governments can address include…
  - **Hard issues:** The need for proper incentives and financing.
  - **Soft issues:** The need to add societal pressures and reward good actions.

**Exercise 30 min**

**Group brainstorming:**
- What could be done to enhance coordination and cooperation between different government departments?
- What is most effective and what is needed to help make the necessary changes?

**Think6**

**Presentation 15 min**

**Summary of ‘Thinking Circular Economy – Concepts and principles’**

- **That was it:** Overview slide on all modules of Day 1.
- **What will follow:** Issues from Day 1 that will be taken up in the following days and modules of the training.
Day 2 ‘Promoting Circular Economy – Measures & Instruments’

Objectives for day 2:

- Workshop participants are provided a good overview and in-depth knowledge on a wide variety of policy instruments to support policy-makers in setting up a sound framework for implementing CE and SCP.
- Workshop participants are provided an overview of the latest state-of-the-art on policy making best practices and experiences in the field of CE and SCP.
- Workshop participants become aware of the benefits of designing sound and integrated policy mixes that support CE and SCP.

The presentation of the modules are structured as follows:

- **Introducing the instrument category**: Provides a definition and objectives for the instrument category, shows their strength and weaknesses and the success factors.
- **The instrument category in focus**: Describes different instrument in the instrument categories and provides best-case examples for applying the instruments.

<table>
<thead>
<tr>
<th>Promote1 15 min</th>
<th>Overview on ‘Promoting Circular Economy – Measures &amp; Instruments’</th>
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<tbody>
<tr>
<td>Presentation 15 min</td>
<td>• <strong>What has been</strong>: Summarising Day 1</td>
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<td></td>
<td>• <strong>What it is all about</strong>: Presenting the objectives of Day 2</td>
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<td>• <strong>What will come</strong>: Introducing the modules of Day 2 and their basic content</td>
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<td></td>
<td>• <strong>Opening the toolbox of policy instruments</strong>: Provision of overview of the instruments of the toolbox that will be introduced during Day 2</td>
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<tr>
<td></td>
<td>• Regulatory instruments: Setting the rules</td>
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<td>• Economic instruments: Getting the prices right</td>
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<td>• Cooperation instruments: Initiating co-operation initiatives</td>
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<td></td>
<td>• Educational instruments: Educating and creating awareness</td>
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<td></td>
<td>• Informational instruments: Providing targeted information</td>
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<thead>
<tr>
<th>Promote2 1:00 hr</th>
<th>Regulatory Instruments: Setting the rules</th>
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<tbody>
<tr>
<td>Presentation 25 min</td>
<td>• <strong>Introducing regulatory instruments</strong>: Defines regulatory instruments as laws and any rules with a legally binding nature, set and enforced by public authorities. While they have a high certainty in achieving objectives, enforcement can be difficult and costly. Important success factors include policy coherence and legal authority and efficacy.</td>
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<tr>
<td></td>
<td>• <strong>Regulatory instruments in focus</strong>: This section focuses on norms and standards and liability laws. Both are defined and illustrated with case studies, e.g. the Japanese Top Runner Programme and the EU Environmental Liability Directive</td>
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<thead>
<tr>
<th>Exercise 35 min</th>
<th>Group discussion:</th>
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<tbody>
<tr>
<td></td>
<td>• Which of the regulatory instruments discussed in the presentation would be most effective in China/your region?</td>
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<td>• At which phase of the product life-cycle will the instruments be most effective? Why?</td>
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<td>• Which organisation can be most effective in taking the lead?</td>
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</table>
### Economic Instruments: Getting the prices right

**Presentation**
- **25 min**
  - **Introducing economic instruments**: Economic instruments cover a range of taxation and pricing instruments that can raise revenue while simultaneously furthering environmental goals. While they reduce the costs of achieving environmental goals and contribute to fiscal objectives, they are difficult to enforce on enterprises in the informal economy, and vulnerable to corruption. Success factors are the ability of governments to collect revenues, and the ability to enforce sanctions in place of non-compliance.
  - **Economic instruments in focus**: The instruments introduced are: a) Environmental taxes to make polluters pay for societal costs; b) Fees and user charges to charge users for environmental goods and services; c) Certificate trading schemes to create markets for environmental goods and services; d) Green/Sustainable procurement to create demand for eco-efficient goods and services.

**Exercise**
- **35 min**
- Group discussion:
  - What products/services can be considered for Green Public Procurement in China/your region?
  - What products/services offer the best opportunities for advancing SCP in China/your region?

### Cooperation Instruments: Initiating cooperation initiatives

**Presentation**
- **25 min**
  - **Introducing cooperation instruments**: Beyond traditional regulatory instruments and market-based instruments, governments also have a wide range of cooperation instruments at their disposal. Their strength lies in the flexibility, but they require active contribution from businesses and other stakeholders.
  - **Cooperation instruments in focus**: Two instruments are analysed here in more detail. Technology Transfer programmes aim to make technology available to local businesses. Voluntary Agreements aim to improve companies’ environmental conduct and performance beyond existing legislation and regulations, like in the case of Clean Production Commitments in Chile.

**Exercise**
- **35 min**
- Group discussion: Each group selects one of the cooperation instruments introduced in the presentation and discusses the following questions:
  - What needs to be done to introduce the selected cooperation instrument in China/your region?
  - Which individuals and organisations need to be involved?
  - Which individuals and organisations have the best opportunity to take the lead?
  - Who should make an action plan?

### Educational and Research Instruments: Educating and creating awareness

**Presentation**
- **25 min**
  - **Introducing Educational and Research instruments**: Educational and research instruments aim at creating innovative, less resource-intensive products and services. At the consumption level, they strive for behavioural changes in the public.
  - **Educational and Research instruments in focus**: Concrete instruments are introduced for fostering research and development, and to improve education and training for resource efficiency.

**Exercise**
- **35 min**
- Individual exercise: Think about the following questions individually, followed by group discussion:
  - What groups or organisations within the municipal/local government authorities are the most important for educating about the Circular Economy?
Why are these groups especially important for education about the Circular Economy?

What groups or organisations outside the municipal/local government authorities are most important for educating about the Circular Economy? These could be specific industrial sectors or certain groups in society such as young people.

Why are these groups especially important for education about the Circular Economy?

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td></td>
<td><strong>Informational Instruments: Providing targeted information</strong></td>
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<td></td>
<td><strong>Promote6</strong> 1:00 hr</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>25 min</td>
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<tr>
<td></td>
<td><strong>Introducing informational instruments:</strong> Information instruments are environmental policy tools that seek to influence the behaviour of firms and individuals by providing targeted information.</td>
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<tr>
<td></td>
<td><strong>Informational instruments in focus:</strong> Four instruments are introduced in this category. First, labelling for goods and services can enable customers to make sustainable decisions. Second, information programmes for industry can be used to support sustainable production, and information targeted at consumers can help to protect consumers and change their behaviour. Last, public reporting and awards for informing citizens, community leaders and officials can help to create an enabling environmental for sustainable consumption and production.</td>
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<tr>
<td></td>
<td><strong>Exercise</strong> 35 min</td>
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<tr>
<td></td>
<td><strong>Group discussion:</strong></td>
</tr>
<tr>
<td></td>
<td>What information instrument is your department best able to implement to promote the Circular Economy? Why?</td>
</tr>
<tr>
<td></td>
<td>What other department should be involved to improve the chances of success? Why is this other department the best partner?</td>
</tr>
<tr>
<td></td>
<td><strong>Promote7</strong> 1:15 hr</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>20 min</td>
</tr>
<tr>
<td></td>
<td><strong>What is a sound policy mix?</strong> A sound policy mix should address clearly articulated objectives with policy measures that have the greatest chances of success by applying a mix of mutually supporting approaches. The policy mix should consider the resources of government to implement, evaluate and enforce the policy and the ability of the regulated parties to achieve the policy objectives.</td>
</tr>
<tr>
<td></td>
<td><strong>Issues to consider: Incentives</strong> for companies to contribute to policy objectives under existing framework conditions and ability of companies to respond to policy instruments in an adequate way.</td>
</tr>
<tr>
<td></td>
<td><strong>Policy matrix</strong>: Helps to identify policies that respond to the root causes of environmental problems (lack of incentives / lack of ability).</td>
</tr>
<tr>
<td></td>
<td><strong>Promote8</strong> 15 min</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>15 min</td>
</tr>
<tr>
<td></td>
<td><strong>Summary of ‘Promoting Circular Economy – Measures &amp; Instruments’</strong></td>
</tr>
<tr>
<td></td>
<td><strong>That was it:</strong> Overview slide on all modules of Day 2</td>
</tr>
<tr>
<td></td>
<td><strong>What you learned:</strong> Collection of key learning’s and insights from the participants?</td>
</tr>
<tr>
<td></td>
<td><strong>What will follow:</strong> Issues for Day 3</td>
</tr>
</tbody>
</table>
Day 3 ‘Implementing Circular Economy – Methods and Action Steps’

Objectives for day 3:

- Workshop participants understand how to systematically set priorities, assess policy opportuni-
ties, coordinate necessary actions and to implement, evaluate and communicate the chosen policy package
- Workshop participants have a set of tools at hand (Priority Finder, Material Flow Analysis, Life-
Cycle Assessment, Benefit-Cost Analysis, etc) to set priorities, assess policy opportunities and
implement policy packages
- Workshop participants are aware of the policy cycle and the importance of coordinated actions
to make a policy package and/or policy modifications successful

Implement1 ‘Implementing Circular Economy - Methods & Action Steps’

Presentation
15 min
- What has been: Summarising Day 2
- What it is all about: Presenting the objectives of Part 3
- What will come: Introducing the modules in Part 3 and their basic content

Implement2 Setting Priorities: Analysis of current production and consumption patterns

This module introduces methods for determining political priorities and topics that require attention
and action by policy makers.

Presentation
30 min
- Introducing priority setting: Introduces reasons and a framework for priority setting
- Stock taking: Determines broad patterns and topics prevalent in a specific region
- Assessing: The principles and broad methodology behind a range of tools for Material Flow
Analysis are introduced. Concepts introduced are Ecological Footprint Analysis, the Account-
ing for Material Flows, and the ‘Material Input per Service Unit (MIPS)’ methodology. It is also
shown how the results can be linked to economic indicators to create ‘eco-efficiency’ indica-
tors.
- Focussing: Introduces other factors that might be considered when setting priorities.

Exercise
60 min
Group Discussion:
- Consider a key economic sector in China/your region. Think about the main material and
resource flows connected to the sector.
- Consider environmental impacts that can result from the resource flows.
- Also consider the economic sectors that are active in the resource flow and the impo-
rtance of these sectors to the economy.

Implement3 Assessing Policy Opportunities: Drafting and Analysing Policy Options

This Module provides an overview on approach to generate a set of policy options (‘draft’) and
evaluate these policy options according different criteria (‘analyse’).

Presentation
30 min
- Determining Policy Options: Four approaches for generating policy options are introduced,
including best practice learning, review of political agendas and stakeholder analysis.
- Policy Analysis: Sound analysis of policy options is necessary to achieve the objectives set,
address policy trade-offs and build support for the policy measures taken. A set of criteria is
introduced and illustrated with two case studies. The criteria come from the areas of effec-
tiveness and efficiency, equity and fairness, incentives for long-run improvement, enforceabil-
ity and the acceptability in the local context)
Exercise 60 min

**Group discussion:** Split in the same group as Implement2, and

- Brainstorm potential policy instruments to address one of the resource flows analysed in Implement2
- Select one policy instrument and briefly analyse the proposed policy responses according to a criteria list provided

Implement4 45 min

Implementing the policies: Policy coordination through networks and partnerships

Implementing policy is concerned with converting ‘policy output’ (laws, directives) into ‘policy impact’, e.g. change in behaviour or technology applied. This module shows challenges, and how networks and partnerships for policy coordination can be used to overcome these.

Presentation 15 min

- **Challenges in policy implementation:** The factors hindering policy implementation include lack of commitment of public bodies, a lack of coordination between different agencies, lacking capacity to implement policy measures taken, and finally corruption. Success does not only depend on the implementing authority, but also on the behaviour of the target group of the policy, of other public agencies and a wider set of stakeholders.

- **Opportunities to improve policy implementation:** Four options are presented to improve policy implementation. These include inter-agency cooperation and partnership in governments, stakeholder approaches to enforcement and the decentralisation of implementation tasks. Last, measures can be taken to increase information availability and transparency.

Exercise 30 min

**Group discussion:** Split in the same group as Implement3, and discuss potential options to improve implementation of CE policy instruments, especially considering opportunities for coordination and partnership

Implement5 45 min

Following up policy implementation: Indicators, evaluation and corrective action

Confirm that policy has been implemented as intended, determine if the desired policy objectives are being achieved and recommend adjustments to the policy mix.

Presentation 15 min

- **What to monitor:** Describes which indicators can be monitored for following up policy implementation, including a) the state and development of SCP patterns, b) the measures taken to implement policy instruments and c) the results achieved by policy instruments.

- **Indicator and target development:** Introduces principles for developing indicators and targets for SCP policy implementation.

- **Monitoring and corrective action:** Shows how indicators can be monitored through internal or external mechanisms, and how the results can be used to influence different stages of the policy cycle.

- **Case studies:** Introduces various approaches for monitoring SCP policy implementation.

Exercise 30 min

**Group discussion:**

- Divide into groups
- Brainstorm a list of indicators for Circular Economy.
- Discuss relevance and feasibility of the indicators in the group

Implement6 30 min

Summary of ‘Implementing CE - Steps for taking successful action’

Presentation 15 min

- **That was it:** Overview slide on all modules of Day 3
- **What you learned:** Collection of key learning’s and insights from the participants
- **What else:** Issues the participants found lacking
Closing

Closing Session, Feedback and Provision of Certificates

<table>
<thead>
<tr>
<th>Presentation</th>
<th>60 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Looking back: Overview on all three parts and their modules</td>
<td></td>
</tr>
<tr>
<td>• Training evaluation sheet: Dissemination of a training evaluation sheet, asking the participants on key learning’s, what they liked, what they would improve, etc.</td>
<td></td>
</tr>
<tr>
<td>• Participation certificate: Provision of a participation certificate to the participants</td>
<td></td>
</tr>
</tbody>
</table>

Workshop Materials

The materials for the training workshop include:

<table>
<thead>
<tr>
<th>Policy Framework Study</th>
<th>Key trends in Europe and to be handed out to participants as background reading for the training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentations &amp; exercises</td>
<td>Files in PowerPoint format printed in hard copy (suggest 2 slides per page) provided to workshop participants to make notes during workshop.</td>
</tr>
<tr>
<td>Exercises</td>
<td>Files in word format as worksheets for participants (possibly include within booklet/bound copy with slides)</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>Feedback questionnaire</td>
</tr>
<tr>
<td>Training Certificates</td>
<td>Certificate certifying that workshop participants successfully attended the training</td>
</tr>
</tbody>
</table>
Further reading and information sources for trainers


Xiaofei Pei (n.a.): *Overview of the Circular Economy in China*, Discussion paper.


Training Packages on Policies of SCP and Circular Economy

Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China (PRODEV)

The First Day
Welcome to PRODEV training!
Policy reinforcement for Circular Economy

Introduction

Making Circular Economy happen
Policy reinforcement for Circular Economy

What is Prodev?

What is the training about?

What will happen?
# What is Prodev?

**Introduction to the project**

## ProDEV

**Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China**

### Objectives

- Institutional and technical capacities to develop sound and socially responsible economic development in China
- Development of policy interventions to forge a path to Circular Economy
- Mainstreaming the Circular Economy concept
- Improve understanding of policy-making in China and Europe
- Create information links and co-operation among local authorities

### Project Partners & Stakeholders

- UNEP
- CSCP/Wuppertal Institute
- Guiyang Government
- China State Environmental Protection Administration (SEPA)

### Funded by

- EuropeAid - Asia Pro Eco Programme
Prodev Timeline
Overview of main project activities and time plan

- Activity 3: Policy Framework Study
  - Project Kick-off: Dec. 2005
  - April 2006
- Activity 4: Development of the Training Package
  - Aug 2006
- Activity 5: Training for policy makers in Guiyang
  - Finalised training package
- Activity 6: Activity 5 A Study tour in Germany
  - Feedback
  - Activity 7: Policy gap identification
  - Activity 8: Action plan for policy modification
  - Activity 9: Pilot policy intervention and/or modification
  - Activity 10: PMB #2
  - Activity 11: Train-the-trainer workshop
  - Activity 12: Feedback
  - Activity 13: Asia-EU Mayors Conference
  - June 2007
Policy reinforcement for Circular Economy

What is Prodev?

What is the training about?

What will happen?
## What is the training about?
### Introducing the three training days

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Welcome and Introduction</strong></td>
<td><strong>Thinking Circular Economy</strong></td>
<td><strong>Implementing Circular Economy</strong></td>
</tr>
<tr>
<td><strong>Concepts &amp; Principles</strong></td>
<td><strong>Promoting Circular Economy</strong></td>
<td><strong>Methods and Action Steps</strong></td>
</tr>
<tr>
<td>Think 1-5</td>
<td>Promote 1-8</td>
<td>Implement 1-6</td>
</tr>
<tr>
<td><strong>Policy Instruments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What is the training about?
Introducing the three training days

Day 1

Thinking Circular Economy - Concepts & Principles

Key principles of Circular Economy (CE) and Sustainable Consumption and Production (SCP)
Creating knowledge and awareness of CE and SCP and exploring the ‘CE/SCP way of thinking’

Day 2

Promoting Circular Economy

Overview on key measures, instruments and strategies that policy makers can apply to build a sound and successful framework for Circular Economy and sustainable consumption and production patterns

Day 3

Implementing Circular Economy - Steps for taking successful actions

Key methods and guiding action steps for policy makers helping to make CE and SCP happen
Setting Priorities - Assessing Policy Opportunities - Planning the Actions - Implementing the policy package
### Day 1

**‘Thinking Circular Economy - Concepts & Principles’**

<table>
<thead>
<tr>
<th>Think1</th>
<th>Setting the stage: ‘Thinking CE - Concepts and Principles’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Think2</td>
<td>World-wide trends and European/Chinese success stories on CE and SCP</td>
</tr>
<tr>
<td>Think3</td>
<td>Opportunities for China: The key results from the policy framework study</td>
</tr>
<tr>
<td>Think4</td>
<td>Opportunities for advancing SCP in China</td>
</tr>
<tr>
<td>Think5</td>
<td>The SCP policy toolbox: Supporting Governments to address the opportunities ahead</td>
</tr>
<tr>
<td>Think6</td>
<td>Summary of ‘Thinking CE - Concepts and Principles’</td>
</tr>
</tbody>
</table>
What is the training about?
Modules of Day 2

Day 2 ‘Promoting Circular Economy - Measures & Instruments’

<table>
<thead>
<tr>
<th>Promote1</th>
<th>Overview on ‘Promoting CE - Measures &amp; Instruments’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote2</td>
<td>Regulatory Instruments: Setting the rules</td>
</tr>
<tr>
<td>Promote3</td>
<td>Economic Instruments: Getting the prices right</td>
</tr>
<tr>
<td>Promote4</td>
<td>Cooperation Instruments: Initiating cooperation initiatives</td>
</tr>
<tr>
<td>Promote5</td>
<td>Education and Research: Educating and creating awareness</td>
</tr>
<tr>
<td>Promote6</td>
<td>Information instruments: Providing targeted information</td>
</tr>
<tr>
<td>Promote7</td>
<td>Bringing the pieces together: Setting up the framework and designing a sound policy mix</td>
</tr>
<tr>
<td>Promote8</td>
<td>Summary of ‘Promoting CE - Measures &amp; Instruments’</td>
</tr>
</tbody>
</table>
What is the training about?
Modules of Day 3

Day 3 ‘Implementing Circular Economy -
Steps for taking successful action’

<table>
<thead>
<tr>
<th>Implement1</th>
<th>Overview of ‘Implementing CE - Steps for taking successful action’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement2</td>
<td>Setting priorities: Analysis of current production and consumption patterns</td>
</tr>
<tr>
<td>Implement3</td>
<td>Assessing the Policy Opportunities: Drafting and Analysing Policy Options</td>
</tr>
<tr>
<td>Implement4</td>
<td>Implementing the policies: Policy coordination through networks and partnerships</td>
</tr>
<tr>
<td>Implement5</td>
<td>Following up policy implementation: Indicators, evaluation and corrective action</td>
</tr>
<tr>
<td>Implement6</td>
<td>Summary of ‘Implementing CE - Steps for taking successful action’</td>
</tr>
</tbody>
</table>
Policy reinforcement for Circular Economy

What is Prodev?

What is the training about?

What will happen?
What will happen?
Presentations and Exercises

Presentations & Exercises

**Day 1**
- Think1
- Think2
- Think3
- ...

**Day 2**
- Promote1
- Promote2
- Promote3
- ...

**Day 3**
- Implement1
- Implement2
- Implement3
- ...

Prodev Training  |  Day 1  |  Presentation - Introduction / Think1  |  Building Capacity for SCP  | 13
What will happen?
Presentations and Exercises

Presentations & Exercises

Day 1
- Think1
- Think2
- Think3

Day 2
- Promote1
- Promote2
- Promote3
...

Day 3
- Implement1
- Implement2
- Implement3
...

A. Presentation
- Provided by the trainers approx. 30-45 min

B. Exercise
- Done by the participants approx. 30-45 min
What will happen
After the training - Participation Certificate

Certificate on CE / SCP Training

Training

- Presentations
- Exercises

Day 1 - Day 3

Participation Certificate

- Continuous and active participation
- Attendance 3 days
- Provision of feedback form
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Setting the stage: ‘Thinking Circular Economy – Concepts and Principles’
Objectives of ‘Thinking Circular Economy’

- Provide latest state-of-the-art and knowledge on Circular Economy and sustainable consumption and production (SCP) in China, Europe and other world regions

- After Day 1 the participants will have identified the major opportunities for Guiyang that arise from CE and SCP activities and will have provided and discussed a number of possible suggestions for successful implementation activities

- Good understanding among the participants on the importance of governments concerning the setting of a sound framework for CE and SCP and good coordination among different departments and bureaus
Day 1 – Summary
‘Thinking Circular Economy - Concepts & Principles’

Think2
What is CE / SCP and why does it matter?

Think3
The situation in China

Think4
Enabling means to promote CE / SCP

Think5
The role of governments
# Thinking Circular Economy - Concepts & Principles

What will come today

## Day 1

‘Thinking Circular Economy - Concepts & Principles’

<table>
<thead>
<tr>
<th>Think1</th>
<th>Setting the stage: ‘Thinking CE - Concepts and Principles’</th>
<th>Objectives and overview for Day1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Think2</td>
<td>World-wide trends and European success stories on CE and SCP</td>
<td>Why resource consumption matters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resource efficiency – the way forward</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Initiatives for promoting resource efficiency</td>
</tr>
<tr>
<td>Think3</td>
<td>Opportunities for China: The key results from the policy framework study</td>
<td>Current status of Circular Economy in China</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Main results of the policy framework study</td>
</tr>
<tr>
<td>Think4</td>
<td>Opportunities for advancing SCP in China</td>
<td>Awareness raising and capacity building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engagement and partnership</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technology transfer and development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Funding and financing</td>
</tr>
</tbody>
</table>
### Day 1

**‘Thinking Circular Economy - Concepts & Principles’**

<table>
<thead>
<tr>
<th>Think5</th>
<th>The SCP policy toolbox: Supporting Guiyang government to address the opportunities ahead</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Think5</strong></td>
<td><strong>The importance of governments</strong></td>
</tr>
<tr>
<td></td>
<td>How governments can steer societies towards SCP</td>
</tr>
<tr>
<td></td>
<td>Principles for sound SCP policy making</td>
</tr>
<tr>
<td></td>
<td>Opportunities for SCP along the policy cycle</td>
</tr>
<tr>
<td><strong>Think5</strong></td>
<td><strong>The SCP policy toolbox</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Think6</th>
<th>Summary of ‘Thinking CE - Concepts and Principles’</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Think6</strong></td>
<td><strong>Summary for Day1</strong></td>
</tr>
<tr>
<td></td>
<td>Outlook Day2</td>
</tr>
</tbody>
</table>
Policy reinforcement for Circular Economy

Let’s get started!
Policy reinforcement for Circular Economy

Think2

Setting the stage: ‘Worldwide Trends and European/Chinese Success Stories on CE and SCP’
Policy reinforcement for Circular Economy

Structural Change: The case of Germany

Recent trends: The case of China/Asia

The decoupling challenge: Opportunities through resource efficiency

Circular Economy in China: Opportunities for decoupling
The Case of our region
Ruhr-Area
North-Rhine Westphalia, Germany
The city of Wuppertal
A collaborating centre with UNEP
Rhein-Ruhr Area in Germany
A region of structural changes

Rhein-Ruhr-Area, Germany

From resource-based industrial revolution...

...to service-oriented society and high quality living area
Rhein-Ruhr Area in Germany
A region of structural changes

<table>
<thead>
<tr>
<th>Resource-based heavy industry</th>
<th>Heavy pollution problems</th>
<th>End-of-pipe solutions</th>
<th>Input-orientation/Resource Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
<td><img src="image3" alt="Image" /></td>
<td><img src="image4" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1900</th>
<th>1930</th>
<th>1960</th>
<th>1990</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry activities</td>
<td>Economic growth</td>
<td>Increased consumption</td>
<td>Waste Recycling/Resource Efficiency</td>
<td></td>
</tr>
</tbody>
</table>
Rhein-Ruhr Area in Germany
A region of structural changes

Ruhr
Area
5.3 million
4,435 km²

Inhabitants

Guiyang
Size
3.4 million
8,046 km²
Rhein-Ruhr Area in Germany
A region of structural changes

Source: Landesamt für Datenverarbeitung und Statistik NRW, Düsseldorf 1998
(Regional Authorities for Data Processing and Statistics North Rhine-Westphalia)
Rhein-Ruhr Area in Germany
A region of structural changes

From heavy industry area to service-oriented and innovative region...
Rhein-Ruhr Area in Germany
A region of structural changes

Former industrial parks as leisure parks for families...
Rhein-Ruhr Area in Germany
A region of structural changes

Former industrial parks for cultural events...
Policy reinforcement for Circular Economy

Structural Change: The case of Germany

Recent trends: The case of China

Recent trends: The case of China/Asia

The decoupling challenge: Opportunities through resource efficiency

Circular Economy in China: Opportunities for decoupling
The case of China: Recent trends and why resource consumption matters
Why resource consumption matters
Matching ecological footprint and human development

'Sustainable Development' of 'Developed Countries'
'Sustainable Development' of 'Developing Countries'

Ecological Footprint per person

Source: WWF 2005
Why resource consumption matters
Global value chains – local issues

Coffee plantations  Textile production  Street Market  Electronic waste

Developing Countries
Resource Extraction  Producers  Retailers  Consumers  End-of-life Managers

Developed Countries
Surface Mining  Sugar beet farmer  Shopping Centre  Recycling

Why resource consumption matters
Global value chains – local issues

Coffee plantations  Textile production  Street Market  Electronic waste

Developing Countries
Resource Extraction  Producers  Retailers  Consumers  End-of-life Managers

Developed Countries
Surface Mining  Sugar beet farmer  Shopping Centre  Recycling
Why resource consumption matters
Global supply chains – local issues
Why resource consumption matters
Trends – decoupling economic growth from resource use

- USA 75–94
- Finland 75–97
- Germany 91–96
- Netherlands 75–94
- China 89–96
- EU-15 80–97
- Japan 75–94
- Poland 92–97
- UK 75–97

TMR per capita (tonnes)

GDP per capita (’000 $US)
Why resource consumption matters
Increasing evidence for burden shifting – a European Perspective

Global systems of production and consumption lead to growing natural resource extraction from the third world…
Why resource consumption matters
The global picture – ecological footprint by region

Ecological Footprint by Region
2001

Source: WWF 2005
Why resource consumption matters
The regional picture – ecological footprint by country

Ecological Footprint in the Asia-Pacific Region

Source: WWF 2005
Why resource consumption matters
The national picture – ecological footprint in China


Source: WWF, 2005
Why resource consumption matters
The national picture – resource consumption in China

Trends in China:

Resource Consumption

Environmental impacts

- Other non-ferrous metals
- Zinc
- Aluminium
- Copper
- Steel
- Gas
- Petroleum

Growth Rate

Source: Background-Paper China Roundtable on Sustainable Consumption
Why resource consumption matters
The national picture – environmental impacts in China

Trends in China:

Resource Consumption

- COD discharge exceeds capacity by 60%

Environmental impacts

- Only 21% of hazardous industrial waste properly disposed
- Emission of CO2 exceeds bearing capacity of atmosphere by 80%
- Light pollution in 32%, and heavy pollution in 27% of cities

90% of inner-city rivers seriously polluted

Source: Background-Paper China Roundtable on Sustainable Consumption
‘Global Consumer Class’ (GCC)

**Why resource consumption matters**

Consumption issues – global consumer class

---

**Golden Resources Shopping Mall, China**

**What is the GCC?**

- Consumption patterns similar to those in developed countries (>7000 USD BIP)

**Where is the GCC?**

- 1.7 billion members, of these
  - 50% in developing countries
  - 362 Million in China and India, more than in Europe
- In the next years, the GCC will grow most strongly in developing countries.

Source: Bentley 2003: Leading consumer classes in countries, 2002
Why resource consumption matters
Consumption issues – Ecological backpack of different need areas

Most resource consumption hidden in „backpack“

Material intensity per capita per year

76 tonnes = 100%

- Others: 11
- Community: 6
- Leisure: 13
- Education: 5
- Health: 9
- Clothing: 6
- Food: 20
- Residence: 29

Hidden material load

- Erosion
- Earth displacement
- Unconverted materials
- Mineral raw materials
- Fossil fuels
- Biological raw materials

Source: Wuppertal Institute
Policy reinforcement for Circular Economy

Structural Change: The case of Germany

Recent trends: The case of China/Asia

The decoupling challenge: Opportunities through resource efficiency

The decoupling challenge: Opportunities through resource efficiency

Circular Economy in China: Opportunities for decoupling
The decoupling challenge

Resource efficiency as the way forward
The decoupling challenge
National goals for raising resource efficiency

Resource-Efficiency in national sustainability agendas

<table>
<thead>
<tr>
<th>Country</th>
<th>Goal Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>Factor 4</td>
</tr>
<tr>
<td>Austria</td>
<td>Factor 10</td>
</tr>
<tr>
<td>Sweden</td>
<td>Factor 10 (within next 25 to 50 years)</td>
</tr>
<tr>
<td>Germany</td>
<td>2.5 fold increase in raw material productivity (from 1993 to 2020)</td>
</tr>
<tr>
<td>UN GA</td>
<td>Factor 4 in the next two to three decades</td>
</tr>
</tbody>
</table>
The decoupling challenge
European framework for resource productivity

Total material requirements

Extracting raw materials and energy

Supply
- Know-how (education)
- Technology (R&D)
- Diffusion & transfer
- Voluntary agreements

Manufacturing products

Demand
- Public procurement
- Consumer information & access
- Stakeholders’ rights

Customers & consumption

Product disposal

Possible Policies

Market Structure
- Targets
- Material input taxes
- Standards
- Reporting, accountability

Extracting raw materials and energy

Possible Policies

Supply
- Know-how (education)
- Technology (R&D)
- Diffusion & transfer
- Voluntary agreements

Demand
- Public procurement
- Consumer information & access
- Stakeholders’ rights

Market Structure
- Targets
- Material input taxes
- Standards
- Reporting, accountability
The decoupling challenge
Case Study: Circular Economy Law, Germany (1)

Circular Economy Law, Germany

Output-oriented measures
- Waste Disposal Act (1972)
- Waste Avoidance and Management Act (1986)
- Packaging Ordinance (1991)

Input-oriented measures
- Resource Efficiency (2005)

Circular Flow Economy Waste Law
- Framework regulation
- Make manufacturers responsible for the entire life cycle of a product
- The owners of generators of waste are responsible for waste avoidance, recovery and disposal
- Source of further statutory ordinances and voluntary agreements
The decoupling challenge
Case Study: Circular Economy Law, Germany (2)

Circular Economy Law, Germany

Dual Disposal System

Producers

Distributors

Collection of waste packaging directly from private households, the sorting of this waste into material groups, and the recycling of these materials

The Green Dot (‘Der Grüne Punkt’)

License label printed directly on the packaging and showing that producers payed for the packaging management

Over 20 millions tons of used packaging recycled- the consumption of packaging was reduced by 1,3 millions of tonnes (compared to 1991)

1993
The decoupling challenge
Resources in the production-consumption system

Production-Consumption System

Input

Environment

Output

Resource Extraction  Producers  Retailers  Consumers  End-of-life Managers

Environment
The decoupling challenge
Resource efficiency and other policy approaches

Source: Adapted from Wuppertal Institute
The decoupling challenge
Resource efficiency – the way forward

<table>
<thead>
<tr>
<th>Detoxification / End of Pipe</th>
<th>Reuse and Recycling</th>
<th>Use of renewable resources</th>
<th>Raising resource efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce environmental impacts</td>
<td>+++</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Sustaining the structure of production-consumption systems</td>
<td>−</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Adjust throughput of production-consumption system</td>
<td>−</td>
<td>+</td>
<td>−</td>
</tr>
<tr>
<td>Limit expansion of infrastructure</td>
<td>−</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>Socio-economic benefits (competitiveness, poverty reduction)</td>
<td>(−)+</td>
<td>++</td>
<td>+(+)</td>
</tr>
<tr>
<td>Minimise problem shifting</td>
<td>− −</td>
<td>+</td>
<td>+/−</td>
</tr>
</tbody>
</table>

Source: Adapted from Wuppertal Institute
Resource efficiency – the way forward
Vast cost reduction opportunities in the private sector...

Material and energy costs
- 51% of total costs
- Material flows generate further 21%

Personnel costs
- 23% of total costs

Factor 2-3 : 1

Type of costs in % of the total costs*

- Material and Energy: 51%
- Personnel: 23%
- Others: 19%
- Depreciation / Rent: 3%

*Federal Statistical Office, Cost Structure of Manufacturing Industries, 1999

Quelle: ADL, Dr. Hartmut Fischer, 2003
Recent focus in German CE Policy

Output-oriented measures
- Waste Disposal Act (1972)
- Waste Avoidance and Management Act (1986)
- Packaging Ordinance (1991)
- Resource Efficiency (2005)

Input-oriented measures

Focus
- Precautionary Principle
- Waste Avoidance
- Resource Efficiency
German Material Efficiency Program for the Ministry of Economics and Labour

Policy Recommendations for designing and implementing a Material Efficiency Program

Ongoing Evaluation

- Impulse Program Material Efficiency
- Material Efficiency Agency
- Regional Players/Consultant Pool
- Material Efficiency Award

Program Aim: Diffusion in SME via consulting, information and motivation
Policy reinforcement for Circular Economy

Structural Change: The case of Germany

Recent trends: The case of China/Asia

The decoupling challenge: Opportunities through resource efficiency

Circular Economy in China: Opportunities for decoupling

Circular Economy in China: Opportunities for decoupling
Circular Economy in China
Challenges and opportunities for decoupling
Circular Economy in China
Achieving the “all-round well-being society”

**Circular Economy in China**

**Micro**
Individual firm level
- **Reduce** consumption of resources and emission of pollutants and waste
- **Reuse** resources
- **Recycle** by-products

**Meso**
Network level
- Collaborate in industrial parks and clustered or chained industries
- Resources shall circulate fully in the local production system

**Macro**
Regional level
- Municipal or regional by-product collection, storage, processing, and distribution systems
- Integrate different production and consumption systems

**Final Goal:**
„all-round well-being society“
Circular Economy in China
 Opportunities to enhance resource efficiency and competitiveness

Circular Economy in China

3R-Principle: Reduce – Reuse – Recycle

Input

Output

Strong focus worldwide & also in China

Becomes increasingly important in the future

Resource-Efficiency & Dematerialisation

Prodev Training | Day 1 | Presentation - Think2 | Building Capacity for SCP | 41
Circular Economy in China

Presentation by SEPA
Circular Economy in China
Resource efficiency – the way forward

Large efficiency gap

Between developed and developing countries

Between developing countries

Quelle: Eisenmenger und Schandl 2003
Circular Economy in China
Resource efficiency – the way forward

**Growth 1991-2001**

Ecological footprints grow slower than GDP

“Decoupling” of growth and resource use in Asia?

Resource efficiency for competitiveness?

Data from WWF 2005

Thailand
Philippines
Korea, Republic
Japan
Indonesia
India
China
World
Australia

Ecological Footprint
GDP
Population

Eco.
Footprint
GDP
Population
Circular Economy in China
Opportunities to leapfrog towards resource efficiency
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Think2

Group discussions: Expected benefits from implementing Circular Economy
Group discussions

Benefits for your region

What environmental, economic and social benefits do you expect from implementing Circular Economy in your region?

What do we do?

- Brainstorming on expected benefits
- Record responses to questions in group
- Presentation of results to the meeting
- Facilitators leads discussion

Time:
- 25min
- 20min
Group Discussion

Please brainstorm...

What environmental, economic and social benefits do you expect from implementing Circular Economy in your region?

<table>
<thead>
<tr>
<th>Environmental:</th>
<th>Economic:</th>
<th>Social:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Write answers to each question

25 Minutes

Report to group
Opportunities: Circular Economy and SCP in China & Key results from the Guiyang policy framework study
<table>
<thead>
<tr>
<th>Current status of Circular Economy in China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main results of the policy framework study</td>
</tr>
</tbody>
</table>
Survey findings
Importance of CE for Guiyang

Presentation by SEPA
Policy reinforcement for Circular Economy

Current status of Circular Economy in China

Main results of the policy framework study
Importance of CE for Guiyang

High awareness on Circular Economy concept among governmental officials

In the interviews, local decision makers stated...

“CE offers opportunity to align economic growth with environmental protection”

“Guiyang is very committed to a long-term CE strategy”

“Guiyang has recently reinforced its commitment to CE”

“More instruments needed to implement CE at city level”
Survey findings
Awareness and understanding on Circular Economy I

Awareness & understanding

Current state

- High awareness on Circular Economy concept among governmental officials
- Understanding on CE is closely related to the 3R-Principles (Reduce, Reuse, Recycle)

Resulting opportunities

- Raising public awareness on CE and communicating the role of consumers in applying CE at household level
- Focus lies on Reuse & Recycle, hence, opportunities to raise awareness on benefits of resource efficiency
Survey findings
Awareness and understanding on Circular Economy II

Current state

- Focus on solid waste management in urban areas
- Circular Economy is closely related to the establishment of Eco-Industrial Parks
- Understanding of the interrelationship of environmental protection and the quality of human life

Resulting opportunities

- Opportunities exist for increasingly enhance and promote knowledge on life-cycle-thinking
- Knowledge-building on the integration of production and consumption systems on a regional basis
- Further exploring the mutually reinforcing linkages between environmental services and poverty alleviation
Survey findings
Awareness and understanding on Circular Economy

Current focus
State-owned enterprises in selected heavy polluting industries

- Include private sector enterprises, especially SMEs
- Address full life cycle of products and services
- Address consumption behaviour
- Develop new, less-polluting industries
Survey findings
Barriers towards implementing Circular Economy

Main Barriers for implementing CE

- Funding emerges as most important barrier
- State and development of technology as another key areas of concern
- Partnerships as third-priority issue

Survey findings
Barriers towards implementing Circular Economy

Main Barriers for implementing CE

- Funding emerges as most important barrier
- State and development of technology as another key areas of concern
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Survey findings
Barriers towards implementing Circular Economy

Main Barriers for implementing CE

- Funding emerges as most important barrier
- State and development of technology as another key areas of concern
- Partnerships as third-priority issue
Survey findings
Current application of policy instruments

Policy instruments implemented

**Already strong application**
- Laws and regulations (legislative measures)
- Cleaner Production (auditing and implementation)
- Economic instruments
- Development of master plans
- Environmental management systems

**Improvement opportunities**
- Economic instruments
- Educational and research tools
- Informational tools
- Co-operative tools
- Indicators
- Labelling
- Life-cycle assessment
- Public procurement
- Sustainable consumption

*Policy mix*: Understand linkages and dependencies between policy instruments
Survey findings
State of stakeholder involvement

Stakeholder involvement

**Strong interaction**
- Governmental departments (11)
- State owned enterprises (8)
- Private sector (7)

**Weak interaction**
- Foreign NGOs (4) / NGOs (3)
- International organisations (3)
- Public (3)
- Foreign Enterprises (3)
- Foreign governmental institutions (3)

Opportunities arising

- Extend outreach of governmental activities to wider society
- Build stronger international linkages to implement projects
- Increase societal support for implementation of policy instruments
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Individual Brainstorming: Addressing the key results from the policy framework study
Think3
Opportunities for China: Addressing the key study results

Individual Brainstorming

Opportunities for China

1. Consider the main barriers identified in Policy Framework Study

2. Write down possible solutions to overcome the barriers on cards

3. Identified solutions will be clustered on clip chart

What do we do?

The task

- Individual brainstorming
- Write solutions to identified barriers on provided cards
- Return the cards to the facilitators
- Facilitators cluster solutions and lead a discussion

10 min
35 min
Think3
Opportunities for China: Addressing the key study results

Individual Brainstorming

Opportunities for China

**Identified barriers:**

1. Insufficient funding, need to review approaches elsewhere
2. Need for technical & management/organizational system innovation
3. Knowledge & guidelines on CE planning procedures and difference from traditional environmental management
4. Need for legislative support for CE and market-based approaches

![Diagram]

### What do we do?

- **The task**
  - Individual brainstorming
  - Write solutions to identified barriers on provided cards
  - Return the cards to the facilitators
  - Facilitators cluster solutions and lead a discussion

10 min

35 min
Policy reinforcement for Circular Economy

Opportunities for advancing sustainable consumption and production in China
Barriers to realising SCP projects

Lessons learned from Guiyang and beyond...

- Finance needed to enable investments in transition period
- Lack of access to appropriate technologies / ability to developed these
- Single actors unable to move due to internal and external constraints
- Both public and private actors lack awareness and knowledge on SCP
Opportunities enabling SCP
4 major means to break barriers to implementing SCP policies

Finance
Partnership

Technology
Capacity Building

Barriers to SCP
Policy reinforcement for Circular Economy

Funding and financing

Funding and financing
Technology transfer and development
Engagement and Partnership
Awareness raising and capacity building
Funding and financing

Overview

Funding and financing

Finance needed to enable investments in transition period

Mix public and private funding

Public seed funding to initiate continuous investments

Private sector investment to capitalise on investment capacities

Use environmental funds to coordinate funding

Try to maximise environmental, social and economic side-effects

- Environmental taxes and charges
- Co-financing
- Development grants
- NGO and foundation funding
- Micro-finance
- Carbon financing
- Private investment
Financing and funding
Case Study: Clean Development Mechanism

Clean Development Mechanism

**Mechanism**
Allows industrialised countries with a greenhouse gas reduction commitment to invest in emission reducing projects in developing countries (e.g. China) as an alternative to more costly emission reduction projects in their own countries.

**How it works**
- Identify local GHG abatement project and find investment partner from industrialised country
- Make the case using CDM Executive Board (EB) approved methodologies
- Approval by third-party agency
- After final approval by CDM EB, Certified Emission Reductions (CER) are awarded

**Possible projects**
Fuel Switching, Efficiency, Gas capture/destruction from landfills, Renewables, Transport, Small/large hydro, sinks for GHGs

**Current State - July 2006**
- Currently 240 projects
- 70 million CERs issued
- ~36% for China
Equator Principles

A benchmark for the financial industry to manage social and environmental issues in project financing

41 Banks worldwide have adopted the Equator Principles, covering about 80% of project financing worldwide (June 2006)

Equator Principles Financial Institutions (EPFIs) will only provide loans to projects (>10 million US$) that conform to the Equator Principles

**Categorisation**

**Category A**: High risk, Projects with potential significant social and environmental impacts

**Category B**: Limited risk, Projects with limited social and environmental impacts, largely reversible

**Category C**: Very low risk, Projects with minimal or no social or environmental impacts

**Equator Principles**

- Review and Categorisation
- Social and Environmental Assessment
- Applicable Social and Environmental Standards
- Action Plan and Management System
- Consultation and Disclosure
- Grievance Mechanism
- Independent Review
- Covenants
- Independent Reporting and Monitoring
- EPFI Reporting
**Environmental Funds**

**Long-term finance mechanism**

**What are they?**

Environmental Funds are innovative mechanisms for long-term finance initiatives.

**How do they work?**

- Special taxes / earmarked fees
- Private donations and/or its interest
- Grants (government or other agency)

- Conservation measures
- Improving Areas
- Awareness Raising
- Other environmental activities
**Financing and funding**

**Case Study: ProKlima**

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**ProKlima**

**Impulses for the Hannover region**

**Climate Protection Fund in Hannover, Germany and its region**

---

**Sources of funding**

- **Total of about 5 Million EUR/year**
  - City of Hanover
  - Cities around Hanover
  - Municipal utility of Hanover
  - Earmarked fees from gas usage (50%)
  - A set percentage of annual profits (50%)**

**Support Programmes**

- Energy modernisation of older buildings
- Heat energy conservation
- Solar water heating systems
- Solar energy and climate protection in schools and public institutions
- Energy modernisation of club houses/buildings
Policy reinforcement for Circular Economy

- Funding and financing
- Technology transfer and development
- Engagement and Partnership
- Awareness raising and capacity building
Technology transfer and development
An overview

Technology transfer & development

Lack of access to appropriate technologies / ability to developed these

- Technology transfer
  - Introducing technology already applied in other circumstances

- Local technology development
  - Developing technology based on local knowledge and resources

- Technology assessment
  - Assess environmental, social and economic impacts of technology

- Technology promotion
  - Make sure that environmental technology gets applied by business
Technology transfer and development
Case Study: Effizienz-Agentur NRW, Germany

Effizienz-Agentur NRW
Cleaner Production in North Rhine-Westphalia

EFA Toolbox
- Material Flow Analysis
- Eco-Efficiency Check
- Optimisation of Product Development
- Finding potential for cost cutting in resource use
- Financing PIUS Implementation

Helping small and medium sized manufacturing enterprises achieve an increase in cost efficiency, protect the environment and gain a competitive edge in the market

Facts
- From 1998 until 2005, 132 Projects on Production Integrated Environmental Management have been completed
- Effect: 5.3 Million EUR of savings in production processes each year
Technology transfer and development
Case Study: Support for clean technology

IHOBE Regional support initiative for clean technology

Basque List of Clean Technologies

A list of environmental technologies that generate meaningful environmental improvements within the areas of water, air, waste, resources and/or soil.

Database, information on clean technology and awareness raising

Up to 30% tax deduction to promote usage of technologies by business
Engagement and Partnership

An overview

Engagement & Partnership

Single actors unable to move due to internal and external constraints

- International agencies
- Donor organisations
- Universities & Research Institutions
- Local businesses
- Governmental departments
- Multinationals operating in and sourcing from region
- State-owned companies
- NGOs (local, national, foreign...)
- Business associations

Pool resources and capabilities of different partners to make SCP projects happen

Pool demand and create markets for SCP products and services

Exchange knowledge and information for policy and project implementation
Engagement and Partnership
Case Study: Espaço ECO Foundation

Espaço ECO Foundation
Latin America’s “first centre for applied eco-efficiency”
Supports environmentally and economically efficient production in Latin America

Eco-Efficiency training centre for entrepreneurs and multipliers
Disseminate knowledge on existing projects
Develop new and innovative solutions

joint project

BASF
The Chemical Company
German chemical company active in the Brazilian market

gtz
German development and technical cooperation agency
### Engagement and Partnership

**Case Study: LEAP (Local Authority EMAS and Procurement), UK**

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**LEAP**

Local Environmental Management Systems and Procurement

---

**Local Authority Partners**

- Leicester, UK
- Kalithea/Rhodes, Greece
- Göteborg, Sweden
- Sandwell (London), UK
- Amaroussion, Greece
- Almada, Portugal
- Sutton (London), UK
- Holargos, Greece
- Southwark (London), UK
- Lewisham (London), UK

---

**Project Objectives**

**Joint procurement**

Create demand and increase production for "greener" products

---

**Development of Concrete Tools for Public Procurement**

---

**Create markets for green products**

**Reduced costs for green products**

---

**Prodev Training**  **Day 1**  **Presentation - Think 4**  **Building Capacity for SCP**  **17**
Germany’s big discount stores
Sales of organic products (change from 2004 to 2005)

+62%

+46%

+62%

**FairTrade Sales increase in 2005**

<table>
<thead>
<tr>
<th>Product</th>
<th>Incr.</th>
<th>Organic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
<td>+ 10%</td>
<td>50%</td>
</tr>
<tr>
<td>Juice</td>
<td>+ 12%</td>
<td>8%</td>
</tr>
<tr>
<td>Candy</td>
<td>+ 14%</td>
<td></td>
</tr>
<tr>
<td>Cocoa</td>
<td>+ 10%</td>
<td>79%</td>
</tr>
<tr>
<td>Honey</td>
<td>+ 8%</td>
<td>13%</td>
</tr>
<tr>
<td>Chocol.</td>
<td>+ 22%</td>
<td>60%</td>
</tr>
<tr>
<td>Tea</td>
<td>+ 0%</td>
<td>71%</td>
</tr>
<tr>
<td>Fruits (South)</td>
<td>+120%</td>
<td>99%</td>
</tr>
</tbody>
</table>

64% of FairTrade products in Germany are also organic

German Organic Label (EU Standards)
Engagement and Partnership
Untapped opportunities for partnerships along value chains

Impacts and Opportunities among consumer products

Environmental & Social Impact

Value Chain

Natural Resources → Transportation → Manufacturing → Distribution → Consumption

high

low
Engagement and Partnership
Untapped opportunities for partnerships along value chains

Current Management and Policy Effort

Focus of current management effort: only ad hoc and sporadic management

Value Chain:
- Natural Resources
- Transportation
- Manufacturing
- Distribution
- Consumption

Management Response:
- high
- low
Engagement and Partnership
Untapped opportunities for partnerships along value chains

Mismatch between the two

Environmental and social impacts

- High opportunities for partnerships
- Low opportunities for partnerships

80% of overall efforts focus on 20% of the total risk

Policy, performance and reputation opportunities

Value Chain

- Natural Resources
- Transportation
- Manufacturing
- Distribution
- Consumption
Policy reinforcement for Circular Economy

- Funding and financing
- Technology transfer and development
- Engagement and Partnership
- Awareness raising and capacity building
- Awareness raising and capacity building
Awareness raising and capacity building

An overview

Both public and private actors lack awareness and knowledge on SCP

Challenges
Lack of awareness among consumers, NGOs and business leaders and even the government
Lack of institutional and human capacity to make change towards SCP happen

Solutions

Internal programmes
Strengthen the capacity of government institutions, personnel and decision makers

External programmes
Target businesses, consumers, organisations, etc.

General programmes
Integrate SCP into education

training programmes
information centres
guidebooks
manuals
Engagement and Partnership
Case Study: ECOPROFIT in Graz, Austria

**ECOPROFIT**
ECOlogical PROject for Integrated Environmental Technology

- **Public Private Partnership**
  - Consultants
  - Local Authority
  - Business / Companies

**ECOPROFIT Framework**
- Networking / meetings
- Adressing current issues
- Training / Workshops

**Workshop Programme**
- Information and motivation
- Cleaner Production
- Setting up an environm. team
- Material flows analysis
- Waste Management / Logistics
- Laws and regulations
- Efficient energy use
- Eco-controlling / Eco-indicators
- Preparation of final report

**Awards**
- Dubai International Award for Best Practices to Improve the Living Environment 2002
- European Sustainability City Award 1996
The Efficient Entrepreneur

A calendar for small and medium sized enterprises

- Developed by UNEP and Wuppertal Institute
- Month-by-month guide for achieving lower resource use and higher efficiency
- A different subject each month, e.g. energy (March), water (May), communication (November)
- Includes an Assistant booklet

www.efficient-entrepreneur.net
Awareness raising and capacity building
Capacity building tool – Sustainability

SMART
Sustainability for the Small and Medium Sized Companies committed to Accountability, Responsibility and Transparency

A toolkit enabling SMEs to cope with the sustainable production and consumption challenge

- Performance optimiser
  - Month-by-month desk calendar programme

- Training package
  - Capacity Building among "information gatekeepers"

- Reporting resource book
  - Introduce SMEs to the GRI Guidelines
Awareness raising and capacity building
One Million Sustainable Homes, UK

One Million Sustainable Homes

To overcome barriers to building sustainable homes, WWF is working on six key strategies

6 Key Strategies
- Fiscal Incentives
- Planning and Building Regulations
- Investor Support
- Ensuring competitive cost
- Build consensus on definition of „sust. homes“
- Consumer Awareness

Housebuilder Sustainability Toolkit
provides clear guidance on for housebuilders seeking to address a wide range of sustainability issues

Fact
More than half of the resources consumed globally are used in construction

Govern-ment
Industry
Consumers

Fact
More than half of the resources consumed globally are used in construction
Learning Partnerships for Sustainability

**Benefits**
- Better image
- Presentation of company
- Innovative ideas from pupils
- Potential apprentices / employees
- Contact to companies
- New and interesting learning material
- „On the job“ and practical experience

**Study Material**
- Sustainable Development
- Companies and Sustainability
- Products, Services and Sustainability
- Companies in a globalised world

**Dialogue on Sustainability**
- Companies
- Schools

**Kurs 21**
 Awareness raising and capacity building
Germany: Kurs 21
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Think4

Group exercise: Opportunities for advancing SCP in China
Group Exercise

Solution Oriented Opportunities: Resource Efficiency

1. Four groups with a mix of participants from different departments
2. Consider one of the following:
   - Group #1: Partnerships
   - Group #2: Capacity building
   - Group #3: Finance
   - Group #4: Technology
3. Write answers on provided sheets
4. Report back to meeting

What do we do?
- The task
  - Split into 4 groups
  - Discuss the questions and write down your answers
  - Report back to the group and give the forms to the meeting facilitators

25 min
20 Min
Partnerships can help foster mutual confidence and cooperation that enhance CE and SCP implementation. Examples are local learning networks, knowledge networks in Ecological Industrial Parks (EIP), public-private partnerships and external knowledge partners.

1. Chose an important industrial sector in China.

Sector________________________

2. Who are the key stakeholders that should form a partnership to improve resource efficiency? Why are these stakeholders important?

3. What are one or two things each stakeholder should do to make a successful partnership?

Report back in 25 Minutes
Group Discussion

Group 2: Capacity building

Capacity Building can provide opportunities and approaches for social innovations. This can include information centres, training programs that promote eco-efficiency, environmental management in enterprises, guidebooks and manuals for employees.

1. What are some key knowledge gaps in China that need to be filled to implement the Circular Economy policy?

   A. Government:

   B. Industry:

   C. Consumers:

2. What specific actions are needed to address the knowledge gaps about resource efficiency? Please give realistic suggestions.

Report back in 25 Minutes
Partnerships can provide opportunities for Circular Economy and Sustainable Consumption and Production implementation activities. These can include revenue from economic instruments, Global Environment Facility (GEF) and other multi-lateral donor funding, Clean Development Mechanism (CDM) carbon credits, development cooperation, public-private partnerships.

1. What sources are currently used to fund Circular Economy and Sustainable Consumption and Production activities in China?

2. What projects or initiatives are facing the most critical shortages of funding?

3. What are two things that can be done to increase funding for resource efficiency initiatives?

Report back in 25 Minutes
Group Discussion

Group 4: Technology

Technological development can provide opportunities for enhancing technological innovation. Methods and tools for technological development can include technology transfer, equal access, technology impact assessment, and incentives for environmental and eco-efficient technologies.

1. What are the key issues for technology development that authorities in China are currently working on?

2. What are the highest priority areas for technological innovation to improve resource efficiency? Why are these areas the highest priority areas?

3. What are two suggestions for how technological innovation for resource efficiency can be stimulated in China?

Report back in 25 Minutes
Policy reinforcement for Circular Economy

Think5

The SCP policy toolbox: Supporting governments to address opportunities
Policy reinforcement for Circular Economy

How governments can steer societies towards SCP

Cooperation needed for sound policy making

Opportunities for SCP along the policy cycle
How governments can steer societies towards SCP
How can governments influence businesses and consumers?

“Need for development of policy frameworks that promote the adoption of the SCP by industry and consumers and follow the principles of better regulation”

Source: CSCP, UN-DESA, UNEP: Costa Rica background paper, SEPA: China Roundtable on SCP
How governments can steer societies towards SCP
Interdependencies between governments and businesses

- Regulation/Liability
- Economic instruments
- Financial support
- Green procurement

- Compliance management
- Controlling, Accounting
- Accounting and Corporate Finance
- Market research and product dev.
How governments can steer societies towards SCP
Interdependencies between governments and consumers

Government

- Economic instruments
- Consumer advise/information
- Product-related regulation

Consumers

- Allocate household budget
- Get informed on buying options
- Product usage decisions
Policy reinforcement for Circular Economy

Cooperation needed for sound policy making

How governments can steer societies towards SCP

Opportunities for SCP along the policy cycle

Cooperation needed for policy sound making
Cooperation needed for sound policy making
Guiyang is part of the global consumption & production system

China is part of the global consumption and production system

- Resource Extraction
- Producers
- Retailers
- Consumers
- End-of-life Managers
Cooperation needed for sound policy making
Lessons in Germany over time

Complex problems and challenges...

Pollution problems  Health problems  Poverty reduction  Need for innovation

...need to be solved by cooperation
Cooperation needed for sound policy making
Ministries involved in Circular Economy in Germany

Coordinate between different governmental areas

- Ministry of Economic Development
- Ministry of Consumer Protection
- Ministry of Health Affairs
- Ministry of Infrastructure and construction
- Ministry of Finance
- Ministry of Environment

Circular Economy
How governments can steer societies towards SCP
Policies to create solutions at multiple levels

Coordinate between different governance levels

International level
International Expert Meetings

Regional and national initiatives
- Market-based instruments
- Informational instruments
- Strategies (e.g. CE)
- Dialogue Processes

Local SCP policies
- Eco-industrial parks
- Business support centres
- Local partnerships
- Environmental Technology
- Renewable Energy
- Cleaner Production

Policies to create solutions at multiple levels:
- Coordinate between different governance levels
  - International level
  - Regional and national initiatives
  - Local SCP policies

Example approaches:
- International Expert Meetings
- Market-based instruments
- Informational instruments
- Strategies (e.g. CE)
- Dialogue Processes
- Eco-industrial parks
- Business support centres
- Local partnerships
- Environmental Technology
- Renewable Energy
- Cleaner Production

Day 1
Prodev Training Presentation - Think5
Building Capacity for SCP
Cooperation needed for sound policy making
Dialogue between businesses and policy makers

**Example: Resource efficiency**

1. Phase: Preparation
   - Environment: Early environmental concerns about resource consumption

2. Phase: Extension
   - Environment: Resource efficiency key to wide range of environmental issues
   - Economy: Resource efficiency as cost issue for enterprises
   - Finance: Singular economic instruments to promote resource efficiency
   - Research: Technical solutions and potential for resource efficiency

3. Phase: Mainstreaming
   - Environment: Resource efficiency innovation for enhancing competitiveness
   - Economy: Resource efficiency as a driver for structural innovation
   - Finance: Environmental reform of fiscal systems, covering all instruments
   - Consumer Protection: Consumer responsibility for reaching resource efficiency
Cooperation needed for sound policy making
Dialogue between businesses and policy makers

Example: Environmental Management Systems (EMS)

1. Phase: Preparation
   - Environment: Experimental approach to fostering compliance

2. Phase: Extension
   - Environment: Key element of environmental policy approaches
   - Economy: Concern about impact of environmental management on company performance
   - Justice: Improved risk management in companies enables environmental liability regimes

3. Phase: Mainstreaming
   - Economy: Environmental Management as key component of company competitiveness
   - Justice: New negligence standards for environmental liability schemes, use as mainstream instrument
   - Environment: Improved risk management in companies enables environmental liability regimes
Cooperation needed for sound policy making
The case of the CSCP

UNEP/Wuppertal Institute
Collaborating Centre on Sustainable Consumption and Production (CSCP)

Cooperation project supported by...

Regional Level
North Rhine-Westfalian Ministry for Environment, Agriculture and Consumer Protection

Federal Level
Federal Ministry for Economic Cooperation and Development
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Local Level
Business and Employment Support Agency
Policy reinforcement for Circular Economy

How governments can steer societies towards SCP

Cooperation needed for sound policy making

Opportunities for SCP along the policy cycle

Opportunities for SCP along the policy cycle
Opportunities for SCP along the policy cycle

The policy cycle

- Determining political priorities and topics that require attention and action by policy makers
- Analysing policy options and deciding which instruments are applied and how this happens
- Implementing the policy instruments, allocating funds and administrative responsibilities
- Monitoring and evaluating economic, social and environmental effects of policy instruments

Agenda setting

Policy formulation

Policy implementation

Policy evaluation

Feedback and corrective action

New topics and priorities for political agenda

New criteria for policy analysis

Adopt implementation strategies

The policy cycle
Opportunities for SCP along the policy cycle

The policy cycle

- Integrating SCP thinking and objectives in all policy development and implementation
- Overcoming perception that sustainability concerns are not secondary elements and drawbacks to rapid growth and poverty reduction
- Developing better understanding of the value of SCP for businesses and consumers

Example:

SCP-related strategies on EU level

- Lisbon Strategy (Competitiveness, Employment)
- EU Sustainable Development Strategy
- Sixth Community Environment Action Programme
- Thematic Strategy on the Sustainable Use of Resources
- International Panel on Natural Resources
- Thematic Strategy on the prevention and recycling of Waste
- Thematic Strategy on the Urban Environment
- Environmental Technology Action Plan
- Integrated Product Policy

Source: CSCP, UN-DESA, UNEP: Costa Rica background paper, SEPA: China Roundtable on SCP
Opportunities for SCP along the policy cycle
The policy cycle

- Using a well-designed ‘policy-mix’ with flexible approaches
- Include positive incentives and assistance since strict ‘command and control’ regulations do not work well in all frameworks
- Need for voluntary agreements and other policy instruments that compensate for weak regulatory enforcement capacity
- Working with the markets dynamics and identify and tackle market failures/stimulating innovation
- Involve industry in the development of legislation, regulation and other governmental incentives

Source: Defra: Changing patterns; CSCP, UN-DESA, UNEP: Costa Rica background paper
Opportunities for SCP along the policy cycle
The policy cycle

- Improve enforcement of environmental regulations by addressing the shortages in financial, technical and human resources
- Involving businesses into the SCP agenda, possibly through intermediary bodies like chambers of commerce/trade associations
- Need for equality, clarity and predictability in regulatory frameworks

Source: Defra: Changing patterns; CSCP, UN-DESA, UNEP: Costa Rica background paper
Opportunities for SCP along the policy cycle

The policy cycle

- SCP indicators help to monitor implementation and effectiveness of policy initiatives
- Few systematic SCP indicator sets developed so far, but some integrated into general sustainability indicator sets
- Opportunities for cross-country exchange of information and learning processes

Source: Defra: Changing patterns; CSCP, UN-DESA, UNEP: Costa Rica background paper
Policy reinforcement for Circular Economy

The SCP policy toolbox: Supporting Guiyang government to address opportunities

The importance of governments

The SCP policy toolbox
The SCP policy toolbox
Determining factors for SCP

Determining factors

Address ‘soft’ factors, i.e. societal pressures and internal knowledge

Address ‘hard’ factors, e.g. related to financial incentives and funding opportunities

Government strategy

Reward / Penalise
Motivate
Support

Determine factors

Hard
Soft

Determining factors

Prodev Training
Day 1
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Building Capacity for SCP
The SCP policy toolbox
Government strategy

Government strategy

Hard
Soft
Determining factors

Governments can properly reward eco-efficiency and penalise laggards
Governments can guide and support societal actors towards eco-efficiency

Reward / Penalise
Motivate
Support

Government strategy
The SCP policy toolbox
Sample issues in the matrix

Example issues

- Stakeholder relations
- Consumer attitudes
- Organisational setup
- Brand reputation
- Employee satisfaction
- Human Capital
- Status of technology
- Financial assets
- Credit status
- Legal compliance
- Cost structure
- Government strategy

Determining factors
- Soft
- Hard

Reward / Penalise
Motivate
Support

Prodev Training  Day 1  Presentation - Think5  Building Capacity for SCP  23
The SCP policy toolbox
SCP policy instruments in the matrix

Determining factors

Hard
- Norms and Standards
- Subsidies
- Tributes, Dues and Fees
- Liability Law
- Environmental Taxes and Charges

Soft
- Consumer Advisory System
- Sustainability Reporting
- Voluntary approaches
- Green Procurement
- Eco-Labelling
- Education and Training for Eco-Efficiency

Reward / Penalise
- Government strategy
- Green Procurement

Motivate
- Learning Networks
- Information Centres
- Technology Cooperation and Promotion
- Research and Development
- Trade
- Certificate Trading

Support
- Finance
- Education and Training for Eco-Efficiency
- Learning Networks
- Information Centres
- Technology Cooperation and Promotion
- Research and Development
- Trade
- Certificate Trading
- Finance
The SCP policy toolbox
Example: Consumer Advisory System

Consumer Advisory Systems create external rewards for eco-efficient enterprises, but do not actively help them to take advantage of these.

The policy instrument does not directly target the financial bottom line of businesses, but changes their stakeholder environment, i.e. makes intangible issues more important.
The SCP policy toolbox
Example: Finance

Finance Mechanisms enable business to take advantage of existing opportunities, but do not necessarily create new ones. Therefore, the instrument falls into the ‘Support’ category.

Finance is concerned with tangible issues at the business level, therefore it is labelled a ‘hard’ policy measure.

Finance

Determing factors

Hard

Soft

Reward / Penalise
Motivate
Support

Government strategy
The SCP policy toolbox
Analysis of measures to promote eco-efficiency

The toolbox!

Regulatory
- Norms & Standards
- Liability Laws

Economic
- Environmental Taxes and Charges
- Tributes, dues and fees
- Certificate Trading
- Green public procurement
- Subsidies
- Finance Mechanisms

Education & Research
- Research and Development
- Education and Training

Information
- Eco-labelling
- Sustainability Reporting
- Consumer advice
- Information centres

Cooperation
- Voluntary approaches
- Learning networks
- Technology cooperation and promotion
- Self-commitments
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Think5

Group exercise: Supporting governments to address opportunities
Group Exercise

The importance of governments

1. Four groups with a mix of participants from different departments.

2. What could be done to enhance coordination and cooperation between different government departments?

3. What is most effective and what is needed to help make the necessary changes?

What do we do?

- Split into 4 groups
- Discuss the questions and write down your answers
- Report back to the group and give the forms to the meeting facilitators
Group Discussion

The importance of Governments

1. What could be done to enhance coordination and cooperation between different government departments to boost Circular Economy and Sustainable Consumption and Production?

2. What could be the most effective method to increase coordination and cooperation and what is needed to help make the necessary changes?

Report back in 15 Minutes
Policy reinforcement for Circular Economy

Summary of ‘Thinking Circular Economy – Concepts and Principles’
Thinking Circular Economy - Concepts & Principles

What has been achieved today

Day 1 – Summary

Thinking Circular Economy -

Concepts & Principles’

Think2
What is CE / SCP and why does it matter?

Think3
The situation in China

Think4
Enabling means to promote CE / SCP

Think5
The role of governments
Day 2 – Outlook

‘Promoting Circular Economy
— Measures & Instruments’

- Definition and objectives
- Strength and weaknesses
- Examples and case studies

Concrete policy instruments to promote Circular Economy / SCP

How to build a sound policy mix
### Day 2

#### ‘Promoting Circular Economy

- Measures & Instruments’

1. **Overview on ‘Promoting CE - Measures & Instruments’**
2. **Regulatory Instruments: Setting the rules**
3. **Economic Instruments: Getting the prices right**
4. **Cooperation Instruments: Initiating cooperations**
5. **Educational and Research: Educating and creating awareness**
6. **Informational instruments: Providing targeted information**
7. **Bringing the pieces together: Designing a sound policy mix**
8. **Summary of ‘Promoting CE - Measures & Instruments’**

*See you tomorrow!*
Training Packages on Policies of SCP and Circular Economy
Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China (PRODEV)

The Second Day
Policy Reinforcement for Circular Economy

‘Promoting Circular Economy – Measures & Instruments’
Day 1 – Recap ‘Thinking Circular Economy - Concepts & Principles’

Think2
What is CE / SCP and why does it matter?

Think3
The situation in China

Think4
Enabling means to promote CE / SCP

Think5
The role of governments
Objectives of ‘Promoting Circular Economy’

- Achieve a good overview and profound knowledge on a wide variety of policy instruments that support policy-makers in setting up a sound framework for implementing CE.

- Get an overview of the latest state-of-the-art on policy making best practices and experiences in the field of CE and SCP.

- Be aware of the benefits of designing sound and integrated policy mixes that support CE and SCP.
Promoting Circular Economy - Measures & Instruments

What will come today

Day 2 – Overview

Promoting Circular Economy - Measures & Instruments’

Promote2
Regulatory Instruments: Setting the rules

Promote3
Economic Instruments: Getting the prices right

Promote4
Cooperation Instruments: Initiating cooperation initiatives

Promote5
Education and Research Instruments: Educating and creating awareness

Promote6
Information Instruments: Providing targeted information

Promote7
Bringing the pieces together: Setting up the framework and designing a sound policy mix
### Day 2

‘Promoting Circular Economy - Measures & Instruments’

<table>
<thead>
<tr>
<th>Promote1</th>
<th>Overview on ‘Promoting Circular Economy - Measures &amp; Instruments’</th>
<th>Objectives and overview for Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote2</td>
<td>Regulatory Instruments: Setting the rules</td>
<td>Norms and Standards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liability law, liability directives</td>
</tr>
<tr>
<td>Promote3</td>
<td>Economic Instruments: Getting the prices right</td>
<td>Environmental Taxes, Fees and user charges</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Certificate trading schemes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green/sustainable procurement</td>
</tr>
<tr>
<td>Promote4</td>
<td>Cooperation instruments: Initiating cooperation measures</td>
<td>Technology transfer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Voluntary agreement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clean Production Commitments</td>
</tr>
</tbody>
</table>
### Promoting Circular Economy - Measures & Instruments

#### What will come today

**Day 2**

**‘Promoting Circular Economy**

**- Measures & Instruments**

<table>
<thead>
<tr>
<th><strong>Promote 5</strong></th>
<th>Educational and Research Instruments: Educating and creating awareness</th>
<th>Research and development, applied research</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Education and training</td>
</tr>
<tr>
<td><strong>Promote 6</strong></td>
<td>Informational Instruments: Providing targeted information</td>
<td>Labelling for goods and services, eco-labelling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information centres, Consumer information, consumer advisory system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Public reporting</td>
</tr>
<tr>
<td><strong>Promote 7</strong></td>
<td>Bringing the pieces together: Setting up the framework and designing a sound policy mix</td>
<td>What is a sound policy mix?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identifying obstacles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Setting objectives and next steps</td>
</tr>
<tr>
<td><strong>Promote 8</strong></td>
<td>Summary of ‘Promoting Circular Economy - Measures &amp; Instruments’</td>
<td>Summary of Day 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outlook of Day 3</td>
</tr>
</tbody>
</table>
Let’s get started!
Policy Reinforcement for Circular Economy

Promote2

Regulatory Instruments: Setting the Rules
Policy Reinforcement for Circular Economy

Introducing regulatory instruments

An overview of regulatory instruments

Regulatory instruments in focus
Bringing the pieces together
SCP policy instruments in the matrix

SCP policy instruments

Determining factors

Hard

Soft

Reward / Penalise

Motivate

Support

- Consumer Advisory System
- Sustainability Reporting
- Education and Training for Eco-Efficiency
- Green Public Procurement
- Eco-Labeling
- Voluntary approaches
- Learning Networks
- Subsidies
- Environmental Taxes and Charges
- Certificate Trading
- Information Centres
- Liability Law
- Tributes, Dues and Fees
- Research and Development
- Norms and Standards
- Technology Cooperation and Promotion
- Finance
- Information Centres
- Technology Cooperation and Promotion
- Finance

Prodev Training | Day 2 | Presentation - Promote2 | Building Capacity for SCP
An overview of regulatory instruments
Definition and Objectives

What are regulatory instruments?

“Command and Control”
Principles, rules, laws and targets set and enforced by public authorities
Include laws and any rules with a legally binding nature

Objectives

Prevent pollution by penalising rule breakers
Improve efficiency by setting targets
An overview of regulatory instruments

Strengths and Weaknesses

**Strengths**
- Effectiveness and certainty in achieving objectives
- Relatively easy to set up
- Clarity for businesses
- Fairness on national level
- Remedial/preventive effect
- ‘The first step’ of environmental protection in developing countries

**Weaknesses**
- High cost to enforce
- Little incentive for innovation
- Vulnerable to corruption
- High information requirements
- Judicial/financial burdens
An overview of regulatory instruments
Success factors

**Success Factors**

**Government**
- Sound political structure/clear priorities
- Legal authority and efficacy
- Policy coherency
- Business knowledge
- Effective control system
- Effective and transparent consultation

**Successful regulation**

**Businesses**
- Willingness to follow the rules on the business side

Prodev Training Day 2 Presentation - Promote2 Building Capacity for SCP
Policy Reinforcement for Circular Economy

An overview of regulatory instruments

Norms and Standards
Liability Laws
Norms and Standards

Definition & Regulated Groups

Statutes, directives and technical specifications set by public authorities (‘command’) and enforced by compliance procedures (‘control’)

Target mainly businesses but also private consumers

Typology

- Ambient standards
- Technology standards
- Emissions standards
- Operational/Process standards
- Product standards
- Resources/Materials
- Production
- Product

Regulatory instruments in focus
Norms and standards at a glance
Regulatory instruments in focus
Case Study: Air Quality Control, Germany

Air Quality Control in Germany

Goals

Protection: Protect the general public and the neighbourhood against harmful effects of air pollution
Precaution: Provide precautions against harmful effects of air pollution in order to attain a high level of protection

Benefits

• Helpful for both industry and administration since the regulation provides legal and planning security
• Sound instrument for controlling air pollution: provision of a unified approach, having impact on air quality standards in other countries
Japan’s Top Runner Programme

Objective: **Improve energy efficiency in the use phase of the products**

Governing body: Ministry of Economy, Trade and Industry (METI)

**Characteristics**

**Innovative Standard Setting**

The product with the highest energy efficiency becomes the benchmark of the standards.

**‘Soft’ Enforcement**

Voluntary but manufacturers risk negative reputation if they did not achieve the standards.

**Positive Impacts**

Manufacturers have been achieving more than the requirement.
Regulatory instruments in focus
Case Study: Top Runner Programme, Japan (2)

Top Runner Programme

Timeframe

1998  3-12 years, depending on product category  2010

Point of reference

Target year

Standard setting

Within the same product group, differentiated standards are set reflecting one or more parameters (function, size, weight, type of technologies used, type of fuel, etc.) The potential for technological innovation and diffusion is taken into account.

Reduction targets in weighted-average energy consumption

Computers: 83%
Air conditioners: 63%
Vehicles: 23%
Refrigerators: 30%
Video recorders: 59%
Regulatory instruments in focus
Case Study: Top Runner Programme, Japan (3)

Top Runner Programme

Monitoring

Tools: Mandatory information and voluntary labelling on achieved energy efficiency.

Sanction: ‘Name and shame’ = negative publicity, order to comply or fines

Review: Standards/timeframes are reviewed at target year arrives or when some products already met the standards.

Positive results & challenges

Motivation for design change

Significant efficiency improvements

Diffusion of innovation

Low administrative costs

Changing purchasing behaviour (new products are costly)

Addressing smaller producers (‘name and shame approach may not work)

Harmonising measurement methods and standards on a global scale
Regulatory instruments in focus
Liability law at a glance

**Liability Law**

**Principle**

"Polluter Pays Principle": Let the causer of environmental damage pay for remedying

**Objectives**

- Compensate parties who have suffered injury or damage (individuals and ‘society’)
- Provide a direct incentive not to pollute and to reduce environmental risks in the first place

**Typology**

- **Strict liability (no fault liability):** target damage caused regardless of behaviour
- **Negligence based liability (fault-based):** target damage attributable to behaviour

**Targets**

- Industrial accidents or gradual pollution caused by hazardous substances or waste from identifiable sources...
- ...but not for...
- ...dealing with widespread pollution which is impossible to link with activities of individual actors
Regulatory instruments in focus
Case Study: EU Environmental Liability Directive

EU Environmental Liability Directive

Areas to be protected
Water, land, animal and plant species, habitats

Damage
Concrete and quantifiable damage

Assessment of the damage
Environmental evaluation (as a last resort)

Remedy
Restoration + complementary and compensatory remedial action

Compulsory Financing mechanism
No compulsory financing mechanisms like insurance/central funds is not directly imposed but rather promoted by the directive

Expected Impact: Prevention through better...

Production decisions
Environmental insurance
R&D
Behavioural change
Policy Reinforcement for Circular Economy

Thank you for your attention !!!
Policy Reinforcement for Circular Economy

Promote 2

Group Exercise: Setting the Rules
Group Exercise

Regulatory instruments:

1. Four (or more) groups with participants from each department.
2. Which of the regulatory instruments discussed in the presentation would be most effective in China/your region?
3. At which phase of the product lifecycle will the instruments be most effective? Why?
4. Which organisation can be most effective in taking the lead?

What do we do?

The task

- Split into groups according to department
- Discuss the questions and write down your answers
- Report back to the group and give the forms to the meeting facilitators

20 min

15 Min
Group Discussion

Regulatory instruments can include legal restrictions and controls on emissions, activities, resource use and toxic substances. Specific instruments can include technology or environmental performance specifications, permits, quotas, licensing and material bans, mandatory environmental standards or audits, environmental labelling requirements, staff training requirements.

1. Which of the regulatory instruments discussed in the presentation would be most effective? Why?
2. What instruments will be effective at different phases of the product life-cycle? Why?

3. Which organisation can be most effective in taking the lead? Why is this organisation most effective?
Policy Reinforcement for Circular Economy

Economic Instruments: Getting the prices right
Policy Reinforcement for Circular Economy

An overview of economic instruments

An overview of economic instruments in focus
Bringing the pieces together
SCP policy instruments in the matrix

**SCP policy instruments**

**Hard**
- Financial Instruments
  - Taxes and Charges
  - Subsidies
  - Liability Law
- Learning Networks
- Information Centres
- Technology Cooperation and Promotion
- Research and Development
- Finance

**Soft**
- Determining Factors
  - Green Public Procurement
  - Eco-Labelling
  - Voluntary Approaches
- Education and Training for Eco-Efficiency
- Certificate Trading
- Environmental Taxes and Charges
- Subsidies
- Tributes, Dues and Fees
- Learning Networks
- Information Centres

**Government strategy**
- Reward / Penalise
- Motivate
- Support
An overview of economic instruments
Definition and Objectives

Definition

“Economic instruments cover a range of taxation and pricing instruments that can raise revenue while simultaneously furthering environmental goals”

Objectives

Further environmental goals
- land contamination
- water quality
- noise
- energy use
- air quality
- waste
- resource use
- Etc...

Raise revenue
- General budget
- Fund environmental improvements
An overview of economic instruments
Strength and Weaknesses

**Strengths**
- Reduced costs of achieving environmental goals
- Long-term incentive to reduce environmental impacts
- Mobilise revenue and reduce tax system distortions
- Realise 'polluters pays' principle and realise environmental justice
- Promote accountability in public institutions

**Weaknesses**
- Vulnerable to corruption and illicit behaviour
- Difficult to apply to informal economic actors
- Trade-off between revenue raising and fiscal goals
- Measurement and reporting requirements
- Required payments can trigger political resistance
An overview of economic instruments

Success Factors

Goal: successful application of economic instruments

Governments
- Functioning revenue collection system
- Ability to enforce sanctions in case of non-compliance
- Link environment to tax discussions
- Good Inter-ministerial coordination

Businesses
- Information on cleaner production options
- Monitoring, reporting and accounting systems
- Government accountability for revenues
- Good Inter-ministerial coordination

Success Factors
- Good Inter-ministerial coordination
- Link environment to tax discussions
- Information on cleaner production options
- Monitoring, reporting and accounting systems
- Government accountability for revenues
- Ability to enforce sanctions in case of non-compliance
- Functioning revenue collection system
Policy Reinforcement for Circular Economy

An overview of economic instruments

Economic instruments in focus
Economic instruments in focus

Overview

Environmental taxes
Make polluters pay for societal costs

Fees and user charges
Charge users for environmental goods and services

Certificate trading schemes
Create markets for environmental goods and services

Green/Sustainable procurement
Create demand for eco-efficient goods and services
Economic instruments in focus
Introducing environmental taxes

Environmental taxes
Make polluters pay for societal costs

Environmental taxes (or ‘eco-taxes’) are taxes with a potentially positive environmental impact

Typology
Taxes might be levied on...
- Land-use
- Transport
- Energy
- Emissions
- Resource use

Other key decisions
- Exemptions
  - Exclude certain industry sectors?
- Revenue
  - General budget or environmental investments?
- Taxpayer
  - From business, suppliers or consumers?
Economic instruments in focus
Case Study: Carbon and Energy Tax, Sweden

Sweden: Carbon and Energy Tax

Policy Changes

1991 Reform of the Energy Tax System
Introduction of Carbon Tax
Energy Tax reduced by 50%
Industry had to pay no energy tax and 50% carbon tax

Effects

Reduction of CO₂
Expansion of Biomass in the district heating systems
Development of technology for biomass extraction
Implementation of more efficient heat plants in the district heating system
Economic instruments in focus
Case Study: Removing Pesticide Subsidies, Indonesia

Indonesia: Removing Pesticide Subsidies

1985
Pesticide Subsidies up to 85%
141 million US$

Phasing out of subsidy

1990
Pesticide Subsidies down to 0%
0 million US$

• Financial burden (0.8% of total government spending)
• Excessive and inefficient use of pesticides
• Causing economic loss and environmental damage

• Government savings of over US$100 million
• No adverse effects on rice production (rise from 26.5 to 30.3 million tonnes)
• Pesticide production fell by 58%
• Less environmental damage, especially on public health and biodiversity
Economic instruments in focus
Fees and user charges

**Fees and user charges**
Charge users for environmental goods and services

<table>
<thead>
<tr>
<th>Fees and user charges</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A set price for good or service</td>
<td>People or organisations will use good/service more efficiently</td>
</tr>
<tr>
<td>New income source</td>
<td>Used to finance the government service</td>
</tr>
<tr>
<td>Accurate Prices</td>
<td>Promotion of accountability in the public sector</td>
</tr>
</tbody>
</table>

**Types of fees/charges**
- User fees
- Effluent discharge fees
- Regulatory fees
- Non compliance fees
- Product charges
- Impact fees
Economic instruments in focus
Case Study: German Effluent Charge: At glance

German Effluent Charge

Legal development

- Effluent Charge Act (AbwAG) passed in 1976
- Came into force in 1981
- Charges gradually increased until 1997

Main characteristics

- Policy-mix: economic incentives within a system of direct regulation
- Economic deterrent/polluter-pays principle; penalty tax
- Supplementary to ‘command-and control’- based on standard- BAT
- Goal: incentive towards reduction of water waste through prevention, waste water treatment, low-emission/zero emission processes, introduction of environmentally friendly products
- Nation-wide environmental charge
- Financial goal: subsidizing the construction of public sewage plants
- Measurement based on 'damage units'- the smaller the emissions- the smaller the charges

Industry and municipalities

Construction and operating costs of public sewage plants

Charge

Germany’s states

Investment
Economic instruments in focus
Case Study: German Effluent Charge: Institutional layout

**German Effluent Charge**

**Federal government**
- Uniform pollution levels for whole Germany

**States**
- Negotiations on branch guidelines

**Polluter**
- Industries and municipalities that discharge directly to surface waters

**States**
- Collection of the charge - approx. 40% from industry, 60% from communities
Economic instruments in focus
Case Study: German Effluent Charge: How does it work?

**German Effluent Charge**

- **Standard**
  - Till 1986: Generally Accepted Technological Standard
  - From 1986: Best Available Technology (BAT)

- **Charge assessment**
  - Allowed discharges defined in state-issued permits

- **Monitoring**
  - Left to polluters with random spot-checks by authorities

- **Charge**
  - Dischargers without permits or with insufficient discharge limits pay charges based on their declared discharges

- **Incentives**
  - Charges reduced in advance to support installation of new technology
  - Subsidizing the construction of public sewage plants
Economic instruments in focus
Case Study: German Effluent Charge: Lessons learned

German Effluent Charge

**Strengths**
- Incentives for water pollution investments
- Capacity building effects within public authorities
- Reduced emissions at the same time as industrial growth
- Awareness/Positive incentive effects

**Challenges**
- Measurement problems to assess effects
- Lengthy political discussion
- Administrative costs (15% of charge)
- Limits to efficiency
- Questions about ongoing need for charges
Economic instruments in focus
Case Study: Congestion charging in London, UK

Congestion charging in London
introduced in 2003

About

• The congestion charge is a fee paid by motorists entering the Central London Area
• London is the largest city to introduce this charge (as of 2006)

Goals

• Aim is to encourage travellers to use more public transport and cleaner vehicles
• Reducing congestion and pollution
• Faster and more predictable journeys
Economic instruments in focus
Certificate trading schemes

Certificate trading schemes
Create markets for environmental goods and services

Implementation Process
- Establishing the boundaries
- Setting up the system
- Issuing the certificates
- Designing the market
- Enforcing the rules
Economic instruments in focus
Case Study: Acid Rain Programme - SO₂ Emission Allowances, USA

Acid Rain Programme
SO₂ Emission Allowances

Goals
- Reduction in emission of sulfur dioxide (SO₂) and nitrogen oxides (NOₓ)
- Achieve significant environmental and public health benefits at the lowest cost
Green/Sustainable procurement
Create demand for eco-efficient goods and services

**Principles**
- Choose products that do not consume energy or natural resources unnecessarily
- Choose products that are not harmful to producers or consumers
- Choose products that can be reused or recycled

**Technical Specifications**

**Contract Criteria**
- Price
- Quality
- Delivery
- Procurement
Economic instruments in focus
Case Study: Mayor’s Green Procurement Code, London, UK

Mayor’s Green Procurement Code
London, UK

Project Information
• Launched in 2001
• All 33 boroughs and about 500 key organisations of London are participating

Purpose and Goals
• Organisations commit to green procurement
• 4 different levels of commitment
• The Code is helping many organisations to buy quality recycled products at competitive prices
Economic instruments in focus

Presentation by SEPA
Policy Reinforcement for Circular Economy

Thank you for your attention !!!
Policy Reinforcement for Circular Economy

Promote3

Group Exercise: Green Public Procurement
Group Exercise

Green Public Procurement:

What do we do?

1. Four (or more) groups with participants from the same department.

2. What products/services can be considered for Green Public Procurement in your city/region?

3. What products/services offer the best opportunities for advancing SCP in your city/region?

The task

- Split into groups according to department
- Discuss the questions and write down your answers
- Each group reports to the meeting & discuss
- Give worksheets to facilitators

15 min

20 min
Group Discussion

Green Public Procurement

1. What products/services can be considered for Green Public Procurement in your city/region? Why could these products be considered for Green Public Procurement?

2. What products/services offer the best opportunities for advancing SCP in your city/region? Why do these products offer the best opportunity?

Report back in 15 Minutes
Policy Reinforcement for Circular Economy

Cooperation Instruments: Initiating Cooperation Initiatives
Policy Reinforcement for Circular Economy

Introducing cooperation instruments

An overview of cooperation instruments

Cooperation instruments in focus
Bringing the pieces together
SCP policy instruments in the matrix

**SCP policy instruments**

- **Consumer Advisory System**
- **Sustainability Reporting**
- **Voluntary approaches**
- **Education and Training for Eco-Efficiency**
- **Learning Networks**
- **Information Centres**
- **Technology Cooperation and Promotion**
- **Reasearch and Development**
- **Finance**
- **Norms and Standards**
- **Liability Law**
- **Tributes, Dues and Fees**
- **Environmental Taxes and Charges**
- **Subsidies**
- **Eco-Labelling**
- **Green Public Procurement**

**Determining factors**
- **Soft**
- **Hard**

**Government strategy**
- **Reward / Penalise**
- **Motivate**
- **Support**
An overview of cooperation instruments

Typology

Beyond traditional regulatory instruments and market-based instruments, government also has a wide range of cooperation instruments.

- Voluntary Agreements
- Learning networks
- Partnerships
- Technology Cooperation
- Capacity Building
- North-South-South Cooperation
Strengths and Weaknesses

**Strengths**
- Knowledge spill-over
- New market opportunities (for environmental technology)
- Long-term impact, but also short-term visible and tangible results
- Provide greater flexibility than regulations
- Encourage proactive and precautionary attitudes in industry
- Improve dialogue and trust between industry and stakeholders

**Weaknesses**
- Reliance on partners
- Low initial level of capacities in some countries (infrastructure, education level, etc.)
- Lack of information on cost-effectiveness
- Difficult to apply in areas with little business self-interest
- Existence of “free riders”
- Difficult to ensure global application
An overview of cooperation instruments
Success factors

Success Factors

Government

Set a concrete mission/target
Incentives for participation

Successful cooperation

Setting for a successful dialogue
Design in a way that it leads to concrete results

Businesses
Policy Reinforcement for Circular Economy

An overview of cooperation instruments

Technology Transfer
Voluntary Agreements

Cooperation instruments in focus
Cooperation instruments in focus
Technology Transfer: How does it work?

Technology Transfer

- Foreign actor
- Domestic actor
- Environmentally Sound Technology + Know-how

Government Development Agencies Businesses

Legal/Istitutional setting…
- Working with international development agencies
- Bi- or multilateral agreements
- Establishment of technology transfer institutions
- Support of pilot projects

...concrete market-based results
- Creation of local markets for environmental technology
- Promotion of foreign direct investments
GTZ’s HERA Programme

Background

- Africa: fuelwood - The sole energy resource for 90% of households
- Alternatives: Not accessible, other sources are unaffordable
- Problems: Environmental, economic and health-related

HERA programme

Increasing use of energy-efficient stoves by:
- Identify measures and strategies for scaling up the use of stoves
- Further development and dissemination of strategies and concepts for basic energy supply
Cooperation instruments in focus
Case study - HERA Programme: The Role of the Programme

HERA Programme

Demand-side management
awareness of efficient use of biomass

Supply-side management
secure access to stoves

Policy level
mainstream stoves in energy policy

Results so far

• Support of the development of energy-efficient stoves
• 1 million stoves successfully produced and sold in the last 20 years
• Stoves: up to 80% of the biomass savings; produce virtually no smoke

Impacts

Economic  Socio-cultural  Health  Environmental
Cooperation instruments in focus
Case study: Effizienz-Agentur NRW, Germany - PIUS Check

**Effizienz Agentur NRW: PIUS Check**

The PIUS Check ➔ The EFA Tool for Cleaner Production

Cooperation project between...

Industrial producer + Effizienz-Agentur NRW

...which both authorise...

Technical consulting company

...with the objective of performing a material flow analysis at the industrial company

**Target group**

Companies < 500 employees
Max. 9 consulting days

**Financing**

EFA pays up to 70% (up to 4,500 €) or max. 500 € per day
The company pays 30%
Cooperation instruments in focus
Case study: EFA NRW, Germany - PIUS Check: How does it work?

Effizienz Agentur NRW: PIUS Check

4 steps toward significant improvement of resource efficiency

1. Step: Initial Meeting
   Check relevance of Cleaner Production (e.g. technologies)

2. Step: Macro - Analysis
   Material flow analysis within company

3. Step: Micro - Analysis
   Develop alternative manufacturing concepts

4. Step: Concept Planning
   Start program introduction with management

Cooperation agreement

Intermediate follow up meeting to ensure project is on track

after 6-9 Months EFA checks
whether goals have been achieved
Cooperation instruments in focus
Case study: EFA NRW, Germany - PIUS Check: Examples

Effizienz Agentur NRW: PIUS Check

Examples of actions taken under PIUS

- Substitutions of environmentally unfriendly auxiliary and industrial materials
- Application of efficient and innovative processes
- Usage of energy saving potential (e.g. heating)
- Internal circulation management of materials used
- Ecological product creation
- Usage of, as opposed to, sales of products (ecology leasing)
Cooperation instruments in focus
Case study: EFA NRW, Germany - PIUS Check: Who were the participants?

Effizienz Agentur NRW: PIUS Check

Status quo PIUS Check, Industrial sectors, 372 projects, January 2006

- Plastic processing: 15
- Leather: 2
- Laundry cleaning: 14
- Service: 7
- Car service: 17
- Machine construction: 21
- Surface finishing: 44
- Metal processing: 78
- Non ferrous metal: 28
- Food processing: 69
- Textile: 14
- Timber/furniture: 7
- Paper/printing: 25
- Chemical: 21
- Ceramics: 10
- Machine construction: 21
- Car service: 17
- Laundry cleaning: 14
- Service: 7
- Surface finishing: 44
- Metal processing: 78
- Non ferrous metal: 28
- Food processing: 69
- Textile: 14
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- Ceramics: 10
Cooperation instruments in focus
Case study: EFA NRW, Germany- PIUS Check: Lessons learned

Effizienz Agentur NRW: PIUS Check

<table>
<thead>
<tr>
<th></th>
<th>Previously implemented projects</th>
<th>Long-term total capacity of all projects (estimated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>152</td>
<td>345</td>
</tr>
<tr>
<td>Investment</td>
<td>23.6 Million €</td>
<td>53.6 Million €</td>
</tr>
<tr>
<td>Annual savings in the production processes</td>
<td>7.1 Million €</td>
<td>16.2 Million €</td>
</tr>
<tr>
<td>Annual savings of the resource water/waste water</td>
<td>806,281 m³</td>
<td>1.83 Million m³</td>
</tr>
<tr>
<td>Annual savings of the resource waste/hazardous waste</td>
<td>11,329 t</td>
<td>18,175 t</td>
</tr>
<tr>
<td>Annual savings of the resource energy</td>
<td>44.7 GWh</td>
<td>101.5 GWh</td>
</tr>
</tbody>
</table>
Cooperation instruments in focus
Case study: Effizienz-Agentur NRW, Germany - PIUS Check: Benefits

Effizienz Agentur NRW: PIUS Check

Benefits

- Increase of company’s competitiveness
- Cost reductions
- More efficient usage of raw materials/energy
- Optimization of operative processes
- Improvements of environmental protection standards
- Initiated continual improvement processes
- Highly successful - 95% of all cases!
Cooperation instruments in focus
Case study: Effizienz-Agentur NRW, Germany - PIUS Check: Challenges

Effizienz Agentur NRW: PIUS Check

Challenges

- Simplify the implementation of innovative technology
- New funding concepts
- Maintenance of technology

GOAL

Implement resource efficiency considerations in all company strategies!
Cooperation instruments in focus
Case study: Effizienz-Agentur NRW, Germany- PIUS Check: Replicability

Effizienz Agentur NRW: PIUS Check

Replicability/implications for other countries/regions

Demonstrate the benefits
Awaken the entrepreneurial ambition
Show success stories

Replicated in other German states and piloted in Japan
Interest shown in England, Switzerland and China
Cooperation instruments in focus
Voluntary Agreements: How does it work?

Voluntary Agreements

Objectives / Target groups

Improve companies’ environmental conduct and performance beyond existing legislation and regulations.

Typology by the level of institutionalisation

- Unilateral commitments made by industry
- Agreements between industry and public authorities
- Voluntary agreement schemes set up by public authorities
Cooperation instruments in focus
Case Study - Clean Production Commitments, Chile: Overview

Clean Production Commitments (APLs) in Chile

**Objective:** to motivate enterprises in different sectors to institute internal environmental protection measures and to improve the use of resources

**Legal character:** voluntary; no legal basis in many cases

**Ministry of Economy**
- National Council for Clean Production
  - The state
  - Industry associations
  - Trade unions

**Financial incentives**
- Fund for promoting advisory services
- Fund for enhancing management capacities for implementing the commitments
- Special environmental credit line to promote investment

**Businesses and Associations**
Cooperation instruments in focus
Case Study - Clean Production Commitments, Chile: How does it work?

Clean Production Commitments in Chile

**Formulation**

- National Council for Clean Production…or…
  - …minimum 6 companies

- Proposal of APLs

- Negotiations between the initiators
  - Agreements on:
    - environmental aspects
    - production
    - sanitation
    - working environment

**Implementation**

- First phase of implementation (3 years)
- Appraisal of the achievement of objectives by external controllers
- Achievement of goals - company is granted a certificate…
  - …used for marketing purposes
Cooperation instruments in focus
Case Study - Clean Production Commitments, Chile: Lessons learned

Clean Production Commitments in Chile

**Positive results**

- Integral part of the government’s economic promotion policy
- Rising number of industry sectors and companies taking part (>4,000 firms signed the APLs)
- Implementation of an APL prepares later certification under ISO 14001
- APLs are voluntary and therefore easier to persuade participation

**Challenges**

- Pressure from industry to set up standards that are favourable to them
- No legal sanctions for non-compliance
- No representatives from scientific experts and civil society in the National Council for Clean Production
- No additional state incentives e.g. favouring APL-certified companies in public procurement
Cooperation instruments in focus

Presentation by SEPA
Cooperation instruments in focus
Case Study: Netherlands Benchmarking Covenant: At glance

Netherlands Benchmarking Covenant

Legal development

- Established in mid-1999
- First evaluation- 2004
- Intermediate targets- 2005/2008
- Target year- 2012

Main characteristics

- Agreement between government and industry: a covenant
- Goal: “world’s top” (best international standard) on energy efficiency as a moving (improving) target
- Point of reference: international benchmark
- Target group: energy intensive industry (> 0.5 Pj/y)
- Rationale: no point in using heavy restrictive measures if it leads to firms leaving Netherlands
- Benefit: environmental and economic gains (reducing CO2 emissions)
Cooperation instruments in focus
Case Study: Netherlands Benchmarking Covenant: Institutional layout

Netherlands Benchmarking Covenant

Federal ministries
- The Ministry of Economic Affairs
- The Ministry of Housing, Spatial Planning and the Environment (VROM)

Local/Regional governments
- The Inter-Provincial Consultative Forum (IPO)

Industry
- VNO-NCW Confederation of Netherlands Industry and Employers
- Sectoral organisations
- Electricity production sector
Cooperation instruments in focus
Case Study: Netherlands Benchmarking Covenant: What is a covenant?

**Netherlands Benchmarking Covenant**

- Goal: world leaders in energy efficiency
- Maximum effort towards efficient energy consumption in industry
- Exemption from supplementary national CO2 or energy conservation policies for parties to agreement
- Energy tax exemptions/other exemption related to emission rights

**Agreement**

**Industry**
- Goal: world leaders in energy efficiency
- Maximum effort towards efficient energy consumption in industry

**Government**
- Exemption from supplementary national CO2 or energy conservation policies for parties to agreement
- Energy tax exemptions/other exemption related to emission rights

**Reciprocal obligation**
Cooperation instruments in focus
Case Study: Netherlands Benchmarking Covenant: How does it work?

Netherlands Benchmarking Covenant

**Supervision**
- **Benchmarking Committee**
  - System implementation
  - Report to government

**Monitoring**
- **Benchmarking Verification Bureau**
  - Confirm benchmarks of industry
  - Advice on benchmarks to industry and government

**International benchmark on energy efficiency**

**Energy Efficiency Plan**
- How and when the energy efficiency goal will be reached/Rate of investment
- Begin with cost-effective measures - then less cost-effective
- If world leading standard not reached by 2008 - flexible instruments permitted (emission trading)
- Evaluated and approved by government authorities and reviewed every 4 years

Revision every 4 years
2012: target year
Cooperation instruments in focus
Case Study: Netherlands Benchmarking Covenant: State of art (2005)

Netherlands Benchmarking Covenant

<table>
<thead>
<tr>
<th>Category</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number and character of companies</td>
<td>103 companies - industry + electricity generating sector (1060 PJ/y)</td>
</tr>
<tr>
<td>Number of plants involved</td>
<td>232</td>
</tr>
<tr>
<td>Percentage of eligible companies in industrial sector</td>
<td>94%</td>
</tr>
<tr>
<td>Percentage of eligible companies in electricity sector</td>
<td>100%</td>
</tr>
<tr>
<td>Number of processes involved</td>
<td>528</td>
</tr>
<tr>
<td>Number of consultants involved</td>
<td>49</td>
</tr>
</tbody>
</table>
Cooperation instruments in focus
Case Study: Netherlands Benchmarking Covenant: Positive results

Netherlands Benchmarking Covenant

Positive results

- Significant appeal for industry
- Simplified reporting
- Based on international ‘best-practice’

- Establishing a moving standard based on best international practice
- Stimulus for continuous improvement
- Support from industry
- Level playing field for industry
Cooperation instruments in focus
Case Study: Netherlands Benchmarking Covenant: Challenges

Netherlands Benchmarking Covenant

Challenges

- Intensive process to establish benchmarks and energy efficiency plans
- Need to carefully consider transparency and confidentiality needs
- Need for independant holder of benchmarking information
- Benchmarks should exceed requirements of EU IPPC Directive
- Disappointing energy savings: approx. 5%
- Need for evaluation of transaction costs
Policy Reinforcement for Circular Economy

Thank you for your attention !!!
Policy Reinforcement for Circular Economy

Promote4

Group Exercise: Cooperation Instruments
1. Split into four groups with participants from different departments.

2. Select one of the presented cooperation opportunities.

3. Answer the questions on the forms and report back to the meeting.

What do we do?

- The task:
  - Split into groups
  - Select one cooperation instrument
  - Discuss the questions and write down your answers
  - Report back to the group and give the forms to the meeting facilitators

- Time:
  - 20 min
  - 15 Min
**Promote4**

**Cooperation Instruments**

**Group Exercise**

1. Select one of the cooperation instruments above with the best chances of success in China or your region. Why is this the best instrument?

2. What needs to be done to introduce the selected cooperation instrument in China or your region?

3. Which individuals and organisations need to be involved?

4. Which individuals and organisations have the best opportunity to take the lead?

---

**What do we do?**

- Split into groups
- Select one cooperation instrument
- Discuss the questions and write down your answers
- Report back to the group and give the forms to the meeting facilitators

---

20 min

15 min
Group Discussion

Cooperation instruments

1. Circle one of the cooperation instruments above with the best chances of success in China or your region. Why is this the best instrument?

2. What needs to be done to introduce the selected cooperation instrument in China or your region?

Report back in 20 Minutes
Group Discussion

3. Which individuals and organisations need to be involved?

4. Which individuals and organisations have the best opportunity to take the lead?

5. Who should make an action plan?

When completed each group presents its plan for introducing a cooperation instrument

Report back in 20 Minutes
Policy Reinforcement for Circular Economy

Educational and Research Instruments: Educating and Creating Awareness
Policy Reinforcement for Circular Economy

An overview of educational and research instruments

Educational and research instruments in focus
Bringing the pieces together
SCP policy instruments in the matrix

SCP policy instruments

<table>
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<tr>
<th>Determining factors</th>
<th>Soft</th>
<th>Hard</th>
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<tr>
<td>Support</td>
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<td>Research and Development</td>
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<td>Finance</td>
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</tbody>
</table>
An overview of educational and research instruments

**Definition**

Educational and research instruments present a further group of soft policy instruments. At the production level, they aim at creating innovative, less resource-intensive products and services. At the consumption level, they strive for behavioural changes in the public.

The main instruments within that group are:

- Vocational training and qualifications
- Applied research
- Industrial Research
- Consumer Education

**Objective**

- Creation of innovative technologies (products/services) that spur the economical growth and bring more employment while lessening the environmental and social impacts
- Capacity building/awareness raising within society towards environmental protection and efficient use of energy/circular economy
An overview of educational and research instruments

Strengths and Weaknesses

**Strengths**
- Provide innovative solutions
- Increase national competitiveness/economic growth
- Build up capacities for further development
- Long-term effectiveness
- Spill-over effects
- Reduce dependency on external skills

**Weaknesses**
- Free riders/Risk of failure (R&D)
- Difficulty in prioritisation/lack of knowledge of the government
- Missing basic skills/Weak educational systems might be a drawback
- Incentives to participate
- Public budget restraints/Need to qualify teachers and training providers
An overview of educational and research instruments

Success Factors

Goal: successful education and research

Governments

- Sufficient capacity (level of education)
- Setting clear goals
- Education and training: early, customised, flexible, interdisciplinary, using established institutions and student-centred learning
- Legal framework (e.g. intellectual property)- balance public and private needs

Use market mechanism/public-private partnerships where possible

Businesses
Policy Reinforcement for Circular Economy

An overview of educational and research instruments

Educational and research instruments in focus

Educational and research instruments in focus
Overview

Research and Development

Education and Training for Resource Efficiency
Research and Development

**Definition**

Research and development (R&D): “systematic investigatory work carried out to increase the stock of knowledge and the use of such knowledge to devise new products and processes”

**Characteristics/Ac tors involved**

- **Forms of R&D**
  - Basic Research
  - Applied Research
  - Experimental Development

- **Actors**
  - Governmental Departments
  - Universities
  - Research Institutes
  - Non-governmental research bodies

**Goals**

- Raising productivity and competitiveness of companies...
- ...and creating more employment...
- ...by producing new products and improving production processes

- Innovate new ways to deliver products and services in a less resource-consuming manner
Educational and research instruments in focus
Research and Development: What can a government do?

Research and Development

Government

Long-term R&D policy

Financial policy intervention
- Direct financing
  - Grants
  - Long-term investment
- Tax incentives
- Granting/removing subsidies

Non-financial policy intervention
- Protection of intellectual rights
- Co-ordination bodies
- Demonstration projects
- Industrial standards
- International collaboration

Business

Short-term changes to obtain quick financial return
Educational and research instruments in focus
Case Study: Fraunhofer UMSICHT Institute

Fraunhofer UMSICHT Institute

Development and Research of latest know-how

Transfer to industrial applications and marketable products

Business Units:
- Renewable Resources
- Process Technology
- Waste Mgmt. / Technology
- Advanced Materials
- Safety Engineering
- Energy Technology
- Energy Systems
- Know-How/Tech Transfer
Educational and research instruments in focus

Presentation by SEPA
**Education and Training**

**Characteristics**

Education and training for resource efficiency aims to build capacity among people on resource efficiency by re-directing education and training programs.

**Goals**

- Develop an understanding of a range of environmental and eco-efficiency concepts
- Encourage reflection on the effects of personal values and lifestyle choice
- Promote skills, concepts, methods and approaches for critical thinking and practical, effective action

**Targeted stages of education**

- Primary/Secondary schooling
- Technical and vocational training (TVET)
- Higher Education
- Life-long/on the job
Educational and research instruments in focus
Education and Training for Resource Efficiency: Role of government

Education and Training

**Government**

<table>
<thead>
<tr>
<th>Key features</th>
<th>Specialisation</th>
<th>Integration</th>
<th>Mainstreaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>Creation of special careers</td>
<td>Integration into standard curricula</td>
<td>Integration into different curricula</td>
</tr>
<tr>
<td>Benefits</td>
<td>Small-only a fraction of people</td>
<td>Middle-depending on the courses</td>
<td>High-reaches all students</td>
</tr>
<tr>
<td></td>
<td>Generates experts with in-depth knowledge</td>
<td>Generates experts with 'traditional' background</td>
<td>Resource efficiency gets linked to core career issues</td>
</tr>
</tbody>
</table>
**Educational and research instruments in focus**

**Case Study: Education System in Sweden**

# Education and Training

**Ministry of Education, Research and Culture, Sweden**

<table>
<thead>
<tr>
<th>Wide spread</th>
<th>Environmental courses and environmental programs can be studied more or less at all universities and colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>Different ways and various combinations of courses within and beyond education programs at basic level as well as at under-graduate and postgraduate levels</td>
</tr>
<tr>
<td>Voluntary services</td>
<td>Considerable part of this education takes place outside upper-secondary schools and higher education institutes</td>
</tr>
<tr>
<td>In-depth knowledge/availability</td>
<td>Several programs focus on pure environmental and ecology issue/A wide range of courses and teaching material produced for organizations’ environmental certification work</td>
</tr>
</tbody>
</table>
Educational and research instruments in focus
Vocational Training for Sustainable Development in Trades, Germany

Sustainable Development in Handwork Trades

What is it?

Vocational sustainability training programme in the trades sector

What is the goal?

To raise the awareness of sustainable development and resource efficiency issues among tradespeople

What is the rationale?

Vocational sustainability training

Reducing internal costs + Development of sustainable business areas = Long term competitiveness and environmental sustainability
Educational and research instruments in focus
Vocational Training for Sustainable Development in Trades, Germany

Sustainable Development in Handwork Trades

Who gets trained?

- Managers of SMEs
- Teachers and vocational trainers in companies
- Consultants
- Individual tradespeople

Who established the program?

- Operating institution: West German Chamber of Trades
- Scientific cooperation: Wuppertal Institute for Climate, Environment and Energy
- Klaus Novy Institute
Educational and research instruments in focus
Vocational Training for Sustainable Development in Trades, Germany

Sustainable Development in Handwork Trades

How to develop a vocational training program for sustainability?
- Pilot programme with companies
- Industry wide results
- Development of the training program
- Broader training via media-packet

How to integrate the training into trades businesses?
Qualification and consultancy
- Step 1: Introduce tradespeople to sustainability
- Step 2: Review the business
- Step 3: Determine the strengths and opportunities/measures for improvement
- Step 4: Teach the tradespeople
- Step 5: Control and improve
Education and public awareness in China

Presentation by SEPA
Policy Reinforcement for Circular Economy

Thank you for your attention !!!
Policy Reinforcement for Circular Economy

Promote5

Individual Exercise: Education and research
Individual Exercise
Education and research

1. Work individually.
2. Consider which groups inside and outside the municipal/local government authorities are important for Circular Economy education.
3. You may discuss the questions in small groups or with the facilitators.
4. When finished return the forms to the meeting facilitators.

What do we do?
- Work individually
- Answer the questions on the provided form
- Give the forms to the meeting facilitators

35 min
Individual work exercise

What groups or organisations within the municipal/local government authorities are the most important for educating about the Circular Economy?

1. To enhance CE opportunities at the enterprise level
2. To enhance CE opportunities at the sector or industrial park level
3. To enhance CE opportunities at the society level

Why are these groups especially important for education about the Circular Economy?

1. Enterprise level
2. Sector or industrial park level
3. Society-wide level

Return the completed forms in 35 Minutes
Individual work exercise

What groups or organisations outside the municipal/local government authorities are most important for educating about the Circular Economy? These could be specific industrial sectors or certain groups in society such as young people.

1. To enhance CE opportunities at the enterprise level
2. To enhance CE opportunities at the sector or industrial park level
3. To enhance CE opportunities at the society level

Why are these groups especially important for education about the Circular Economy?

Return the completed forms in 35 Minutes
Policy Reinforcement for Circular Economy

Promote 6

Information Instruments: Providing targetted information
Policy Reinforcement for Circular Economy

An overview of information instruments

An overview of information instruments in focus
Bringing the pieces together
SCP policy instruments in the matrix

**SCP policy instruments**

- **Soft**
  - Consumer Advisory System
  - Education and Training for Eco-Efficiency
  - Green Public Procurement
  - Environmental Taxes and Charges
  - Liability Law
  - Norms and Standards
- **Hard**
  - Sustainability Reporting
  - Voluntary approaches
  - Tributes, Dues and Fees
  - Certificate Trading
  - Subsidies
  - Research and Development
  - Technology Cooperation and Promotion
  - Finance

**Determining factors**

**Reward / Penalise**

- Consumer Advisory System
- Tributes, Dues and Fees
- Liability Law
- Subsidies

**Motivate**

- Sustainability Reporting
- Voluntary approaches
- Certificate Trading
- Environmental Taxes and Charges
- Education and Training for Eco-Efficiency

**Support**

- Research and Development
- Technology Cooperation and Promotion
- Finance
- Information Centres
- Learning Networks
- Green Public Procurement
An overview of information instruments
Promote6

Definition

“Information instruments are environmental policy tools that seek to influence the behaviour of firms and individuals by providing information.”

Build knowledge & capacity
Influence behaviour
An overview of information instruments
Promote6

Objectives

Build knowledge & capacity  Influence behaviour

Typology

- Labeling for goods and services
- Training
- Information centres
- Public information & education
- Technology cooperation/transfer
- Awards & recognition
- Pollutant release registers
- Public reporting
- Non-compliance reporting
- Knowledge exchange centres
- Public information & education
- Training
- Information centres
- Technology cooperation/transfer
- Awards & recognition
- Pollutant release registers
- Public reporting
- Non-compliance reporting
- Knowledge exchange centres
An overview of information instruments
Promote6

Strength and Weaknesses

**Strengths**
- Cost effective way to achieve environmental goals
- Build knowledge and capacity
- Provide support for other measures
- Engage citizens in improving environment/behavioural change
- Promote corporate accountability & transparency
- Enable informed decision making
- Non-coercive

**Weaknesses**
- Possible trade concerns, especially for development of labelling standards
- Difficult to measure results or success
- No assurance of achieving results
- Potential for information overload
- Quality of information needs to be assured
- Effectiveness can be reduced if used in isolation
- Labeling initiatives often focus on narrow set of issues
An overview of information instruments
Promote6

Success Factors

**Goal:** improved knowledge and behaviour change by producers and consumers

- Effective when a lack of information about how to reduce impacts is a significant barrier
- Need to provide the right information in the right way, at the right time to the right people
- Important as critical support for other instruments

The environment is important but what can somebody like me do?

How can I tell which products are best?

The rules are changing so fast. Where can I get help?
Policy Reinforcement for Circular Economy

An overview of information instruments in focus
Overview

Labeling for goods and services
Enabling purchasers to make sustainable decisions

Information for industry
Supporting sustainable behaviour

Information for consumers
Protecting consumers and changing behaviour

Public reporting & awards
Informing citizens, community leaders and officials
Information instruments in focus
Labeling for goods and services

Labeling for goods and services
Enabling purchasers to make sustainable decisions

Build knowledge and capacity

Types of labels

- **Type I**
  - Independent certification

- **Type II**
  - Self declaration

- **Type III**
  - Quantified information

Purpose or example

- **Eco-labels**
  - Organic food labels
  - Fair Trade labels
  - Used to inform purchasers

- **Uncertified statement**
  - on product or package
  - Often for single issue

- **Independently certified technical data & information**
  - Often used for business procurement purposes
Information instruments in focus
Case Study: Eco-Labeling, EU

Eco-Labeling for Goods and Services
European Union

The EU Eco Label “Flower” is.....

...A simple guide for consumers to make environmentally sound purchasing decisions

... 23 product categories covering twelve major areas of manufacturing and one service activity

...awarded to services and goods alike, but food and medicine are excluded

...only awarded to products that comply with strict ecological and performance criteria

Encourages business to market “greener products”

Promotes cleaner production and consumption

When a product is approved the flower can be placed anywhere on the product

Criteria take into account the overall life cycle (production to disposal)

www.eco-label.com
Information instruments in focus
Case study: Energy Label, EU

Energy Labeling
European Union

- Producer & product model information
- Products rated from A (most efficient) to G (least efficient)
- How much the appliance costs to run under standard conditions
- Performance features of the appliance
- Noise level under operation (optional)

By law, the label must be shown on the following appliances:
- refrigeration
- laundry
- dishwashers
- electric ovens
- lightbulbs
- air conditioners.
Information centres in focus
Information for industry

Information centres
Supporting sustainable behaviour

Build knowledge and capacity

Information centres provide information on eco-efficient production techniques. The main target group is industry, employees, government officials and consultants.

On-site visits & audits
Information clearinghouse
Technology cooperation
Training & conferences
Information helpline/advice
Demonstration projects
Reference publications & newsletters
Information sharing & collaboration
Technology transfer

SME Focus
There is often a special focus on SMEs which can lack access to information on improving technological competence.
Information instruments in focus
Case study: Cleaner Production Centre in China

What is the CNCPC?

CNCP was created by SEPA within the Chinese Research Academy of Environmental Sciences in Beijing with assistance from the UNEP/UNIDO

National Cleaner Production Network
Cleaner Production Newsletter
Cleaner Production Manuals, Guidelines
Training
CP Case studies
Demonstration projects

www.chinacp.com/eng/cporg/cporg_cncpc.html
Information instruments in focus
Case study: Cleaner Production Centre in India: Energy Management

National Productivity and Cleaner Production in India

The NCPC India is part of the National Productivity Council India (NPC), selling services to make India more competitive.

Cleaner Production is closely linked to higher productivity.

Clients of the NPC...
...are ministries and industrial sectors alike.

Topics:
The NPC covers a wide range of topics, from energy management to Information technology.

Energy Management...
...consists of a mixture of technology upgradation and application of alternative energy sources.

...is for example: Waste heat recovery, Energy monitoring systems, electric energy audits.
Information instruments in focus
Case study: Material Exchange in Canada - RCBC Mex

The Recycling Council of British Columbia Materials Exchange

RCBC: main characteristics

- A multi-sectoral, non-profit organization working towards waste recycling and prevention
- Canada’s oldest recycling council (est. 1974)
- Promote waste management solutions by conducting research, facilitating the exchange of ideas, and providing information services
- 150,000 inquiries a year from individuals and businesses and media
- Participate as stakeholder in policy discussions
- Financial support from industry, government and individuals

The RCBC’s Material Exchange

The Materials Exchange is a free waste matching service to help businesses and individuals find solutions to dispose:

- Industrial by-products and chemicals
- Construction materials
- Paints
- Household waste like fridges
- Waste computers

Goal: To encourage the transfer of reusable "waste" goods between generators and users
Information instruments in focus
Case study: Material Exchange in Canada- RCBC Mex: Institutional layout

The Recycling Council of British Columbia Materials Exchange

Financial Support and Funding

Local Governments

Individuals

Industry, Banks

Greater Vancouver Regional District

The Recycling Council of British Columbia (RCBC)

Industry, Banks

Product Care

Vancity

Canada’s National Brewers

BC Hydro

Power Smart

ENCORP

ALCAN

Greater Vancouver Regional District

The Recycling Council of British Columbia (RCBC)
Information instruments in focus
Case study: Material Exchange in Canada- RCBC Mex: How does it work?

The Recycling Council of British Columbia Materials Exchange

Waste generators/Users
- Individuals and businesses from North America

Telephone hotline, webpage & database

Reusable goods & materials

Waste seekers
- Individuals and businesses from North America
Information instruments in focus
Case study: Material Exchange in Canada- RCBC Mex: Lessons learned

The Recycling Council of British Columbia Materials Exchange

**Strengths**
- Easy way to reduce waste disposal and environmental impact
- Facilitation of location and acquisition of ‘hard-to-find’ items
- Cost savings for companies

**Materials Exchanged**
- Wood
- Specialty Oils/lubricants
- Paint
- Chemicals
- Plastic
- Industrial pipe & tubing
- Medical supplies

**Costs & requirements**

**Costs...Very low**
- $CDN 10 000 per year (6 500 EUR)

**Staffing...Very modest**
- 1 full time employee
- 2 part time employee

**Information Technology**
- Webpage and database
Information instruments in focus
Information for consumers

Information for consumers
Protecting consumers and changing behaviour

Definition
Consumer Advisory Systems are an important part of consumer protection. For environmental protection, consumer advisory systems can provide three types of services:

- Precaution (consumer advisory systems)
- Control (legislation)
- Consumer care (liability)

Typology (organisation)
- Consumer organizations
- Consumer information centers
- Testing institutes
- Governmental services
- Private initiatives
Information instruments in focus
Case study: BVL, Germany

Consumer Advisory System

The Federal Office of Consumer Protection and Food Safety

Authority responsible for risk management in the following areas:

- Food
- Feed
- Commodities
- Plant protection products
- Effective and Safe Veterinary Drugs – Healthy Animals
- Genetic Engineering
- Health-Related Consumer Protection
Information instruments in focus
Case study: Ökotest

Consumer Advisory System

**What is the Ökotest?**

Ökotest is a **testing institute**, established in **1985**, publishing their results in several **magazines** and **online**

**Ökotest - the success story**

20 years, 240 magazines, 3,000 tests, 100,000 products, 100 law suits - only one lost

**What is tested?**

Anything one needs to live: cosmetics, baby food, washing powder, paints, painkillers, laptops, vehicles and chips. Recently, even financial services, insurances and financial assets have also been tested.

Each edition contains **10-12 tests** of over **200 products**.
Information instruments in focus
Case study: Ökotest, Germany

Consumer Advisory System

Impact

- Health aspects highlighted in the first line
- Publication of the results/ÖKO-TEST label
- Bad/unhealthy products loose their demand
- Producers are put under pressure to improve their products

Ökotest in numbers

- Employees: 25
- Turnover (in 2003): 10 Million €
- Test costs a year: >1,9 Million €
- Circulation: over 150.000 copies
- Readers: over 1,8 Million (2005)
Information instruments in focus
Public reporting

Public reporting
Informing citizens, community leaders and officials

Influence behaviour

Incentives through information
Increasing transparency of information can motivate firms to improve performance

Public information
Knowledge of environmental conditions can build support for environmental initiatives and action
Information instruments in focus
Case study: PROPER, Indonesia

Public reporting
Informing citizens, community leaders and officials

Indonesia: Program for Pollution Control, Evaluation and Rating (PROPER)

Environmental Performance Criteria
- Environmental Management System
- Hazardous Waste
- Resource Management
- Community Relations & Development
- EIA Compliance
- Water Pollution
- Air Pollution

Rating Analysis:
- Qualitative Information
- Quantitative Analysis
- Visual Analysis

Public Disclosure

QuickTime® and a TIFF (Uncompressed) decompressor are needed to see this picture.
Information instruments in focus
Case study: High5! Sustainability Reporting

Public reporting
Informing citizens, community leaders and officials

High5!

- Sustainability reporting in SMEs
- Close collaboration with GRI
- A practical guide: “How and what to report in 5 steps”
- Case studies showing feasibility, potential and success factors
Information instruments in focus
Case study: Global Reporting Initiative GRI

Public reporting
Informing citizens, community leaders and officials

GRI Guidelines
- Provision on how to report on economic, social and environmental issues
- High uptake across sectors

Sector Supplements
- Contain sector specific indicator sets and guidance
- Available for Automotive, Financial Services, Mining and Metals, Public Agency, Tour Operators, Telecommunications

Challenge
GRI Sector Guidelines for the Energy Sector?
Information instruments in focus
Case study: Royal Awards for Sustainability, Denmark

Royal Awards for Sustainability
Informing citizens, community leaders and officials

Energy

Investment

Media/Film

Urban Innovation

Young Scientist

Tourism

QuickTime? and a TIFF (Uncompressed) decompressor are needed to see this picture.
Informational instruments in focus

Presentation by SEPA
Policy Reinforcement for Circular Economy

Thank you for your attention !!!
Policy Reinforcement for Circular Economy

Promote6

Group Exercise: Information Instruments
1. Divide into four (or more) groups with participants from the same department.

2. What information instrument is your department best able to implement to promote the Circular Economy? Why?

3. What other department should be involved to improve the chances of success? Why is this other department the best partner?

4. When completed each group presents its idea.
1. What information instrument is your department best able to implement to promote the Circular Economy? Why?
2. What other department should be involved to improve the chances of success? Why is this other department the best partner?

When completed each group presents its idea. You should try to convince the other department to participate with you to implement your idea.

Report back in 20 Minutes
Policy Reinforcement for Circular Economy

Promote7

Bringing the pieces together: Setting up the framework and designing a sound policy mix
What is a sound policy mix?

A sound policy mix should address clearly articulated objectives with policy measures that have the greatest chances of success by applying a mix of mutually supporting approaches.

The policy mix should consider the resources of government to implement, evaluate and enforce the policy and the ability of the regulated parties to achieve the policy objectives.
Bringing the pieces together
Promote7

Setting a clear objective

What are the root causes?
Are there trends that will affect root causes of the problem locally? nationally? Globally?

Determine objective
Clearly understand and define the problem to be addressed, and effects and relationships to other environmental issues.

Will there be support for policy measures to address the problem?

What are the social, cultural, political, economic and legal implications of the problem?
Bringing the pieces together
The need to clearly identify obstacles

Clearly identify obstacles

**Incentives** for companies to contribute to policy objectives under existing framework conditions...

- Stakeholder relations
- Brand reputation
- Cost structure
- Legal compliance

**Ability of companies to respond to policy instruments in an adequate way...**

- Organisational setup
- Human Capital
- Status of technology
- Credit status

Reward / Penalise

Motivate

Support

Government strategy
Bringing the pieces together
SCP policy instruments in the matrix

And then choose from the Menu

Determining factors

Hard

Soft

Government strategy

Reward / Penalise

Motivate

Support

Consumer Advisory System

Sustainability Reporting

Education and Training for Eco-Efficiency

Green Public Procurement

Eco-Labelling

Learning Networks

Voluntary approaches

Certificate Trading

Information Centres

Subsidies

Environmental Taxes and Charges

Technology Cooperation and Promotion

Liability Law

Tributes, Dues and Fees

Research and Development

Norms and Standards

Certificate Trading

Finance

Eco-Labelling

Sustainability Reporting

Education and Training for Eco-Efficiency

Green Public Procurement

Eco-Labelling

Voluntary approaches

Subsidies

Environmental Taxes and Charges

Learning Networks

Liability Law

Tributes, Dues and Fees

Certificate Trading

Technology Cooperation and Promotion

Norms and Standards

Finance
Bringing the pieces together
An illustrative example...

A sample obstacle identification

Air pollution might be a problem in a specific region as...

Legal compliance

... no legal framework exists to push producers to limit their emissions

Human Capital

... companies are not aware of the problem and potential solutions

Status of technology

... appropriate technology is not available in the local market

Government strategy
Bringing the pieces together
An illustrative example...

A sample policy mix
Select policy instruments to address specific problem

- **Government strategy**
  - **Reward / Penalise**:
    - Set a legal framework linking emission levels to license to operate
    - Norms and Standards
  - **Motivate**:
    - Support training programmes for employees on status of regulation and improvement options for enterprise
  - **Support**:
    - And set up training programme to enable access to state of the art technology
    - Education and Training for Eco-Efficiency
    - Technology Cooperation and Promotion

Determining factors
- **Hard**
  - Government strategy
- **Soft**
  - Education and Training for Eco-Efficiency
  - Technology Cooperation and Promotion

Select policy instruments to address specific problem
Bringing the pieces together
An illustrative example...

Governmental capacities
Are necessary resources available to implement policy mix?

Determining factors

Hard
- Norms and Standards
- Capital for policy formulation?
- Knowledge for course preparation?
- Organisation skills for marketing training?
- International contacts of public agencies?
- Knowledge to build up local development centre’s

Soft
- Reward / Penalise
- Motivate
- Support
- Government strategy

Prodev Training | Day 2 | Presentation - Promote7 | Building Capacity for SCP
Bringing the pieces together
Outlook – next steps

**Next steps...**

**Setting Priorities**
Analysis of current production and consumption patterns and assembling the information in a structured way

**Assessing Policy Opportunities**
Evaluate the policy options with respect to effectiveness, efficiency, equity and fairness, local appropriateness etc.

**Implementing the Policies**
Distributing responsibilities, taking appropriate action and coordinating networks and partnerships for policy implementation

**Following up the Policies**
Evaluate actions taken and progress achieved towards policy objective through indicators and deciding on corrective action

...next day!
Bringing the pieces together
Wrapping it up...

Remember

• Sustainability concerns should not be secondary

• Focus policies on underlying causes of environmental problems with attention to life-cycle considerations and increasing the productivity of material and energy use.

• Strict 'command and control' regulations alone may not be enough for SCP objectives.

• Integrate SCP thinking and objectives into all policy areas, not just environmental policy.

• Industry should be actively involved in the development of legislation, regulation and other governmental incentives to ensure their technical expertise and avoid inadvertent disincentives to innovation.

• Where possible take flexible approaches for promoting business participation in SCP including positive incentives and assistance.
Policy Reinforcement for Circular Economy

Promote8

‘Promoting Circular Economy - Concepts and Principles’
Day 2 – Summary

- Measures & Instruments’

Promote2
Regulatory Instruments: Setting the rules

Promote3
Economic Instruments: Getting the prices right

Promote4
Cooperation Instruments: Initiating cooperations

Promote5
Educational and Research Instruments: Educating and creating awareness

Promote6
Informational Instruments: Providing targeted information

Promote7
Bringing the pieces together: Setting up the framework and designing a sound policy mix
Day 3 – Outlook

‘Promoting Circular Economy – Measures & Instruments’
Day 3

‘Implementing Circular Economy’

- Implement1 Overview on ‘Implementing CE’
- Implement2 Setting Priorities: Analysis of current production and consumption patterns
- Implement3 Assessing Policy Opportunities: Drafting and Analysing Policy Options
- Implement4 Implementing the policies: Policy coordination
- Implement5 Following up policy implementation: Indicators, evaluation and corrective action
- Implement6 Summary of ‘Implementing CE’

See you tomorrow!
Training Packages on Policies of SCP and Circular Economy

Policy Reinforcement for Environmentally Sound and Socially Responsible Economic Development in China (PRODEV)
Policy reinforcement for Circular Economy

Implement1

‘Implementing Circular Economy - Methods & Action Steps’
Implementing Circular Economy - Methods & Action Steps
Recap of Day 2

Day 2 – Recap ‘Promoting Circular Economy – Measures & Instruments’

Promote2
Regulatory Instruments: Setting the rules

Promote3
Economic Instruments: Getting the prices right

Promote4
Cooperation Instruments: Initiating cooperation initiatives

Promote5
Education and Research Instruments: Educating and creating awareness

Promote6
Information Instruments: Providing targeted information

Promote7
Bringing the pieces together: Setting up the framework and designing a sound policy mix
Objectives of ‘Implementing Circular Economy’

• Understand how to systematically set priorities, assess policy opportunities, coordinate necessary actions and to implement, evaluate and communicate the chosen policy package

• Have a set of tools at hand (Priority Finder, Material Flow Analysis, Life-Cycle Assessment, Benefit-Cost Analysis, etc) to set priorities, assess policy opportunities and implement policy packages

• Be aware of the policy cycle and the importance of coordinated actions to make a policy package and/or policy modifications successful
Implementing Circular Economy - Methods & Action Steps

What will come today

Day 3 – Overview

‘Implementing Circular Economy - Methods & Action Steps’

- Implement2: Setting Priorities: Analysis of current production and consumption patterns
- Implement3: Assessing Policy Opportunities: Drafting Policy Options
- Implement4: Implementing the policies: Policy coordination through networks and partnerships
- Implement5: Following up policy implementation: Indicators, evaluation and corrective actions
The policy cycle
What we will look at today

- Clearly articulated objectives
- Sound policy mix
- Based on partnerships

Agenda setting
Policy formulation
Policy implementation
Policy evaluation

Assessing policy opportunities
Clear indicators

Based on partnerships
### Implementing Circular Economy - Methods & Action Steps

#### What will come today

<table>
<thead>
<tr>
<th>Day 3</th>
<th>‘Implementing Circular Economy - Methods &amp; Action Steps’</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Implement1</strong></td>
<td>Overview of ‘Implementing Circular Economy - Methods &amp; Action Steps’</td>
</tr>
<tr>
<td><strong>Implement2</strong></td>
<td>Setting priorities: Analysis of current production and consumption patterns</td>
</tr>
<tr>
<td><strong>Implement3</strong></td>
<td>Assessing policy opportunities: Drafting policy options</td>
</tr>
<tr>
<td><strong>Implement4</strong></td>
<td>Implementing the policies: Policy coordination through networks and partnerships</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Implement2</th>
<th>Setting priorities: Analysis of current production and consumption patterns</th>
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<tbody>
<tr>
<td>Setting priorities: Analysis of current production and consumption patterns</td>
<td></td>
</tr>
<tr>
<td>Introducing priority setting</td>
<td></td>
</tr>
<tr>
<td>Stock taking</td>
<td></td>
</tr>
<tr>
<td>Assessing</td>
<td></td>
</tr>
<tr>
<td>Focussing</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Implement3</th>
<th>Assessing policy opportunities: Drafting policy options</th>
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<tr>
<td>Determining Policy Options</td>
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<tr>
<td>Policy Analysis</td>
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<table>
<thead>
<tr>
<th>Implement4</th>
<th>Implementing the policies: Policy coordination through networks and partnerships</th>
</tr>
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<tbody>
<tr>
<td>Implementing the policies: Policy coordination through networks and partnerships</td>
<td></td>
</tr>
<tr>
<td>Challenges in policy implementation</td>
<td></td>
</tr>
<tr>
<td>Opportunities to improve policy implementation</td>
<td></td>
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Day 3  ‘Implementing Circular Economy - Methods & Action Steps’

<table>
<thead>
<tr>
<th>Implement5</th>
<th>What to monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following up policy implementation: Indicators, evaluation and corrective action</td>
<td>Indicator and target development</td>
</tr>
<tr>
<td></td>
<td>Monitoring and corrective action</td>
</tr>
<tr>
<td></td>
<td>Case studies</td>
</tr>
<tr>
<td></td>
<td>What to monitor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implement6</th>
<th>Summary of Day 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary of ‘Implementing Circular Economy - Methods &amp; Action Steps’</td>
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What will come today

Methods & Action Steps

Implement5

Implement6
Let’s get started!
Policy reinforcement for Circular Economy

Implement2

Setting Priorities: Analysis of current production and consumption patterns
Bringing the pieces together
Selecting an optimal policy mix

Purpose...

Determining political priorities and topics that require attention and action by policy makers

Key issues to consider

- Understand the problems and underlying causes to determine policy objectives.
- What trends affect underlying causes of the problem?
- Will there be support for policy measures to address the problem?
- Does existing policy address the issue?
- What level of environmental improvement is achievable?
Policy reinforcement for Circular Economy

Introducing priority setting

Stock taking
Assessing
Focussing
Introducing priority setting
Criteria for Setting Priorities

Why is priority setting important?

- Achieve more effective results
- Focus on what really matters
- Start with practical measures
- Reduce Complexity
- Implement Policies with highest benefits

Why is priority setting important?
Steps for priority setting

Stock taking
- What are the major areas of demand in the region?
- What environmental issues are significant in the region?

Assessing
- What type of material flow analysis is relevant?
- What type of data is available?
- What are the supporting methodologies?

Focusing
- Based on the assessment, which areas seem to have priority?

Repeat cycle to get active on new issues
Policy reinforcement for Circular Economy

Introducing priority setting

Stock taking

Assessing

Focussing
Introducing priority setting
Stock taking

in terms of...

- Economic sectors
- Environmental issues
- Life cycle phases
- Demand areas
- Product groups
Introducing priority setting
Stock taking

1. Resource intensive consumption and production patterns of your town/region/country

2. High environmental impact economic sectors: Which sectors and activities have high resource use and/or environmental impacts, considering both production and consumption?

3. Acute environmental problems: What are the most pressing environmental issues of the town/region/country?

4. Businesses/products and services adding social and environmental value to the town/region/country: Which products and services are helping to preserve the state of the environmental or enhancing the life quality of citizens?
“On current trends, an extra 113m tonnes of waste will need to be dealt with by 2020”
Policy reinforcement for Circular Economy

Introducing priority setting

Stock taking

Assessing

Focussing

Assessing
Approaches for priority setting
Material Flow Analysis

Assessing

**Material Flow Analysis (MFA)**

- **Allows to systematically assess:**
  - Production and consumption patterns
  - Material flows related to sectors, product chains or areas of demand
  - Environmental and social impacts related to these material flows
Approaches for priority setting
Material Flow Analysis

Material Flow Analysis tools can identify resources used...

- along the life cycle of a specific product or service
- along the life cycle of the products or services consumed in areas of demand
- along the life cycle of the products or services consumed in a specific region
- in production processes in regions
- within different sectors
- within an organisational entity, e.g. business or governmental department
- in an economy, including resource use connected to imports and exports

Address underlying cause of many environmental impacts (Less resources used = Less pollution)

Assign monetary value to different resource flows to achieve comparability

Compare different inputs according to material intensity

Capture inputs used along life cycle beyond immediate scope

Flexible methodology that can be adapted to concrete needs in a specific situation
Approaches for priority setting
Material Flow Analysis

Material Flow Analysis Tools

- Ecological Footprint Analysis
- Accounting for Material Flows
- Material Input per Service Unit (MIPS)

Linkage to economic indicators

Eco-intensity indicators
Approaches for priority setting
Ecological Footprint explained

Objective
Identify SCP patterns in regions
To measure the demand upon natural resources
Design policy interventions/strategies on a regional/local level

Method
“Calculation that estimates the area of Earth's productive land and water required to supply the resources that an individual or group demands, as well as to absorb the wastes that the individual or group produces.”

Collection of Data → Calculate Footprint → Results
Trend Analysis → Comparison → Modelling of Scenarios

Prioritise Strategies which reduce footprint
Approaches for priority setting
Ecological Footprint of towns/regions, an example

Local Ecological Footprint

Comparing actual space to ecological footprint: Striking mismatch in consumer societies
Approaches for priority setting
Ecological Footprint of towns/regions, an example

Local Ecological Footprint

Northern Limits Project’ objectives:

- Calculate resource efficiency of the Northern Ireland economy
- Calculate the Ecological Footprint of Northern Ireland
- Model a number of improvement Scenarios in terms of Ecological Sustainability
- To make recommendations on a SD Strategy for Northern Ireland
- To assess data gaps and needs and make recommendations

Source: www.northern-limits.com
Approaches for priority setting
Accounting for Material Flows explained

Objective
Identify patterns of resource use on different levels
Plan policy interventions
Monitor trends in resource use

Method

- Economy-wide
  Overall picture of resource to (imports), within and from (exports) a society

- Sectors
  Material Flows from a production perspective: Which industry sectors matter most?

- Fields of demand
  Material Flows from a consumption perspective: Which fields of demand matter most?
Approaches for priority setting
Material Flows – an economy-wide application

Material Flows

Economy-wide

Estimated economy-wide material flows in the EU, on a per capita and year basis for the second half of the 1990ies

Source: Wuppertal Institute 2005: Resource Use in European Countries
Approaches for priority setting
Material Flows – an industry sector application

Material Flows

Industry sectors

Mass Balance of UK Magazine Publishing Sector

Material flows through magazines (2001, Mt)

- Raw Materials 1.1Mt
- Emissions to Air 0.23Mt
- Archive 0.15Mt
- Products 0.74Mt
- Process Wastes 0.29Mt
- UK MAGAZINE SUPPLY CHAIN
- Recycle 0.03Mt
- Landfill

Primary resources consumed by the magazine supply chain

- Paper 7%
- Covermounts, inserts and polybags 2%
- Ink
- Diesel
- Diesel
- Other inputs <1%

Source: Biffawards
Approaches for priority setting
Material Flows – an industry sector application

Material Flows
Fields of Demand

Material Flows as related to key fields of demand

Residence and food emerge as key fields to be addressed

For non-European countries, results will be different?!
Approaches for priority setting
MIPS explained

MIPS Material Input per Service Unit

Objective
Identify product chains or demand areas with highest resource consumption

Method
1. Compile main inputs (raw materials, energy, goods, services) needed (e.g. in a product chain or for an area of demand)
2. Calculate life cycle wide material input factors for these inputs (e.g. water needed to provide certain quantity of goods), if not readily available
3. Calculate life cycle wide material use by multiplication of input (1) and material input factor (2)
4. Add up data for single inputs to get the total for each demand area

Info on methodology and material input factors available at www.mips-online.info
# Approaches for priority setting
MIPS to compare products

## MIPS & products

<table>
<thead>
<tr>
<th>Material</th>
<th>Weight, excl. packaging (kg)</th>
<th>Abiotic raw materials (kg)</th>
<th>Material intensity factor (kg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>23.1</td>
<td>1500*</td>
<td>65</td>
</tr>
<tr>
<td>Notebook</td>
<td>2.8</td>
<td>434</td>
<td>155</td>
</tr>
<tr>
<td>Handheld</td>
<td>0.8</td>
<td>81</td>
<td>101</td>
</tr>
<tr>
<td>Personal organiser (paper-based)</td>
<td>0.4</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

* Estimations from 1998 (outside the scope of the HP study)

Source: Wuppertal Institute
### Approaches for priority setting
MIPS to identify hot spots in company

#### MIPS of a Company

**Example: Ecological Backpack**

<table>
<thead>
<tr>
<th>Land used</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 million hectares; close to the area of Switzerland</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 million tonnes due to erosion; equivalent to 3 million loaded trucks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Abiotic materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 million tonnes (non-renewable materials) e.g. fossil fuels, fertilisers</td>
</tr>
<tr>
<td>equivalent to the amount needed to produce 833 thousand big cars</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biotic materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 million tonnes (renewable materials) e.g. animal fodder, harvest residues</td>
</tr>
<tr>
<td>equivalent to the amount needed to produce 20 billion pairs of jeans</td>
</tr>
</tbody>
</table>

Source: Wuppertal Institute
Approaches for priority setting
MIPS to identify hot spots within product chains

Example
Hotspots within product chains

Direct material input of a food producer company
12 million tonnes of agricultural and semi-processed food materials every year close to the 15 million tonnes that Finland consumes every year.

Priority life cycle phases
- **agriculture** is a high priority area for footprint reduction, soil erosion being a key aspect to address;
- the **processing** phase is important for products with typically high energy- or raw materials-intensive processes.

Source: Wuppertal Institute
Approaches for priority setting
MIPS to identify hot spots within product chains

Coffee cultivation is the largest contributor to the overall environmental score of the coffee chain. Increased shares of shade grown coffee and less intensive farming techniques, including reduced levels of agrochemicals, may help reduce the footprint.

Even though instant coffee production ranks first in energy use among different food products, the significant improvements already achieved in this phase led to a lower grade.

Energy use and emissions to air are most important when road transport is used. However, in the overall context of the coffee chain, and in the light of KF-specific information, this phase assumes low relevance.

While coffee brewing is a large energy user in the coffee chain, waste generation is an issue stakeholders give considerable importance to.
Approaches for priority setting
Eco-Intensity Indicators explained

Eco-Intensity Indicators

Objective
Link material flow data to economic indicators
Improve decision making and raise accountability
Complement financial statements

Method
1. Compile ‘absolute’ indicators already described (e.g. environmental footprint)
2. Select economic indicator as denominator (e.g. economic value added or GDP)
3. Calculate ratio to assess eco-intensity of different economic sectors

Eco-Intensity = \frac{\text{Environmental impact}}{\text{Value added}}
### Approaches for priority setting

#### Eco-Intensity – example on country level

**Eco-intensity on country level**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Eco-Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>1994</td>
<td>0.36</td>
</tr>
<tr>
<td>EU-15</td>
<td>2000</td>
<td>0.78</td>
</tr>
<tr>
<td>Chile</td>
<td>2000</td>
<td>7.69</td>
</tr>
<tr>
<td>Brazil</td>
<td>1995</td>
<td>3.23</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1997</td>
<td>2.11</td>
</tr>
<tr>
<td>Thailand</td>
<td>2000</td>
<td>3.85</td>
</tr>
<tr>
<td>Philippines</td>
<td>2000</td>
<td>6.71</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2000</td>
<td>27.03</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>2000</td>
<td>7.75</td>
</tr>
</tbody>
</table>

Data is given as tons / 1000 $US

- Eco-intensity comparison of countries
- Linking resource consumption to economic activity
- Similar comparisons possible for economic sectors
Policy reinforcement for Circular Economy

- Introducing priority setting
- Stock taking
- Assessing
- Focussing
- Focussing
Supporting Approaches
Criteria for Setting Priorities

Focussing

Other factors that might be considered when setting priorities

- Political agendas
  Regional, national and international agendas and priorities

- Best-practice replication
  Best practice results in other regions show where improvements are feasible

- Stakeholder Opinions
  Priorities by key stakeholder groups within and outside government

More details in Implement3...
Supporting Approaches
Criteria for Setting Priorities

Navigation...

Progress so far...

- Clearly articulated objectives

Agenda setting ➔ Policy formulation ➔ Policy implementation ➔ Policy evaluation

...and what will come next
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Implement

Group Exercise: Applying a Priority Setting Matrix
Approaches for priority setting
Applying a priority setting matrix

Applying a Priority Setting Matrix

1. Divide into four (or more) groups with participants from different departments.
2. Consider a key economic sector in China/your region and the main resource flows, environmental impacts and economic importance of the sector.
3. Fill in your group’s responses in the provided forms.
4. When completed each group presents its results for the top resource flow.
1. Consider a key economic sector in China/your region. Think about the main material and resource flows connected to the sector. Consider environmental impacts that can result from the resource flows. Also consider the economic sectors that are active in the resource flow and the importance of these sectors to the economy.

Consider resource flows in terms of:
- abiotic raw materials (e.g. minerals, water, fossil fuel)
- biotic raw materials (e.g. wood)
- water
- erosion
- air

Group: Phosphorus chemical production
<table>
<thead>
<tr>
<th>Sector:</th>
<th>Resource flow #1</th>
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<th>Resource flow #3</th>
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<td>What policy instruments have been discussed that might be useful in addressing these resource flows?</td>
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Report back in 30 Minutes
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Consider resource flows in terms of:
- abiotic raw materials (e.g. minerals, water, fossil fuel)
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- erosion
- air

Group: Coal chemical production
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Consider resource flows in terms of:

- abiotic raw materials (e.g. minerals, water, fossil fuel)
- biotic raw materials (e.g. wood)
- water
- erosion
- air
### Group: Urban infrastructure

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Consider resource flows in terms of:

- abiotic raw materials (e.g. minerals, water, fossil fuel)
- biotic raw materials (e.g. wood)
- water
- erosion
- air
# Group: Supermarkets & retail marketplaces

<table>
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Consider resource flows in terms of:

- abiotic raw materials (e.g. minerals, water, fossil fuel)
- biotic raw materials (e.g. wood)
- water
- erosion
Group: Pharmaceuticals

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Report back in 30 Minutes
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Consider resource flows in terms of:
- abiotic raw materials (e.g. minerals, water, fossil fuel)
- biotic raw materials (e.g. wood)
- water
- erosion
- air
Group: Construction

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Report back in 30 Minutes
Policy reinforcement for Circular Economy

Assessing Policy Opportunities: Drafting and Analysing Policy Options

Implement
Determining policy options
Selecting an optimal policy mix

Purpose...

Using the policy objectives as a starting point identify and analyse policy options with respect to their ability to achieve the desired objectives

Key issues to consider

Start with clear policy objectives

Policy options should address the objectives
Policy reinforcement for Circular Economy

Determining Policy Options

Determining Policy Options
Policy Analysis
Determining policy options
Selecting an optimal policy mix

Formulating policy options

Best Practice
- Best practice guides from leading jurisdictions
- Policy compendiums
- In-house policy studies of other jurisdictions (what worked, what did not, why?)
- Research institutions

Political Agendas
- International
- National
- Regional
- Local

Key Stakeholders
- Industry organisations & other regulated parties
- NGOs & citizen groups
- Academics/Universities

Existing Policies
- Consider existing instruments in use and how they might be applied
- Consider other policies that might influence the policy the objective

What are others doing to solve the problem?
Which policy instruments fit with political developments?
What do key stakeholders see as options?
How do other policies affect the policy objective?
‘Best Practice’

**Successful**
- Has achieved tangible results in other regions under roughly comparable conditions
- Success clearly attributable to activities implemented
- Consistency is achieved when the process is followed

**Replicable**
- Documentation available, including systematic evaluation
- Opportunity to contact institution in charge to exchange information and guidance

**Match desired policy objectives of the ‘Best Practice’ case with the local needs**
### Determining policy options
#### Political Agendas

<table>
<thead>
<tr>
<th>International</th>
<th>National</th>
<th>Regional</th>
<th>Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Johannesburg Plan of Implementation</td>
<td>• Circular Economy Plan</td>
<td>• Regional development plans</td>
<td>• Regional spatial (urban / rural) development plans</td>
</tr>
<tr>
<td>• Millennium Development Goals</td>
<td>• National Development Plans</td>
<td>• Regional environmental strategies / action plans</td>
<td>• Land development programmes</td>
</tr>
<tr>
<td>• Kyoto Protocol - CDM</td>
<td>• National Sustainable Development Strategies</td>
<td>• Neighbouring state/province policies or proposals</td>
<td></td>
</tr>
</tbody>
</table>

- **Which measures are identified or supported by international developments?**
- **Do national political developments support certain policy instruments?**
- **Do regional political developments support certain policy instruments?**
- **Do local political developments support certain policy instruments?**
Determining policy options
Key stakeholders

Key stakeholders

- Develop better policy
  - Consult based on policy objectives and/or proposed measures
  - Stakeholder Opinions: Key stakeholder groups inside and outside government can have positive input to policy selection, development and evaluation
- Build needed support for implementation
  - Report back on input received and actions taken

People support what they help to build
Determining policy options
Case study: Canada Round Table on the Environment and Economy

National Round Table on the Environment and the Economy

Exploring new opportunities to integrate environmental conservation and economic development

- NGO members
- Corporate leaders
- University faculty
- Politicians
- Technical experts
- Managers

Round Table to facilitate unfettered exchange of ideas

Canada

National Round Table on the Environment and the Economy
Determining policy options
Case study: Public Consultation United Kingdom

Public Consultation

UK Department of Environment, Food and Rural Affairs

Consultation Criteria

1. **Wide consultation** with time to respond.
2. **Clarity about proposals**, who affected and timelines for consultation.
3. Consultation must be **clear, concise and accessible**.
4. **Feedback on responses** and how policy was influenced.
5. Government departments must **monitor the effectiveness** of consultation exercises.
Determining policy options
Case study: Public Consultation United Kingdom

Public Consultation
UK Department of Environment, Food and Rural Affairs

www.defra.gov.uk/corporate/consult
Policy reinforcement for Circular Economy

Determining Policy Options

Policy Analysis
Policy Evaluation
Selecting an optimal policy mix

Why analyse policy?

Policy Tradeoffs
Ensure scarce resources of government and society are put to the best use

Achieve Objectives
Chose the policy options that have the best chances of success

Build Support
Demonstrate to stakeholders inside and outside government that the selected policy options are optimal

It is important to develop clear criteria for policy analysis that are recognised and supported by decision makers and stakeholders inside and outside government

Effectiveness and efficiency
Equity and fairness
Incentives for long-run improvement
Enforceability
Acceptability in the local context
Policy analysis criteria

- Effectiveness and efficiency
- Equity and fairness
- Incentives for long-run improvement
- Enforceability
- Acceptability in the local context

In the following applied to...

**Eco-Industrial Parks**

A flexibly applied regional industrial cooperative often initiated by local governments, to gain ecological and economic benefits by exchanging unneeded resources.

**Environmental Agreement (EA) in the Chemical Industry**

An implementation agreement between a government and the chemical industry for emissions and waste reduction. Firms hand in a Company Environmental Plan (CEP) every 4 years. If complying with the criteria, they benefit from a simplified licensing process.
Policy analysis criteria

Effectiveness and efficiency

Effective
- Polluters will respond in ways that achieve desired objectives
- Results can be measured

Efficient
- Balance between abatement cost and environmental damages (cost-benefit analysis)

Cost-effective
- Achieving objectives at lowest cost. Alternative to cost-benefit analysis

Economic impacts, trade and competitiveness
- Short term, medium term, long term

Equity and fairness

Incentives for long-run improvement

Enforceability

Acceptability in the local context
Policy analysis criteria

- **Effectiveness and efficiency**
- **Equity and fairness**
- **Incentives for long-run improvement**
- **Enforceability**
- **Acceptability in the local context**

**Eco-Industrial Parks**

**Effectiveness**
- Enables clear and measurable savings
- Firms might continue to pollute if no regulation exists

**Efficiency**
- Reduction of natural resource usage
- Often depend on substantial government funding

**EA in the Chemical Industry**

**Effectiveness**
- Possibility of flexible planning and simple licensing creates incentive to meet criteria.
- Overall environmental goals might not be achieved. Lack of necessary innovation

**Efficiency**
- Reduces emissions and waste significantly.
- Impact of EA in comparison with other policy instruments can’t be measured.
Policy analysis criteria

- **Equity and Fairness**
  - *Equity and fairness*
    - How benefits and costs are distributed
  - *Tradeoffs between efficiency and distribution*
    - Efficient policy may distribute benefits and costs in ways that are perceived as unfair
  - *Social impacts & environmental justice*
    - Some groups in society may be especially at risk of being subject to greater pollution due to social standing or place of residence
    - Employment impacts & opportunities
Policy Analysis
Policy Analysis Criteria

Policy analysis criteria

Eco-Industrial Parks
Equity & Fairness:
Distribution of Benefits and Costs

Effectiveness and efficiency
Equity and fairness
Incentives for long-run improvement
Enforceability
Acceptability in the local context

Firms participating all mutually benefit from the system
Local stakeholders needs might not be addressed

EA in the Chemical Industry
Equity & Fairness:
Distribution of Benefits and Costs

Due to a constant negotiation process, balance between needs and abilities of public and private actors can be found
Due to flexible regulations system, firms may not reduce emissions where greatest need exists

Due to flexible regulations system, firms may not reduce emissions where greatest need exists
Policy analysis criteria

Incentives for long-run improvement

**Incentives**
- Policy should provide incentives for continuous innovation in the long term
- Flexibility and results-based regulation is key to enable innovation

**Policy Certainty**
- Provide confidence for effective long term investments in equipment, technology and training
**Policy analysis criteria**

- **Effectiveness and efficiency**
- **Equity and fairness**
- **Incentives for long-run improvement**
- **Enforceability**
- **Acceptability in the local context**

---

**Eco-Industrial Parks**

**Incentives for long-run improvements**

- System is flexible to changes of method or place. The longer the coordination, the more cost-effective for the firms.

- Flexibility allows for declining commitment as well. Cost effectiveness may come before maximum of resource efficiency.

---

**EA in the Chemical Industry**

**Incentives for long-run improvements**

- The 4-year Plan (CEP) a firm has to make encourages long term planning.

- Incentives for long-run improvements depend on results of future negotiation rounds.
Policy analysis criteria

Effectiveness and efficiency

Equity and fairness

Incentives for long-run improvement

Enforceability

Acceptability in the local context

Enforceability

Compliance monitoring
- Evaluate monitoring costs for government and for industry under each policy option.

Sanctioning/prosecution costs
- Cost and complexity of bringing polluters to justice under different policy options.
- Soft enforcement tools.

Paradox of high penalties
- High penalties create incentives to comply but can make prosecution more difficult.

Feasibility
- Is it the right time for policy implementation?
- Government capacity to implement and oversee
- Capacity of industry to comply
Policy analysis criteria

**Eco-Industrial Parks**

- **Enforceability**
  - Governments may initiate the system, firms have a (cost) incentive to participate
  - Monitoring is difficult in the long term. It is up to the firms how they share materials

**EA in the Chemical Industry**

- **Enforceability**
  - Firms lose possibility to benefit from the simplified licensing procedure if not complying with agreed upon criteria
  - Monitoring of customised criteria difficult as no standard procedure exists

---

Prodev Training | Day 3 | Presentation - Implement3 | Building Capacity for SCP

21
Policy analysis criteria

Acceptability in the local context

Moral issues and perceptions
- Beliefs of right and wrong.
- Political acceptability.

Policy failure
- Avoid assuming that every proposed policy intervention will improve matters for society as a whole. All policy should be subject to careful objective and rational analysis.
Policy analysis criteria

- **Effectiveness and efficiency**
- **Equity and fairness**
- **Incentives for long-run improvement**
- **Enforceability**
- **Acceptability in the local context**

**Eco-Industrial Parks**

**Acceptability in the local context**

- Less pollution and cheaper prices (less resource use)
- Local stakeholders can, but are not always actively involved in the process.

**EA in the Chemical Industry**

**Acceptability in the local context**

- Provincial authorities take part in the negotiation process, so local political acceptability might be high
- Local stakeholder are not participating directly and hence their beliefs are not taken into consideration
Navigation...

Progress so far...

- Clearly articulated objectives
- Sound policy mix
- Analyzing policy opportunities
- Agenda setting
- Policy formulation
- Policy implementation
- Policy evaluation

...and what will come next
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Group Exercise: Analysing Policy Options
Analysing Policy Options

1. Split into the same groups as in the last exercise (Implement2)
2. Brainstorm potential policy instruments to address one of the resource flows analysed in Implement2
3. Select one policy instrument and briefly analyse the proposed policy responses according to the criteria list provided.
4. Present some key results from your analysis to the meeting
### Analysing Policy Options

1. Split into the same groups as in the last exercise (Implement2)

<table>
<thead>
<tr>
<th>Sector:</th>
<th>(Same as in Implement2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Flow:</td>
<td>(Select one from exercise in Implement2)</td>
</tr>
</tbody>
</table>

2. Brainstorm potential policy instruments to address one of the resource flows analysed in Implement2

<table>
<thead>
<tr>
<th>Potential policy instruments:</th>
<th>(Brainstorm)</th>
</tr>
</thead>
</table>
3. Select one policy instrument and briefly analyse the proposed policy responses according to the criteria list.

<table>
<thead>
<tr>
<th>Instrument selected:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness and efficiency</td>
<td></td>
</tr>
<tr>
<td>Will the objectives of the policy instrument be achieved?</td>
<td></td>
</tr>
<tr>
<td>Does the instrument allow for costs savings? What might be implications for industry competitiveness?</td>
<td></td>
</tr>
<tr>
<td>Equity and fairness</td>
<td></td>
</tr>
<tr>
<td>Are benefits and costs of the policy distributed in a fair way?</td>
<td></td>
</tr>
<tr>
<td>What is the impact on socially vulnerable groups in society?</td>
<td></td>
</tr>
<tr>
<td>Incentives for long run improvements</td>
<td></td>
</tr>
<tr>
<td>Does the policy provide incentives for continuous innovation?</td>
<td></td>
</tr>
<tr>
<td>Enforceability</td>
<td></td>
</tr>
<tr>
<td>Does government presently have sufficient capacity to implement and oversee the policy?</td>
<td></td>
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<tr>
<td>Does industry have the resources to comply with the policy?</td>
<td></td>
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<tr>
<td>----------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>

**Acceptability in local context**

<table>
<thead>
<tr>
<th>Doe the policy instrument fit to the local mentality and habits?</th>
</tr>
</thead>
</table>

4. Present some key results from your analysis to the meeting

Report back in 30 Minutes
Policy reinforcement for Circular Economy

Implement4

Implementing the policies: Policy coordination through networks and partnerships
Challenges in policy implementation
Overview

Key issues to consider
• What departments need to cooperate to implement the policy?
• Has money been allocated in each department to handle the new responsibilities?
• What is the timing of each phase of implementation?
• What are the most critical steps and what can be done if there are delays?
• What supporting material is needed (manuals, checklists, information for enforcement staff, information for regulated groups, computer systems etc.)

Purpose...
Ensuring that policy instruments are effectively implemented to promote change
Policy reinforcement for Circular Economy

Challenges in policy implementation

Opportunities to improve policy implementation
Challenges in policy implementation
From policy output to policy impact

Policy formulation

Policy implementation

Policy output
Might include...
- Laws and directives establishing norms, standards, liability regimes or economic instruments
- Revised tax codes
- Voluntary Agreements
- Public procurement codes
- Mandates for information centres or programmes
- Technology cooperation agreements
- Etc.

Policy impact
Might include...
- Awareness of environmental laws and directives
- Business actions to reach compliance, reduce environmental risks and increase efficiency in use of resources
- Introduction of environmental management
- Increasing knowledge of environmental issues
- Transfer and application of environmental technology
- Etc.
Challenges in policy implementation

From policy output to policy impact

Challenges in policy implementation

**Commitment**
- Lack of funding and commitment can hinder implementation and enforcement
- Follow up of programmes difficult when responsibilities are not clearly set

**Coordination**
- Uncoordinated policy implementation can hinder effectiveness
- Coordination is especially important where the policy mix involves different agencies

**Capacity**
- Public agency might lack capacities to follow up implementation
- Business might lack capacities to adequately respond to implementation of policies

**Corruption**
- Enforcement of compliance with regulatory instruments
- Economic instruments might fail, e.g. if collection of taxes is avoided through corruption
Challenges in policy implementation
From policy output to policy impact

Actors involved in policy implementation

Implementing authority

- Inform and create awareness for policy instruments

Other stakeholders

- Award top-runners, push laggards, support capacity building

- Inform and create awareness for policy instruments

Other public agencies

- Coordinate and cooperate with other public agencies

- Implement supportive policies

Target group / business
Policy reinforcement for Circular Economy

Challenges in policy implementation

Opportunities to improve policy implementation
Opportunities to improve policy implementation

Overview

1. Inter-agency cooperation and partnership
2. A stakeholder approach to enforcement
3. Decentralisation of implementation tasks
4. Increasing information and transparency

Improve policy implementation
Opportunities to improve policy implementation
A stakeholder approach to implementing policy

1 Inter-agency cooperation and partnership

Agencies responsible for CE policy instruments
Coordination among these agencies

Public agencies in other policy arenas

Agencies for sectoral policies
Agriculture, manufacturing, service sector, energy, water, transport, etc.

Other agencies & ministries
Finance, economic, justice, trade, foreign relations

Up-stream agencies
e.g. Federal or state level

Agencies on other levels

Down-stream agencies
Local or community agencies
Cooperation needed for sound policy making
Case study: Cooperation between regions

1 BLAG NE

Federal-state working group on sustainable development

Coordination body between the state environmental ministries and federal environmental agencies

- Reporting on state level sustainable development strategies
- Developing of common sustainable indicator set for state and federal level
- Organise best practice exchange between local and regional governmental agencies
- Support and coordinate state and federal policy making and implementation
Opportunities to improve policy implementation
Case study: information programme for local communities

1 Information programme for local and community agencies

Objectives

Collect and disseminate good examples and experiences from local and regional practice

Demonstrate to local communities the opportunities and chances they gain implementing sustainable development

Use appropriate instruments for providing local communities with new scope for action on sustainability management for town development

Link communal sustainability development to national sustainability strategy

Products and services

- Strategies, instruments and consultation modules for sustainable local development
- A catalogue of criteria and guidelines for the local Agenda 21
- Lectures and discussions, conferences, seminars, expert talks and workshops
- Offers of qualification
- Conception and editing of articles, brochures, documentation and specialist publications
- Lectures, talks by visiting speakers, presentations
1 US-EPA’s Federal Facility Compliance Programme

**Aim:** Assist other federal facilities to be compliant with national, regional and local US environmental regulation

**Means:**
- Information directory
- EMS training and auditing
- Vendor directories for green products
- Hotline service

**Programme Areas:**
- Env. Compliance
- Green Buildings
- EMS
- Buying Green
- Natural Resources
- Energy
- Chemical Management
- Cleanup
- Pollution Prevention
- Sustainability

Source: [http://www.fedcenter.gov](http://www.fedcenter.gov)
Opportunities to improve policy implementation
A stakeholder approach to implementing policy

2 A stakeholder approach to enforcement

- Public authorities
- Businesses
- NGOs
- Consultancies
- Media
- Financial institutions
- Information broker

Create societal pressure that supports policy implementation
Gain additional physical, human and organisational resources

Target actor / business

Source: Herrndorf 2006: Greening SMEs in developing countries
Opportunities to improve policy implementation
Case study: Stakeholder approach to implementing policy

2 Auditoría Ambiental

Agency responsible for enforcement of environmental regulation in Mexico

General public
Clean industry seal to demonstrate compliance with laws and best practice to customers and other stakeholders

Consultancy
Works out two-year step by step action plan to reach compliance with environmental regulation by the business to address lack of internal knowledge on relevant legislation

Target business

Improves image in public
Achieves environmental compliance

Source: http://www.profepa.gob.mx/Profepa/AuditoriaAmbiental/
Opportunities to improve policy implementation
A stakeholder approach to implementing policy

3 Decentralisation of implementation tasks

More effective implementation, e.g. collection of fees, due to proximity and knowledge of local situation

Better information flow for monitoring of implementation efforts

Experiment locally with different approaches and enable mutual learning and exchange

Show link between policy instruments and environmental improvements on local level

Build long-term local capacity for continuous learning and structural change

Delegate tasks

Federal authority → Local / community bodies
### Opportunities to improve policy implementation

**Case study: Decentralised conservation measures and fee collection**

#### 3 River Basin Committees in Brazil

**Conservation measures**
- Promotion of multiple water uses
- Integrated Environmental Management System
- Experiment with different approaches

**Collection of user fees**
- To demonstrate that water is available only in limited quantity (i.e. not a ‘free’ good)
- To encourage rational water use
- To obtain funding to finance the programmes in the River Basin Management Plans

**Status**
Charges are already in place in the Paraiba do Sul River Basin and in design in three other basins

*Source: UNEP: The Use of Economic Instruments*
Opportunities to improve policy implementation
Increasing transparency through use of ICT

4 Increasing information flows and transparency

- Raise awareness about legislation
- Inform about environmental technology & networking opportunities
- Provide forums for peer learning etc.

Information and communication technology
- Interactive web pages
- Online databases
- Newsletters
- Discussion forums

Producers

Consumers
- Pool information about sustainable products and services available
- Raise awareness to support consumer legislation and protection
- Give consumers a voice

Prodev Training  Day 3  Presentation - Implement No. 5  Building Capacity for SCP 17
Opportunities to improve policy implementation
Case study: Supporting textile producers e-textile – the toolkit

An integrated information exchange, communication and learning platform on eco-efficiency in the textile industry

- **e-learning**: Online learning and capacity building training tool
- **e-calendar**: Performance measures, tools and management approaches
- **e-catalogue**: Extensive database on practical efficiency measures

---

**e-textile toolbox**

Your online resource for efficient textile production

Partner organizations from Asia and Europe have joined hands to develop an on-line toolbox to help make textile production more efficient, reduce production costs, improve product quality and achieve a better environmental performance.

The integrated toolbox consists of an on-line capacity building module to acquire competitive knowledge, a performance management tool in the form of a monthly calendar as well as a catalogue of technical solutions.

---

- **UNESCO-IHE**: Institute for Water Education
- **Science Centre North Rhine-Westphalia**: Institute of Work and Technology
- **Institute for Culture Studies**: Wuppertal Institute for Climate, Environment and Energy
- **ASi@ITC**: ASI (Agricoltural Systems Innovation) Institute
- **EUROPEAN COMMISSION**: CO-OPERATION OFFICE

---

**Prodev Training** | **Day 3** | **Presentation - Implement No. 5** | **Building Capacity for SCP** | 18
Opportunities to improve policy implementation
Case study: Encouraging sustainable commuting via Internet

4 Commuter Challenge
Canada's Sustainable Commuting Programme

People are encouraged to use a sustainable mode of transport

During Clean Air Day and Canadian Environment Week people can sign up

Communities with the highest percentage of participation win

Source: http://www.commuterchallenge.ca
Challenges in policy implementation

Navigation...

Progress so far...

- Clearly articulated objectives
- Sound policy mix
- Based on partnerships
- Agenda setting
- Policy formulation
- Policy implementation
- Policy evaluation
- Analysing policy opportunities

...and what will come next
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Implement4

Group Exercise: Analysing Options to improve Policy Implementation
Bringing the pieces together
Improving policy implementation

Analysing Options to improve Policy Implementation

1. Split into the same groups as in the last exercise (Implement3)
2. Discuss potential options to improve implementation of CE policy instruments, especially considering opportunities for coordination and partnership
3. Present three promising ideas from your discussion to the meeting

What do we do?

The task

- Work in groups from different departments
- Discuss options to improve policy implementation
- Present to meeting and provide forms to facilitators

[Time allocations: 30min, 15min]
### Group Discussion

**Analysing Options to improve Policy Implementation**

1. Split into the same groups as in the last exercise (Implement3)

<table>
<thead>
<tr>
<th>Sector:</th>
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<tbody>
<tr>
<td>(Same as in Implement3)</td>
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</table>

<table>
<thead>
<tr>
<th>Resource Flow:</th>
<th></th>
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<tbody>
<tr>
<td>(Same as in Implement3)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy instrument(s):</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>(Select from Implement4)</td>
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</tbody>
</table>

2. Discuss potential options to improve implementation of CE policy instruments, especially considering opportunities for coordination and partnership

<table>
<thead>
<tr>
<th>Inter-agency cooperation and partnership</th>
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<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A stakeholder approach to enforcement</strong></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Decentralisation of implementation tasks</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Increasing information and transparency</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
</tr>
</tbody>
</table>

3. Present three promising ideas from your discussion to the meeting

Report back in 30 Minutes
Following up policy implementation: Indicators, evaluation and corrective action
Bringing the pieces together
Evaluating policy impacts

Purpose...

Confirm that policy has been implemented as intended, determine if the desired policy objectives are being achieved and recommend adjustments to the policy mix

Key issues to consider
- Was the policy mix implemented as intended?
- Are regulated groups responding to the policy measures as desired to achieve the policy objectives? Why or why not?
- Are the policy objectives still valid?
- Are there trends occurring that will affect the policy objectives or policy measures?
Bringing the pieces together
Overview

1. What?
- State and Development of SCP patterns
- Implementation of policy instruments
- Results achieved by policy instruments

2. Why?
- Report and disseminate findings
- Decide on corrective actions

3. How?
- Indicator and target development
### Policy reinforcement for Circular Economy

<table>
<thead>
<tr>
<th>What to monitor</th>
<th>What to monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator and target development</td>
<td></td>
</tr>
<tr>
<td>Monitoring and corrective action</td>
<td></td>
</tr>
<tr>
<td>Case studies</td>
<td></td>
</tr>
</tbody>
</table>
Monitoring – what and why?
What: State and Development of SCP patterns

Know your SCP patterns
baseline indicators

C&P Patterns
- Location and shape of production
- Transport patterns
- Housing and settlement
- Consumption habits

Resource Flows
- Flows of Resources through the production-consumption system
- Extraction, proceeding and disposal

Env. impacts
- Air and water pollutions
- Soil degradation
- Generation of solid and/or hazardous waste

Soc. impacts
- Health problems
- Reduced soil productivity
- Loss of environmental goods and services

Measure

Adopted from OECD / UNDP 2002
Monitoring – what and why?
What: Implementation of policy instruments

What action has been taken?
management indicators

<table>
<thead>
<tr>
<th>Input</th>
<th>Quality</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial, physical and human resources</td>
<td>Process quality of policy formulation and implementation</td>
<td>‘Products’ generated by responsible agencies</td>
<td>Access to, use of, and satisfaction with ‘products’</td>
</tr>
<tr>
<td>e.g. public expenditure for environmental policy preparation and implementation</td>
<td>Participation of stakeholders, coordination with other policy instruments</td>
<td>Laws, directives, activity reports, meetings, workshops</td>
<td>Workshop attendance, awareness of regulation, firms being compliant, fines imposed</td>
</tr>
</tbody>
</table>

Measure

Adopted from OECD / UNDP 2002
Monitoring – what and why?
Why: Results achieved by policy instruments

What results were achieved?
performance indicators

Actors
- Values
- Habits
- Knowledge
- Capabilities

Institutions
- Organisations
- Incentive systems
- Expectations & Accountability

SCP performance
Impact on baseline indicators:
- C&P Patterns
- Resource Flows
- Env. impacts
- Soc. impacts

Adopted from OECD / UNDP 2002
Policy reinforcement for Circular Economy

What to monitor

Indicator and target development

Monitoring and corrective action

Case studies
Indicator and target development
Measure on all levels

What change happens...

- at country level, including spill-over effects to other countries?
- at the regional level, including sectors?
- at the local level, including companies and consumers?
Indicator and target development
A framework for SCP monitoring

Country

additional data

Regions

Country Report

additional data

Local communities

Imports National activity Exports
# Indicator and target development

From theoretical concepts to indicators

<table>
<thead>
<tr>
<th>Theoretical Concept</th>
<th>Content of the concept</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Categories</td>
<td>Aspects</td>
</tr>
</tbody>
</table>

**Sustainable Development**

From theoretical concepts to indicators.
Indicator and target development
From theoretical concepts to indicators

SMART targets

**Specific:** Set precise objectives

**Measurable:** Set quantifiable objectives

**Ambitious:** Set objectives that imply a significant improvement over status quo

**Realistic:** Consider the resources available to make the objective happen

**Timed:** State a concrete timeline for achieving the objective
Policy reinforcement for Circular Economy

What to monitor

Indicator and target development

Monitoring and corrective action

Case studies
Setting up monitoring system

**Internal monitoring**

- Responsibilities for
  - Formulating indicators and technical protocols
  - Collecting and processing data
  - Evaluating and interpreting data
  - Discussing methodology and results with stakeholders

**External monitoring**

- Responsibilities for
  - Verifying indicators, methodology and results yielded
  - Providing technical support for data collection
  - Scientific support for evaluation and interpretation
Communication and Corrective Action
Corrective action

Corrective Action

Agenda setting

Policy formulation

Policy implementation

Policy evaluation

Former issues resolved, but new ones appear

Intermediate indicators improve, but no progress on final outcome indicators

Planned measures implemented, but expected change does not occur

Unexpected side effects appear

Lack of resources committed to policy implementation

Lacking quality / quantity of outputs

Low response to outputs by affected parties

Intermediate indicators improve, but no progress on final outcome indicators

Planned measures implemented, but expected change does not occur

Unexpected side effects appear

Lack of resources committed to policy implementation

Lacking quality / quantity of outputs

Low response to outputs by affected parties
Policy reinforcement for Circular Economy

What to monitor
Indicator and target development
Monitoring and corrective action

Case studies
Case Studies
North Rhein Westphalia Indicators for Sustainability

‘NRW Indikatoren’
Benchmarking and sustainability planning portal for local communities

- Common indicator set based on stakeholder dialogue
- Cities can customise and add own indicators
- Data available from state agencies already provided
- Planning tool for setting goals and monitoring progress towards these
- Cities can compare themselves to others (‘benchmarking’)
- About 30 cities participating, including various industrial towns from post-industrial ‘Ruhrgebiet’ area (e.g. Gelsenkirchen, Dortmund)
Case Studies
Santa Monica Sustainable City Progress Report

Santa Monica
Sustainable City Progress Report

- Environmental, social and economic indicators
- Online available on internet platform
  http://santa-monica.org/epd/scpr/index.htm

**Improving**
- Solid Waste
- Ecological Footprint
- Green Construction
- Vehicle Miles Traveled
- Household Hazardous Waste
- Farmers' Markets
- Average Vehicle Ridership
- Vehicle Ownership
- Tree Canopy
- Park Accessibility

**Stable**
- Energy
- Santa Monica Bay Health
- Livable Housing
- Economic Diversity
- Voter Participation
- Bike Paths
- Bus Ridership
- Open Space
- Housing -Special Needs Groups

**Worsening**
- Cost of Living
- Water Use
- Waste Water
- Affordable Housing
- Jobs/Housing Balance
- Pedestrian/Bike Safety
- Traffic Impact on Emergency

Water as priority!
Case Studies
Belgium: SCP indicator system

Methodology
Semi-participative co-design
- Stakeholder participation: constant feedback and expert advice
- Collective approach: steering committee

Indicator set
Indicators for assessing...
Policy implementation
- Input
- Process
- Output
Policy effects
- Outcome
- Impact

Examples
- Number of companies with a certified eco-management and/or socio-management audit system
- Number of cases of labour diseases and accidents
- Total Material Requirement (TMR)/GDP

Source: Heyerick / Mazijn 2004: The need for indicators...
The European Common Indicators
Towards a Local Sustainability Profile

Tested indicator system for cities, including core and additional indicators

Applied by various cities worldwide

Common online reporting platform for benchmarking

State of Environment (SoE) reports on local level
- Overview of human-induced impact on the environment
- State of the environment and current trends
- Political responses to these trends
- Degree to which these responses have been attained
- Comparison between environmental situation in different cities

Source: www.ceroi.net

Network of cities
Partners

- European Environment Agency
- World Health Organization Regional Office for Europe
- SHELTER FOR ALL United Nations Human Settlements Programme
- United Nations Environment Programme
- UNEP
Case Studies
Defra/DTI: Sustainable Consumption and Production Indicators

UK Sustainable Consumption and Production Indicators

Economic growth
Environmental degradation

Measuring Decoupling

Basket of 12 indicators

Economy-wide decoupling indicators
(4 indicators, e.g. greenhouse gas emissions)

Resource use indicators
(3 indicators, e.g. Total material use)

Decoupling indicators for specific sectors
(5 indicators, e.g. Agricultural or Manufacturing output)

Case Studies

Sustainability indicator set for the European Aluminium Industry

Sustainability indicator set for the European Aluminium Industry

24 categories

115 indicators
Case Studies
Sustainability indicator set for the European Aluminium Industry

What information do internal and external stakeholders expect from the Aluminium Sector?

Environmental  Economic  Social

Index: 0 = not relevant category
3 = highly important category

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<th>Indicator</th>
<th>Index Internal Stakeholder n = 11</th>
<th>Index External Stakeholder n = 17</th>
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<td>3.23 Waste</td>
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<td>3.24 Land-Use</td>
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Prodev Training  Day 3  Presentation - Implement5  Building Capacity for SCP  24
Case Studies
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Prodev Training  Day 3  Presentation - Implement5  Building Capacity for SCP
Challenges in policy implementation

Navigation...

Progress so far...

- Clearly articulated objectives
- Sound policy mix
- Based on partnerships
- Clear indicators

Agenda setting
Policy formulation
Policy implementation
Policy evaluation

- Analysing policy opportunities
- Recommended changes to policy
Policy reinforcement for Circular Economy

Thank you for your attention !!!
Policy reinforcement for Circular Economy

Implement5

Group Exercise: Brainstorming an Indicator Set for Circular Economy
Bringing the pieces together
Selecting an optimal policy mix

Develop a draft indicator set

1. Divide into four (or more) groups with participants from a mix of different departments
2. Brainstorm a list of indicators for Circular Economy.
3. Discuss relevance and feasibility of the indicators in the group
4. Presents indicators that were found to be relevant and feasible to the meeting
Group Discussion

Develop a draft indicator set

1. Divide into four (or more) groups with participants from a mix of different departments

2. Brainstorm a list of indicators for Circular Economy in your city/region.

3. Discuss relevance and feasibility of the indicators in the group

You can use the following table for collecting and discussing the indicators.

Rate relevance and feasibility as ‘high’, ‘medium’ or ‘low’

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<thead>
<tr>
<th>Indicator list</th>
<th>Relevance</th>
<th>Feasibility</th>
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4. Present indicators that were found to be relevant and feasible to the meeting.

Report back in 30 Minutes
Policy Reinforcement for Circular Economy

Implementing Circular Economy – Methods & Action Steps
Recalling the Policy Cycle...

- Clearly articulated objectives
- Sound policy mix
- Based on partnerships

Agenda setting → Policy formulation → Policy implementation → Policy evaluation

Assessing policy opportunities

Clear indicators
Implementing Circular Economy - Methods & Action Steps

What has been done today

Day 3 – Recap

Implement2
Setting Priorities: Analysis of current production and consumption patterns

Implement3
Assessing Policy Opportunities: Drafting Policy Options

Implement4
Implementing the policies: Policy coordination through networks and partnerships

Implement5
Following up policy implementation: Indicators, evaluation and corrective actions
Policy Reinforcement for Circular Economy

Closing

Closing session and feedback
Congratulations
PRODEV training!

Congratulations
PRODEV training!
What have we done together?
Reviewing the three training days

Day 1
‘Thinking Circular Economy - Concepts & Principles’
Key principles of Circular Economy (CE) and Sustainable Consumption and Production (SCP)
Creating knowledge and awareness of CE and SCP and exploring the ‘CE/SCP way of thinking’

Day 2
‘Promoting Circular Economy’
Overview on key measures, instruments and strategies that policy makers can apply to build a sound and successful framework for Circular Economy and sustainable consumption and production patterns

Day 3
‘Implementing Circular Economy - Steps for taking successful actions’
Key methods and guiding action steps for policy makers helping to make CE and SCP happen
Setting Priorities - Assessing Policy Opportunities - Planning the Actions - Implementing the policy package
Participation certificate

- Participants receive a certificate of participation
- Based on regular and active participation and provision of feedback form
- Continuous and active participation
- Attendance 3 days
- Provision of feedback form
We want your opinion!

- We want to continuously improve our service
- Your feedback is important to us
- Please fill in the questionnaires provided and hand in to a facilitator or send by fax to + 49 . 202 - 45958 . 31
- Be sincere and open: What did you like, what didn’t you like?
See you again!

Thank you!