

# Global Trends in Tourism and Imperatives of the Circular Economy in the Context of Sustainable Environmental Development of States

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**Abstract:** The relevance of the study is conditioned by the need for an in-depth investigation of the relationship between the imperatives of the circular economy and tourism and the identification of the role of this system in achieving sustainable environmental development of states. The purpose of the study is to describe global trends in tourism, substantiate the connection between tourism and the ideas of the circular economy, determine the prospects for digitalization of the tourism industry, present examples of the use of circular economy technologies in hospitality institutions, and provide information on national and international circular economy initiatives and their results. The leading method of this study is economic analysis, which was used to examine in detail the economic processes in the paradigm of circular economics, their regularities and consequences. The economic analysis established the influence of the circular economy on the development of trends in tourism. In addition, the following research methods were used: logical analysis, synthesis, deduction, observation, comparative, abstraction, and analysis of scientific literature. The study substantiates the connection between tourism and the ideas of the circular economy, determines the prospects for digitalization of the tourism industry, presents examples of the use of circular economy technologies in hospitality institutions, and provides information about national and international circular economy initiatives and their results. The materials of the study are of practical value for teachers and students of tourism, economic and environmental specialities, owners of tourism businesses and hospitality establishments, environmentalists, economists, members of environmental committees, environmental activists, politicians.

**Keywords:** Business Model of the Circular Economy; Profitability of Implementing Resource-Saving Technologies; Social Development; Digitalization of the Tourism Industry; Environmental Initiatives.

**JEL Classification:** F64, L83, O13, P48, Q56, Z30,

## 1. INTRODUCTION

The prospects for circular economy policy have expanded markedly since the beginning of the new millennium. The discussion of the circular economy began in the 1970s, and the use of the term "circular economy" was proposed two decades ago. The EU (European Union), China and India were world leaders in implementing the circular economy until, in 2011, in the context of the circular economy debate, the European Union launched its ambitious action plans to put the ideas of the circular economy into practice. Subsequently, EU member states and European cities began to adopt circular tourism economy strategies (Ghosh and Ghosh, 2021). The Circular Economy Promotion Law of the People's Republic of China (2009) was issued by the Chinese leadership. In 2013, the government introduced a number of

strategies that support the introduction of circular economy practices, and in 2016 – expanded producer responsibility (McDowall et al., 2017). In addition, since 1974, a number of regulations based on resource conservation and environmental protection have been established in India (State Board of India, 1974). Therefore, there was a slow shift in focus and, as a result, the creation of the Swachh Bharat Mission (2014) solid waste management, and in 2016, six laws on waste management based on 5R (refuse, reduce, reuse, repurpose, recycle) and circular economy (Sustainable Construction Waste Management in India, 2020) were introduced.

The concepts and implementation of circular economy ideas are supported at the level of international organizations. For example, the United Nations (UN) initiated the signing of a global agreement on eight United Nations Millennium Development Goals (2000) for 2000-2015 and seventeen United Nations Sustainable Development Goals (2015) by 2030. All these documents support the concepts and implementation of a circular economy in the tourism sector. The EU4 Environ-

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ment Action (2019) Project, funded by the European Union, aims to conserve and use natural resources more efficiently, improve people's ecological well-being, and stimulate economic growth in six Eastern Partnership countries: Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova, and Ukraine. Tourism is gradually moving from a linear to a circular economy, which aims to ensure that the resources consumed by tourists are reused. Kitchens, storage areas, and hotel guests are thought to generate large amounts of waste, making them one of the main sources of waste production (Sinha and Fukey, 2020). National policy and studies on the implementation of the circular economy model in the tourism sector have appeared quite recently, but are developing rapidly. This is happening within the current legal framework, which already has elements that can provide a solid foundation for the adoption of circular economy strategies (Melendez et al., 2021).

Tourism is often considered a way of economic growth of the state or individual regions; it can potentially contribute to rapid development because by attracting visitors and investment, new jobs and income opportunities are created (Borysova and Hryniuk, 2021; Hryniuk and Borysova, 2021). As an industry, tourism is a massive socio-economic phenomenon with numerous positive consequences. Within the European Union, tourism is one of the main sectors of the economy, with 9% employment and 9% consumption. In addition, it is one of the top five export categories in 83% of all countries in the world and the main source of foreign currency revenues in almost 38% of countries. As a result, tourism plays a major role in the economies of many countries as a source of employment and a way to combat poverty (Pocuca and Matijasevic, 2018).

Thus, it is of high interest to examine global trends in tourism and its connection with the ideas of the circular economy, prospects for digitalization of the tourism industry, and trends in the sustainable environmental development of states.

## 2. MATERIALS AND METHODS

The study of the environmental development of states from the standpoint of the ideas of the circular economy in the context of the tourism industry should be based not only on economic processes, but also include the analysis of elements of digital technologies, regulations of different states with an analysis of the consequences of certain decisions on environmental development, and the search for other indirect effects; in addition, the study should consider social, behavioral, and psychological aspects that can affect users of tourist services and which of these aspects can later lead to negative or positive consequences for the ecology of the state and the world. Thus, the main method in this study is economic analysis; also, the following methods were used: logical analysis, synthesis, deduction, observation, comparative, abstraction, and analysis of scientific literature. Economic analysis was applied for a detailed scientific investigation of economic processes in the paradigm of circular economy, their regularities and consequences. Economic analysis also determined the impact of the circular economy on the development of trends in tourism.

The logical analysis was applied to investigate the effects of the circular economy in modern tourism as a multicomponent system, considering the impact of social, national, and foreign policy, international and global factors on it. The logical analysis identified that there are three effects of the circular economy, which are clearly expressed and develop the trends in tourism, namely: economic development of the industry, social progress, that is, raising tourists' awareness of the importance of preserving and restoring the natural environment and, as a result, environmental protection. The synthesis method presented the results of the logical analysis in the form of a concept, and all subsequent research methods were used to examine a new, expanded idea of the interrelated sustainability of environmental and economic development of states. The deduction method was applied to examine the relationship and impact of methods related to energy conservation and rational waste management on the tourism industry, based on a refined understanding of the effects of the circular economy in tourism. The deduction method identified a number of factors associated with the modernization of the hospitality sector, which positively affect the profitability of the tourism business.

The observation method was used to review the experience of different countries in implementing circular economy initiatives. This method of scientific knowledge presented examples of the introduction of renewable energy plants (wind turbines, solar panels, and waste recovery stations) that reduce the harmful impact on the environment in hospitality establishments in India. The comparative method was used to compare the qualitative results of travel companies' activities without and with the introduction of information and communication technologies (ICT). It was established that today ICT is not an option, but a necessity for running a successful business. The abstraction method helped in the formulation and use of abstract economic categories, such as money, price, market, etc. The abstraction method is an important auxiliary method in economic research because it brings heterogeneous subjects or factors into a single category. This is possible only if the abstraction method is used. The analysis of the scientific literature on the relationship between the ideas of the circular economy and the modern tourism industry, their mutual influence, and methods of implementing and regulating the initiatives of the circular economy was applied to obtain additional opinions from researchers from other countries and draw exhaustive conclusions.

## 3. RESULTS AND DISCUSSION

The 21<sup>st</sup> century has brought a great strategic shift in the tourism sector, from mass tourism to alternative forms of ecotourism, in response to the increasing uncertainty caused by global climate change and structural changes in consumer behavior patterns (Jankovic and Jovanovic, 2020). These changes characterize the process of the global transition of humanity to the postulates of a circular economy. Commonly, the circular economy is contrasted with the more familiar linear economy, which is characterized by the following processes: resource extraction; manufacture of products; consumption; waste disposal. The circular economy model is a closed process: production; distribution; consumption; repair/recycling/reuse; recycling department. Thus, the transi-

**Table 1. Examples of Circular Economy Initiatives in Hotels in India.**

Name	Location	Initiative
Taj Coromandel	Chennai	Electricity generation using wind turbines
Taj West End	Bangalore	The use of solar water heating systems, which saves about 51 thousand litres of fuel in 3 years
Vivanta by Taj	Coimbatore	The use of wind energy to meet 80% of electricity needs
Taj Rambagh Palace	Jaipur	Introduction of a 2.1 MW wind generator, which currently provides 70% of the hotel's annual electricity demand
Vivanta by Taj	Goa	Conversion of waste to coal by thermal decomposition and production of fuel units used in tandoor grills

Source: Sinha and Fukey (2020).

tion of humanity to a circular economy means a radical change in resource consumption and waste processing, in particular in the field of tourism, in which three main effects of a circular economy can be distinguished: economic development; social progress; environmental protection.

The positive effects related to economic development include the reuse of household items, equipment, clothing, etc. and their repair. Social progress is characterized by conscious consumption, saving of natural and energy resources, and fairer work and trade. The impact of the circular economy on the environment is the restoration of the environment as a result of the reduction of emissions of harmful substances and transition to natural materials and renewable energy sources. An example of the introduction of a circular economy in the tourism industry is hotels in India (Table 1) that have initiated the use of renewable energy and waste recovery techniques. This introduction allowed not only reducing the harmful impact on the ecology of Indian resorts but also lowering energy costs, ensuring the stability of hospitality establishments without interruptions in light, water supply, water heating, etc. In addition, the implementation of the described initiatives largely improved the ecological image of the regions and the hotels, which contributed to an increase in tourist flows and the economic development of the tourism sector.

Travel offers can be considered a decentralized value chain, in which most travel products and services are provided by small and medium-sized enterprises (SMEs). In addition to the trend towards tourism in the paradigm of the circular economy, SMEs that provide tourism services often attract modern digital technologies at the stage of choosing and ordering services. As a result of the interaction established with each user, improved by digital technologies, travel service providers potentially accumulate a large amount of information about the interests, motivations, needs, and behavior of tourists. The information received by these SMEs should be tacit (meaning codification and adaptation processes) and localized (rooted in destination and service characteristics). The SME database becomes a repository of unique and unrepeatable knowledge, which does not necessarily involve the development of new products and services or the introduction of new forms of the organization since SMEs tend to be less involved in the development of innovative products and do not fully use their productivity potential. The effectiveness of interaction between stakeholders is

crucial for increasing regional innovation potential by transforming this unique and localized knowledge into a reorganization of tourism services, contributing to the differentiation of destinations. This potential depends on the level of knowledge and investment in research and development (Romao, 2020).

Unlike small and medium-sized enterprises, large corporations actively use data about their customers obtained as a result of the digitalization of sales processes. This helps manufacturers better understand the needs of their customers, develop new, more progressive areas of business, and become founders or the first ones to join the global process of creating common values. There are four mechanisms for creating shared values that are enshrined in circular business models:

Optimization of material and technical cycles by closing, decelerating, and narrowing biological and technical life cycles. Adidas, for example, has released sneakers made of original plastic that can be reused to make the same shoes over and over again.

Transformation of ownership into products and services through rent and lease. For example, with the growing interest in bicycles and electric bicycles, new rental systems such as Velib in Paris are becoming increasingly popular and provide customers with bicycles or electric bicycles for temporary use.

Resource sharing and, as a result, full use of assets. Repairs instead of buying new sports equipment were the work of two former Rossignol employees. They started a business aimed at repairing old snowboards and reusing them.

Development of symbiotic ecosystems, in which different stakeholders jointly manage circular processes. Relatively new sportswear company Outerknown has teamed up with Levis to develop and produce a new eco-friendly fashion line made from recycled cotton. Companies are joining forces to reuse recycled materials in their supply chain and create new clothing that is completely recyclable (Ferher and Gerke, 2020).

The implementation of the above-mentioned processes as part of a business based on a circular economy is becoming increasingly popular among travel companies in many European countries (Table 2), which corresponds to the aspirations for sustainable environmental development of states and, as a result, environmental sustainability.

**Table 2. Share of the Entertainment and Hospitality Sector in the Circular Economy of European Countries.**

Country	Share of the Entertainment Sector in the Circular Economy, %
Austria	9.3
Belgium	17.1
Bulgaria	15
United Kingdom	11.9
Greece	9.8
Denmark	10.1
Estonia	16.7
Ireland	11
Spain	11.5
Italy	12.8
Cyprus	10
Latvia	23.1
Luxembourg	17.1
Netherlands	12.9
Germany	13.5
Poland	17.8
Portugal	11.2
Romania	16.7
Slovakia	19.1
Slovenia	20
Hungary	10
Finland	12.9
France	10.8
Czech Republic	8.8
Sweden	14.5

Source: Tsironis et al. (2021).

In the latest business models, environmental sustainability includes the following concepts: renewable energy use, sustainable resource management, circular economy, and environmental protection. The three proposed dimensions of reasonable sustainability are sustainable infrastructure; sustainable destination planning; and sustainable tourism economy. Sustainable infrastructure includes not only buildings (such as hotels and commercial areas) but also natural resources at their destinations. Sustainable destination planning is characterized by the ideas of modern urban planning applied to tourism. Finally, a sustainable tourism economy refers to sustainable tourism with a broader perspective than environmental concerns, including a tourism economy that contributes to a better economy for a destination, considering factors such as human development, job availability, and the

well-being of local residents (Bulchand-Gidumal, 2022). For the revival of wildlife and the development of environmental initiatives, it is necessary to attract the resources of public authorities and take the following steps (Sultana et al., 2020): inclusion of basic knowledge about ecological tourism in the primary school curriculum; use of mass media to raise people's awareness of modern tourism; use of new, ethical ways to develop tourist infrastructure; planning the annual budget for further implementation of projects.

Information technologies (IT) are currently considered the main method of tourism management. One-time actions and quick solutions are not enough to build the potential for digitalization. Instead, there is a need for continuous accumulation of knowledge related to the progress of IT development. Digitalization skills and mentoring initiatives are considered the main needs of the tourism sector, so while massive open online courses Massive Open Online Courses (MOOC) of various forms are created in the field of digitalisation in tourism, long-term support for such a course-oriented structure is a necessity, given the complexity, speed of change, and uncertainty associated with digital transformation (Marx et al., 2021). The concept of digitalization of the tourism sector is based on three consecutive processes, each of which is the result of improving the previous one: digitization of data; automation of business processes; digital transformation – the mass use of digital products. The tourism industry can be considered an innovative network that is not necessarily limited by destination boundaries and potentially attracts other stakeholders in the region, taking advantage of geographical proximity and potential interactions.

The innovation process and the development of information and communication technologies have become important factors in improving the competitiveness of the tourism sector and have also facilitated tourists' access to information. Thus, the level of use of online services in travel planning, booking accommodation, and transport was higher in the case of trips abroad (59%), compared to trips within the country. The age profile of tourists who plan to travel using modern information and communication technologies is similar to people who use the Internet. A greater spread of online bookings is observed in the case of air transport (67%) and reaches 75% among young age groups (15-34 years). According to a 2015 survey on ICT use by individuals and households, 39% of the population aged 16-74 responded that they use the Internet to get information about planned trips. 65% of Europeans who use online services ordered products and services online, and more than 50% of them booked or planned trips and vacations (accommodation and transportation) using these means. In 2018, the share of people who planned to travel for personal purposes using online technology, large deviations in the territorial profile were recorded. The leading countries with the highest user share were the Netherlands (54%), Denmark (50%), the United Kingdom (48%), Norway (47%), and Sweden (45%). These countries are characterized by the high availability of internet services, a high level of digital skills of individuals, and a considerable degree of digitization of services. At the opposite end of the rating are Romania (only 3%), Croatia (4%), and Bulgaria (6%). Factors of influence cover the level of development of the country, education, IT security, and

local characteristics of the tourism sector (Banescu et al., 2021).

Advances in technology are driving innovation, growth, and globalization in the travel industry and are completely changing the concept of travel. Digitalization in this area is actively discussed in specialized circles, since humanity is at a turning point that would change society as deeply as industrialization. This process affects all areas of activity at all levels. In some areas, changes are pronounced and persistent, while in others they are just beginning. Digitalization is also used in the tourism sector – it is part of large research projects and relatively easy-to-implement ideas. Changes take place even in most small businesses in the industry – from online reviews of interesting places to booking hotels and travel agencies, from the cashless payment at a restaurant or mobile check-in at the airport to sharing experiences and impressions on social networks or making online ratings – digital technologies make travel more convenient, efficient, and innovative; they are radically transforming the travel industry. According to statistics, today 1.9 out of 10 vacation trips are organized online. The Internet is most actively used in the decision-making phase – users spend eight to nine hours researching the network before booking, and 75% of users find the smartphone very useful at each stage of travel preparation (Kabakchieva, 2021).

Every year, researchers attempt to discover new mechanisms that can contribute to the economic growth of developing countries. A literature review shows that tourism, agriculture, capital accumulation, and energy sector development contribute to economic growth in most developing countries. The development of tourism has received worldwide recognition as an incentive for the growth of the economy, agriculture, and the energy sector and as a way to combat poverty. Governments of developing countries support and promote tourism through its powerful incentives in the context of job creation, increase in foreign exchange earnings, positive impact on the balance of payments, and stimulation of sectors of the tourism supply; in addition, all these measures help to combat poverty. The development of tourism encourages the growth of economic indicators, which is conditioned by the attraction of foreign direct investment and the construction of new infrastructure facilities (Khan et al., 2020). With the common goal of replacing the concept of a linear economy with a system that closes material loops, Georgia has recently accelerated its move towards a circular economy model. Through the joint efforts of the government, civil society organizations, academics, and international partners, Georgia initiated the development of a circular economy strategy and roadmap aimed at an integrated approach from many perspectives, including production, consumption, waste and recyclables management, innovation, investment, and ongoing initiatives in various sectors, diverse players, at different stages of the value chain or different stages of development (Prasek and Pavliashvili, 2020).

Tunisia has adopted many environmental initiatives, introducing major waste management projects. Tunisia is one of the first countries in Africa to establish several controlled landfills and sewage treatment plants since the early 1990s. Despite major environmental challenges, Tunisia continues to rank among the 50 countries that benefit from developing

environmental policies and launched several green entrepreneurship projects and programs. Firstly, the Tunisian government launched an initiative to create a national strategy for the establishment of the National Waste Management Agency "ANGed", which is a non-administrative state institution. The main tasks of "ANGed" are:

- Mastering of the management of various waste types.
- Strengthening efforts to create waste management jobs.
- Promotion of material and energy waste regeneration.
- Promotion of private sector involvement in waste management.
- Improvement of communication, consultation, awareness, and data acquisition in the field of waste management.
- Improvement of the institutional, legal, and financial framework for waste management (Fersi et al., 2021).

The waste targeted by the above-mentioned initiative includes plastic. One of its ecological and promising substitutes for use in the tourism sector is bioplastics. Bioplastics, which are typically plastics made from bio-based polymers, contribute to more sustainable commercial plastic life cycles as part of a circular economy in which primary polymers are made from renewable or recycled raw materials. Carbon-neutral energy is used for production, and products are re-used or recycled at the end of their service life. Compared to fossil-based plastics, bio-based plastics may have a lower carbon footprint and exhibit beneficial properties of materials in the context of the tourism industry; in addition, they may be compatible with available recycling flows, and some suggest biodegradation as a recycling scenario for bioplastics if it is performed in controlled or predictable environments (Rosenboom et al., 2022).

The circular economy has gained popularity in recent years as a new economic paradigm. While a circular economy sets a fairly clear vision for a sustainable future, current circular economic guidelines and studies do not provide sufficient insight into how to move from a linear economy to a sustainable future. To address this shortcoming, researchers propose futures research as an additional source of information, as it offers methods to achieve the desired future (Weigend Rodríguez et al., 2020). The problem of ecology is one of the global problems of humanity. Tourism is an industry that largely uses natural resources. For a long time, tourism was considered relatively harmless to the environment, but with the growing consumption of resources by tourists, conflicts between the tourism industry and the natural environment are increasingly emerging. The growing interest in natural tourist resources creates the following risks:

- excess of their capacity – the number of users exceeds the capacity (calculated based on the area, length, volume, etc.) of the corresponding resource;
- overload – the number of visitors exceeds the number allowed by the capacity of the corresponding resource since visitors exert pressure on the environment (household waste, harmful gases from vehicles, soil leaching, vegetation crushing, etc.) through their activities;
- demolition – for example, the destruction of stalactites and stalagmites can lead to ecological imbalance associated with

wetlands, extinction of sensitive species of plants and animals;

degradation – the natural environment is faced with constant negative changes and irreversible losses to the area of tourist attraction (Kabakchieva and Vasileva, 2018).

Over the past four decades, Turkey has made considerable strides in institutionalizing environmental authorities and developing environmental legislation. The country has a strengthened and comprehensive regulatory framework for environmental protection that can support the components of the circular economy. However, the implementation of environmental regulations requires improvement. Several targets have been set for the recycling and disposal of waste, the use of renewable energy to support the introduction of a circular economy: 87% of municipal waste is currently buried; increasing the level of municipal waste disposal is one of the country's top priorities; the recovery of industrial waste is improving faster than the disposal of household waste in Turkey; hazardous industrial waste disposal increased by 68%, and non-hazardous industrial waste disposal increased by 30% since 2019.

Turkey is in the process of implementing several projects aimed at reducing plastic waste pollution and improving the level of recovery. Zero Waste is a leading project in this regard, but a large amount of plastic waste is also imported to Turkey, which is a difficult task in the context of the Zero Waste Policy. Turkey has great potential and increased installed capacity of renewable energy sources, and private sector environmental investment tends to grow. However, the high-carbon economy, which depends on fossil fuels, is still a concern from the standpoint of the circular economy. Turkey has set mandatory tasks to support the implementation of the circular economy in the country, mainly related to the processing and disposal of certain types of waste. Moreover, the country is in the dynamic process of creating an effective management system for all types of recycling and disposal (Salihoglu et al., 2021).

Virtual reality is evolving as part of smart tourism, which aims to provide information about tourist destinations and attractions while demonstrating enough potential to become a new travel service. This trend has proved to be very useful, although it is slowly coming into use due to the difficulties encountered by tourists while learning new technologies. Virtual reality allows tourists to explore their destination in advance and get acquainted with local attractions. Interactive, realistic, simple, and detailed navigation helps tourists in the processes of trip and activity planning. Virtual reality technologies will undoubtedly evolve, and opportunities in the tourism sector would grow exponentially. Regardless of the area in which these achievements and developments take place, direct applications and trends have already been identified and applied in the tourism industry. There are predictions that virtual reality will radically change the way the experience and needs of the tourism business are managed (Pestek and Sarvan, 2020). Thus, there are great prospects for digitalization of the tourism industry both from the standpoint of advantages in the form of increased profitability for the business and preservation of the natural environment and transition to modern economic and production practices.

#### 4. CONCLUSIONS

This study reviewed the trends in tourism and the rules of the circular economy in the context of sustainable environmental development of states. It was shown that tourism in 2022 is part of a dynamic system of pro-environmental movement, followed by all advanced countries and characterized by careful treatment of resources, rational waste management, and the use of renewable energy sources. Moreover, the study identified a positive effect of digitalization on the hospitality industry. It can be concluded that the prospects for further development of the tourism industry and an increase in revenues from it to the state treasury are possible only if the existing practices in the tourism industry are modernized, digitalized, and brought to the imperatives of the circular economy. The main prerequisites for this conclusion are the following observations:

Thus, Turkey is at the stage of implementing projects aimed at reducing plastic waste pollution and increasing the level of recycling. Therefore, the country established and implements support for the circular economy, mainly related to the processing and disposal of certain types of waste. Environmental initiatives and circular economy ideas are becoming increasingly popular and the implementation of these practices in the tourism industry creates conditions to meet the demand of consumers of tourist services.

The involvement of renewable energy sources in the energy supply of the hospitality industry in the form of solar panels, wind turbines, waste recovery systems, etc., contributes to the sustainable environmental development of the state by reducing harmful emissions and proper waste management. In addition, given the fact that every year an increasing number of regulatory documents on the development of the circular economy come into force, the introduction of the methods described above can provide tourism business owners with high competitiveness during transition periods.

The digitalization of the hospitality sector ensures that guests get the best possible experience by increasing the speed of service, eliminating the human factor, and the involvement of big data allows organizing travel based on the personal preferences of the tourist, which consists in the possibility of advance planning of the travel route due to interactive, realistic, easy-to-use and detailed navigation.

Thus, virtual reality will fundamentally change the way of managing the needs of the tourist business, which will positively affect the economic component. Access to information on virtual media contributes to the activity of tourists and facilitates the work of businesses. This is known from the experience of the studied countries that correspond to sustainable ecological development and, as a result, ecological sustainability.

In this regard, the development of an economically sound action plan for the transition to renewable energy sources for small and medium-sized enterprises in the hospitality sector is promising. This plan would provide an opportunity for business owners to ascertain that this step is profitable and, as a result, play a role in the environmental development of the state.

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