

# Eco-innovation in Europe and Japan



## TBL Innovation Factors – from European & Japanese experiences

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Tomoo Machiba

UNEP / Wuppertal Institute Collaborating  
Centre on Sustainable Consumption and Production



UNEP/WUPPERTAL INSTITUTE COLLABORATING  
CENTRE ON SUSTAINABLE  
CONSUMPTION AND PRODUCTION

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TBL Innovation Factors in  
Europe & Japan

An introduction to the CSCP

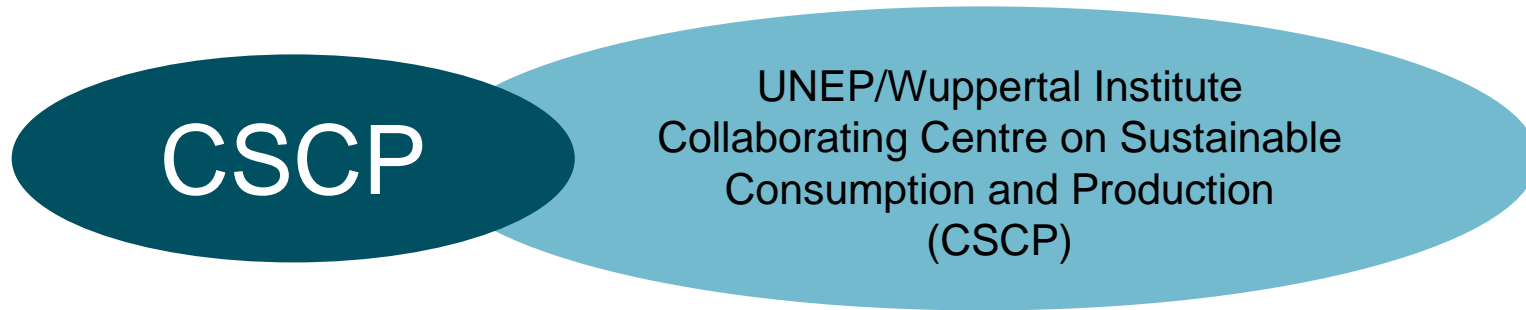
The concept of TBL Innovation  
& its factors

Cases from Europe & Japan

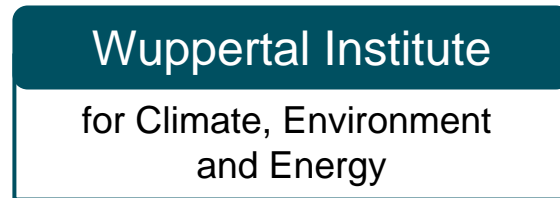


# About CSCP

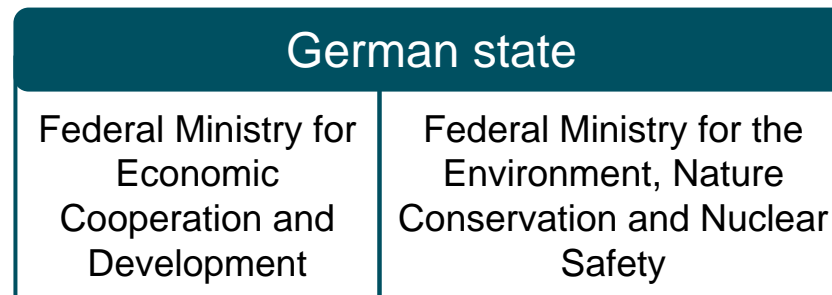
## Organisational Setup



A collaboration by



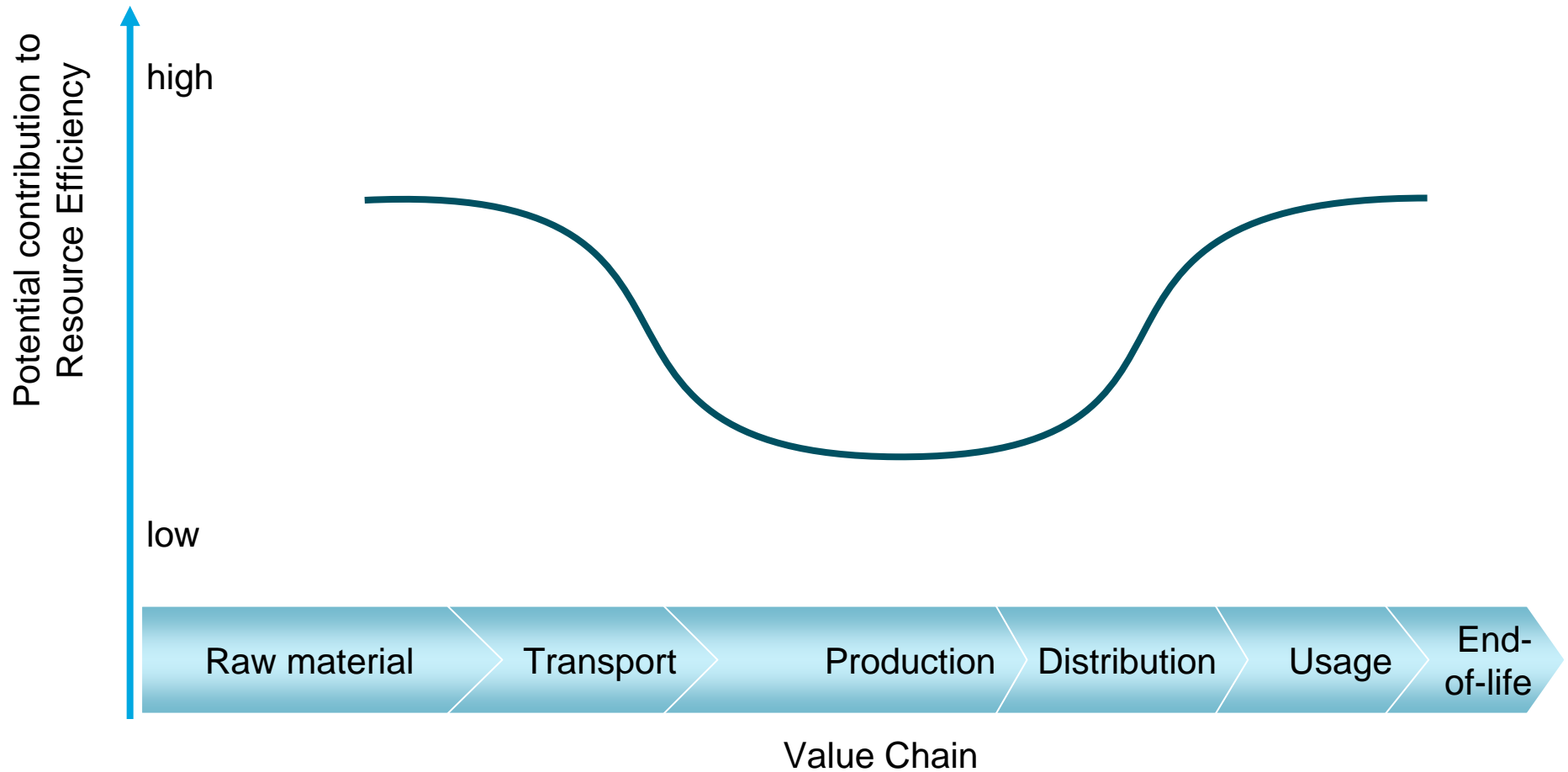
Financial support given by



# TBL Innovation for Realising SCP

## Opportunities in value chains

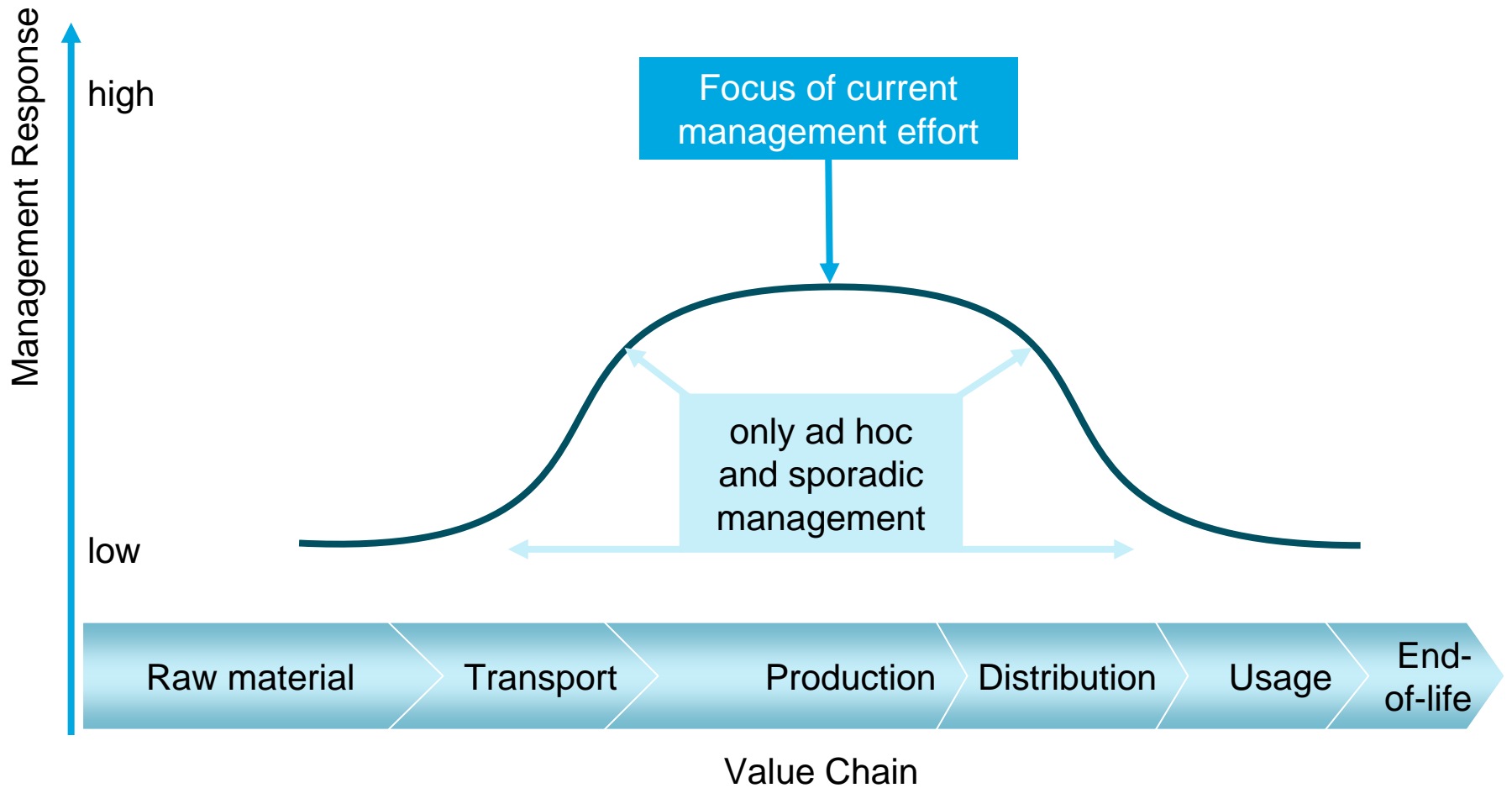
Impacts and Opportunities among consumer products



# TBL Innovation for Realising SCP

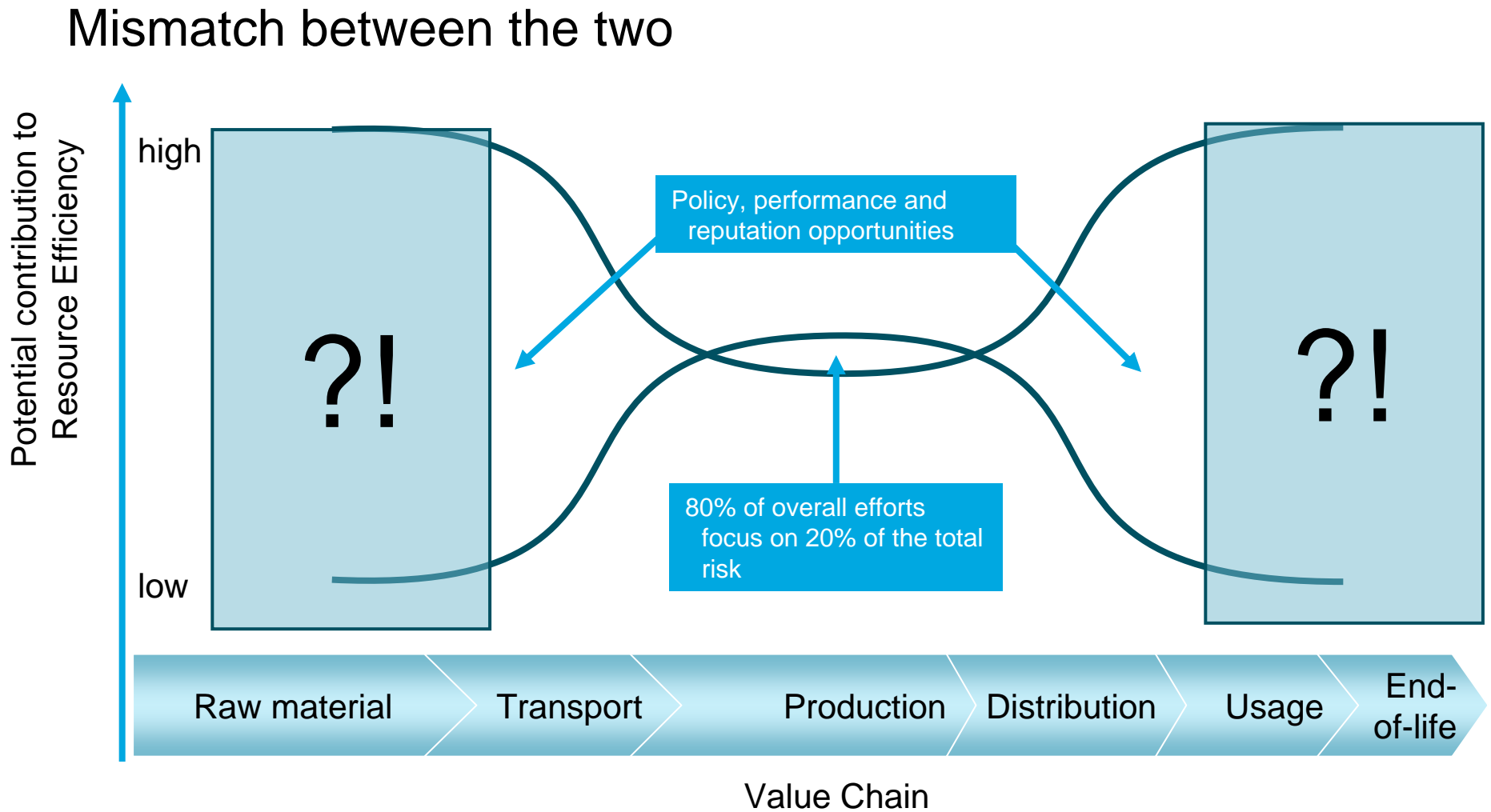
## Management focus in value chains

### Current Management Effort



# TBL Innovation for Realising SCP

## Classic mismatch between opportunities and efforts



# About CSCP

## Strategic priority areas

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### SCP for National & Local Development

- Awareness-raising and capacity-building for governments
  - Collaborating with local sustainable development agencies
  - Incorporating SCP into micro- and development finance
- 

### Changing Individual and Institutional Patterns of Consumption

- Encouraging sustainable lifestyles
  - Communicating SCP to consumers effectively
  - Strengthening role of government in promoting lifestyles
- 

### Encouraging Responsible Industrial Development

- Encouraging SMEs to engage in SCP activities
- Guiding industry sectors on their role to achieve SCP
- Exploring an effective, market based instrument mix for promoting SCP along global value chains

### Sustainable Consumption & Production Policies

#### Regulatory



- Norms & Standards
- Liability Laws

#### Economic



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

Reward / Punish

Soft

Support

Hard

#### Education & Research



- Research and Development
- Education and Training

#### Cooperation



- Voluntary approaches
- Learning networks
- Technology cooperation and promotion
- Self-commitments

#### Information



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

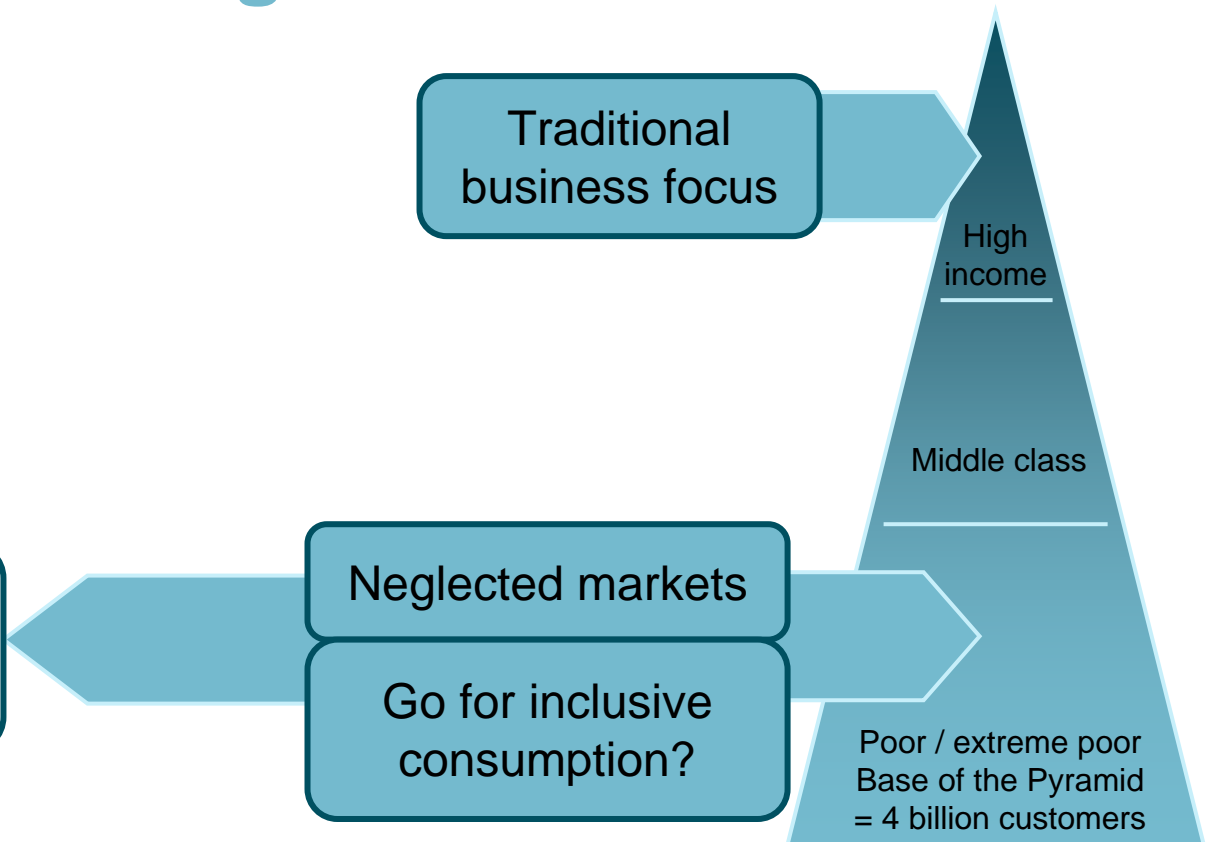




Anwara Begum,  
a Grameen 'telephone lady'

(Credit: Nurjahan Chaklader)

## Human Development through the Market



# Eco-innovation in Europe and Japan



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The concept of TBL Innovation  
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Cases from Europe & Japan

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“Triple bottom line innovations are **novel improvements** developed within **a network of institutions** aiming at preservation of **absolute amount of natural resources** and **enhancement of social and economic capital.**”

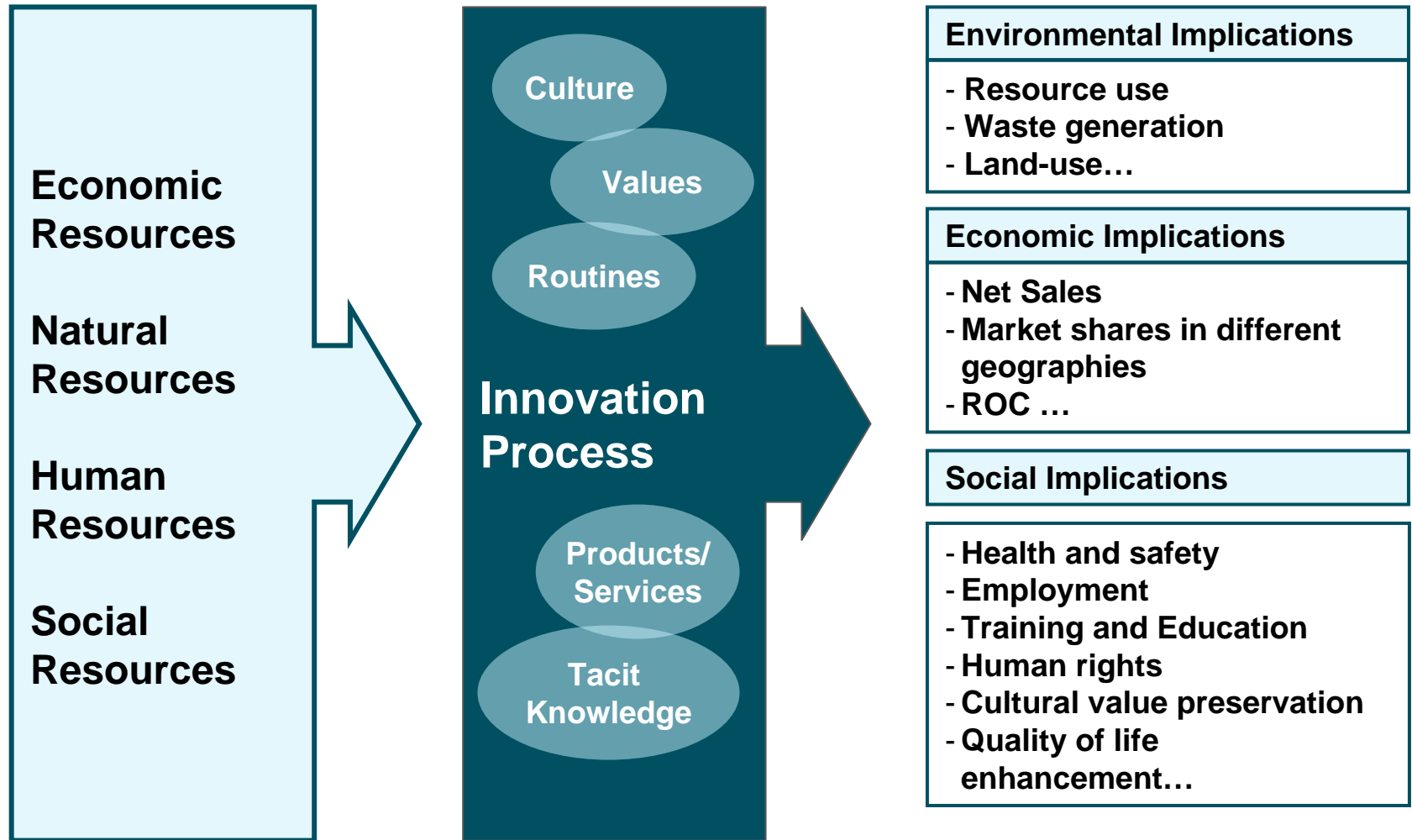
**For change, multi-level approach is required.**

“Transitions are **not caused by single variables** such as a policy act, a price change or a new technology, but are **results of developments in various domains**, which sustain each other: technology, economy, institutions, behaviour, culture, ecology and images/paradigms.”

*Rotmans, et al. 2000*

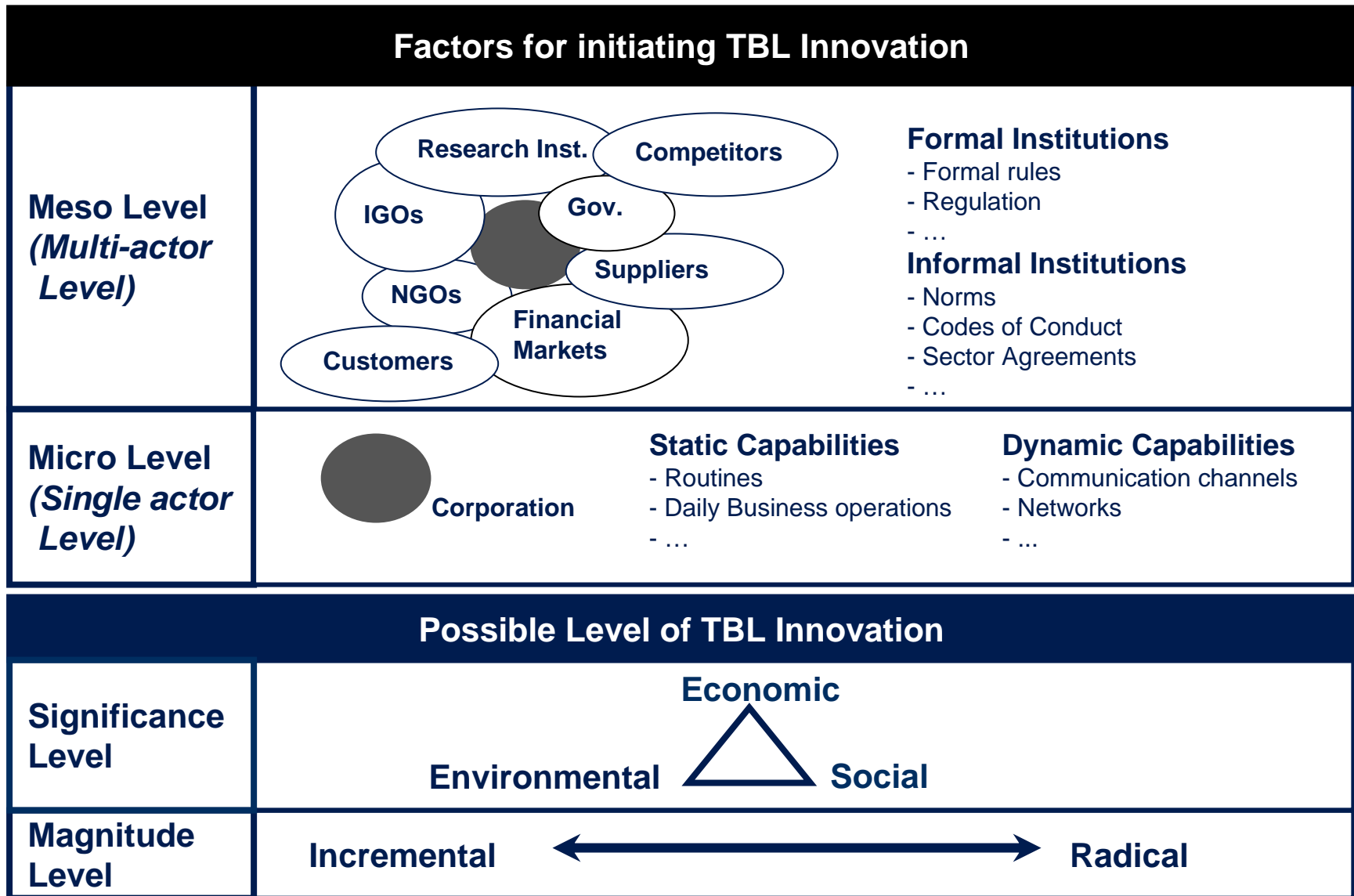
# TBL Innovation

## Understanding internal & external dynamics



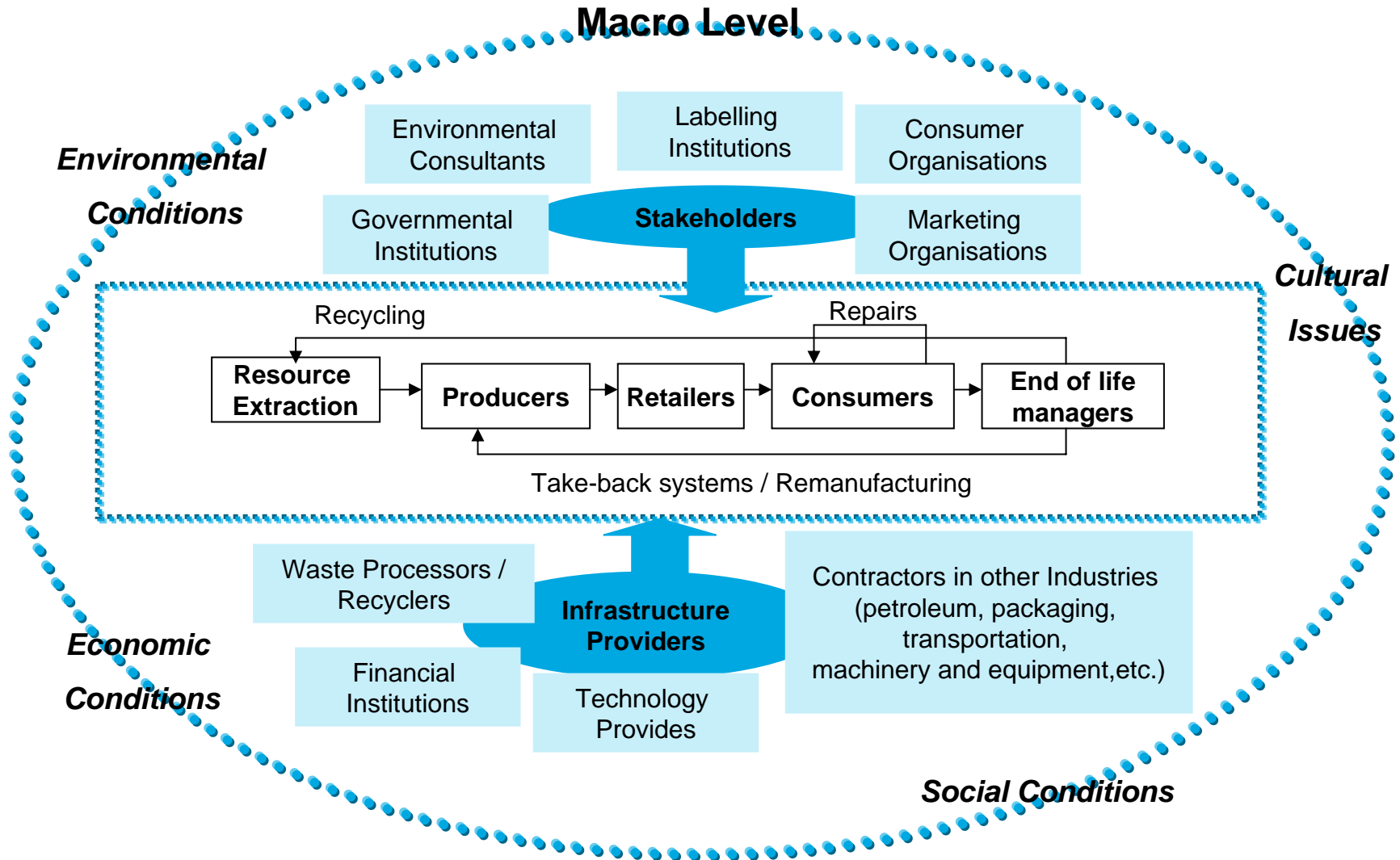
# TBL Innovation Framework

## Internal & external factors



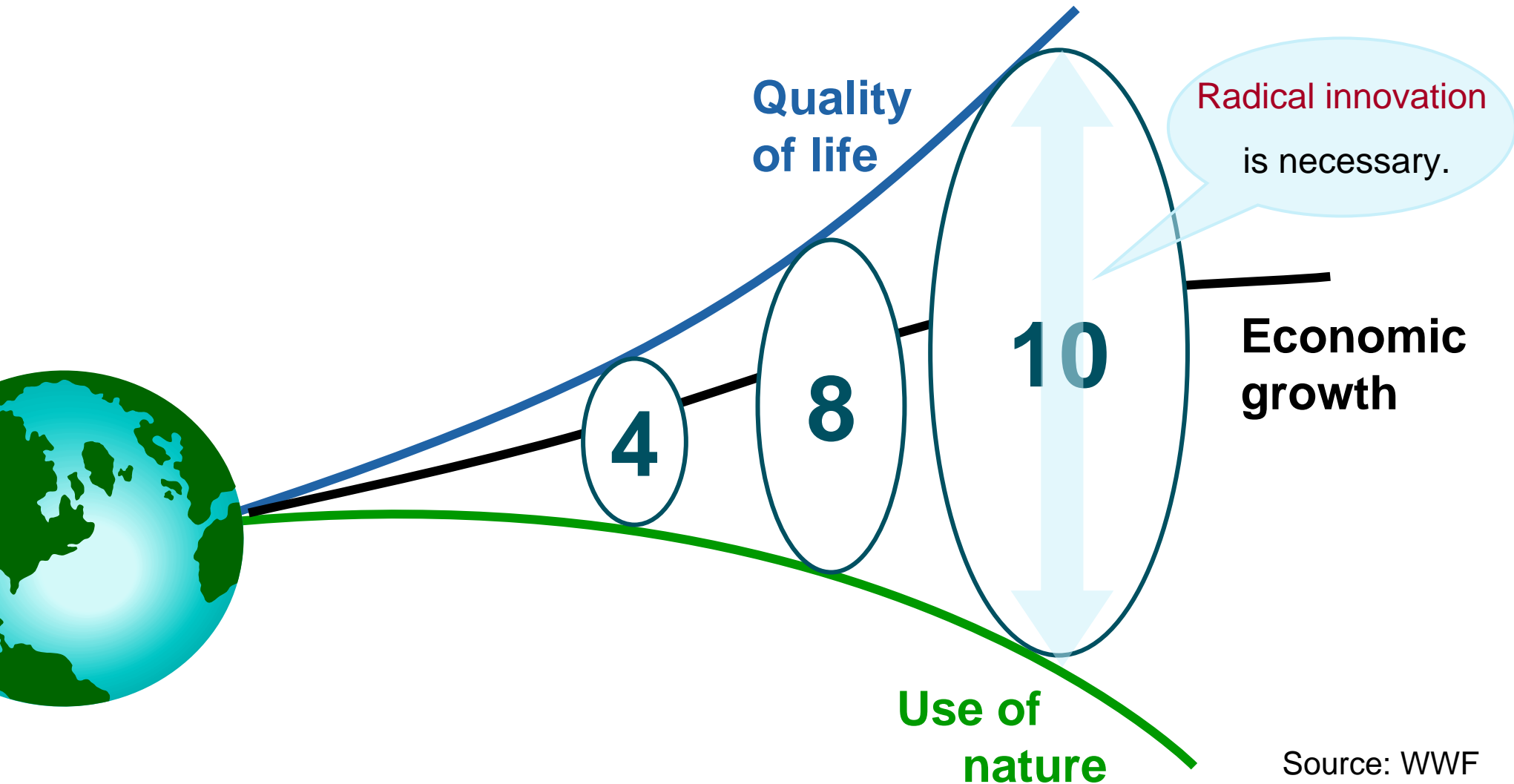
# TBL Innovation Framework

## Actors at meso level



# The Overall Challenge

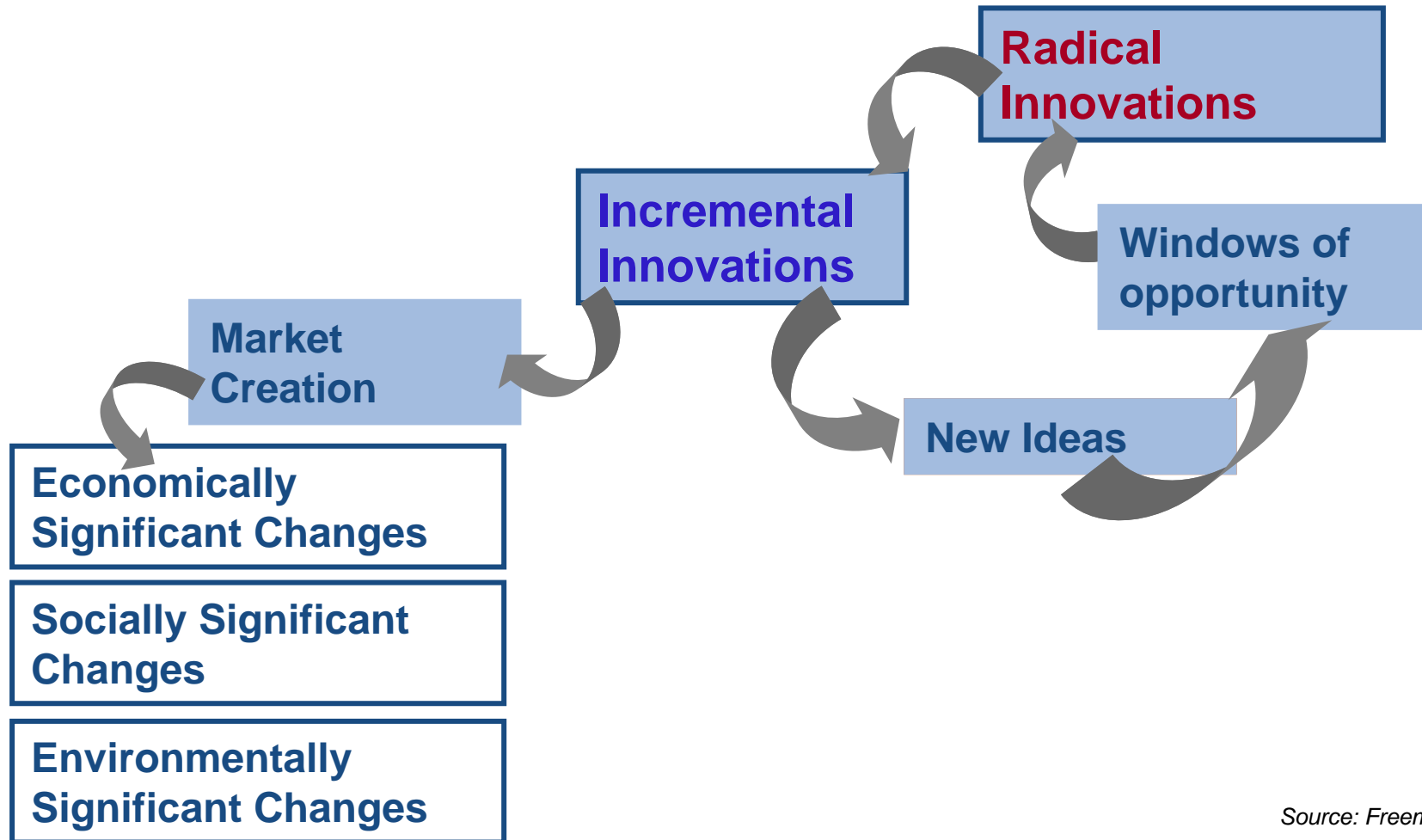
Decoupling use of nature from creation of life quality



Source: WWF

# The Overall Challenge

## Radical innovations v Incremental innovations



Source: Freeman, 1991  
Orozco, 2000



# Eco-innovation in Europe and Japan



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# How to create TBL Innovation?

## Instruments

Possible instruments for enhancing the micro and meso-level factors for initiating TBL Innovation:

- **Core indicator development**
- **Sustainability reporting**
- **Capacity building tools**
- **Sector governance system**
- **Multi-stakeholder platform**



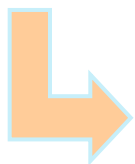
**Active use of stakeholder engagement**

# Cases from Europe (1)

## Development of Aluminium sector indicators



- Review of agendas of stakeholders
- Stakeholder survey of expectations
- Workshop discussions with the industry
- Sector-wide stakeholder-oriented indicator development



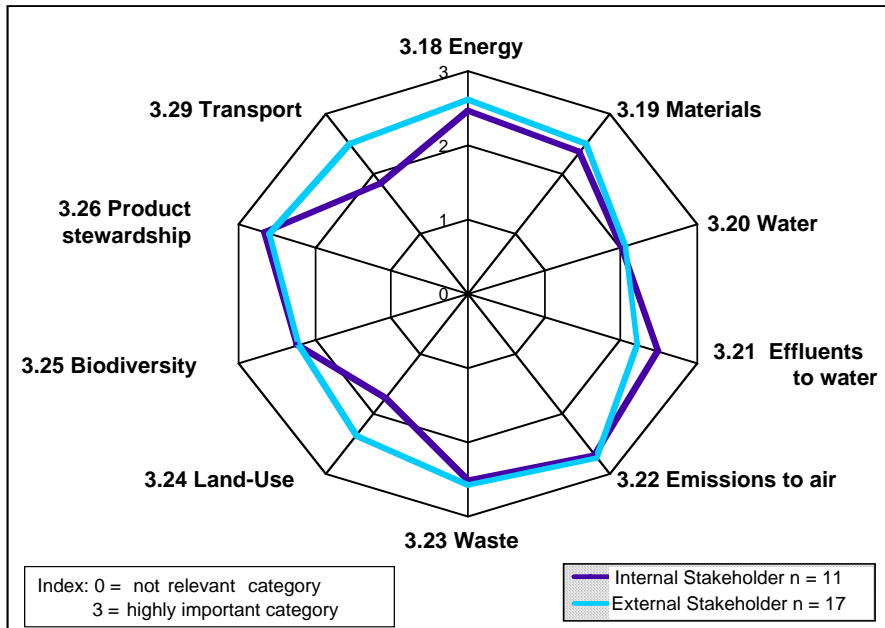
**Creation of micro-level dynamic capabilities**  
**Enhancement of meso-level preparedness**  
**Sector-wide responsibility governance systems**

# Cases from Europe (1)

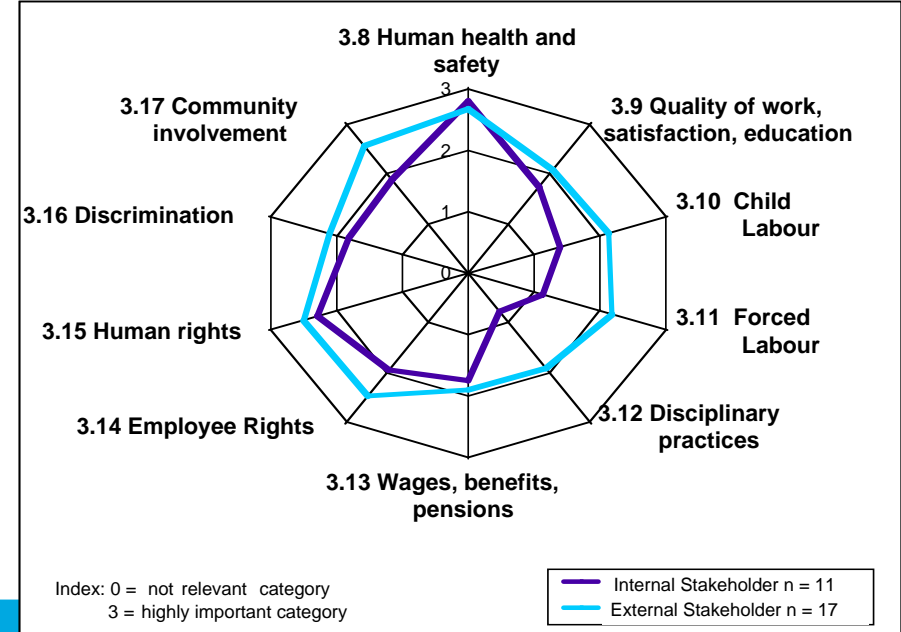
## Development of Aluminium sector indicators

### Stakeholder expectations

What information do internal and external stakeholders form the Aluminium Sector expect ? - Environmental issues



What information do internal and external stakeholders form the Aluminium Sector expect ? - Social issues



- Selection of priority areas for action
- Stakeholder-oriented product and service system developments?

# Cases from Europe (2)

## Nano-technology & the environment

### Opportunities

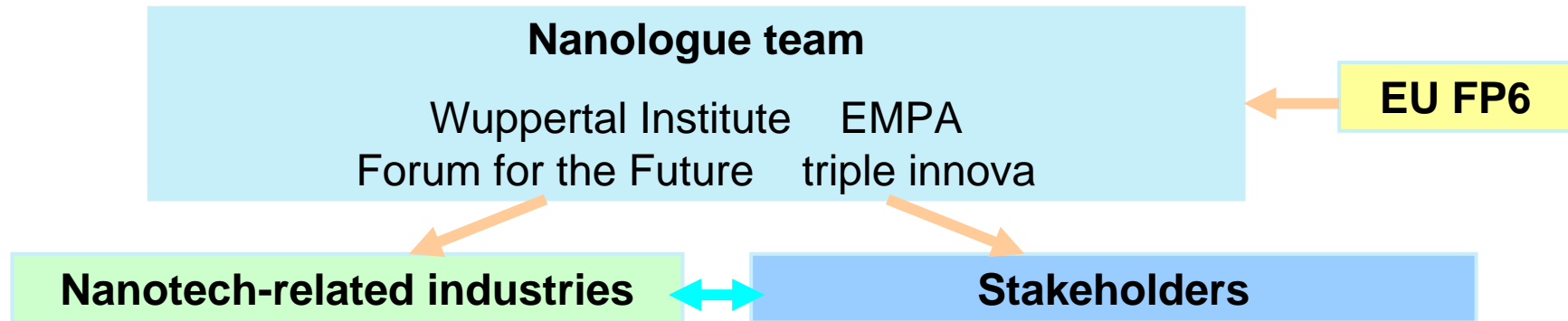
- Potential for increased resource efficiency
- Substitution of harmful chemicals
- New or improved environmental technologies
- Pollutant remediation
- Clean(er) energy
- Increased fuel efficiency
- Env. Monitoring

### Risks

- Increased Env. Rucksack
- Rebound-Effects
- Human- and Eco-toxicology potential
- Recycling- and Decomposition issue
- Diffusion of material with unknown characteristics (novel properties)

# Cases from Europe (2)

Nanologue [www.nanologue.net](http://www.nanologue.net)



- Mapping study on recent development
- Dialogue sessions on an inclusive & neutral platform
- Expert interviews
- Development of future scenarios to identify potential implications
- Creation of NanoMeter for assessment of nano-tech applications



**Creation of micro-level dynamic capabilities**  
**Enhancement of meso-level preparedness**  
**Setting a direction for future innovation**

### Green Purchasing Network (GPN)

- Established in 1996 as a multi-stakeholder platform
- 2,300 companies, 300 public authorities and 280 NGOs
- Guidelines and database in 16 product categories
- Set up International Green Purchasing Network (IGPN) in 2005

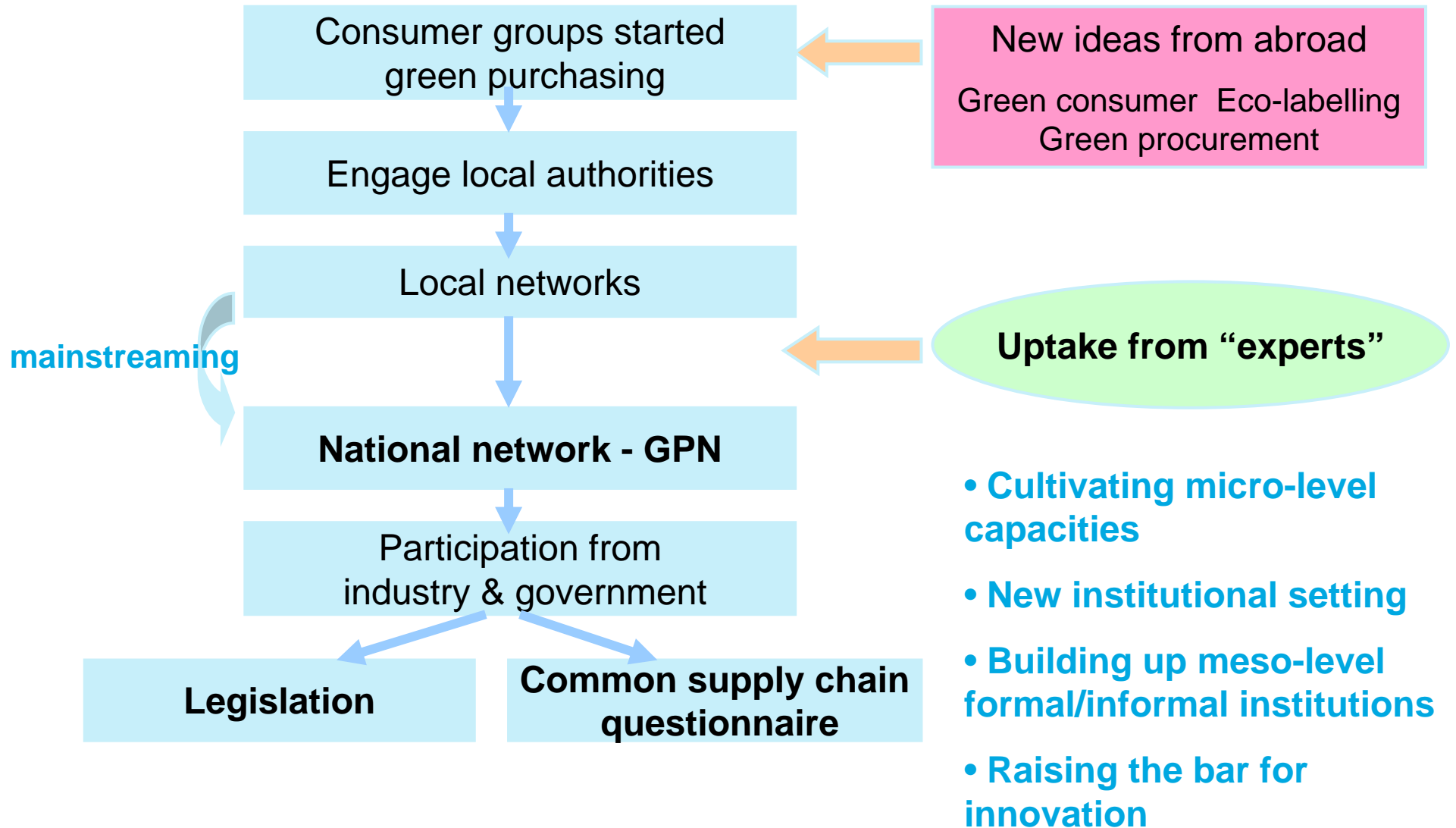


### Japanese government

- Law on Promoting Green Purchasing & Basic Policy on Green Purchasing (2001-)
- Require all governmental institutions to develop policies, set targets, implement and report to the Environment Minister every year
- Require efforts also to local governments and private sector
- Provide evaluation criteria and a database of eco-products

# Cases from Japan (1)

## Green procurement





## Panasonic benchmarks new models with old ones

New products are required to exceed a defined Factor X improvement value

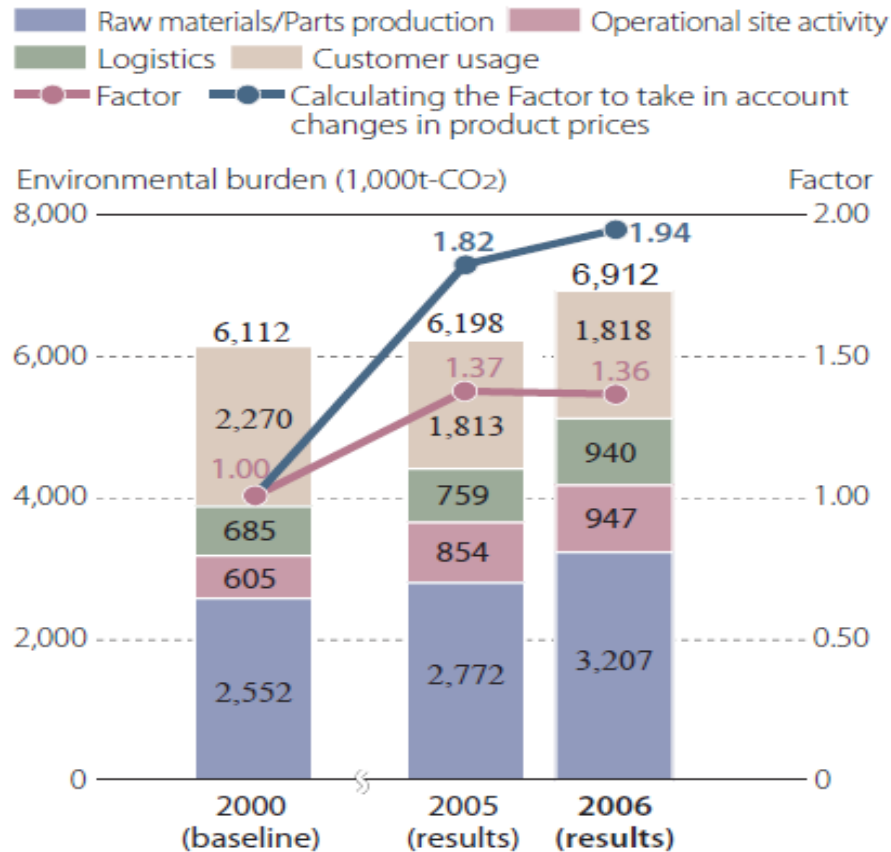


# Cases from Japan (2)

## Factor X

Vision for 2010  
Overriding Indicator: Factor 2

$\frac{\text{Net sales}}{\text{Life cycle CO}_2 \text{ emissions}^*}$  More than double compared with 2000

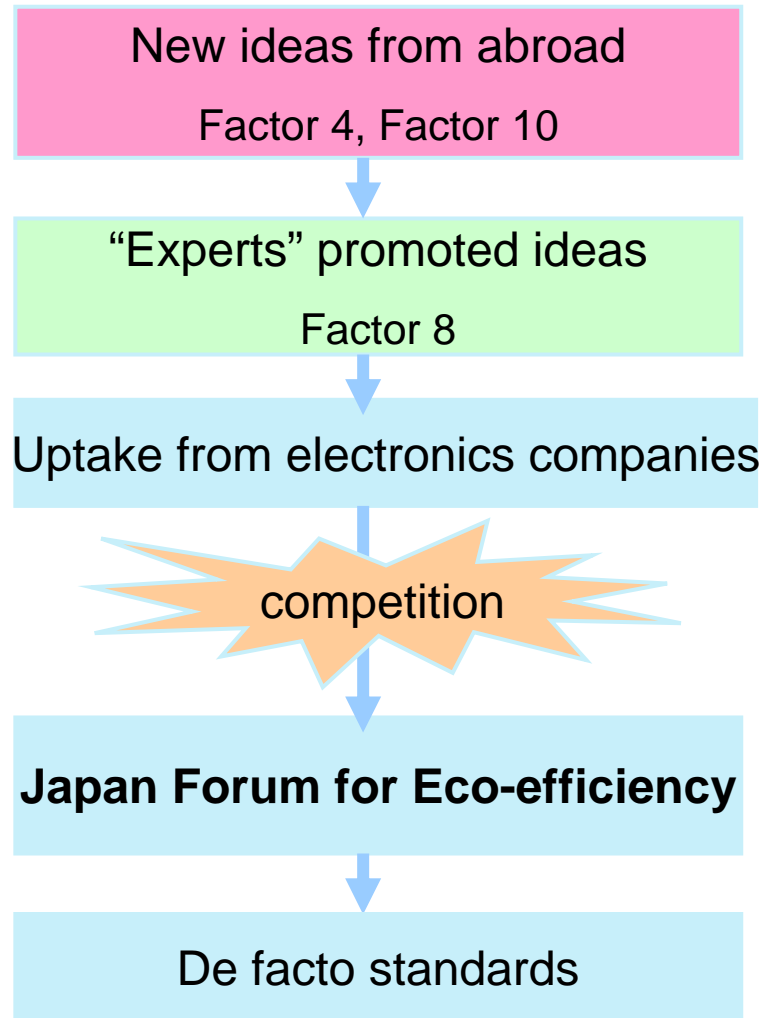


# Canon

- Canon has set ambitious factor 2 goal for its operations by 2010
- Environmental accounting reveals: Eco-efficiency pays off when looking at the whole chain
- **Main benefits in consumption phase!**

# Cases from Japan (2)

## Factor X



- Cultivating micro-level capacities
- Help introduce LCA thinking
- New sector platform
- Building up meso-level informal institutions

# Cases from Japan (2)

## Factor X – diverse applications

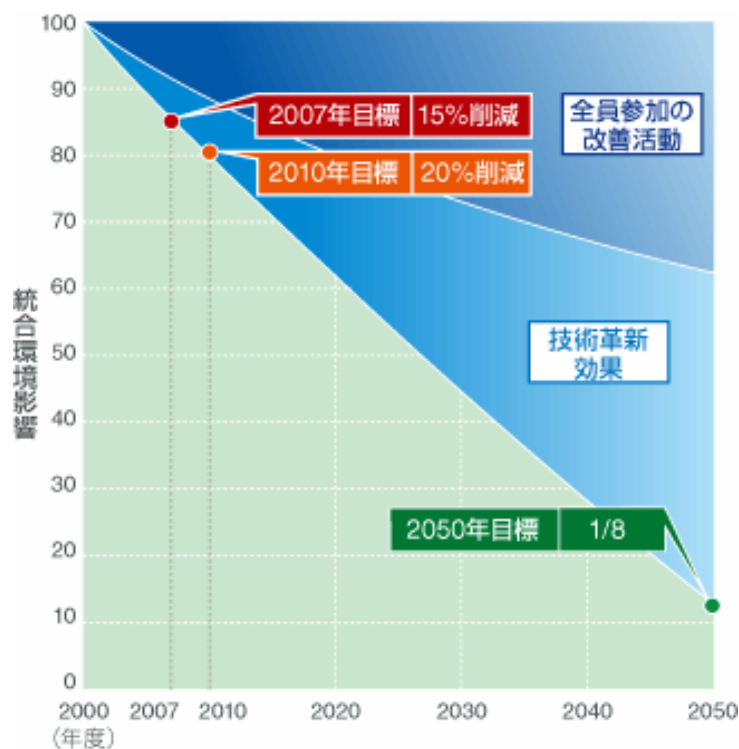


**Panasonic**  
ideas for life

**MITSUBISHI**  
*Changes for the Better*

**FUJITSU** THE POSSIBILITIES ARE INFINITE

Factor X



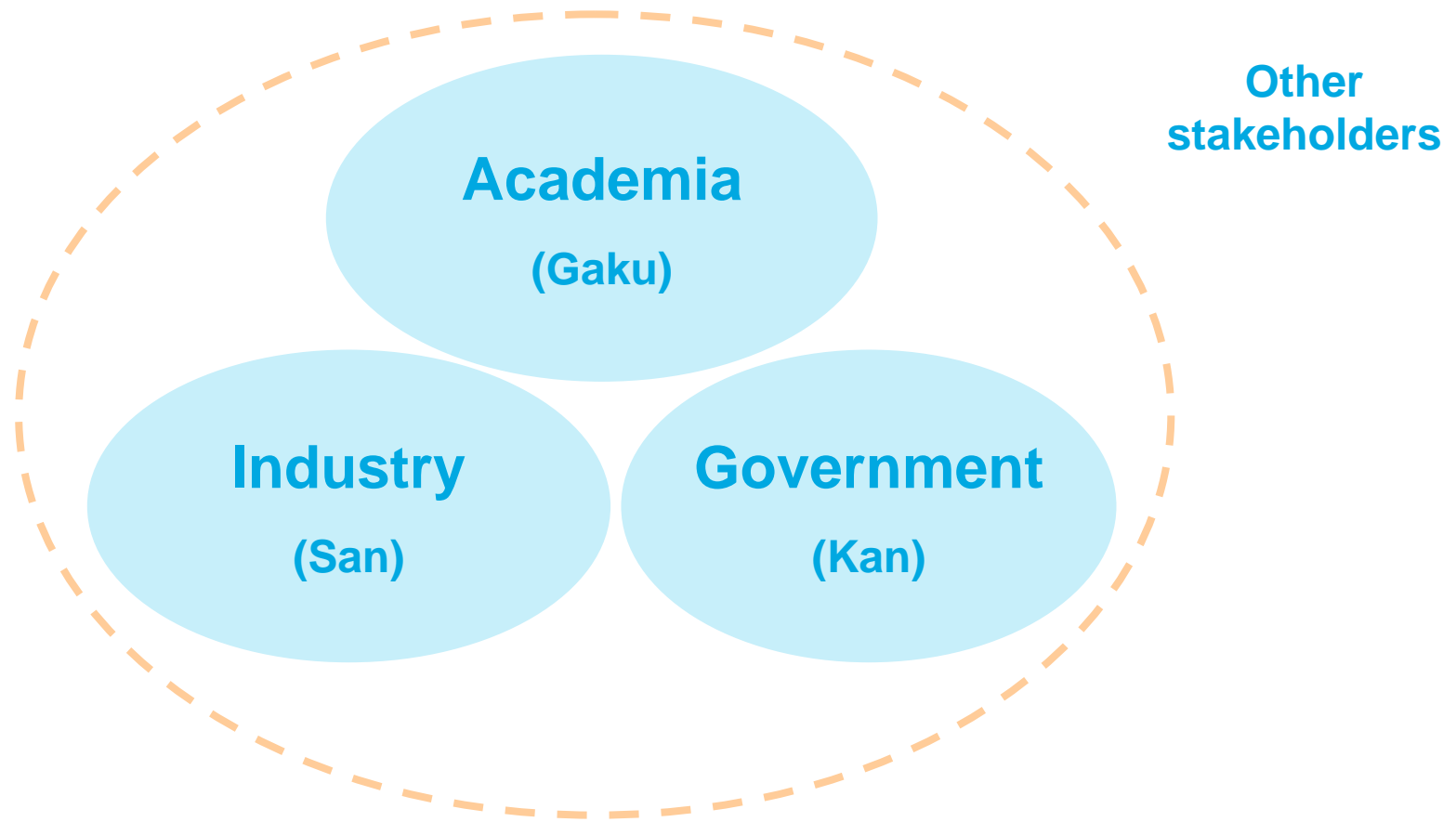
**TOSHIBA**  
Leading Innovation >>>

Factor T

**RICOH**  
Factor 8

**Canon**  
Factor 2

### *San-Kan-Gaku* Trinity



# TBL Innovation Factors in Europe & Japan

## A comparison

<b>Europe</b>		<b>Japan</b>
Ideas from scratch	<b>Ideas</b>	Ideas from abroad
Top-down from experts	<b>Direction</b>	Bottom-up from grassroots
Experts as initiator, intermediary	<b>Role of experts</b>	Experts as mainstreamer, moderator
Sector-wide approach	<b>Sector relation</b>	Competition within sector
More stakeholder engagement	<b>Stakeholders</b>	Less scope for stakeholder participation
Voluntary initiatives – high-level leadership but lack followers	<b>Institutions</b>	Institutionalisation – high-level uptake & long-lasting effects
High potential for radical innovation	<b>Innovation potential</b>	Low potential for radical innovation

# Eco-innovation in Europe and Japan



Can Europe & Japan learn lessons each other?

What is the best way for experts to intervene?

How can stakeholder views & actions be integrated in eco-innovation?

## Questions!

How best can big ideas be utilised in real world?

Is using the existing institutional setting the only way?

Why is Japan better at application of the concepts developed in the West?

Can big corporations make radical innovation?

Is the sector approach effective?

What is the best way for government to support eco-innovation?

# Eco-innovation in Europe and Japan



**Thank you for your attention !!!**

Tomoo Machiba

CSCP

[tomoo.machiba@scp-centre.org](mailto:tomoo.machiba@scp-centre.org)

Tel + 49 - 202 . 45 95 8 - 14

Fax + 49 - 202 . 45 95 8 - 31

[www.scp-centre.org](http://www.scp-centre.org)



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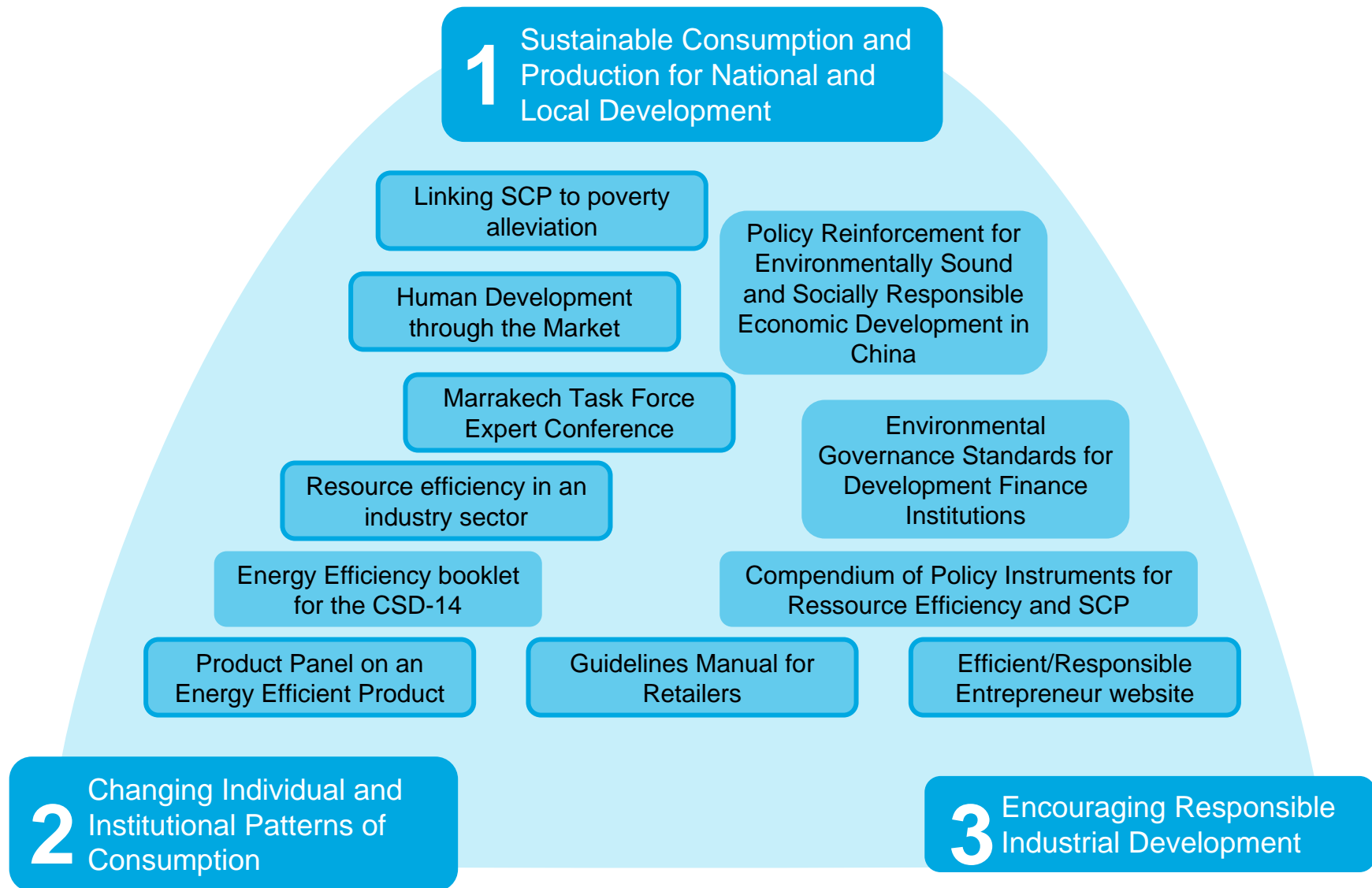


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# Backup

# About CSCP

## Working areas and projects



# What can business do? The case for private action

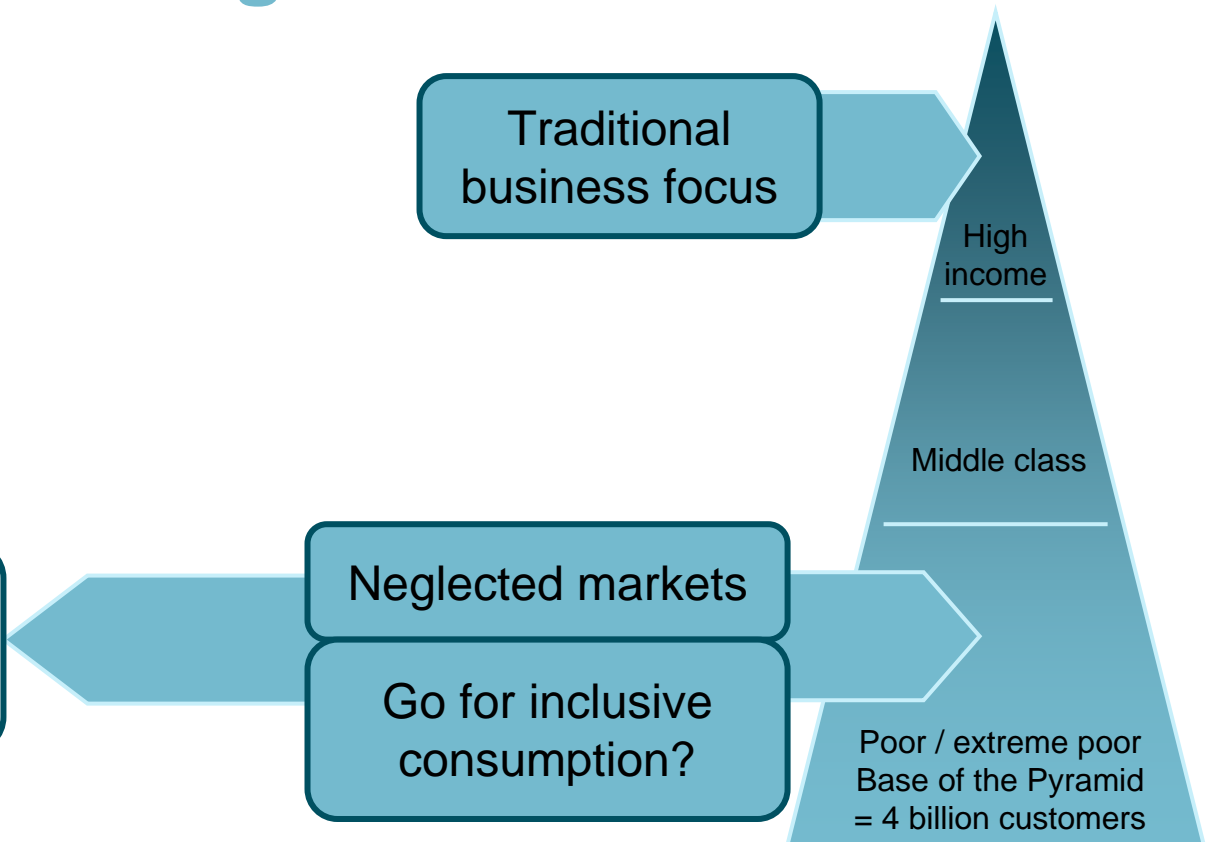
## Fostering sustainable marketing



Anwara Begum,  
a Grameen 'telephone lady'

(Credit: Nurjahan Chaklader)

## Human Development through the Market



# TBL Innovation for Realising SCP

## Global supply chains – local issues

**Mining**



**Sugar beet farmer**



**Shopping Centre**



**Recycling**



**Coffee plantations**



**Textile production**



**Street Market**



**Electronic waste**

Raw material

Transport

Production

Distribution

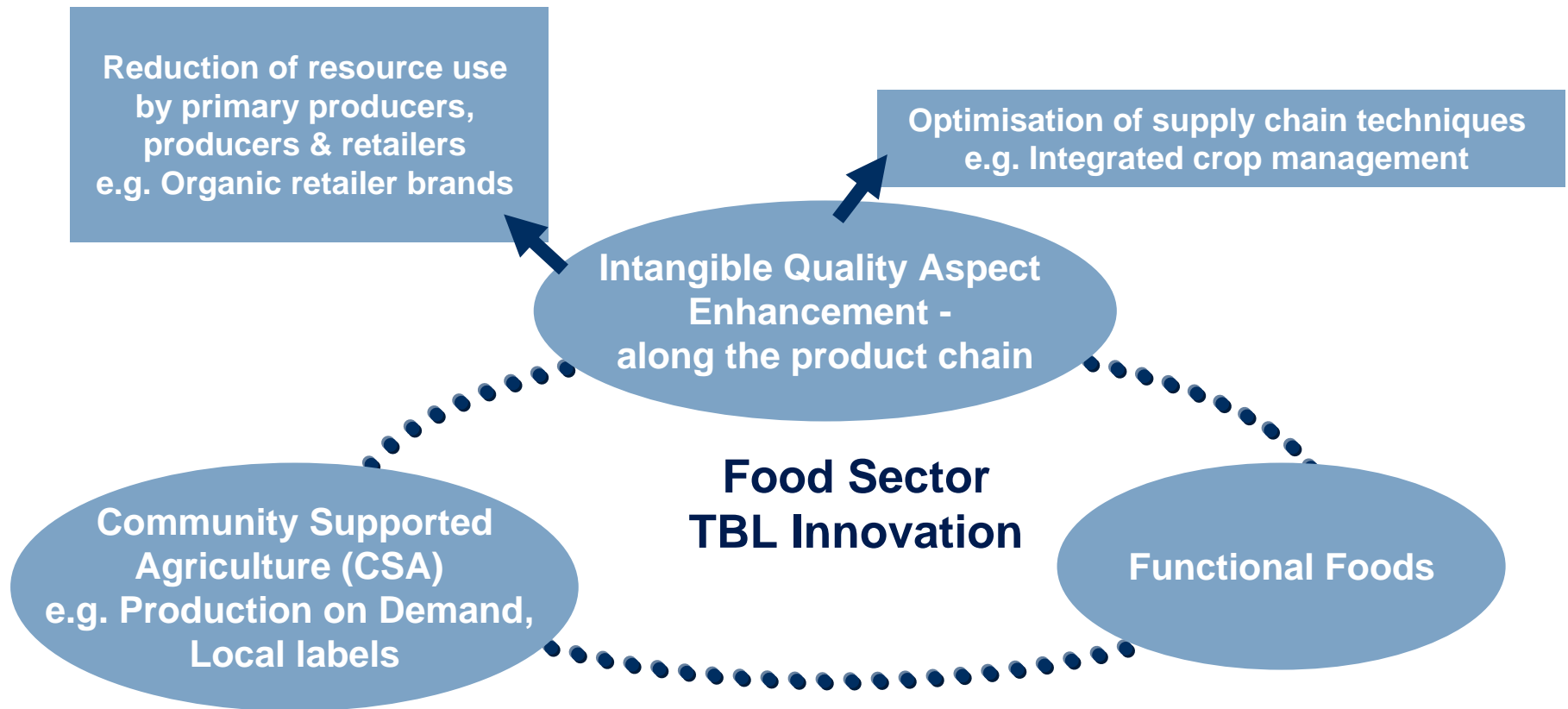
Usage

End-of-life

Value Chain

# TBL Innovation Framework

## An example of application in the food sector



www.nanologue.net



[home](#)

[about the project](#)

[project consortium](#)

[external advisory board](#)

[network](#)

[download](#)

[contact](#)

## Interactive

### NanoMeter

Assessing Opportunities and Risks of Nanotechnology applications

## Background

what are nanotechnologies?

## End of project

After a 21-month period of research, consultations and dialogue the EU-funded project Nanologue came to an end.

Nanologue's overarching objective was to help establish a common understanding concerning social, ethical and legal aspects of nanotechnology applications and to facilitate a Europe-wide dialogue among science, business and civil society about its benefits and potential impacts.

## Project design

Nanologue composed of three main steps.

In a first project phase key findings from a **Mapping Study** on ethical,

## News

### Nanologue scenarios published

'The Future of Nanotechnology - We need to talk' describes three scenarios contrasting developments of Nanotechnology in Europe by 2015.

### NanoMeter online

The NanoMeter, a web-based tool to carry out a brief societal assessment of nanotechnological applications, is now available online.

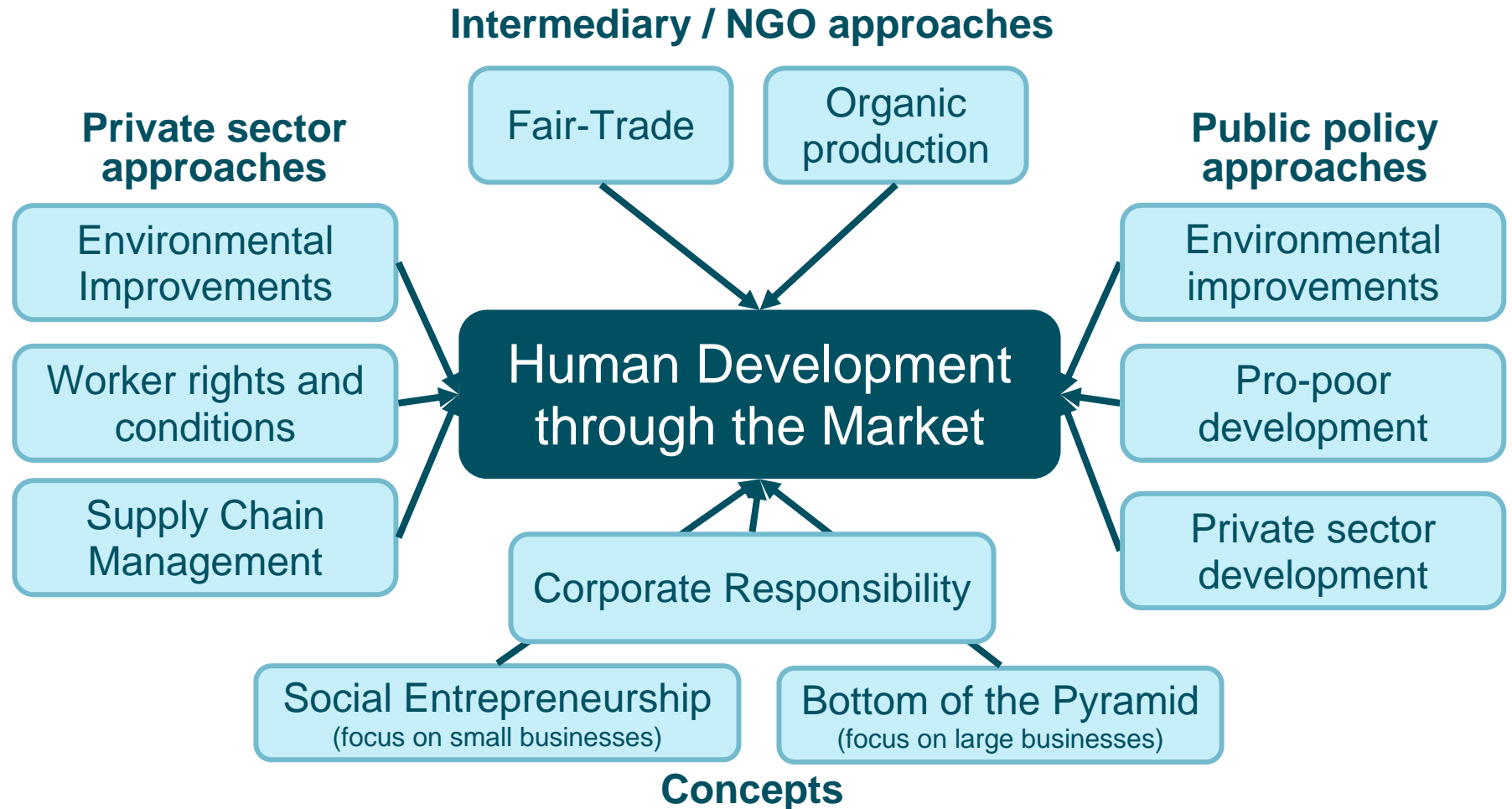
### Results of 'Opinion' phase

'Results from a Consultation with Representatives from Research, Business and Civil Society' is online

### Open Space

Discuss your vision of nanotechnology with us on Oct 7th at the Deutsches Museum, Munich

### An integrative perspective



# Sustainable consumption and production for local and national development

## PRODEV

**P**olicy **R**einforcement f**O**r Environmentally  
Sound and Socially Responsible Economic  
**D**EVelopment in China

Objective	<ul style="list-style-type: none"> <li>• create a capacity building approach for business and policy maker to consider in developing countries on SPC</li> <li>• sound and socially responsible economic development (referred to as Circular Economy) in China, and in other developing countries in Asia</li> <li>• improve understanding of policy-making in China and Europe</li> <li>• create information links and co-operation among local authorities in Asia and Europe</li> </ul>
Stakeholders/ Partners	<ul style="list-style-type: none"> <li>• UNEP</li> <li>• Wuppertal Institute</li> <li>• Guiyang Government</li> <li>• China State Environmental Protection Administration (SEPA)</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;">  <div style="text-align: center;"> <p><small>Science Centre North Rhine-Westphalia Institute of Work and Technology</small></p>  <p><small>Institute for Culture Studies Wuppertal Institute for Climate, Environment, Energy</small></p> </div>  </div>

development of a capacity building approach for business and policy makers to consider in developing countries on SPC