

Royaume du Maroc

Ministère délégué auprès du
Ministre de l'Énergie, des Mines,
de l'Eau et de L'Environnement,
Chargé de l'Environnement



Ministère de l'Industrie, du
Commerce, de l'Investissement
et de l'Économie Numérique



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MCA-Morocco



International Conference
**Sustainable Industrial Areas:
Be Part of the Climate Solution**
14th and 15th March 2017 | Rabat Morocco

Mr. Suren ERKMAN, Lausanne University, Switzerland

The Role of Sustainable Industrial Areas in the International Context & their Potential to Contribute to CC Mitigation & Adaptation

*Climate change adaptation and mitigation:
The role of sustainable industrial areas*

Prof. Suren ERKMAN, PhD

Head, Industrial Ecology Research Group, University of Lausanne

Chairman of the Board, SOFIES Group, Geneva

Rabat, 14 March, 2017



«Take home message»

- **Industrial zones / parks: main global pattern of industrial development;**
- **Global warming: key challenge for economic activities and industrial areas;**
- **Crucial need for adaptation and mitigation strategies for industrial areas (brownfield and greenfield);**
- **Industrial areas can be part of the solution: SIAs / IEPs, including carbon utilization.**

**For the last ~ 70 years, main spatial pattern
for industrial development:**

«Industrial zones»

«Industrial estates»

«Industrial parks»

«Industrial areas»

Industrial Parks: description

- ⇒ **A defined geographical area which contains businesses of an industrial nature.**
- ⇒ **The essential element: the estate is administered or managed by a single authority that has defined jurisdiction with respect to tenant companies.**
- ⇒ **The authority makes provision for continuing management, enforcing restrictions on tenants and detailed planning with respect to lot sizes, access and utilities.**

(Source: UNEP Industry and Environment Review, 1996)

**Possible impact of global warming:
Economic activities likely to be negatively
affected by higher temperatures.**

Estimates:

- Global GDP by 2050: - 23%**
- Morocco GDP by 2050: - 20%**

Source: David Rotman, *MIT Technology Review*, Vol. 120, N° 1, Jan/Feb 2017, pp. 60-63

Industrial areas: vulnerable to climate change

Huge needs for adaptation and prevention

Priority: infrastructures to ensure continuity of economic activities

- Secure access to water and energy;**
- Secure logistics;**
- Preventing impacts of floods, storms, etc.**

The Saltina River, city of Brig (Valais): mud flood in 1993



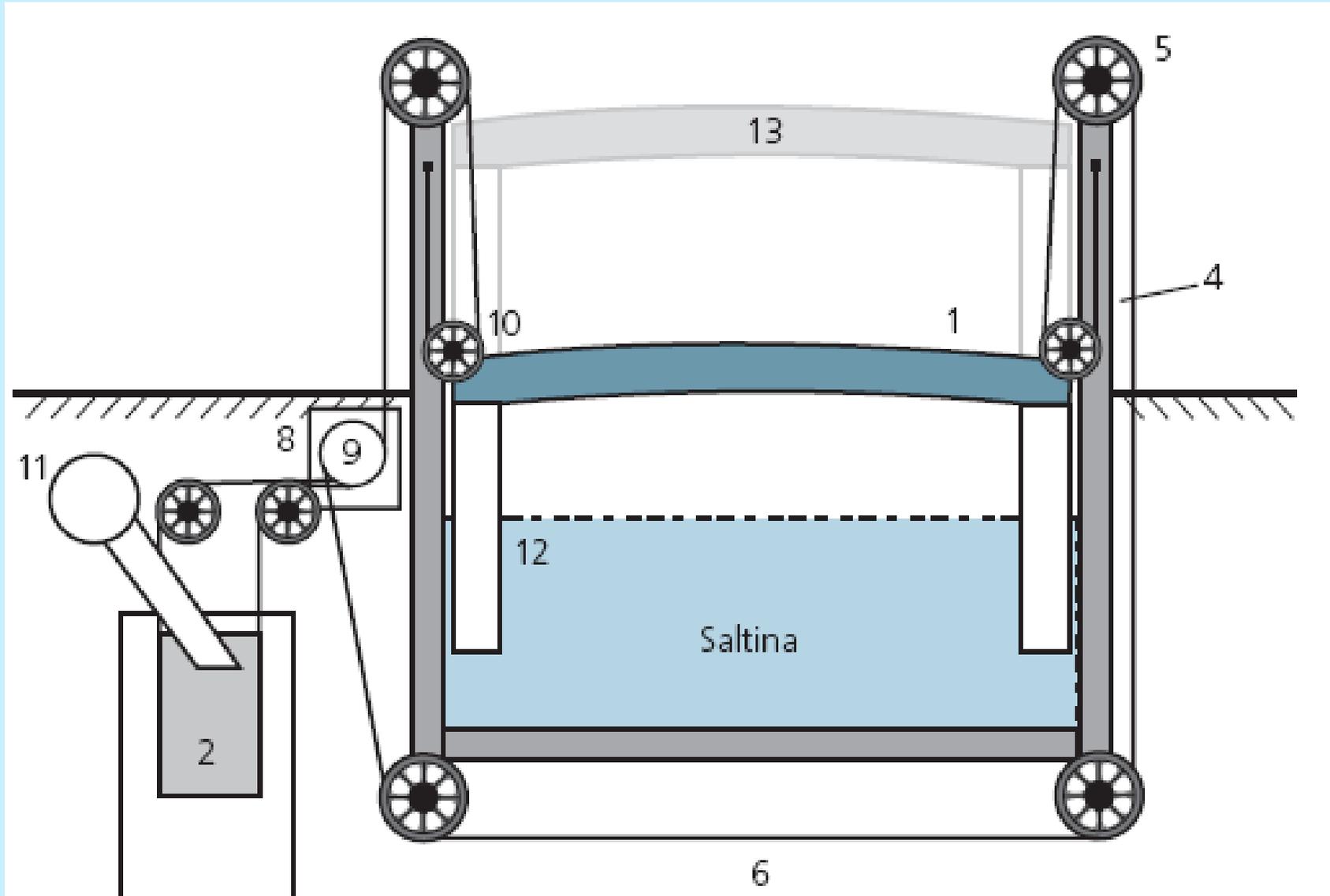
Adapting to climate change: flood prevention

«Mobile» bridge over the Saltina river (Brig, Valais)



Adapting to climate change: flood prevention

«Mobile» bridge over the Saltina river (Brig, Valais)



Main strategy for climate change mitigation:

Decarbonize

Decouple energy function from fossil carbon

Relative vs absolute decarbonization ?

Industrial areas:

large emitters of GHGs, particularly CO₂

1) Need to quantify these emissions

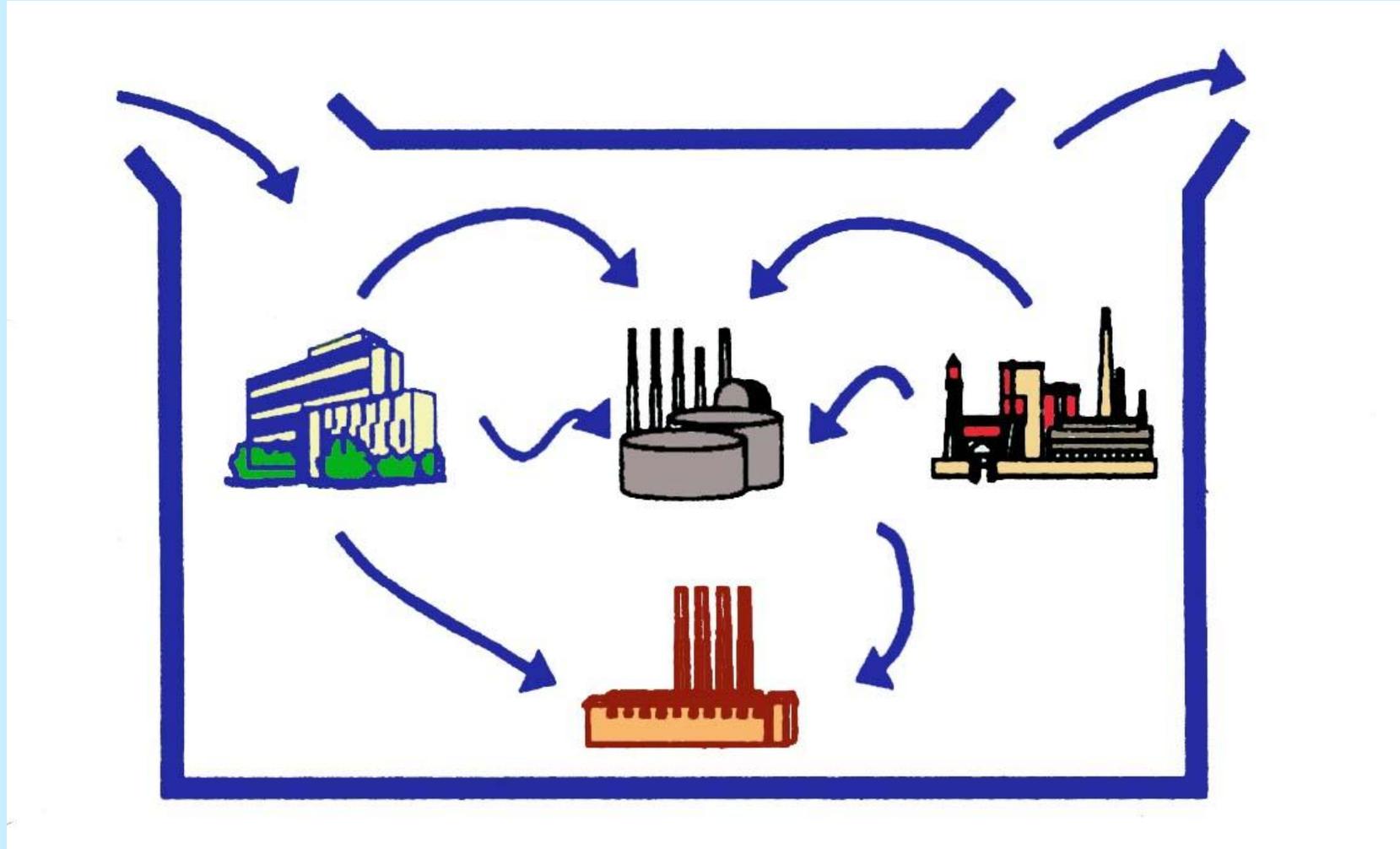
2) Industrial areas, part of the solution:

**- Cleaner Production and Resource Efficiency
(RECP)**

- CO₂ capture and utilization (CCU)

Inter-enterprises synergies or Industrial Symbioses

Eco-industrial Parks (EIPs) or networks



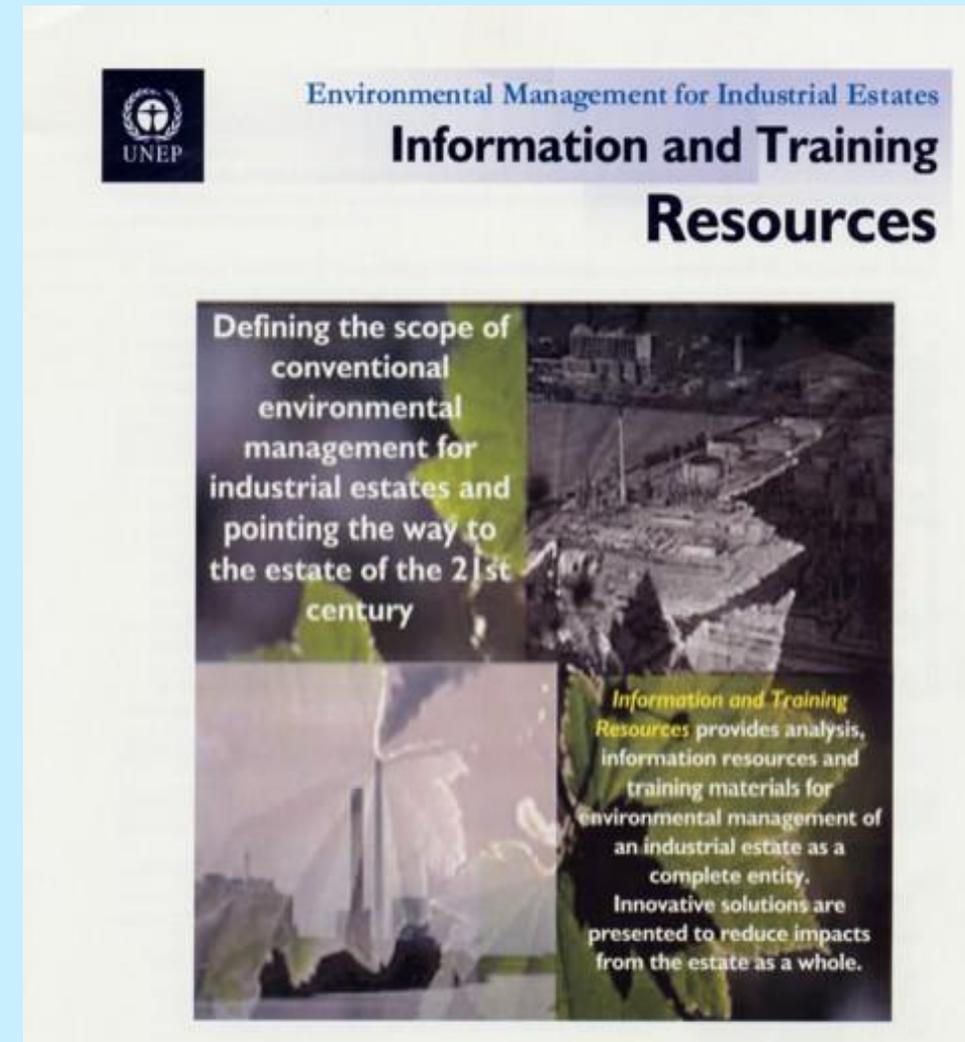
Environmental management of industrial estates

UNEP – DTIE, 2001

Colin Francis & Suren Erkman

United Nations Publication

ISBN: 92-807-2078-3





UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

GLOBAL ASSESSMENT OF

ECO- INDUSTRIAL PARKS

IN DEVELOPING AND
EMERGING COUNTRIES

www.unido.org <https://open.unido.org>

UNIDO Global Assessment of EIPs:

- EIPs as major actors for low carbon activities**
- EIPs as key element of regional development**
- EIPs as part of urban infrastructure**
- Plan and invest accordingly**
- Create business opportunities, attract investment**

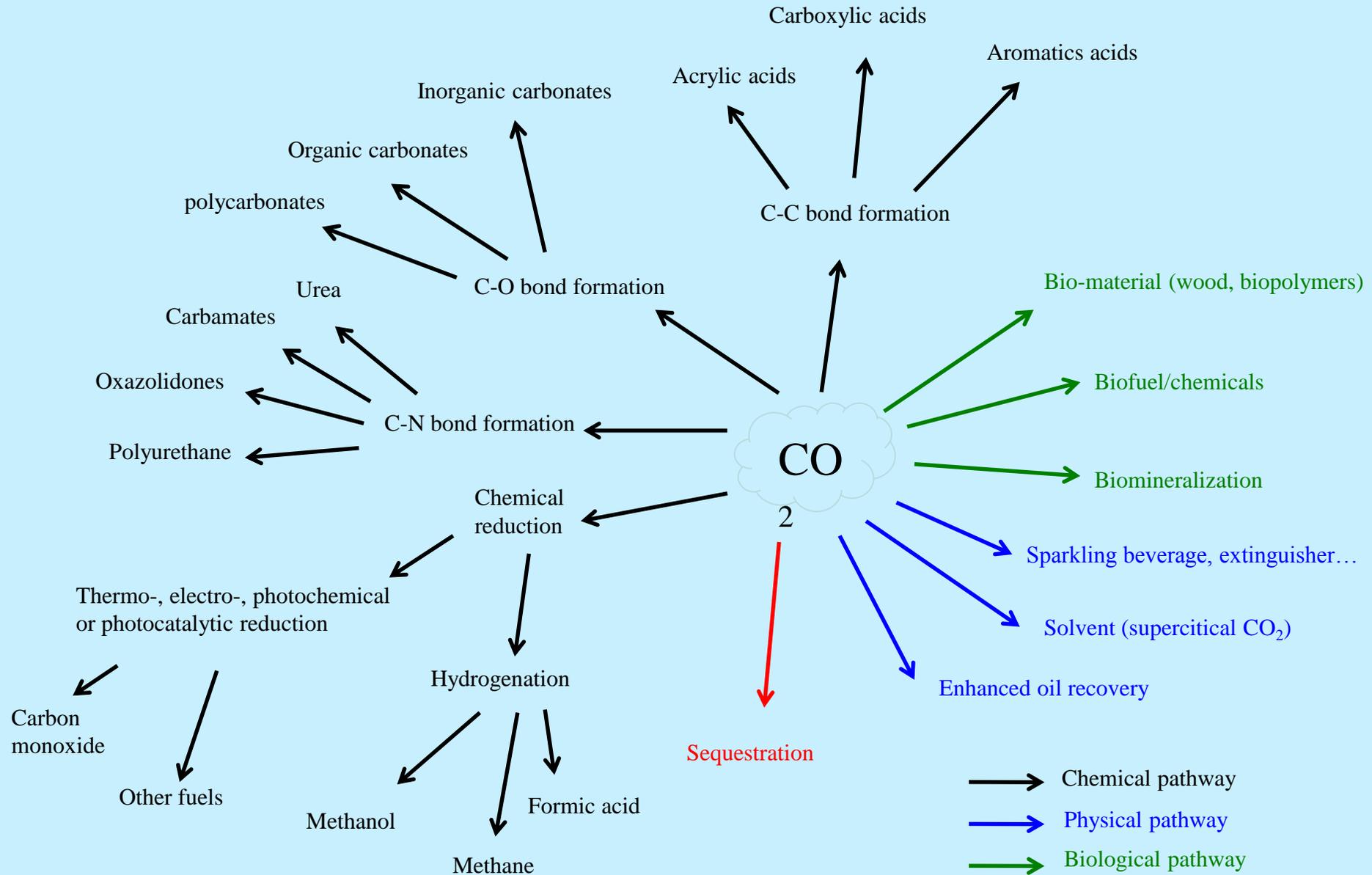
Strategy:

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

CO₂ utilization



Carbon capture and utilization (CCU)



Conclusions / Perspectives

Promote / intensify two global initiatives:

- Upscale and upstream RECP, e.g. through SIA / EIPs;**
- Systematic utilization of CO₂ for valuable products («carbon negative» industrial areas).**

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Thank you !



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