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MARINE MANAGEMENT

HOW DO USERS OF THE GALAPAGOS MARINE RESERVE IMAGINE IT?

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The **Galapagos National Park Directorate** has its headquarters in Puerto Ayora, Santa Cruz Island, Galapagos and is the Ecuadorian governmental institution responsible for the administration and management of the protected areas of Galapagos.

The **Governing Council of Galapagos** has its headquarters in Puerto Baquerizo Moreno, San Cristóbal Island, and is the Ecuadorian governmental institution responsible for planning and the administration of the province.

The **Charles Darwin Foundation**, an international non-profit organization registered in Belgium, operates the Charles Darwin Research Station in Puerto Ayora, Santa Cruz Island, Galapagos.

Galapagos Conservancy, based in Fairfax, Virginia USA, is the only US non-profit organization focused exclusively on the long-term protection of the Galapagos Archipelago.

How do users of the Galapagos Marine Reserve imagine it?

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What is the first image that comes to mind when you hear the word Galapagos? For most people, the image of the Archipelago evokes "the untouched, pristine, wild, and natural" (Celata & Sanna, 2010). These images, built around the idea of "wilderness" or wildlife (Castree & Braun, 2001), were created by western visionaries within the consumer culture of the post war era (Kleese, 2002). For others, the Islands represent the hostile (Ahassi, 2003) or the possibility of "getting rich quick" (Camhi, 1995), a response to the bonanza resulting from sea cucumber fishing. According to Moscovici (2000), this is because social representations are linked to cultural and historical contingencies and societal value systems, ideas, and practices.

The creation of the Galapagos Marine Reserve (GMR) is an example of these social constructions. Initially associated with the idea of protecting the luxuriant marine biodiversity and intimately linked to scientific knowledge, this image has been used as cause célèbre by local forces, and continues so even now when images that are contradictory to the ideal of protection and conservation of biodiversity in the GMR have been developed (Watkins & Cruz, 2007; Salcedo-Andrade, 2008).

The diversity of images created by the users about the GMR has great relevance in the management and long-term viability of the Reserve. According to the Interactive Governance Theory (Kooiman *et al.*, 2005; Bavinck *et al.*, 2013), these images can determine greater or lesser GMR governability. They represent normative and cognitive aspects of users in relation to resource use (Song & Chuenpagdee, 2014). These images are useful when struggling with issues of conservation, management, and governance of resources, the environment, marine protected areas (MPAs), and fishing (Axelrod, 1994; Stern & Dietz, 1994; Pita *et al.*, 2011; Chuenpagdee & Jentoft, 2009). They are useful for decision-making because they illustrate the relationship between those who govern and those who are governed (Bavinck *et al.*, 2005). Finally, they increase the transparency of the process, the user´s willingness to take part in participatory practices (Chuenpagdee, 2011), and provide information regarding user attitudes and behavior in relation to the GMR, illustrating the reasons for their support or opposition to specific management measures (Fischer & Van der Wal, 2007).

Unfortunately, despite the advantage of integrating users´ images within the context of the management of MPAs, the images of the GMR have been traditionally and effectively hidden. This is a result of the dominant "hard science" approach of the research endeavor in Galapagos, in detriment to a more humanistic approach to the functionality of the GMR (Tapia *et al.*, 2009). As a result, it has been shown that this positivist approach has not solved the governance difficulties in the GMR; neither has it been as objective as believed.

The implementation of management actions, decision-making, and policy development have been primarily and exclusively based on science, influenced by theories, values, and power (Longino, 1990), which has proved to be inappropriate and risky.

But what do these "images" related to interactive governance refer to? They are what people think about the GMR, what they think should be done, or what is perceived can happen, based on interpretations of reality by the society, which in turn forms the public discourse. This reality, or our view of it and its social constructions, is expressed as visions, meanings, ideas, representations, cognitive elements, knowledge, facts, judgments, assumptions, hypotheses, convictions, purposes, and goals (Kooiman & Jentoft, 2009; Buijs, 2009; Buijs *et al.*, 2012).

This study illustrates the images that users have of the GMR, its management, and current state, within an interdisciplinary field at a meta-level scale. The research contributes to the literature on governance and governability of MPAs, clarifying the role, usually imperceptible, of images associated with human practices (Kooiman & Jentoft, 2009). This article proposes to: a) illustrate the most common images of the GMR; b) explore how they were formed, and c) describe how they influence governance of the GMR. Finally alternatives are presented to improve governance of the GMR.

Methods

A qualitative methodological paradigm was applied by using a case study to illustrate the phenomenon of interest, without generalizing the results outside the context of this investigation, nor towards other individuals or places, nor testing hypotheses in a universal sample (Stake, 1978; Gomm *et al.*, 2000; Stern, 2008; Golding, 2012; Robinson, 2014). On the contrary, I looked for patterns and meanings in the reasoning of the participants toward the GMR. Combining several methods or "triangulation" (Clifford & Valentine, 2003), I integrated semi-structured interviews, informal discussions, and participant observations at public meetings and consultation sessions. Relevant documents (e.g., journals and grey literature) and other sources of information (e.g., TV and local press) were extensively reviewed. Data collection lasted five and a half months with separate phases during 2010, 2011, and 2012. "Thematic Analysis" (Braun & Clarke, 2006) was used, including theoretical or deductive codes (Crabtree & Miller, 1999; Brinkmann, 2013). These coded data were related to the most common types of images encountered in the governance of marine resources literature. The images were grouped under four philosophical dimensions: expressive, normative, cognitive, and affective (Swart *et al.*, 2001; Keulartz *et al.*, 2004; Stern, 2008).

The data were obtained from 39 interviews with members of seven sectors of direct users of the GMR: eight small-scale fishers, ten tourism operators, seven dive centers, a naturalist guide, five scientists, five resource managers, and three maritime transport operators. Three potential participants refused to be interviewed, indicating a lack of knowledge related to the subject, or distrust and discomfort at being interviewed.

Results

What does the GMR mean to you?

Responses to the initial question, "What does the GMR mean to you?" were grouped into 34 image categories and 13 related topics (Table 1). The images fall mainly under the cognitive dimension, which refers to knowledge (e.g., "what is it?", "what does it do?", "what benefits does it provide?"), and the normative dimension, dealing with regulations and laws related to the GMR (e.g., "how is it managed?", "what are you allowed to do?"). Other images had affective (e.g., sense of belonging) and esthetic (e.g., beauty) connotations. The results show that knowledge about the GMR, regulations, affections, and values associated with the MPA are at the core of the images of the users. In a more practical and administrative context, these images could be "goals," "ends," and "judgments," related to concrete actions to be developed or implemented using management instruments.

Where do the images of the GMR originate?

The images regarding the GMR can originate directly or indirectly. Indirect images were developed mainly through the media, and through family or friends. Interestingly, scientific information and researchers appeared to have less dominant roles in the creation of images than previously thought. No interviewee made reference to scientific sources (e.g., articles in scientific journals or experts) for knowledge of the GMR.

On the other hand, direct images were obtained in situ after visiting the area or through personal experiences (e.g., working in the area). Thus, the relationship of the interviewees with the GMR is considered as a direct mechanism that enables the creation of images. In this case, five main types of interactions were identified: "fishing in the GMR," "tourism" (including divers and agencies), "through their own businesses," "research," and "working for the GMR." Additionally interactions between users and the GMR showed variations as to whether they are unique (e.g., a person is only a naturalist guide) or multiple (e.g., an entrepreneur could also be a fisher; a fisher could also be a dive guide). In addition, the level of engagement of users with the GMR varied over time with some users greatly or little involved in the period when the GMR was created (e.g., either in the establishment of the MPA or currently in its management), or in the level of intensity of interaction through direct (e.g., implementing conservation actions) or indirect (e.g., financially supporting a third party) involvement.

Discussion

Images of the GMR represent different things for the different people who form them. Interactive governance allows us to recognize that the GMR is highly complex, diverse, dynamic, and operates at multiple scales, all of which influence the diversity of images of the GMR being developed. For this reason, as Kooiman *et al.* (2005), we recognize the images of the GMR, along with instruments and actions, as elements that influence, deeply and significantly, the governance of this MPA.

Table 1. The 34 categories and 13 themes for the images resulting from the question "What does the GMR mean to you? "The images primarily correspond to the cognitive (in light gray) and the normative (in dark gray) dimensions. Affective and esthetic images are indicated in black.

Category (Song & Chuenpagdee, 2014)	Theme (Song & Chuenpagdee, 2014)	Type of Image (Kooiman & Jentoft, 2009; Buijs, 2009; Buijs *et al.*, 2012)	Associated philosophical dimensions influencing the images (Swart *et al.*, 2001; Keulartz *et al.*, 2004; Stern, 2008)
Protected Area (location/size/sector) Marine Protected Area Preservation/protection Conservation	Protected Area/protection/ preservation	Goals, ends	Cognitive
Resources/species (flora/fauna)/ preservation/protection Marine protection	Environment/habitat/ resources/protection/species	Goals, ends, knowledge	Cognitive/Normative
Characteristics of the MPA Management and legal framework Protection of the MPA by staff Multiple use zoning Decision-making model (consensus) Management Plan	Management strategy/ instrument	Goals, ends, knowledge, judgments, hypotheses, facts, perceptions	Cognitive/Normative
Mandated/limited use of resources Prohibition/exclusion of industrial fishing Exclusive use by locals	Control/regulations/ exclusion/resource use	Goals, ends, judgements, meaning	Normative
Vulnerability Insufficient patrol/control Risk of extinction	Governance limitations	Judgments, perspectives, ideas	Normative
Risk of extinction	Conservation limitations	Judgments, perspectives, ideas, presuppositions	Normative
Artisanal fishing Tourism Scuba Snorkel*	Profitable tourism activity	Goals, ends, knowledge, meaning, representations	Normative
Scientific research Management Conservation	Nonprofit human activity	Goals, ends, knowledge, meaning, facts	Normative
Diversity Uniqueness Value Local/global/national/international scale Time scale	Richness/value	Knowledge, facts, representations	Affective/Esthetic/ Cognitive
Source of income Tourism means work	Source of income	Judgements, perspectives, ideas, meanings	Affective/ Cognitive
Feelings about the activity Snorkel* Life at sea Individual /personal significance Our province Pride Idyllic scenario	Affection/sense of belonging	Judgements, meanings, representations	Affective
Attraction Snorkel* Uniqueness	Esthetic	Goals, meanings, perceptions, ideas	Affective/Esthetic
Provincial status	Political/administrative status	Goals, ends, representations	Cognitive/Affective

* It is assumed as not necessarily lucrative, because it may also have recreational interest, without economic benefit.

This research does not seek to find, propose, or define "good and correct" or "bad and incorrect" images. Instead I seek to contribute, in a practical manner, to the use of these "other" dimensions, different from the cognitive and normative, which at the same time play an influential and significant role in the formation of GMR users' images. A more inclusive vision that goes beyond the "marine resource management" approach is needed to meet the goals set for the GMR. I therefore propose the adoption of a broad paradigmatic image of "island governance" for Galapagos (including terrestrial and marine environments).

Cognitive and normative images were dominant among the participants, probably inasmuch as they are generated through mechanisms used to know the Reserve. Undoubtedly, communication media (i.e., cognitive) and MPA regulations (i.e., normative) have played an important role in the creation of the images and have served to establish links between means (image generation) and generation of knowledge. This idea, coinciding with Kooiman (2003), shows the decisive role of the means, not only in the creation of images, but also in their transmission and evolution. In this case, little or nothing has been done to resolve conflicts between users of the GMR linked with emotional or esthetic aspects.

The intensity of interactions between users and the GMR varies. It has been seen that being "involved" with the GMR does not necessarily imply an active role on the user´s side. In fact, neutral or inactive interactions were also recorded (e.g., memberships or associations) and form an interesting niche that conservation strategies should target. Another singular form of interaction is the "no interaction." This represents non-existing interactions, for example, through passive resistance or failure to respect laws (e.g., ignore, infringe, or violate regulations of the MPA), or even participation in illegal or arbitrary activities. This means that the obvious images aren't the only ones with which users (particularly authorities) must deal. Those hidden images that are socially accepted, explicitly or by implication, are also worthy of attention (e.g., "break the rules and prohibit participation may be tolerated, depending on who is excluded or what rule is violated").

The multi-temporal attribute of users´ images (i.e., during the creation of the GMR, when they heard of it for the first time or by experience) shows the dynamic complexity of the image formation process; in this case, their creation based on knowledge acquired through "media," "family/friends," "visiting an area," or through "personal experiences." In addition, it seems that relations between users and the GMR are determined by individual (or family) objectives (goals and aims) to develop, for example, small-scale fishing, tourism, personal business initiatives, research, or even being part of the MPA management staff. At the normative level, the fact of being able or unable to develop activities has a great influence on the creation of

images, for example, when explaining the concept of the GMR as a function of the existing restrictions, rules, and regulations.

Conclusions

The link established by the interviewees between cognitive- and normative-based images was imperceptible and never explicitly mentioned. This shows that the "final" image of GMR by the user has no clearly defined domain. In this way, it invites a reassessment of various elements to ultimately achieve the objectives of the MPA.

It is therefore concluded that:

- The images of the GMR show an immense variation, including both matching and contradictory images. There is no "right" or "standard" image of the GMR, not even within the scientific, small-scale fisheries, tourism, or maritime transport sectors. The images are contrasting and recognize the humanity of the MPA systems thus showing how users "imagine the GMR."

- Clarifying hidden images or negotiating opposing images does not necessarily imply that the interactions between those governing and those being governed must be free of discrepancies. It is suggested that those disagreements serve as negotiation mechanisms to find common ground and establish commitments among users. For example, a way must be identified to not only achieve greater community support but also to maintain that support.

- The dominant effect of the media used in the creation and transmission of images should serve as a mechanism to reassess and rethink the goals of the GMR.

- The images of the GMR spread by the media that indicate that it is an "untouched" and "pristine" area should be amended. There is enough evidence showing the negative side of human activity, for example tourism, and which shows that this MPA is not the ecotourism model par excellence that is promoted.

- The images created by users have given us a guideline of what is, in general, the philosophical background for their formation. However, none of the images has a single element nor can we talk about the "purity" of the images. Each image is a combination of aspects surrounding the four philosophical pillars that influence its creation. For this reason, the attempt to reduce conflicts between users and improve governance, for example, must of necessity take into account these four dimensions to attack the problem in a comprehensive way.

Recommendations

Including cognitive and normative domains, as well as affective and esthetic attributes, in the planning and development of activities in the protected area is recommended because much of the user behavior originated in the latter two. The mechanisms currently in place to manage the GMR should be adapted to propose, negotiate, mediate, resolve, and maintain measures that promote nature sustainability and the community's wellbeing in Galapagos. New strategies focusing on the four philosophical pillars that form part of the behavior and feeling of people should be used when designing a renewed and responsible public debate to decide if Galapagos should continue with the voice of rational conservation or if it is necessary to rethink a radical change in the management paradigm toward governance, in political, economic, and scientific agendas in the GMR (Watkins, 2008; Tapia *et al.*, 2009). This would help to improve the GMR governance system, thus increasing its governability over the long term, promoting the common wellbeing, and achieving the awaited equilibrium.

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