



A public-private partnership implementing **corporate water stewardship** in **Colombia**, Peru, Chile, Brasil and Mexico

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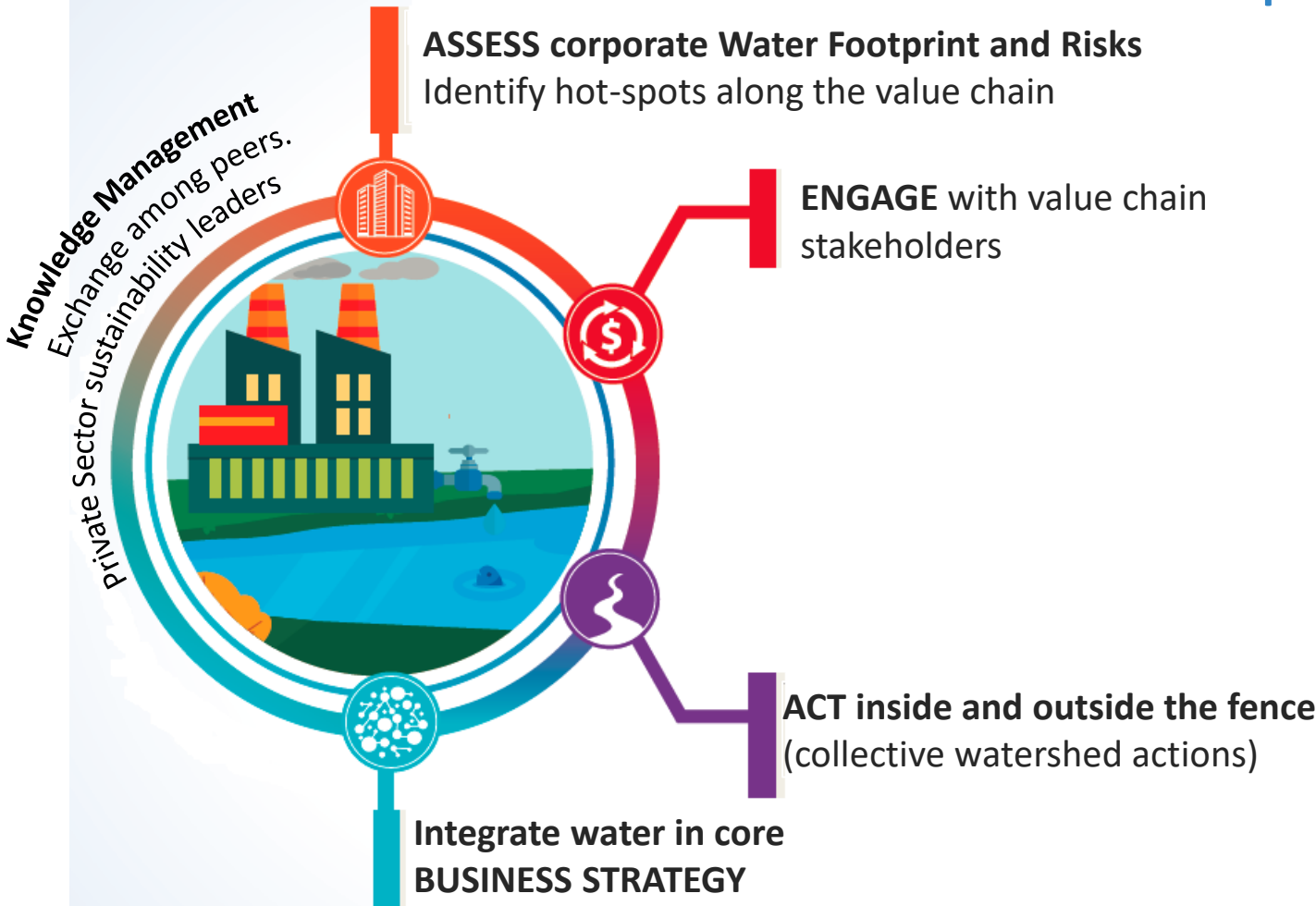


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Swiss Agency for Development
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Advance in corporate water stewardship



6 CLEAN WATER AND SANITATION

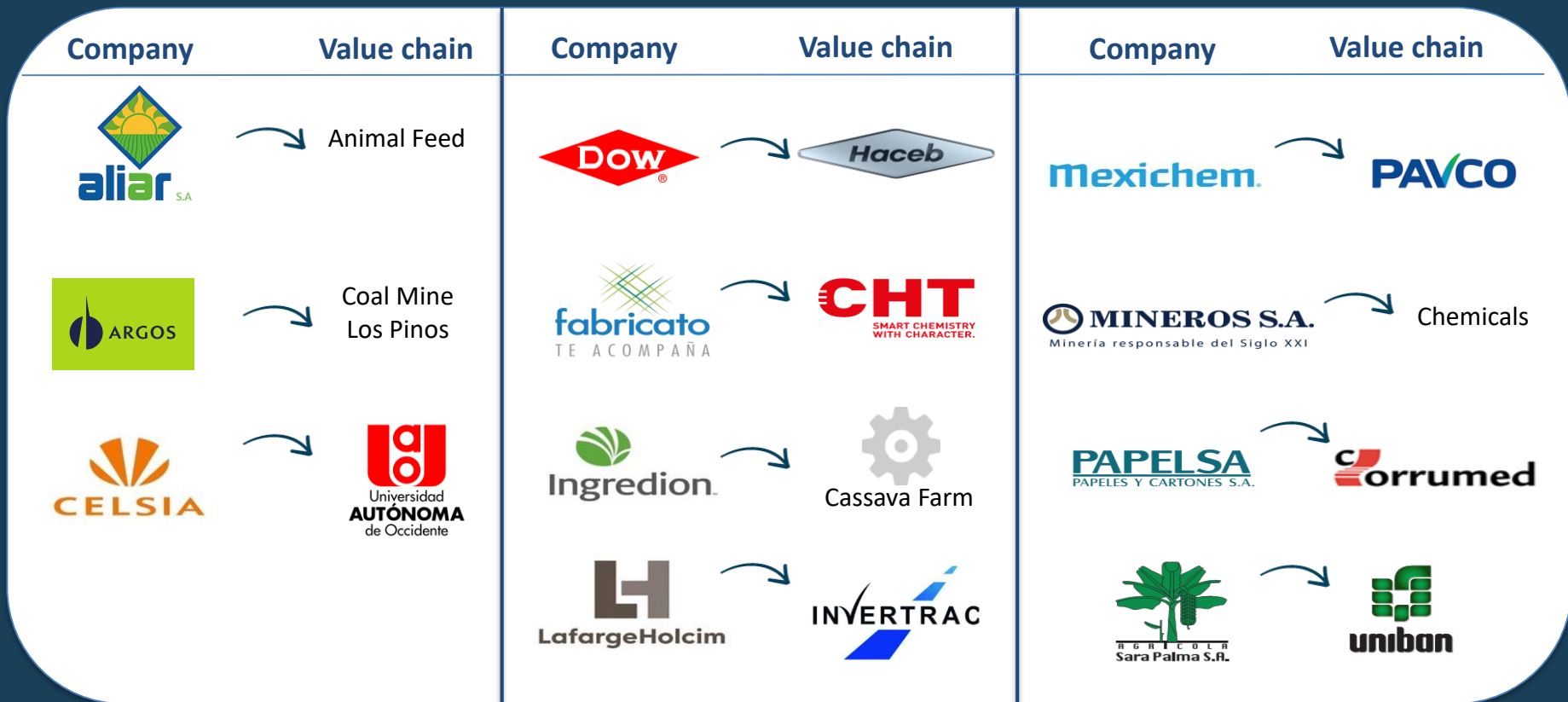


12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Engage along the value chain

15+ companies work together with their suppliers and/or costumers on water actions



Coffee Cluster



+ **Beyond water:** Assess also other environmental aspects (climate, etc.)

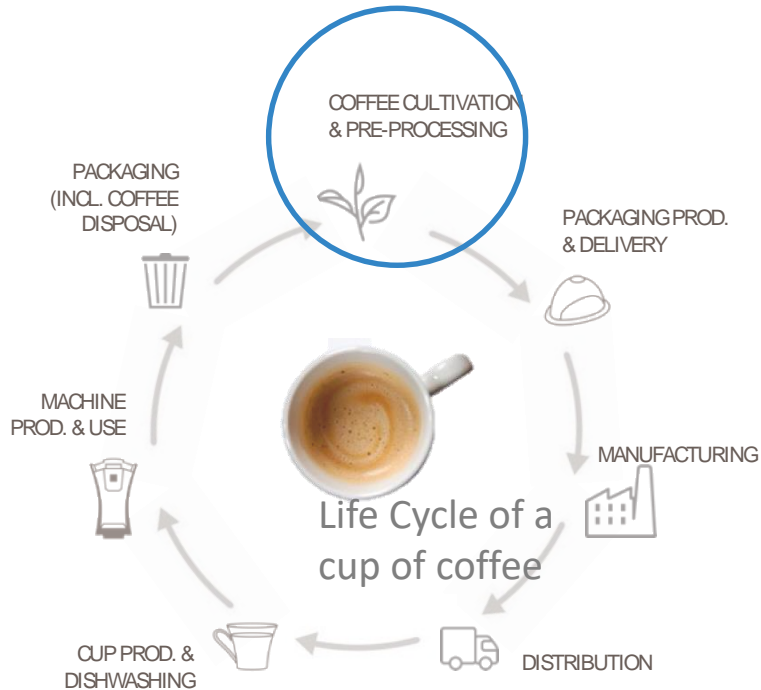
Engage with value chain: Colcafé and De Los Andes Cooperative joint efforts to invest in a centralized De-pulping facility, to enhance the sustainability in the value chain

Value chain actions – focus

HOT SPOT (among others) water withdrawal and pollution

Based on water footprinting (ISO 14046) and water risk assessment

Pulp is a solid waste that requires a proper composting process in every farm. Often is left in the field.



- Coffee growing generates more than 800.000 jobs in Colombia (typically small-holders)
- Coffee plantations are generally not irrigated.
- Most smallholders have their own de-pulping plant (mainly wet process), which is typically not very efficient and water is not treated (40 m³/ton dpc and High organic matter in the wastewater)

Value chain actions – propose change



Roast ,Ground, Soluble and Extract Coffee Producer
23.000 Ton/year

PROPOSITION

CENTRALIZED DE-PULPING



DRIVERS

- ❖ Engage with Farmers
- ❖ Enhance sustainability in value chain hot spot.
- ❖ Increase income and cash flow for farmers
- ❖ Less investment in small farm de-pulping upgrading
- ❖ Increase coffee quality
- ❖ Increase productivity, less rejects

Value chain actions - implement

Actions

INTERMEDIATE RESULTS (water related)

ESTABLISH ASSOCIATION



- 3500 ASSOCIATES** with 1080 are women and 233 are head of family
- Coffee Grower Average age: 55 yr
- Average farm: 2,7 Ha
- De los Andes and Colcafe pays an extra fee 14USD/ 125 Kg cherry coffee.
- Before: **45 days to get income** of harvest
- Now: **1 day to get paid** after harvest

BUILD FACILITY



- Attends 612 families
- Capacity 750 Ton dpc
- Coffee Cisco for drying
- 4 rotative dryers +1 static dryer using coffee chaff as biofuel.

- ✓ 79% reduction on de-pulping water use **from 30 m³/t to 6,3 m³/t dpc**
- ✓ Treatment of 37.680 m³ wastewater /year
- ✓ Expected reduction of at least **11,500 mg/L** in the COD.
- ✓ Coal for drying was eliminated
- ✓ Farmers **cost reduced at 80USD/t dpc**
- ✓ **Farmers have more time** because they don't have to de-pulp and wash the coffee.
- ✓ Colcafe expect to achieve savings equivalent to USD 147,138.56 in 2017 and USD 166,666.67 in 2018 in income taxes.

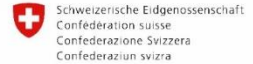
Value chain actions – share it with the community



Water Action Hub



The CEO Water Mandate



Embajada de Suiza en Colombia
Ciencia y Desarrollo (COSUDE)

GOOD PRACTICES AND TECHNOLOGIES

Reducing Footprint in Water
El Agua Nos Une – SuizaAgua América Latina



Construction and Operation of the Farallones Processing Plant



SDG: 6.3. Improvement of water quality
6.4. Water efficiency
7.2. Renewable energy

Company / Implementer: De los Andes Cooperativa
Sector: DSK 4611. Wholesale of food products
Location: Ciudad Bolívar, Antioquia, 5.796403, -76.002489

Update: 16 Jan. 2018

Results:

- Reduction of 78% in the water used for the processing of coffee in cherries, equivalent to 6.5 m³ of water per ton of coffee in cherries. This represents 29,390 m³ of water saved per year.
- Replacement of 100% of the coal used in the coffee drying process at the dry parchment coffee farms, which are now suppliers of coffee in cherries for the Processing Plant, with coffee husks.
- Reduction of 37,680 m³/year of wastewater discharging directly into surface water source within the process at the farms

Other benefits:

- Improvement in the quality of life for the coffee growers due to the reduction in working hours for processing of coffee in cherries.
- Reduction in risk of loss or theft of dry parchment coffee at the farms.
- Standardization of the processing process.
- Reduction in the quantities of dry parchment coffee rejected due to product quality.
- Participation of coffee growers in training, prevention and cultural programs.
- Savings for the coffee growers of USD 80/Ton of dry parchment coffee produced associated to the direct cost of the processing (labor, energy, maintenance and investment in infrastructure).

Supplier References

Supplier of coffee processing technology: JM Estrada S.A., supplier of coffee processing technology.
Contact Information: Jorge Estrada.
E-mail: jgestrada@jmeestrada.com

Implementing Company

Implementing company: DelosAndes Cooperativa Andes, Antioquia
E-mail: jean.rendon@delosandescooperativa.com
http://www.delosandescooperativa.com
Donor: Colcorte S.A.S.
Contact information: Hugo Andrés Santamaría
E-mail: hasantam@colcorte.com.co

Description

Coffee in cherry processing plant in which coffee cherries are purchased from 612 families settled within its area of influence, with capacity to process 6,000 tons/year of coffee in cherries. In this plant the most modern equipment with the latest technology for pulp removal, fermentation, classification, washing and drying coffee are used to obtain the highest quality of the product, minimizing energy, fossil fuel and water consumption, without impacting the quality of the coffee.

Additionally, the results of research and development for processing coffee wastewater treatment developed in the country are applied, minimizing the environmental impact associated to wastewater discharged directly into surface water source.

Investment and Operating Costs

Investment Costs:

- Construction and assembly: USD 1,828,000
- Machinery and equipment (wet and dry processing with automatic husk supply): USD 832,000
- Wastewater treatment plant for coffee processing: USD 70,000
- Caterpillar composting compact loader: USD 7,352

Operating Costs: operating costs include qualified labor for administrative duties, coffee quality verification and operation of coffee processing machinery and equipment, maintenance of equipment and infrastructure, wastewater treatment, among others

Cases of Application

Jardin La Abubuela Processing Plant.
Andes La Chaparral Processing Plant (being built).

Recommendations and Limitations

- Long processing plant construction, start-up and standardization times, which increased the costs of the project.
- Complexity of the operation of the wastewater treatment plant due to the production peaks of the process.
- Long time for the operation stabilization because of the number of variables that need to be controlled.

References

http://www.delosandescooperativa.com/2015-06-04-19-39-06/centrales-de-beneficios.html



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SDG 6.1: Increase Access to Sanitation, Hygiene
SDG 6.3: Water Quality
SDG 6.4: Water Use Efficiency
SDG 6.5: Integrated Water Management

World Map Project Organization Resource

COLLECTIVE WATER MANAGEMENT IN THE TERRITORIES

El Agua Nos Une – SuizaAgua América Latina
Preparation Phase

Objective: Development of an ecological corridor composed of Dry Tropical Forest and Cloud Forest, and support in the establishment of ecologically sustainable and profitable agricultural production with vulnerable communities with the purpose of protecting water resources at the basin of the Amoychondo and Tumbo rivers - Valle del Cauca.

Location: Municipality of Tumbo, three rural settlements located at the La Ebra and Cerro Daga Garisaco forest reserves in the upper parts of the Amoychondo and Tumbo basins, in the municipality of Tumbo, Valle del Cauca Lat. 3.531970, Long. -76.504300

Update: 29 Jan. 2018

Results: We expect the following results:

- 20 reforested hectares in an ecological corridor located in El Rincon and Diamante rural settlements.
- Increase in infiltrated water, CO2 capture and levels of richness of the soil in reforested areas.
- 50 people, including 30 youth and 10 women, trained in reforestation and forest fire prevention, who will also participate in the planting process.
- 10 farmer families with increased income thanks to a clearer production business of vegetables and greens.
- Strengthening of the ASOHEBIAL Grower Association of the Tumbillo rural settlement.

Leading actors	Institutions	Implementing Entity	Cooperation
 Ingredion Celsia	 EVC Universidad del Valle	 ecovida	 Schweizerische Eidgenossenschaft Confederazione Svizzera Confederaziun Svizra Embajada de Suiza en Colombia Agencia Suiza para el Desarrollo y la Cooperación COSUDE
Community actors 4 producers' associations. Asociación de campesinos ASOHEBIAL en la vereda de Yumbillo. GEOTARGET - mapeo de predios con drones.	Collaborators Bomberos Voluntarios. Asociación Ecolabtiat.	Contact Information: <ul style="list-style-type: none"> Carlos Arturo Martínez – Director of Environmental Management at Ingredion - carlos.martinez@ingredion.com Marta Isabel Gallego Salazar – Environmental Management Office – VP of Generation – CELSIA - mgallego@celsia.com Joaquín Navia – Chairman of ECOVIDA - gerente@ecovidanet.com 	
Descripción: This project will be executed through the collaboration among several actors. The engagement process involved, among others, identifying regional initiatives and the actors involved in each before choosing the initiative led by ECOVIDA as the project which was more in line with the common interests of the two companies in terms of area of work, strategic lines and complementary corporate interests. Selecting this project made it possible to add the reforestation component to the clean production process with the support of the Swiss Embassy COSUDE.			

Characterization of properties and participatory planning in terms of feasibility to climate change for land restoration purposes

"Property Plans for Adaptation to Climate Change"

Reforestation of a 20-hectare ecological corridor in four farms containing a wide array of species and producing at least 50% of the plant material used in local nurseries

A profitable and ecologically sustainable business model through the clean production of greens and vegetables for 10 families, including water-based crops, three community biofactories of organic fertilizers, six co-chickens adapted to climate change, workshops on biofertilizers and biochar, and construction of water reservoirs