From linear to circular tourism: the case study of an Italian Ecologically Equipped Productive Area

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Abstract

Tourism-related activities greatly contribute to environmental degradation and, at the same time, represent one of the most vulnerable industries, considering that these activities are based on the availability of natural ecosystems in good condition and accessible to tourists. Circular Economy (CE) is considered an efficient way to overcome critical environmental impacts and natural resources scarcity in different sectors. It aims to overcome the take-make-dispose linear pattern of production and consumption, proposing a circular system in which the value of products, materials, and resources is maintained in the economy as long as possible. However, the application of the concept in the tourism sector is still unexplored and more efforts should be done to understand the potentialities of Circular Tourism. To implement CE principles, the Italian government has proposed the development of Ecologically Equipped Productive Area (EEPA). EEPA is a business cluster, in which firms share the objective of environmental sustainability. The present study tries to figure out how to apply CE concepts and practices in the tourism sector and to illustrate a project aiming at defining a EEPA in a tourist cluster. The research objective is to identify CE principles and business models applicable in the tourism sector, with a specific focus on the EEPA development.

Keywords: Circular Economy, Circular Tourism, Sustainable Tourism, Ecologically Equipped Productive Area (EEPA), Eco-industrial park.

1. Introduction

Tourism is one of the sectors responsible for environmental degradation and, at the same time, one of its biggest victims. Many of the tourist activities are based on the availability of natural ecosystems in good condition and accessible to tourists (Hall, 2001). This aspect is particularly critical when considering coastal tourism (Bruzzi, Boragno, Serrano-Bernardo, Verità, & Rosúa-Campos, 2011). In fact, if on the one hand the quality of the natural environment is one of its main attraction factors, on the other coastal tourism has a strong environmental impact because it insists on eco-system areas often very sensitive to human activities (Hall, 2001). In addition, often the coastal tourism is subjected to seasonality that contributes to increase the need to find proper management options to reduce its environmental impact (Rebollo & Baidal, 2009). Considering the strong growth of the sector, it is necessary to develop strategies to mitigate its environmental impact. In recent years, voluntary tools have been developed to improve the environmental management of coastal tourist areas, such as the Blue Flag, EMAS (Eco-Management and Audit Scheme) (Merli, Preziosi, & Massa, 2014), EU Ecolabel and the Legambiente Turismo Ecolabel (Chen & Bau, 2016; Marin, Palmisani, Ivaldi, Dursi, & Fabiano, 2009; United Nations Environment Programme, 2009). From a social point of view, the goal is to transform tourism into an opportunity to enhance and develop local crafts and cultures, strengthen the vitality of the local community, improve tourist facilities and local awareness of economic value of its cultural and environmental heritage, in order to encourage residents to safeguard it (Bramwell & Lane, 2008). Also at the EU policy level, the sustainable development of coastal tourism is having a growing importance. The European Parliament’s report on Blue Growth (European Commission, 2017) recommended a series of actions to boost the sector and support the development of sustainable tourism in coastal destinations. In the following year, a Communication of the European Commission entitled “A European Strategy for more Growth and Jobs in Coastal and Maritime Tourism” (European Commission, 2014) identified the need to strength the sustainability of coastal destinations, with a specific policy action aimed to “Promote strategies on waste prevention, management and marine litter to support sustainable coastal and maritime tourism”. Recently, Circular Economy (CE) has emerged as a guideline and an operating strategy for the implementation of sustainable development objectives (Merli, Preziosi, & Acampora, 2018). Even if in a development state, its principles may be suitable to be implemented in the tourism industry that could benefit both from
industrial symbiosis practices and sharing economy practices (Manniche, Larsen, Broegaard, & Holland, 2017). As touristic areas are composed by a multitude of supply chain actors of small dimensions, it is crucial to develop a strategy that can coordinate them to boost actions to mitigate their environmental impact. A greater coordination and cooperation among these actors would increase the efficacy and would reduce the monetary effort that single operators should sustain in the implementation of sustainable development-oriented actions. The efficacy of setting a common strategy to reduce the environmental impact and reduce costs has been widely documented by scholars through industrial symbiosis experiences (Chertow, 2000; Zhao, Zhao, & Guo, 2017). Some studies have also highlighted how a territorial cooperative approach in the environmental management of tourism areas can be effective, allowing the obtainment of several benefits (Battaglia, M., Daddi, T., & Rizzi, 2012; Hill & Gale, 2009). In Italy, these experiences have been fostered through the implementation of Ecologically Equipped Productive Area (EEPA) (Daddi, Tessitore, & Testa, 2015; Tessitore, Daddi, & Iraldo, 2015). Additionally, touristic areas are well-suited to develop sharing and performance economy practices, as part of a Circular Tourism strategy (Zhang & Tian, 2014a). However, little research has explored how to implement circular principles in touristic areas. The paper presents the first steps of a pilot project that aims at the implementation of circular tourism principles into an Italian coastal tourism destination, employing as a starting point the Italian experience provided by the EEPA.

Next sections provide an overview of the application of circular economy practices to the Italian EEPA and define boundaries and objectives of the Circular Tourism strategy. Next, material, methods and aims of the pilot project are presented. Then, in the Results and Discussion Section, the context, main objectives and potential outcome of the project are exposed. Finally, some conclusions are drawn.

2. The Ecologically Equipped Productive Area (EEPA)

The concept of EEPA was introduced for the first time in Italy in 1998 and in force with the decree 112/98 in the Italian national law. The EEPA are known in Italian as APEAs (Daddi, Iraldo, Frey, Gallo, & Gianfrate, 2016). The EEPA model is strictly linked to the concept of Eco-Industrial Park (EIP) (Daddi et al., 2015). In the Lazio Region, the EEPA is defined as: “an area destined to industrial, craft, commercial and agricultural production, also in mixed form (public and private), characterized by integrated management of infrastructures, centralized services and resources aimed at guaranteeing the environmental and economic sustainability of local development and at increasing the competitiveness of the established companies” (Regione Lazio, 2015). The EEPA can be conceptualized as a sustainable approach to production, aiming at reducing companies environmental impact and increase their competitiveness. The Italian legislation believes that it is up to the individual regions the task of regulating the EEPA discipline, but establishes some basic reference elements:

- the EEPA is endowed by infrastructures and systems necessary to guarantee the right to good health, safety, and environmental protection;
- they are characterized by forms of unified management of infrastructures and services;
- production facilities located within are exempt from the acquisition of permits that cover the use of the services therein (Gallo, 2013).

The definition of an EIP (APEA) in Italian legislation differs from those of other countries. However, some similarities exist between EIP and EEPA, like the possibility of integrated and shared environmental services and infrastructure and the collaboration between public and private entities (Daddi et al., 2015).

3. Circular tourism

The circular economy aims at creating a virtuous circle that produces goods and services without wasting the limited resources of the planet as raw materials, water and energy, minimizing the production of waste (Macarthur, 2013). In the same way, circular tourism proposes a model in which every tourism actor (traveler, guest, tour operator and supplier)
adopts an eco-compatible approach. Opting for circular tourism allows travelers to take a responsible approach at all stages of their stay, from preparation for travel to local experience (Zhang & Tian, 2014b). The steps to follow the circular tourism approach are: 1. Exploit the sustainable tourism opportunities offered by tourism agencies 2. Offer more sustainable tourism services 3. Choice of the most environmentally friendly transport option 4. Responsible management of selected services: use of local food products, crafts and eco-sustainable measures adopted 5. Waste management, energy and water conservation, etc. 6. Feedback between tourists and/or professionals to improve the sustainable tourist offer 7. Development of Sharing and Performance Economy (Green Ideas for Tourism, 2018).

4. Aim and methods of the study

As a strategy to support a sustainable development, the research tries to figure out how to implement principles of circular economy in touristic areas. The EEPA have been identified as a solid foundation to develop a pilot project in which actors representing different stages of the touristic supply chain cooperate and share resources to embrace a circular approach to their activities. After defining the EEPA members, the first step in this phase is to set clear goals that need to be implemented. Thus, in the next sections the actors involved in the EEPA and the priority areas of improvements that will serve as baseline to define more concrete actions in the next phased of the project will be presented. Goals and related-practices of the pilot-project were identified through the Italian EEPA regulation and using the ETA Beta approach (developed in the LIFE+ Project “Environmental Technologies Adopted by Small Business Operating in Entrepreneurial Territorial Areas”)(ETA-BETA PROJECT, 2013). Additionally, the guidelines of Tuscan Region for EEPA development were considered (Tuscany Region, 2011). Then, the guideline published by ITACA (“Institute for Innovation and Transparency of Public Tenders and Environmental Compatibility”) (ITACA, 2013) and ENEA (Italian National Agency for Alternative Energies) from the project SIAM (“Sustainable Industrial Area Model”) (Tarantini, Di Paolo, Dominici, Peruzzi, & Dell’Isola, 2007). Finally, EMAS and the related Sectoral Reference Document for Tourism were employed (Styles, Schönberger, & Martos, 2013). Based on the best practices selected, the partners of the pilot-project were interviewed with semi-structured interviews to figure out which of the proposed EEPA goals were applicable to their operations.

5. Results and Discussion

5.1 Context: the EEPA Gaeta Green Tourism development

The EEPA Gaeta Green Tourism, started in 2017, on a tender for call of Lazio Region, aiming at developing the EEPAs in his territory. The project started in collaboration with the department of business study of Roma Tre University, the spinoff Toureco and different tourism firms in the area of Gaeta. The EEPA project is mainly located in the municipality of Gaeta (20,630 inhabitants) in the province of Latina in southern Lazio. The municipality extends for 29 km². Its prevailing economic vocation regards restaurant business and tourism, commerce, services, fishing and agriculture. In recent years the municipality has invested heavily in the development of tourism and its deseasonalization. In fact, according to ENIT (Italian National Tourism Agency) (ENIT, 2017) research results, the Gulf of Gaeta ranked first in Italy between June and September for seaside resorts marking with a 29.3% increase compared to last year (ENIT, 2017). The municipality of Gaeta has also been active for years in the development of a tourism that is more attentive to environmental, social and economic impacts. As evidence of this commitment, the city of Gaeta received the “Blue Flag” award in 2017 (for the fourth consecutive year), which has been considered by scholars as one of the most powerful tool to ensure environmental quality of tourism (Capacci, Scorcu, & Vici, 2015).

In this pilot phase, the EEPA is composed by 6 touristic activities: one hotel, two Bed and Breakfast, one tour operator, one restaurant, and one beach club. Considering the tourist sector supply chain (Figure 1), the project involves actors belonging to different areas of the chain: tour operators, hotels, B&B, beach club and restaurant services. The final goal will be to
involves a greater number of actors, in order to take into consideration the entire supply chain involved in the tourist destination supply chain.

![Tourism supply chain](image)

**Figure 1. Tourism supply chain (European Commission - Joint Research Centre - Institute for Environment and Sustainability, 2012)**

### 5.2 The goals of the touristic EEPA

The “Gaeta Green Tourism” EEPA has as its main objective the implementation of circular economy principles to a touristic cluster. Therefore, the goal is to develop an area in which tourism activities are implemented, following the logic of circular economy. Additionally, with respect to the environmental aspects, a specific attention is given to the social and economic opportunities for the EEPA partners. To summarize, the EEPA main goals are:

- to identify innovative tools and methods to reduce the environmental impact of the EEPA partners;
- to reduce the use of natural resources and pressure on the environment;
- to promote the development and application of clean technologies in the EEPA;
- to promote the continuous improvement of the environmental performances, both EEPA and of the individual local businesses;
- to encourage the diffusion of new business models for circular economy like product-service systems;
- to encourage business partnerships and effective relations between local authorities, citizens and companies;
- to increase employment and improve workers’ status.

Table 1 presents the specific goals of the EEPA corresponding to the different area of improvements to be implemented by the EEPA partners.
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<th>Theme</th>
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| **The protection of health, safety and the environment, also from a landscape point of view** | • Ensure the harmonization of anthropic activities with the natural elements of the landscape in which it is inserted.  
• Ensure the quality of open spaces (green areas, roads, parking lots and areas pertaining to the lots) and buildings in terms of overall structure and construction choices.  
• Implementation of a sustainable tourism destination plan  
• Implementation of a biodiversity management plan |
| **Prevention and reduction of air, water and soil pollution**        | • CO₂ and air emissions reduction  
• Reduction of water consumption, also by differentiating supplies according to uses and by adopting systems for rainwater or wastewater reuse  
• Reduction of use of chemicals  
• Sustainable supply chain development with the choice of products and services that comply with specific environmental criteria  
• Guarantee the efficiency of the road network to optimize the accessibility of roads to the area and to favor the sustainable mobility of people and goods |
| **Wastewater treatment**                                             | • Reduce the discharge of wastewater through a system of separate wastewater disposal  
• Ensure a wastewater treatment system that reduces the environmental impact of traditional purification processes |
| **Recycling, waste recovery**                                        | • Efficient collection of waste and recycling  
• Waste material exchanges among partners |
| **Resources consumption**                                            | • Reduce the consumption of materials within the partners’ activities |
| **Reduction of energy consumption and energy efficiency**            | • Reduce primary energy consumption for heating and / or cooling and ensure thermo-hygrometric comfort in indoor environments  
• Control/reduce the use of non-renewable sources for energy supply and maximize the use of renewable sources  
• Optimize the performance of natural and artificial lighting systems in indoor environments for energy saving and visual comfort |
| **Performance and sharing economy**                                  | • Development of sharing and performance economy solutions  
• Implementation of the "Product as service" business model like: bike sharing; car sharing; platform for local tour guides; product as a service (PSS) |
| **Key elements of the environmental, productive and competitive improvement program** | • Environmental and social communication and education  
• Consumption monitoring  
• Development and application of indicators  
• Shared EEPA partners’ staff training  
• Implementation of the environmental management system and / or obtaining ecolabels |
5.3 Expected outcome of the project

As shown in Table 1, the pilot project has the objective to capture the three levels of sustainable development following the circular economy principles. In fact, potential advantages of applying circular economy in a touristic destination not only determine a reduction of the impact on the environment, but also include the opportunity to improve social relations and working conditions, creating new business partnerships. The expected outcome of the EEPA mainly relate with:

- the reduction of environmental impacts and material consumption;
- economic savings related to the reduction of energy and water consumption;
- development of knowledge in the field of eco-innovation and of eco-efficient technical solutions, applied to the whole area and not only to individual companies;
- opportunities for Green Marketing;
- strengthening of the local community;
- improvement of tourist facilities;
- incentive to the conservation and transmission of culture and traditions;
- development of common infrastructures and services.
- development of new business models for sharing and performance economy.

6. Next steps of the project and conclusion

Starting from the Italian experience of the EEPA for the implementation of circular economy principles in the context of industrial clusters, the paper has shown the potential of implementing the same principles in a touristic area. Once identified the goals of the touristic EEPA, the next steps will be to transform them into practical actions to be implemented by the EEPA partners. Further development of the project will be:

1. the application of the EU Ecolabel criteria for tourism, with a centralized certification assistance to firms;
2. the application of Legambiente Turismo eco-label Decalogue;
3. the implementation of the European system of indicators for sustainable tourism (ETIS);
4. the development of EMAS environmental management system and/or ISO 14001 certifications schemes and the development of the performance economy and the sharing economy (bike sharing; car sharing; platform for local tour guides; product as a service systems (PSS)).

Following a lifecycle thinking approach, energy and materials exchanges among the partners will be analyzed to identify potential opportunities for cooperation. Significant attention will be given to identify which activities can be carried out with shared resources of EEPA partners in order to optimize costs and amplify potential advantages.

References


Regione Lazio. Linee guida APEA per lo sviluppo delle aree produttive ecologicamente attrezzate nel Lazio (2015).


