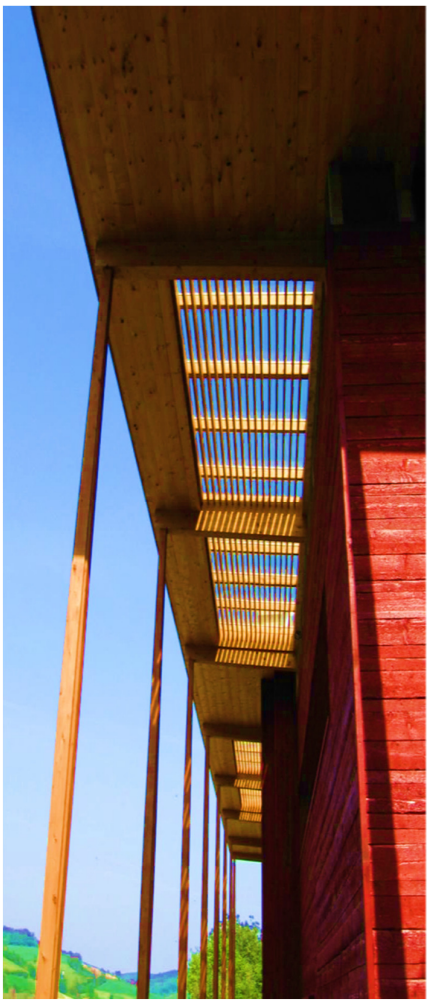

Low Carbon & Climate Resilient Industrial Development:

Green Industry Action Agenda

GrAT (Center for Appropriate Technology) TU Wien

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Project Manager

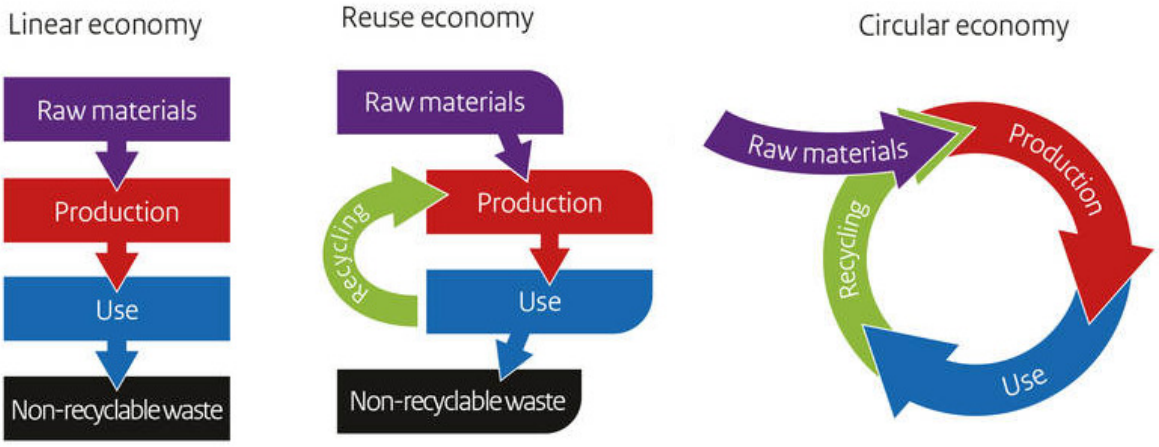
Dr. Robert Wimmer
Managing Director/Chairman

Contents

- Background: circular economy, decoupling of economic growth and resource consumption
- Green Industry Strategies and Actions
- Thematic priorities (relevant to Climate Change Adaptation)
- Sketch of a system map for GI (preview of the Day 2 workshop)

Circular Economy

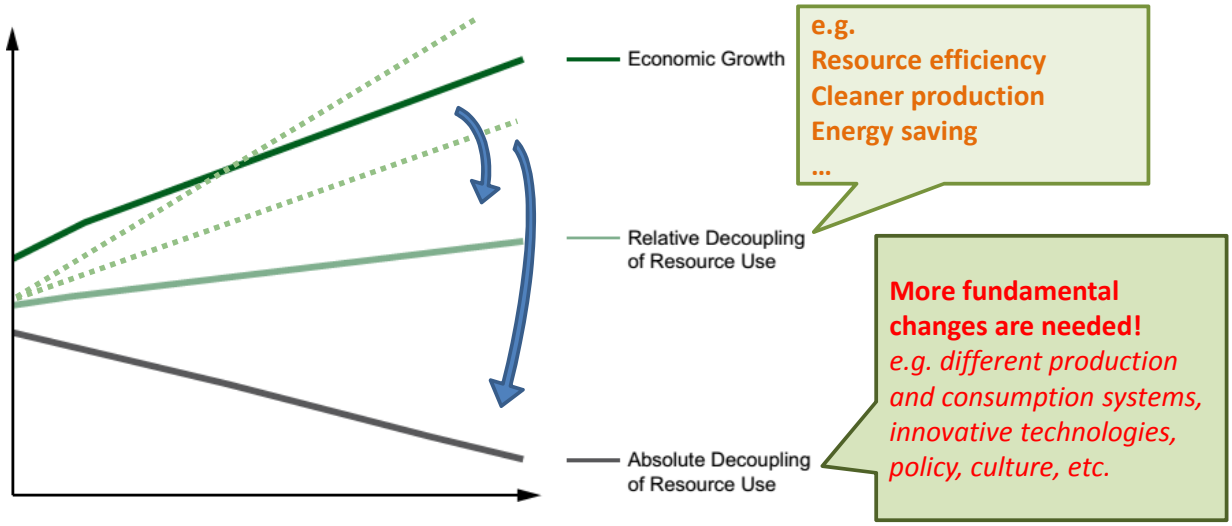
- "A world without waste": requires a system change in which the term 'waste' is basically eliminated.



Transition from a linear economy and a circular economy
(source: www.government.nl)

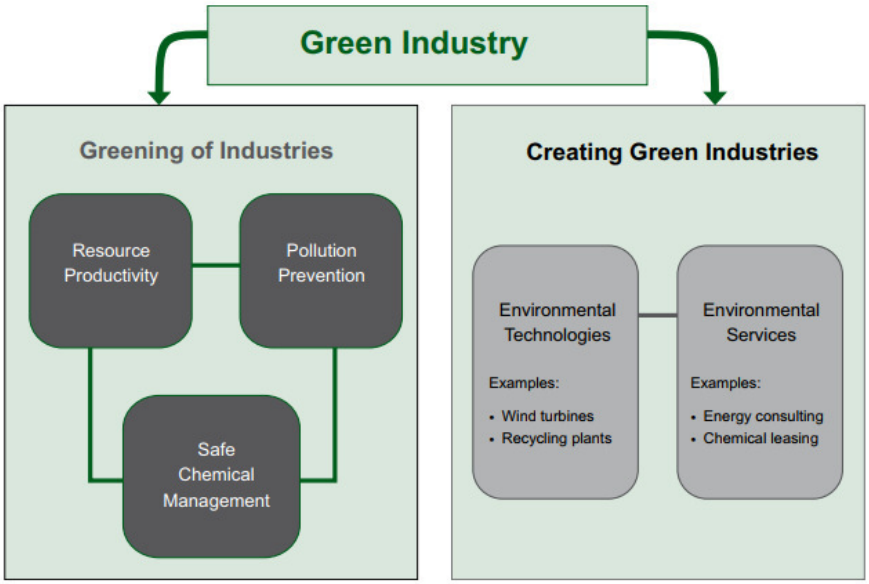
Decoupling of economic growth and resource consumption

- Relative decoupling: slows down the increase of resource use relative to the economic growth, but still results in an increase of resource use in total.
- Absolute decoupling: economic growth is independent from resource use and can be realized even with decreasing resource consumption



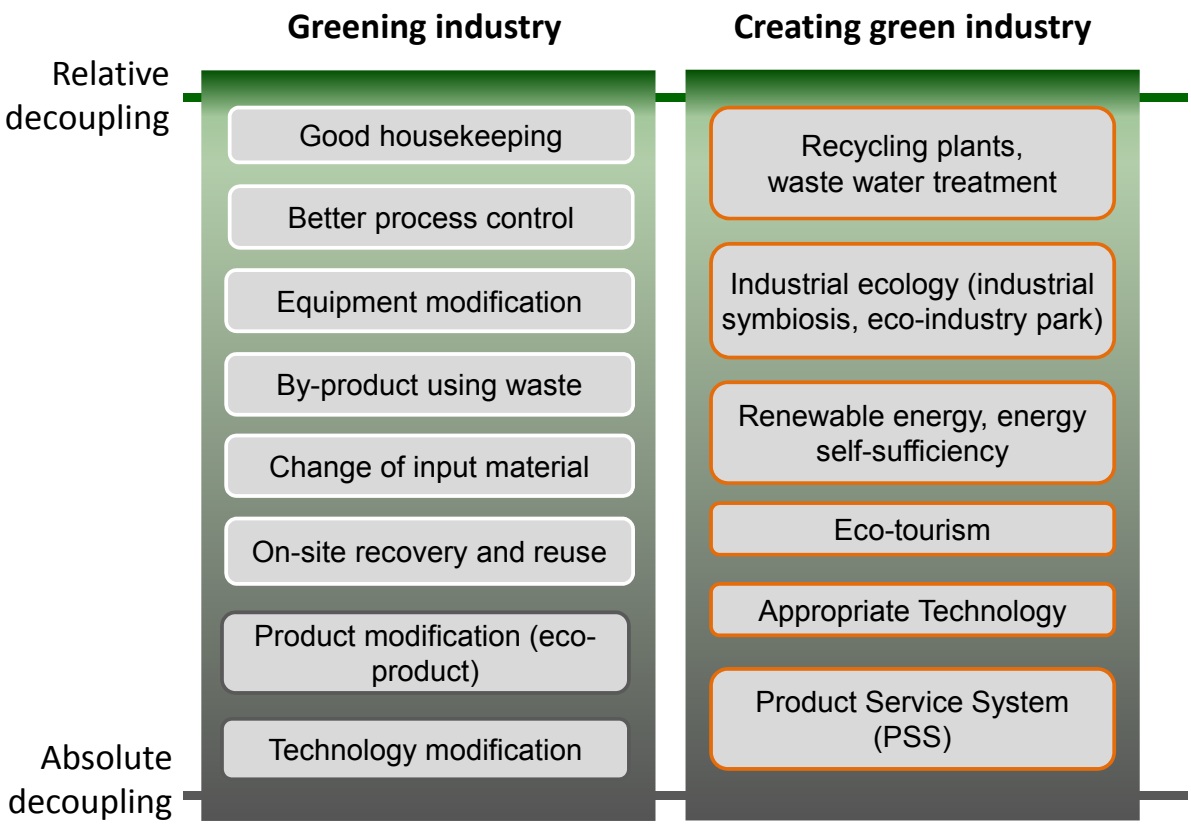
(source: UNIDO Green Industry Initiative for Sustainable Industrial Development, 2011)

UNIDO Green Industry Strategy



Green industry - a two-pronged strategy (UNIDO, 2011)

GI actions towards relative & absolute decoupling

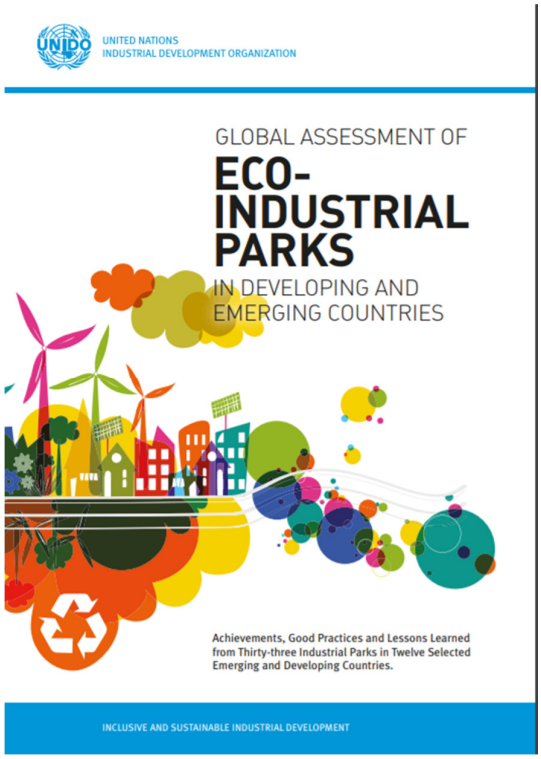


Priority thematic areas

- **Industrial ecology** (Eco industrial park, industrial symbiosis)
  - Wastes from one enterprise can be raw materials for another enterprise
  - Sharing infrastructure
  - Cost savings

→ Institute with an overview on the inputs and outputs of industries ('industrial matchmaker' with strong leadership)

→ Virtual networking (e.g. WISP in South Africa)



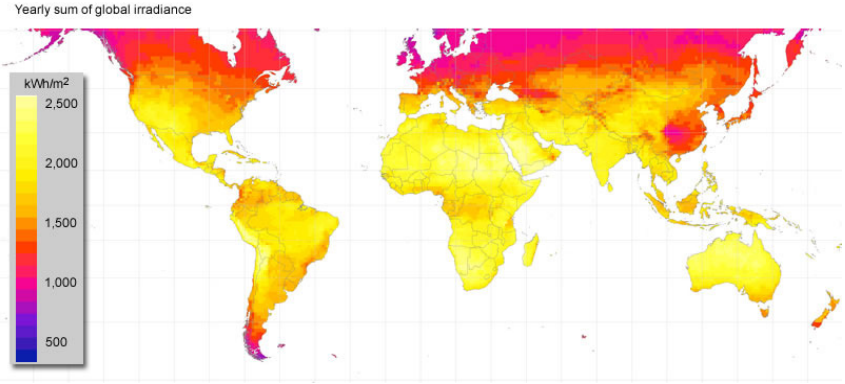
- **Renewable energy**

- Reduction/replacement of fossil-based energy sources)
- Long-term forest health, soil productivity, water quality, wildlife habitat, and biodiversity.

→ Foster biofuel sector (non-food), solar water heater, solar cooker/dryer, PV

→ Accurate and continuous assessment of the amount of biomass available. Avoid ecological and economic misuses.

→ Incentives, subsidies



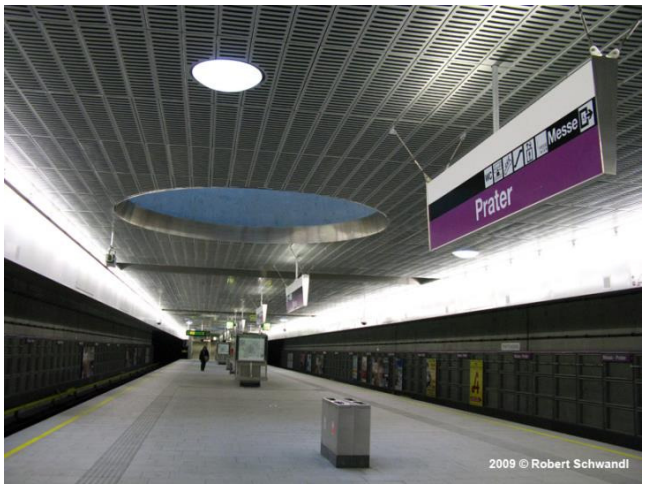
- **Eco-tourism:** unique value creation in partnership with related sectors

→ 1) farm visit, educational program
2) supplying hotels and restaurants with high quality organic products)

(source: http://www.cebu-philippines.net/sustainable-eco-tourism.html
https://www.ihg.com/hotelindigo/hotels/gb/en/london/lonag/hoteldetail
https://www.seemallorca.com/news/healthy-holidays-in-mallorca-organic-and-vegan-food-in-mallorca-island-695049)

- **Appropriate Technology**

- Immediate development with minor capital investment
- Use of available and abundant resources
- Creating local jobs (human intelligence, skill-based)
- Open source technology blueprint → capacity building
- Not inferior, but just appropriate!



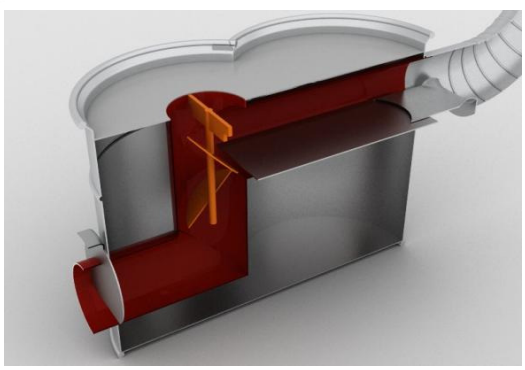
Source: https://blog.podio.com/2014/12/10/a-liter-of-light/

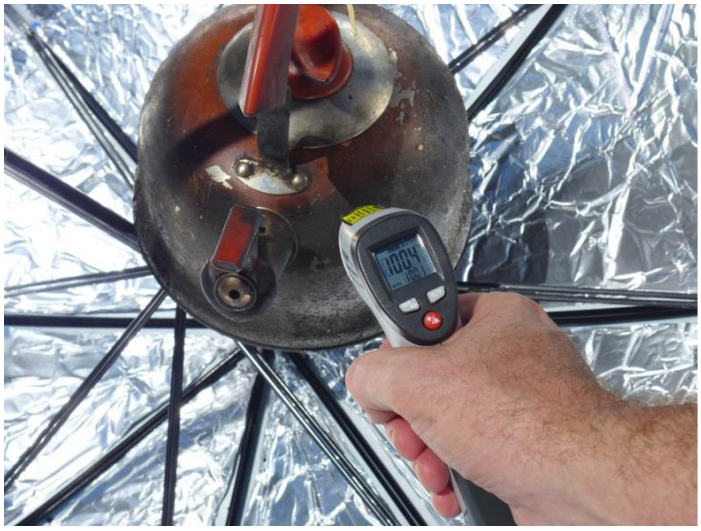
DRINK
MANGO JUICE
DRINK
ORANGE JUICE

SEID

EID

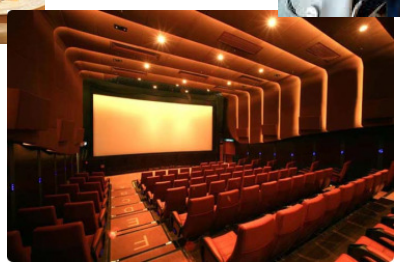
FUEL





- **Product Service System (PSS)** solutions: business models effectively utilizing services, to fulfill specific client demands.

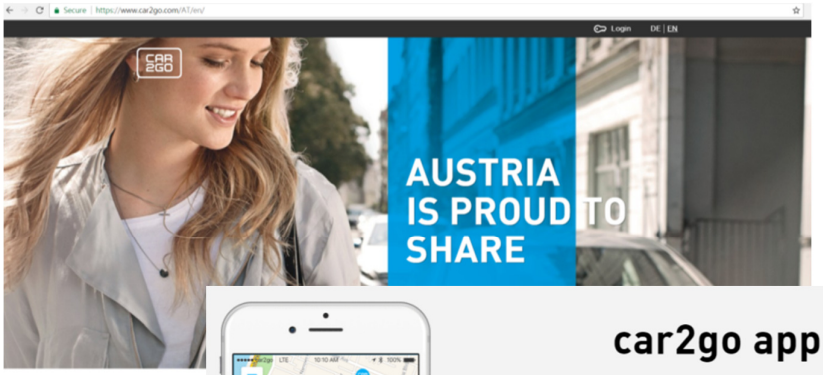
"We don't need a mousetrap.
We want to catch mice!„
(Schmidt-Bleek, 2004)

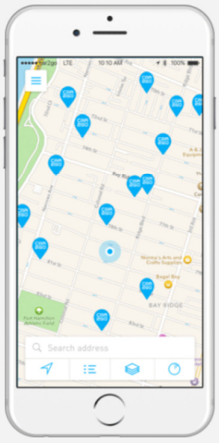


PSS example: CAR2GO

- You can drive a car with or without reservation (find cars via internet or directly pass by).
- You can drive in every area in the city, possible to make stop over.
- The car can be parked at any parking zones.

http://www.car2go.com/wien/de/





car2go app

Your key to carsharing: Find, reserve, and unlock your car2go in just a few taps. All you need is the app.

Find a car2go | Start a trip | End a trip

You can always reserve a car2go for up to

Minute rates

With car2go you can always have a car, whenever you need one. Just reserve one nearby and drive spontaneously and flexibly within the home area.

smart	A-class	CLA/GLA
€ 0,31 /min	€ 0,35 /min	€ 0,38 /min

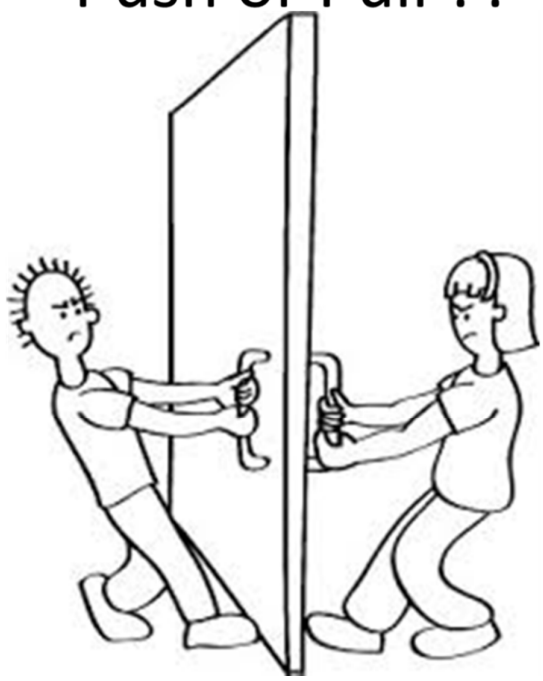
PSS example: Koppert

- Integrated Pest Management
- With as little damage as possible to people, the environment and beneficial organisms
- All possible crop protection techniques including monitoring, crop sanitation, cultural and mechanical control, and the introduction of beneficial insects and mites

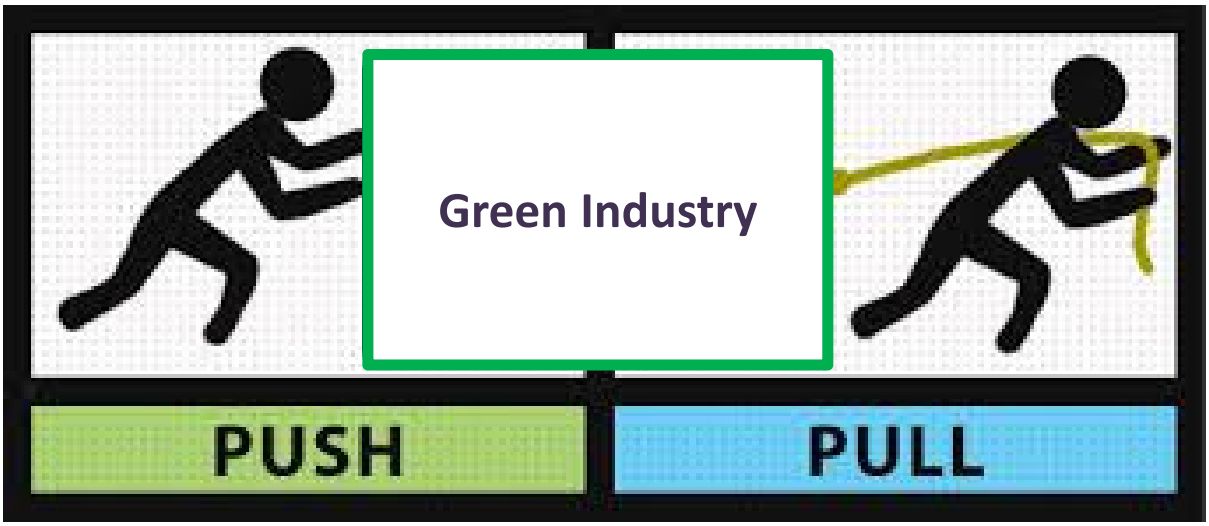
www.koppert.com

Green Industry is the industry that <u>actively adopts managerial and/or technological interventions</u> in order to pursue a circular economy and an absolute decoupling of value creation and resource exploitation.

Push or Pull ??



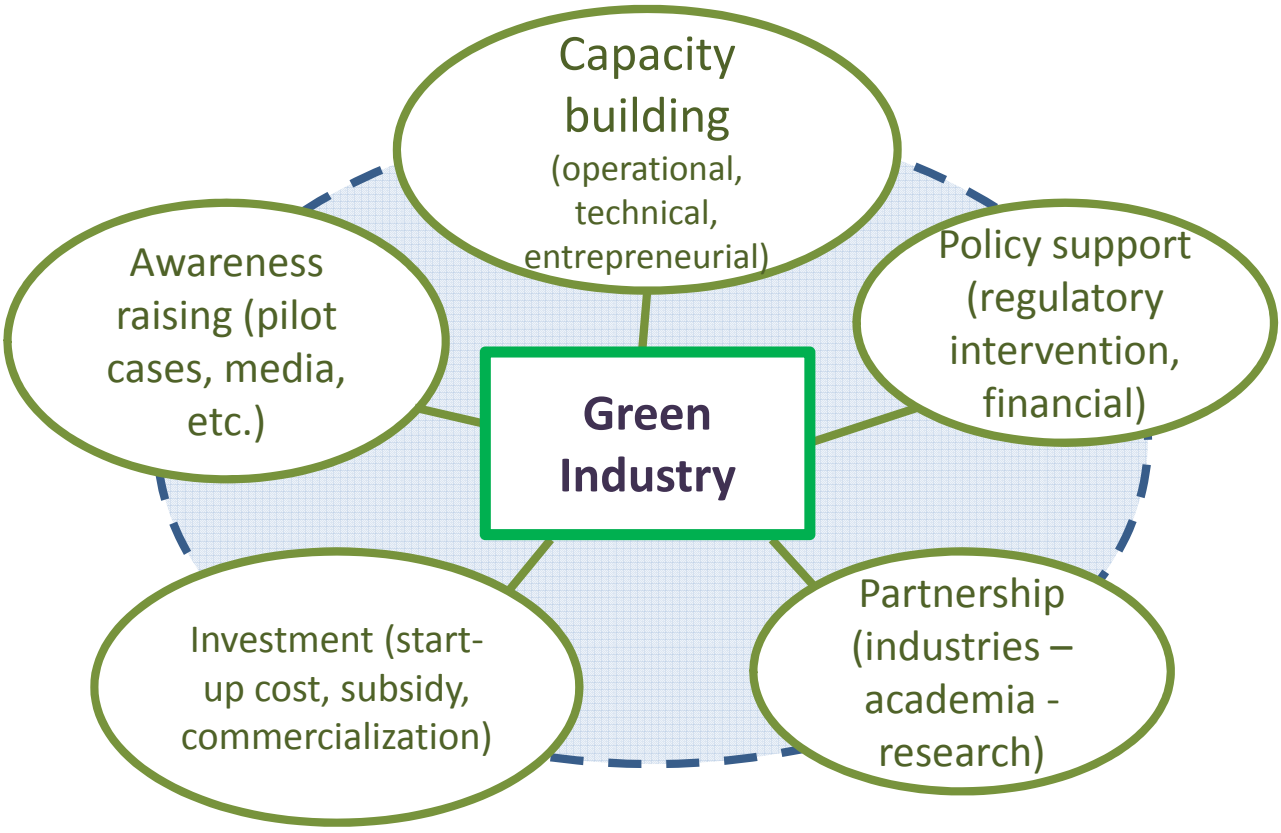
Push & Pull !!



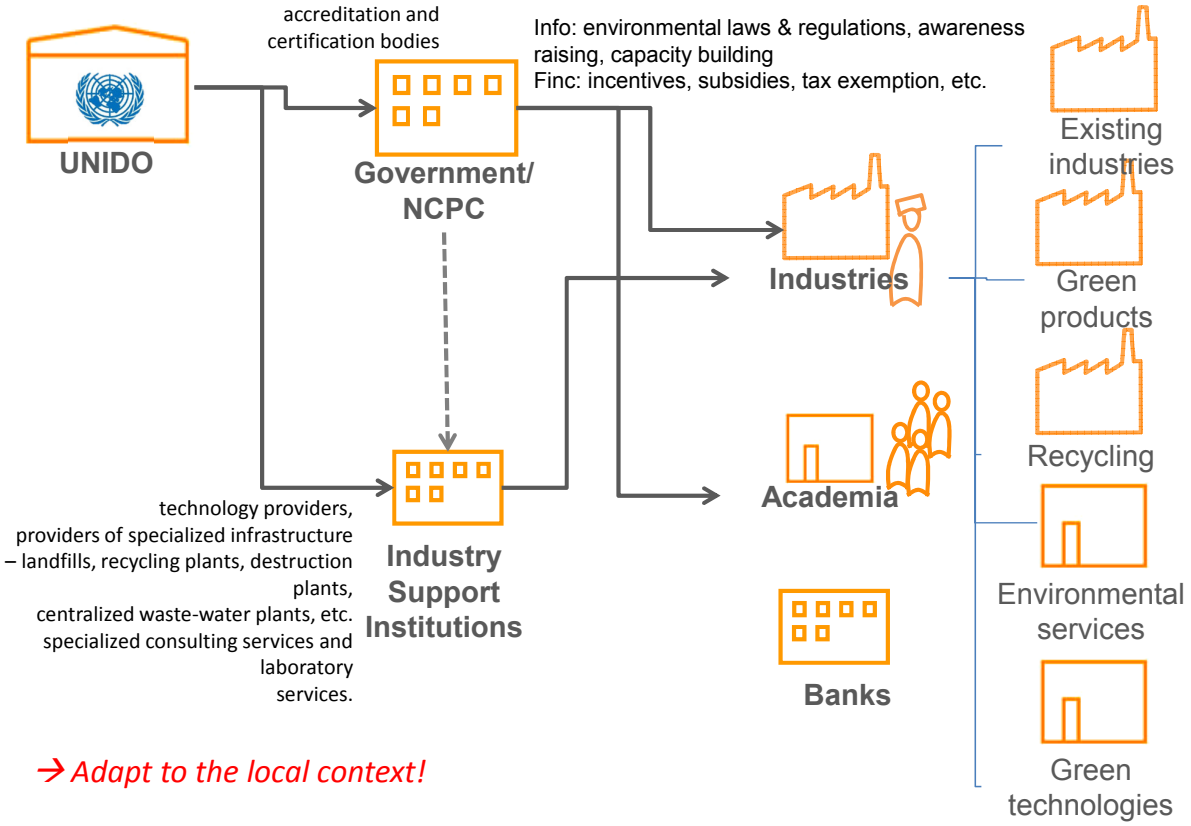
Intl./ntl. Institution
Government
NCPC
…

Industries
Industry associations
Green technology, service, infrastructure
…

Practical Actions for Green Industry



Sketch of a system map for GI implementation



→ *Adapt to the local context!*

GrAT TU WIEN TECHNISCHE UNIVERSITÄT WIEN Vienna University of Technology

Thank you!

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