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Communication and the Convention on Biological Diversity: a reading on the Ilha Grande State Park (Rio de Janeiro, Brazil) and the Maremma Natural Park (Tuscany, Italy)

Comunicação e a Convenção sobre Diversidade Biológica: uma leitura sobre o Parque Estadual da Ilha Grande (Rio de Janeiro, Brasil) e o Parque Natural da Maremma (Toscana, Itália)

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ABSTRACT: Biodiversity conservation represents a complex contemporary demand. In scenarios of environmental crisis, social groups have been trying to influence the decision-making process through pacts such as the *Convention on Biological Diversity* (CBD). CBD is the main international agreement that guides public policies related to this agenda. Within the framework of the CBD, communication is recognized as a fundamental component for raising awareness concerning this important issue. Based on this premise and considering the strategic role of protected areas for the conservation of global biodiversity, the purpose of this article is to understand how communication itself is expressed in the management of two protected areas located in different contexts. In this sense, we selected Ilha Grande State Park, in the state of Rio de Janeiro, Brazil (country with the biggest biological diversity in the world), and Maremma Natural Park, located in the Tuscany region, Italy (responsible for the greatest biodiversity of the European Union). Based on bibliographical and documentary research, interviews with interlocutors from the public management, and analysis of the available online tools for communications, we could evaluate that there are ongoing actions in both parks. However, considering that Target 1 from the 20 Aichi Targets (agreed by the CBD for 2011-2020) refers to the social awareness regarding the biodiversity relevance, visible differences are observed when it comes to the form that each park creates/releases this information. This situation may influence the appropriate achievement of this goal in each case.

Keywords: protected areas; Convention on Biological Diversity (CBD); communication; Ilha Grande State Park; Maremma Natural Park.

RESUMO: A conservação da biodiversidade representa uma demanda contemporânea de grande complexidade. Em cenários de crise ambiental, diversos grupos sociais têm buscado influenciar o processo de tomada de decisão, por meio de pactos como a Convenção sobre Diversidade Biológica (CDB), principal acordo internacional orientador de políticas públicas dirigidas a essa agenda. No âmbito da CDB, a comunicação é reconhecida como um componente fundamental para a sensibilização da sociedade sobre a importância dessa temática. Partindo desse pressuposto e considerando o papel estratégico das áreas protegidas para a conservação da biodiversidade global, o objetivo deste artigo é interpretar como as ações de comunicação se expressam na gestão de duas áreas protegidas localizadas em contextos geográficos, socioeconômicos e ambientais distintos. Neste recorte, foram selecionados o Parque Estadual da Ilha Grande, no Rio de Janeiro, Brasil, país líder mundial em diversidade biológica; e o Parque Natural da Maremma, região da Toscana, Itália, país que responde pela maior biodiversidade da União Europeia. Com base em pesquisa bibliográfica e documental, entrevistas com interlocutores da gestão pública e análise de ferramentas de comunicação virtuais disponíveis, foi possível avaliar que há ações em curso, em ambos os parques. Porém, considerando que, dentre as 20 Metas de Aichi (pactuadas pela CDB para 2011-2020), a Meta 1 remete à sensibilização da sociedade sobre a relevância da biodiversidade, diferenças evidentes são observadas em relação à maneira como a gestão de cada parque gera e divulga suas informações, o que tende a influenciar o alcance dessa meta, em cada caso.

Palavras-chave: áreas protegidas; Convenção sobre Diversidade Biológica; comunicação; Parque Estadual da Ilha Grande; Parque Natural da Maremma.

1. Introduction

Biodiversity, or biological diversity¹, is made up of plants, animals, micro-organisms, and the ecological relationships that sustain all forms of life, essential to planetary balance and human well-being. This natural patrimony is fundamental to guarantee society with a supply of food, fibers, and medicines as well as to favor the protection of freshwater sources, climatic stability, and other environmental, socioeconomic, and symbolic benefits (MEA, 2005).

Considering the central importance of this theme, the growing loss of biodiversity has been

characterized as one of the greatest contemporary dilemmas with the need to conserve this patrimony representing a great challenge. Since the 1990s, this issue has been recognized as a matter of global responsibility and reach, motivated by the action of the environmental movement, through scientific advance that allowed the deepening of studies on risks associated with this process as well as the increase in the journalistic coverage of this agenda (Hannigan, 2009).

The risks to the survival of many species have been illustrated by the periodic dissemination of the so-called *Red List* of threatened animals and plants. This scenario is broadly related to human

¹ In the context of the *Convention on Biological Diversity*, biodiversity means: “the variability of living organisms of all origins, including among others, terrestrial, marine, and other aquatic ecosystems and other aquatic ecosystems and ecological complexes of which they belong; still including diversity within species, between species, and different ecosystems” (MMA, 2000, p. 9).

activities - *habitat* degradation, worsening climate change, pollution, exploitation of natural resources, and the presence of invasive exotic species - according to the *Global Biodiversity Outlook 3* - GBO3 report (SCBD, 2010).

The search for solutions to these dilemmas has pervaded the concerns and actions of various social segments. These articulations are reflected in the last two decades within the scope of the implementation process of the *Convention on Biological Diversity* (CBD) (MMA, 2000). The CBD is considered the main international pact built to guide this complex and controversial agenda (Bensusan, 2014; Prates & Irving, 2015).

In the context of the CBD, the dissemination of communication actions is of central importance to broaden the understanding of society on the complexity of this issue, although the materialization of this orientation is also considered a challenging issue at the global level (Hesselink *et al.*, 2007). *The 20 Aichi Targets*² (important global deliberations agreed under the CBD for implementation in the period of 2011-2020, in which approach, mentioned below, inspires the discussion of this article) were established to deal with this and other challenges.

Considering that within the context of the CBD, parks and other protected areas are recognized for their central importance in biodiversity conservation, as well as the complexity involved in the implementation of this *Convention*, particularly in relation to the dissemination of qualified information on the agenda in question, the objective

of this article is to interpret how communication actions are expressed in the management of two parks located in different countries: one in Latin America and another in the European Union. Considering the different geographic, ecological, political, and socioeconomic contexts to which the surveyed parks are associated, it is worth noting that the idea was not to produce a comparative study but to reflect on potential advances, dilemmas, and lessons learned from these two communication experiences. In turn, this interpretation was inspired by the *Aichi Target*³, which refers to the need to sensitize society about the importance of biodiversity, an issue that presupposes access to qualified information. For this purpose, an interdisciplinary perspective was also sought after. Thus, the communication theme is approached overlapping with other areas of knowledge such as anthropology, biology, social ecology, sociology, and economics, represented in this article by references chosen to promote the proposed dialogue.

The selected scenarios for the accomplishment of this qualitative research based on the approaches that supported this article were represented by the *Ilha Grande State Park* (PEIG) located in Rio de Janeiro, Brazil, a leading country in biological diversity worldwide (Lewinsohn & Prado, 2005), and the *Maremma Natural Park* located in the region of Tuscany, Italy, which is entitled to the European Union's greatest biodiversity (MATTM, 2014). This selection is justified by both parks being inserted in coastal regions that are subjected to the growth of mass tourism

² Complex content available at: <<https://www.cbd.int/sp/targets/>>. Access in: Feb 2016.

³ *Aichi Target 1*: "By 2020, at the latest, people are aware of the values of diversity and the steps they can take to conserve and use it sustainably." Source: <<https://www.cbd.int/sp/targets/>>. Access in: Jan 2016.

among other types of pressures. These structures were also created at the same time - the 1970s - to safeguard the priceless natural and cultural heritage from various threats. The PEIG, besides being the third oldest park in the State of Rio de Janeiro (Vallejo, 2005a), it is the second largest insular park in Brazil (INEA, 2013). The *Maremma Park* was the first protected area established in the region of Tuscany (Regione Toscana, 2009).

Based on these assumptions, the starting point in the methodological course was carried out in Italy between March and June of 2015⁴. During this period, the activities of bibliographical and documentary surveys were carried out in portals of Italian governmental and non-governmental institutions; a visit to the *Maremma Natural Park*; interviews with two interlocutors⁵ who contextualized how communication actions were part of the management process of this protected area; and an analysis of the main virtual tools for disseminating information to society. For the purposes of preparing this article throughout 2016 and until July of 2017, these media sources were revisited for eventual updates.

Based on the same methodology, the activities related to bibliographic and documentary research, and the analysis of the virtual communication tools of the *Ilha Grande State Park* (PEIG) were initiated in the first half of 2016. The data obtained were systematized by December of the same year. The interview with the area manager⁶ occurred only in March of 2017, aiming to contextualize how

communication actions were part of the management process in this protected area. To delimit the time frame, all updates of information regarding the PEIG were carried out until July of that year.

The fact, that the dissemination of information about the importance of biodiversity to society continues to be recognized as a primordial global issue was considered both in the research stages and the process of constructing this article. Therefore, we agree with Frome (1998), Carvalho (2009), and Dovers *et al.* (2015); according to these references, communication actions on environmental themes have central relevance to the success of public policies. For this, socio-cultural particularities should be considered among other specificities of the localities where they are inserted.

However, the rescue, although synthetically, of some central issues that pervade the CBD itself is considered important before beginning the discussion about the main issues observed about the communication actions in the two studied parks.

1.1 From Rio-92 to the Aichi Targets: advances and challenges in the implementation of the CBD

Brazil and Italy are part of a group of 196 countries that have become signatories to the CBD since the *Convention* was formalized in 1992 under the *United Nations Conference on Environment and Development* (UNCED). This emblematic event

⁴ Research supported by the Ph.D. Program of Studies Abroad (PDSE) funded by the Brazilian Federal Agency for Post-graduate Education (CAPES).

⁵ Interviewees were: Enrico Giunta, the park's manager, and Elena Moutier, the acting professional of Communication and Environmental Education.

⁶ Tercius Barradas.

held in Rio de Janeiro was also called *Rio-92*.

Underpinned by three objectives⁷, the CBD has considerably increased global public action towards the issue of biodiversity conservation, according to Viola (1998). Thus, it has also inspired a number of public policies in the signatory countries since 1993 when it came into force (Prates & Irving, 2015).

However, even if progress towards the biodiversity conservation agenda has been achieved in the last two decades, motivated by the CBD, it is not a linear and homogeneous process. On the contrary, it is a process that has been permeated by controversies, progress, and even setbacks in a global way (Irving & Oliveira, 2012). Given this scenario, what have been the main paths to the implementation of this *Convention*?

In this retrospective, it should be noted that in 2002, ten years after *Rio-92* took place, global leaders met during the UN *Sustainable Development Summit* in South Africa to evaluate the outcomes of the agreements signed during that flagship conference. In this new international meeting, called *Rio+10*, the representatives of the various countries, member of the United Nations (UN), recognized the need to expand measures to protect biodiversity, a matter reflected in the final document *The Johannesburg Declaration on Sustainable Development* (United Nations, 2002).

Similar reflections had also motivated new actions within the CBD itself in 2002, months before *Rio+10*. In that year, the signatory countries of this *Convention* committed themselves to a significant reduction in the rate of biodiversity loss by 2010. This purpose was inserted in the

Strategic Plan 2002-2010, approved at the 6th *Conference of the CBD Parties* (COP-6) held in the Netherlands in 2002.

However, according to the GBO3 report (SCBD, 2010), the results were below expectations after reaching the deadline set in the planning. As a result, the CBD signatory countries have mobilized again, and in 2010, during the 10th *Conference of CBD Parties* (COP-10) in Nagoya, Japan, new commitments were made for the next decade.

The *Strategic Plan 2011-2020* was defined in the context of the COP-10 central deliberations, to which the so-called *Aichi Targets* are related. This pact even surprised the environmental movement because, at that time, the feeling was of a lack of prospects for advances in the negotiations (Oliveira & Irving, 2011).

Although the CBD's signatory countries have made new public commitments to this agenda, there are still countless and complex challenges to reach the set 20 Aichi Targets. As central parts of the dilemmas, there are disputes involving biodiversity conservation measures *versus* increasing demands for the exploitation of natural resources to support the model for contemporary production and consumption (UICN, WWF-Brasil, IPÊ, 2011).

In continuation of this discussion, some of the challenging questions emerging from these reflections on the achievement of the *Aichi Targets* will be introduced briefly as follows. To this end, the focus is directed to the management of protected areas and the insertion of communication actions in this context.

⁷ Conservation and sustainable use of biological diversity components (both directly associated with the theme of this article) and the fair and equitable sharing of benefits arising out of the utilization of genetic resources are CBD goals.

1.2. *Conserving biodiversity, for what and for whom? A brief reading on protected areas in Brazil and Italy*

Conserving biodiversity means protecting the multiplicity of life forms existing on the planet through highly complex actions planned for a long-term scale (Wilson, 1997). To this end, environmental agencies, among other government agencies, tend to adopt measures that directly interfere with the way various social groups use natural resources. Because this agenda involves a range of social actors, with multiple interests, the implementation of laws and other forms of regulation are permeated by tensions and controversies (Neves, 2012).

The process of creation, implementation, and management of protected areas is inserted in this regulatory context adopting a terminology widely used globally which, particularly in Brazil, is replaced in specific cases by the denomination of conservation unit (UC)⁸, as indicated by Bensusan (2014). Although recognized as one of the main international strategies for biodiversity conservation in the long term, especially within the framework of the CBD, the institution of protected areas has motivated a broad and controversial global debate because it involves restrictions in the use of natural resources (Giuliani, 2005; Irving, 2010).

Historically, given the interpretation that society's actions on nature are potentially destructive, the idea of reserving natural spaces with the intention of conserving original aspects of the planet for some specific purposes was strengthened. Among

these purposes are the carrying out of scientific research and leisure and visitation activities. The environmental agencies have played the role of controllers of these environments, which tends to generate resistance since limitations in the use of natural resources interfere in the livelihoods of populations inhabiting the interior or surroundings of these areas (Catão & Carneiro, 2005).

This “shielding” perspective about the effects of human action over some areas of high ecological relevance was named by Diegues (1996) as *the modern myth of pristine nature*, which is the title of one of his works of reference. In that publication, the author presents a history of the model of management of protected areas spread worldwide, mainly, from the creation of the first national park in the world in 1872, the *Yellowstone National Park* in the United States.

Following an international trend, the protected areas created in Brazil since the 1970s were traditionally guided by the integral protection model. This impedes the direct use of natural resources and the presence of human occupation; characteristics strongly expressed in the category of parks. In the 1990s, due to actions of social mobilization, there was an opening space for the creation of protected areas of sustainable use. In these spaces, the direct use of natural resources is allowed in a planned manner and with a long-term vision (Giuliani, 2005; Irving, 2010).

In Brazil, the processes of creation, implementation, and management of conservation units (UCs) follow the criteria and standards established

⁸ “(...) territorial space and its environmental resources including jurisdictional waters with relevant natural characteristics, legally established by the Public Power with the goals of conservation and establishment of limits under a special administrative regime in which appropriate protection is guaranteed.” (Brasil, 2000, Article 2º, Addendum I).

by the National System of Conservation Units in Nature (SNUC), established by the Federal Law No. 9985/2000 (Brasil, 2000). Within the context of this legal framework, federal, state, and municipal UCs are distributed in categories of management of integral⁹ protection and sustainable use¹⁰. In addition to these typologies, until July of 2017¹¹, the country had 2,082 UCs in the continental area, occupying an area of 1,535,127 square kilometers and 169 UCs in the marine area occupying 55,200 square kilometers. This total was distributed in the Brazilian biomes as follows: Amazon, 27.3%; Caatinga, 7.7%; Cerrado, 8.3%; Atlantic Forest, 9.4%; Pampa, 2.8%; Pantanal, 4.6%; and marine areas, 1.6%.

Conversely, from the perspective of Giuliani (2005), although in a different geographic, political, and socioeconomic context of Latin America, the policy directed to protected areas in Italy seems to have evolved in the same direction of the Brazilian strategies. According to the author mentioned, until the 1980s, this type of initiative was strongly aimed at addressing the risk of extinction of certain species of animals and plants in that country. However, the restructuring in the Italian system in the early 1990s began to recognize not only the role of protected areas for the conservation of biodiversity but also

the relevance of these spaces as inducers of local development.

Based on information from the Ministry of Environment and the Territorial and Marine Protection (MATTM)¹², the National System of Protected Areas of Italy¹³ (anchored in Law No. 394/1991) is responsible for the management of 871 protected areas covering 3.1 million hectares of land (10.5% of the national territory). The 27 national marine protected areas totaled 2.8 million hectares when added to the International Marine Mammal Sanctuary (2.5 million hectares). The protected coastal area, in turn, is 658 kilometers.

According to Pellizzaro *et al.* (2015), a broad correspondence between the standards established by the countries and the international system of classification of protected areas proposed by IUCN (1994) does not seem to be globally in place. According to a survey carried out by the authors cited above in countries of five continents, including Brazil and Italy, the only exception is the National Park category (found in all surveyed countries).

On the other hand, although an influential environmental organization such as the IUCN has not been able to guide an equivalent global system of classification of protected areas - with a focus on strengthening a common language in the forms of

⁹ Categories of management in UCs for integral protection: Ecological Station, Biological Reserve, National Park, Natural Monument, and Wild Life Refuge.

¹⁰ Categories of management in UCs with sustainable use: Environmental Protection Area, Area with Relevant Ecological Interest, National Forest, Extractive Reserve, Fauna Reserve, Sustainable Development Reserve, and Private Reserve of the Natural Heritage.

Source: <<http://www.mma.gov.br/areas-protetidas/unidades-de-conservacao/categorias>>. Access in: jan.2017.

¹¹ Source: <http://www.mma.gov.br/images/arquivo/80112/CNUC_JUL17%20-%20C_Bio.pdf>. Access in: Jul 2017.

¹² Source: <<http://www.naturaitalia.it/areeNaturaliProtezione.do>>. Access in: jan.2017.

¹³ The Italian system is composed of the following management categories: National Park, Natural Regional Park, Nature Reserve, Marine Protected Areas, Wetlands of International Importance (Ramsar), and Other Natural Protected Areas.

categorization of these spaces - some authors, such as Pellizzaro *et al.* (2015), consider that several conceptual advances have been more widely accepted worldwide. According to these references, the recognition of the importance of integrating local cultural values with mechanisms of conservation of natural resources is part of this process of advances.

Moreover, as Fernandes-Pinto & Irving (2017) point out, a paradigmatic change in this direction occurred during the *V World Congress on Parks*¹⁴. The event was considered a milestone for this debate for having made recommendations on the importance of integrating cultural values to the processes of management of protected areas globally.

Thus, although the creation of protected areas is recognized by the strategic importance for the conservation of global biodiversity, this theme involves great complexity. Therefore, we tried to discuss, although synthetically, some of the challenging questions that permeate this agenda. To launch such reflections, it seems fundamental to introduce, next, the discussion on the interfaces of communication in the process of management of protected areas, the main motivation of this article.

1.3. Communication as central to the success of the CBD guidelines

Sensitizing society on the importance of conservation and sustainable use of biodiversity is considered a central issue for the success of the

actions planned by CBD signatories. To this end, Article 13 on *Education and Public Awareness* in the *Convention* recommends that countries should stimulate the understanding of this issue. This should be done through the dissemination of information in the media and the implementation of educational programs.

The *Work Program on Communication, Education, and Public Awareness* (CEPA)¹⁵ is one of the main axes of this direction in the CBD. A list of priorities was elaborated to promote the strengthening of this theme during the COP-8 (based in Brazil in 2006) in the context of this initiative. The need for regional training workshops was highlighted, and the organization of a guide to facilitate the applicability of communication practices on the subject was suggested globally.

Based on the defined priorities, the *CBD Secretariat* requested the *International Union for Conservation of Nature* (IUCN) to develop the so-called *toolkit* for the CEPA¹⁶. Directed to decision-makers in countries that are signatories of the *Convention*, this guide with English and Spanish versions seeks to advise on governmental and non-governmental communication and education initiatives on the biodiversity conservation agenda through a comprehensive systematization of specialized information.

For Hesselink *et al.* (2007), organizers of the mentioned publication, one of the great challenges of CBD signatory countries is precisely the development of actions of *Communication, Education,*

¹⁴ Event held in Durban, South Africa in 2003. World Park Conferences are promoted by the IUCN since 1962 (once every ten years); they generate important deliberations that guide management processes in protected areas worldwide.

¹⁵ Information on CEPA available at: <<http://www.cepatoolkit.org/>>. Access in: jan.2016.

¹⁶ Available at: <<https://www.cbd.int/cepa/toolkit/2008/doc/CBD-Toolkit-Complete.pdf>>. Access in: jun.2016.

and Public Awareness. In the processes of management of protected areas, the recommendations of this guideline tend to be fundamental because part of its objectives is specifically to present the wide range of communicative resources. These resources can be used for the dissemination of information to society on the importance of these spaces for the conservation of biodiversity.

Therefore, the recommendations of Hamú *et al.* (2004) are also worth noting because they highlight the importance of communication actions to achieve conservation objectives and sustainable use of biodiversity in protected areas. Thereby, these initiatives should be transversally considered in the management processes of these spaces in the view of sociocultural issues and other dimensions that involve the range of social actors who wish to inform and engage. However, implementing these guidelines still poses a challenge, as discussed below.

2. The Ilha Grande State Park and its relevance for the conservation of biodiversity in Rio de Janeiro

Created in the 1970s¹⁷ with the purpose of preserving an inestimable environmental heritage in the state of Rio de Janeiro, the *Ilha Grande State Park* (PEIG) is located in the municipality of Angra dos Reis, on the southern coast of the State of Rio de Janeiro. This region is known worldwide, both for the beauty of its landscapes and the great diversity of its natural ecosystems formed by forests, beaches, restingas, and mangroves in addition to streams, rocky shores, and others.

Due to its ecological importance and strategic location for the conservation of biodiversity, the PEIG was recognized as an *Atlantic Forest Biosphere Reserve* in 1992 by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). Since then, it has gained international status in the context of public policies for the protection of nature (INEA, 2011; 2013).

The PEIG occupies 12,052 hectares and covers 62.5% of land area in the *Ilha Grande Bay* (BIG), which is formed by the municipalities of Angra dos Reis, Paraty, and Mangaratiba, and considered the most preserved bay in the State of Rio de Janeiro. Due to the privileged geographical location, the physical interface of this protected area maintains wide connectivity with the marine surroundings. This assigns an important differential landscape and ecosystem to this site in a region where fishing and tourism represent some of the main economic activities (INEA, 2011).

The BIG region, in which PEIG is inserted, is recognized as a *hotspot*, that is, it is an area of significant biodiversity and, at the same time, strongly pressured by threats of degradation. Because it shelters the main forest remnants of the Atlantic Forest in Rio de Janeiro State, the creation of protected areas has become a strategic initiative for the conservation of the biodiversity that still exists in the region. Thus, the PEIG is also part of the Bocaina Mosaic, comprised of 18 conservation units, five indigenous lands, and four quilombola territories located between Rio de Janeiro and São Paulo, created with the objective of strengthening the integrated management of these spaces of rich environmental and cultural diversity.

¹⁷ Created by State Decree N° 15.273 of June 26, 1971.

The preservation of natural ecosystems; execution of scientific research; and performance of activities of environmental education and interpretation, recreation, and ecological tourism are among the main objectives of the *Ilha Grande State Park*. Hence, a *Visitor Center* inside the park offers educational materials and guided tours services for students, and activities such as trails, waterfalls, diving, contemplative visits, and mountaineering are available public options. However, the park also faces problems such as visitation by unauthorized access and predatory behavior of visitors in remote areas as well as other negative impacts such as illegal plant extraction and hunting of wild animals (INEA, 2011).

The threats to biodiversity conservation mentioned above have expanded since the 1960s when the region was heavily pressured by real estate speculation. This process was driven by its natural attractiveness and the easy access of visitors from large urban centers such as Rio de Janeiro and São Paulo, the country's main capitals (Vallejo, 2005b).

The valorization of the region in which the *Ilha Grande State Park* is inserted has also provoked numerous socio-cultural impacts, such as the breakdown of ancestral ways of life. In this context, populations such as those of fishermen who traditionally were established in those beaches were taken to inhabit hills and slopes in the Serra da Bocaina, and thus, stimulating the slums (Diegues & Nogara, 2005).

Amidst the pressures from urban and industrial growth, as well as the lack of infrastructure of public services such as sanitation and others, the disorderly expansion of tourism activities has led to an increased degradation of the BIG over decades, generating concern due to the ecological relevance of the region (Alho, 2002; INEA, 2011).

Due to the expansion of public debate about the negative impacts of mass tourism in the BIG, some solutions to face this process have been considered in recent years. An alternative already disclosed by media of national circulation, however, considered controversial, refers to the prospect of charging an entrance fee to visitors in the Ilha Grande Bay. The funds collected would be invested in environmental protection actions (Araújo, 2015).

As a way of coping with the pressures of mass tourism, the Public-Private Partnership (PPP) proposal has been considered as a possible management model for the PEIG; however, this is another controversial topic. Several civil society organizations oppose the alliance between government and private initiatives because they believe that strategic natural resource management should be maintained within the sphere of public power (Garcia, 2016).

As analyzed by Oliveira (2008), in general, it can be stated that the risks associated with the advance of touristic interest in the Ilha Grande Bay are perceived by local populations. Nevertheless, according to the author, contradictorily, residents of the region do not interpret a trend of sustainability in the model of local tourism, nor even in that practiced within the scope of the PEIG management. According to the same reference, the lack of dissemination of information on environmental norms and laws, which support the existence of protected areas such as the PEIG, is a problem that affects the perception of residents about this model of regulation on the use of natural resources. The author also identified in these stakeholders a feeling of estrangement from the process of nature protection instituted in the context of the park's management.

Given these perceptions, the great challenge of expanding educational activities and disseminating

information about the PEIG, not only for tourists but especially for residents of the Ilha Grande Bay, is even more illustrative. Also, considering that the *Aichi Target 1* tends to motivate reflection on the challenges imposed to the process of expanding the dissemination of information on biodiversity conservation, to what extent have these actions been currently strengthened in the context of the PEIG's management? This is an issue that pervades the discussion presented below.

2.1. Communication in the Ilha Grande State Park, dilemmas and potential

In the context of this research, one of the first findings was that the PEIG did not have an exclusive *website* in the period dedicated to researching available *online* tools. The official information content about the park was presented on a page inserted in the State Environmental Institute (INEA)¹⁸ website, an environmental agency responsible for the management of conservation units in the State of Rio de Janeiro.

The INEA *website* was, until then, the main official communication channel on the PEIG to society. It was possible to perceive two central characteristics during the analysis in this virtual space. The presentation of the informative content of the analyzed page, in addition to being summarized, emphasized the process of creation of the park among other approaches of a more documentary

character. In one of the few more direct messages to the public, it was possible to observe that the communication, in general, referred to the guidelines on the expected behavior of visitors in a protected area. The emphasis, in this case, was on respect and care for biodiversity during sporting activities. A small leaflet with this approach was available in the presentation space of the park's location.

A map and a full version of the *Management Plan* (INEA, 2011)¹⁹ were also highlighted as part of the information content about the PEIG, presented in the scope of the researched website. This document establishes norms and restrictions of use, besides guiding on management actions of natural resources in conservation units. Information about the Park's *Advisory Board*, including its composition, was also available. The final part of the content made available on the *website* presented, until then, information on how to carry out scientific research activities in the park and studies in progress.

In addition to the virtual space inserted in the official INEA *website*, the PEIG also had a *Facebook*²⁰ page with 8,800 followers. The main content disseminated in the social network included news and photos about events held since 2010. Unlike the poorly illustrated content of the analyzed *website*, previously presented, hundreds of images are shared in this social network by users and park professionals showing moments of interaction between visitors and the environment of this protected area.

Most of the news posted on the PEIG *Facebook* page reported on activities that were

¹⁸ Content available at: <<http://200.20.53.3:8081/Portal/index.htm>>. Access in: Jul 2016.

¹⁹ Management Plan available at: <<http://www.inea.rj.gov.br/cs/groups/public/documents/document/zwew/mdiw/~edisp/inea0020167.pdf>>. Access in: Jul 2016.

²⁰ Available at: <<https://www.facebook.com/Parque-Estadual-da-Ilha-Grande-278015802756/>>. Access in: Jul 2016.

being carried out with a focus on biodiversity conservation in the park's insertion region. This emphasis was being presented, for example, in editions of the *Vem Passarilhar Rio - Ilha Grande State Park* program. This event is held annually and is intended for birdwatching by residents, tourists, and environmentalists. As analyzed, users share their photographic records on this social network.

Other issues released through *Facebook*, and identified in this analysis, also involved the activities of the PEIG *Advisory Board* and news about lectures, tree planting distributions in that region, and other educational actions directed at residents.

However, it was possible to realize that, although the *Facebook* page seemed more dynamic than the official PEIG webpage inserted in the researched *website*, it also needed updating; the occurrence of months of interval between posts was observed, indicating that the content sometimes tended to be outdated.

Given these and other existing constraints, how can we ensure that access to qualified information about PEIG is guaranteed? How to ensure that communication actions are enhanced in the process of managing this park so that its importance for biodiversity conservation is more likely to be widely disseminated to society, as guided by the *Aichi Target 1*? What do managers, active in the park, think about the topic discussed in this article?

As pointed out by the PEIG manager during an interview, the development of communication actions is considered as a fundamental practice in

the daily life of the protected area²¹. Thus, even if the obstacles to the achievement of this specific objective were recognized, there was a process of development in progress. As announced by this interlocutor, a new website for the dissemination of more detailed information about parks in the State of Rio de Janeiro, including the PEIG, was in its final stages of preparation.

Furthermore, this managing body stated plans to frequently update the PEIG *Facebook* page. This social network is considered by the management team as fundamental to the dissemination of news about the park. The tool is also recognized as an essential space for facilitating the process of interactivity between managers and society.

Regarding the strengthening of PEIG's communication actions, not only for tourists but residents as well, the park management team considers that structural issues, such as lack of electricity in some communities of the *Ilha Grande Bay*, are some of the main obstacles to overcome. It should be noted that in this case, because this problem makes it difficult to connect locally to telephone and internet systems, other strategies for interaction and information dissemination need to be specifically designed to serve this type of audience. Thematic workshops, lectures, and discussion meetings among other on-site events, and the distribution of printed materials are some alternatives that could be useful in this regard. Other actions should also be considered to identify demands, especially with this and other groups of residents in the region. From this perspective, solutions that seek to apprehend,

²¹ The communication context was presented at the interview with the PEIG's manager, Tercius Barradas, in March of 2017 because there was no reference about the insertion of this component in the management process of this protected area at the official *website*, despite the acknowledgment of its importance as highlighted by the interviewee.

from the local point of view, aspirations regarding practices of information dissemination, focusing on the biodiversity conservation agenda, can be planned. This also tends to bring park residents and management teams close together.

Predatory tourism in the *Ilha Grande Bay* was highlighted during the interview as part of the challenges faced by the PEIG management team and, considered as the biggest problem to be overcome. This pressure factor has caused concerns, above all, regarding the capacity of support in areas that compose this region of great touristic interest, in which the park is inserted.

Given this scenario, INEA has been promoting communication actions over the last few years as ways to raise awareness among residents and tourists about the main environmental issues related to the park. The objective is to minimize the negative impacts of the disorganized visitation in the region. Such practices, however, tend to be more successful with the support of fully functioning communication tools and other strategies for that purpose, tailored to the specificities of the audience they wish to engage.

Thus, the guidelines²² for the dissemination of qualified information on the biodiversity conservation agenda, prepared by specialists in environmental communication, may be useful. These guidelines are available in an *online* guide and should be appropriated by public management bodies and social movements, academia, and other segments of society so that this kind of strategy can be advanced. Thus, this content tends to be another facilitator for the alignment of decision-makers with

the *Aichi Targets*, with an emphasis on *Target 1*, which inspires this article.

In Brazil, the *National Strategy for Communication and Environmental Education in Conservation Units* (ENCEA)²³ has also been prepared. Its objective is to guide the implementation of best practices on this theme in public policies and other actions directed to conservation units, such as those expressed as demands in the context of the PEIG.

2.2. Conclusions

In general terms, based on the analysis of the official PEIG webpage inserted in the *website* of the managing body, it was possible to perceive that, until then, there was a lack of dynamics in the information content presented. In addition to observing the absence of a space for up - to - date news insertion, there were no diversified photographs that could illustrate both the scenic beauty of the park and examples of interaction between visitors and natural environments that are open to the public, nor was there any emphasis on the relevance of its biodiversity. The access to this type of content required opening technical documents such as the *Management Plan* through available links.

Furthermore, direct messages including an invitation to park users to know the park and enjoy its diversified environments were not found on the mentioned *website*. Although educational activities were being developed with the purpose of presenting information about the importance of conserving this heritage in the long term to the public, as pre-

²² A guide about this theme is available at: <www.cbd.int/sp>. Access in: Apr 2017.

²³ See the ENCEA guidelines at: <<http://www.icmbio.gov.br/educacaoambiental/politicas/encea.html>>. Access in: Jul 2017.

viously pointed out, these practices were not being highlighted in this available virtual space.

Similarly, information on the accomplishment of events destined to park visitors was not visualized in the analyzed page; such events disseminate the idea that the central importance for the conservation of biodiversity is related to the park in the coast of the State of Rio de Janeiro.

In addition to the context of the analysis carried out, an integration of the two official information platforms on the PEIG, available via the internet, was not observed. In that sense, no reference was made on the *website* to the existence of the park's *Facebook* page. At the same time, a link that could direct Internet users to the park's official *online* communication channel was not found in this social network.

Considering that the PEIG receives about 800 thousand visitors per year²⁴, with updated and integrated communication channels, this audience tends to have a great potential for sharing information disseminated in their networks. This type of movement is increasingly facilitated by advances in digital media.

Likewise, it would be advisable that the actions on the PEIG could acquire greater visibility to the extent that they were published in the media in general and reproduced in official spaces of information dissemination of public management.

In continuation of this debate, the following pages present the main communication actions developed within the scope of the management of

the *Maremma Natural Park* and the analyses on the theme produced in the context of this research.

3. The Maremma Natural Park, the oldest protected area in Tuscany

With four decades of creation, celebrated in 2015, the *Maremma Natural Park* is the oldest protected area in Tuscany²⁵. It is renowned for its wealth of biodiversity, scenic beauty (uncovered along 25 kilometers of coastline), and its role as a vector of socioeconomic development in the region where it is inserted.

The park territory totals 9,800 hectares that range from the mouth of the Ombrone river to Talamone in the province of Grosseto. This region is cut by a mountain range that extends towards the Tyrrhenian Sea. In this geographic context of diverse ecosystems involving beaches and cliffs, marshes and forests, in addition to a rich historical and cultural heritage, the park attracts about 50 thousand paying visitors annually²⁶.

It is noteworthy that the entire Italian coastal region, in which the park is inserted, stands out for its strong touristic vocation. In addition to the discussions about the potential impacts of this segment on environmental and cultural dimensions, there has also been an investigative effort to interpret the conflicts that usually emerge from the relationship between residents and tourists. Bimonte & Punzo

²⁴ According to information disclosed during an interview with manager Tercius Barradas in March of 2017.

²⁵ Implemented on June 5, 1975, by Law n° 65 from the region of Tuscany.

²⁶ Information provided by director Enrico Giunta in a live interview during a visitation at the park in 2015. At the time, aspects related to the importance of communication in the management system of this protected area were reiterated, which is also in the content of the evaluated official *website*.

(2011) and Bimonte & Faralla (2012) have already developed studies with this approach.

Conversely, the region of insertion of this protected area is also marked by the strong tradition in agropastoral production, with emphasis on the cultivation of olive trees for the extraction of olive oil and pasture for small herds. This profile is highlighted in an official publication that discusses the advances and challenges for the management of protected areas in Tuscany. In this context, the relevance of reconciling the objectives of scientific research and protection of the natural and cultural resources of the *Maremma Park*, taking advantage of its potential as an inducer of regional social and economic development in the long term, is also discussed (Regione Toscana, 2009, p. 40).

To reconcile the objectives of nature conservation and stimulate regional socio-economic vocations (in which tourist visitations are included), Venturi (2015) highlighted some projects in the context of the park's 40 years celebrations, then considered important for its management. Among them, the conclusion of the reintroduction of the hawk-fisherman (*Pandion haliaetus*). This species was absent from the region for about 40 years. However more recently, the hawk-fisherman has been breeding in protected wetlands and attracting the attention of both visitors and researchers.

In order to understand the current management context of the surveyed park, it is important to know the reasons that led to the creation of this protected area. According to Bimonte & Pagni (2003), the government needed to restrain the process of real estate speculation that gained momentum in the region in the 1970s.

Because of the creation of this protected area, according to the mentioned authors, the territory of

the park was heavily administered through rules and restrictions of use from 1975 to 1998. During this period, there was a need for more rigorous control in the management process due to pressures related to urban development and threats associated with mass tourism. Such measures have fueled tensions between the population, representatives of local institutions, and the park's administration.

In search of a new management model able to reconcile objectives of conservation of natural resources with better practices of regional development, a transition occurred from 1994 onwards. A departure from a situation of strong regulation by the management of the protected area to a phase of a closer relationship between public managers and local actors occurred (Bimonte & Pagni, 2003).

Thus, with more openness to dialogue, one of the perceived advances was the incentive to complementary activities of agricultural production for farms in the region. Initially, in the face of this process, the perception of residents was that the creation of the park represented a risk of possible devaluation of their properties; at a later stage, the presence of the protected area became recognized as a value-adding element. For Bimonte & Pagni (2003), once this territory brand achieved regional recognition, this positive perception transcended the residents' reading about the area.

Given the more favorable situation for dialogue and the search for joint solutions, the following decade contributed to the construction of guidelines focusing on the quality of management of this protected area. These guidelines, in turn, were reflected in the regional economic dynamics.

Thus, in addition to being the first park created in Tuscany, the *Maremma Park* was also

a pioneer in the region to guide management by the ISO 14000 international environmental management system in 2003 (Regione Toscana, 2009). Since then, the management practices of this protected area have undergone periodic revisions for the renewal of the *green seal*.

The qualification in environmental management sought to encourage the environment. This process was mainly based on an orientation guide for hotel establishments aimed at improving the quality of services offered to tourists and reducing the environmental impacts of their activities. In this context, the dissemination of information about the importance of the park and the benefits derived from its area of influence was also considered as a fundamental element.

Moreover, for the park's administration, the environmental management project also offers the opportunity for a continuous exchange of information between the management team and the region's tourism entrepreneurs. This experience has allowed the improvement of strategies to encourage visitation in this protected area. The communication actions discussed more broadly below are considered as central elements to the success of this initiative, as reiterated by the interviewed managers.

3.1. Communication strategy as a fundamental element for integration with society

The official *website* of the *Maremma Park*²⁷ has been considered the main vehicle for disseminating information about the importance of

this protected area to the general public. In this virtual space, created a decade ago, the most relevant environmental characteristics and best management practices of this Tuscan heritage are disclosed, as well as up-to-date news about the various socio-cultural activities carried out in the area throughout the year. The information content is presented in two languages (Italian and English).

The analyses of the *website* information, subdivided into four parts called *Know*, *Live*, *Participate*, and *Study*, shows that this initiative seems to translate the intention to motivate the public interest in the usufruct of the park's spaces with clarity. This motivation is reflected in the highlights of what is most important regarding natural, historical, and cultural heritage.

In the *Know* section, it was possible to observe the contextualization of general information about historical facts and tales that involve the region, besides curiosities about architectural monuments, characteristics of flora and fauna, and archaeological discoveries in its area of influence.

Through the *Live* section, visitors were invited to visit the park following information on the main itineraries, cultural activities, and environmental education. There was an indication of food and lodging establishments aligned with management-oriented environmental management criteria. A map of the region concentrated the main data (address, telephone, and *website*) of enterprises with the *green label*. The content of this section also offered several *links* to portals of regional, national, and international environmental institutions, including the *Italian Federation of Parks and Natural Reserves* (Federparchi). Thus,

²⁷ Available at: <<http://www.parco-maremma.it/>>. Access in: Jul 2016.

it also seemed clear, through this virtual space, the intention of facilitating the interconnection of Internet users to a broader universe of access to information on the biodiversity conservation agenda at various levels of management.

The section *Participate* showed that Internet users were being encouraged to register in *The Seasons in the Park Photographic Contest*²⁸. This page highlighted landscapes, species of animals and plants, and photos that expressed the satisfaction of tourists who already had contact with that natural environment. Thus, the content related to this award signaled a permanent motivation to enjoy the socio-environmental and cultural benefits of this protected area.

The *Study* section showed an orientation to scholars interested in conducting research in the park or knowing the result of past scientific studies.

An annual calendar featured images highlighting biodiversity and the park's natural landscapes for each month of the year. This seemed to illustrate how simple alternatives can have a pedagogical function in the context of a set of integrated communication tools.

In this analysis, it was also noticed that the *website* was also intended to present the institution responsible for managing the park and its way of acting based on the guidance for transparent management in the Italian legislation²⁹.

Although the *website* represented the main official information dissemination space of the *Maremma Park* for society, as observed in the context of this research, it was not the only available channel. Managers of the protected area were already seeking to broaden their visibility through the internet upon recognizing the potential of social networks as tools of communication. For that, a *Facebook* page³⁰ was initially created.

In July of 2017, the *Facebook* page had more than 11,000 followers. Information about activities open to the public was being updated frequently and news about the park, disclosed in the Italian and international media, were shared. However, it was noted that the focus on most postings was to encourage tourism in this protected area.

Information about the park was also being disseminated in three other social networks: *Instagram*, *Youtube*, and *Pinterest*; all integrated with each other. *Instagram*³¹, a virtual environment dedicated mainly to posting photos, had 1,200 followers and more than 200 images released. On this page, users were being encouraged to share experiences of contact with nature in this protected area.

However, both *YouTube*³² (an online video channel) and *Pinterest*³³ (a social network to share photos and videos) seemed to be still less widespread in the communication toolkit used to disseminate information about the surveyed

²⁸ More information at: <<http://www.parco-maremma.it/partecipa/concorso-fotografico/>>. Access in: Jan 2017.

²⁹ Legislative Decree N° 33 of March 14, 2013, available at: <<http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2013-03-14;33>>. Access in: Jan 2016.

³⁰ Information available at: <<https://www.facebook.com/parco.dellamaremma/>>. Access in: Mai 2016.

³¹ Park content available at: <<https://www.instagram.com/parcomaremma/>>. Access in: Jul 2017.

³² Available at: <<https://www.youtube.com/channel/UCu6tjPgWMmI0a87Pn4ZlQYg>>. Access in: Jul 2017.

³³ Available at: <<https://br.pinterest.com/parcodellamaremma/>>. Access in: Jul 2017.

protected area. In these mentioned networks, 40 subscribers and 12 followers were identified by July of 2017. The two virtual spaces presented the beauty of landscapes and the diversity of fauna and flora enjoyed by visitors as their main focus.

3.2. Conclusions

From the methodological approach used in this research, it was possible to perceive that the management of the *Maremma Park* had been seeking to occupy strategic spaces for the dissemination of information via the Internet, although some of the social networks seemed more widely used for this purpose than others.

In this context, two central aspects were perceived in the process of analysis of the virtual communication tools in this protected area. First, the frequent updating of information about the park and the integration of available information channels via the internet. Thus, in the official *website*, as in the other researched *online* tools, the interconnection was easily perceived through icons that identified the digital media used. This characteristic tends to facilitate the access of Internet users to contents divulged in varied spaces and the rapprochement of the public in general with the daily management of this protected area.

Therefore, it was also observed that the option of using digital tools to broaden the dialogue with different types of public and, above all, to disseminate the theme of local biodiversity, has been recognized in the management of this agenda. An example of this was the inclusion of communication and environmental education activities of the *Maremma Park* in a publication

of the *European Federation of National and Natural Parks* (Europarc Federation, 2014). This publication brought together some of the best communicative practices in nature management in the European Union.

Finally, it should also be noted that, in addition to highlighting the relevance of the structure for the region in which it is inserted and of seeking to facilitate the interactivity between its management team and society, the main virtual channels of information dissemination of the *Maremma Park* have also so far contributed to avoid paper consumption, one of the strategies adopted under the environmental management system of this Tuscan protected area.

4. Final considerations

Communication plays a central role, both in raising society's awareness of the importance of biodiversity for human well-being and in efforts to articulate different social actors to promote the necessary changes to reach this goal. It is not by chance that the *Aichi's Target 1* focus on the importance of broadening the understanding of this issue by the signatory countries of the *Convention on Biological Diversity* (CBD). This international pact also acts on this basis.

Considering the relevance of the subject in question, the proposal of this article was precisely, from two distinct cases, one in Latin America (*Ilha Grande State Park*) and another in the European Union (*Maremma Natural Park*), to interpret how information management actions were being developed in the sense of seeking to bring society closer to this complex agenda. For

that, the *Aichi Target 1* recommendations were the inspiration source.

In view of the chosen approach and methodology used, it was noticed that communication actions were in progress in the two researched protected areas. In addition, in both cases, the relevance to society's access to information was considered fundamental by the public management stakeholders. In this sense, virtual tools were used, above all, through the recognition of the progress made by Internet communication channels and their functionalities and potentialities.

However, in general, in the case of the *Ma-remma Natural Park* in Italy, greater agility and dynamicity was identified in the use of virtual spaces for the dissemination of information on the management of this protected area and its importance for the conservation of biodiversity in the context where the park is inserted. Moreover, the main channels of communication were promoting the circulation of news by signaling alternatives for interactivity between managers and society. The analyzed tools also pointed to more integration among them, which, in theory, tends to potentiate the objectives of dissemination of educational and informative messages.

From this perspective, in the case of the Italian park, there seems to be a clear tendency to align actions developed within the *Aichi Target 1* guidelines. However, considering the complexity involved in the researched agenda, it is important to emphasize that only specific studies could contribute to measuring the level of understanding of Internet users about the disseminated content since this was not the objective of this investigation. However, the interpretations brought

by this research can inspire management in this protected area to promote surveys that move in this direction.

Conversely, in the case of the *Ilha Grande State Park* in Brazil, even though Internet channels were identified to promote access to information on the management of this protected area, numerous deficiencies were observed in the process. The used communication tools lacked, for example, expanding and updating the transmitted content.

Likewise, the central importance of this park for biodiversity conservation in the region was not yet addressed with the necessary detail in the surveyed virtual networks. It is important to emphasize that the language disseminated in these spaces needs to be understood by the various types of audience and not only by experts seeking official documents and other archives with scientific data or relevant legislation.

For these and other reasons that involve the actions in the investigated communication, it is possible to state that the PEIG is still in the initial phase of mobilization to broaden the understanding of society on its forms of management and the relevance of biodiversity in this protected area for human well-being in the context in which it is inserted, and as directed by the *Aichi Target 1*.

However, it should be emphasized that the different management conditions in each surveyed protected area must be recognized, as well as the different specificities when it comes to academic investigations in countries with different socioeconomic realities. Therefore, this approach sought to emphasize the importance of both parks for the development of the regions in which they are inserted. Nevertheless, the current

reality of their management processes is not the same, which has obvious effects on communication actions.

Given the issues addressed in the context of this article, particularly in the Brazilian case, it is evident that there is a need to address the lack of integration and updating of the disseminated information about the PEIG in the researched official tools. Similarly, studies to improve the understanding about profiles and demands of internet users can contribute in this sense. Certainly, the solution of these problems will require cooperative actions involving not only the public agency responsible for the park's management but also a greater effort by research institutions and other social segments in the construction of communication strategies that are more efficient and adapted to the region's reality.

Thus, considering that the reformulation of virtual tools for the dissemination of information about the PEIG are planned, as discussed previously, advances can be reached in the future with the unfolding of these initiatives accompanied by new academic investigations.

Finally, given the accelerating process of loss of global biodiversity and the need to broaden the understanding of society about the complexity involved in this issue, the exchange of national and international communication experiences on the role of protected areas tends to have increasingly central importance.

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