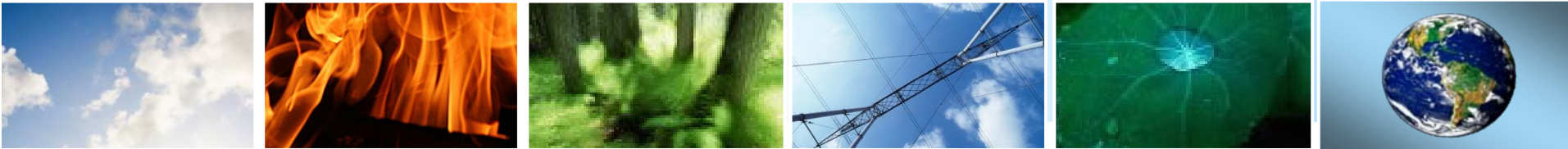


Third Meeting of the Regional 3R Forum in Asia

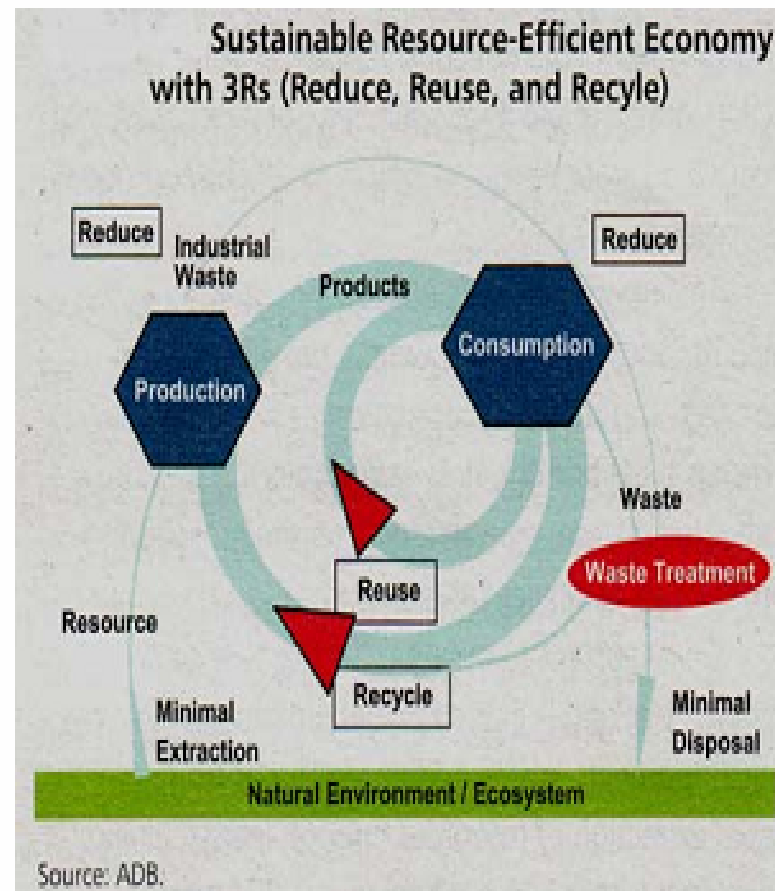
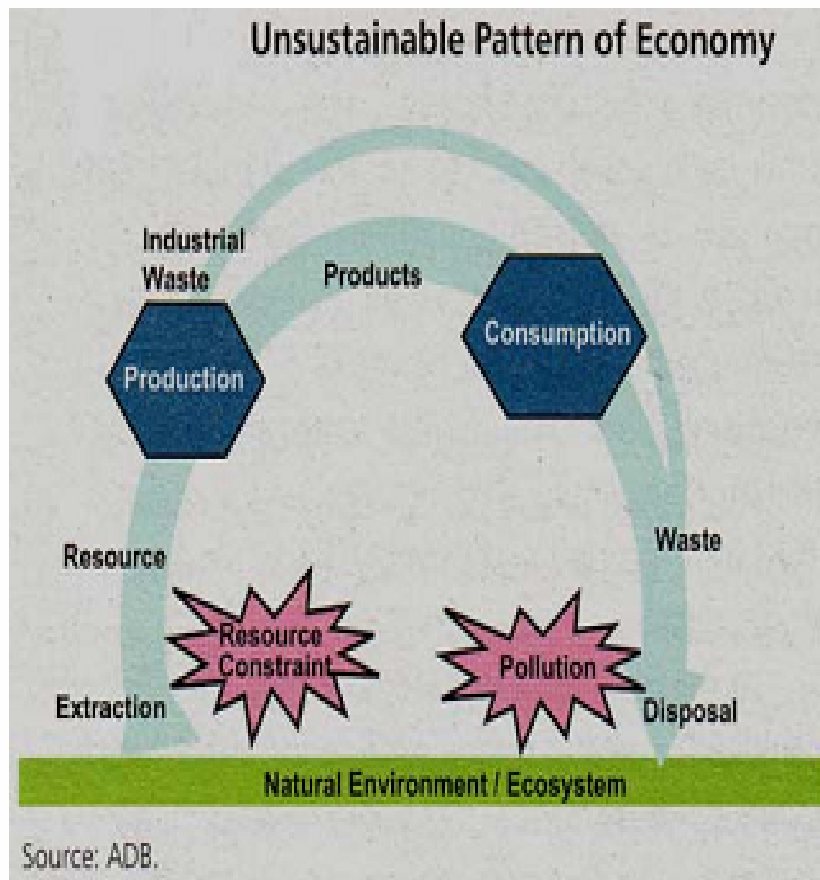


**Market demand as driving force for 3R
technology transfer and
the role of private sector**

Alban Casimir

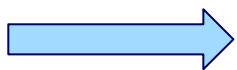
5-7 October 2011
Singapore



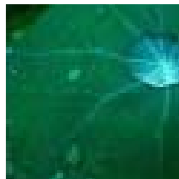
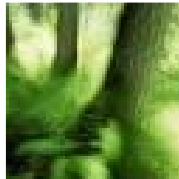




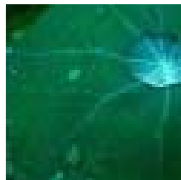
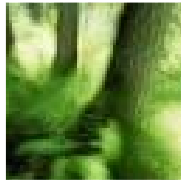
- Substitutability between primary and secondary raw materials:
 - Depleting supply of primary raw materials and hence price increase
 - Better substitutability
- Project owner see 3Rs development as a mean to minimize costs or add revenue streams (electricity sales, Carbon Credits, steam...)
- Improvement of environmental standards lead to development of 3Rs technologies
- Green procurement
- Rising of public awareness
 - Environment preservation
 - sustainable production and consumption (SCP), extended producers responsibility (EPR)...



Those market drivers are still weak in Asia



Business-to-business technology transfer: Case study



An example of failure



- Technology:

- front end and automatic treatment plant
- anaerobic digestion plant
- Gas holder to sell electricity in peak-period
- 625 kW_e gas cogeneration set
- Production of compost from sludge



- Economics:

- Investment Euro 3.60 million
- Pay back period is about 9 years after commissioning

Why did it fail?

- High O&M costs – initial budget did not cover the O&M
- Poor maintenance and operation of the facilities
- Lack of staff expertise
- Incomplete separation of non-biodegradable (separation blades are not working properly because of the waste packing which is different from Europe)
- Wrong design of the facilities (no modification to suit developing countries waste characteristics, staff expertise... same technology for Europe and Thailand!)

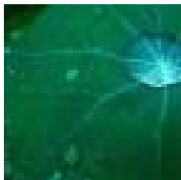
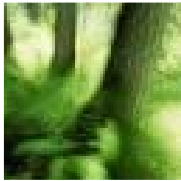




Why did it fail?

- Lack of incentive to operate the facilities when a landfill is also available although planned for inert waste only
- Lack of waste separation at source (communities are not involved)
- High cost of compost compared to commercial fertilizers
- Low quality of compost (no nutrients added)



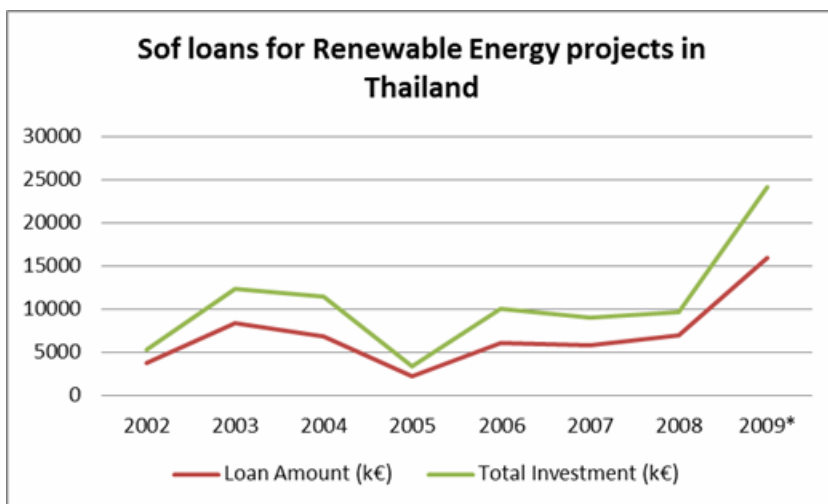


An example of Success



Historically, Thailand has relied extensively on fossil energies for electricity generation (especially on natural gas, above 70%). Considering the rise of fossil energies costs, the significant quantity of municipal/agricultural waste and the environmental protection awareness, the Thai government decided in 2001 to launch a subsidy scheme for Power Producers from renewable energies.

Type of Renewable Energy	2007-2008 Adder Rate (Baht/kWh)	2009 Adder Rate (Baht/kWh)	Special Adder for Diesel Replacement (Baht/kWh)	Special Adder For Three Southermost Provinces (Baht/kWh)	Years Supported
1. Biomass					
- Installed Capacity ≤ 1 MW	0.30	0.50	1.00	1.00	7
- Installed Capacity > 1 MW	0.30	0.30	1.00	1.00	7
2. Biogas					
- Installed Capacity ≤ 1 MW	0.30	0.50	1.00	1.00	7
- Installed Capacity > 1 MW	0.30	0.30	1.00	1.00	7
3. Waste (MSW and Industrial Waste, excluding Hazardous Waste and Organic Waste)					
- Landfill and Digester	2.50	2.50	1.00	1.00	7
- Thermal Process	2.50	3.50	1.00	1.00	7
4. Wind					
- Installed Capacity ≤ 50 kW	3.50	4.50	1.50	1.50	10
- Installed Capacity > 50 kW	3.50	3.50	1.50	1.50	10
5. Small / Microhydro					
- 50 kW ≤ Installed Capacity < 200 kW	0.40	0.80	1.00	1.00	7
- Installed Capacity < 50 kW	0.80	1.50	1.00	1.00	7
6. Solar					
	8.00	8.00	1.50	1.50	10

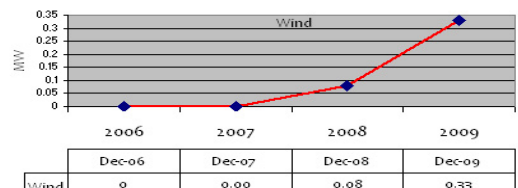
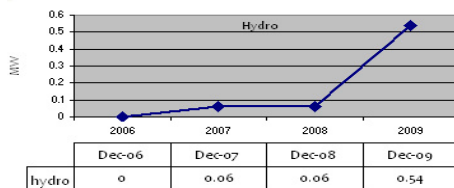
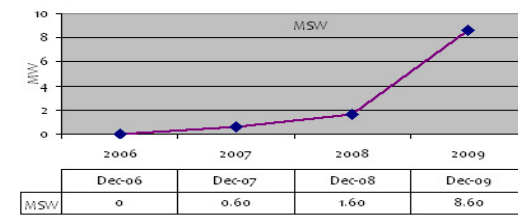
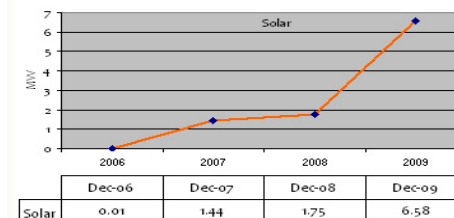
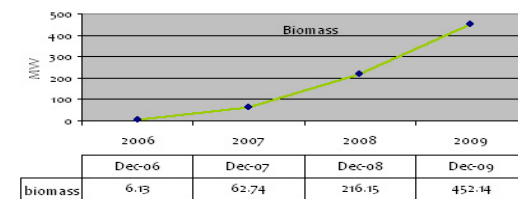
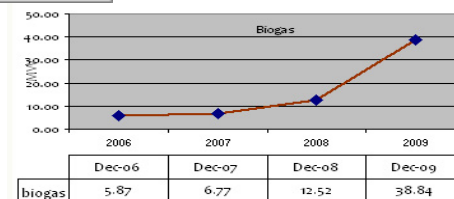


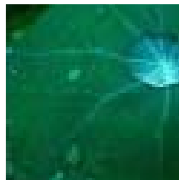
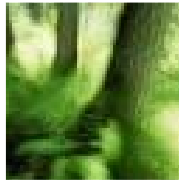
There is always money available when the return is right

NB: Clean Development Mechanism has also played a role in the inflow of money

High subsidies stimulated private investments to install 507.03 MW as of 2009 compared to 12.01 MW in 2006 (prior to the subsidies package): a tremendous yearly 248% increase!

About 200 million USD natural gas savings per year





Necessary conditions for a successful transfer of technology



- On the technological side:
 - Proven, easy to operate and cost effective
 - Community based and labor intensive
 - Adapted to local specific conditions and needs
 - When complex, proper training must be carried out

- Government and citizens:
 - Public environmental awareness
 - Political will
 - Conducive institutional, administrative, legislative and policy environment

- Country specificities:
 - Lack of resources
 - Land scarcity
 - Remote areas in vast countries

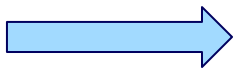
- Firm:
 - Corporate image
 - Consumer and regulation driven demand
 - Management will
 - Trainings
 - Incentives and taxes
 - Additional staff responsibilities



- There are too many activities, we shall focus our analysis on LFG
- In Thailand, Malaysia, Indonesia and Vietnam altogether, there are 18 projects registered
 - 50/50 market share between developing and developed countries
 - 100% of the projects are private owned although some have been financed through governmental or international organizations scheme
 - One pilot project has been financed and developed by the Government of Thailand in Bangkok

In LFG, Developing countries are tapping CDM as much as developed countries

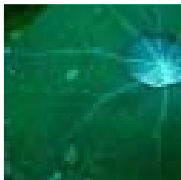
Although open to all parties, only the private sector, in LFG, has financed and developed projects





Project 2217 : Municipal Solid Waste based Composting at Kolhapur, Maharashtra

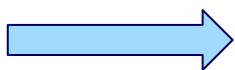
Project title	<p>Municipal Solid Waste based Composting at Kolhapur, Maharashtra</p> <p>- project design document (1268 KB)</p> <p>PDD appendices</p> <p> Appendix 1 - Enclosure (87 KB)</p> <p> Appendix 2 - Enclosure 1 (271 KB)</p> <p> Appendix 3 - Enclosure 2 (540 KB)</p> <p> Appendix 4 - Enclosure 3 (55 KB)</p> <p>- registration request form (229 KB)</p>
Host Parties	<p>India , involved indirectly approval (149 KB) authorization (149 KB)</p> <p>Authorized Participants: Zoom Bio-Fertilizer Private Limited</p>
Other Parties Involved	<p>United Kingdom of Great Britain and Northern Ireland , involved indirectly approval (82 KB) authorization (82 KB)</p> <p>Authorized Participants: Conoco Phillips (UK) Ltd.</p>
Sectoral scopes	13 : Waste handling and disposal
Activity Scale	SMALL
Methodologies Used	AMS-III.F. ver. 5 - Avoidance of methane production from decay of biomass through composting
Amount of Reductions	30,430 metric tonnes CO2 equivalent per annum
Fee level	USD 4586.0
Validation Report	<p> Validation report (431 KB)</p> <p> Modalities of Communication (222 KB)</p> <p>Annex 2 (Add Project Participant) valid as of 28/07/2011</p> <p>Annex 2 (Change/update authorized signatory, name or contact details) valid as of 25/07/2011</p> <hr/> <p>Public availability information</p> <p>Link to information uploaded for public availability</p>
Registration Date	01 Apr 09 (view history)
Crediting Period	01 Apr 09 - 31 Mar 19 (Fixed)
Requests for Issuance and related documentation	<p>Monitoring report: 01 Apr 2009 - 31 Mar 2010 (649 KB)</p> <p>Issuance request state: Issued</p> <p>CERs requested: 7990</p> <p>Serial Range: Block start: IN-5-93716047-1-1-0-2217 Block end: IN-5-93724036-1-1-0-2217</p> <p>[Full view and history]</p>



Role of central governments to promote 3Rs



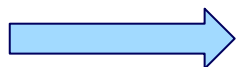
- Internalize the positive and negative externalities by the market or the regulation
- Mitigate the investment barrier
- Facilitate the access conditions to commercial and public financing for 3Rs projects
- Create rewards (quantitative and qualitative) for firms that not only meet the pollution control standards but also implement 3Rs technologies
- Green procurement
- Create database, organize and spread reliable and relevant information
- Developing pilot projects (R&D)
- Facilitate the granting of licenses and permits for construction and operation of 3Rs



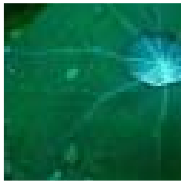
Address the market failures



- Promotion of high level 3R policy dialogues at the regional, and international levels
- Establishing regional and international networks on the 3Rs
- Fostering international collaborative activities including those facilitated by bilateral aid agencies, UN and other international and regional organizations such as the Secretariat of the Basel Convention, UNCRD, UNEP, ADB, UN ESCAP...
- Public-Private Partnership (PPP)
- Close association of 3R activities with sustainable production and consumption (SCP), extended producers responsibility (EPR) and product design
- Encouraging day-to-day communication among customs, port, and maritime authorities to monitor transboundary movements of waste and to prevent illegal movements



Collaboration with other countries and International Organizations



Recommendations and Conclusion



- The **establishing of a National 3R focal point**, a well-organized institutional set-up, is a prerequisite for implementation of 3R and its sustainability
 - Promoting 3Rs activities by rising public awareness
 - Levying waste collection and disposal charge to all waste generating sources
 - Assist firms and local administrations to access international funding
 - Creation and management of a 3R Promoting Fund
 - Partnership development with local (communities, local governments...) and international (NGOs, UN...) organizations

- **Financial and technical assistance for R&D**

- **Strong marketing campaign** for “reused - recycled” products

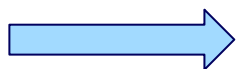
- **Government support for allowing access to land and other essential services as well as fast-tracking licenses and permits**



- **Market-based instruments such as subsidy and tax should be used:**
 - Subsidization of 3Rs technologies (switching of subsidy from chemical fertilizer to organic compost – Subsidy on green electricity – differentiated taxation (customs tariff and corporate tax exemption for environmental friendly businesses)
 - Subsidy to preserve informal sector's involvement in 3R activities and to recycled material-using factories and industries
 - Revenue generation through taxing polluting activities and products (high disposal costs)
 - Greater use of deposit-refund scheme for reuse and recycle of items (glass bottle or mobile phones for instance)

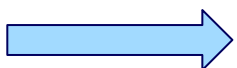


- 3Rs transfer and implementation in Asian cities, particularly for the wastes, still have many problems. The current regulation system is not perfect while the existing management and the collection facilities may not fit the present requirements.
- But Governments, NGOs, CBOs, and the private sector are working hard to improve this situation with several achievements and success stories waiting for duplication

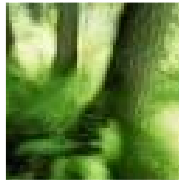


Transfer and implementation of environmental technologies including 3Rs is already a reality

- However, market failures and barriers remain creating room to central governments for action
- To drive the way forward, several countries are already elaborating National 3Rs strategies, creating 3Rs funds, promoting renewable energies...



Some of the recommendations mentioned earlier are already being implemented



**Thank you for your kind
attention
and have a fruitful forum!**