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Circular Economy, Transformative Tourism and the role of place and context – Examples from the island of Bornholm

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Introduction about myself and CRT



- I am a senior researcher at the Centre for Regional and Tourism Research; I have a PhD on Geography of Innovation and Local Food.
- The Centre for Regional and Tourism Research is a small independent research centre with 16 employees, established in 1994 and located on the Danish island of Bornholm.
- CRT has an annual grant of ca. 750.000 Euros from the Ministry of Education and Research, which is supplemented with project funding of ca. 950.000 Euros.
- We carry out research and consultancy analyses about economic and social development with a focus on peripheral, rural areas (tourism, local food, place-based businesses, local education and labour markets, sustainable development).
- From 2016-19 we were involved in the EU Interreg South Baltic project CIRTOINNO on Circular Economy in tourism with partners from Sweden, Poland, Lithuania, Latvia and Kaliningrad.

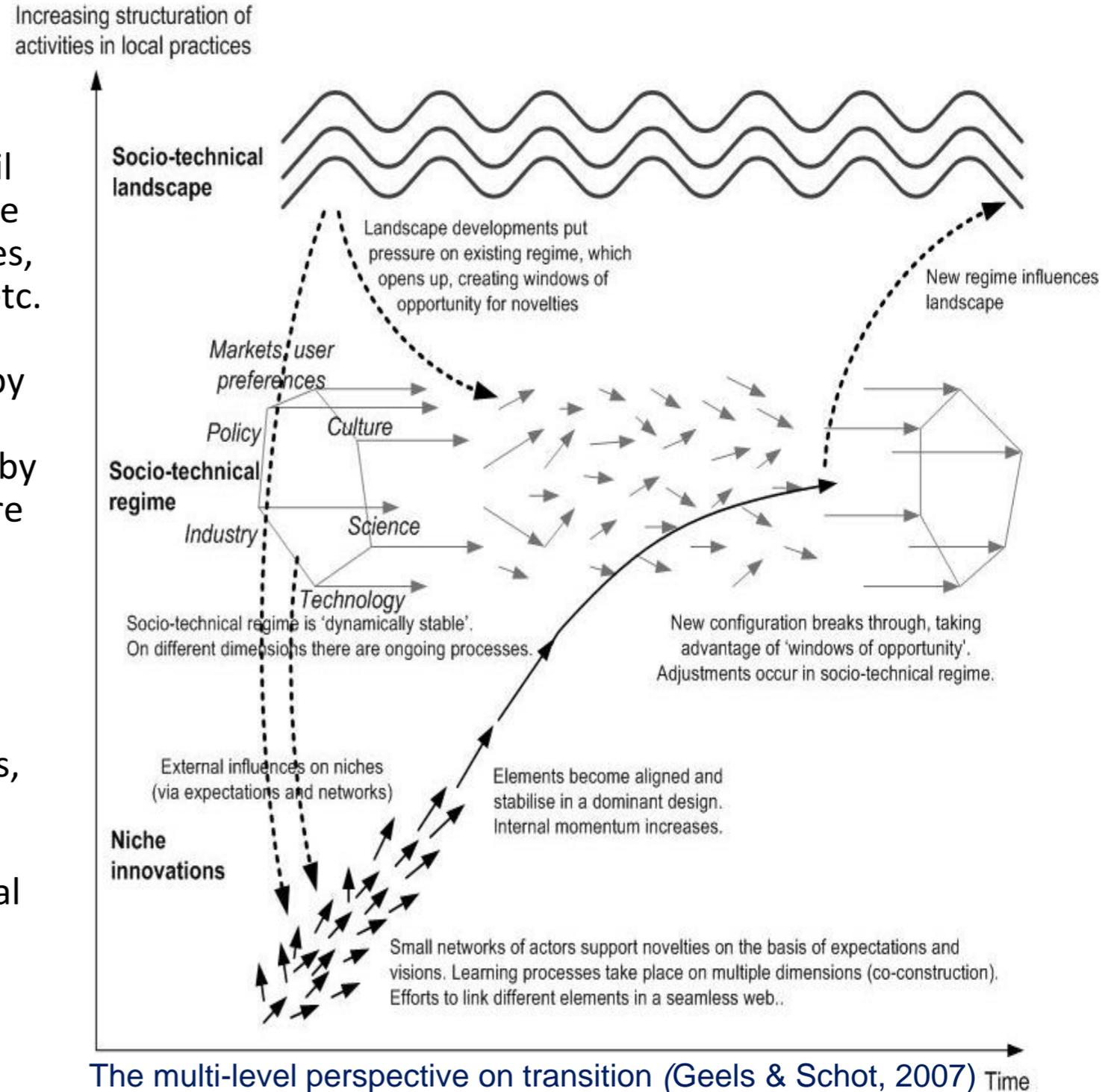
”Circular Tourism”: A matter of system transition – not just tourism innovation

Realizing truly circular/sustainable forms of tourism requires a **systemic transition** of the “socio-technical regime” (i.e. the prevailing linear economy), which sustains tourism as we know it today, relying on fossil energy and technologies, abundant use of exhaustible natural resources, laws and regulation, infrastructures, financial markets, business models, cultural norms, etc.

The prevailing linear economy **regime** is challenged by political, economic and cultural changes at overall **landscape** level (e.g. the Paris agreement) as well as by innovations in **niches** (such as tourism) to create more sustainable products, technologies, organizational practices.

System transition processes:

- not deterministic but open-ended social dynamics, outside control of individual actors
- constrained by power structures and technological path dependency
- placebased, framed by geographical contexts



Tourism – by definition unsustainable?

- The tourism industry unquestionably has serious sustainability problems:
 - immense CO² footprints due to mainly the travelling element;
 - vast use of energy, water and other natural resources;
 - negative impact of mass/over-tourism on natural habitats, local cultures and communities;
 - etc.
- Nonetheless, it is often overlooked that except for the travelling part most of tourists' consumption during holidays (often collectively provided) is not additional to but replacing their daily consumption (often individually provided)
- Further, tourism has certain **transformative potentials** for encouraging a broader societal sustainability transition - at production as well as consumption side. Tourism is a “showcase”, illustrating important sustainable elements of circular economy consumption (sharing economy, collaborative consumption, experience economy)

“Transformative Tourism”: Business opportunities at production-side

Reduction of natural resources flow

Tourism businesses can reduce their use of natural resources (and save costs) by implementing circular principles (reduce, reuse, recycle, recover) in their operations and supply chains (see business cases in Manniche et al. (2019))

For examples:

- Energy saving/efficient **buildings**
- Water and energy-saving **laundry technologies** (e.g. laundry service company *Berendsen*: reusing water, saving energy and linen)
- **Extending the life** of furniture, carpets, and other fixtures through repairing and remanufacturing
- Reducing **food waste** through new practices, i.e. produce-on-demand, smaller buffet plates, staff awareness etc.

“Transformative Tourism”: Business opportunities at production-side

New products and revenue sources

Tourism businesses may have opportunities of creating new products and revenues from “waste”:

- Sale/redistribution of food waste (*Too Good To Go* (<https://toogoodtogo.dk/>): Restaurants, caterers, supermarkets etc. advertise left-over food that customers can find and purchase via an app and then collect
- Sale/redistribution of used furniture, mattresses, building materials and other “bi-products” (remanufacturing and up-cycling)
- Rental of electrical cars

An action framework for CE innovation regarding material flows

Two dimensions:

- 1. Temporal scope:** addresses to what extent a new circular technology or service is immediately accessible or if there are temporal barriers (new knowledge, technology, capital) to the innovation at the level of individual businesses
- 2. Scale of innovation:** addresses whether the innovation can be carried out firm-internally or if it depends on coordination with upstream value chain actors or even sector-external actors/initiatives.

	Near future		More distant future		
	Material flows	Firm internal; no or few current barriers	Dependent on other actors or sectors, no or few current barriers	Firm internal; current barriers to be overcome	Firm external, current barriers to be overcome

See Manniche et al. (2019)

An action framework for CE tourism innovation (examples of material flows)

Material flows	Near future		More distant future		
	Firm internal; no or few current barriers	Dependent on other actors or sectors, no or few current barriers	Firm internal; current barriers to be overcome	Firm external, current barriers to be overcome	Sector external, current barriers to be overcome
Accessing remanufactured furniture, fixtures, etc.	Implementation of reverse supply chain management principles/code of conduct for suppliers based on CE	Investing in and purchasing reused and re-manufactured hotel accommodation products, forming alliances with sharing platforms	Expanding the supply chain management principles to include all suppliers	Expanding the types of products available as remanufactured or reused.	Cascading systems for the design, use and treatment of many products are developed
Circular water systems	Adoption of monitoring and management systems for water	Access to environmentally responsible laundry services	Investment in greywater circular water systems	Developing new greywater treatment systems with innovative partners	Access to regional circular water treatment including greywater handling

“Transformative Tourism”: Business opportunities related to consumption

The Experience Economy of tourism

- Tourism is “*Experience Economy*” (Pine & Gilmore, 1999), i.e. value-creation relies not on functional product features but on memorable, meaningful experiences, co-created by producers and consumers.
- Tourism relies on an interpersonal host/guest relationship, which gives opportunities for ***personalized interaction*** and influencing the way guests think and behave.
- Circular ideas and principles can be important ***narrative tools*** for the inclusion and engagement of guests in experiences with a positive social and environmental impact
- The engaging potentials of “circular biographies” of products and services compared to factual information about reduction of used materials

“Transformative Tourism”: Business opportunities related to consumption

The sharing economy and collaborative consumption of tourism

Tourists carry very little with them, immerse in new surroundings and socio-technical setups, and use the properties of other people, e.g. a room and a bed to sleep in. In other words, the tourism and hospitality sectors already operate on the basis of circular economy business models such as replacing ownership by access, sharing amenities between users.

However, sharing economy/collaborative consumption could be organised and exploited more strategically as a core element of all services and experiences for guests (“come-as-you-are-and-use-what-we-have”). For example, hotels could collect used artefacts from locals (raincoats, cycling equipment, toys, books etc.); the use and evaluation of such goods and services by guests could be part of the marketing and storytelling.

“Transformative Tourism”: Business opportunities related to consumption

“*Transformative Living Labs*”

Tourism businesses and entire destinations could re-organize themselves as *Transformative Living Labs*, where guests experience, play with, gain information and knowledge, and radically re-think the organization of their daily life, use of resources, social relationships etc.

The guests’ use of energy, electricity, water etc. could be reflected in the *pricing* so that guests are rewarded for responsible behaviour. They could even be encouraged to produce their own electricity via exercise bikes in rooms.

The importance of place and context for approaches to sustainability and circular economy

- Every place and tourism destination is unique and characterized by specific natural, economic, infrastructural, political, social, and cultural preconditions
- Thus, the opportunities and barriers for circular/sustainable tourism differ from place to place; business and policy approaches to support sustainability transitioning should be place-based and place-specific (bottom-up)
- Yet, system transition also requires common visions and universal initiatives (top-down) – for example a common tourism indicator system with which places/destinations can benchmark and compare their sustainability efforts and performances (Danish destinations are about to implement such a system, elaborated by CRT)

Conditions and strategies for sustainability and circular economy on Bornholm

Renewable Energy

- Today 100% of electricity produced by renewable sources (wind, solar, biomass) and in 2020, Bornholm was winner of EU Horizon 2020 **Responsible Island Prize** for its ambitious strategy/work for renewable energy (Samsö, another Danish island, was second) – but long journey and still a long way
- Bornholm has worked in decades for converting from fossil to renewable energy sources. In 2008, Bornholm municipality launched the **Bright Green Island strategy for renewable energy** and for becoming **test lab for new energy technology** (partnerships with external universities and tech-companies); strategy revised in 2018 (*The Bornholm Goals*).
- **Comparative advantages** as ‘energy test lab’: clearly delimited electricity net (one cable in/out); smart grid infrastructure; ‘full-scale’ economy/society of 38.000 inhabitants, public authorities, hospital and other institutions, transport systems etc.
- As in the rest of Denmark, collective **community heating** is widespread (more than 60% of households connected); use of biomass (burning of local household waste and wood) but will be faced out by 2040.
- In 2021, launching of **Bornholm Energy Strategy 2040** (no fossil energy by 2040 incl. community heating and land/sea transport).
- In 2022, launching of national plan for 2-3 GW **offshore windmill park and large-scale Power-to-X facilities** on Bornholm. If Bornholm will be properly connected, this will allow for a 100% fossil free society.

Conditions and strategies for sustainability and circular economy on Bornholm

Other factors and initiatives

- Bornholm is big (summer) **tourism destination**; **sustainable place-making** and place-branding have gained importance in recent years.
- Island status (“bounded region”) means dependence on “**dirty**” **ferry/flight transport** as well as serious **barriers for reuse and recycling** of disposed resources.
- Ambitious municipality strategy ***No Waste by 2032***; but still only limited waste separation due to barriers connected to scale of island and physical structure of villages.
- Larger EU funded sustainability projects: *BYG360* (reuse/recycling of building materials) and *Sustainable Bottom-line Bornholm* (combining sustainable transition and economic results targeted tourism and other industries)
- **Bornholm as quality brand**: recognized for small-scale local foods and Arts & Craft (as first region in Europe, in 2017 Bornholm was assigned with the title *World Craft Region* by the *World Craft Council*).

Hotel Green Solution House: A lighthouse for Bornholm's green place-brand

- The hotel Green Solution House (GSH), located on the island of Bornholm/Denmark, represents a particular type of business model that may be of **interest for destination developers**.
- GSH is a small 4-star hotel and conference centre with 92 rooms and 20 employees. The GSH recently was nominated by *The Guardian* as one of the 10 most sustainable hotels in Europe. The hotel is based on a **cradle-to-cradle** business model and a **holistic approach to sustainability and circularity**, integrated in almost all aspects of its operation.
- The GSH functions as a **living lab and showroom** for new technical solutions and large parts of the hotel and conference space are used for **visualizing the varying solutions** to guests and other visitors. The hotel has **partnerships** with a number of advanced technology firms (especially in the construction sector) that wish to experiment and test new technologies in a real environment.
- The GSH has adopted numerous 'green' and circular solutions covering a variety of hospitality services such as energy producing solar-panels and skylight windows, circular water purification and recycling systems, upcycled furniture, air cleaning carpets and intelligent indoor climate systems, elimination of food waste and use of plastic, local supplies of foods and building materials, and interaction with the surrounding landscape and biotopes.
- Most of the individual solutions developed and implemented in the GSH do not rely on specific Bornholm resources but are **immediately transferable** to other contexts including other peripheral regions and could be used for cross-regional learning.

Summing up

- From an overall system transition perspective, **tourism forms only a small (unsustainable) niche**, relying on other sectors, legislation, technologies, infrastructures etc. The tourism industry and individual tourism businesses may contribute to but cannot alone realize a truly Circular Economy. **Concerted entrepreneurial and policy actions at multiple levels** are required.
- Yet, tourism is a **key sector with potentials** for encouraging a transition to a circular economy. Already relying on “collaborative consumption” and co-creative “experience economy” business models, tourism seems to encapsulate and animate important consumption aspects of the CE concept which is often overlooked (**‘Transformative Tourism’**)
- **Production side:** The Circular Economy has potentials for helping tourism businesses as an **instrumental guide for innovation** of more sustainable production practices through the reduction, reuse, recycling and recovering of natural resources, and through the supporting of local resource flows, for instance by “sharing economy” and “collaborative consumption” arrangements.
- **Consumption side:** Moreover, from a storytelling and experience creation point of view, the concept of circularity can serve as a **strong narrative tool** for the engagement of tourists in developing more sustainable consumption practices during and after their holiday stays.

Summing up (II)

The peripherally located island of Bornholm was used to illustrate the complex multi-level and multi-scalar dynamics of transitioning an economy and society towards sustainability as well as the opportunities and constraints for local economic and social development that such a transitioning gives rise to.

In general, policies and research on sustainability transition to a large extent are focussed on resolving the problems of metropolitan and urban areas, which is understandable considering the concentration of people there. However, there is a lack of knowledge on the specific preconditions, opportunities and constraints of more densely populated, rural areas related to the ongoing overall sustainability transition. I hope this lecture has been helpful also in this way.

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Thank you for your attention!

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