



SECTOR  
AGROINDUSTRIAL  
DE LA CAÑA



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# Watershed conservation in Colombia's sugarcane agroindustry



# 3 topics

1. Why do we protect WS?
2. How do we do it?
3. Results



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A large, lush green waterfall cascades down a rocky cliff on the left side of the image, creating a misty spray at the bottom. The background is a soft, light blue gradient.

**WHY**

**Do we protect WS?**

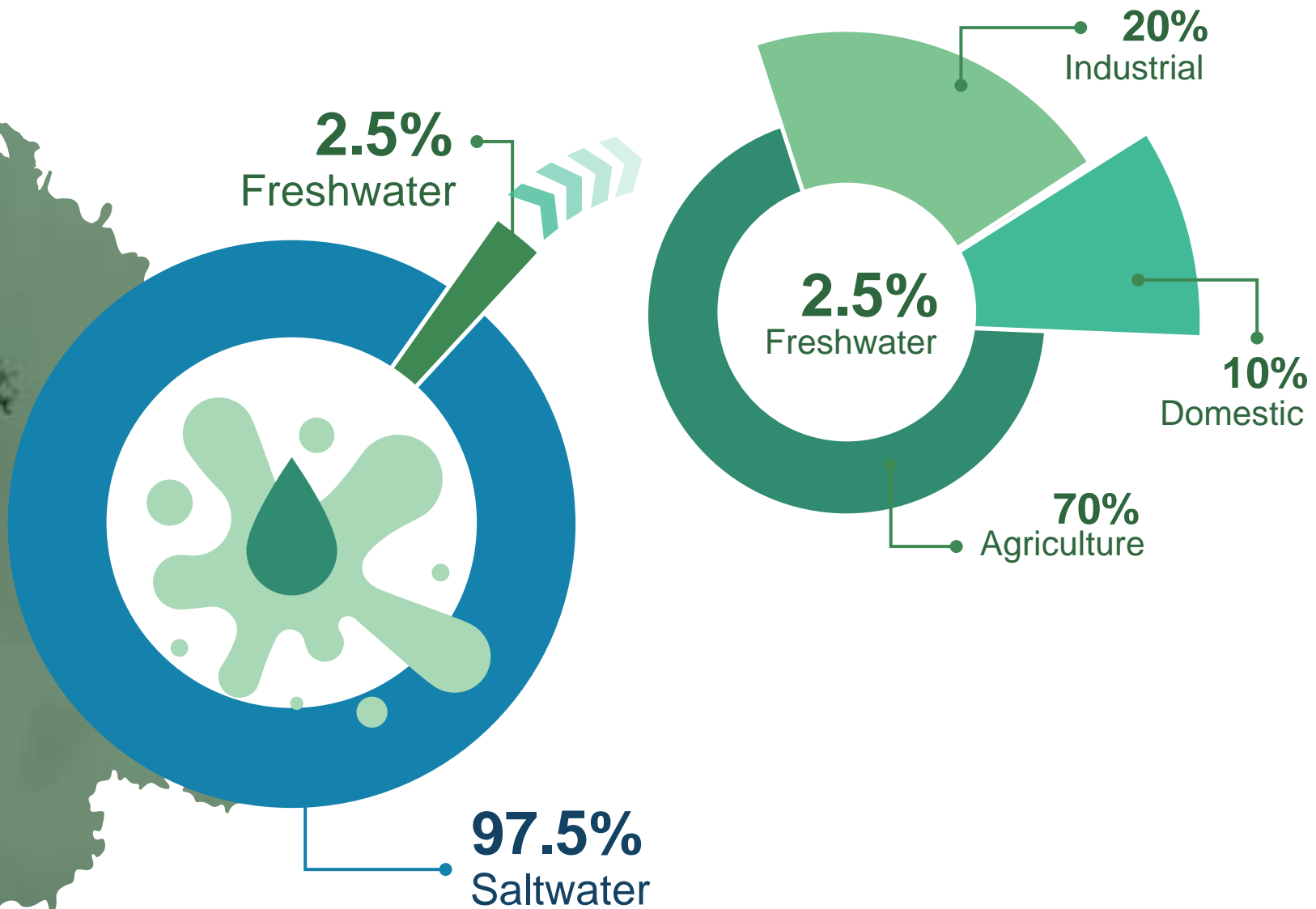
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# Globally

70% of water is used in agriculture

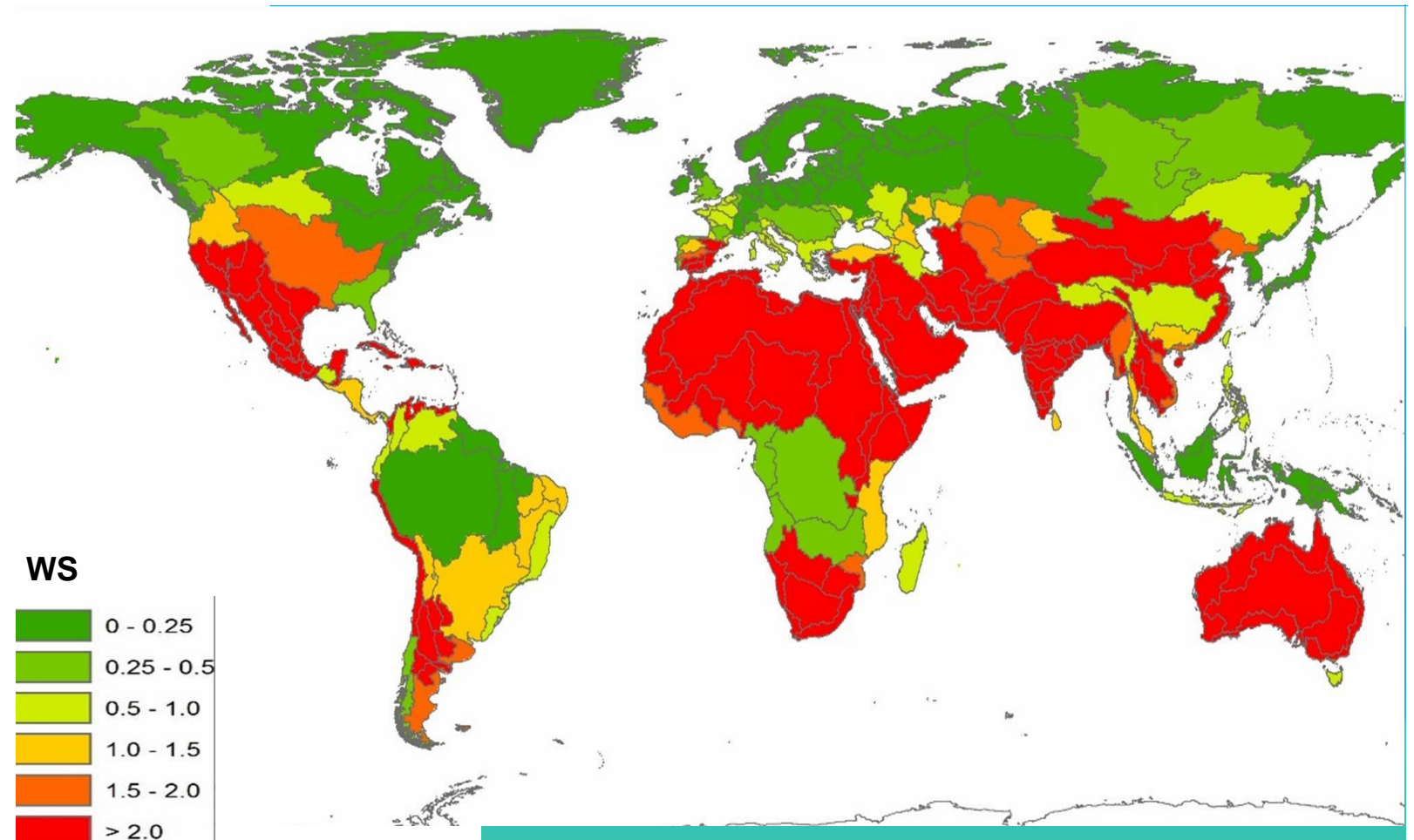




## WATER STRESS BY WATERSHED

80% of the world's population is under serious threat from water scarcity

4 billion people (66% of the population) live under severe water stress for at least one month a year. This affects the whole world



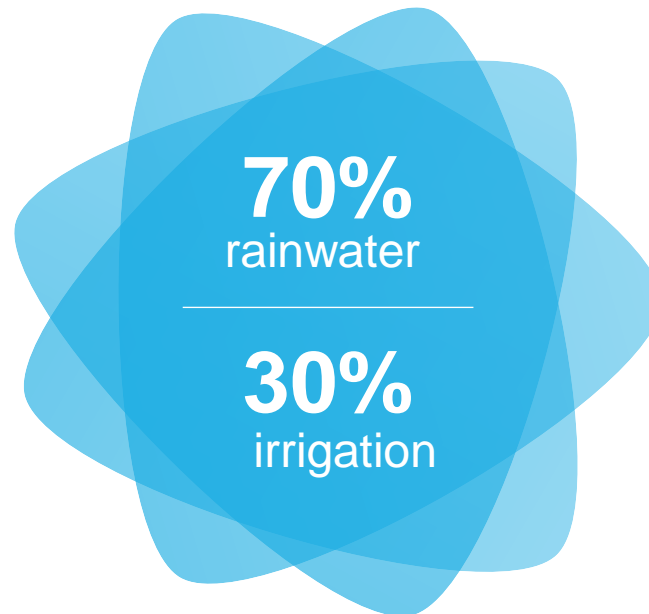
Mekonnen and Hoekstra, 2016

**Water** is one of the most important elements we need to guarantee the **sustainability** of the sugar cane industry and the life of all.

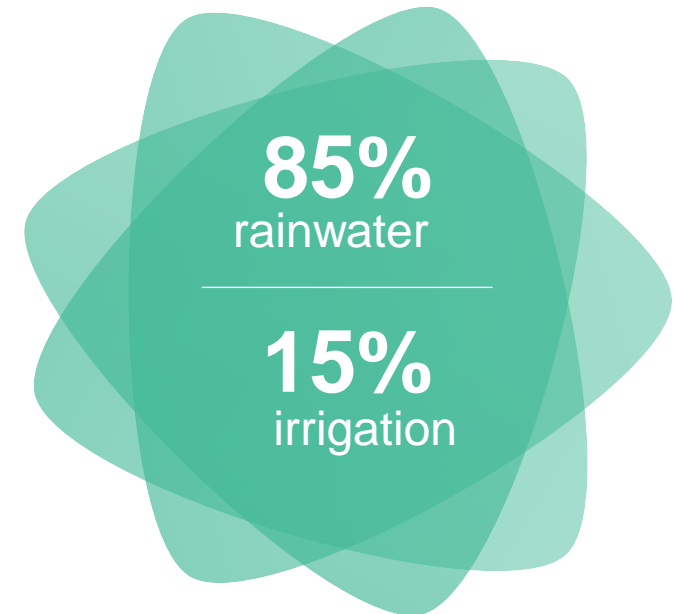
We must work on two areas at the same time.....

**Efficient Consumption** and **Watersheds conservation**

In the last **22 years**, Colombia's Sugarcane Agroindustrial Sector has reduced its water consumption by up to 50%.



**50%** del área

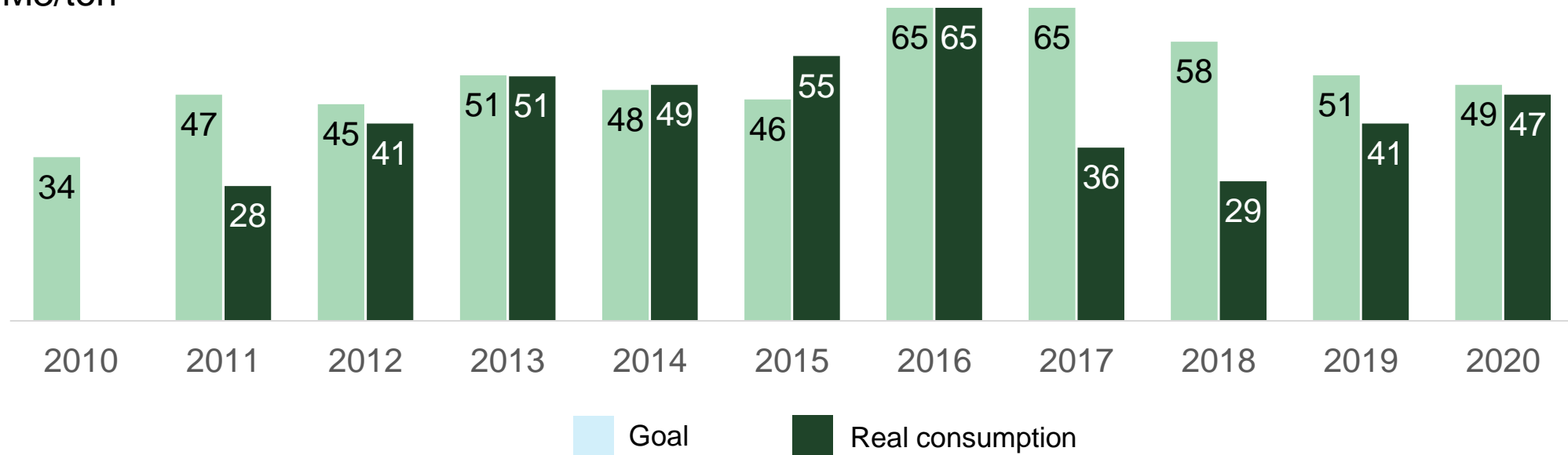


**50%** del área

**Water demand:** **10** thousand - **14** thousand  
m<sup>3</sup>/ha (cultivation cycle: 13 months)

## Significant efforts have been made to reduce the use of water in the field...

M3/ton



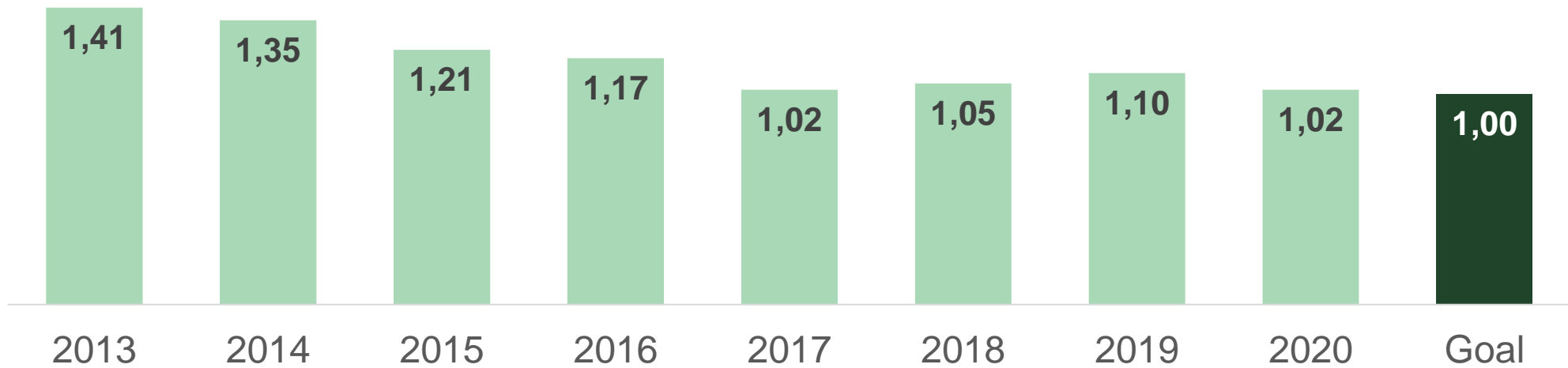
Through: Site-specific agriculture: water balance (accounting), technified irrigation systems

Source: Cenicaña. 2020



As well in the in the manufacturing process... **28% reduction since 2013.**

m3 / ton cane



**Water balance (accouting) and recirculation**

**Source:** Cenicaña. 2020



*Water makes us work together for a common purpose in a territory where we all fit*

## The efforts are not enough in a territory that presents:

- **Environmental tensioners:** water and ground
- **Social tensioners:** lack of dialogue and trust
- Significant number of **rural communities**
- **Ethnic diversity**
- Family Farming with **Difficulties**
- **Insufficient economic resources**
- **Inadequate infrastructure** for production

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**HOW**

**Do we do it**

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**In 2009, the sugarmills  
founded the Water for  
Life and Sustainability  
Fund Foundation - FFAVS**

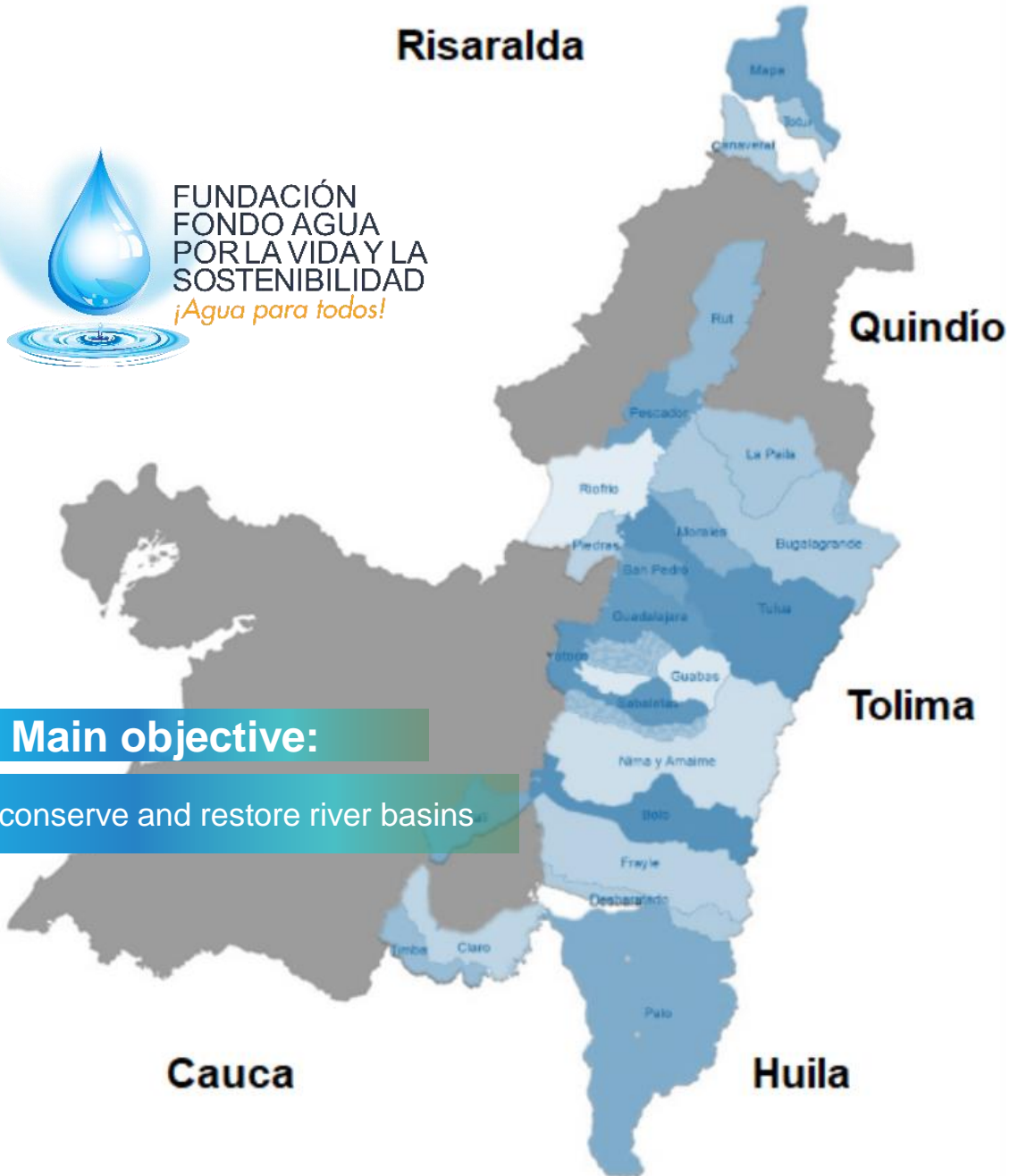


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**Main objective:**

to conserve and restore river basins.

*The FFAVS is an example of a true integral intervention of the territory.*

### Influence Area:

- 26 watersheds
- 29 municipalities
- more than 850,000 hectares
- 1,300 meters above sea level
- Strategic ecosystems of moorland, sub-moorland, high andean forest, sub-andean and dry forest.

# Partners

Besides the 12 sugar mills, Asocaña and Cenicaña, we also have 39 strategic allies that support the FFAVS



# STRATEGIC LINES



## ENVIRONMENTAL



Water sources protection



Strategic ecosystems conservation



Climate change adaptation



## SOCIAL



Food security and sustainable production



Community strengthening and environmental awareness



**13** ACCIÓN  
POR EL CLIMA



**15** VIDA  
DE ECOSISTEMAS  
TERRESTRES



**2** HAMBRE  
CERO



**6** AGUA LIMPIA  
Y SANEAMIENTO



**OBJETIVOS  
DE DESARROLLO  
SOSTENIBLE**

**17** ALIANZAS PARA  
LOGRAR  
LOS OBJETIVOS



**What do we  
do?**





High mountain irrigation systems

Land Planning

Water Safety

What do we do?

Income generation

Food Security

Environmental awareness

Reconversion of livestock

Rescue of native species

Moorland conservation

Implementation of Landscape management tools - HMP

Forest and watersprings isolation

Natural Enrichement



***Forest and  
watersprings  
isolation***



# Extensive livestock re-conversion

Forest connectivity



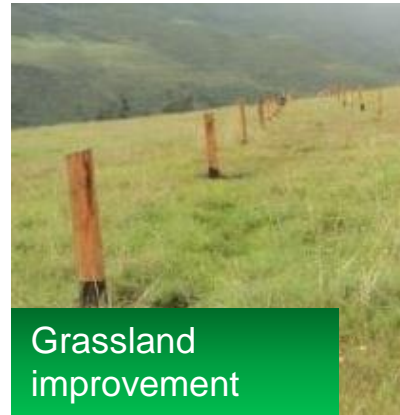
Grassland Management



Solar panels installation



Grassland improvement



Substitute troughs



# Installation of high mountain irrigation systems



Installation of a **water distribution and storage network** for human consumption and livestock production





Land-planning  
with owners



bear habitat  
protection

# Moorland protection



Solar Panel  
Establishment (CELSIA)



HMP  
Establishment

Water basins insulation

Free-ranging livestock areas

Forest enhancement



# Income generation





All these actions are carried out through the **user associations in every watershed**, non-profit organizations financed by farmers and producers.

## Metas 2016-2020

<b>METAS</b>	Hectáreas	Árboles
Forest & waterspring isolation	<b>12.200</b>	-
Livestock reconversion	<b>1.500</b>	<b>300.000</b>
Other HMP	<b>1.180</b>	<b>678.500</b>
<b>Total</b>	<b>14.880</b>	<b>978.500</b>

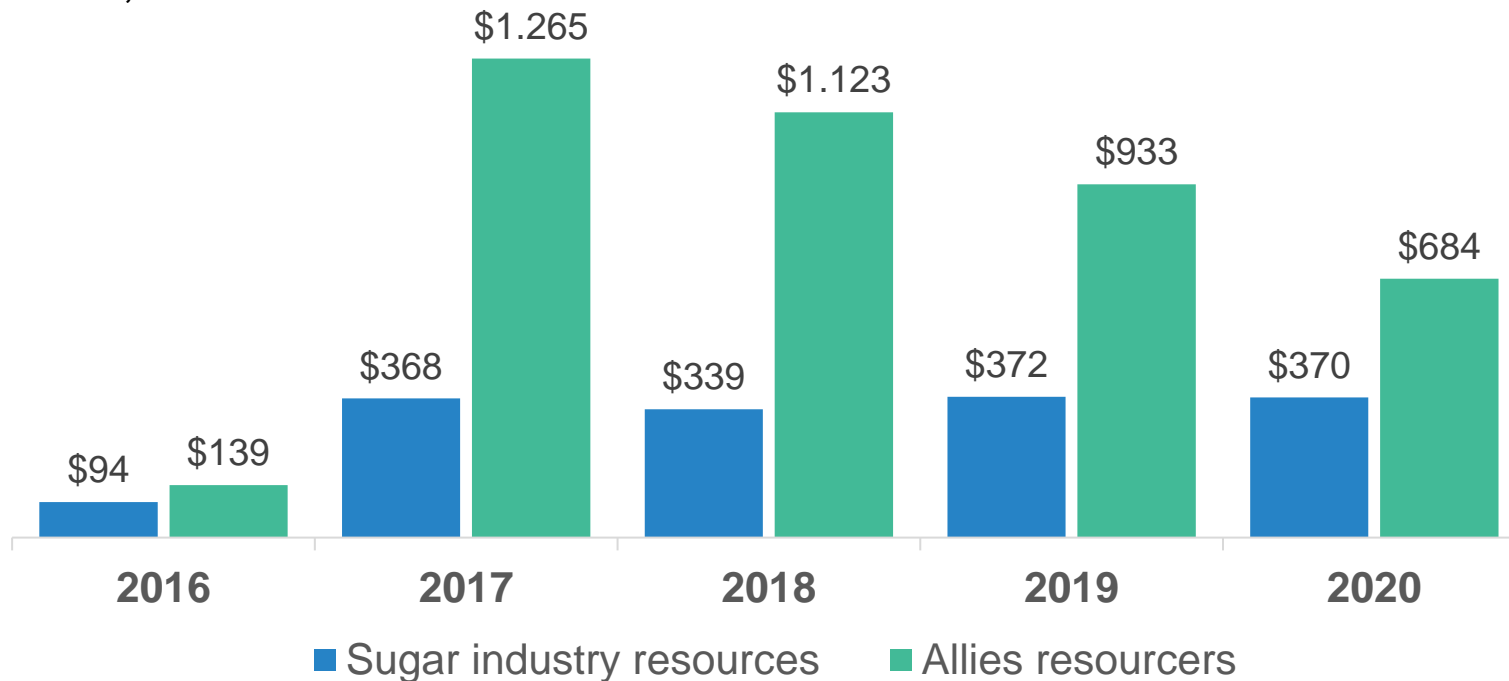
## Resultados 2016 - 2020

<b>METAS</b>	Hectáreas	Árboles
Forest & waterspring isolation	<b>13.656</b>	-
Livestock reconversion	<b>2.861</b>	<b>572.200</b>
Other HMP	<b>1.341</b>	<b>771.075</b>
<b>Total</b>	<b>17.858</b>	<b>1.343.275</b>



# Resource Management

USD, 000



For each dollar contributed by the sugar mills, 3 dollars are managed by allied entities.

## Investment 2016 - 2020

Sugar industry: USD 1,54 million

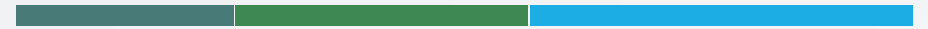
Allies\*: USD 4,14 million

\*/ Environmental Authorities, Governments, City Halls, Natural National Parks, Private organizations.

## Total Investment

**USD \$ 5,68**  
million dollars

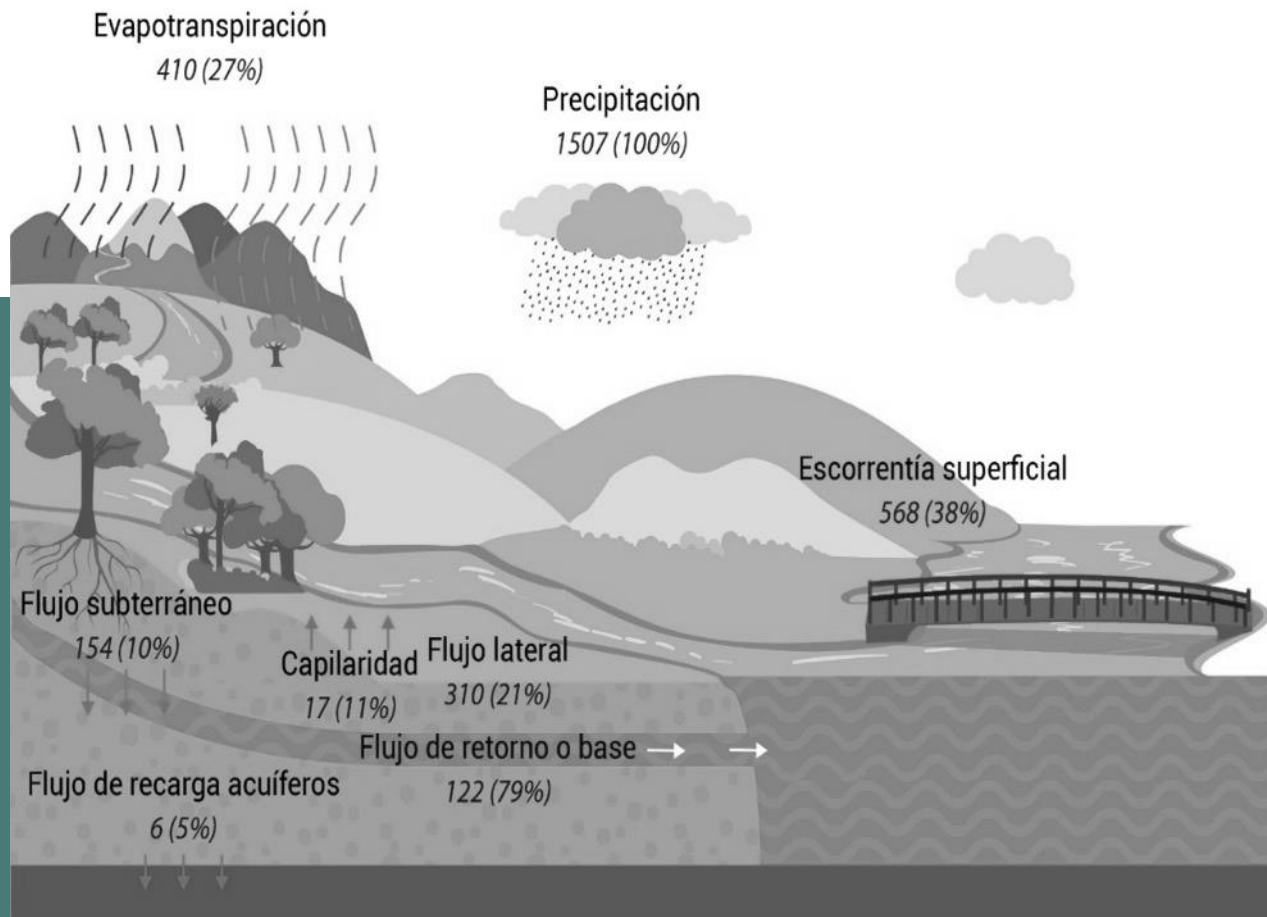
# THE Results



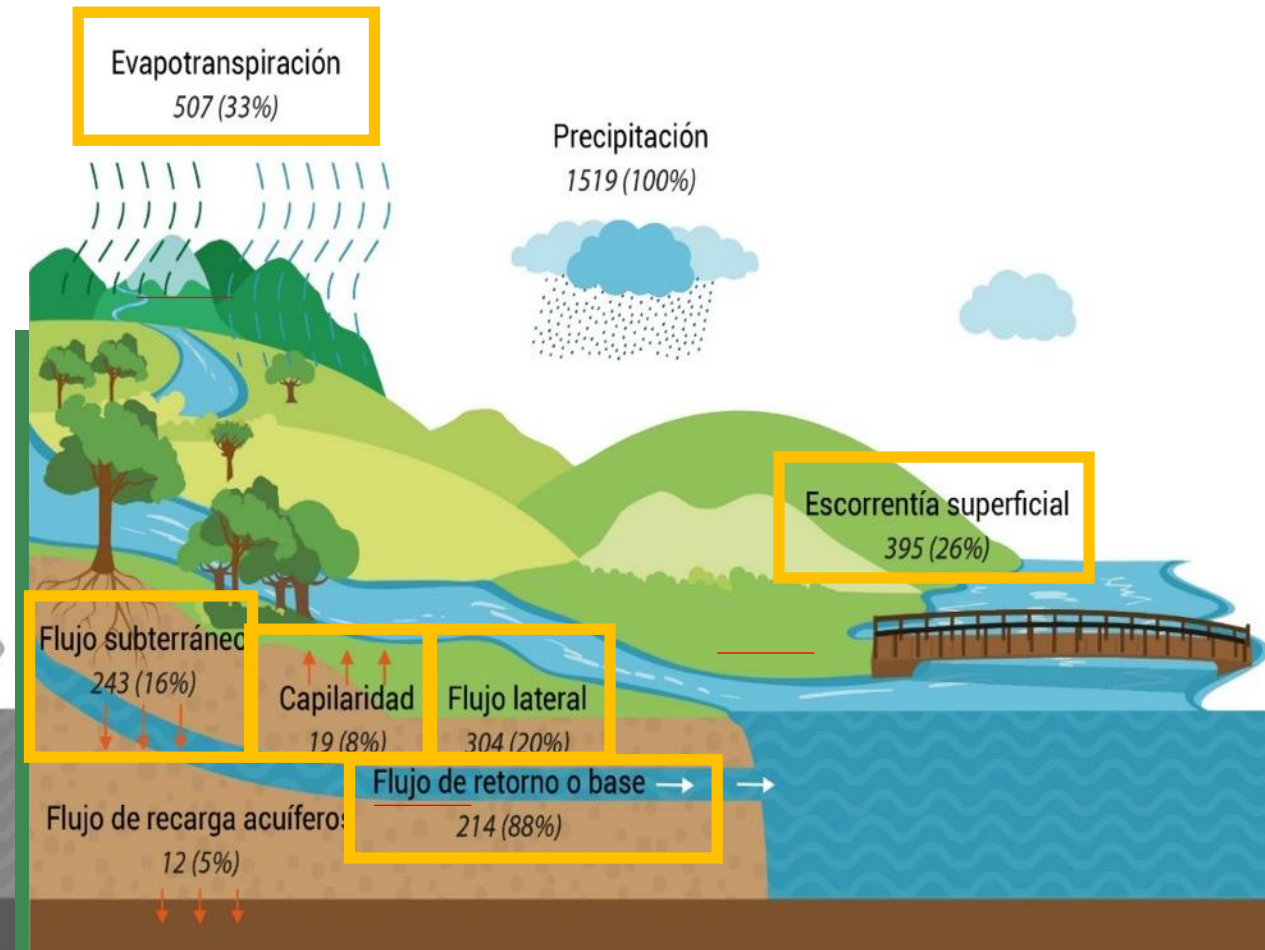
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# Hydrological Monitoring Results by Cenicaña

not intervened by the FFAVS  
(year 2020)



Intervened by the FFAVS  
(year 2020)



# Monitoring Results

- ✓ **Less soil loss** due to drag is evidenced (ground cover)
- ✓ **Greater flow stability:** Reduction of peaks after rainfall
- ✓ **Less surface runoff and greater underground storage** (availability in dry season)
- ✓ There was evidence of **flow gain in the river** and a constant flow throughout the year in the watersprings.
- ✓ **We can conclude that there is a better water regulation in the watershed intervened**





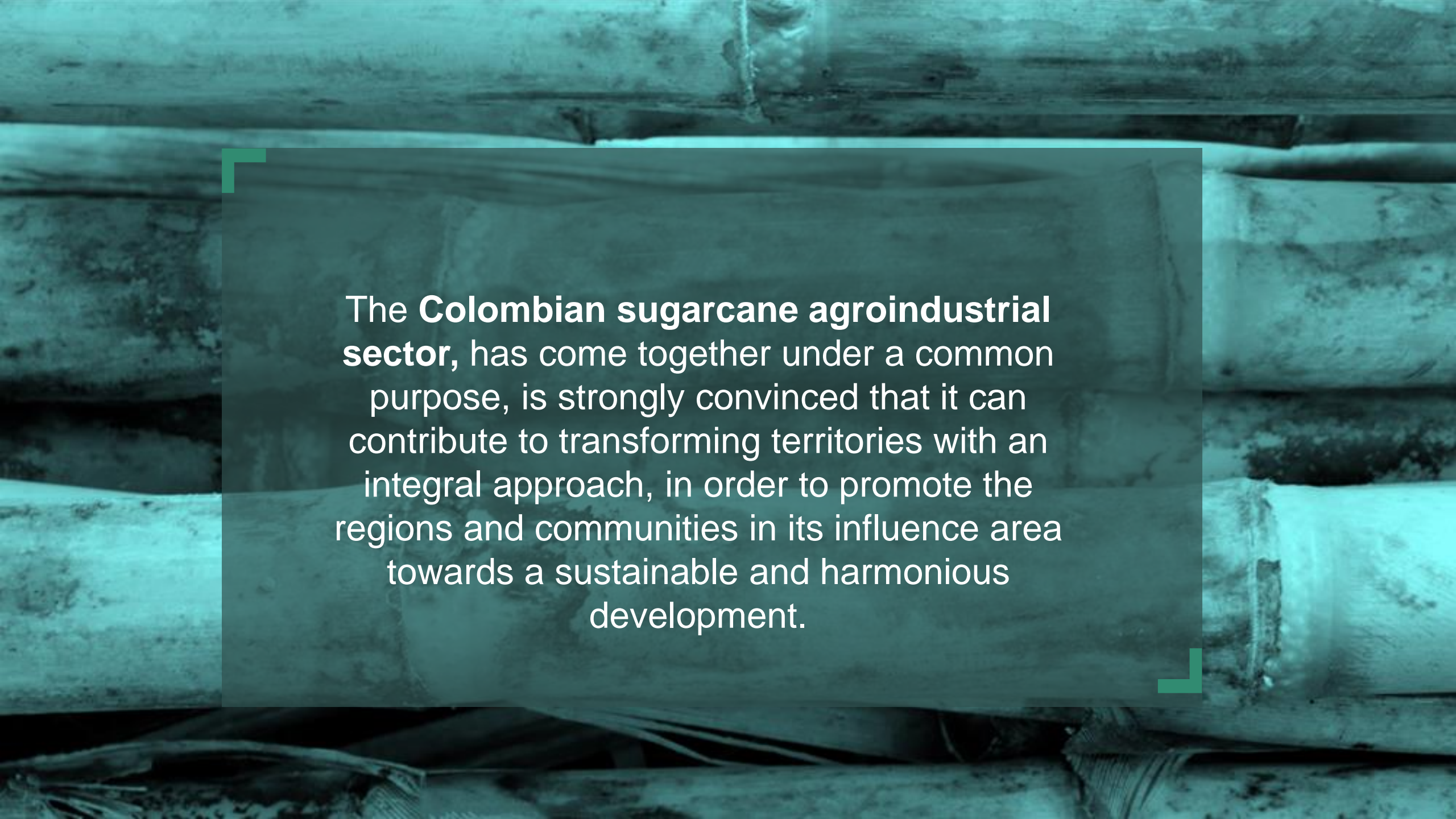


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# The FFAVS

- Is the best instrument for achieving agreement on water and ecosystem conservation
- Generator of ways of communication and confidence with the communities
- Regional reference for the conservation of watersheds.
- A technical benchmark for Environmental Authorities in the implementation of Landscape Management Tools.
- The most important Fund of the country and reference at the international level.





The **Colombian sugarcane agroindustrial sector**, has come together under a common purpose, is strongly convinced that it can contribute to transforming territories with an integral approach, in order to promote the regions and communities in its influence area towards a sustainable and harmonious development.





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THANKS