

COLOMBIAN OIL PALM SECTOR: Navigating a responsible path with nature and local communities

industry. The consolidation of an economically viable sector and the development of oil palm crops in harmony with their environment and biodiversity depends on their balance.

The Biodiverse Oil Palm Landscapes project (PPB given its acronym in Spanish) was an initiative that began in 2007, with the formulation of a project jointly promoted by Fedepalma, Cenipalma, WWF and the Alexander von Humboldt Institute. The purpose of the project was to provide the oil palm sector with information and environmental tools to support better decision making processes in the feasibility analysis, design and operation stages of oil palm crops, implementing strategies and good practices that conserve biodiversity and contribute to increase productivity. It was financed by the Global Environment Facility (GEF), and its implementing agency was the Inter-American Development Bank (IDB).

One of the main contributions of the PPB project was the identification of High Conservation Value areas in its two implementation areas, located in the northern and eastern oil palm regions in Colombia.

The HCV concept was developed by Proforest and adopted by the Roundtable on Sustainable Palm Oil (RSPO), whose sustainability standard is the most widely recognized in the World for palm oil. With this, the RSPO aims for oil palm crops not to replace or impact HCV areas; those with a high biological, ecological, social or cultural value for palm oil producing countries and for communities in oil palm regions.

Today, more than ever, sustainability and The PPB project welcomed the HCV concept as a productivity go hand in hand with the oil palm agro tool for the Colombian oil palm sector to actively contribute to biodiversity conservation, and to show progress in relation to international sustainability standards required by national and international markets.

> In its two implementation areas, the PPB project developed an innovative methodology as it first identified HCV areas in a regional context, and then went into greater detail to consolidate specific HCV reports for the six beneficiary oil palm companies of the project and their supply base (three in each implementation areas).

> These HCV reports were the first in Colombia to meet the requirements that the High Conservation Value Network had recently modified by the time they began in 2014.

> In this document, we share the main findings, lessons learned and strategies for identifying HCV areas in the Northern Zone, as well as some management and monitoring measures that were jointly formulated with the beneficiary oil palm nuclei for the six HCV categories.

> It should be noted that a good part of the information included in this document (and especially the HCVs identified in a regional context) is useful for other oil palm nuclei within the PPB implementation area, and that the management measures can be replicated by other producers that identify HCVs similar to those described here.

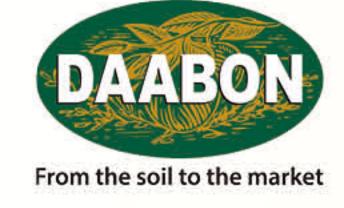
THE PPB HAD AN INNOVATIVE COMPONENT: It proposed a methodology to identify HCV at a regional scale

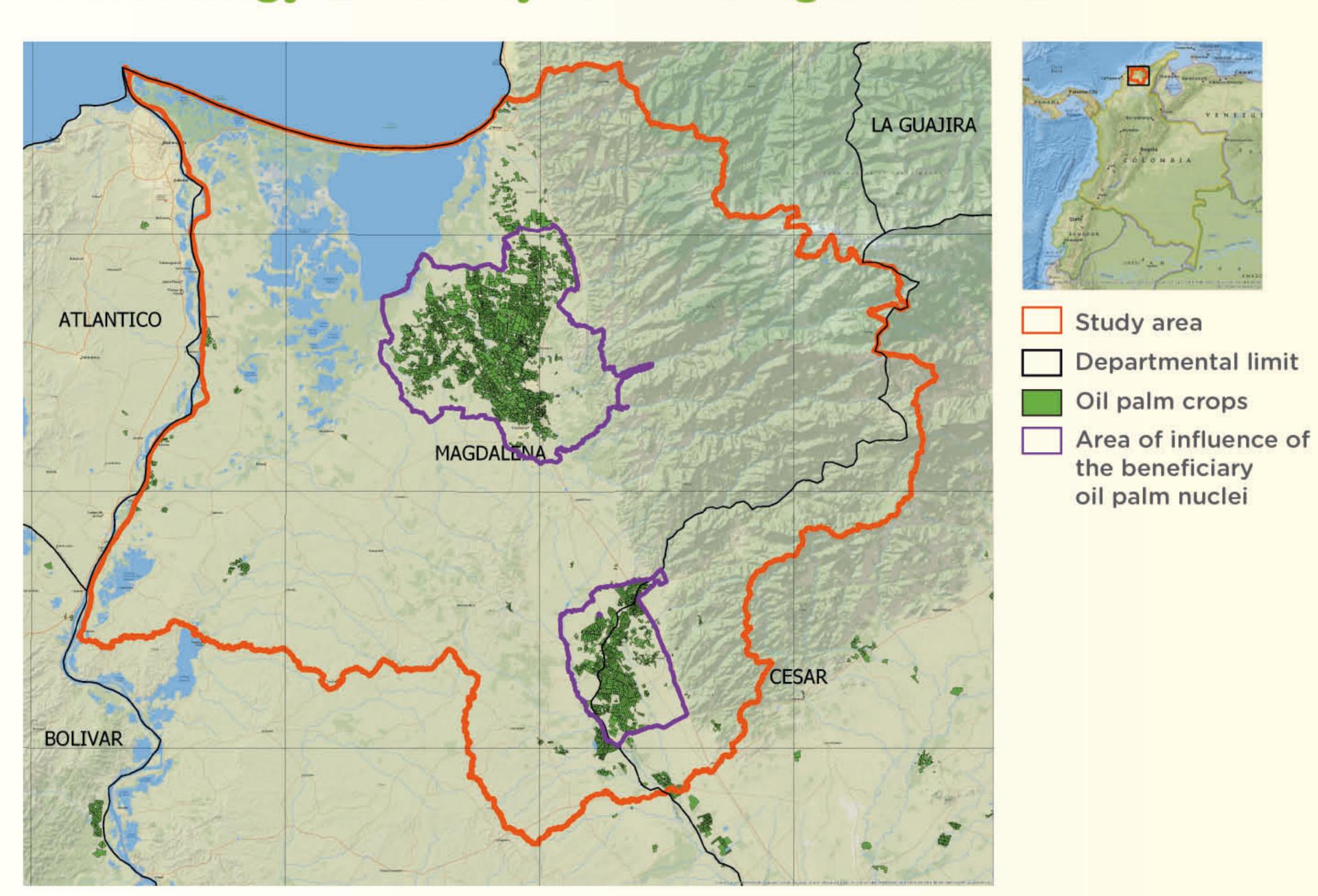
Study area 1'292.197 hectares

Oil palm nuclei in which detailed HCV assessments were conducted in this area:





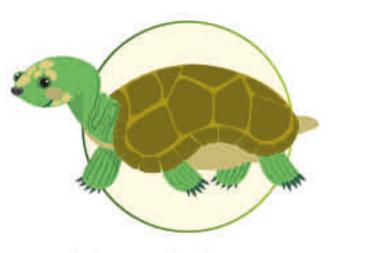




What are High Conservation Values - HCV?

- High Conservation Values (HCV) are biological, ecological, social or cultural values which are outstandingly significant or critically important at the global, national or regional level, or for a local community.
- All natural habitats have inherent conservation values including the presence of rare or endemic species or ecosystems, the provision of ecosystem services, sacred sites, or because they provide resources to satisfy the basic needs of local communities.
- There are six ways to identify if any of them is a High Conservation Value, or six HCV categories:

HCV Categories



Concentrations of biological diversity including endemic, rare, threatened or endangered

Examples: mammal: otter, nocturnal monkey, amphibian: sea toad, reptile: Magdalena tortoise.



Santa Marta and Ciénaga Grande de Santa Marta

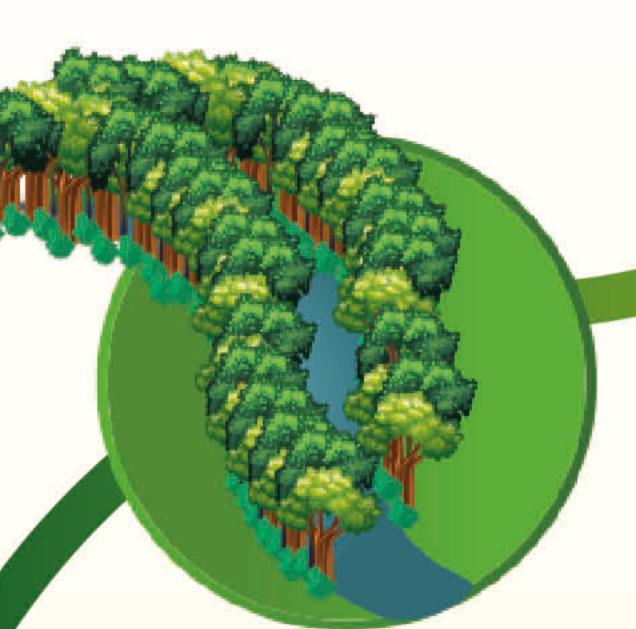
Landscape-level ecosystems and mosaics. Intact forest landscapes and large landscape-level ecosystems and ecosystem mosaics that contain viable populations of the great majority of the naturally occurring species.

Examples in Colombia: Sierra Nevada de Santa Marta, paramo complexes and high Andean forests, wetland complexes of the Depresión Momposina and the Ciénaga Grande de Santa Marta, biodiverse natural savannas of the Orinoco basin, large forests in the Amazon and Chocó, among others.

HCV 3

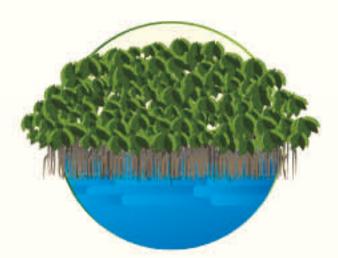
Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

Examples: Riparian buffer zones that protect against erosion and floods, forests that regulate temperature and humidity, wetlands that dampen flooding of rivers.



Rare, threatened or endangered ecosystems.

Examples: Dry forests, mangroves, among others.





Trees that protect from gusts of winds.





Lakes that support local fisheries

HCV 6

Sites, resources, habitats and significant landscapes for cultural, historical, religious or archaeological reasons for local communities or indigenous peoples.





Archaeological findings

METHODOLOGY

The survey sought to The route went beyond the properties of the A ground survey was identify the presence of conducted to identify RTE (rare, three beneficiary oil palm nuclei and covered a these RTE species, and it wider area of influence of the oil palm activity in threatened or endangered) was equally important to species in the study area. the study area. identify their natural habitat.

The specific route for the survey was agreed with the Humboldt Institute, a PPB project partner and Colombia's authority on biodiversity research and policy matters, based on its Red Book listings of endangered species and on the RTE lists of the International Union for the Conservation of Nature (IUCN).

During the survey, flora species and five faunal groups (mammals, birds, amphibians, reptiles and fish) were analyzed.

The areas identified as HCV1 were those habitats that concentrated a great diversity of HCV1 species.

Regional scale: Areas with the highest concentrations of biological diversity

In its regional analysis, the PPB project identified two large areas with a high concentration of species diversity in the forested areas of the Sierra Nevada de Santa Marta and in the wetland and mangrove complex of the Ciénaga Grande de Santa Marta.



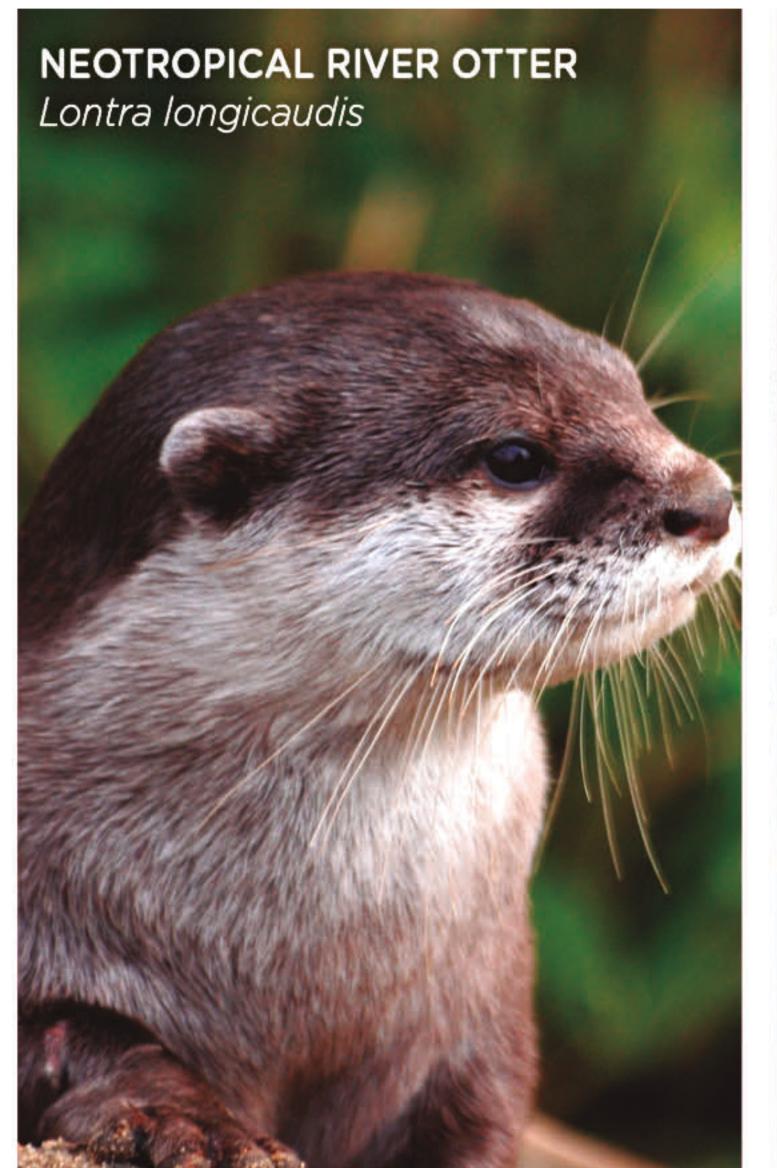


Study area Departmental limit

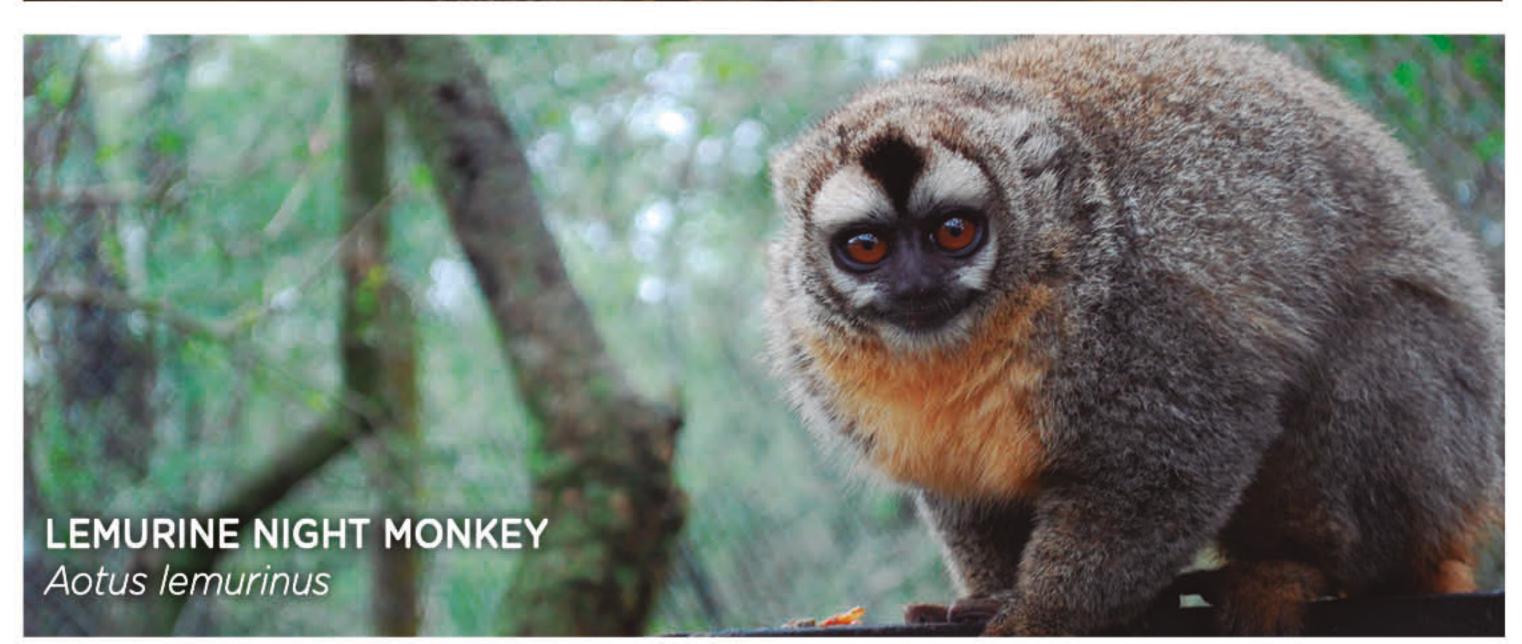
HVC 1 108.327 ha











IDENTIFICATION OF SPECIES IN THE OIL PALM AREA OF INFLUENCE WITHIN THE STUDY AREA

SPECIES IDENTIFIED	FLORA	MAMMALS	BIRDS	REPTILES	AMPHIBIANS	FISHES	TOTAL
IN THE SURVEY	557	40	142	21	17	49	826
SPECIES IDENTIFIED AS HCV 1	17	15	9	2	4	16	63
	HC\	/1 SPECIES IDEN	ITIFIED IN BENE	EFICIARY OIL P	ALM NUCLEI		
ACEITES	11	4	9	2	4	11	41
PALMACEITE	11	7	5	2	4	5	34
	4 =					10	4.0

∞ MANAGEMENT ACTIONS ◊

For the adequate management and monitoring of the identified HCV1 areas and habitats, several actions were agreed with the three beneficiary oil palm nuclei.

Most of these actions aim at maintaining or improving the habitat of HCV species, which were classified as arboreal, aquatic or terrestrial according to their habitat type.

ARBOREAL Restore and preserve riparian buffer zones. Conserve and enrich forest patches. Incorporate biological corridors to connect forest patches and

riparian buffer

zones.

TEQUENDAMA

CONTRACTOR

Conserve

and their protective vegetation.

Conserve wetlands and and their vegetation; they are the habitat of many

migratory birds.

AQUATIC

water bodies

amphibians, reptiles and

Maintain a protection strip near water bodies, in which the use of agrochemicals is minimized or eliminated; reptile and amphibian species live in these areas and their skin

is sensitive to this type of Monitor water quality and mitigate the impact of palm oil mill effluents on water bodies and fish species.

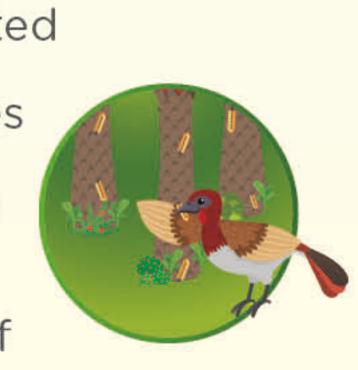
TERRESTRIAL

Incorporate living fences and biological corridors to facilitate the passage of species.

Plant crop coverings for better soil management.



 Adopt an integrated management of pests and diseases with biological control strategies to avoid soil contamination with excess use of agrochemicals.





Prevent logging and hunting of species.

34

HCV 2 Landscape-level ecosystems and mosaics

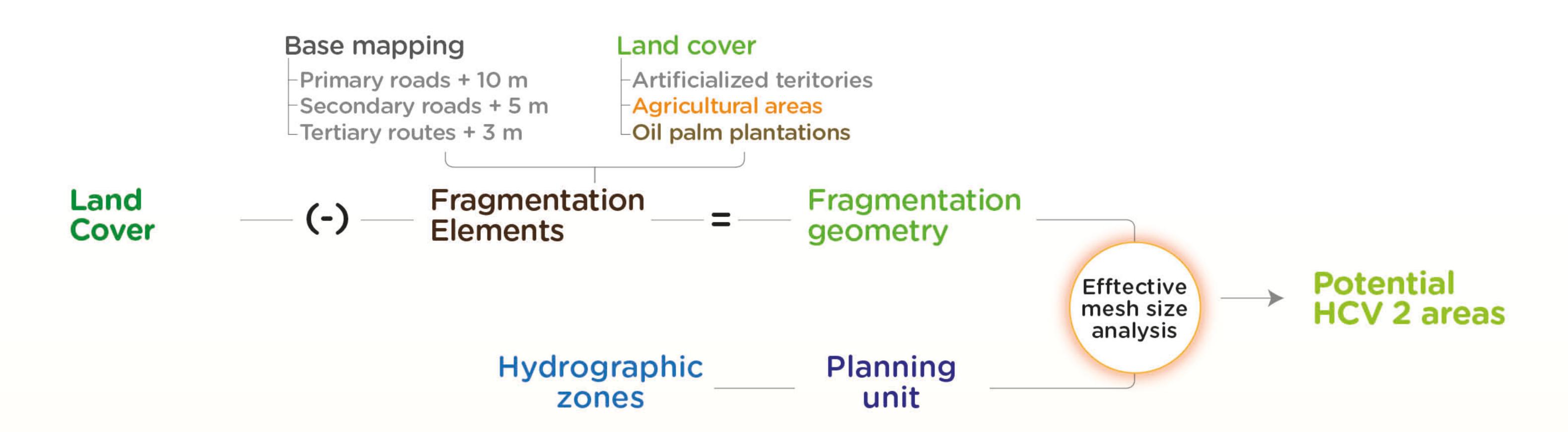
METHODOLOGY

Bearing in mind that HCV2 are large ecosystems and in a good state of conservation, the PPB project identified this HCV category at a regional scale for its entire study area in the northern oil palm region.

Habitat loss and ecosystem fragmentation caused by anthropogenic activities in natural regions, is recognized as one of the main drivers for biodiversity loss. Landscape fragmentation due to roads, urban development, agriculture and other infrastructure has large fragments of these ecosystems with high degrees of considerable effects on the functional structure of biodiversity.

One fragmentation indicator is the effective mesh size, which expresses the probability that two locations are connected, or not separated by barriers (i.e. roads) (Jaeger 2000 *). It can also be interpreted as the average area that an animal located at random within a given landscape can access without barriers.

The PPB project chose this methodology as a proxy to characterize HCV2 ecosystems, as it could identify connectivity, in which species could move more easily to find food and have enough habitat for their survival in time.



The first step was to analyze the entire Caribbean the mobility and survival of a large number of species, region of Colombia. Its degree of transformation was they have also been nationally and internationally found to be high, with the exception of the Darién recognized for their biological importance. region near the border with Panamá, the Paramillo National Park in Antioquia, and the Sierra Nevada and the Ciénaga Grande de Santa Marta.

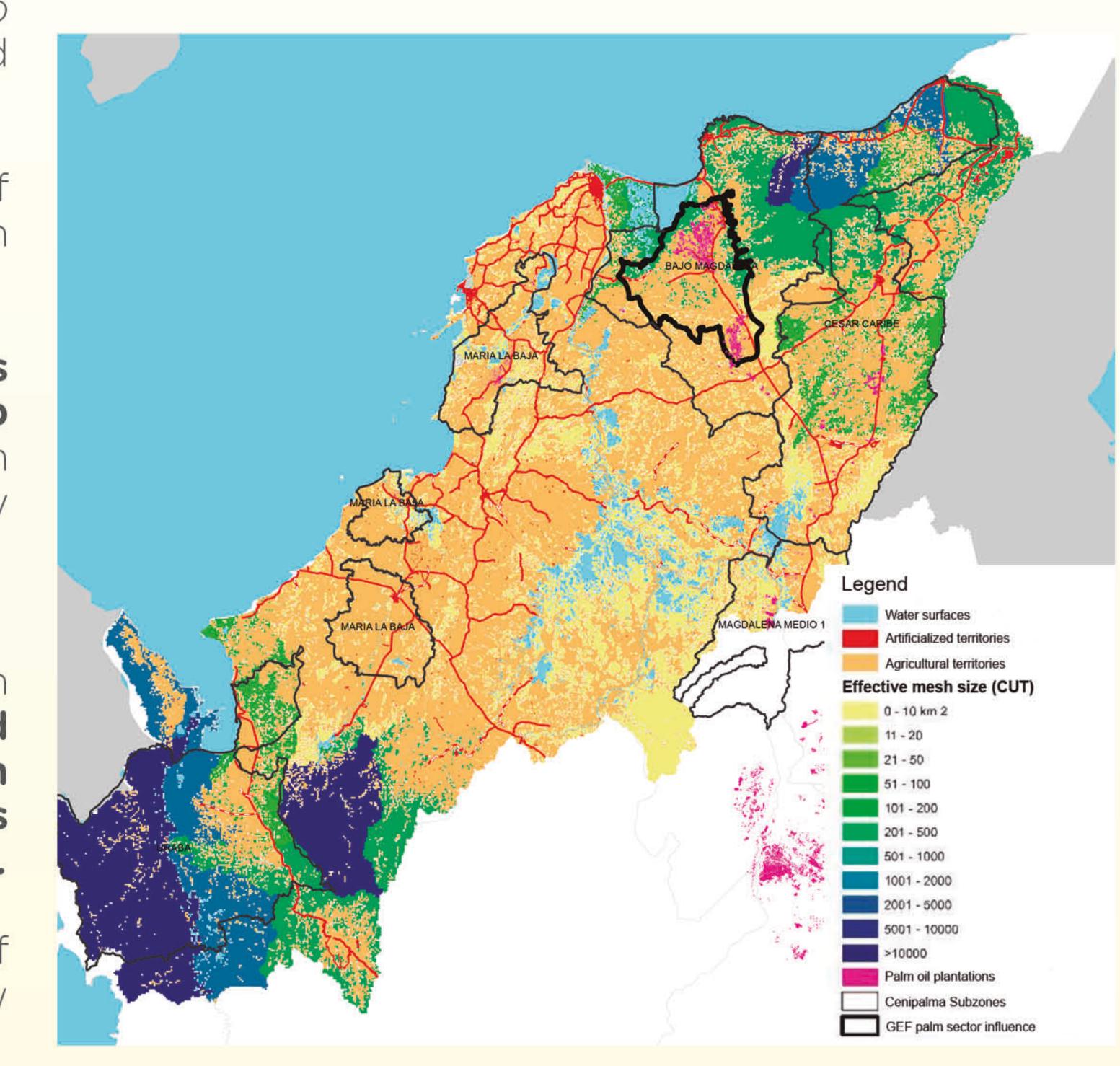
Ecosystem fragmentation is considerable in the rest of the Caribbean region, and therefore the effective mesh size is low.

Subsequently, a more detailed analysis was undertaken for the study area, using a land cover map developed by the PPB based on satellite images from 2014 and using the Corine Land Cover methodology adapted for Colombia.

(see land cover map, page 8)

Within the study area, the only two areas with an effective mesh size large enough to be considered HCV2 were the best preserved forest ecosystems in the Sierra Nevada de Santa Marta and the wetlands and mangroves of the Ciénaga Grande de Santa Marta.

Besides being two areas with a large extension of ecosystems in good state of conservation that allow







- Study area Departmental limit
- HCV 2 325.253 ha

The Sierra Nevada de Santa Marta

was declared as a

National Park in Colombia,

and internationally

World Biosphere Reserve

The Ciénaga Grande de Santa Marta

was declared a

Flora and Fauna Sanctuary in Colombia,

and its lagoon complex (the largest in Colombia),

was recognized as a

Wetland of International Importance under the Ramsar Convention.

MANAGEMENT ACTIONS

Given the extension and integrity of HCV2 areas, it is very unlikely that oil palm crops will be found within an HCV2.

This was evidenced in the detailed analysis of the study area; no coincidence was found between HVC2 areas and oil palm crops.

However, oil palm crops or palm oil mills located in the vicinity or upstream of HCV2 areas can disturb or impact them.

Therefore, some management actions were identified to be considered in such cases.

Also, there is a significant number of oil palm plantations between the Sierra Nevada and the Ciénaga Grande de Santa Marta, in an area that is highly fragmented.

For this reason, several management actions were proposed to improve connectivity between these two HCV areas.

FOR OIL PALM CROPS IN THE VICINITY OF THE SIERRA NEVADA DE SANTA MARTA



 Avoid the transformation or disturbance of natural areas in the foothills of the Sierra Nevada.

FOR OIL PALM CROPS NEAR OR UPSTREAM OF THE CIÉNAGA GRANDE DE SANTA MARTA

Avoid the transformation or disturbance of natural areas near the Ciénaga, especially of wetlands and mangroves.



Minimize the contaminant load of palm oil mill effluents discharged to water bodies as much as possible.

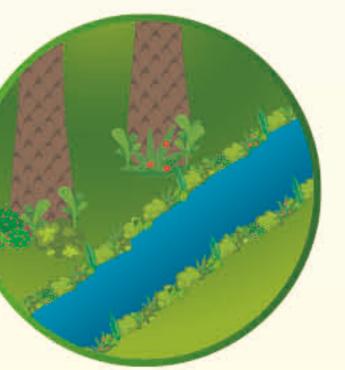
 Reduce the use of agrochemicals in nearby areas or those with influence on wetlands and mangroves, as much as possible.

Prevent and control logging and hunting.

FOR ALL OIL PALM CROPS LOCATED BETWEEN THE SIERRA NEVADA AND THE CIÉNAGA GRANDE DE SANTA MARTA



- Restore and protect riparian buffer zones.
- Implement corridors of natural vegetation that facilitate connectivity between natural ecosystems and the passage of wildlife species.



 Implement efficient irrigation systems and other actions aiming at a more efficient use of water, to ensure that rivers flowing from the Sierra Nevada and through oil pam regions provide enough fresh water to the Ciénaga.



• Sensitize oil palm growers and workers about the environmental importance of these

Rare, threatened or endangered ecosystems

HCV3 are rare, threatened or endangered (RTE) ecosystems.

RTE ecosystems may be naturally rare because the climatic or geological conditions necessary for their development are limited, or because they have become rare due to anthropogenic pressures such as the conversion of natural ecosystems for agricultural use, among others (Jennings et. al., 2002*).

Ecosystems in this category include:

- Ecosystems (unaltered or not) that are now rare or that have been considerably reduced, even though they were previously large or were typical in a given region.
- Ecosystems (unaltered or not) that have always been rare.



The methodology used for identifying HCV3 in the study area contemplated 3 steps:

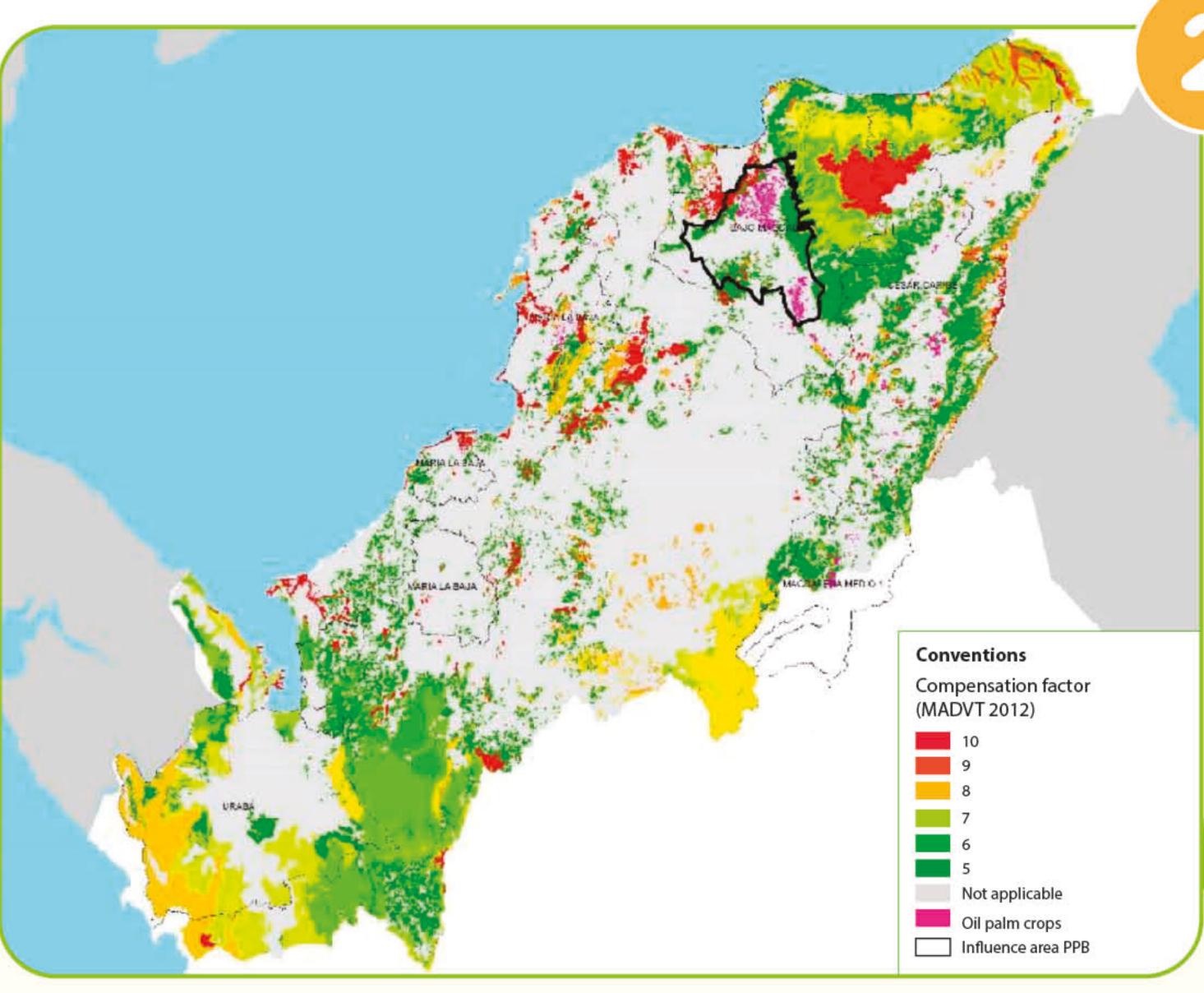


Rare, threatened or endangered ecosystems with legal protection in Colombia were identified. Tropical dry forests

Mangroves

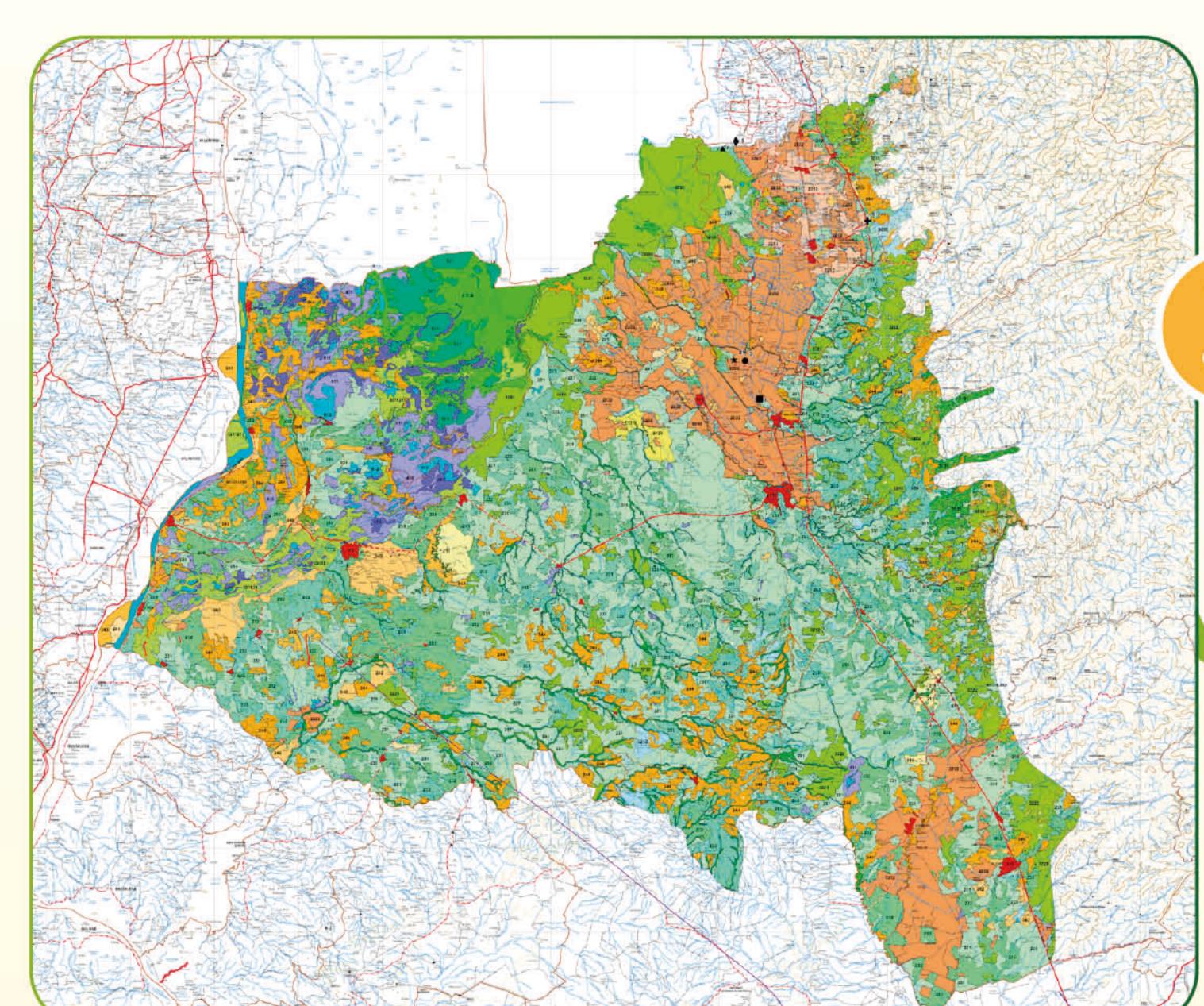
Páramos (high altitude grasslands) Wetlands

Areas of special ecological importance for the conservation of water resources



Based on the ecosystems map of Colombia, rare, threatened or endangered ecosystems were identified for the Caribbean region.

Each type of ecosystem was assigned a relative importance according to the compensation factor established in the Compensation Manual of the Ministry of Environment and Sustainable Development (2012). This factor assesses the rarity, representativeness, remanence and transformation rate of ecosystems in each biome / biogeographical district.



HCV3-type ecosystems were more accurately identified in the study area, based on a land cover map developed by the PPB project with satellite images for 2014 and using the Corine Land Cover methodology adapted for Colombia.

Based on these criteria, the only ecosystem identified as HCV3 in the Northern Zone study area was the Dry Forest.

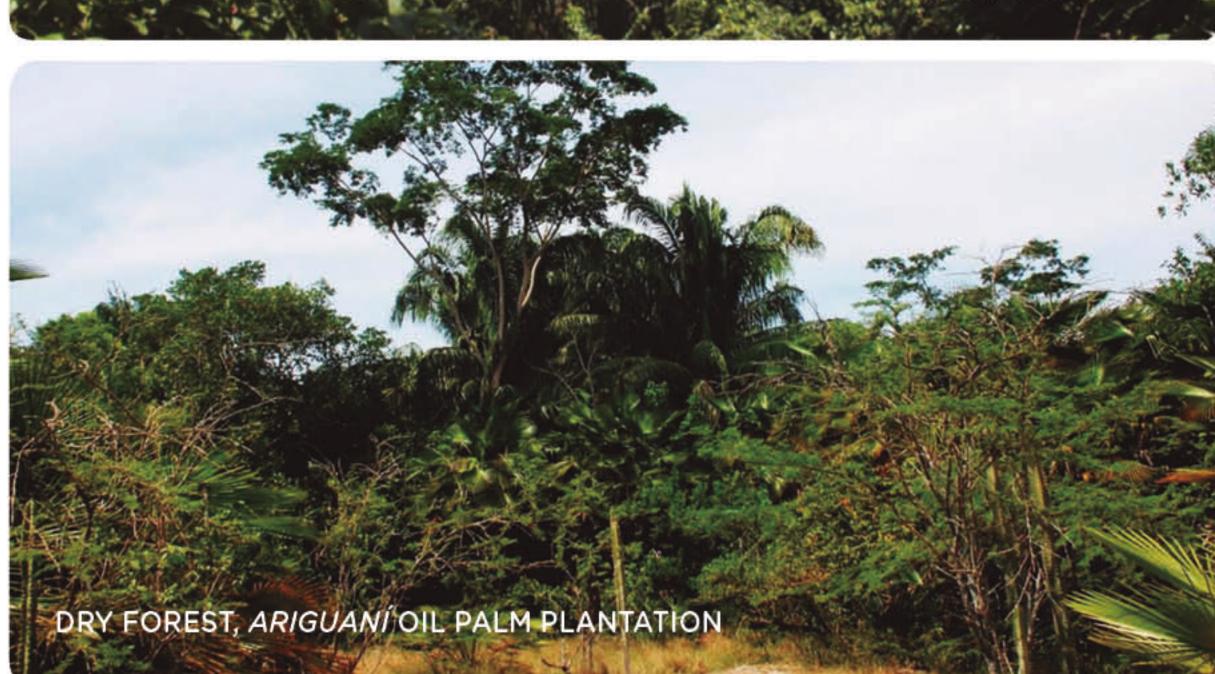




Study area Departmental limit

HCV3 8.556 ha





Photos: Francisco Castro

MANAGEMENT ACTIONS



Prevent and control burning in these ecosystems, especially in dry forests, which are very vulnerable to fires



Implement enclosures to prevent livestock from entering into these sensitive ecosystems.



Implement surveillance and control programs for logging and hunting.



Delimit and mark these conservation areas.



Raise awareness about the existence of these ecosystems, understanding that they have been classified as endangered and that they are in a vulnerable state.

Implement Landscape Management Tools - LMT

to improve the status and connectivity of these ecosystems



Enrichment of forest fragments



Protection or restoration of riparian buffer zones



Implement biological corridors to connect patches of dry forest and riparian buffer zones.



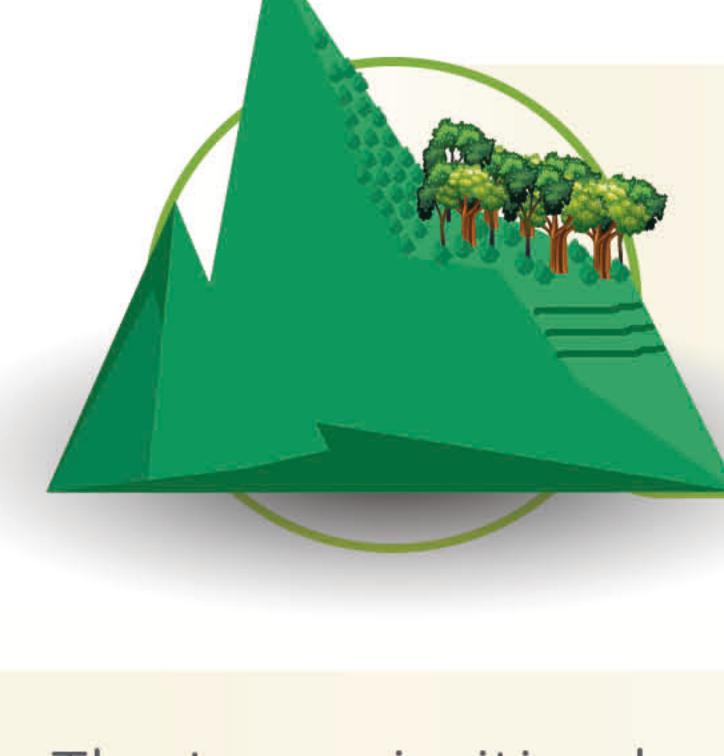
Minimize as much as possible the use of agrochemicals and the discharge of wastewater into water bodies in crops near wetlands and mangrove areas



HCV 4 Basic ecosystem services in critical situations



To identify HCV4 areas, the ecosystem services that benefit local communities, towns and other productive activities in the direct area of influence of the three beneficiary oil palm nuclei in this study area were analyzed.

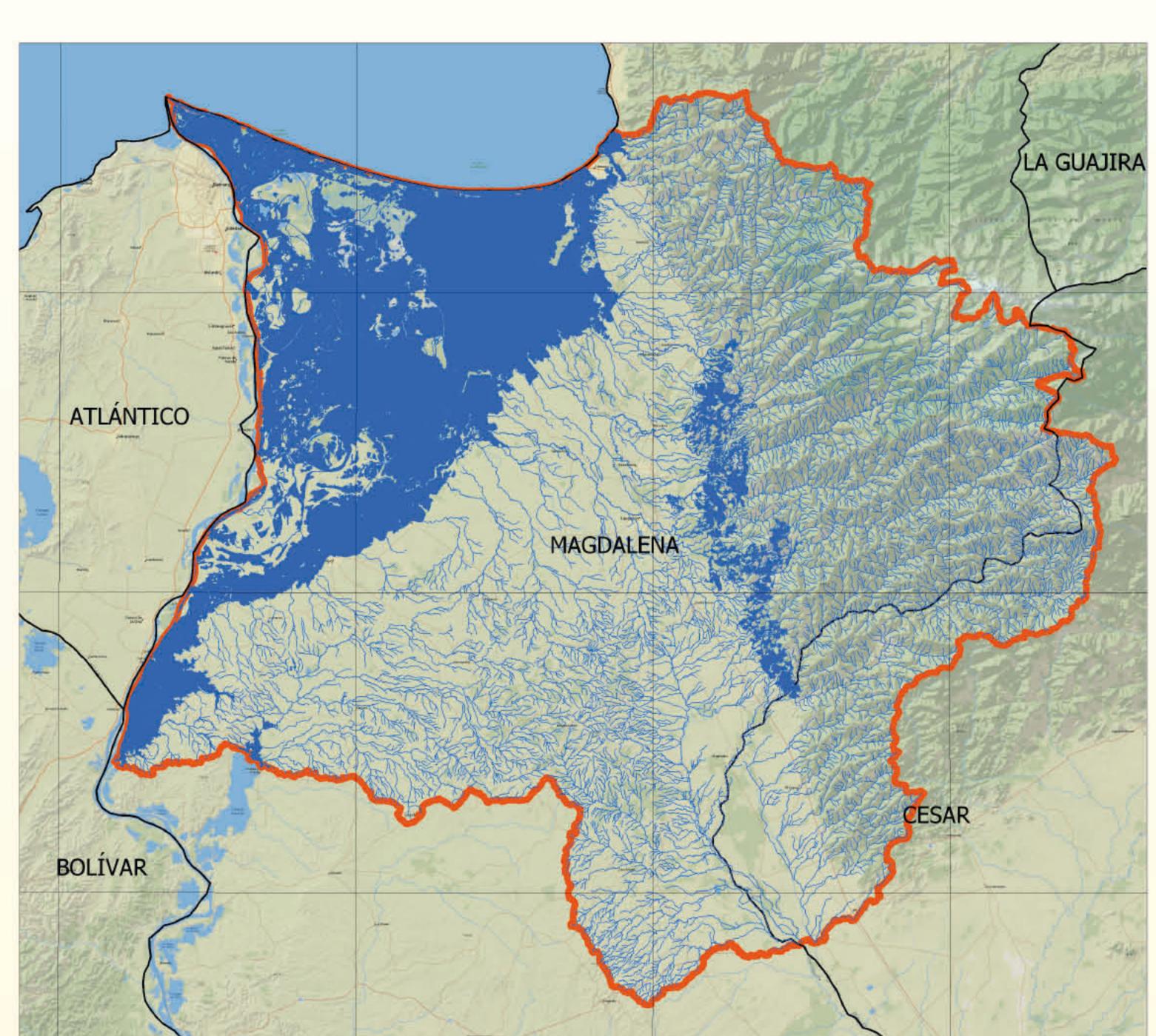


The ecosystem services classification of the Millennium Ecosystem Assessment was used to prioritize those most relevant in the study area.



- Regulation and maintenance of water quality and quantity
- Control of erosion and flooding on river banks

RESULTS





- Study area

 Departmental limit
- HCV 4
 325.698 ha

The main findings in relation to the two prioritized ecosystem services were:

 Regulation and maintenance of water quality and quantity: This ecosystem service is provided by water bodies that are part of the of the Aracataca, Fundación and Ariguaní river basins, where most oil palm crops of the three beneficiary oil palm nuclei are located. They were considered as HCV4 not only because of their critical importance for the population and other economic activities of the region, but also because the mangrove ecosystem of the Ciénaga Grande de Santa Marta (which was classified

as HCV2) requires a delicate balance of fresh and salt water, so a decrease in the flow and / or the quality of the water coming from these basins could affect it significantly.

• Control of erosion and flooding on river banks: This ecosystem service is provided by riparian forests, which contribute to the filtering of pollutants and also reduce the flow of sediments in rainy seasons, controlling erosion in the lower basins. On the other hand, the natural vegetation on the river banks reduces the risk of flooding in nearby areas, including oil palm crops.

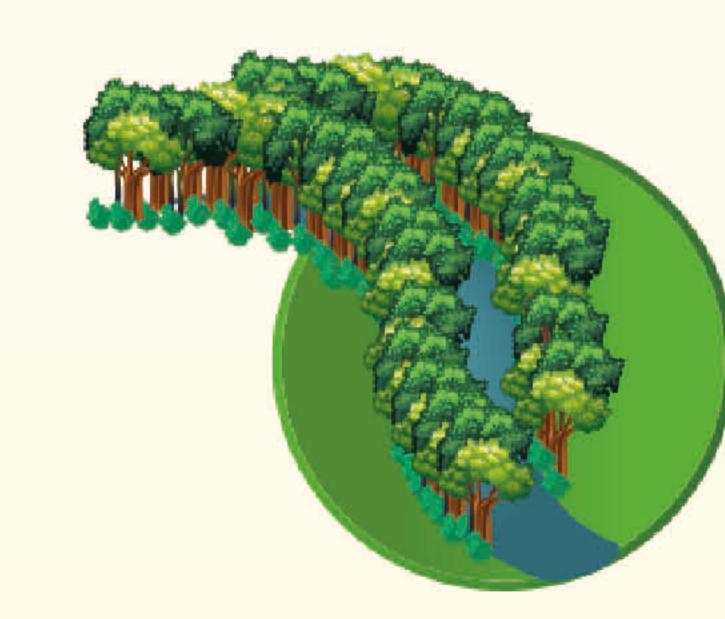
At the regional level, the wetland complex of the Ciénaga Grande de Santa Marta was identified as HCV4, including its main lagoon and the existing wetlands between the Ciénaga and the Magdalena River.



Photo: Francisco Castro



Photo: Francisco Castro



Delimit, protect and restore riparian buffer zones



Avoid cutting down the natural protective vegetation along riverbeds.



Control burnings in areas adjacent to water bodies.

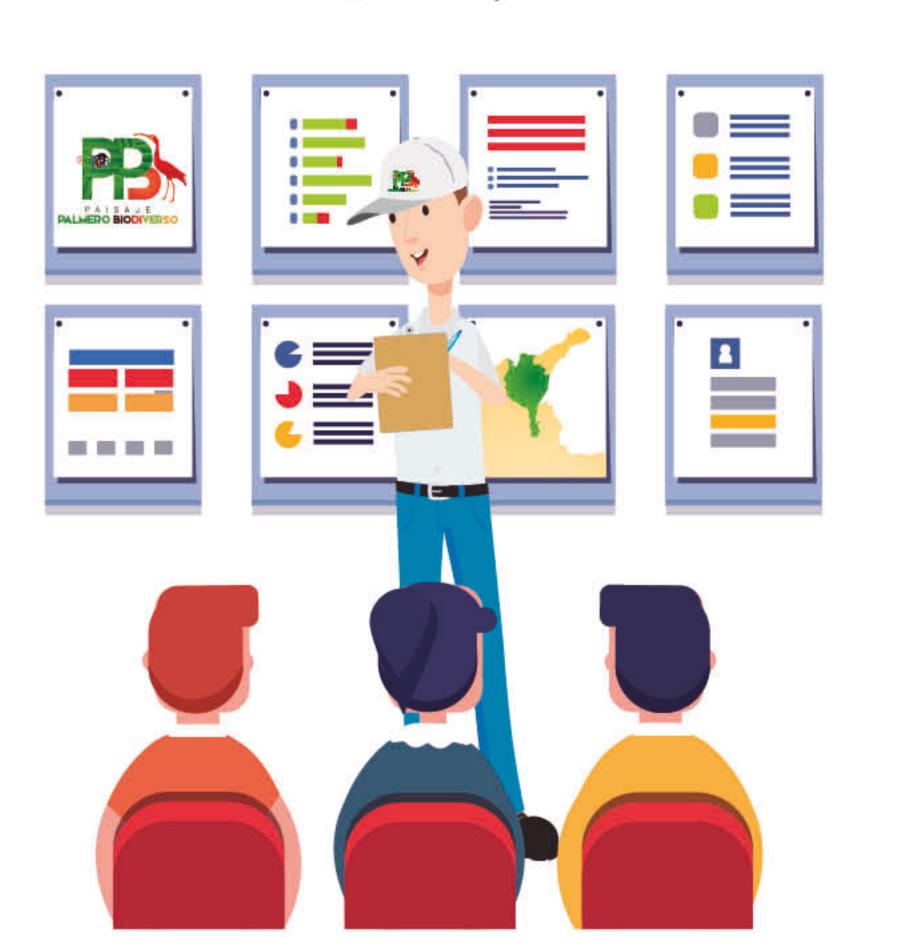


Do not use agrochemicals in the delimited areas of riparian buffer zones.

HCV 5

Sites or resources for satisfying basic needs of local communities

The methodology used to identify HCV5 areas within the direct area of influence of the three beneficiary oil palm nuclei was based on workshops with local communities and stakeholders.



A facilitator designed participatory dynamics to identify natural areas that the community uses for the provision of:

- → Water
- Food (including fishing areas)
- Woody or construction materials
- Clothing materials Medicinal plants

4 workshops

municipalities attended by

70 people

Participants included: neighboring communities, Community Action Boards, municipalities, indigenous groups, etc

HCV 6

Sites, resources, habitats of cultural,

religious or archaeological value

In the workshops held with local communities and stakeholders, dynamics were also developed to identify sites, resources, habitats and significant landscapes for cultural, historical, religious or archaeological reasons for local communities or indigenous peoples.



CONTRACTOR

Workshop held in the municipality of Pivijay.



Workshop held in the municipality of El Retén



Workshop held in the municipality Zona Bananera.



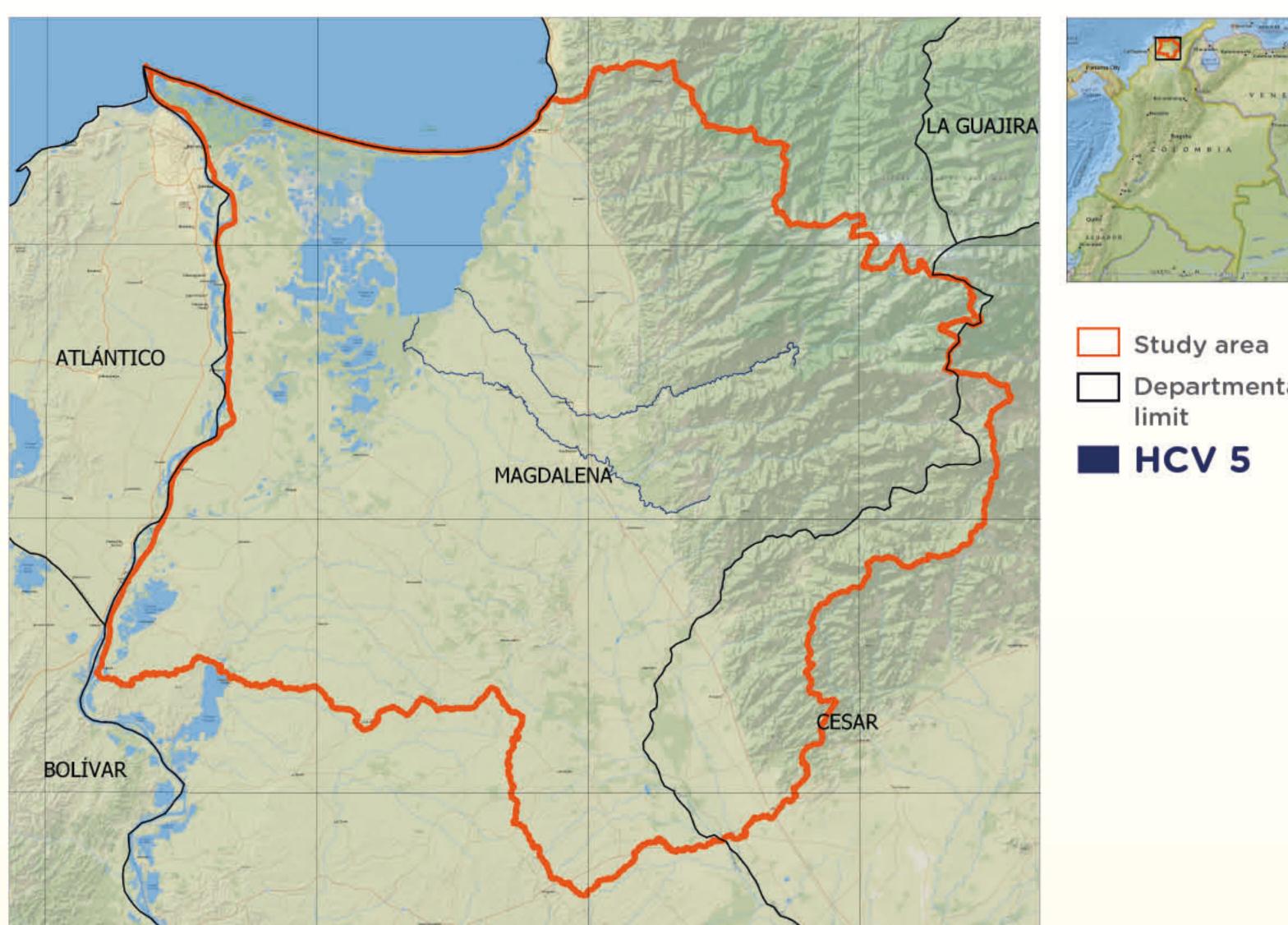
 The natural resource most widely used by local communities in the direct area of influence of the three oil palm nuclei in the Northern Zone is water for their own consumption.



 Some communities established in the vicinity of the Ciénaga Grande de Santa Marta fish in the Aracataca and Fundación rivers.

 At the regional level, the Aracataca and Fundación rivers were identified as HCV5, due to their importance for water supply and fisheries for local communities.





Study area Departmental

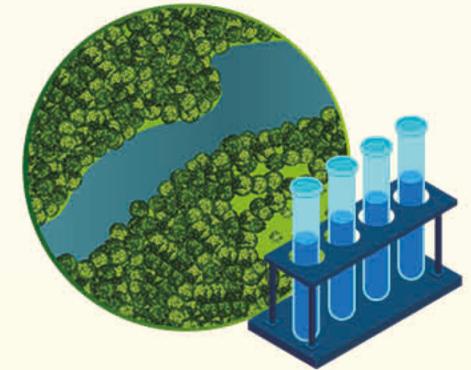
MANAGEMENT ACTIONS «



Implement rights-of-way to allow access for local communities to their fishing sites for subsistence.



Minimize the contaminating load of palm oil mill efluents (POME) discharged to water bodies as much as possible.



Periodically monitor water quality before and after POME discharge points, especially during the dry season.

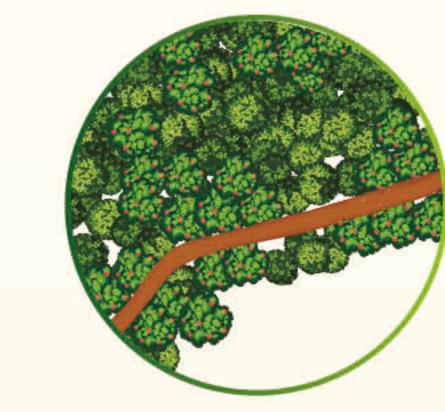


Establish a protection strip near water bodies, in which the use of agrochemicals is minimized or eliminated.

- The "Linea Negra" (Black Line perimeter of the Sierra Nevada, which symbolically separates the sacred sites of the Arhuacos, Koguis and Malayos indigenous groups) runs between the Sierra Nevada de Santa Marta and the municipalities of Zona Bananera, Aracataca and Fundación, very close to the railway line..
- The boundary of the Linea Negra was identified as HCV6 in this study, due to its cultural and religious importance for these three indigenous groups of the Sierra Nevada de Santa Marta.
- Additionally, two sacred sites were identified as HCV6 in the mouths of the Aracataca and Fundación rivers into the Ciénaga Grande de Santa Marta, at the sites called Bocas de Cataca and El Chuval.
- Neighboring communities to oil palm plantations also identified sites along the riverbanks that they use for bathing and recreation.
- In this study area, an oil palm plantation had an archaeological finding.

Línea Sacred sites

MANAGEMENT ACTIONS «



Implement rights of way for indigenous communities to access their sacred sites and for local communities to access recreational sites along the rivers.



Develop a manual of duties and rights in which:

- Oil palm growers ensure rights of way to those places.
- Beneficiaries of the right of way committ to: not throwing garbage, not hunting, not threatening the integrity of plants and crops, and maintaining order and tranquility in the area.



Sensitize workers and communities on the Línea Negra, its boundary and its importance for the indigenous groups.



In case of an archaeological finding: Follow the recommendations of the Guide for the Formulation of the Protocol of Fortuitous Findings of Archaeological Heritage and Public Archeology and Disclosure developed by Fedepalma, which establishes:

- Suspend all oil palm cultivation activities
- Cordon off the area.
- Do not manipulate the findings.
- Give notice to the Colombian Institute of Anthropology and History - ICANH.

¥12 134

Testimonies

The Biodiverse Oil Palm Landscapes project PPB is an innovative initiative in which project partners, experts in environmental and biodiversity issues and, of course, oil palm growers from the northern part of the country were involved. Through this initiative, they learned about the criteria and procedures that allow preserving those elements that have an environmental, cultural and social relevance in oil palm crops and in their areas of influence. In this section, the PPB beneficiaries give us their comments on their experience and on the legacy the project has left them for the development of a productive and sustainable plantation model.

We also present some messages from WWF, partner of the PPB project and who promoted including the HCV topic in this project, and of two experts who led the HCV studies at the regional level and in the three beneficiary oil palm nuclei in the Northern Zone.

"The Biodiverse Oil Palm Landscapes project has left us many lessons learned to conserve fauna and flora species that accompany us in our crops, and also of a basic element for us such as water. It has been a very interesting experience, as we have learned the importance of controlling and avoiding practices that not only endanger the crop but also our own life".

Héctor Marín - Beneficiary oil palm grower of the PPB project



"The Value of arear

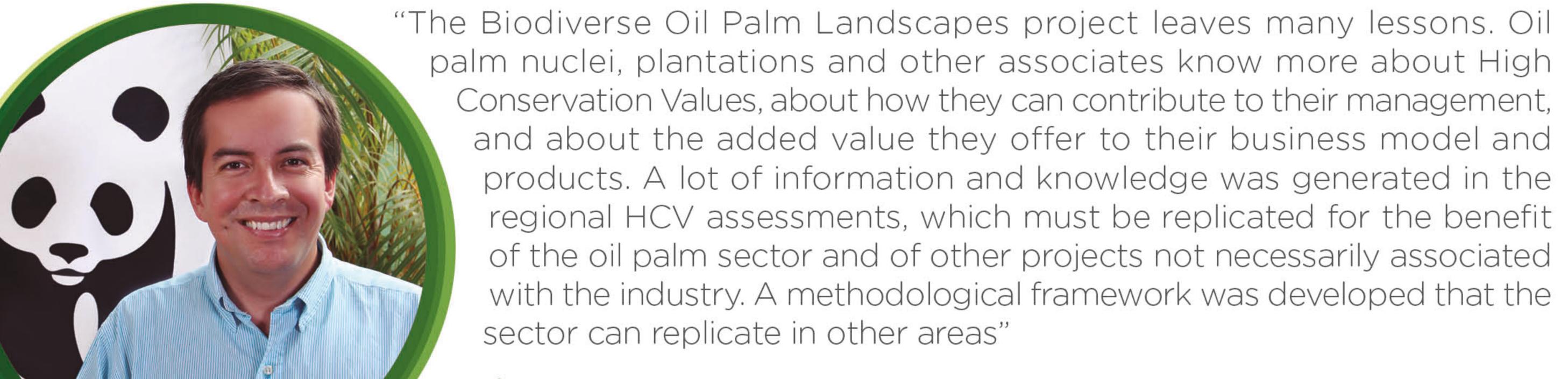
The project leaves me very important lessons. Based on the High Conservation Value concept, I have implemented actions for the caring and conservation of the environment, nature, fauna and flora existing in the crop and in other areas. It also helped me understand the proper use of nectariferous plants and other biological control strategies".

Rogelio Charry, Beneficiary oil palm grower of the PPB project

"The lesson that the project leaves to the oil palm growers of our region is to value what nature, and flora and fauna species mean. Through this initiative, I have helped my workers be more aware of the importance of preserving the environment. Now, they have a new concept about the animals that live in the area and they have taken measures to control hunting.

Rufino Manjarrés - Beneficiary oil palm grower of the PPB project





César Suárez - Coordinator of Geographic Analysis, WWF Colombia

"The HCV assessments created awareness and commitment for conservation with oil palm growers of small, medium and large scale. Understanding ecosystem services, how they benefit from them and the biological importance of the species found in the oil palm cultivation process, was a big milestone for conservation in oil palm production systems. This is an initiative for Colombia and for the region that showed that sustainable palm oil production is possible".

Luis Francisco Madriñán - Conservation and Ecosystem Services

Coordinator, PPB Project (2013-2015)



"The PPB project ventured into something that had not previously been done in the industry. It was an initiative that combined efforts with the best technical and scientific knowledge that was available in the country at the time to implement the HCV concept, which would benefit the entire industry on issues related to biodiversity conservation. This brought cost-efficient benefits to the sector since it assured the consistency of the results and defined next steps to manage and monitor HCVs. This is how the palm oil sector and oil palm growers will guarantee that the components associated with nature and the ecosystem in the crop endure over time".

Daniel Arancibia - Co - director for Latin America, Proforest;

Licensed Assessor, HCV Resource Network

"The HCV assessments carried out by the PPB project not only showed that there is a great diversity of species coexisting with our oil palm crops, but that it is possible to collect regional information on HCVs that is useful for several oil palm companies and their supply base. This reduces costs and allows for opportunities to jointly identify and monitor HCVs between several oil palm nuclei."

Juan Carlos Espinosa - Environmental Leader, Fedepalma



≥14



The Biodiverse Oil Palm Landscapes ("Paisaje Palmero Biodiverso - PPB") project was implemented between 2012 and 2018 by the National Federation of Oil Palm Growers (Fedepalma), in association with Cenipalma, the Humboldt Institute and WWF Colombia. It was financed by the Global Environment Facility (GEF) and its implementing agency was the Inter-American Development Bank (IDB).

This project provides the oil palm sector with information, guidelines and environmental tools to support better decision-making processes in the feasilibity analysis, design and operation stages of oil palm crops, implementing strategies and good practices that conserve biodiversity and increase productivity.











