

IPSI Case Study Summary Sheet

Basic Information

Title of case study			
Conservation on Private Lands Integrating Sustainable Production and Biodiversity in the Mid Dagua River Basin, Colombia			
Submitting IPSI member organization(s)			
Corporación Ambiental y Forestal del Pacífico (CORFOPAL)			
Other contributing organization(s) <i>(IPSI members and/or non-members)</i>			
Social and Environmental Sense (SENSE)			
Author(s) and affiliation(s)			
Sebastian Orjuela-Salazar (CORFOPAL), Andrés Quintero-Ángel (CORFOPAL)			
Format of case study <i>(manuscript or audiovisual)</i>	Manuscript	Language	English
Keywords			
Protected areas, conservation strategies, natural reserves of civil society, community participation, private landowners			
Date of submission <i>(or update, if this is an update of an existing case study)</i>		19 February 2018	
Web link <i>(of the case study or lead organization if available for more information)</i>			

Geographical Information

Country <i>(where site(s) or activities described in the case study are located – can be multiple, or even “global”)</i>									
Colombia									
Location(s) <i>(within the country or countries – leave blank if specific location(s) cannot be identified)</i>									
Dagua, Valle del Cauca Province									
Longitude/latitude or Google Maps link <i>(if location is identified)</i>									
https://www.google.com/maps/@3.3333333,-76.3666667,10z									
Ecosystem(s)									
Forest	x	Grassland		Agricultural	x	In-land water		Coastal	
Dryland		Mountain		Urban/peri-urban		Other <i>(Please specify)</i>			
Socioeconomic and environmental characteristics of the area									
<p>The basin is divided physic-geographically into the Upper and Lower Part, regions well differentiated by their biophysical and socio-economic characteristics. The middle zone of the Dagua River Basin comprises the confluence of the Bitaco, Grande and Sabaletas rivers to the east and the foothills of the Western Cordillera to the west (Vargas, 1998). There is currently a network of protected areas in the region: Farallones de Cali National Natural Park (NNP, the highest category of conservation in Colombia), three National Forest Protection Reserves (Anchicayá, San Cipriano and Dagua), two Integrated Regional Management Districts (IRMD— Chilcal and Atuncela), and the District of Soil Conservation of the Rio Grande. Currently, these conservation units work as isolated islands under different (and ineffective) management schemes, besides being highly populated and transformed. Dagua, the municipality in the study area located in the middle zone of the Dagua River Basin, has over 36,000 inhabitants out of which around 20% are unemployed and 35.3% are in a poverty situation. The main productive activities in the region are agriculture, cattle raising, poultry farming, pisciculture, mining, and tourism. In Dagua municipality the main economic activity is agriculture, especially pineapple farming that presents a high production and quality. Other crops are tomato, cacao, banana, coffee, papaya and citrus fruits. These activities are benefited by the diversity of climates present in the wider region.</p>									
Description of human-nature interactions in the area									
Due to the various historical processes of settlement and land use, today this area has landscapes with a dynamic mosaic of habitats and land uses that includes villages, farmlands, forests, grasslands and private									

recreational farms. The landscape has been shaped over the years as a result of the interactions between people and nature in ways such that the high biodiversity present in natural relicts provides the inhabitants of the region with the ecosystem services necessary for their well-being.

Contents

Status (<i>"ongoing" or "completed"</i>)	Completed	Period (<i>MM/YY to MM/YY</i>)	08/2013 to 12/2017
Rationale (<i>why activities or policies described, or information shared in the case study are needed</i>)			
<p>The main threats and pressures that ecosystems and biodiversity in general face in the MDRB region are landscape transformation and fragmentation and loss of natural cover and ecological structure. These pressures have led to habitat deterioration for the local biodiversity, as well as to the isolation of populations, the demotion of soils (leading to erosive processes), and hence the alteration of hydric regulation processes. All of this is related directly to the changes in land use that have led to permanent deforestation. The main driver of these changes in land use is the expansion of the agricultural frontier that has led to the cutting of natural forest to establish crops or pastures to feed livestock, as well as the selective logging of timber species and mining activities. If these pressures and threats were to continue increasing and remain unattended, threatened ecosystems such as the Dry Tropical Forest and Sub-xerophytic Forest would tend to disappear, biodiversity would be loss and many ecosystem services the surrounding villages, municipalities and cities count and depend on would be significantly reduced.</p>			
Objectives (<i>goals of activities or policies described, or of producing the case study</i>)			
<p>The objective is linking nature conservation with the improvement of human well-being, by developing a participatory process of intervention in favour of the improvement of environmental, sustainable agricultural production and the promotion of private conservation with the establishment of Natural Reserves of Civil Society.</p>			
Activities and/or practices employed			
<p>The Natural Reserves of Civil Society are an initiative for the conservation of biodiversity and natural resources on private property. The NRCS are the only legal private protected area in Colombia and are part of the National System of Protected Areas (SINAP). In order to have a property registered as an NRCS, it must comply with legal and other technical requirements. In the legal framework, the property must guarantee the real and effective possession of the real property by public deed and certificate of tradition. For the technical component, the property must conserve a representative sample of the natural ecosystem and manage the use of natural resources under the principles of sustainability, excluding industrial exploitation of timber and allowing only sustainable exploitation of wood for domestic use.</p> <p>Firstly, CORFOPAL identified possible private land owners who would be willing to register a representative part of their property as NRCS and supported the register process providing technical and legal support, filling in the registration form, reviewing the legal documentation of the property, and development of the zoning map of the farm, as well as submitting the documentation to the National Natural Park Unit of Colombia. In cases where the land owners were interested but didn't comply with the legal and/or technical requirements, conservation agreements were drafted and signed. These agreements are a voluntary understanding between the owners and an NGO, where the owners commit to conserve the forests on their farm and to maintain sustainable production practices in exchange for the technical accompaniment and the implementation on their farms of conservation actions (e.g. fences for conservation, forest enrichment, silvopastoral systems and irrigation for pastures) by the NGO.</p> <p>In second place, once the NRCS were established or the conservation agreement signed, a basic biophysical and socio-economic descriptive diagnosis was made. Subsequently, a zoning of the property was made using the base cartography of the area, the areas to be conserved and restored were defined, along with the landscape management tools and productive systems to be implemented, according to the potential land use and planning instruments that contribute to habitat improvement and conservation. With this information, the management plan and the monitoring system were established.</p>			

Finally, the NGO carried out training workshops and awareness campaigns, targeting the local community in the MDRB, during which we sought to recover the traditional knowledge and rekindle its employment, and building capacities in the community and among other local actors in the areas of responsible consumption and production and the importance of sustainable of ecosystem services, as well as in the conservation of biodiversity and actions that minimize and avoid its loss.

Results

CORFOPAL has registered 13 NRCS and signed 20 conservation agreements with private land owners, achieving a corridor of 638.9 ha that links private owners with protected areas and contributes to the conservation of the high biodiversity reported in the region (261 species of flora, 102 species of resident birds, 26 species of amphibians and reptiles and 27 species of mammals). Moreover, participation by the community in conservation activities and respect for the environment have improved, and people living in the area (reserve owners or not) are more aware and committed to sustainable production practices, enabling them to be more independent and have better opportunities in the ever-growing green market.

Regarding the implemented conservation actions defined in agreement with the reserves' owners, we have installed 10.1 km of protective isolation fences on the margin of streams, protecting more than 100 ha of natural areas and allowing restoration processes to take place effectively. To that end and to carry out enrichment actions in areas with natural coverage in the MDRB, five plant nurseries have been constructed in order to produce plant materials. The enrichment of the secondary forests was achieved in a total of 25 ha, planted with more than 3,000 trees pertaining to native and timber species, produced in the nurseries mentioned above. Another conservation action was to change or improve livestock keeping which is one of the main economic activities in the area, a process called livestock reconversion that includes the implementation of a silvopastoral system and installment of mixed fences to allow degraded areas to recover and preserve forest relicts. We established seven silvopastoral systems in 36.4 ha and three km of mixed fences using native species and forage species that contribute to conservation and connectivity. Finally, we established nine ha of agroforestry systems that associate trees with productive crops, improving the soil characteristics and benefiting the crops.

Lessons learned (*factors in success or failure, challenges and opportunities*)

The presence of public protected areas and private conservation initiatives are an adequate strategy, but not enough to support landscapes and conservation initiatives. For greater effectiveness of interventions under a territorial approach, it is essential to consider the different forms of land ownership in the target areas, and to find a balance between the needs of people and of the protected areas. Likewise, it is important to establish participatory strategies with the community in order to build management initiatives.

Regarding the landscape management actions, they should be monitored periodically, involving stronger social processes that allow the implemented actions to have continuity, especially when committed community members are involved. In this way, the community and their leaders would be aware of the achievements obtained and could therefore replicate the results.

The restoration processes on the other hand, require the establishment of a monitoring scheme for the actions involved at every successional stage to cut the costs of interventions. The restoration should be considered a research process that allows knowledge to be applied to tropical dry forest restoration processes and not be an isolated initiative.

It is clear that it is imperative to involve new generations in the territory, including the school community and new inhabitants that are usually disregarded due to their lack of in depth knowledge on the conditions of the environment or because they are traveling in the territory (tourists). This involvement is important because the new generations are not interested in the field, and they do not understand the importance of conservation of the ecosystems and the traditional knowledge associated with them.

Key messages

The implementation of landscape management tools in the area of direct influence of the MDRB will in the short and medium term generate a dynamic of connectivity and increase the necessary conditions for biodiversity conservation in the dry forest and provision of ecosystem services. Participation is a milestone in this type of process. Thus, individuals, academia and civil society in general must actively participate.

Relationship to other IPSI activities (*if the case study is related to any other IPSI collaborative activities, case studies, etc.*)

This case study originally appeared in the Satoyama Initiative Thematic Review v. 4.

Funding (any relevant information about funding of activities or projects described in the case study)

Contributions to Global Agendas

CBD Aichi Biodiversity Targets (<https://www.cbd.int/sp/targets/>)

The table below shows based on the self-evaluation by author(s).  and  indicates the "direct" or "indirect" contributions to the CBD's Aichi Biodiversity Targets respectively to which the work described in this case study contributes to.

Strategic Goal A					Strategic Goal B				
									
									
Strategic Goal C			Strategic Goal D			Strategic Goal E			
									
									

UN Sustainable Development Goals (SDGs) (<https://sustainabledevelopment.un.org/sdgs>)

The table below shows based on the self-evaluation by author(s).  and  indicates the "direct" or "indirect" contributions to the SDGs respectively to which the work described in this case study contributes to.

Figures, tables and photos

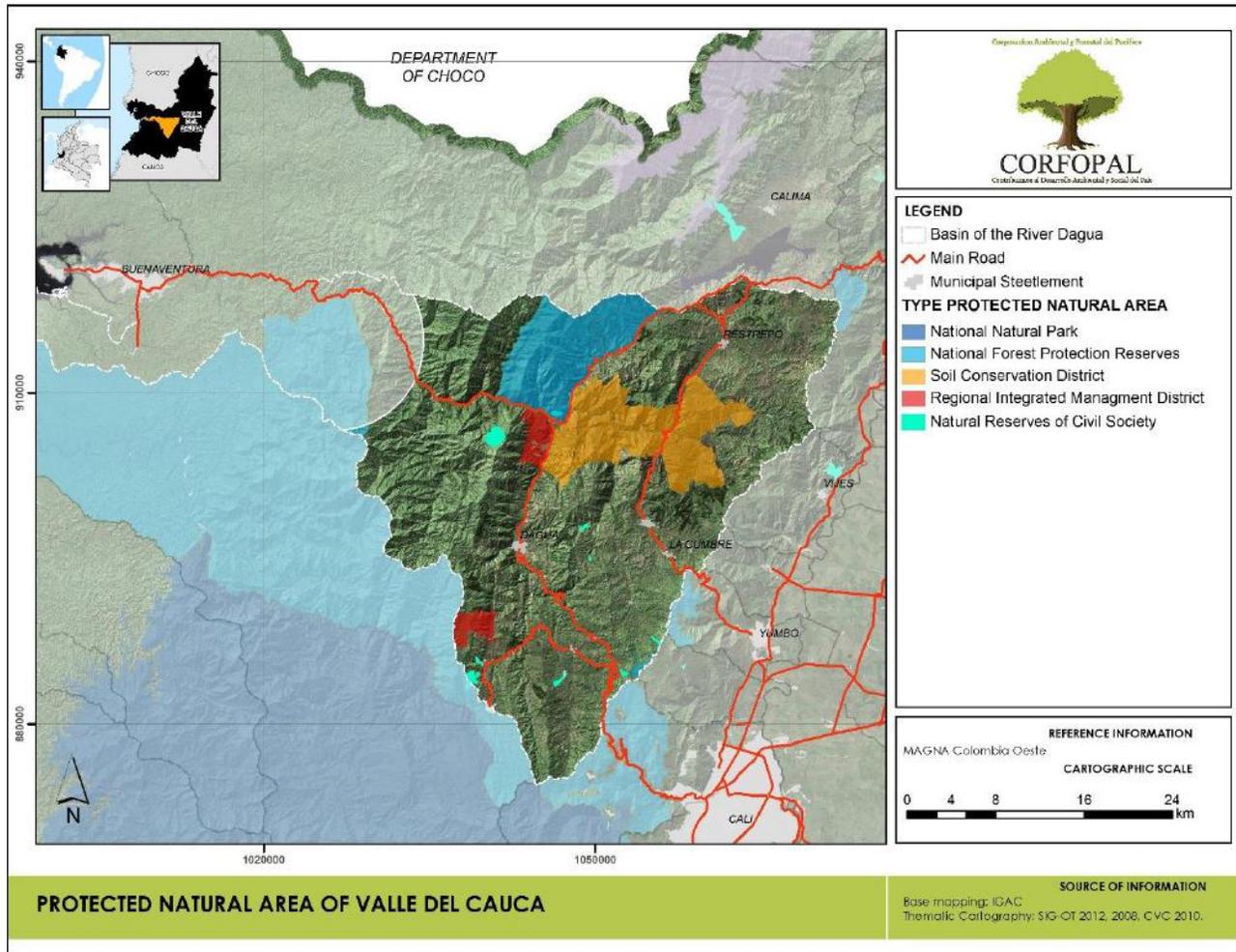


Figure 1. Map of the country and case study region. General location of Dagua River Basin and its protected areas

Authors' profiles

Sebastián Orjuela: Biologist with expertise in biological characterizations, Ecology, Mammalogy, Environmental Education and Skills development, formulation and implementation of research projects. More than 5 years working in planning and declaration of protected areas in the Valle del Cauca in the framework of the Departmental System of Protected Areas.

Andrés Quintero Angel: Biologist with experience in the study of Reptiles, medium and large mammals, and conservation work with ethnic communities. Current research includes the effects of fragmentation and landscape transformation on Wildlife in the Neotropics.