Eco-Clusters as Driving Force for Greening Regional Economic Policy

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Eco-Clusters and Innovations

Eco-Clusters

- Clusters
  
  “[...] geographic concentrations of interconnected companies and institutions”
  “[...] system of interlinked companies of an economic or industrial sector [...]”
  
  (Michael E. Porter, 1998/1999)

  - efficient and innovative structures, knowledge transfer
    (regional innovation system)
  - industry, science and public entities

- Eco-Industries

  - “...industrial sectors producing goods and services to measure, prevent, limit, minimize or correct environmental damage to water, air, soil and ecosystems, [...] addressing problems related to waste and noise.”
  
  (European Cluster Observatory, Eco industries, 2013)
(1) Eco-Clusters and Innovations

Eco-Clusters

- Eco-Innovations
  “any form of innovation resulting in [...] goal of sustainable development, through reducing impacts on the environment, [...] or achieving a more efficient and responsible use of natural resources.”

  (European Commission, Eco Action Plan, 2011)

- Eco-Clusters
  - regional innovative networks with focus on environmental friendly and sustainable technologies, products, processes
  - R&D and innovation in environmental technology
  - more in economically strong countries and regions, with significance for environmental topics
  - enhance regional economic activity and green growth
(1) Eco-Clusters and Innovations

**Characteristics**

- social aspects and sustainability
  - prevention/reduction of environmental impact
  - sustainable development, qualitative growth, green growth **BUT**
  - higher ecological burden and costs for social disadvantaged groups

- economic effects
  - double externalities: spillover, external benefits/reduced external costs
  - regulatory push/pull effect: no sufficient eco-innovations because of reduced investment and innovation incentives
(2) Literature Review on Eco-Clusters

- European Cluster Observatory
  - Eco-Industries as emerging industry - high growth rates, market potential
    (Ketels/Protsiv – European Cluster Panorama 2014)
  - trend: “integration of specialized eco industries-related companies into larger industrial groups”
    (Eco Industries, 2013)
  - “cluster policies have the potential to further leverage Eco-Innovation”
    (Barsoumian et al., 2011)

- European Commission
  - Eco-Innovations for a sustainable future
Research Question and Research Strategy

Research Question

- hypothesis

*Eco-Clusters differ from other clusters, have to be policy-driven and therefore set up top-down.*

- uncertainty about new technology on a developing green market
- high risks and costs for SMEs and start-ups
- eco-innovations: characteristics of radical innovations (external effects)
- public good character of environmental issues
- governmental and public commitment is necessary
  ... to create certainty on evolving market
  ... for more private investment in environmental technologies
  ... reach long-term goal of sustainability and socio-ecological transition
  ... connect actors (public, private, research units)
  ... to further encourage social engagement for environmental and ecological topics
(3) Research Question and Research Strategy

Own Empirical Research on Eco-Clusters

- personal interviews
- 9 Eco-Clusters in Austria
  - 7 included in research
  - answers of cluster managers and regional policy makers
- own questionnaire, indicators

Source: http://www.clusterplattform.at/index.php?id=51
(3) Research Question and Research Strategy

Applied Analysis Criteria - Indicators

- Emergence (initiating parties)
- Governance Structure (private/public)
- Cluster Type (top-down vs. bottom-up)
- Organization and Cluster Management (external/internal)
- Ownership Structure (legal form)

- Financing
- Objectives (local/corporate)
- Internationalization
- Research & Development
- Commitment of Members
- Region and Cluster
Research Findings I

- Eco-Clusters in Austria
  - all (observed) initiated top-down
  - public or private-public partnerships
  - externally organized and managed (local business agencies)
  - financing structure: regional funding, member fees

- cluster structures – main objectives
  - support of cluster members (companies, SMEs)
  - provide institutional and information structures
  - strengthen innovation activity and competitiveness of region
  - regional growth through innovation
  - cooperations: interface for local companies, research units and public units
Research Findings II

- the economically stronger a region, the higher public interest in Eco-Industries and sustainable growth
- interest of regional public units: local business agencies, strengthen regional network
- research activity and innovative capacity appear in research units rather than enterprises
- SMEs: lack of self-organization, high risks and costs, uncertainty
(5) Implications for Economic Policy

Incentive Structures I

- national and regional development strategies: environmental and sustainable issues as a long-term goal
- adequate legal frameworks for Eco-Industries
- incentives for corporate research/innovation activity:
  - project cooperations with research units
  - project calls in environmental topics
  - direct financial funding opportunities (SMEs)
- alternative funding structures: R&D investments of larger private companies
(5) Implications for Economic Policy

Incentive Structures II

- education/qualification offers in eco-related industries
- enhancing regional business settlements in Eco-Industry
- encourage regional companies to specialize in energy self-sufficiency
- increase of start-ups in Eco-Industries
(5) Implications for Economic Policy

**Greening Regional Economic Policy**

- integration of sustainability, ecological and societal goals with regional development and competitiveness

- long-term goal in regional development strategies

- publicly initiated eco-clusters as driving force for greening regional economies

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Further Research

- regional data surveys
- statistical significant differences
  - Austria: other clusters
  - European Union: Eco-Clusters vs. other clusters
- questionnaire: top-down/bottom-up initiation of other clusters
(7) Conclusion

- Eco-Clusters have to be initiated top-down
  - governmental and public commitment can create certainty on an evolving green market
  - to arouse interest for more private investment in environmental technologies,
  - provide regional infrastructure and prosperous surroundings for eco-innovations,
  - network and cooperation possibilities (between companies, science and politics),
  - public interest and regulation is needed
  - as eco-innovations show indications of radical innovations,
  - internalize externalities and market failure
  - environmental and sustainable topics have to be implemented in long-term strategies
  - green economic policy and foster eco-innovations in eco-clusters,
  - increase settlement of firms and employment in eco-industry and regional prosperity
  - to reach a change of sustainable behavioral pattern in the long-run, as well as
  - green growth
Thank you!

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Literature

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