



# **Greening of Industrial Parks in the context of Global Urbanization**

**Prof. Suren ERKMAN**

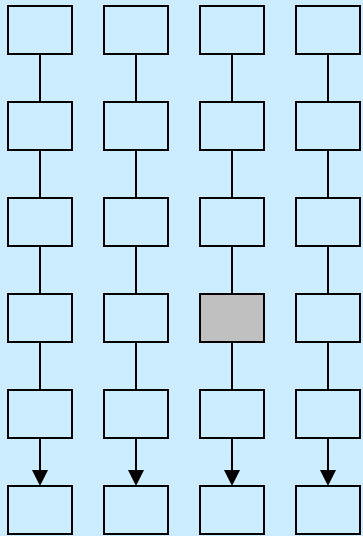
**Head, Industrial Ecology Research Group**

**Green Industry Conference**

**Ulsan, Republic of Korea, June 29, 2016**

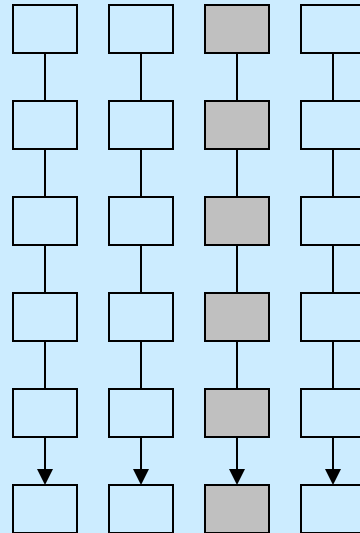
# Green Industry: scales for implementation

## RECP



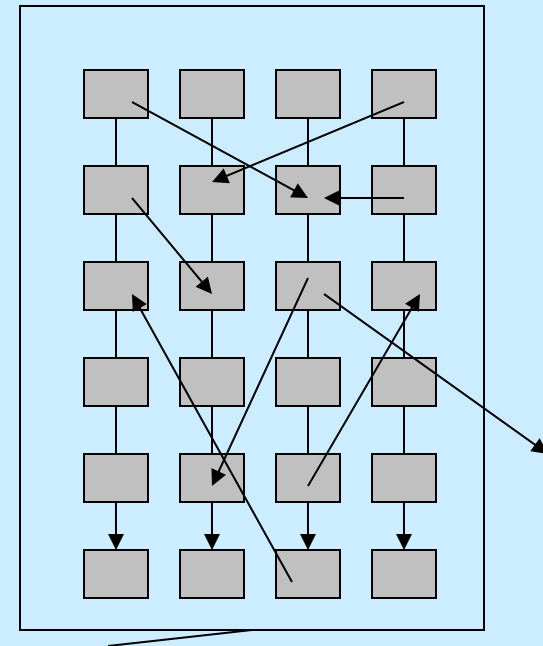
**Processes &  
products**

## Extended RECP



**Value chains**

## Systemic RECP



**Conindustrialization**

# Spatial pattern of industrialization

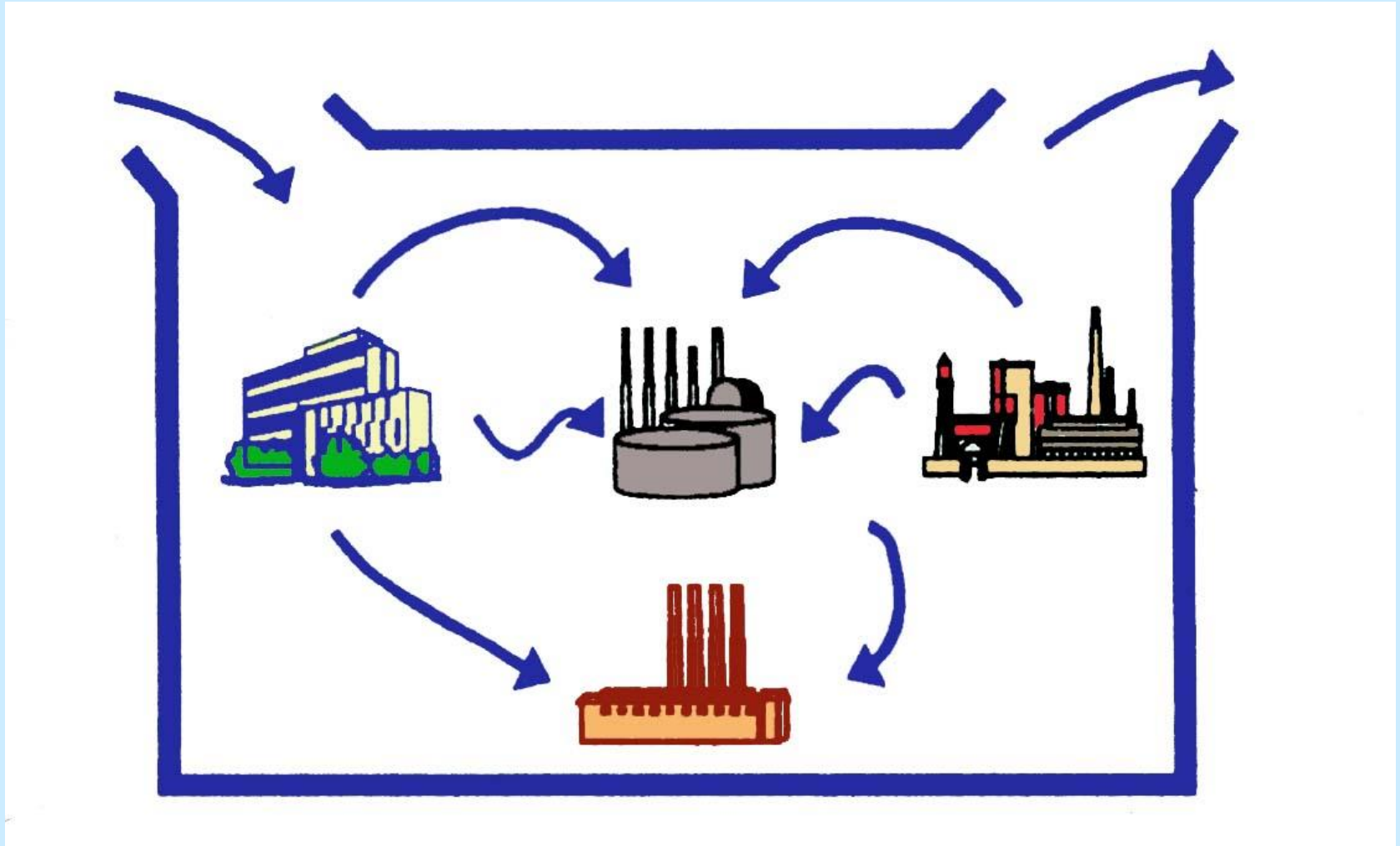
**George T. Renner: Geography of Industrial Localization, *Economic Geography*, Vol. 23, N° 3, July 1947, pp. 167-169.**

**«Industrial interrelationships» (p. 180):**

*«There are relationships between industries, sometimes simple, but often quite complex, which enter into and complicate the analysis. Chief among these is the phenomenon of industrial symbiosis. By this is meant the consorting together of two or more dissimilar industries.»*

# Inter-enterprises synergies or Industrial Symbioses

## Eco-industrial Parks (EIPs) or networks

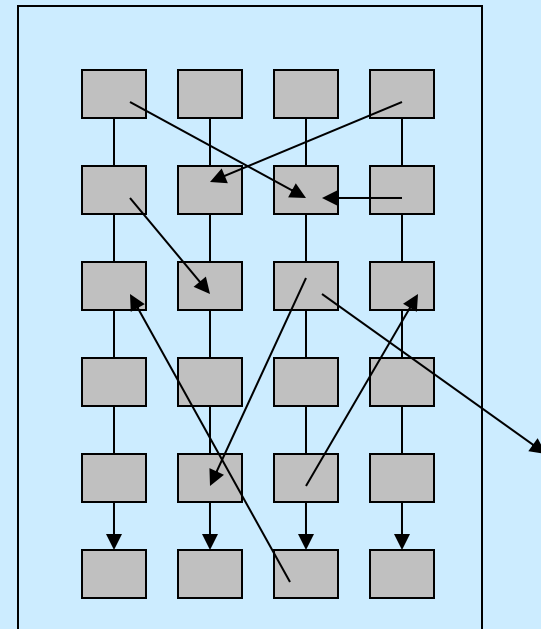


# Green Industry: scales for implementation

## Challenges:

- **Implement RECP collectively**  
(specific governance and tools)
- **Take into account the disruptive dynamics of the globalized economy**  
(e.g. 3D printing, etc.)

## Systemic RECP (EIPs)



## Conindustrialization

# Spatial pattern of industrialization

**George T. Renner: Geography of Industrial Localization,  
*Economic Geography*, Vol. 23, N° 3, July 1947, pp. 167-169.**

**«Conindustrialization» (p. 181):**

*«This tendency for fabricative industries to develop symbiotically is, after industrial maturation has been reached, very striking. Its net result is to produce urbanization and urban clustering on a large scale.»*

**UNIDO Project Manager: Dr. René van Berkel**

**International Lead Expert: Prof. Suren Erkman, UNIL**

***UNIDO Global Review of Eco-industrial Parks (EIPs)***

***in Developing and Emerging Countries:***

***achievements, good practices and lessons learnt (2014/2014)***

**33 case studies in 12 countries (+ national policy reviews)**

**Follow up project starting in 2016**

# *Suggestions and recommendations*

- **Need for awareness, promote EIP concepts**
- **Need for «institutional» definition of EIP**
- **Not many requirements for labels/certifications**
- **Need for capacity building**
- **Need for relevant policies (remove barriers, etc.)**
- **Need for dedicated mechanism/structure at the level of the park**



# **General conclusion**

**Establish overall framework for mainstreaming and upscaling eco-industrial parks.**

**In particular:**

- EIPs as key element of regional development**
- EIPs as part of urban infrastructure**
- Plan and invest accordingly**
- Create business opportunities, attract investment**

# Perspectives / Suggestions

**Launch global thematic initiatives, e.g:**

**-Agro-industrial complexes in urban environment (3D farming, confined agriculture, closed loops)**

**-Systematic valorization of CO<sub>2</sub> (from concentrated sources or Direct Air Capture) for valuable products («carbon negative» EIPs).**

# CO<sub>2</sub> utilization





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

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