

Synergies among the Sustainable Development Goals: emphasis on integrating water management and tourism

Sinergias entre os Objetivos de Desenvolvimento Sustentável: ênfase na gestão integrada da água e do turismo

Regina Célia Macêdo do Nascimento ¹

Priscila Marcon ²

Milena Sciascio Ghidini ³

Roberta Dias de Moraes Ribeiro ⁴

Fernanda Vale de Sousa ⁵

Frederico Yuri Hanai ⁶

¹ PhD in Environmental Sciences, Researcher, Departamento de Ciências Ambientais, Universidade Federal de São Carlos, São Carlos, SP, Brazil
E-mail: nascimento.regina@live.com

² PhD in Environmental Sciences, Researcher, Departamento de Ciências Ambientais, Universidade Federal de São Carlos, São Carlos, SP, Brazil
E-mail: primarconi86@gmail.com

³ Master in Environmental Sciences, PhD Student, Departamento de Ciências Ambientais, Universidade Federal de São Carlos, São Carlos, SP, Brazil
E-mail: milenasg@estudante.ufscar.br

⁴ PhD in Environmental Sciences, Researcher, Departamento de Ciências Ambientais, Universidade Federal de São Carlos, São Carlos, SP, Brazil
E-mail: robertaribeiro@ufscar.br

⁵ Master in Environmental Sciences, Researcher, Departamento de Ciências Ambientais, Universidade Federal de São Carlos, São Carlos, SP, Brazil
E-mail: fernandavaleap@gmail.com

⁶ PhD in Environmental Engineering Sciences, Professor, Departamento de Ciências Ambientais, Universidade Federal de São Carlos, São Carlos, SP, Brazil
E-mail: fredyuri@ufscar.br

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ABSTRACT

This study explores the synergies between water management and tourism, analysing the relationship among the Sustainable Development Goals (SDGs). A Focus Group (FG) was used to gather in-depth and unique reflections and generate discussions and interpretations on the topics. The data collected was analysed using Textual Discourse Analysis (TDA), and four categories were thus determined: (i) Dignity, equity and justice, (ii) Socio-biodiversity, (iii) Citizen education, and (iv) Environmentally and socially sustainable economic production. Based on water management and tourism, 170 relationships were found between the SDGs. Six of the 17 goals connected with all the other SDGs, namely SDGs 3, 6, 8, 11, 13 and 17. The dialectic relationship between water conservation and sustainable tourism development is a suitable way to enhance the 2030 Agenda and help build synergies to achieve its goals in an integrated and transdisciplinary way.

Keywords: SDG. Water Management. Sustainable Tourism. Conservation. Connections.

RESUMO

O artigo explora as sinergias entre a gestão hídrica e o turismo por meio da análise de relações entre os Objetivos de Desenvolvimento Sustentável (ODS). Com um Grupo Focal (GF), coletaram-se reflexões, discussões e interpretações profundas e singulares sobre as temáticas pesquisadas. Os dados coletados foram analisados aplicando a Análise Textual Discursiva. Assim, foram determinadas categorias de análise: (i) Dignidade, equidade e justiça, (ii) Sociobiodiversidade, (iii) Formação cidadã, e (iv) Produção econômica ambiental e socialmente sustentável. Tendo como base a gestão hídrica e o turismo, foram encontradas 170 relações entre os ODS. Dos 17 objetivos, seis apresentaram conexões com todos os demais ODS, sendo eles os ODS 3, 6, 8, 11, 13 e 17. Assim, a relação dialética entre a conservação hídrica e o desenvolvimento do turismo sustentável é um caminho oportuno para potencializar a Agenda 2030 e auxiliar na construção de sinergias para alcançar objetivos de forma integrada e transdisciplinar.

Palavras-chave: ODS. Gestão Hídrica. Turismo Sustentável. Conservação. Conexões.

1 INTRODUCTION

Strengthening the relationship between water management and tourism is essential for sustainable development because while in some places the presence of water can make tourism thrive, in others, where this activity is promoted on a larger scale, tourism can cause unsustainable water usage and management (Macedo *et al.*, 2020; Uribe *et al.*, 2020). Water, in all of its different forms, is essential for life on the planet (Westall; Brack, 2018); thus, it must exist in adequate quality to enable the specificities of its various uses (e.g. nutrition, recreation, hygiene) (Ashraf; Hanafiah, 2019). However, recognising water's indispensability to life does not prevent human activities from causing negative impacts, reducing water availability and quality.

Water stress is a global concern affecting various regions of the world, with approximately 40% of the world's population suffering from water scarcity (Unesco, 2021). This is due to several factors, including the excessive use of water resources in economic activities such as tourism and agriculture (Antanova *et al.*, 2021; Unesco, 2021), making both of these sectors highly dependent on the conditions of water resources. In this context, sustainable tourism is emerging as one of the solutions to changes in water quality and availability, as it seeks to reconcile economic development with the conservation of ecosystems (Ekka *et al.*, 2023).

Natural resources play a crucial role in developing tourism and preserving biodiversity, especially in a global scenario characterised by increasing loss of biological diversity. Fauna, flora, and water resources are key to attracting tourism and promoting local economic development (Meng, 2021). Thus, sustainable planning and environmental education are essential to ensure harmony between tourism and environmental conservation, avoiding negative impacts.

As a result, the interconnection between water resources, tourism and conservation requires a holistic approach and a broad debate to ensure that tourism thrives in a sustainable manner and guarantees the preservation of natural resources since the absence of integrated management and proper planning undermines this objective. Responsible tourism practices should, therefore, be promoted, and tourists should be made aware of the importance of sustainability (Irawan; Hartoyo, 2022; Lopes; Santos, 2014) so that tourism is developed ethically, reducing its negative impacts and focusing on the experience and learning of the natural environment. Tourism, therefore, is one of the key activities for achieving sustainable development as it promotes human well-being in different ways (Dweyer, 2022). Tourism's relationship with water goes beyond the health and happiness of tourists since it affects the quality and quantity of natural resources available in regions that suffer direct and indirect effects of this activity.

As a human activity and an important economic source, tourism establishes direct and indirect relations with other sectors since tourists can economically and socially drive several municipalities and even entire regions. Therefore, to achieve sustainable and efficient tourism management, the roots of conflicts should be identified, and we must seek solutions that maximise the positive impacts of this activity (Perkumienè *et al.*, 2020). Starting with an integrated vision based on sustainable development, it is then possible to establish synergistic relationships between water management and tourism. This, therefore, means that strengthening water management and sustainable tourism is linked to the proposals of the Sustainable Development Goals (SDGs).

The UN's 2030 Agenda is a coordinated effort to make a series of international commitments in the area of sustainability. This Agenda incorporates the need to broaden the aims and objectives of global actions, in particular, to address socio-environmental and sustainability issues (Saito, 2021). It consists of 17 Sustainable Development Goals (SDGs) and 169 targets, representing a global benchmark for developing sustainability practices. Recognising the interconnection between poverty, hunger, health, education and the environment, the implementation of the SDGs as an "indivisible whole" is crucial to the success of the Agenda (Weiland *et al.*, 2021).

In this way, the 17 SDGs form an integrated system; they identify that an action in one area generates impacts in others and that sustainable development must balance social, economic, and environmental aspects, requiring a coordinated global effort. This integrated approach seeks to overcome problems due to fragmentation and promote positive interactions between each SDG. However, each of the SDGs and their respective targets can either boost or hinder the achievement of others (Anderson; Denich; Warchold, 2022). therefore, their implementation is complex and challenging, as it requires coordination between different countries, governments, and actors (Libório, 2021; Weiland *et al.*, 2021), as well as being universal, ambitious and multifaceted (Swain; Ranganathan, 2021).

This study, therefore, explored synergistic pathways between water management and sustainable tourism by analysing the relationships between the involved SDGs. The use of the SDGs as an analytical resource is justified by the inherent integration already displayed in the 17 SDGs, developed to be pursued jointly to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity by 2030 (UN, *n.d.*). Indicating these pathways may also boost the progress of the 2030 Agenda.

2 METHODOLOGY

2.1 FOCUS GROUP

The Focus Group (FG) technique was applied to identify the relationships between water management and the SDGs. This methodology allows researchers to interact, reflect and discuss a certain theme, generating data through the group's statements, unique views, experiences and perceptions (Borges; Santos, 2005; Busanello *et al.*, 2013; Ressel *et al.*, 2008).

The FG was carried out with 20 researchers, 13 female and 7 males, with different backgrounds (environmental and biological sciences, tourism, geography, pedagogy, social sciences, environmental and urban engineering) in three meetings in November 2023. The authors of this study are members of the Sustenta Research Group at the Federal University of São Carlos (UFSCar), aimed at exchanging, integrating, developing and converging reflections and studies on sustainability and environmental management and their relationship with the economy, society and the environment. In this way, the choice of experts for the FG was made possible by the contact within the Sustenta Research Group, with researchers who develop activities related to the addressed themes from different perspectives of training and work.

As indicated by Debus (1994) and Lopes (2014), there should be at least one point of convergence between the FG participants. In this case, all the researchers carry out work related to water. In order to better stimulate participation and extract the different points of view of the participants, the group was divided into 4 sub-groups, with 5 participants each. The larger group was subdivided because smaller groups can deepen discussions and generate more content (Corrêa *et al.*, 2021; Gil, 2002).

Subsequently, the 17 SDGs were divided among the 4 sub-groups, and 3 of these sub-groups addressed 4 SDGs each, with the fourth group focusing on 5 SDGs. This structure allowed for in-depth discussions on the interconnections between the SDGs and water management. Participants also explored and examined the major contributions made by integrated water resources management and sustainable tourism in the context of the SDGs. This analysis involved an in-depth reflection on how these practices can act as drivers for the goal's achievement, highlighting their individual relevance and their synergistic interactions that can significantly advance towards a broader and more holistic sustainable development.

2.2 TEXTUAL DISCOURSE ANALYSIS

Based on the interactions, reflections, discussions, interpretations, testimonies, visions, experiences and perceptions of the FG, the Textual Discourse Analysis (TDA) was applied to analyse the SDGs. According to Moraes and Galiazzi (2006), this type of analysis helps to infer and create relationships according to the research questions, making it possible to reflect on the synergistic pathways among water management, sustainable tourism and the SDGs.

TDA combines elements of content and discourse analysis. This method consists of sectioning texts into meaningful units, which will then be categorised, resulting in different categories for analysis. The process includes interpreting the meaning attributed by the authors and articulating similar meanings. TDA is fundamentally a writing process that moves from empirical to theoretical abstraction, generating analytical metatexts. In the context of analysis, the importance of deconstruction stands out, a movement of dismantling existing meanings followed by the organised reconstruction of units of meaning, leading to a deeper understanding of science and the object of research (Moraes; Galiazzi, 2006).

Thus, using this methodological approach, the answers presented and collected by the FG were analysed, allowing for deeper and unique interpretations based on reflections on the research themes, in which ideas emerged, not only through textual analysis but also through in-depth understanding and the construction of meaningful knowledge. By taking these answers apart and interpreting them, it was possible to explore detailed layers of connections between them and thus infer categories (presented below in topic 3.2). Subsequently, a meta-text was drawn up which synthesises the connections and discussions found, providing a comprehensive view of the phenomena investigated. The TDA process was carried out using the Atlas.ti version 9 program for the Windows operating system platform. The use of this resource was necessary to analyse unstructured data (Friese, 2021) similar to that collected in the FG.

3 RESULTS

The analysis resulted in a network of interactions among the SDGs, as well as a synthesis of how water management and tourism can contribute to the implementation of the 2030 Agenda and vice versa.

This was possible because of the connections between the targets set for each goal. These interrelationships, considered to be positive, enhance the achievement of the SDGs since progress on one goal creates synergistic conditions and scenarios for the progress of another and vice versa. It should be noted that the connections established in this article were obtained via an FG.

3.1 RELATIONSHIPS BETWEEN THE SUSTAINABLE DEVELOPMENT GOALS

The experts who took part in the FG found 170 links between the SDGs. Of the 17 goals, six had connections with all the other SDGs, namely SDG 3 (Health and Well-being), SDG 6 (Drinking Water and Sanitation), SDG 8 (Decent Work and Economic Growth), SDG 11 (Sustainable Cities and Communities), SDG 13 (Action on Global Climate Change) and SDG 17 (Partnerships and Means of Implementation).

Further, the FG identified connections based on the understanding that to achieve the goals of the SDGs; they must feed back into each other to add up the efforts made to meet each goal. To achieve SDG 1, for example, supporting sectors such as agriculture, food availability, work and education for the most vulnerable populations is essential. Therefore, to reach SDG 1, the goals, objectives and indicators of SDGs 2, 3, 4, 5, 6, 8, 10 and 16 also need to be met.

The experts also highlighted SDGs with fewer links (14 and 15), such as SDG 14 (Life on Water), which was linked only to SDGs 6 and 7 (Clean Energy), and SDG 15 (Life on Land), which is associated with SDG 2 (Zero Hunger). Despite these few connections, the experts stress the importance of all the SDGs, given the complex interconnections that must be observed so that the 2030 Agenda can be accomplished.

In order to summarise and represent the amplitude of results obtained in the FG, a graphical representation was drawn up (Figure 1), indicating the relationships found between the SDGs. Arrows were used to describe the connections between the SDGs and represented with the colours and numbers used by the UN. Further, the six SDGs (3, 6, 8, 11, 13 and 17) related to all the other objectives are represented outside the blue circle so their connections can be better visualised.



Figure 1 – Graphical representation of the relationships between the Sustainable Development Goals. SDGs 6, 8, 11, 13 and 17 are highlighted, as they are connected with all the other SDGs

Source: Own authorship (2024).

Figure 1 shows the diversity and complexity of the relationships between the SDGs, given the significant number of arrows. SDG 6 was one of the goals with the most interactions with other SDGs. As for the other goals, there was low connectivity with SDGs 14 and 15, as shown.

Given the complex network of interactions obtained and presented in Figure 1, the results were also represented horizontally (Figure 2) to visualise details of the connections established between the SDGs, making it easier to identify those with the highest and lowest number of mentioned relationships. In Figure 2, the columns represent each SDG, while the rows indicate their respective relationships indicated by the FG



Figure 2 – Horizontal representation of the relationships found among the SDGs

Source: Own authorship (2024).

Figure 2 highlights the absence of some relationships, represented by the empty spaces. However, there may still be possibilities of indirect interactions that can contribute to achieving the SDGs of the 2030 Agenda, especially since six of the seventeen SDGs have connections with all the goals. Another relevant aspect is the number of times each SDG appears in the lines of the interactions. Only SDGs 12, 13 and 14 are repeated less than 10 times between the connections, indicating the need for integrated action between the different fronts covered by the SDGs.

These results also make it possible to explore the synergies between water management, sustainable tourism activities, and efforts to implement the 2030 Agenda since synergies and common paths were mentioned to justify each specific relationship.

When looking for synergies between tourism and the SDGs, three SDGs were identified that are directly related to this activity: SDGs 8, 12 and 14. SDG 8 is influenced by tourism due to its impact on global economic growth, as it is one of the activities that drives the economy, especially in the service sector.

Regarding SDG 12 (Sustainable Consumption and Production), emphasis was placed on the influence of tourism on consumption patterns, both for tourists and for local communities, so sustainable consumption practices should be adopted. SDG 14 (Life in Water) was seen as a condition for ensuring that tourism is developed in an integrated way with coastal management, focusing on the conservation of marine ecosystems.

By analysing the synergies between integrated water management and the SDGs, we identified that SDGs 1 (Eradication of Poverty), 6 (Drinking Water and Sanitation), 7 (Clean and Affordable Energy), 10 (Reducing Inequalities), 12 (Sustainable Consumption and Production) and 14 (Life by Water) stand out. SDGs 1 and 6 were directly related to water, as guaranteeing access to drinking water in adequate quantity and quality is essential for integrated and sustainable management and is, therefore, fundamental to meeting basic needs. Regarding SDG 7, it was noted that adequate and efficient access to energy can reduce impacts on water resources. Further, regarding SDG 10, the reduction of inequalities must also occur when it comes to water management since there must be universal access to drinking water and sanitation.

SDG 12 is closely related to the rational and responsible consumption of water (reuse, reduction, alternative sources), as well as reducing sources of pollution and monitoring the quality and quantity of water, showing a synergistic relationship with water management. Moreover, the relationship with SDG 14 is based on the need for integrated management of water resources, considering all waters equally, including the conservation and sustainable use of oceans, seas and marine resources for sustainable development.

3.2 TEXTUAL DISCOURSE ANALYSIS CATEGORIZATION

The TDA deepened the investigation of the synergies between water management and tourism as activities that enhance the implementation of the 2030 Agenda. To this end, four categories of analysis were initially established:

- I. **Dignity, equity and justice:** promoting means (resources) and mechanisms (public policies, agreements, incentives) that ensure equal dignity for all people (regardless of their race, sexual orientation, gender, origin, nationality) to be healthy (physically, mentally, spiritually, environmentally);
- II. **Socio-biodiversity:** protection of biological diversity (fauna and flora), as well as social diversity (worldviews, cultural, spiritual, relationships, politics), as a basis for maintaining the ecological balance of the Earth's systems, and a strategy for resilience in the face of the consequences of climate change and other alterations to the Earth's balance;

- III. **Citizen education:** training children, adults and older people to encourage critical thinking about social well-being (with dignity, equity and justice for all), social, environmental and economic sustainability, and the preservation of natural, social and cultural heritage;
- IV. **Environmentally and socially sustainable economic production:** producing goods and providing services that respect the environment, consuming fewer resources, generating less waste, not contaminating water bodies, soil, air and biota, as well as helping to transform relationships in order to preserve socio-biodiversity and natural, social and cultural heritage.

The results of the analysis carried out based on the categories mentioned are detailed below. The notes were organised by highlighting the relationship between water and the SDGs, the existing challenges for water management within the scope of each SDG, and the challenges for tourism within the scope of each SDG.

3.2.1 RELATIONSHIPS WITH WATER

The groups pointed out the links between water and all the SDGs, reiterating how essential water is for sustaining life and promoting activities that establish conditions of dignity, equity, justice and economic production.

It is clear from the responses that the relations with water cut across all the SDGs and, therefore, access to water of a quality compatible with human activities, as well as care for the maintenance of this asset, should be the basis for the SDGs.

Most of the links between water and the SDGs (47.1%) regarded the establishment of **Dignity, Equity and Justice** since access to water is essential for eradicating poverty, promoting health, well-being, gender equality, building a culture of peace and justice, and reducing inequalities between countries. All people must have access to basic sanitation for action against climate change and for cities and communities to be transformed into more sustainable (considering social, environmental and economic aspects) and resilient environments.

Moreover, the groups related a large number of SDGs (35.3%) with **Environmentally and Socially Sustainable Economic Production** due to the need to adapt economic activities so as to generate less waste and consume fewer inputs, including electricity, as Brazil's main source of energy is water. Thus, more sustainable agricultural, industrial and construction practices are needed in order to eradicate hunger and sustain human population growth.

Recognising the importance of water for the protection of terrestrial and aquatic life, the relationship between water and the protection of **socio-biodiversity** was also identified (11.7%), reinforcing the need to maintain the complex network between different beings and knowledge to keep waters in suitable conditions for their various uses.

Lastly, only SDG 4 was related to **Citizen Education**, representing 5.9% of the interactions, since the promotion of an emancipatory, inclusive and critical education that deals with the importance of water encourages relationships and less harmful uses of natural resources. As a result, learning opportunities encourage more appropriate practices in activities that affect the water situation, as well as encouraging active participation in water management.

3.2.2 CHALLENGES IN WATER MANAGEMENT

Most challenges related to water management (53%) were issues regarding **Dignity, Equity and Justice**. One of the main challenges listed was the need for higher representation of the most vulnerable groups in River Basin Committees.

One of the key points discussed in trying to solve the problems related to water management is through **Citizen Education** (17.6%). Raising awareness and educating the population about the importance of water for life, as well as continuously training professionals who work (directly or indirectly) with this resource, is essential to promote new and better practices. After all, through knowledge, environmental solutions emerge for issues such as water degradation and pollution, water availability and basic sanitation, among others.

When analysing the relationship with **Environmentally and Socially Sustainable Economic Production** (5.9%), problems related to low investment in water research in its different spheres, approaches and scales were pointed out. In addition, difficulties in accessing new technologies were cited, either due to limitations in technical or financial capacity, with municipalities being one of the spheres most affected by this situation.

With regards to **Socio-biodiversity** (23.5%), the challenges related to water management are mainly due to the need to intensify mediation of conflicts related to water use, increase monitoring of water quality, and recover degraded areas. These challenges end up being directly or indirectly related to SDGs 12 and 13, due to the unsustainable economic model adopted by humanity, which causes direct damage to the environment, including climate issues.

3.2.3 CHALLENGES RELATED TO TOURISM

With regard to the challenges of the SDGs related to tourism, it was noted that the category of **Environmentally and Socially Sustainable Economic Production** stood out, accounting for approximately 47% of the mentions. This is because promoting tourism as a source of income and economic growth, integrating it with agricultural policies, and the preservation of natural heritage can improve the quality of life of local communities. In addition, encouraging the use of recyclable materials and renewable energies, saving water and energy, and developing technologies for reusing products represent other important challenges. Finally, encouraging local tourism and creating sustainable tourism models that involve the use of sustainable energy, as well as making visits to these sites attractive and educational, are also important challenges.

Aspects related to the **Dignity, Equity and Justice** category received 35.3% of mentions. In general, the promotion of sustainable tourism was pointed out as a way of reducing poverty in local communities, as well as overcoming prejudice and insecurity. However, despite being an activity with great potential, obstacles to its development were highlighted.

The FG attributed another part of the challenges to **Citizen Education** (11.8%), one of the central points being the lack of educational stimuli in the sector and the need for a broader approach to environmental education. The absence of a national guideline for promoting sustainable tourism management was pointed out, together with conflicts in some countries, which are all aspects that hinder the development of tourism. Therefore, to overcome these obstacles, the group suggested an investment in education on a global scale and promoting peace in conflictive areas to make tourism viable. In addition, it is essential to give an active voice to society, especially traditional communities, so that they actively participate in promoting sustainable tourism practices.

Furthermore, regarding **Socio-biodiversity** (5.9%), the challenges point to the demand to value forest terrestrial ecosystems in the context of sustainable tourism, ensuring not only their preservation but also the promotion of authentic experiences that allow tourists to establish a physical connection and experience the well-being provided by these natural environments. This requires the development of strategies and practices that not only attract tourists but also guarantee the long-term conservation of these ecosystems while respecting the needs of local communities and the integrity of natural areas.

Among the four categories established by the TDA, the **Dignity, Equity and Justice** category stands out as the one most closely related to water (47.1%) and the challenges of water management (53%). In addition, this is the second most related category to the challenges of tourism (35.3%). It is, therefore, clear that the category in question requires greater attention and in-depth study, with a focus on promoting and enhancing the 2030 Agenda.

4 DISCUSSION

Looking at the SDGs in a fragmented way is not the best way to achieve sustainability or the proposed goals. Pradhan *et al.* (2017) found that SDG 1 has synergies with most of the other goals, corroborating the results presented here. After all, in order to achieve these goals, connections must be established between various aspects (improvements in work, health and well-being, equity, and education, among others). In addition, Singh *et al.* (2018) stated that SDG 14 corroborates SDG 1 and SDG 2 since these two goals depend on the oceans' sustainability.

Further, Kroll *et al.* (2019) pointed out that emphasising SDG 1 is an effective way to achieve the goals of the 2030 Agenda. By eradicating poverty, not only do people become healthier, but localities also perform better in terms of economic development. This enables investment in infrastructure and public services, contributing to improvements in education and other essential services for the population.

Contrastingly, this study points to six SDGs (3, 6, 8, 11, 13, 17) which, if pursued together, can contribute to the implementation of the other goals. The idea is not to rank the SDGs but to find synergies between them that strengthen the implementation of the 2030 Agenda, as advocated by Gaertner *et al.* (2021). In this sense, the relationship between water management (SDG 6) and sustainable tourism (SDGs 8 and 11) emerges as a strategic opportunity to promote the integration and advancement of these goals simultaneously, taking advantage of the positive interactions between these areas to drive global progress towards the principles of the 2030 Agenda.

Connections between water and the SDGs were not restricted to those covered by SDG 6, detailed in Jacobi *et al.* (2020). On the contrary, aspects relating to the importance of access to high-quality water in good quantity for human consumption and for the promotion of economic activities were mentioned, as well as the need to improve and implement public policies to integrate water management with other social sectors, to reduce waste, protect the quality of water and sensitise more actors in water conservation and sustainability.

Moreover, there were also aspects linked to individual and social well-being, linking water to the promotion of health (including mental health), aesthetics, spirituality, caring for peers, establishing social bonds and different perceptions of life and worldviews. With this, the experts highlighted how important water is for all the SDGs, reiterating the need for other perspectives to implement the SDGs (Macpherson, 2023; Maeda, 2023), such as socio-hydrology (Di Baldassarre *et al.*, 2019), which seeks to grasp the different decision-making levels of human nature (Sivapalan *et al.*, 2012; Yu *et al.*, 2022).

In places such as the most vulnerable regions, women are directly associated with water, as they are responsible for the household (using water for domestic activities) as well as economic activities, as seen with shellfish gatherers. This reinforces how different worldviews are needed for people to learn

how to perceive, relate and be with water, thus intertwining the interdependence of the human and non-human worlds, as advocated by River Of Life *et al.* (2021).

Combating the unsustainable use of water resources, the environmental degradation of marine resources (especially in tourist areas) and integrating worldviews requires the implementation of preventive and planned measures to maintain an area's ecosystem functions. In addition, it is crucial to value the natural heritage for tourist visitation, apply environmental compensation practices for unavoidable impacts and promote sustainability concepts.

In line with these principles, public policies for local tourism and water management must be aligned with the SDGs. To this end, effective regulations to control disorderly growth should be developed, guaranteeing the preservation of cultural and environmental heritage. Enforcement measures must be strongly implemented to ensure compliance with these regulations, as well as to prevent practices that are harmful to the environment and the community. However, in practice, what is observed is the formulation of centralised public policies without interconnections, indicating the need for a paradigm shift.

Although the practical application of public policies relating water and tourism to the SDGs in Brazil (and around the world) has yet to be seen, one example is the relationship between health and the SDGs. For instance, in Sri Lanka, the mapping of synergies has led to the development and expansion of policies aimed at sustainable development, according to Helldén *et al.* (2022).

Identifying synergies between the SDGs favours multisectoral connections, whether at the local, regional or national levels, helping achieve the proposed targets. Also, by mapping existing relationships, it is possible to understand which aspects need to be improved, as well as identify possible partnerships which, when developed, can contribute to achieving the proposed goals and objectives. Furthermore, the present study has limitations in terms of identification at all levels, but it contributes to promoting discussions on the subject and analysing the respective consequences.

Strengthening partnerships across multiple sectors underpins the creation of a sustainable support network aimed at promoting initiatives that benefit both the local community and tourists. This network can include collaborations with local organisations, private companies and government institutions. The diversification of tourism activities, emphasising cultural and environmentally responsible practices, promotes a more authentic tourist experience and creates local economic opportunities. Although tourism was initially linked to only 3 SDGs in the 2030 Agenda (United Nations, 2015), its contribution can cover all 17 SDGs (Unwto; United Nations, 2017). The need to review this limited linkage is highlighted due to tourism's far-reaching impact on territorial, environmental, economic and socio-cultural aspects. In addition, it is necessary to develop indicators adapted to tourism to effectively monitor progress towards achieving the SDGs.

Although the SDGs are present in many countries' planning strategies, the approaches vary considerably, both in terms of instruments and regarding how they are linked to different goals. It is crucial to promote a more cohesive integration of public policies, recognising the comprehensive nature of the SDGs, and to link tourism to all 17 goals, adapting to the particularities of each territorial and tourist context (Soares; Ivars-Baidal, 2021).

In short, there are many challenges related to the paradigm shift towards an integrated approach to the SDGs, tourism and water management. While analysing the importance of the SDGs, it is clear that there are more and more studies with detailed analyses to verify their synergies. Furthermore, even with the relationships that can occur, each SDG will have a different approach and needs to be highlighted, even when combining it with another goal for the purposes of formulating a public policy, as indicated by Zhao *et al.* (2021). Lastly, the potential of each goal must be verified, since, by taking an integrated approach, their potential tends to be and needs to be highlighted in order to achieve

the proposed objectives and goals (Kroll; Archold; Pradhan, 2019; Nilsson *et al.*, 2018). Studies like this, although incipient in quantity in the scientific literature, are fundamental because they produce content for decision-makers at local and regional scales, as indicated by Swain and Ranganathan (2021).

5 CONCLUSIONS

In order to better achieve the objectives of the 2030 Agenda, the SDGs must be viewed in an integrated way, identifying possible synergies to favour the achievement of the Agenda's goals. With this in mind, the FG and subsequent TDA were important tools for verifying synergies between the SDGs and the challenges of water management and tourism. SDGs 3, 6, 8, 11, 13 and 17 were more closely connected to the other goals. Further, the in-depth analysis of these synergies led to the establishment of four categories of analysis: (i) dignity, equity and justice; (ii) socio-biodiversity; (iii) citizen education; (iv) environmentally and socially sustainable economic production.

The interrelationships between the SDGs can occur in different dimensions, but this work sought to explore how water, an essential element for all the goals, could help achieve them. Recognising the importance of water for building dignity, equity and justice, for maintaining and recovering socio-diversity, for citizen education and for establishing socially and environmentally sustainable forms of economic production, a synergistic and potential path emerges in the quest to achieve the SDGs.

It is, therefore, imperative that water management be based on an integrative vision of the complexities inherent in human-water interaction. This vision should consider not only the perspective of water as a resource and a raw material for human activities but also views that encompass other social, religious, historical, health-promoting, and well-being relationships. Tourism is a strategic activity for incorporating these different understandings and visions of water.

Sustainable tourism creates an opportunity that is as much about the obvious conservation of water quality and quantity as it is about transforming human relations with water since it enables experiences that broaden the recognition of water from other perspectives.

The dialectic relationship between water conservation and the development of sustainable tourism is, therefore, a way to boost the 2030 Agenda and help build paths to achieve its objectives in an integrated and transdisciplinary way. Studies such as the one presented here encourage discussions about the connections between the SDGs and uniting integrated management with the promotion of sustainable tourism. In this way, future studies can build on the discussion presented here and the public policies proposed to achieve the SDGs, incorporating the results obtained as a basis for their construction and discussion.

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