

ТЕОРЕТИЧЕСКИЕ АСПЕКТЫ ЭКОНОМИКИ И ТУРИСТСКОГО СЕРВИСА THEORETICAL ASPECTS OF ECONOMICS AND TOURIST SERVICE

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Svetlana I. MISHULINA

Federal Research Center the Subtropical Scientific Center
of the Russian Academy of Sciences (Sochi, Krasnodar Territory, Russia)
PhD in Economics; e-mail: MISHULSV@yandex.ru

CIRCULAR TOURISM CONCEPT MODEL

Abstract. The research is aimed at developing a concept model for the circular economy in tourism based on the analysis of domestic and foreign studies on the circular economy principles' adoption issues and existing practices for their implementation in business processes of tourist sector participants. The proposed model is a systematic approach to circular tourism (CT) treated as an organic part of nature ecosystem and a structural element of regional and national circular economy. The nature-like, closed-loop, circular relationships between the system elements are ensured by long-term circular chains of the tourist product creation, where every participant is considered (in addition to its main function in the chain) as a producer of value-based multidimensional benefits. The main principle of intra-sectoral and inter-sectoral interaction is to increase the socio-ecological and economic value of initial inputs throughout the entire life cycle of complex tourist product through the introduction of eco-innovations and business models that meet the principles of circular framework and ensure diversification and multiple effective application as initial resources and manufactured products, minimizing all forms and types of unproductive waste. The condition for the system setup and effective functioning is the presence of developed circular infrastructure, institutions, and management. The scientific novelty and practical significance of the study are determined by the initial stage of circular tourism concept creation and consists in the development of circular tourism concept model, which is necessary to understand the functioning principles of the circular economy in tourism, the formation of circular strategies at all levels, the identification of triggers and barriers throughout the entire chain of the tourist product creation and consumption, determining the mechanisms for building closed intra-sectoral and inter-sectoral chains both at the cluster level and at the destinations level.

Keywords: tourism, closed-loop economy, circular economy in tourism, circular tourism concept model

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МИШУЛИНА Светлана Ивановна

*Федеральный исследовательский центр «Субтропический научный центр
Российской академии наук» (Сочи, Краснодарский край, РФ)
кандидат экономических наук; e-mail: MISHULSV@yandex.ru*

МОДЕЛЬ ЦИРКУЛЯРНОЙ ЭКОНОМИКИ ТУРИЗМА

Цель работы – разработка концепт-модели циркулярной экономики туризма на основе анализа отечественных и зарубежных исследований проблем внедрения принципов циркулярной экономики и существующих практик их реализации в бизнес-процессах субъектов туристского сектора экономики. Предлагаемая модель представляет собой системный подход к пониманию циркулярного туризма (ЦТ) как органичной части природной экосистемы и структурного элемента региональной и национальной циркулярной экономики. Природоподобный, замкнутый, циркулярный характер взаимосвязей между элементами системы обеспечивается выстраиванием на долгосрочной основе круговых цепочек создания туристского продукта, в которых каждый участник рассматривается (помимо основной его функции в цепочке) как производитель совокупности многомерных выгод, каждая из которых обладает ценностью. Основным принципом внутри секторального и меж секторального взаимодействия является наращивание социо-эколого-экономической ценности исходных факторов производства в течение всего жизненного цикла комплексного туристского продукта за счёт внедрения экоинноваций и бизнес-моделей, отвечающих принципам циркулярного фреймворка и обеспечивающих диверсификацию и многократное эффективное использование как исходных ресурсов, так и произведённых продуктов, минимизацию всех форм и видов непродуктивных отходов. Условием формирования и эффективного функционирования системы является наличие развитых циркулярных инфраструктуры, институтов и управления. Научная новизна и практическая значимость исследования определяются начальной стадией формирования концепции циркулярного туризма и состоит в разработке концепт-модели циркулярного туризма, необходимой для понимания принципов функционирования экономики замкнутого цикла в туризме, формирования циркулярных стратегий всех уровней, выявления триггеров и барьеров по всей цепочке создания и потребления туристского продукта, определения механизмов построения замкнутых внутри секторальных и меж секторальных цепочек как на уровне кластеров, так и на уровне дестинаций.

Ключевые слова: *туризм, экономика замкнутого цикла, циркулярная экономика туризма, концепт-модель циркулярного туризма*

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Introduction

Environmental issues aggravation manifested in a significant decrease in the quality of natural environment, pollution and degradation of almost all ecosystems elements and, as a result, an increase in the risks of environmentally caused threats to human health and life, loss of biodiversity and depletion of economic development resource base, climate change that lead to the growth of dangerous natural phenomena and processes, the need to adapt to fundamentally different living conditions determined the relevance of abandoning the traditional economy model and searching for a new development paradigm that ensures harmonization of relations between humans and natural environment.

Despite the growing attention to environmental issues, the effectiveness of measures taken to solve them remains low, which is explained by a number of reasons:

- CE principles are not integrated into political decisions, legislation, tax system and population consciousness [14];
- sustainable development goals (UN SDGs) are poorly integrated into regional and municipal socio-economic development strategies [4];
- projects for the transition to the green economy principles implemented in the regions are limited and not coordinated [5, p. 1114];
- environmental issues are reviewed apart from production and consumption processes, as a result, there is no response to the causes as only the consequences are eliminated;
- linear logic of interaction between economy and natural environment is preserved both in production and consumption processes

and in management systems: resources → manufacture → distribution → consumption → waste;

- excessive consumption coupled with low efficiency of resource use leads to the depletion of the economy resource base, accompanied by a cascade of waste and pollution that destroy the natural ecosystems of the planet.

According to the Rosprirodnadzor, 53 billion tons of industrial and domestic waste were accumulated in the regions of Russia by the end of 2021. 8.5 billion tons were produced within 2021. Of these, 4-5% were processed and 75% went to landfill¹. According to 2019 estimates, the total area landfills in the Russian Federation amounted to 4 million hectares [6], which exceeds the area of 65 countries. Comparative analysis of production and consumption wastes generation dynamics, recycling and neutralization and the GDP dynamics in the Russian Federation for 2010-2018 indicates absence of the decoupling effect and the accelerated growth of waste [3].

In the Krasnodar Territory, a tourist region, the cost of waste management has increased from 6410.5 million rubles in 2015 to 10310.0 million rubles in 2020². In the resort city of Sochi, 600 million tons of waste are taken to the landfill in Belorechensk during off-season, and in summer the waste volumes double, reaching 1200 million tons,³ that reflects the role of tourism in waste accumulation.

Immediacy of the problem determines the need for a transition to an alternative linear and nature-like model of the closed-loop economy (hereinafter referred to as the Circular economy, CE)⁴, in which, ideally, the waste of some manufacturing facilities serve as resources for others,

¹ Росприроднадзор: в России за 2021 год накопилось 8,5 млрд тонн отходов [Rosprirodnadzor: during 2021 about 8.5 bln tons of waste accumulated in Russia] // РИА Новости [RIA News], 18.07.2022. URL: <https://ria.ru/20220718/otkhody-1803287582.html>

² Краснодарский край в цифрах. 2020 [Krasnodar Territory in numbers. 2020]: Statistics digest. Krasnodar: Krasnodarstat, 2021. 274 p.

³ Чистый город-курорт. Сочи приближается к европейским технологиям переработки ТКО [Clean resort city. Sochi approaches European technologies on SMW recycling]. March 18, 2020. URL: <https://www.kuban.kp.ru/daily/27106.4/4180321>

⁴ National and foreign publications on the circular economy issues have a wide range of terms used to denote it (circular

thus reducing the volumes of resources withdrawn from natural environment and the volume of production and consumption wastes going to ecosystems.

The significance of the travel industry direct and induced impact on the economy, the role assigned to tourism in the socio-economic development of the constituent entities of the Russian Federation and the proven scale of negative environmental and social externalities of its functioning determine the relevance of developing an innovative environmentally and socially oriented model of its development, the search for which led to the formation and development concepts of sustainable tourism, ecotourism, green tourism and circular tourism.

The factors that determine the relevance of the circular economy concept development and implementation in tourism include:

- the scale of its influence on natural environment and climate change [9, p. 2-3 of 35]. Tourism is currently responsible for 4.5 Gt of CO₂-e per year⁵. Calculations show that the carbon multiplier in tourism is higher than in global manufacture [12]. The average carbon footprint of a tourist in Barcelona, for example, is 111.6 kg of CO₂-e per day, which is much higher than for a local resident – 5.8 kg of CO₂-e [19, p.2 of 16]. Travel industry recovery pace after the downturn caused by COVID-19, the expansion of domestic tourism geography and scale give no grounds for optimistic expectations on reductions in the tourism negative impact on natural environment. Tourism emissions are forecasted to grow by at least 25% by 2030 compared to 2016⁵;
- aggravation of resource constraints: the joint UNEP/WTO report on green economy forecasts an increase in energy consump-

tion in tourism by 154%, water – by 152%, an increase in greenhouse gas emissions by 131% and municipal solid waste disposal by 251% by 2050 while maintaining the linear development model [18];

- a high level of resources irrational consumption and waste production, determined both by the hedonistic perception of travel – unwillingness to abandon the usual consumption levels, and low efficiency of technologies for a tourist product production. For example, tourism, competing in the use of water resources with agriculture and a number of other industries, makes a serious contribution to the aggravation of water supply issue, especially in regions experiencing water shortages. Water consumption, according to some sources, can vary from 80 to 2000 l/day per tourist [15, p. 14]. Food losses in the hospitality industry amount to approximately \$100 million annually [7]. Coastal tourism is recognized as one of the three main sources of marine litter and threats to the ecological well-being of water facilities;
- environmental transformation of tourists needs and behavior patterns [16; 17]: growth in demand for all types of nature tourism, including eco-tourism in specially protected natural areas (SPNA); increased attention to the environmental friendliness of the tourist product and healthy lifestyle issues; the formation of demand among tourists to acquire new experience of participating in circular practices [22];
- aggravation of social problems in the host community because of disproportionate increase in the pressure on biodiversity, natural, historical, and cultural heritage, public spaces, and the resource base of

economy, closed-loop economy, circled, regenerative, cyclical, etc.). We should agree with S.N. Bobylev that the essence of the new paradigm is more consistent with the term “closed-loop economy” [3] but shortened “circular economy” is used more often. Both terms are synonyms in the current study.

⁵ Draft document for the Ninth Ministers Conference “Environment for Europe”: Applying circular economy principles to sustainable tourism 05.10.21. URL: <https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits> (Accessed on October 01, 2022).

destinations. Transforming places for living into places for consumption [11].

In circumstances when tourism is becoming an industry of economic specialization in 74 regions of Russia⁶, there are activities to form and implement strategies for domestic tourism development, the issues of environmentally safe and effective tourism potential development under the principles of circular economy are of particular relevance. The way these issues are reflected in the adopted strategies and linked with other aspects of regional socio-economic development determines the possibility to achieve sustainable development goals (SD) of regions and the competitiveness of regional and national tourism products in the long term.

Forming development strategies under the circular economy principles implies deep understanding of the region's circular economy functioning logics and the tourism place in circular chains increasing the gross regional product value, which determines the importance for developing the circular tourism theory and practice.

The research is aimed at developing a conceptual model of circular tourism based on a closed-loop economy concept analysis and its applicability in tourism as a tool for environmental modernization of a tourist product production and consumption processes and ensuring the sustainable development of domestic tourism and regions that enlarge tourism specialization.

Data and methodology

The research theoretical background includes national and foreign scientific papers on the issues of closed-loop economy (circular economy) concept development and its application in tourism. The research data background is composed of analytical and statistical reports of international tourist and nature protection institutions, governmental and nongovernmental entities, including the analysis of tourist market entities activities in implementing the circular economy principles. Standard methods of scientific

analysis and synthesis, statistical and comparative analysis, methods for identifying cause-and-effect relationships, as well as content analysis of scientometric databases were applied during the research.

A systematic approach to circular tourism treated as an organic part of nature ecosystem and a structural element of regional and national circular economy was used for structuring the model. The tourist sector of regional economy was divided into four basic elements, each representing a set of market entities – participants in the process of a complex tourism product production and consumption:

- suppliers – participants in the chain of a tourist product creation, who are external to the tourist sector manufactures of goods and services that form an integral part of the final tourist product (enterprises in such sectors of regional economy as construction, transport, agriculture, furniture and textile industries, financial and IT sectors and many others insofar as they are involved in the process of creating the final tourist product value (including National parks, reservations and other specially protected areas; forest and water facilities with tourist attractiveness);
- production – a set of companies engaged in the production and provision of tourist services and products, including such key sectors as tour operator activities, aggregators, accommodation, catering, organization of leisure and entertainment, health and SPA centers, tourist transport;
- consumption – a set of tourist's activities, including the processes of selection, arrangement and consumption of tourist products and services and, due to the characteristics of a tourist product production and consumption processes, coinciding with production processes in space and time, and, therefore, requiring the inclusion of a

⁶ The Russian Federation spatial development strategy for the period till 2025 defines tourism as an industry of economic specialization for 74 of 85 RF regions (as of June 25, 2022). URL: <https://docs.cntd.ru/document/552378463>

consumer (tourist)) into circular processes implemented both within tourist companies and throughout the entire value chain of the tourist product;

- circular infrastructure (CI) is an element of the CT system that unites not only the traditional set of energy and engineering infrastructure facilities, including enterprises for waste collecting, sorting and processing, but also a network of companies that ensure reverse flow of resources, products and materials for the purpose of technical maintenance, repair, reuse, reconstruction, remanufacturing, recycling, regeneration of natural systems.

The nature-like, closed-loop, circular relationships between the system elements are ensured by long-term circular chains of value creation, where every participant is considered (in addition to its main function in the chain) as a producer⁷ of marketable multidimensional benefits with value.

The main principle of intra-sectoral and inter-sectoral interaction is to increase the socio-ecological and economic value of initial inputs throughout the entire life cycle of complex tourist product (LCTP) through the introduction of eco-innovations and circular business models (CBM) that meet the principles of circular framework and ensure diversification and multiple effective application as initial resources and manufactured products, minimizing all forms and types of unproductive waste.

Theory

Despite the place of tourism in the global economy, its role in aggravating environmental, economic, and social problems and recognition as a trigger for transformations of the global economic system (due to the multiplier effect it generates) at the official international level, unfortunately there is no adequate reflection a circular economy concept development in tourism research [21].

Studies to determine the essence of CE in tourism, adapt the concept to the production and consumption features of tourist product, and the applicability of the CE principles in the practical activities of enterprises in the tourism are extremely limited. This is evidenced by the content analysis of the WoS and Scopus databases performed by Vargas-Sánchez A. [24] using the keywords "circular economy" and "tourism", "tourism circular economy", "circular tourism", and the content analysis of the RSCI scientometric database conducted by the author of the current research. For the query "circular economy + tourism" (in title, abstract, keywords and full text) as of 20.10.22, the system returned "0" results. The query "Circular economy in tourism" returned 470 publications, further analysis of which allowed to select only 7 that are not directly related to circular tourism but mention it in the course of analyzing sustainable tourism development issues.

A surge of interest in the CT concept was observed within the period from 2016 to 2019. However, studies of scientometric databases indicate that there are much less articles in English on CT published between 2009 and 2020 than publications on CE [21].

According to researchers, circular tourism development issues have not yet been adequately reflected in the documents of international organizations: they are not mentioned in reporting, for example, in the WTO report "Hotels 2020", and are not included in strategic documents, such as the book "2050 – Tomorrow's Tourism", although the concept of SD is recognized as a key concept for the future [24, p. 5].

At the same time, there are international and national organizations that are actively promoting the idea of introducing the CE principles in tourism. The CEnTOUR project, the goal of which is to support SMEs in the transition to circular business, is implemented within the framework of the EU Program for improving the competi-

⁷ A responsible manufacturer in this context is understood as a manufacturer who builds its internal activities and relationships with partners under the circular economy principles.

tiveness of Small and Medium Enterprises (SMEs) in the tourist sector. Another example is the South Baltic innovation project CIRTOINNO, aimed at increasing the innovativeness of SMEs in the tourist sector by supporting the integration of CE elements into their services, products, and business models [13].

Lack of theoretical publications on the circular economy in tourism [10; 11; 20; 24], leads to a lack of general understanding of circular tourism concept, prevents the formation of a conceptual framework, proven theory, and measurement methods, and limits the possibilities of its formalization and practical application [14].

Foreign publications usually have no definitions of CT. Definitions proposed in publications on CE in industry are used, including definitions from the Ellen MacArthur Foundation⁸, which do not consider specifics of the tourist sector.

One of the few scientific papers containing a definition of circular tourism used by other authors is an article by L. Girard and F. Nocca, published in 2017. The authors give a rather figurative definition, which, in our opinion, reflects the essence of the category under study: "circular tourism - a model capable of creating a virtuous circle⁹ of goods and services production, eliminating the waste of the limited natural resources (raw materials, water and energy) and thereby limiting the impact on the environment, and in which tourism entities (traveler, host, tour operator, supplier) adhere to joint environmentally friendly and responsible approach" [11, p. 69].

Another definition is proposed by Florido C., Payeras M., Jacob M. in 2019, and includes the search for transition ways to the principles of a circular economy in the accommodation sector. In accordance with the research purpose, the authors analyze circular practices implemented in Spanish hotels, with reference to Manniche, J. study, and propose to consider the circular

accommodation sector "as a sector of interconnected and more or less closed circular flows of resources, products and services between activities and sectors: circular construction, circular renovation, circular catering, circular management and circular interaction with guests)¹⁰" [10, p.8 of 16].

This approach is quite applicable to the entire tourism sector, and expanding the framework of interaction between sectors and activities will ensure circular tourism compliance with the thesis that CE is an economy of diverse types of economic activities, cities and industrial systems synergy and symbiosis [11, p. 67].

Based on the above thesis and taking into account the fact that tourism cannot exist outside the socio-ecological-economic system, CT should, in our opinion, be considered as an organic part or subsystem of circular economy, which is a set of closed circles within sectoral and inter-sectoral chains of resources, goods and services built under the principles of non-renewable resources use reduction, increasing the efficiency of use and extending the life cycle of all resources and products types, in order to meet tourism needs while maintaining favorable living conditions for current and future generations.

The lack of theoretical research together with expanding introduction of the circularity principles forces the authors to move from analyzing the practical activities of tourist companies in the field of CE to the synthesis of a conceptual superstructure for the purpose of its further use to develop strategies for the tourist sector transition to CE model [2; 13; 20].

Practice of implementing the circular economy principles in tourism

Analysis of practical activities for the CE principles implementation shows that it is carried out, as a rule, within the framework of corporate social responsibility (CSR) and is aimed at solving

⁸ Finding a common language — the circular economy glossary. Allen MacArthur Foundation official website. URL: Finding a common language — the circular economy glossary (ellenmacarthurfoundation.org)] (Accessed on November 04, 2022).

⁹ A "virtuous circle" is understood as a complex chain of events that are reinforced through a feedback loop.

¹⁰ Circles means nutrition, management, communications, etc., built on the principles of circularity and ensuring the closure of resources and products chains.

individual environmental issues and resources saving (energy and water) with use of circular technologies in three tourism subsectors: accommodation, catering and restaurant business, SPA centers. Transport is considered much less frequently in terms of providing tourist mobility. Hospitality sector is the most acquisitive of the circularity ideas [8].

Restaurant industry is focused on reducing food waste. The most responsible ones are introducing individual circular technologies, such as a smart trash bin, which allows for waste audits and procurement optimization. For example, the Moscow Circular project, which includes the software development that allows you to shoot and memorize waste for the purpose of further analysis. The software costs \$300-600. For 95% of those who implemented it, these investments return during the first year from 2 to 10 times. The program helps reduce waste by 45% and reduce the cost of food procurement by 8% [7].

There are examples of intersectoral circular connections, mainly with agricultural enterprises and individual farmers. For example, a green recycled organics program implemented in the Netherlands involves restaurants collecting coffee grounds and donating them to farmers for use as organic fertilizer in growing oyster mushrooms and returning the waste back to the restaurant in the form of another product – mushrooms [11].

Similar models, such as the "0 km menu", a self-sufficient hotel business model (own food production), etc. are aimed at reducing food waste and optimizing logistics. Meanwhile, catering in hotels and restaurant consume significant volumes of water, energy, washing and cleaning products, complex, energy-intensive equipment, textiles, and tableware, which remain outside the circular processes, except plastic tableware.

Case studies of the CE principles applied in the accommodation sector show that hotel policies are focused on the classic 3Rs CE framework –

Reduce, Reuse and Recycle – the first of which is implemented in activities to reduce energy and water consumption, waste generation and the use of single-use plastics [10]. Reuse is associated with renewable energy sources. In large hotels – with greywater use and heat recovery. Recycling concerns separate collection and sorting of waste generated in hotels – paper, glass, waste oil, plastics, etc. – for further transfer to special organizations.

All the abovementioned technologies are currently basic and, with some exceptions, not very innovative. They are consistent with CE, but thinking solely in terms of reduction means that opportunities for sustainable and circular design that are more in line with the CE principles are missed. In addition, basic framework implementation is usually carried out within a company and does not lead to closed circular chains of interactions with other participants in the value creation process.

The most promising from the point of view of the transition to the CT model seems to be the expansion of the standard 3R framework by including Rethink (product life cycle and raw materials use rethinking), Redesign or Eco-design (re-design, which is understood as the development of next generation products that would use components, materials and resources extracted from the previous life cycle – cascade circular business models (CCBM), and the creation of products initially intended for repeated diversified use in an extensive system of life cycles), as well as Refuse¹¹ (refusal of unnecessary consumption) and inclusion of creative economy entities in value chains in order to increase innovation and differentiate the ways of resources and products use.

Hotel life cycle rethinking involves more than simply offering guests easily recyclable and reusable products and services that reduce hotel operating costs by extending their lifespan and providing alternative use. Since CE is an economy based on the targeted production of goods that have the potential for recycling and repeated

¹¹ It should be noted that the conceptual set of principles – the R - framework differs from publication to publication and over time, which is explained by the interdisciplinary nature of the CE concept, a large number of scientists – representatives of different scientific fields and schools participating in its development, knowledge expansion and broadening, new technological capabilities emergence.

reuse, with a minimum of waste and minimum consumption of non-renewable resources [1, p. 5], CT involves rethinking of all the company activities outcomes. It should be viewed not only as a provider of tourist services, either transportation, accommodation, or food, but also as a producer of many (related and by-products) products and services that can be of value to someone, and not go to wastes. For example, discarded bed linen from five-star hotels can be used by hostels or hospices, the same goes for furniture, tableware, and interior items that are replaced to renovate the interiors. There are practices of local SMEs taking used hotel textiles to make rugs, bags, soft toys, and other useful items that are in demand, which, in addition to resources saving and waste reduction, lead to new jobs offers and solve a number of social problems (for example, employment of people with reduced capabilities).

Laundry complexes in large hotels can provide services to the public or other hotels, the same applies to transport services, etc. Temporarily available rooms can be rented out as offices (co-working).

Searching for new opportunities, in addition to rethinking at the design and engineering stage, involves audit of all products and waste types, using creative approach to assessing the possibilities of extending their life cycle, and presence of institutional and infrastructural conditions for their implementation (for example, platforms for exchange and sharing).

An example of eco-design approach implementation is the Novotel "Eco-Design Processes" program, which is a circular approach to the hotel rooms redesign – the N'ROOM concept – rooms that fully comply with strict environmental criteria throughout the entire life cycle. To decorate such rooms, environmentally friendly paints and certified carpets, high-class energy efficiency appliances, furniture, mattresses and pillows, bed linen, and interior items made from recycled materials or intended for reuse and recycling are used, which allows reducing the volumes of raw materials used for their manufacture, optimizing packaging and transportation. The rooms are

equipped with energy-saving lighting systems and plumbing equipment with water saving functions. That is every detail in the room design is selected in accordance with the principles of circularity, which implies close long-term cooperation of the hotel with manufacturers and suppliers of products that comply with these principles (green procurement), usually certified according to the international standard ISO 14001. They also ensure the reception and processing of return products and resources flows (repair, restoration, reuse of components and parts), carrying out its own activities under the CE principles and minimizing the amount of waste.

Refuse (refusal of use/consumption) – refusal to use excess raw materials (resource consumption optimization), use of non-renewable resources and hazardous materials by a tourist company and conscious refusal of excess consumption by a consumer (supporting the efforts of a tourist product manufacturer to save resources - refuse of daily cleaning and linen change, participation in programs to reduce energy and water consumption, conscious choice of less comfortable but environmentally friendly means of transport and mobility, conscious refusal to purchase products in order to reduce waste).

Of undoubted interest in this approach implementation is the experience of hotel chains in positioning accommodation services in rooms that meet the requirements of circularity, as living laboratories of an environmentally friendly lifestyle.

If we consider a tourist product as a set of goods and services that a consumer/tourist purchases and uses in order to obtain a set of experiences that contrast with their usual everyday life, then the experience of staying in a circular hotel can be offered as an opportunity to gain new impressions and gain a new experience of a "circular lifestyle". And circular destinations can be offered as destinations for new experiences.

Considering that tourists are left without a lot of common things, and giving them an opportunity to test techniques for minimizing consumption and saving resources during the trip, involving them in environmental programs and

promotions, travel companies expand the tourist product framework, complementing it with new experiences and new impressions, promoting a hotel as a “path to the future”. At the same time, they receive a reverse information flow, containing both a tourist’s assessment of the offered service and their proposals for its improvement as well as active participation in circular practices, without which their effectiveness will be lower or even zero, because a tourist is a “co-producer of tourist experience” [22].

Live laboratories for eco-friendly lifestyle are, on the one hand, an innovative tool for introducing the CT principles into the companies’ activities, a new (circular) model of communication with consumers and their products promotion, and on the other hand, a new service that has evident value for tourists, providing new experience and at the same time an opportunity to rethink your daily life.

Live laboratories as a tool for introducing the CT principles can be used not only to form circular chains for communication with consumers, but also to test mechanisms for building cross-sectoral chains of interactions.

An example of such a live laboratory is the Green Solution House (GSH) project, implemented as part of the innovative CIRTOINNO project in Bornholm Island (Denmark). GSH is a business model project based on partnerships between a hotel and advanced technology companies interested in evaluating their ideas and new technologies in real-life conditions [13, p.159]. In this project, GSH is a hotel testing both new circular technologies and new forms of interaction within the value chain.

Transition to CE and CT is associated with the emergence and spread of new circular business models (CBM), based on progression from ownership to use (B2B, leasing, goods – services, etc.). Within this BM framework, a company does not purchase, for example, equipment for hotel gardens and swimming pools servicing, but

purchases a service its use for a certain period. Thus, it saves costs on maintenance, repairs, storage, and disposal. As a result of such BM expansion, the need for equipment production of equipment is reduced, resources are saved, efficiency of use increases, and the volume of waste generation is reduced, providing positive environmental and social effects not only in the tourist sector, but also in the economy as a whole. At the same time, it raises manufacturers interest in their products durability, maintainability, and efficiency.

In parallel with the processes of business models restructuring, consumer behavior models (CBM) are transformed as well [16]. CBM examples that meet the principles of circularity and have become widespread in tourism are the models of collaborative consumption (sharing), barter, C2C sales models, etc., development of which is facilitated by digital technologies that provide consumer interaction platforms¹². The most famous, commercially successful, and resource-efficient implementation of the collaborative consumption model in tourism is Airbnb. Comparative analysis of the resource consumption by an Airbnb accommodation facility and a European hotel showed that the former produces 0-30% less waste, has 50% less water consumption, 80% lower energy consumption, and 90% lower CO₂ emissions [23].

Circular BM, eco-innovations and other green initiatives of companies aimed at ensuring sustainable development cannot be considered as elements of CE if they are carried out only within the company (control of resource flows within the company). The transition to CBM occurs when value chains and the nature of interaction with other chain participants and consumers are transformed to create truly circular flows of resources and products.

Meanwhile, even large hotel chains cannot ensure circular flows of resources, products and the results of their use without a developed circular

¹² OECD (2019), Business Models for the Circular Economy: Opportunities and Challenges for Policy. Paris: OECD Publishing. DOI: 10.1787/g2g9dd62-en.

infrastructure (CI), which includes not only enterprises for collecting, sorting and processing waste, but also a suppliers' network for products made from recycled materials, restored, repaired, including SMEs, ready to buy used mattresses, furniture, textiles, tableware. The CI system should also include local and regional systems for renewable energy, recycling of greywater, heat, waste mineral water from SPA complexes, etc.

Functioning of circular value chains and CI presumes the presence of a developed circular management and logistics systems, which means forward and return flows analysis and their management. At the same time, the logistics of individual companies and value chains should be organically integrated into the logistics systems of destinations, regions and the country as a whole.

The condition for DCI formation and effective functioning, as well as for an extensive system of resources and products circular flow, is the presence of a regulatory framework that ensures their circulation and assessment. Currently, for example, the legislation does not allow a prompt transfer of surplus restaurant products to other economy entities without special expertise, which costs money and takes time. Therefore, it is easier for restaurants to send food to landfills, and thereby contribute to the expansion of solid waste landfills, methane formation, groundwater pollution, etc. Existing rules for writing off end-of-life equipment and materials also impede the implementation of the CE principles.

Definitions and assessments issue requires a solution. Any comparisons of generated and processed waste volumes are currently incorrect because definitions of waste vary by activity, region, and country. Statistics on waste and its recycling is impossible without clear, unambiguous definitions.

An analysis of the CE principles implementation practices in the accommodation sector allows us to conclude that a significant proportion of hotels, to one degree or another, implement individual elements of the 3Rs framework, which are currently no longer innovative, but, nevertheless, help reduce negative impact on natural

environmental and reduce costs as a result of resource savings. The economic factor is still the determining incentive for them. Environmental innovations are carried out, as a rule, within a company only, without leading to an environmental transformation of the value chain and cannot be considered a transition to circular tourism.

Large hotel chains are expanding the CT framework by introducing new CE principles. However, technologies that reduce water and energy consumption, as well as greenhouse gas emissions and waste, and as a result reduce costs and allow gaining a reputation of a socially responsible company, remain a priority. Some large enterprises are moving beyond the company level and, in collaboration with other members of the value chain, are introducing innovations and business models that contribute to the circular transformation of both the production chain and the nature of interaction with consumers, creating truly circular resources and products flow. Such activities are currently, as a rule, experimental in nature (CE strategies have not been adopted even in large hotel chains around the world) [20, p.12], but are becoming increasingly important, indicating the fundamental possibility of transitioning tourism to a circular tourism model.

Tourist companies operating under severe resource shortages are highly active in implementing the CE principles. These are, first of all, island resorts that do not have access to traditional sources of energy and fresh water, incur high transportation costs associated with complex logistics for resource delivery and waste removal, the attractiveness of which is determined by the uniqueness and health of island ecosystems, extremely sensitive to any negative impacts. Tourism is the main source of income for the island community, determining economic and social conditions of life.

The research outcomes on the CE essence, accumulated experience on the principles of circularity introduction into the tourist product production and consumption processes allow us to propose the following circular tourism conceptual model (Fig. 1).

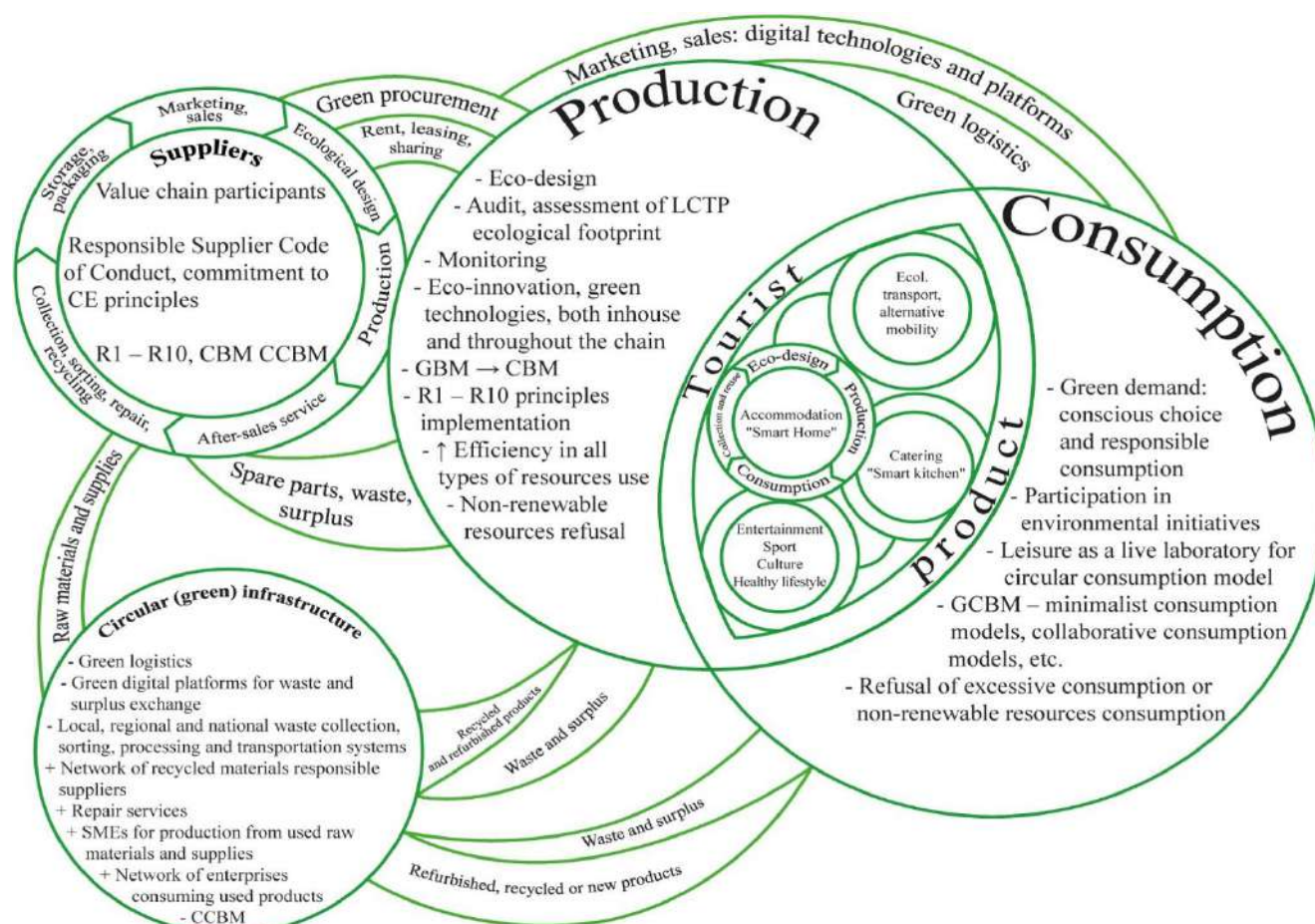


Fig. 1 – Circular tourism concept model

Conclusion

The circular economy (closed-loop economy) concept is in its infancy. However, incomplete development of the CE theoretical foundations does not prevent some countries from pursuing an active policy for supporting CE ideas and stimulating the transition to the CE model in industry. Such policy determines long-term competitiveness of national economies.

The circular economy should be considered as a tool for implementing the SD concept and an integral, most innovative part of the green economy, which, in turn, is a tool for implementing the UN SDGs.

Transition to circular tourism involves the tourism company rethinking and perceiving it not only as a supplier of tourist services and related products, but also as a producer of many (by-) products that can be used and assessed. Applying the CT concept into new business models requires

a thoughtful strategy based on systematic thinking, since the circular economy can be considered a truly radical and disruptive innovation [13], requiring fundamental changes both within the company and the entire value system. Introduction of eco-innovations within the current economic system is not enough.

A serious barrier to building CE in tourism is the complex nature of the relationships between the tourism subsectors, development of which follows its own logic and depends on its own value chains. This barrier is both a challenge and a window of new opportunities, since it is based on an already established system of production processes interconnection, which is a mandatory attribute of CT.

The current emerging and implementation stage of strategies for the domestic tourism development in the RF regions, including large-scale projects for the tourism infrastructure

development, provides a unique chance to create a high-tech, competitive, environmentally safe, and socially oriented tourist industry, subject to the inclusion of goals for transition to the CE model in the strategies for the socio-economic development of regions and industries involved. Then the tourist sector will act as a trigger for resources and products circular flows, while simultaneously being included in the system of a destination or region sustainable resource management, producing a synergistic effect. Environmentally oriented innovative transformation is ineffective within a single chain element, but can, under appropriate conditions, cause a cyclical reaction for related elements restructuring. Ideally, circular processes in tourism should be linked to sectoral and regional circular processes.

The expanding practice of applying the circular economy principles in the practical activities

of tourist sector entities indicates the fundamental possibility for transitioning tourism to the CE model. At the same time, accumulated experience leads to understanding that transformation process can be difficult and long-term, both due to the peculiarities of the tourist product production and consumption processes, and due to the multiplicity and complexity within sectoral and inter-sectoral connections, different levels of preparedness for deep transformations of sectors, companies and consumers – participants in the tourist product value chain (which update the problem of identifying barriers/triggers and the circularity level assessment), lack of circular infrastructure, organizational and institutional conditions for the transition, the main one of which is the inclusion of the goal on transition from linear to circular economy in strategies and plans for all management levels.

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