The role of mitigation technology.

Bernard MAZIJN

Conference 'Climate Change, a new Challenge for Development Cooperation?'

Brussels, 7 March 2008

What's your coffee's carbon footprint?

And … if you don't like coffee …

- … what's the carbon footprint of your cup of **tea** you will drink during the break?
- … or how much are the CO_2 emissions related to the production of your **rice** eaten yesterday?
- … or the carbon footprint of the cashew **nuts** in your chocolate bar?

Content

- A flash back
- Development and transfer of technology
- Technology Needs (Assessment)
- Preparing and presenting project proposals
- Bali Action Plan: the building block ‘technology’
- A concrete investment proposal

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A21- Chapter 34: Transfer of environmental sound technology, cooperation and capacity-building

The following **objectives** are proposed:

a) To help to ensure the access, in particular of developing countries, to scientific and technological information, including information on state-of-the-art technologies;

b) To promote, facilitate, and finance …

c) To facilitate the maintenance and promotion…

d) To support endogenous capacity-building

e) To promote long-term technological partnerships between holders of environmentally sound technologies and potential users.

UNFCCC – Art.4. Commitments

…

§ 5. The developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies.

…

Methodological and Technological Issues in Technology Transfer

A Special Report of Working Group III of the Intergovernmental Panel on Climate Change (2000)

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Framework with 5 key elements (cf. 4/CP.7)

- Technology Needs Assessments
- Technology Information (System)
- Capacity Building
- Enabling Environments
- Financial and Institutional Mechanisms

plus … later on …

  - Innovative options for financing
  - Technologies for adaptation

For deliverables of the EGTT :
see http://ttclear.unfccc.int/ttclear/jsp/

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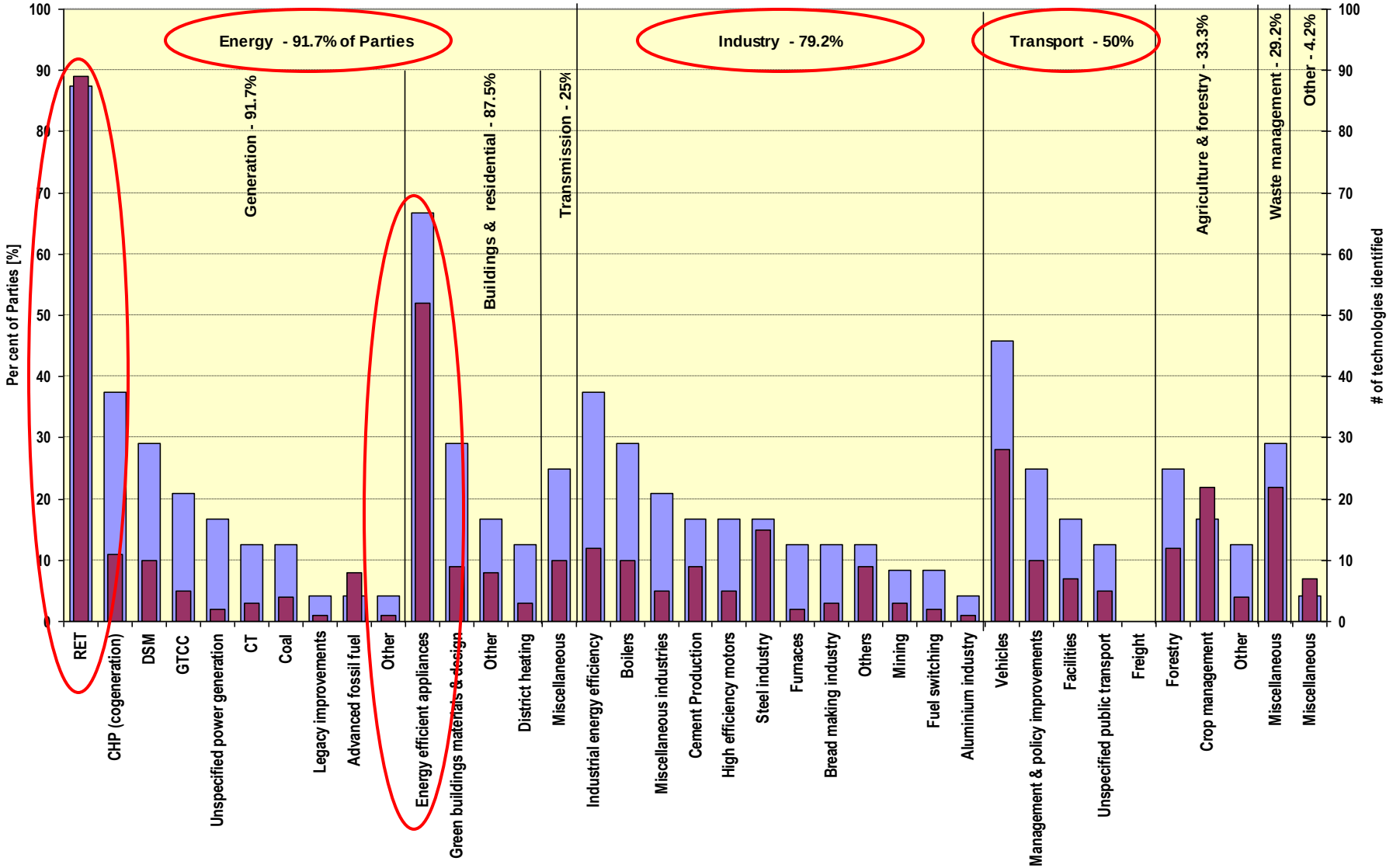
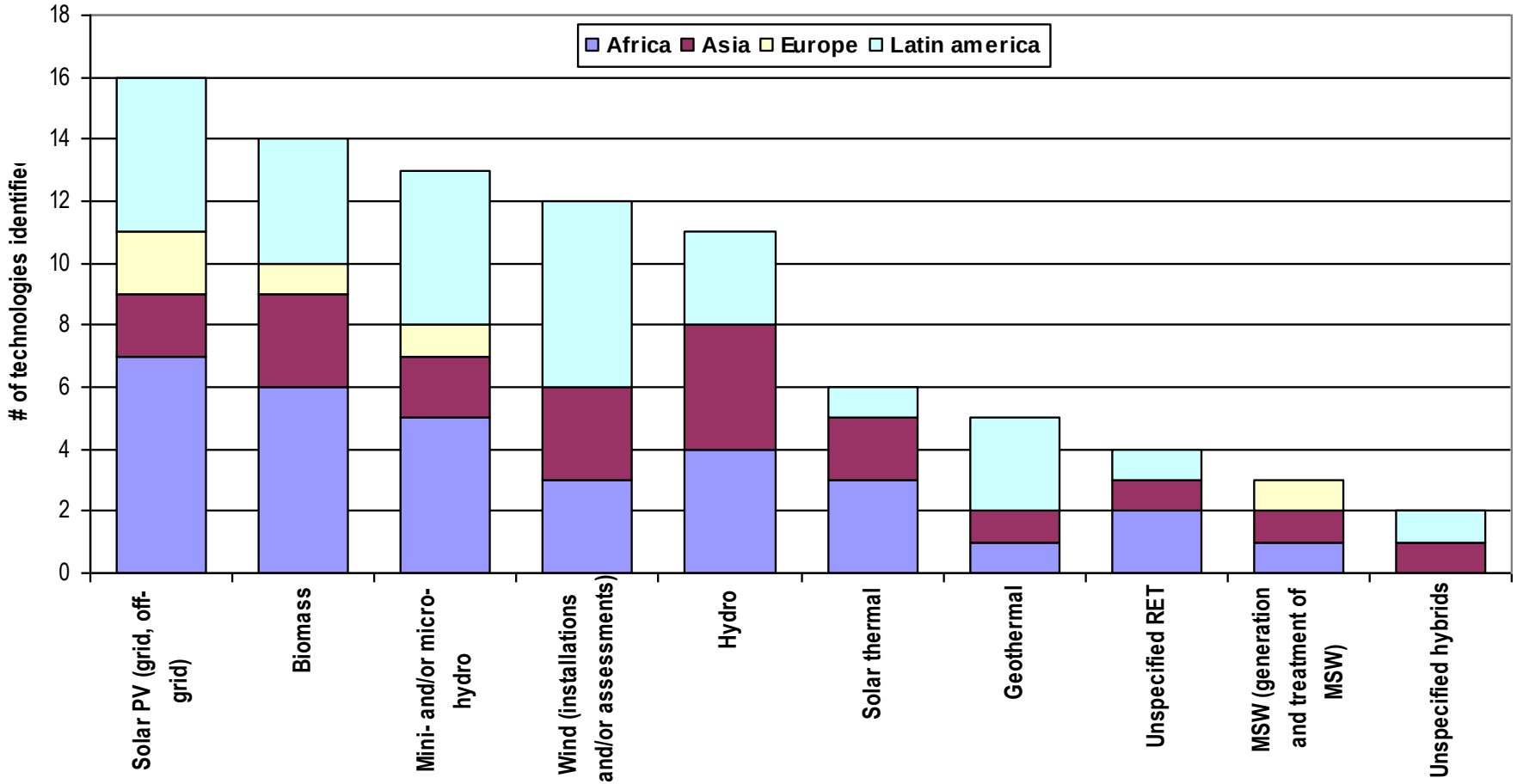
TNA's. What are they?

- **Country-driven activities** that identify and determine the mitigation and adaptation technology **priorities**
- Involve different **stakeholders in a consultative process**
- Identify **regulatory options and develop fiscal and financial incentives and capacity building**
- The **purpose** of TNAs is to assist in identifying and analysing priority technology needs, which can form **the basis for a portfolio of EST projects and programmes**

TNAs | What are commonly identified mitigation technologies in TNAs?



TNAs | What are commonly identified renewable energy technology needs?



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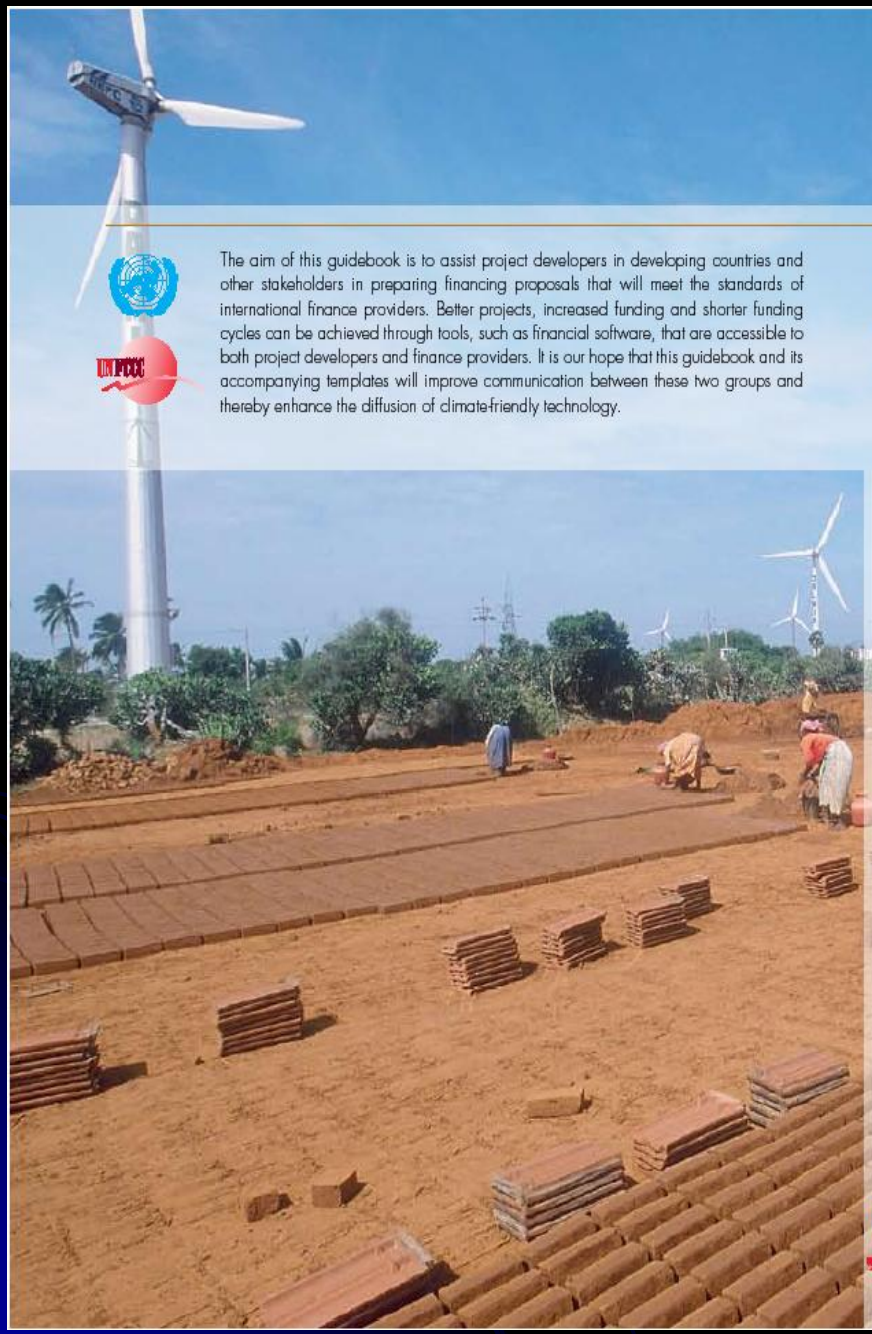
Messages from the EGTT work

- There **is not** a shortage of financing ... for now.
- There **is not** a shortage of good projects.
- But, there **is** a shortage of good financing proposals meeting the standards of the international finance community.



The aim of this guidebook is to assist project developers in developing countries and other stakeholders in preparing financing proposals that will meet the standards of international finance providers. Better projects, increased funding and shorter funding cycles can be achieved through tools, such as financial software, that are accessible to both project developers and finance providers. It is our hope that this guidebook and its accompanying templates will improve communication between these two groups and thereby enhance the diffusion of climate-friendly technology.

Preparing and presenting proposals: A guidebook on preparing technology transfer projects for financing

Preparing and presenting proposals

A guidebook on preparing technology transfer projects for financing

Opportunities for Belgium to support our partner countries (1)

Partner countries with a TNA :	Partner countries without a TNA :
• Bolivia, Ecuador	• Peru
• Senegal	• Benin, Mali, Niger
• Burundi, D.R. of Congo	• Rwanda
•	
• Tanzania	• Mozambique, Uganda
• SADC	• South Africa
• Vietnam	• Palestinian territories • Algeria, Morocco

Source: *UNFCCC 2008*

Opportunities for Belgium to support our partner countries (2)

Partner countries with a TNA :

→ support for preparing and presenting project proposals, up to financial closure

→ support for the regular update of the TNA

Partner countries without a TNA :

→ support for drafting a TNA, followed by the implementation (cf. project proposals)

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Bali Action Plan
(-/CP.13)

"Decides to launch a comprehensive process **to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012**, in order to reach an agreed outcome and adopt a decision at its fifteenth session, by addressing, inter alia : …

…

d) **Enhanced action on technology development and transfer to support action on mitigation and adaptation** …

…

Plus !

"Identify and designate a national entity for the development and transfer of environmentally sound technologies"

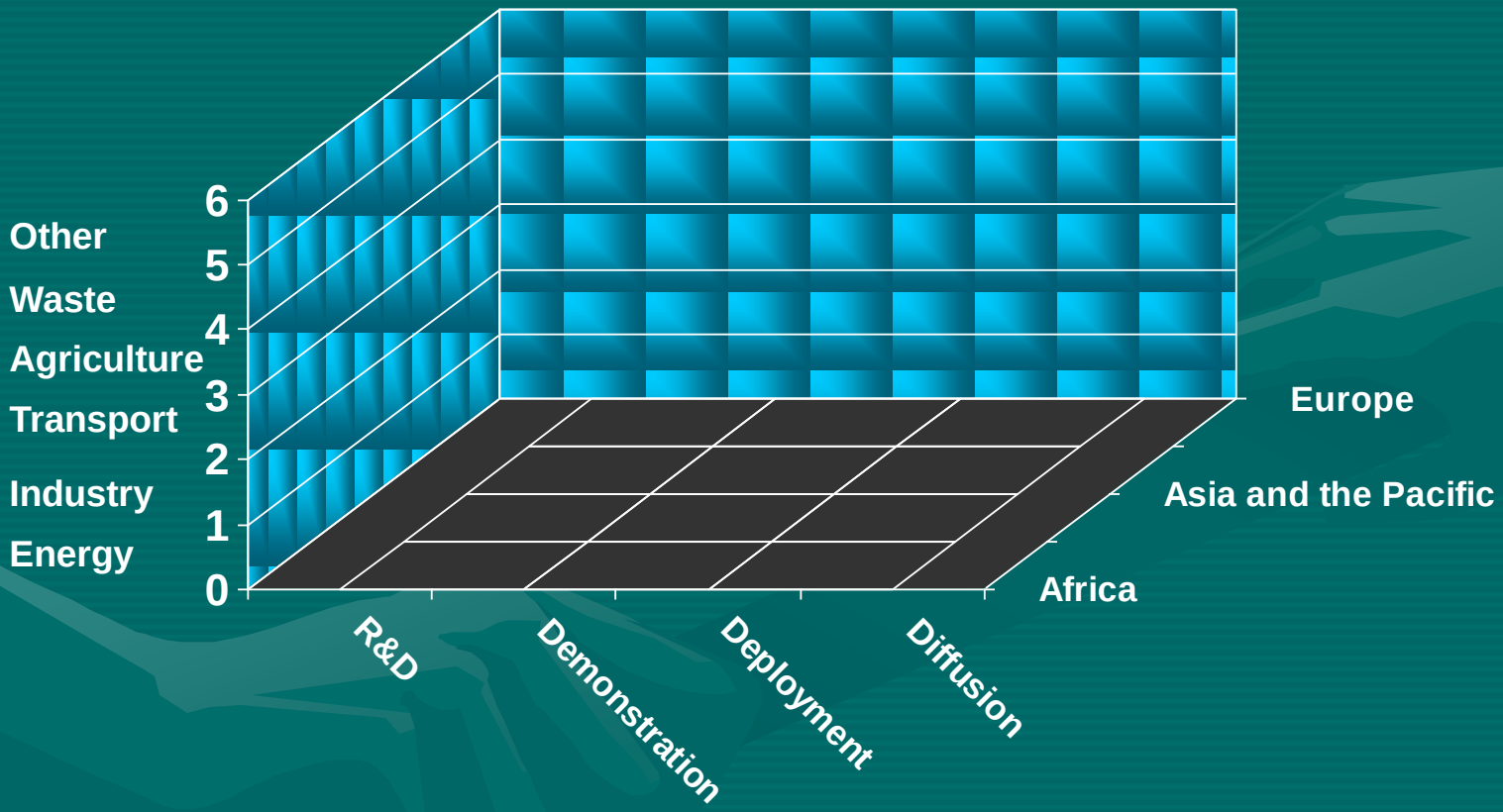
To be reported by Belgium at COP 14

(December 2008, Poznañ, Poland)

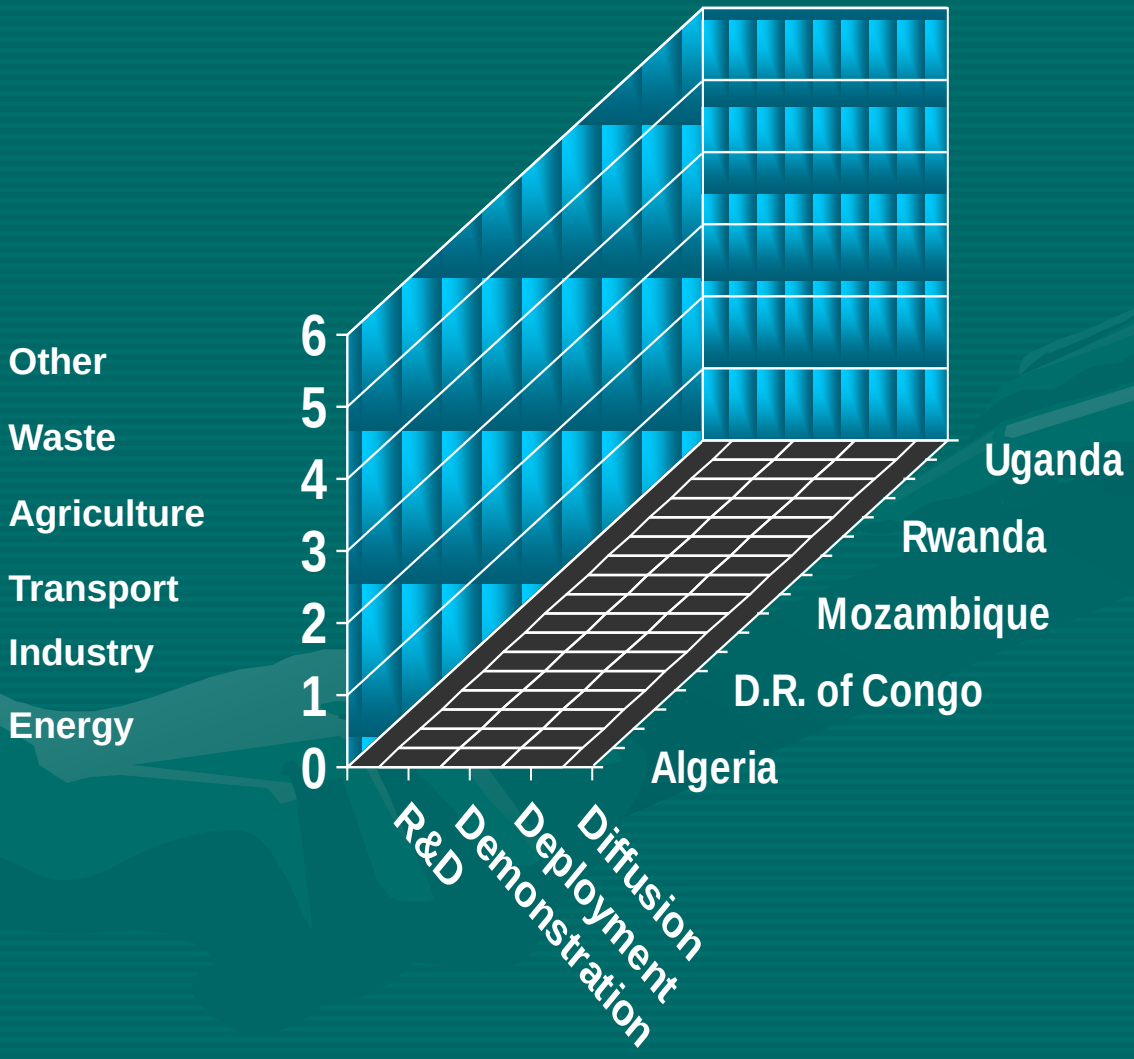
Objective for post-2012 ? Partim 'technology'.

- A multilateral agreement with a multidimensional approach
- Taking into account differences between
  - regions/countries,
  - sectors
  - and stages in the development of technologies.
- For mitigation and adaptation.
- With linkages to 'access to energy' and 'deforestation'.

Technology cooperation and transfer of technologies: multilateral long-term cooperative action, now, up to and beyond 2012 on mitigation



Technology cooperation and transfer of technologies: Belgian bilateral long-term cooperative action, now, up to and beyond 2012 on mitigation



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Concrete proposal
for technology cooperation and transfer of technologies through Belgian bilateral long-term cooperative action, now, up to and beyond 2012.

Some observations

- "Throughout **Central America**, an estimated **16,086 acres of forest are cut to supply the firewood used to dry the coffee production each harvest** -- equivalent to over 828,000 barrels of diesel fuel per harvest."

- "The solar heating system was able to meet the full heating load for tea drying at **a payback of 1,5 years**, not including design and development costs. New projects would have to include these, but they would offset by credits for eliminating the fossil heating system."

- "**Using solar energy to dry crops is ideal** for tea, coffee, fruits, beans, rice, spices, rubber, cocoa, and wood."

Some calculations: from the berry to the cup

Starbucks (a big cup = approx. 250 ml)

- 2 ounces carbon /big cup → 210 g $C0_2$ / cup
- in Belgium: in average a person drinks 600 big cups / year
- which means **all Belgians together**, while drinking coffee, are emitting: **1,323 million ton CO_2**

Salomone (2003) ('dry' method)

- from 1 kg ground coffee to the many cups of coffee: 70 kg CO_2 is emitted
- in Belgium: in average a person drinks 600 cups / year
- which means **all Belgians** together, while drinking coffee, are emitting : **4,25 to 5,3 million ton CO_2**

In Belgium: 10,5 million inhabitans

Some calculations: from the berry to the grean bean

Coltro L. et al. (2006) - Brazil Green Coffee

- 94 kg diesel / ton green coffee & 3,11 kg CO_2/kg diesel
  → 292,3 kg CO_2/ton green coffee

or

- 3,8 MJ - 66,5 MJ / kg green coffee & 74 kg CO_2/GJ (for diesel)
  → 281,2 kg CO_2/ton green coffee (up to 4 920 kg CO_2/ton green coffee)

- **Partner countries – export: 1 419 443 ton green coffee**
  → 407 000 ton CO_2
- **Belgium – import: 193 524 ton green coffee**
  → 55 500 ton CO_2


Solar Trade Corporation

Some calculations: emissions by conventional dryers

Trubey R. (2004) - Green coffee – conventional dryers

- 10,5 kWh / 100 pounds = 10,5 kWh / 45,3 kg
- 1 kWh from fossil fuel = 0,2470 CO_2 kg
- 2,59 kg CO_2/45,3 kg green coffee = 57,25 kg CO_2/ton green coffee

- **Partner countries : 1 419 443 ton green coffee → 81 250 ton CO2**
- **Belgium : 193 524 ton green coffee → 11 000 ton CO2**

- *Plus* 0,12 m³ firewood per 100 pounds = 8,3 m³/ton
- **Partner countries : 1 419 443 ton green coffee → appr. 12 million m³ firewood**
- **Belgium : 193 524 ton green coffee → > 1,5 million m³ firewood**

Important export crops in our partner countries (with a focus on coffee, tea, rice, nuts)

- **Bolivia**: different types of nuts
- **Ecuador**: coffee
- **Peru**: coffee

- **Benin**: cashew nuts,
- **Mali**: groundnuts, rice
- **Senegal**: groundnuts, rice
- **Niger**: beans

- **Burundi**: coffee, tea,
- **D.R. of Congo**: coffee
- **Rwanda**: coffee, tea,

- **Mozambique**: cashew nuts
- **Tanzania**: coffee, tea, …
- **Uganda**: coffee, tea, …

- **Vietnam**: cashew nuts, rice, coffee, tea, cassava dried

- **Palestinian territories**
- **Algeria, Morocco**
- **South Africa**

Source: FAO 2004

Concrete proposal
for technology cooperation and transfer of technologies
through bilateral long-term cooperative action,
now, up to and beyond 2012.

A partnership for massive investments

in solar air heating systems

to dry crops in our partner countries

Win-win solution

- … taking into account environment considerations:
  - mitigation of climate change
  - combating deforestation
  - …
- … taking into account social considerations:
  - new employment opportunities in Belgium and in the partner countries
  - contribution to health care
  - …
- … taking into account economic considerations:
  - securing access to 'natural resources'
  - participating in offset credit systems
  - …

- Development and Transfer of Environmental Sound Technologies within a partnership of cooperation

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