



RETHINKING NATURE CONSERVATION IN COLOMBIA: A CASE STUDY OF OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES

Clara L. Matallana-Tobón^{1*}, Marcela Santamaría², Alexandra Areiza Tapias¹, Clara Solano³ and Sandra Galán³

*Corresponding author: cmatallana@humboldt.org.co

¹ Instituto de Investigación de Recursos Biológicos Alexander von Humboldt

² Asociación Red Colombiana de Reservas Naturales de la Sociedad Civil-Resnatur

³ Fundación Natura Colombia

ABSTRACT

In Colombia, a country of great cultural and ecosystemic heterogeneity, there are many conservation strategies beyond protected areas that stem from both legal frameworks and local territorial processes. After much debate, these have been termed Complementary Conservation Strategies (CCSs), and their identification and recognition are necessary to achieving the country's conservation objectives. At the international level, under the leadership of the IUCN's World Commission on Protected Areas, progress has been made in defining criteria to identify 'other effective area-based conservation measures' (OECMs), and the uptake of these guidelines by the Convention on Biological Diversity (CBD) is expected during the next Conference of the Parties meeting (COP 14). In Colombia, we have run the draft criteria for OECMs against several case studies to identify the main similarities and differences. This paper presents in detail three CCS case studies that show whether and to what degree these include elements relevant to OECMs. The criteria and principal considerations regarding them are analysed. We conclude that, given the similarities, the international debate provides an opportunity to identify, recognise, report and enhance these strategies in Colombia.

Key words: complementary conservation strategies, Colombia, protected area systems, other effective area-based conservation measures, OECM

INTRODUCTION

Since the creation in the 19th century of the first national park in the United States, Yellowstone, protected natural areas represent one of the most relevant tools to conserve nature and biological diversity *in-situ* (Bahia de Aguiar et al., 2013). Its conception traditionally focused on the creation and management of wilderness areas (Rojas Lenis, 2014). However, in 2004, the IUCN had already established that, although the number of protected areas worldwide was growing (WDPA Consortium, 2003), the loss of biodiversity was increasing (IUCN, 2004). It became evident that in order to stop biodiversity loss and maintain the ecological processes and the functionality of a transformed matrix landscape, it was necessary to move from the protection of isolated areas to the management of protected area systems that are

connected at the landscape level and include other strategies such as biological corridors and joint management models in concert with areas under collective and private ownership, among others (Arango-V. & Díaz-M., 2007; Dudley, 2008). Therefore, the present challenge for conservation in protected natural areas relates to planning and management efforts on the matrix of the surrounding landscape through strategies that help maintain ecological processes, their conservation objective, as well as minimise restrictions on human use (Hansen & DeFries, 2007).

Colombia's territory not only includes great ecosystemic heterogeneity with marked changes in land-use (Etter & van Wyngaarden, 2000; IDEAM, 2017), but its social dynamics are moulded by multi-ethnicity and cultural diversity (Colombian Political Constitution of 1991) and

an armed conflict accentuated by differential access to land, resulting in large part from an exclusionary model of agrarian development (CNMH, 2016). Such heterogeneity has spurred different types of conservation strategies that respond to local, social and natural conditions but are not formally recognised (PNNC, 2015).

OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES (OECMs) AND COMPLEMENTARY CONSERVATION STRATEGIES (CCS) IN COLOMBIA

Since the twentieth century, Colombia has implemented conservation strategies that have promoted the use and sustainable management of biodiversity based on human occupation of the territory (Solano, et al., 2006; Rojas Lenis, 2014). Configurations range from public, private to community-based, and even international designations, a result of the country’s signing of international agreements and conventions. Some of these strategies have a legal basis, while others may be brought together as de facto conservation areas.

In 2010, Colombia regulated the management categories of protected areas that comprise the current National System of Protected Areas (SINAP) (Figure 1) with the intention of organising its national protected area system and to comply with the Programme of Work on Protected Areas (PoWPA) (SCBD, 2004). This regulation had as its objective to define the categories of protected areas and exclude the multiple denominations given by the territorial administrative entities that, according to the constitution and environmental law (Law 99 of 1993), are specifically obliged to conserve their natural heritage (Rojas Lenis, 2014).

Efforts by territorial administrative entities, civil society and ethnic and local communities remained outside the categories of SINAP. Legal opinion was that it was impossible to assign new protected area categories because of the lack of previous regulations (Rojas Lenis, 2014). In consequence, these conservation areas that were not framed in the SINAP categories ended up being referred to as in-situ conservation strategies or complementary conservation strategies (CCSs). Subsequently, in 2010 the concept of CCSs was first introduced in law but without a clear definition. In the following years, the concept was widely discussed at the national level and the following definition put forward:

An area with clearly defined boundaries, where a community, a private owner or an institution implements actions to ensure conservation, restoration or sustainable use of biological and cultural diversity, that is complementary to protected areas and contributes to connectivity (PNNC, 2015; Alonso, 2015).

This definition was presented at the second Colombian Congress on Protected Areas (PNNC, 2015), which concluded that CCSs provided an opportunity to contribute to the connectivity of SINAP, as well as recognising and visualising different conservation efforts in territories with a diverse range of governance systems. It also concluded that the country needed to continue identifying these initiatives and should push for their regulation so that they may be included in regional planning policy (PNNC, 2015).

To this day, several types of CCSs have been identified in Colombia, and each regional protected area system (SIRAP) has different terminology. The most recurrent are listed in Figure 2. Presently the Ministry of the

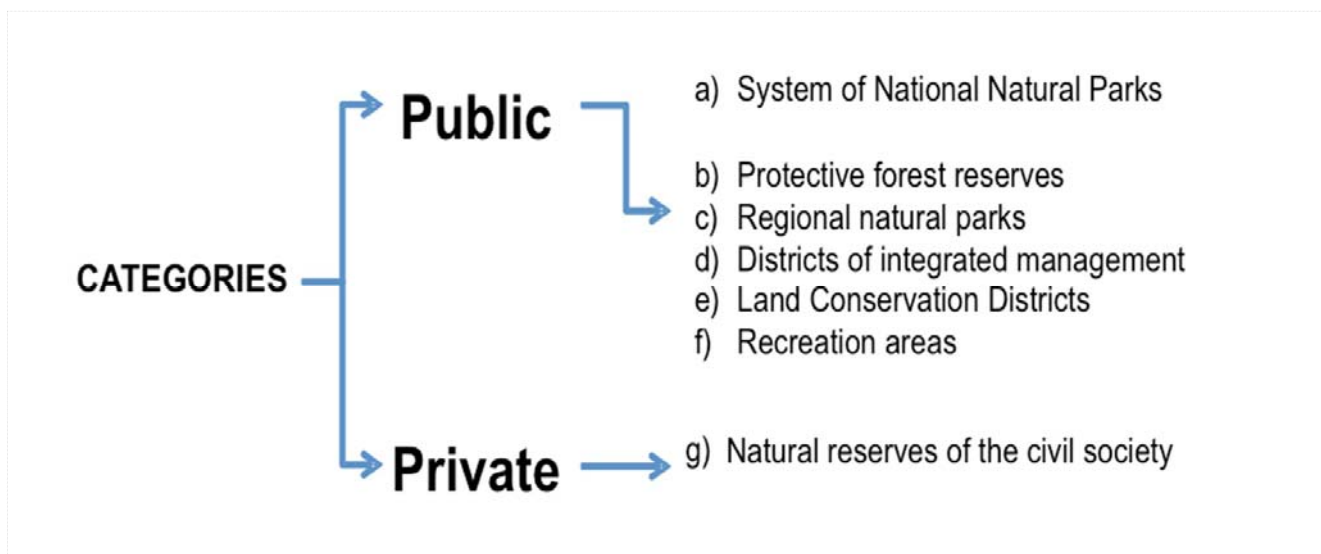


Figure 1. SINAP protected area categories (Decree 1076 of 2015)

Governance type A	Governance type B	Governance type C	Governance type D
<ul style="list-style-type: none"> • Forest Reserve of Law 2 • Lands acquired for watershed protection • Protected lands included in local land management plans • Municipal or urban protected areas. • Ecosystems protected by special laws (Paramos and wetlands) 	<ul style="list-style-type: none"> • Protected rivers • Ramsar wetlands • Biosphere reserve • Important Bird Areas-IBAs • Forest Reserve of Law 2 • Lands acquired for watershed protection • Protected lands included in local land management plans • Conservation agreements 	<ul style="list-style-type: none"> • Unregistered civil society natural reserve * 	<ul style="list-style-type: none"> • Territories and areas conserved by Indigenous peoples and local communities – TICCA * • Indigenous reserves * • Collective territories of afro-descendent communities * • Peasant reserves *

Figure 2. Types of CCSs grouped by the four types of governance (based on the National Agreement on Complementary Conservation Strategies, PNNC, 2015). Type A = Governance by the State on different levels: national, regional and local; Type B = Shared governance; can be established between the State and private and/or community-based organisations; Type C = Governance by private individuals and private organisations, usually the owners; Type D = Governance by Indigenous peoples and/or local communities.

* Only if they recognise themselves as CCSs.

Environment and Sustainable Development (MADS) is in the process of elaborating a legal proposal to recognise CCSs and incorporate these in regional planning policy. This shows the efforts by the State to make visible and recognise diverse actors in biodiversity conservation processes as well as to contribute towards a more complete protected area system.

At the same time as these discussions took place within the country, Colombia, as signatory to the Convention on Biological Diversity (CBD), identified the steps needed to implement the PoWPA. This programme urges all signatory countries to establish systems of effective and representative protected areas, which shall include not only strictly protected core areas and their buffer areas, but also other conservation strategies. Subsequently, the tenth Conference of the Parties to the CBD (COP 10) approved the Strategic Plan for Biodiversity, which contains 20 Targets to be achieved by 2020. Target 11, in particular, mentions that the aim of conserving 17 per cent of terrestrial ecosystems and 10 per cent of the marine area should be achieved through 'systems of protected areas and OECMs' (CBD, 2010).

With the aim of providing an OECM definition, the CBD requested technical support from the IUCN World Commission on Protected Areas, which in 2015 created a Task Force on OECMs. The objective of this group was to generate guidelines for the recognition and reporting of OECMs, which received feedback from members of that Task Force and, subsequently, from the Parties to the CBD. These guidelines include a definition¹ to be

discussed at the CBD meetings to be held in 2018 (SBSTTA 22 and COP 14).

This has led to the need for an evaluation of similarities and differences between the definitions of OECM and



High mountain ranching system with hedges for soil protection, Encino municipality, Santander © Janeth Bougard, Fundación Natura.

Table 1. Comparison between OECM and CCS definitions

Elements	OECM Definition	CCS Definition
Delimitation	A geographically defined space	An area with clearly defined boundaries
Management and governance	which is governed and managed	where a community, a private owner or an institution implements actions
Term	over the long-term	
Objectives	in ways that deliver the effective <i>in-situ</i> conservation of biodiversity, with associated ecosystem services and cultural and spiritual values	to ensure conservation, restoration or sustainable use of biological and cultural diversity
Relation with protected areas	not recognised as a protected area	that is complementary to protected areas and contributes to connectivity

CCS, both of which have elements in common (Table 1), as well as one crucial difference: CCS are designed specifically to support connectivity in the landscape surrounding protected areas, so as to contribute to the integrity and functionality of the systems. Recognising OECMs not only adds to Colombia's efforts to comply with Aichi Target 11 but to achieve this goal in a qualitative way, meaning that protected area systems are representative, complete and connected. Within a framework of compliance with international agreements, identification of OECMs becomes an opportunity to make visible and recognise these strategies (Jonas et al., 2014).

Criteria to identify OECMs were applied to three different types of CCS and the results are presented in the following section for each of the three case studies. Then, these are evaluated and discussed, bearing in mind the differences and similarities between both definitions and the applicability of these criteria.

CASE STUDIES

Reciprocal Water Agreements (RWA)

The main objective of this CCS is to improve the connectivity, quality and regulation of water, as well as to reduce the risks of avalanches in the area known as 'Las Cruces', a micro-watershed in the municipality of San Vicente de Chucurí (Santander). The area is located in the Serranía de los Yariguíes National Natural Park, a key area for the preservation of the Gorgeted wood quail (*Odontophorus strophium*). Its waters provide the effective flow for an aqueduct that supplies water to more than 12,800 people located in the San Vicente de Chucurí urban area.

The Reciprocal Water Agreements are part of a Payment for Ecosystem Services (PES) scheme;

contracts are signed between landowners and the water administration company, in which the landowners are required to care for the forest, and the water administration company pays them for it through the PES scheme. To date, 61 agreements have been signed (in properties ranging from 1 to 10 ha) that cover a total area of 1,194 ha, representing 490.5 ha of Andean and riparian forests and 703.5 ha of cocoa and coffee productive systems, as well as grasslands managed according to good agricultural practices (Céspedes, in press).

The scheme of governance of this CCS involves different stakeholders from the micro-basin, such as the owners of the properties located in the upper areas, the beneficiaries of the water resources in the lower zones, the residents of the San Vicente de Chucurí municipality who benefit from the aqueduct, the provider of the aqueduct service and the municipal government. In this sense, governance is shared between municipal government, civil society organisations and private owners. This structure guarantees direct results not only in terms of micro-basin conservation but also contributes to the conservation of biodiversity mainly through the vegetation associated with water sources. In this way, even though biodiversity conservation is not a main objective of the CCS, it is a secondary conservation outcome.

The strategy involves the design and implementation of a participatory ecosystems monitoring programme, currently taking place. The main objective is to evaluate the efficiency of the RWA programme so as to improve the quality, volume and regulation of water in the micro-basin, changes in vegetation cover, the presence of species and ecological connectivity (Céspedes, in press).



Monitoring of conservation results. Zapatocha, Santander © Bibiana Diaz, Fundación Natura

Exclusive artisanal fishing zones (ZEPA)

In 2008, the Colombian Farming Institute (ICA), at the time responsible for country-wide regulation of fishing and water farming activities, decreed exclusive artisanal fishing zones in the northern Pacific. The area comprises 100,000 ha, along a 2.5 nautical miles wide band from the coastline. The declaration had been sought by the mayors of the municipalities of Juradó and Bahía Solano, ethnic authorities, the community council (Consejo Comunitario General Los Delfines), regional authorities and fisher organisations (Vieira et al., in press).

The objectives of the measure are to promote the recovery of fishing along the coast and improve the livelihoods of fishers and their families. Biodiversity conservation is thus perceived as an ancillary outcome, and includes the conservation of rocky shore ecosystems, mangrove zones, seabeds structure and cetacean migration zones.

In this area only traditional and sport fishing are allowed, whereas all high-impact fishing gear is excluded. What is sought is the recovery of fish populations of species such as the Yellowfin tuna (*Thunnus albacares*), the Green jack (*Caranx caballus*), the Bigeye trevally (*Caranx sexfasciatus*), the Yellow snapper (*Lutjanus argentiventris*), the Pacific dog snapper (*Lutjanus novemfasciatus*), the Bluestriped

chub (*Sectator ocyurus*), the Almaco jack (*Seriola rivoliana*), the Spottail grunt (*Haemulon maculicauda*), the Rock hind (*Epinephelus* sp.) and the Pacific bearded bortula (*Brotula clarkae*).

The area has shared governance led by the National Aquaculture and Fishing Authority (AUNAP), which is the body presently governing fishing in Colombia. There is also a coordinating committee chaired by the traditional fishers' representative body. A governance agreement has been forged with actors assuming different roles, such as the fishing communities, the productive sector, regional, municipal and ethnic authorities, all present at a coordination committee focused on obtaining results which has sustained the measure for over 15 years.

The AUNAP and the regional environmental authority (Codechoco) are responsible for surveillance and control. Fisher communities perform monitoring of fishing resources and carry out social control over big fisheries that use prohibited nets. The positive effect has become measurable in fish populations.

Sacred site – Jaba Tañiwashkaka of the Linea Negra, Sierra Nevada of Santa Marta

This site is located in the Department of La Guajira, municipality of Dibulla, in the Caribbean region of Colombia and forms part of the Linea Negra, a sacred



Flooded savannah at Paz de Ariporo municipality, Casanare © Alexander Naranjo, Fundación Natura

site of the Kogui Indigenous people. In this area, the Indigenous communities obtain materials such as shells and seeds. The area has coastal lagoons that have a spiritual connection with the Sierra Nevada de Santa Marta and has marshlands in the process of recovery; lakes used as nesting place by alligators, turtles and fish; and mangrove areas and dry forests used by migratory birds.

The area is 230 ha in size and represents the first seashore sacred site recovered for the Indigenous people of the Sierra Nevada de Santa Marta. The land was bought and is in the process of incorporation into the Kogui Malayo Arhuaco reservation. In 2012, the Ministry of Culture declared this territory a National Cultural Asset due to the historical, aesthetic, and symbolic value of this natural and traditional area.

Although four different communities share ownership of this place, the Kogui people are in charge of management, supported by different organisations such as the Amazon Conservation Team (ACT). Any decisions in relation to the management of the area are taken collectively during an assembly. Every element of biodiversity has its own meaning and must be managed in accordance with the law of origin of the Indigenous peoples of the Sierra Nevada, so that the balance in the cycles of nature and the welfare of the territory is ensured (Sauna et al., in press).

The results of this strategy have been measured through monitoring projects that include comparison of before /

after photographs, water sampling to analyse quality, direct observation of wildlife, record books to keep track of changes in natural dynamics, observation of animal tracks and development of land cover maps to establish comparison baselines. In addition, six young Indigenous people were trained to manage the sacred site. The Mamos (Indigenous sacred authority) visit the community on a more frequent basis to conduct traditional tasks and keep track of the connections that have been re-established with uphill sites. The Indigenous authority and the support team meet on a regular basis to evaluate management results, also increasing numbers of Indigenous people are participating in the activities and visits.

ANALYSIS ON TESTING OF THE DRAFT GUIDELINES ON OECMS

The working group on CCS² evaluated the elements contained in the Guidelines for Recognising and Reporting Other Effective Area-based Conservation Measures (IUCN WCPA, 2018) for the above-mentioned cases, as well as 15 other case studies. This case review was submitted to the OECM Task Force and led to the following results for each element proposed in the guideline:

The first element of the definition of an OECM, geographically defined space, is aligned with the Colombian proposal for CCSs, where all the evaluated areas have defined boundaries where a measure is being implemented. The cases analysed range in size from 1 to 250,000 ha. It is worth noting that many sites,

particularly those under private governance, form part of conservation networks, increasing connectivity at the landscape level and therefore contributing to biodiversity conservation (e.g. WRA). In this sense, a recommendation was made that the conservation outcomes of an area should take into account the context and its role at landscape scale.

The second element, not recognised as a protected area, applies to CCSs in Colombia. However, there are several CCSs that comply with the definition of protected area but fail to be recognised by the government as a consequence of the current regulation of SINAP, which neither includes local and urban areas nor community governance (afro-descendent, peasant and Indigenous). Some self-recognised CCSs overlap with protected areas and in many cases they do exert effective governance and active management, whereas the protected area lack them. In these cases, the guidelines for OECMs would not include these areas, but in Colombia the debate on considering them CCSs or not, is still open.

As has been established in the guidance, the cases analysed show a type of governance arrangement (third element) that is established to comply with an explicit objective. However, we found that these objectives can be secondary (e.g. the ZEPA case) or even an ancillary outcome (e.g. a military base considered an Important Bird Area). Most areas have community, private or shared governance with a long-term vision that enhances conservation purposes. As many of these areas do not have legal or normative support, there are some with complex governance arrangements, which add up to a large number of institutional, private and community stakeholders organised in inter-institutional round tables (e.g. the WRA case), directive committees or cooperatives. Although these arrangements require time to build up, they show better biodiversity conservation results in the long term (e.g. the ZEPA case).

Most cases showed the existence of a community, an organisation or owner in charge of the management of the area through a planning instrument or equivalent tool (fourth element). These instruments include management plans formulated by owners (civil society nature reserves), agreements on resource use (e.g. the ZEPA case, RWA), decisions of community councils (e.g. the Indigenous sacred area case), among others.

One of the most complicated aspects to analyse in the cases evaluated was the long-term element, as some CCSs do not have the legal basis or support that may guarantee their long-term permanence. The cases vary in the short-, mid- and long-term. However, most have

a long-term intentionality, which means that governance structures and planning instruments guarantee the stability of their efforts over time. As an example, the confluence in ZEPA of actors with clear commitment cannot be overlooked, leading to long-term stability. Other tools or instruments have been used, such as ecological testaments³ and loan agreements for private properties that guarantee long-term permanence. Conservation areas within Indigenous reserves or collective territories of afro-descendant communities have a special legislation that guarantees their legal status in the long term. It is possible that some areas, such as those with contested ownership or located in occupied but untitled lands have a lower chance of becoming established in the long term. Debates on CCSs should include the consideration of normative proposals to be included in regional planning to guarantee measures (use restrictions, formulation of planning instruments, zonification) in support of longer-term outlooks.

Regarding effectiveness of in situ conservation (sixth element), the conservation objectives are explicit and include several hierarchical levels of biodiversity in most of the cases that were evaluated. However, there are no tools or methodologies to measure this element within the CCS framework in Colombia, and that are equivalent to those used to measure Protected Areas Management Effectiveness (PAME). The cases analysed show that only a few areas have particular effectiveness measures focused on species used or consumed (e.g. the ZEPA case) or in the change of vegetation cover or land uses (e.g. the ARA case). It is recommended for a tool to be developed according to the specific characteristics of each area, such as governance, or available resources, among others. For small OECMs, it is proposed to consider effectiveness tools applied at the landscape scale, considering how the measure could improve the connectivity of a larger system.

In the last elements, *ecosystem services and cultural and spiritual values*, many areas are intended to conserve ecosystem services, such as water resources (e.g. the WRA case). However, in a few cases cultural and spiritual values are included as conservation objectives, such as in the case of the sacred sites.

CONCLUSIONS

In Colombia, CCSs have been perceived as an opportunity to recognise forms of conservation that are currently not included in SINAP. They include local conservation and diverse governance arrangements, such as the conservation carried out by Indigenous groups, afro-descendants, peasants, civil society and the

productive sectors, among others. They also include arrangements with normative support that contribute to the objective of a more complete and ecologically representative system of protected areas, as well as integral management of biodiversity and benefits derived from it.

Analysing CCSs in the light of criteria established for OECMs, and comparing the elements to each definition, we can see that there are many similarities but there is a central difference: CCSs are conceived, by definition, to increase the connectivity of existing protected areas⁴. Regarding the other elements, similarities between both definitions can be clearly identified: both have a defined boundary; are generally not recognised as protected areas (with some exceptions for CCSs where there is overlap); they have clearly defined, objective-oriented governance schemes, which are very varied and commonly include diverse actors; and they have well defined primary or secondary conservation objectives that enhance management actions in the area or have ancillary conservation outcomes. Effectiveness in area management and long-term intentionality, which conform to both definitions, are perhaps the most difficult to identify and report at the national to international scale.

The draft IUCN guidelines on OECMs afford a great opportunity to make visible the path taken by Colombia in terms of CCSs. In this sense, the international debate about OECMs has deeply contributed to reopening national debates about CCSs and the need for their identification and recognition, in order to highlight the role of these areas and their models of governance in biodiversity conservation.

Looking ahead, when definitions and criteria to identify OECMs are adopted by the CBD, Colombia will likely see important advances. Based on the analyses conducted, it is estimated that many CCSs will become amenable to inclusion as OECMs. It is proposed that even if particular areas do not fulfil all criteria from the start, transitional regimes are envisaged.

Additionally, it could be established that the most effective way to recognise CCSs are regional planning tools, because they define the way in which the territory should be used and its purpose. In Colombia, such tools are formulated and adopted at municipal levels including land management plans (*planes de ordenamiento territorial*). The principal challenge is to include CCSs within the regional planning processes to achieve their conservation objectives and become tools to aid the resolution of land use conflicts.

ENDNOTES

¹“A geographically defined space, not recognised as a protected area, which is governed and managed over the long-term in ways that deliver the effective *in-situ* conservation of biodiversity, with associated ecosystem services and cultural and spiritual values” (IUCN WCPA 2018).

² Composed of the authors of this article.

³ “The ecological testament refers to the transmission of a set of heritage relations by one person in favour of another, who will obtain the title to the relationship through the legal mechanism of succession after death. The author of the will specifies the use for conservation and sets out whether it is limited in time or for perpetuity” (Solano, 2010).

⁴ The definition includes the element but continues to be a contested issue considering that CCSs can hold intrinsic conservation value.

ACKNOWLEDGEMENTS

The authors acknowledge the Amazon Conservation Team and Fundación Marviva for providing information for the case studies; to Harry Jonas from the Task Force of OECM and also many thanks to the paper reviewers.

ABOUT THE AUTHORS

Clara Matallana-Tobón is an ecologist from Pontificia Universidad Javeriana of Colombia, with a Master's Degree in Biological Conservation from the California State University. She works as a researcher and is currently the leader of the Humboldt Institute's Protected Areas and Other Conservation Measures Research Team, the official organisation in Colombia for biodiversity research. She works with regional and national authorities in order to enhance the protected areas networks, setting priorities for new protected areas, reviewing proposals for the establishment of regional protected areas, and nomination of Important Bird Areas.

Marcela Santamaría is a biologist from Universidad de los Andes, with a Master's Degree in Ecology and Conservation (Universidade Federal de Minas Gerais, Brazil) and a Ph.D. in Biological Sciences (University of Cambridge, United Kingdom). She is currently the technical coordinator of the Colombian Network of Civil Society Natural Reserves (Resnatur). Her work is focused on making visible the contributions of civil society to the voluntary conservation of biodiversity and ecosystem services, in processes of planning and ecological restoration in natural reserves.

Alexandra Areiza Tapias is an Environmental Administrator from Universidad Tecnológica de Pereira

and Magister in Geography from the Universidad de los Andes. Currently, she is a Researcher of the Land-based Biodiversity Management Program at the Humboldt Institute, Bogotá, Colombia. Her academic interests relate to issues such as biodiversity conservation, power relations for access to natural resources and society/nature conflicts.

Sandra Giovanna Galán R is an Ecologist and a Master's Degree student in Territorial Studies. She works as Technical assistant at Fundación Natura's Conservation and Investigation sub-division. She has experience in social and environmental research, in relation to planning and management for the conservation of biodiversity, management and implementation of productive projects and environmental management with administrative components and participatory research, inside and outside protected areas. She works on issues of private conservation tools and complementary conservation strategies, with an emphasis on conservation-production agreements. She has coordinated projects or components to strengthen local and institutional capacities related to conservation areas in the Amazon, the Orinoquia and the Colombian Pacific Coast.

Clara Ligia Solano Gutiérrez: Biologist with a Master's Degree in Conservation Area Planning. Deputy Director of Conservation and Research of Fundación Natura. Experience in the field of biological sciences with emphasis on management, planning, use and management of natural resources; and the management of environmental conflicts related to sectors. She has been linked to research projects, management and use of fauna and flora in the Amazon, the Magdalena Valley, and the Andean Region. She has worked as researcher and director of projects and programmes in national and international private organisations. She has represented organisations and participated in institutional and academic events in Colombia and abroad.

REFERENCES

- Alonso, D.H. (2015). *Conceptualización del Subsistema de Áreas Marinas Protegida en Colombia*. Documento de Trabajo (Versión 1.0). Proyecto Diseño e implementación de un Subsistema Nacional de Áreas Marinas Protegidas (SAMP) en Colombia. Santa Marta: Invemar, MADS, GEF y PNUD.
- Arango-V., N. y Díaz-M., M. (2007). 'Representatividad del sistema de áreas protegidas de Colombia'. In: M.E. Chaves y M. Santamaría (eds.). *Informe nacional sobre el avance en el conocimiento y la información de la biodiversidad 1998 – 2004*, pp. 271–285. Bogotá: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt.
- Bahia de Aguiar, P.C., Souza dos Santos Moreau, A.M. e de Oliveira Fontes, E. (2013). 'Áreas naturais protegidas: um breve histórico do surgimento dos parques nacionais e das reservas extrativistas'. *Revista Geográfica de América Central* 50: 195–213.
- CBD Decision X/2 (2010). 'Strategic Plan for Biodiversity 2011- 2020' in Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting. Gland, Switzerland: IUCN.
- Centro Nacional de Memoria Historica (CNMH) (2016). *Tierras y conflictos rurales*. Historia, políticas agrarias y protagonistas. Bogotá: CNMH.
- Céspedes, C. (en prensa). 'Diseño e implementación de un esquema tipo pago por servicios ambientales-acuerdos recíprocos por el agua- para la protección del recurso hídrico en la microcuenca las cruces municipio de San Vicente de Chucurí'. En: Instituto Humboldt y Fundación Natura. (eds). (En Prensa). *Insumos para la gestión territorial en un escenario de Paz: análisis de estrategias para la conservación de la biodiversidad en Colombia*. Bogotá: Instituto Humboldt y Fundación Natura.
- Dudley, N. (ed.) (2008). *Guidelines for Applying Protected Area Management Categories*. Gland, Switzerland: IUCN.
- Etter, A. and van Wyngaarden, W. (2000). 'Patterns of landscape transformation in Colombia, with emphasis in the Andean region'. *Ambio* 29: 432–439.
- Hansen, A. and DeFries R. (2007). 'Ecological mechanisms linking protected areas to surrounding lands'. *Ecological Applications* 17: 974–988.
- IDEAM (2017). *Décimo tercer boletín de alertas tempranas de deforestación (AT-D) Cuarto Trimestre 2017*. Sistema de Monitoreo, Bosques y Carbono – SMBYC. Bogotá: IDEAM.
- IUCN (2004). *The World Conservation Strategy: living resource conservation for sustainable development*. Gland, Switzerland: IUCN/PNUMA/WWF.
- IUCN WCPA (2018). (Draft). *Guidelines for Recognising and Reporting Other Effective Area-based Conservation Measures, Version 1*. Gland, Switzerland: IUCN.
- Jonas, H., Barbuto, V., Jonas, H.C., Kothari, A. and Nelson, F. (2014). New steps of change: Looking beyond protected areas to consider other effective area based conservation measures. *PARKS* 20: 111–128.
- PNNC (2015). *Áreas protegidas: territorios para la vida y la paz*. Áreas protegidas, paisajes rurales y urbanos: uniendo esfuerzos para la conservación. Parques Nacionales Naturales de Colombia. Tomo II. Bogotá: PNNC.
- Rojas Lenis, Y. (2014). 'La historia de las áreas protegidas en Colombia, sus formas de gobierno y las alternativas para la gobernanza'. *Revista Sociedad y Economía* 27: 155–175.

- Sauna, J., Shibulata Zarabata, J., Zarabata, J., Sauna Mamatacán, A., Alimaco, L., Garavito, P., D. Garavito, Barros, A., Gil, C., Londoño, J., Rey, R., Hettler, B. y Gailer., S. (En prensa). 'Construcción de acuerdos interculturales para la recuperación cultural y natural de un espacio sagrado - Jaba Tañiwashkaka, espacio sagrado de la Línea Negra, Sierra Nevada de Santa Marta' En: Instituto Humboldt y Fundación Natura (eds). (En Prensa). *Insumos para la gestión territorial en un escenario de Paz: análisis de estrategias para la conservación de la biodiversidad en Colombia*. Bogotá: Instituto Humboldt y Fundación Natura.
- Secretariat of the Convention on Biological Diversity (2004). *Programme of Work on Protected Areas* (CBD Programmes of Work). Montreal: Secretariat of the Convention on Biological Diversity.
- Solano C. (2010). 'Mecanismos de conservación privada: acuerdos de conservación producción'. En: N. Ocampo-Peñuela (Ed). *Mecanismos de conservación privada: una opción viable en Colombia*. Bogotá: Grupo Colombiano Interinstitucional de Herramientas de Conservación Privada.
- Solano, C., Peñuela L., Lora A.M., Arcila D. y Sguerra S. (eds.). (2006). *Memorias VII Congreso Interamericano de Conservación en Tierras Privadas*. Cartagena de Indias: The Nature Conservancy, Fundación Natura, Asociación Red Colombiana de Reservas Naturales de la Sociedad Civil, Unidad de Parques Nacionales Naturales y WWF – Colombia.
- Vieira, C., Borda, C., Pardo, R. y Chica, J.I.. (En prensa), La zona exclusiva de pesca artesanal-Zepa: Una estrategia complementaria de conservación (ECC) en la costa norte del Pacífico Chocoano. En: Instituto Humboldt y Fundación Natura. (eds). (En Prensa). *Insumos para la gestión territorial en un escenario de Paz: análisis de estrategias para la conservación de la biodiversidad en Colombia*. Bogotá: Instituto Humboldt y Fundación Natura.
- WDPA Consortium (2003). World database on protected areas. Washington D.C.: IUCN-WCPA/UNEP-WCMC.

RESUMEN

En Colombia, un país de gran heterogeneidad cultural y ecosistémica, existen muchas estrategias de conservación más allá de las áreas protegidas que se derivan tanto de los marcos jurídicos como de los procesos territoriales locales. Después de mucho debate, se les ha denominado estrategias complementarias de conservación (ECC), y su identificación y reconocimiento son necesarios para lograr los objetivos de conservación del país. En el plano internacional, bajo el liderazgo de la Comisión Mundial de Áreas Protegidas de la UICN, se ha avanzado en la definición de criterios para identificar "otras medidas de conservación eficaces basadas en áreas" (OECM, por sus siglas en inglés) y se espera la adopción de estas directrices por el Convenio sobre la Diversidad Biológica (CDB) durante la próxima reunión de la Conferencia de las Partes (COP 14). En Colombia, corrimos los criterios preliminares para las OECM contra varios casos de estudio para identificar las principales similitudes y diferencias. Este artículo presenta en detalle tres estudios de caso sobre ECC que muestran si incluyen elementos pertinentes para las OECM y en qué medida. Se analizan los criterios y consideraciones principales con respecto a ellos. Concluimos que, dadas las similitudes, el debate internacional brinda la oportunidad para identificar, reconocer, reportar y fortalecer estas estrategias en Colombia.

RÉSUMÉ

En Colombie, pays d'une grande hétérogénéité culturelle et écosystémique, il existe de nombreuses stratégies de conservation autres que celle des aires protégées, liées la fois aux cadres juridiques et aux infrastructures territoriales locales. Après de nombreux débats, ces stratégies ont été qualifiées de Stratégies de Conservation Complémentaires (SCC), et leur identification et reconnaissance ont été jugées nécessaires pour atteindre les objectifs de conservation du pays. Au niveau international, sous la direction de la Commission Mondiale des Aires Protégées de l'UICN, des progrès ont été accomplis dans la définition de critères pour identifier d'autres mesures de conservation efficaces par zone (OECM). L'adoption de ces directives par la Convention sur la Diversité Biologique (CDB) est attendue lors de la prochaine réunion de la Conférence des Parties (COP 14). En Colombie, nous avons appliqué les critères correspondants aux OECM à plusieurs études de cas afin d'identifier les principales conformités et disparités. Ce document présente en détail trois études de cas concernant les SCC afin de déterminer dans quelle mesure elles comprennent des éléments nécessaires pour les OECM. Notre analyse examine ces critères et leurs répercussions principales. Nous concluons que, compte tenu des conformités que nous avons trouvées, le débat international permet en effet d'identifier, de reconnaître, de signaler et d'améliorer ces stratégies en Colombie.