

Cerulean Warbler Summit 2  
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# Cerulean Warblers in Coffee-producing regions of Colombia

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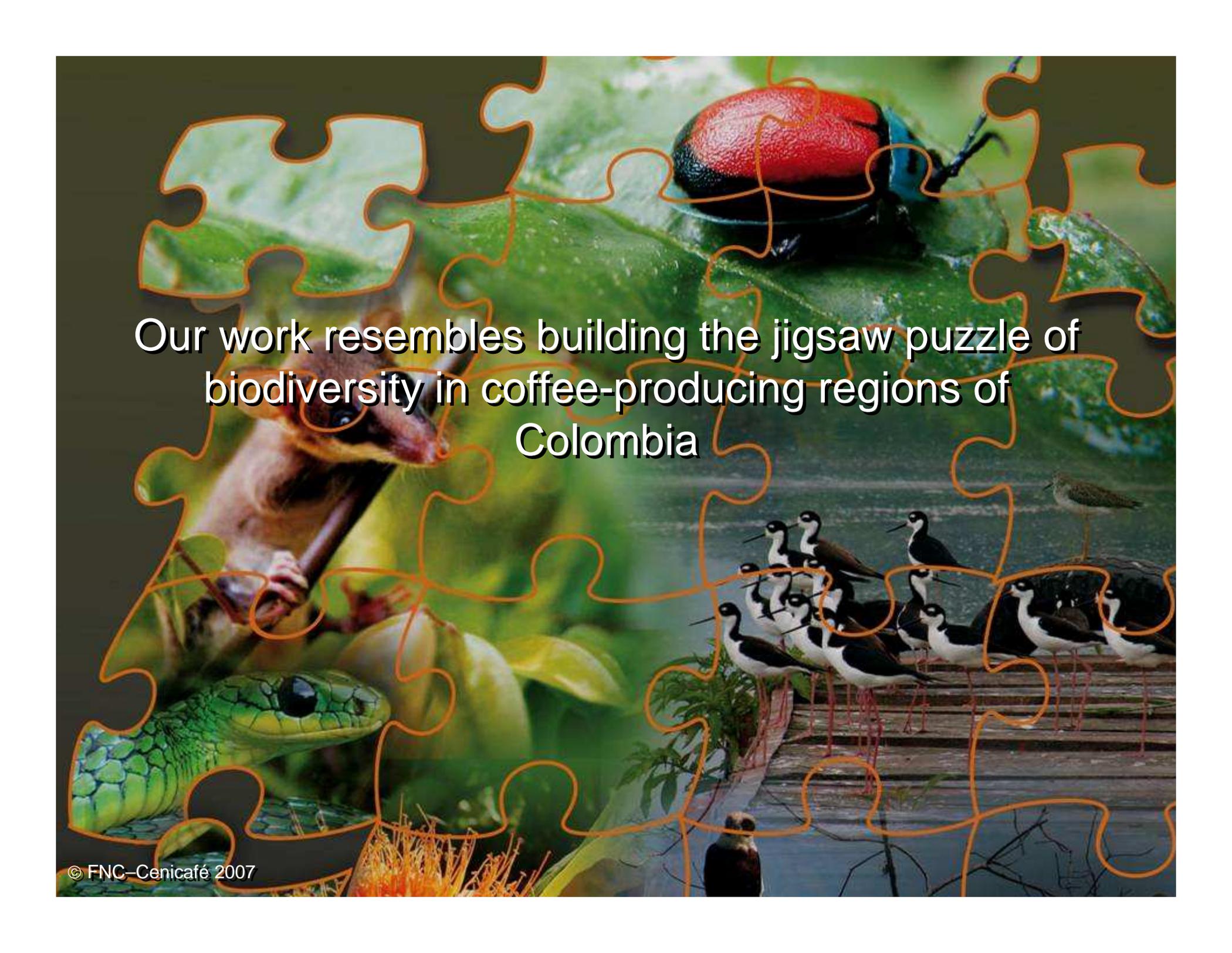
## Working on biodiversity issues

- The Conservation Biology Program is part of Cenicafé
- Cenicafé (Centro Nacional de Investigaciones de Café) is the research branch of the National Coffee Federation

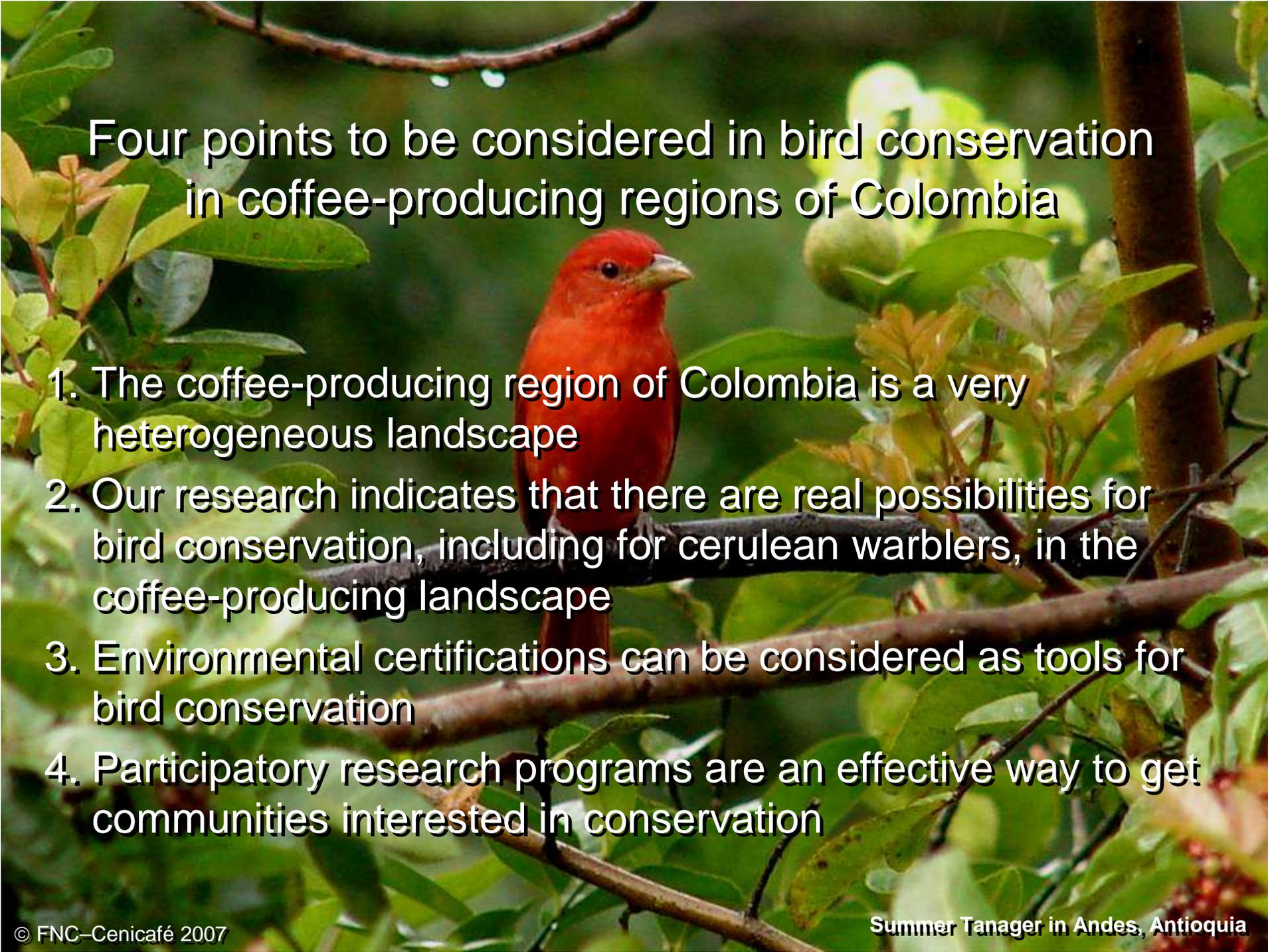
# Our work on biodiversity:

- On several taxonomic groups: plants, arthropods, birds, mammals
- In several landscape elements : coffee plantations, forest fragments, riparian forests
- At different spatial scales: the plantations, the farm, the region
- Working with the communities
- To identify conservation opportunities
- To develop conservation tools





Our work resembles building the jigsaw puzzle of biodiversity in coffee-producing regions of Colombia

A vibrant red Summer Tanager bird is perched on a dark brown branch in a lush green coffee plantation. The bird is facing right, and its bright red plumage contrasts sharply with the surrounding foliage. In the background, several green coffee cherries are visible on the branches. The overall scene is a naturalistic depiction of the bird in its habitat.

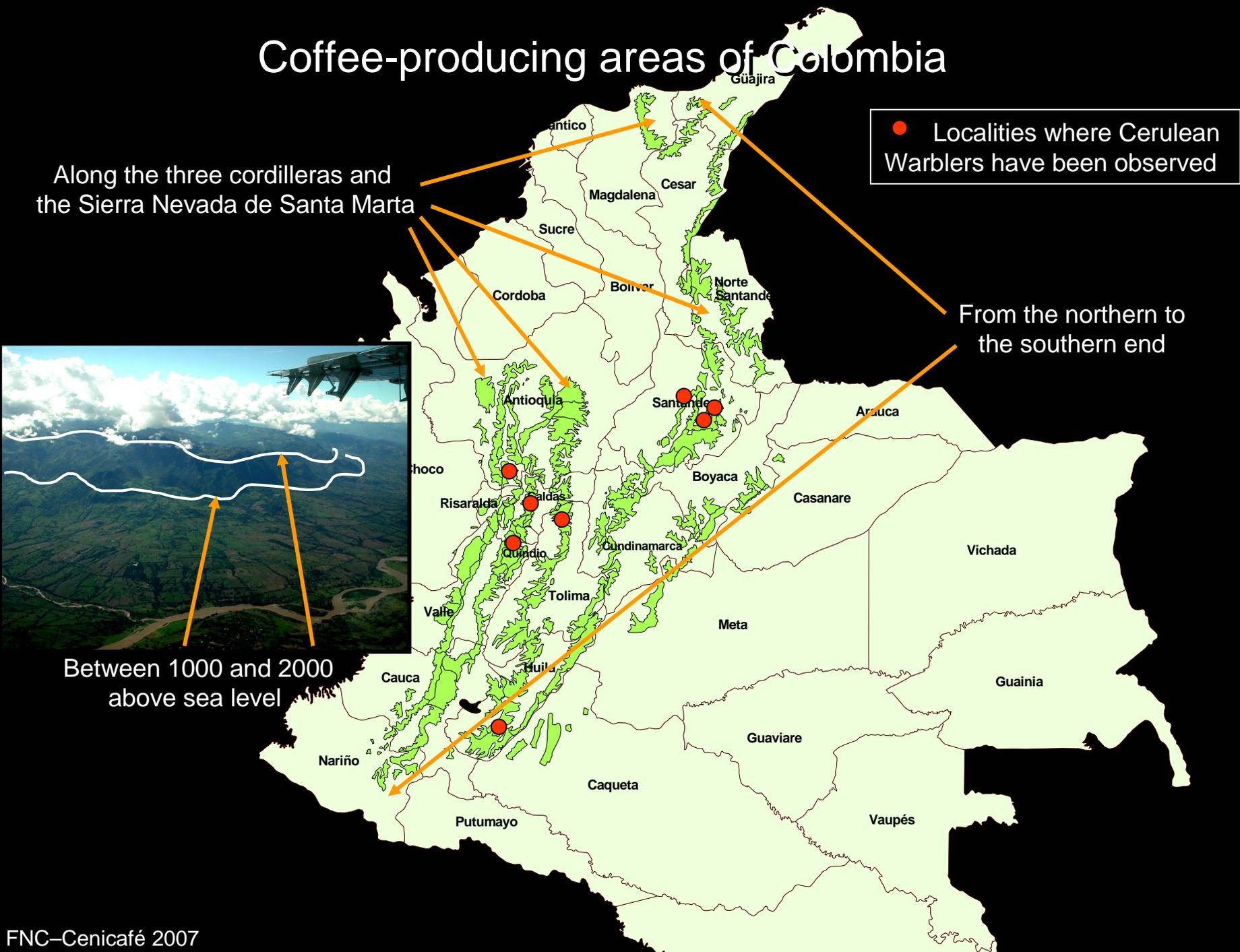
## Four points to be considered in bird conservation in coffee-producing regions of Colombia

1. The coffee-producing region of Colombia is a very heterogeneous landscape
2. Our research indicates that there are real possibilities for bird conservation, including for cerulean warblers, in the coffee-producing landscape
3. Environmental certifications can be considered as tools for bird conservation
4. Participatory research programs are an effective way to get communities interested in conservation

# 1. The coffee-producing region of Colombia is a very heterogeneous landscape

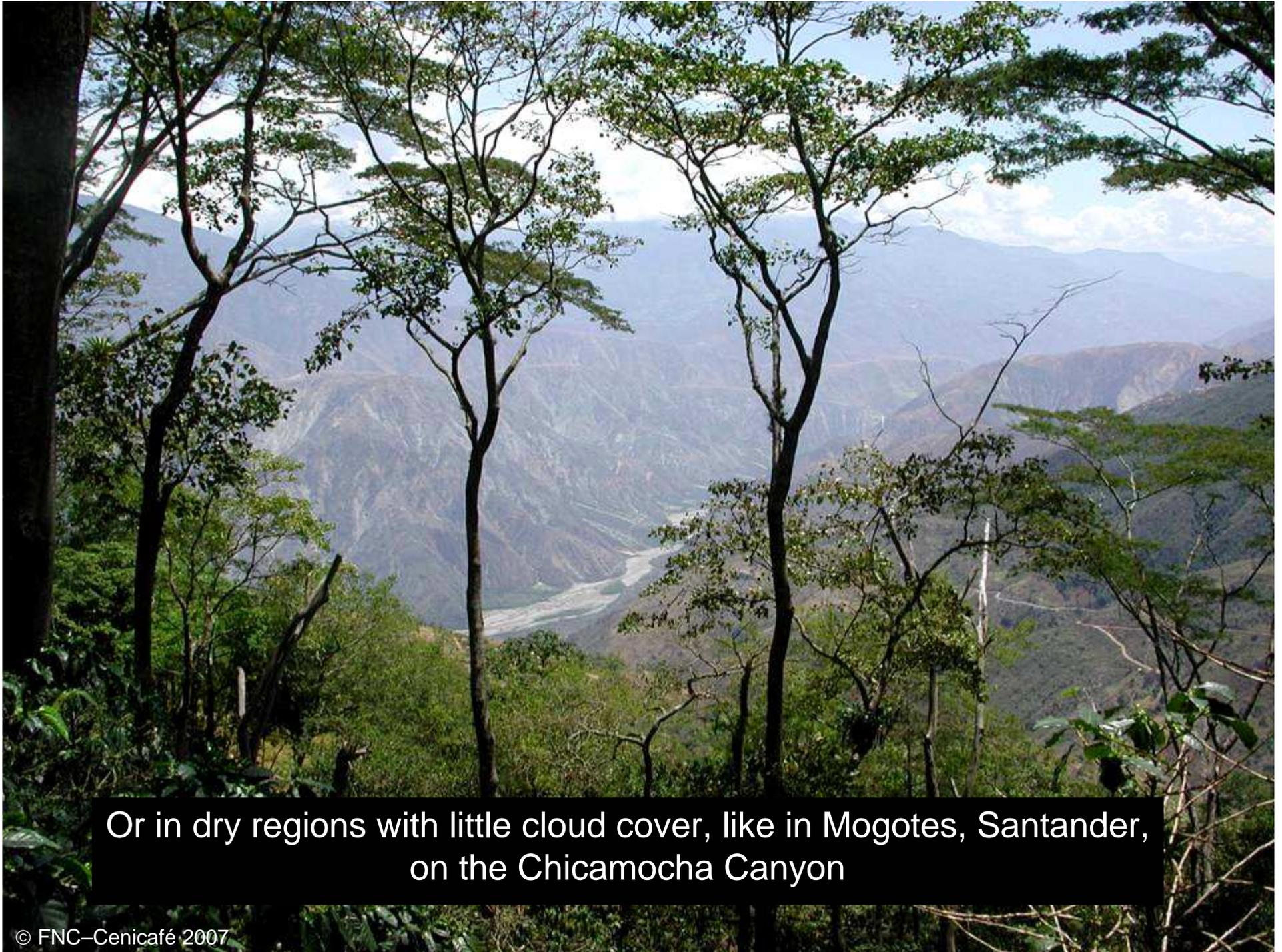
- Coffee is grown only in the mountainous regions of Colombia, along the three mountain ranges and the Sierra Nevada de Santa Marta.
- At an altitudinal belt between 1000 and 2000 m.
- Throughout the range of coffee production, there are major variations in topography, latitude, climate, soil, and ecological conditions.
- There is also cultural diversity.
- Coffee production also varies from region to region: in the sun or under different types of tree shade.
- In this heterogeneous rural landscape, the potentials and challenges for bird conservation are complex.

# Coffee-producing areas of Colombia

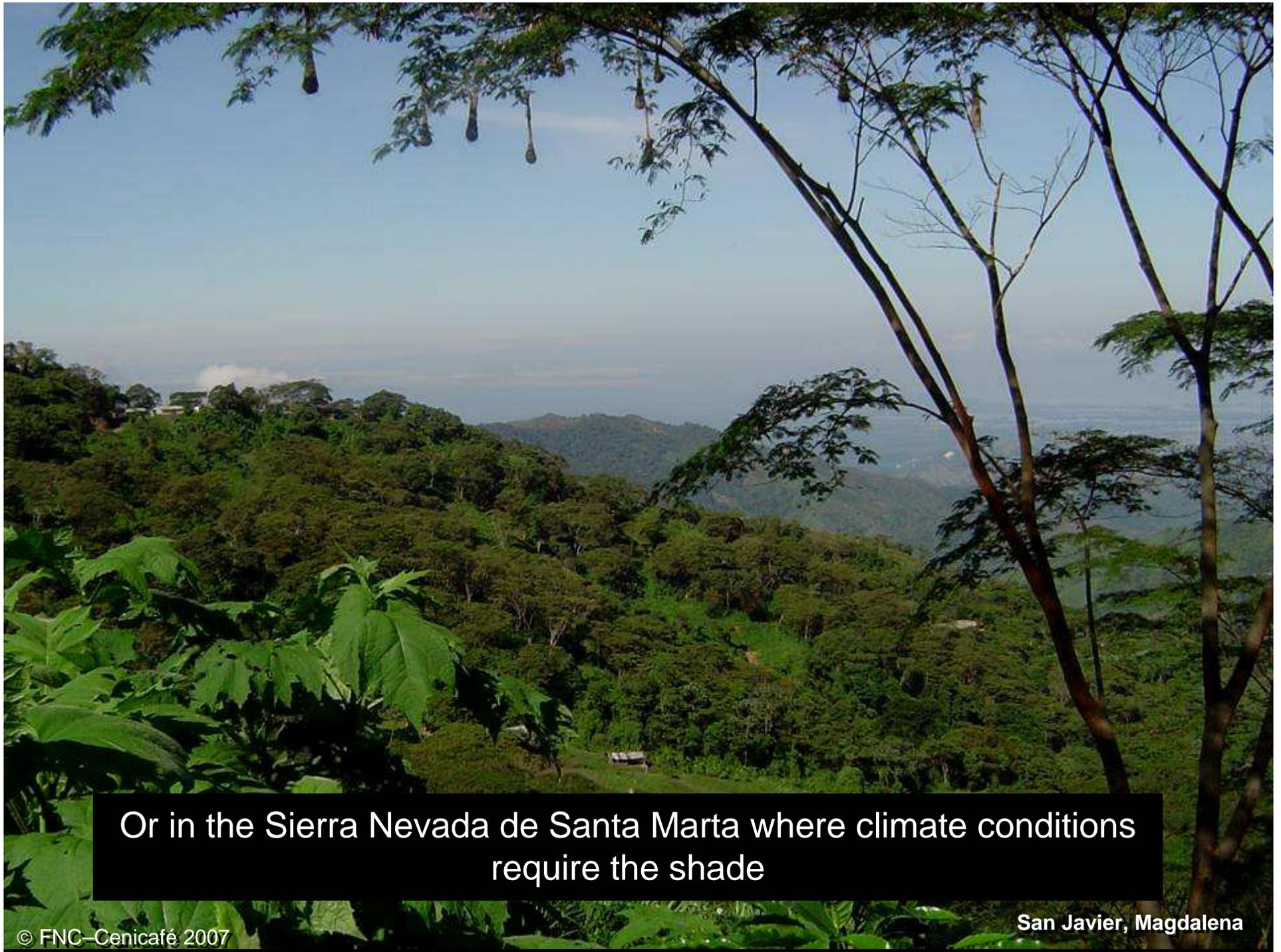




Coffee is grown in regions with high rainfall and high cloud cover,  
like in Manizales, Caldas



Or in dry regions with little cloud cover, like in Mogotes, Santander, on the Chicamocha Canyon



Or in the Sierra Nevada de Santa Marta where climate conditions  
require the shade

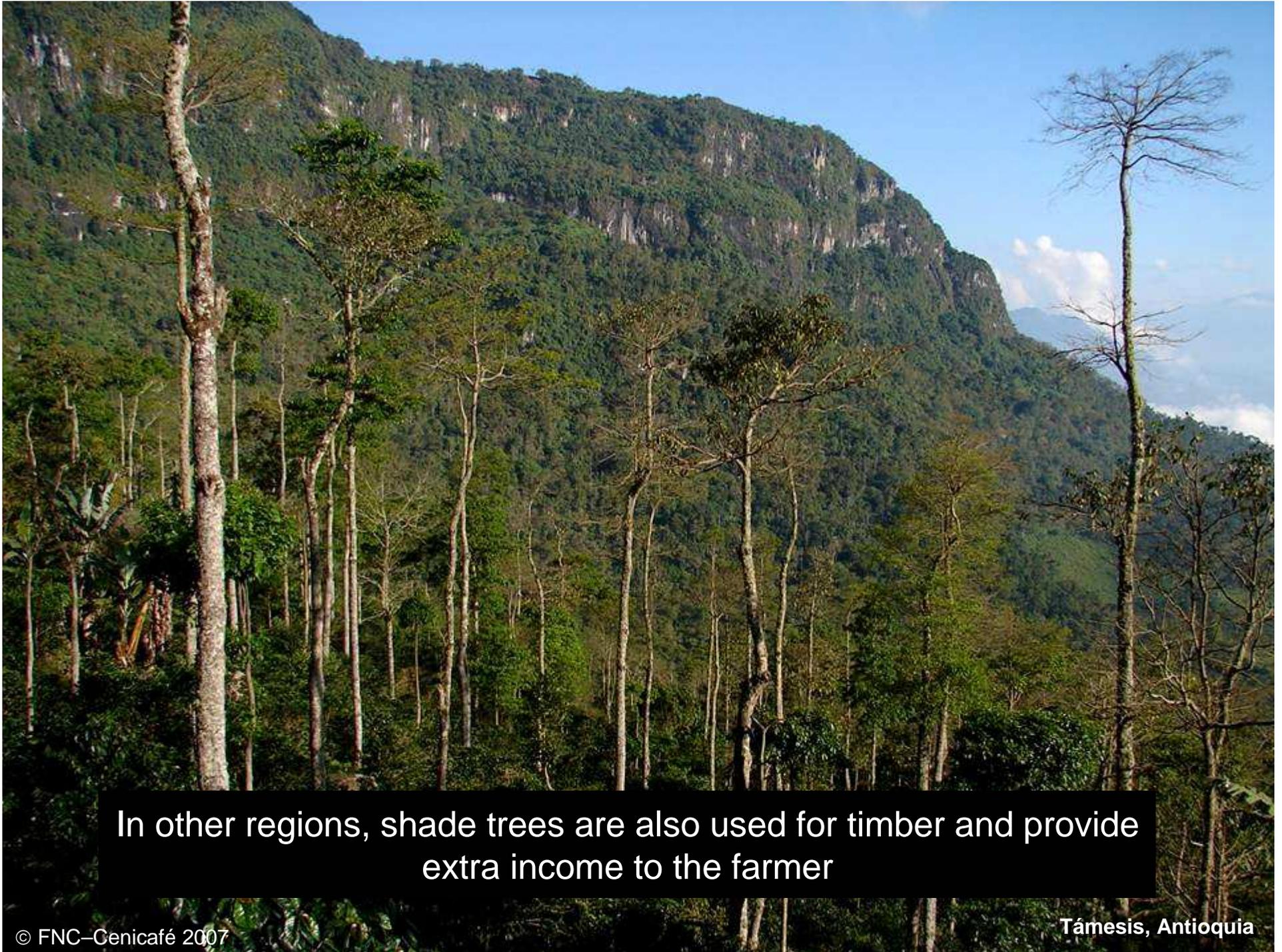


Coffee production is mostly in the sun in Palestina, Caldas, where there is high cloud cover. There, bamboo forests cover the streams





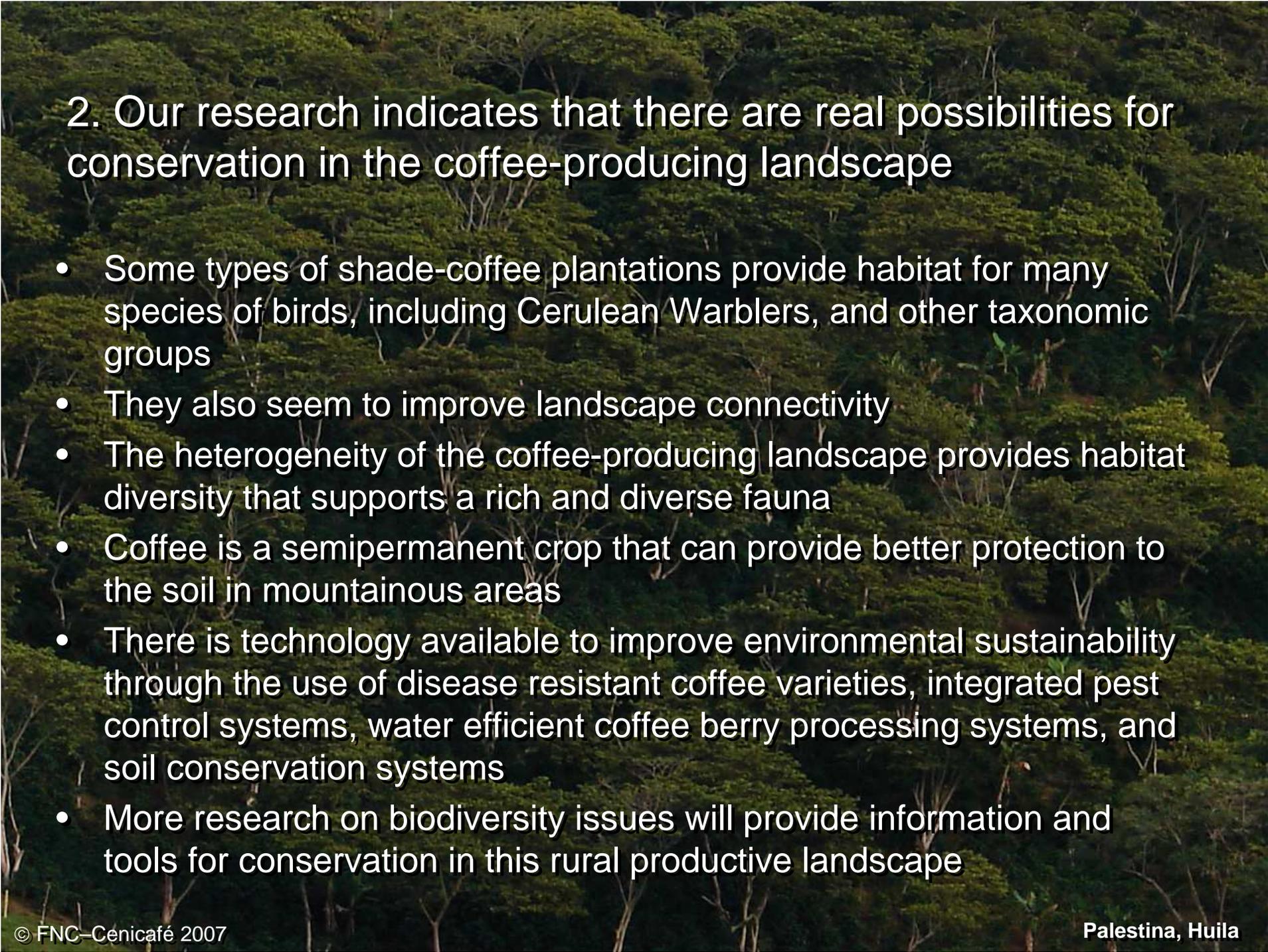
In some regions, like in this farm in Palestina, Huila, the shade is uniform, consisting of only one species of tree



In other regions, shade trees are also used for timber and provide extra income to the farmer

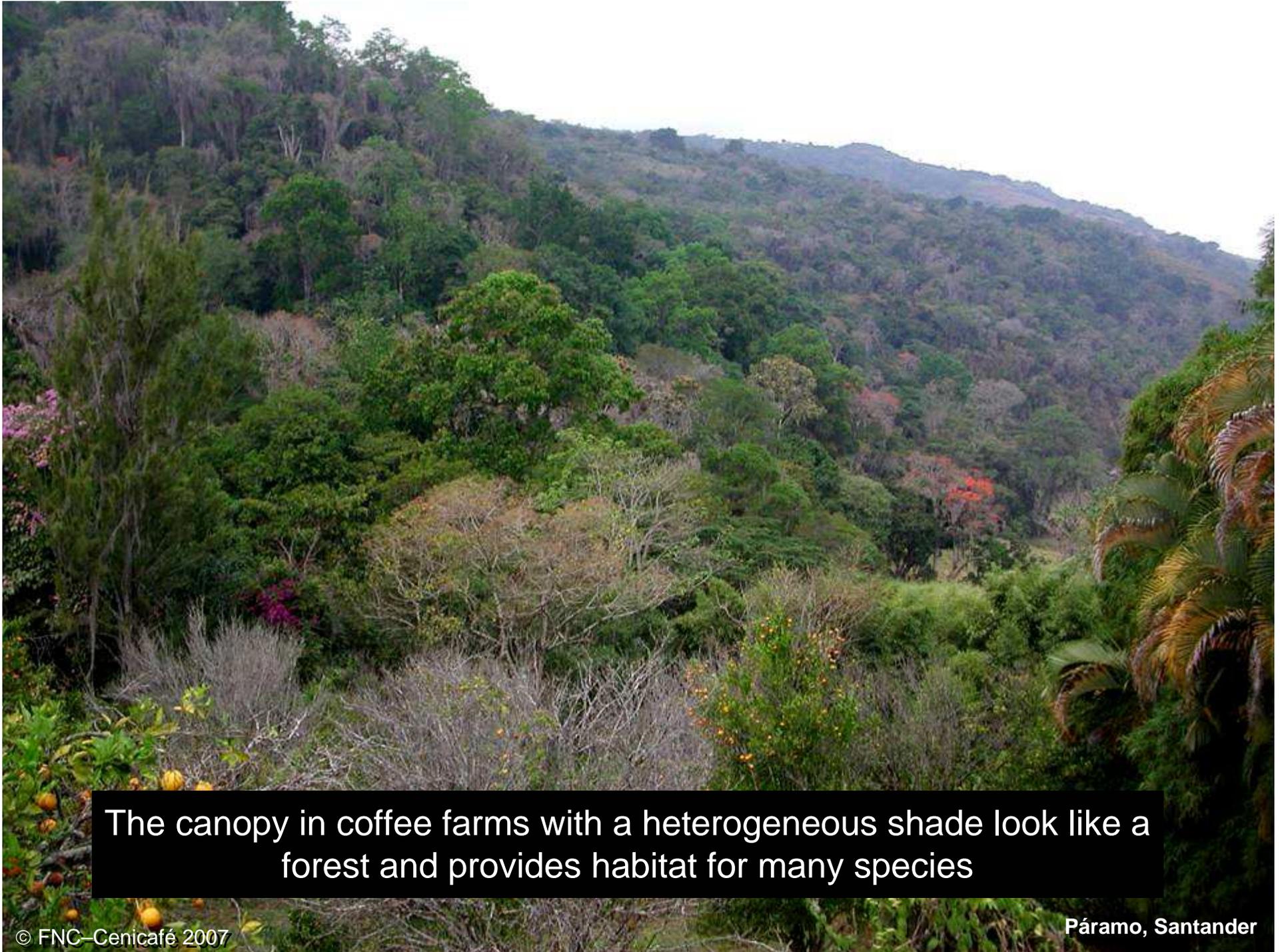


In the Santander region, the shade is diverse and heterogeneous. More than 70 species of trees are used for shade in this area



## 2. Our research indicates that there are real possibilities for conservation in the coffee-producing landscape

- Some types of shade-coffee plantations provide habitat for many species of birds, including Cerulean Warblers, and other taxonomic groups
- They also seem to improve landscape connectivity
- The heterogeneity of the coffee-producing landscape provides habitat diversity that supports a rich and diverse fauna
- Coffee is a semipermanent crop that can provide better protection to the soil in mountainous areas
- There is technology available to improve environmental sustainability through the use of disease resistant coffee varieties, integrated pest control systems, water efficient coffee berry processing systems, and soil conservation systems
- More research on biodiversity issues will provide information and tools for conservation in this rural productive landscape



The canopy in coffee farms with a heterogeneous shade look like a forest and provides habitat for many species



In a study in shade plantations in the San Gil region of Santander, we registered 106 species of birds, of which 21 were boreal migrants, and at least three endangered resident species. Cerulean warblers are found there

These plantations, with a heterogeneous shade, harbor many species of birds, including many migrants

Two rare resident species and



White-throated spadebill  
(*Platyrinchus mystaceus*)



Chestnut-bellied hummingbird  
(*Amazilia castaneiventris*)

two migratory species found in those plantations



Prothonotary warbler  
(*Protonotaria citrea*)



Cerulean warbler  
(*Dendroica cerulea*)



A population of Turquoise Dacnis (*Dacnis hartlaubi*), a very rare Colombian endemic lives in this region. Cerulean warblers are found here too

Some coffee-producing regions, like La Virgen in Támesis, provide habitat for rare endangered species



IBA Los Cafetales de Támesis

For that reason, La Virgen has been listed as one of  
Colombia's Important Bird Areas (IBA)

Cerulean Warblers are being protected here

An aerial photograph of a coffee plantation in Huila, Ecuador. The landscape is dominated by rolling hills. In the foreground and middle ground, there are extensive coffee fields with rows of coffee plants. A large, dense forest remnant, primarily composed of oak trees, is situated in the center of the image, surrounded by the coffee fields. The background shows more forested hills under a clear sky.

Oak forest remnants are protected by Grupo San Isidro, a group of coffee producers in Huila. Cerulean warblers have recently been observed there.

Some coffee-producing communities protect forest patches for water and biodiversity conservation



# Different certification types emphasize different aspects; some include biodiversity conservation

Social sustainability

Economic sustainability

Environmental sustainability

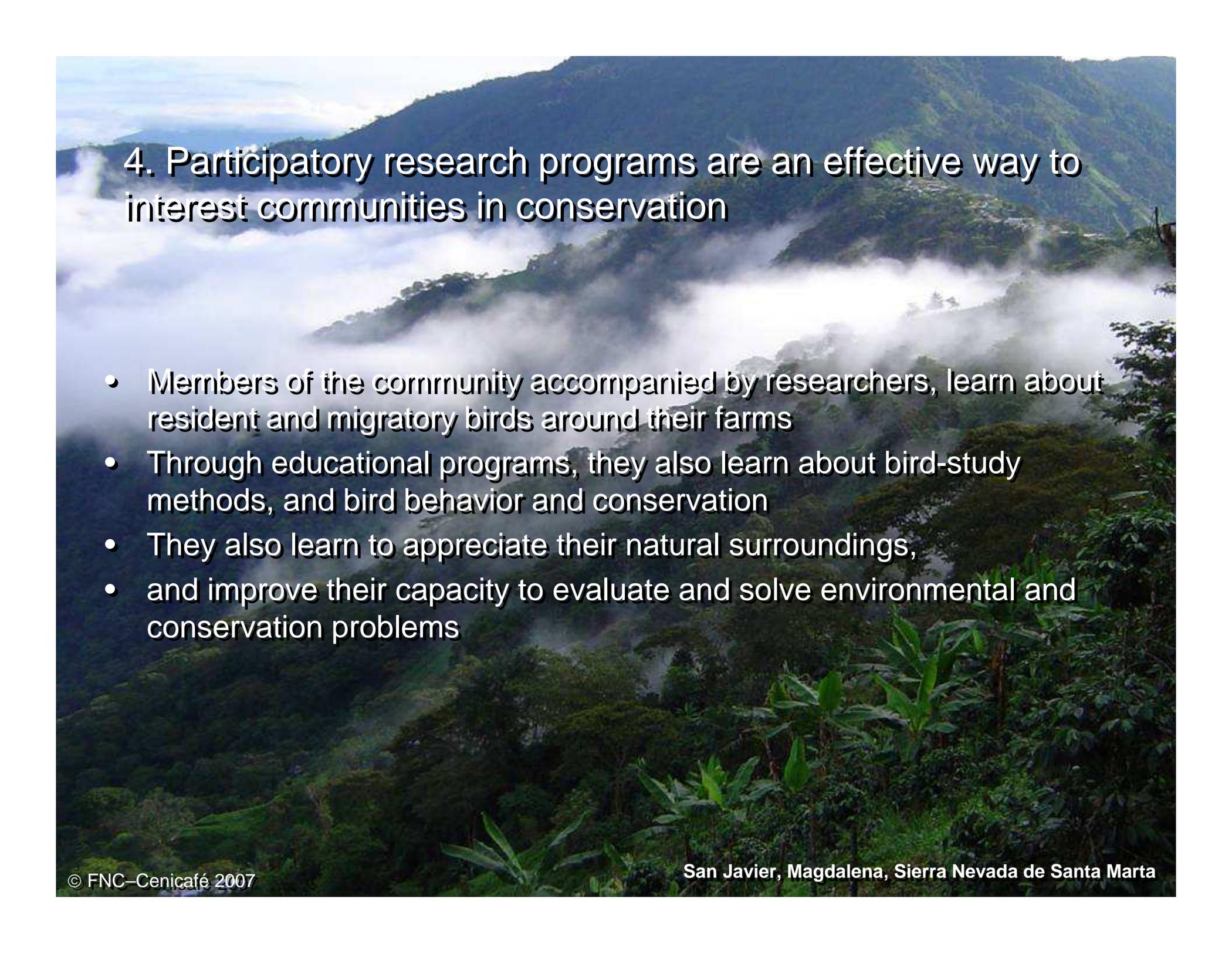


**Common Code for the Coffee Community**



A world market with possibilities for conservation





#### 4. Participatory research programs are an effective way to interest communities in conservation

- Members of the community accompanied by researchers, learn about resident and migratory birds around their farms
- Through educational programs, they also learn about bird-study methods, and bird behavior and conservation
- They also learn to appreciate their natural surroundings,
- and improve their capacity to evaluate and solve environmental and conservation problems

A photograph showing a man in a white lab coat and a blue cap with a red logo, focused on examining a small, light-colored insect on a coffee plant. He is holding the insect with his fingers. In the background, another man wearing glasses and a blue jacket is looking on. The setting is a lush green coffee plantation.

coffee producers participate in research activities



coffee producers, extension officers, and researchers  
learn together about their natural environment



**Mourning Warbler** *Oporornis phoeniceus*  
Lack of bold white eye ring distinguishes adult male from Connecticut Warbler. **Adult female** and especially immatures show a thin, nearly complete eye ring, but immatures lack the Connecticut. Immatures generally have more yellow on the head. MacGillivray's compare also with female Connecticut (page 288). Immature males often show a little black on the head. **Mourning Warblers** hop rather than walk. **Call** is a feeble, clipped chirp. **Song** usually has two parts: a series of distant notes, phrases followed by two or more lower phrases. **Range:** Uncommon in dense undergrowth, thickets, moist woods, common on the ground. Most spring migration is west of the Appalachians.

**MacGillivray's Warbler** *Oporornis tolmiei* L. 5 1/2" (140 mm)  
Bold white crescents above and below eye distinguish all plumages from male Mourning and all Connecticut warblers. Crescents may be very hard to distinguish from those of complete eye ring on female and immature Mourning. **Immature** MacGillivray's Warblers generally have green above and yellow belly. Field identification is often difficult. MacGillivray's hops rather than walks. **Call** is a sharp, harsh rick. **Song** has two parts: a buzzy trill ending in a downruler. **Range:** Fairly common in dense undergrowth, nests on the ground.

**Connecticut Warbler** *Oporornis agilis* L. 5 1/2" (140 mm)  
Large eye with bold white eye ring conspicuous on male. **Immature** has hood and female's brown or gray-brown head. Eye ring is sometimes slightly broken on one side only. **Immature** has hood and brownish breast band. A large, dusky wing noticeably larger than Mourning and MacGillivray's. Like Mourning, long undertail covers gray Connecticut's tail. **Immature** is tail, plump appearance. **Walks** rather than hops. **Call** accelerating song repeats a brief series of explosive notes or whip-ty notes. **Range:** Uncommon, found in spruce hemlock or woodlands; nests on the ground; generally feeds on the ground or on low limbs. Spring migration is about entire west of the Appalachians. Fall migrants uncommon in the east.

They learn to identify the migratory birds around their farms

Children learn about the birds through games and many hand on activities



A group of approximately 15 men are gathered in a room, likely a workshop. They are dressed in casual attire, including t-shirts, polo shirts, and button-down shirts. Several men are holding and looking at informational brochures. One brochure in the foreground is titled "Aves residentes zona cafetera de Colombia" and features illustrations of various birds. Another man in the background holds a poster titled "esperando gavilanes". The men appear engaged and focused on the materials they are holding.

In workshops, members of groups of producers identify conservation actions



Birds are charismatic organisms that attract a great deal of interest among coffee producers

*The Scale-crested Pygmy-Tyrant (Lophotriccus pileatus)* has been adopted by the producers association of Guaduas (Cooiprocafé) as their bird symbol





The conservation of birds, like the Scale-crested Pygmy Tyrant and the Cerulean Warbler, will require combined efforts by coffee producers, consumers, researchers and conservationists

Many other migratory and resident species will benefit from those efforts



Black and white warbler  
(*Mniotilta varia*)



Yellow Warbler  
(*Dendroica petechia*)



Emerald Toucanet  
(*Aulacorhynchus prasinus*)



Black-faced Dacnis  
(*Dacnis lineata*)



Flamed-faced Tangara  
(*Tangara parzudakii*)



## Acknowledgments

Our work on biodiversity research and conservation in coffee-producing areas of Colombia has been possible by the support of many coffee producers, Federation personnel at many localities, and several institutions: The National Fish and Wildlife Foundation, Idea Wild, The American Bird Conservancy, The Audubon Naturalist Society, The Nature Conservancy, The U.S. Forest Service, The Darwin Initiative, Colciencias, Fundación FES, Fundación Natura, The Colombian Ministry of the Environment, and The Alexander von Humboldt Institute. We are grateful to all of them.