

Biodiesel from sustainable palm on
degraded land at El Cimarrón, Colombia

Prestige - efficient and sustainable

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Presentation TEKNA seminar, 16. March 2017

Mission statement




To join our initiative, knowhow and capital with idle land, water and good climate in Vichada, Colombia in order to create high standard agricultural goods that are sustainable economically, environmentally and provide a balanced social settlement.



A pilot project of 625 Ha with Palm oil was established between 2011 to 2013



A close-up photograph of a person's hand holding a young palm seedling. The seedling has a single green leaf and a small stem. It is held with a clump of dark, rich soil, from which a network of light-colored roots is visible. The background shows a large, open-air nursery with rows of similar seedlings in black plastic trays, all under a protective black shade netting. The structure is supported by white metal poles.

The palm germinate from a seed –
and there is nothing wrong with
palm plant – the only wrong thing
is the way it is produced in some
part of the world.



Good agricultural practices are of outmost importance for the production itself, the environment and for the people.

Respect for the local forest is an absolute condition





Construction of the extraction mill for CPO and almonds.

Fruit bunch



Fruit and kernel





Visits of politicians, local administration and environmental department



Composting the dry leftover material from the fruits together with the affluent waste water provide zero pollution and good organic nutrients back to the plantation and reducing the need for fertilizers.



The very beginning of a social settlement in the remote part of Colombia.

Building a plantation of this kind requires steady and hard work over time of the entire team and looking after them is our highest priority. Prestige subsidise the health station and school in the nearest village.



COLOMBIA 2020
A Profitable Social Investment

Feasibility Study

Part I



Social impact studies

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Several thousand pages of technical, economical and social studies have been produced in preparation of the Cimarron project.



Everyone who want to see for them self a honest sustainable production of palm oil will also be invited for lunch!

Biodiesel from sustainable palm on
degraded land at El Cimarrón, Colombia

GHG emissions, social impact and peace

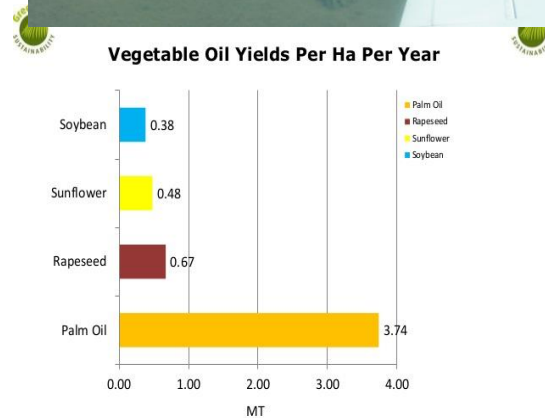
By Henrik Wiig (PhD), ResGrow AS

Pre-certification studies for Prestige Colombia SAS posted www.resgrow.com

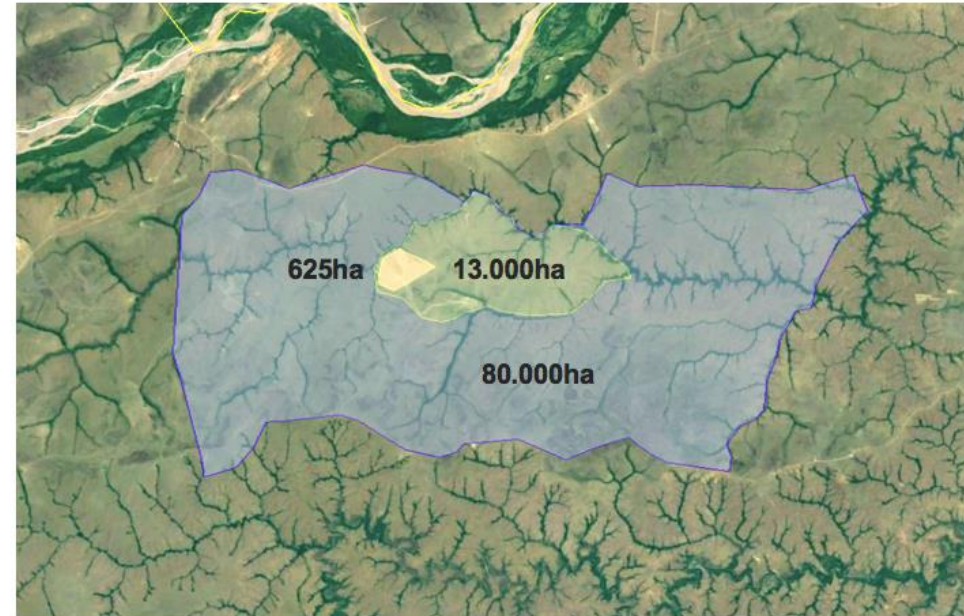
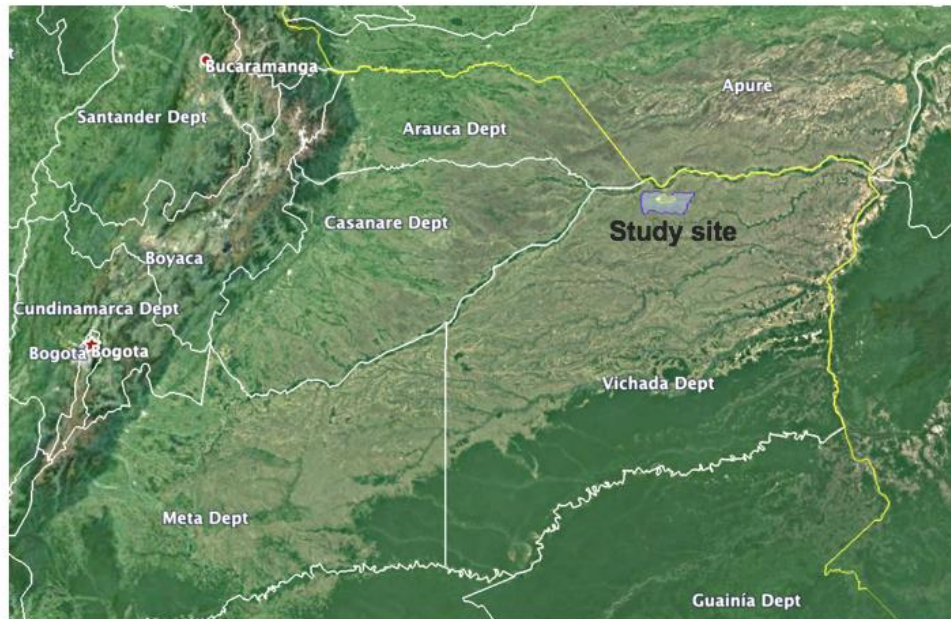
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Altilanura most suitable

- Three geographical concepts of plains...
 - Orinocía river catchment 380' km², include rainforest
 - Los llanos 200' km², grasslands
 - Altilanura 135' km in Meta and Vichada, no flooding
 - Government estimate 150' km² agro potential (35%)
- Natural savannah without trees
 - Grasslands less carbon biomass than palm, 8 vs 60 tc/ha
 - Rich wildlife only in gallery forest along rivers and some wetlands, establish 200 m buffer
 - Low biodiversity on grassland increase in plantations
 - Degraded land, extensive cattle 1/50ha, fires and heavy rains
- Optimal for palm as most efficient oilcrop
 - 8 month rain, sun, lowlands and close to equator
 - Irrigation not needed, hence less nutrient loss
 - Export palm and import food – World division of labour



To measure GHG, 60.000 HA palm project



MONOCROP

- Prestige's farm El Cimarrón, 13,000 ha
- Neighbors, 8,000 ha
- Leased state land, 25,000 ha
- Associative production smallholders, 14,000 ha
- Total 80.000 ha to spare 25%
 - Wetland, gallery forests, wildlife corridors, etc.
 - Plantations increase biodiversity!

MULTICROP

- Maize, soy, cattle, fruits
- Rent more land from government

Carbon Footprint of Biodiesel from el Cimarrón | Colombia



of palm based
biodiesel

Context

- Prestige Colombia SAS is a Colombian **palm oil producer in Vichada** | Colombia
- **Oil palm cultivation:** Currently 650 ha | Expansion plan to 60.000 ha
- **Biodiesel production (future):** State-of-the art oil extraction, biodiesel production and treatment of by-products & **export of palm oil or biodiesel to Europe**

Objective

ASSESS the carbon footprint of the future large-scale biodiesel production of Prestige Colombia in Vichada

EVALUATE the compliance with the GHG criteria of the Renewable Energy Directive (RED)

DESIGN the cultivation and processing facilities in a carbon friendly way.

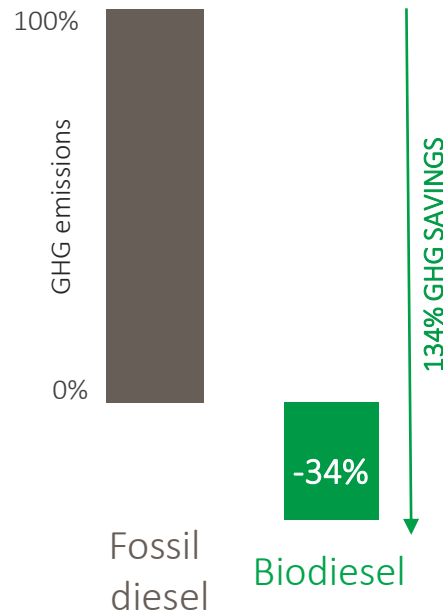
Methodology

The GHG calculation follows the EU RED

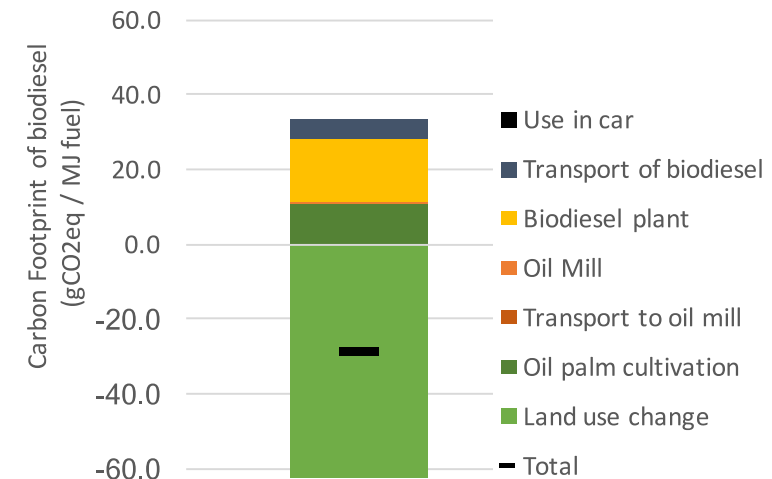
Results



FOSSIL VS. BIODIESEL



ZOOM ON BIODIESEL

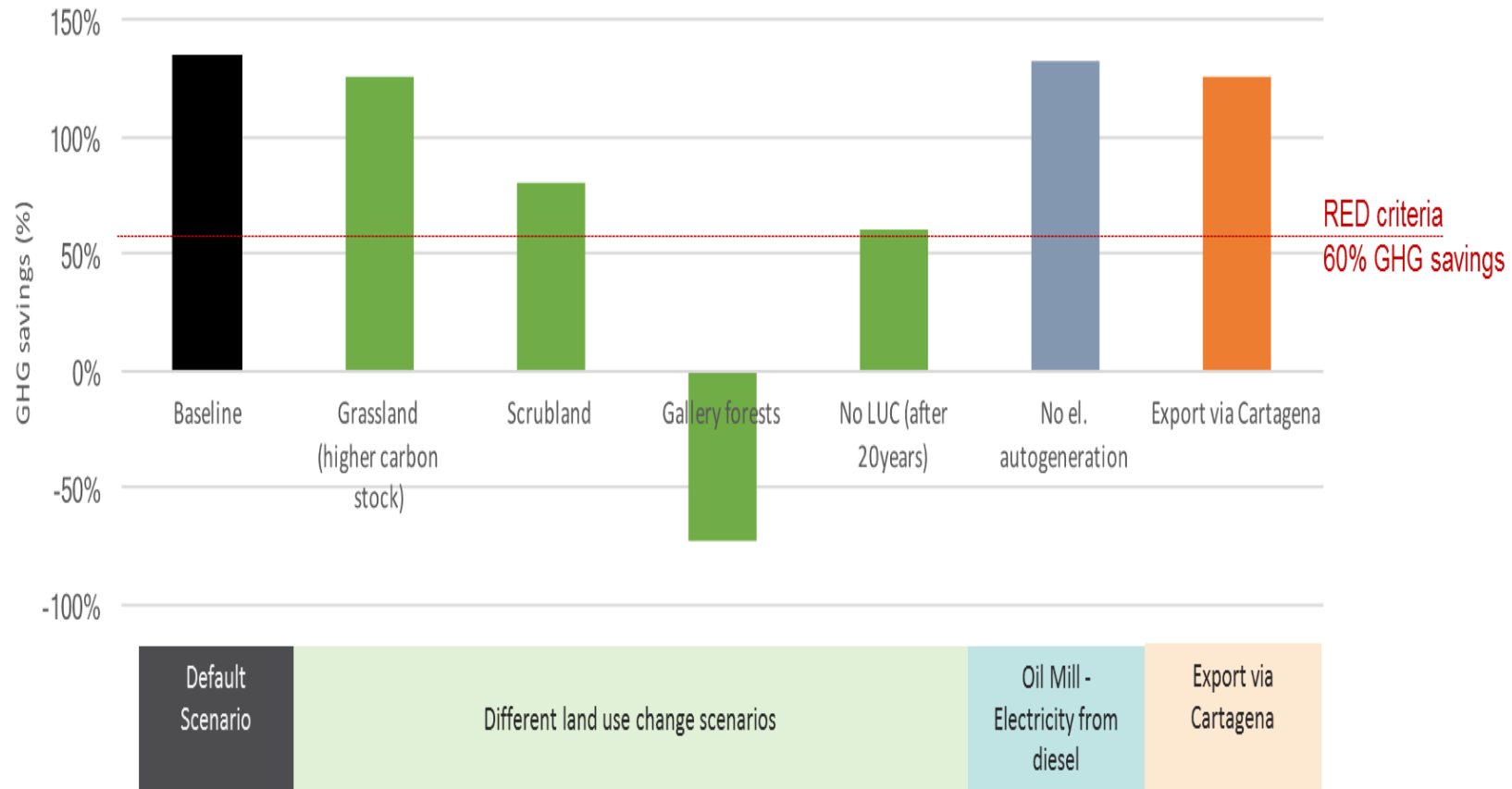


Biodiesel from el Cimarrón is projected to **fulfil the EU RED GHG criteria** by showing **134 %** less GHG emission as compared to fossil diesel.

If **oil palm plantations are established on low carbon land** (e.g. savannas in los Llanos) the carbon stock increases (negative values for land use change).

Economy of scale allows optimal use and treatment of by-products. Avoided methane emission due to proper treatment of POME and EFB.

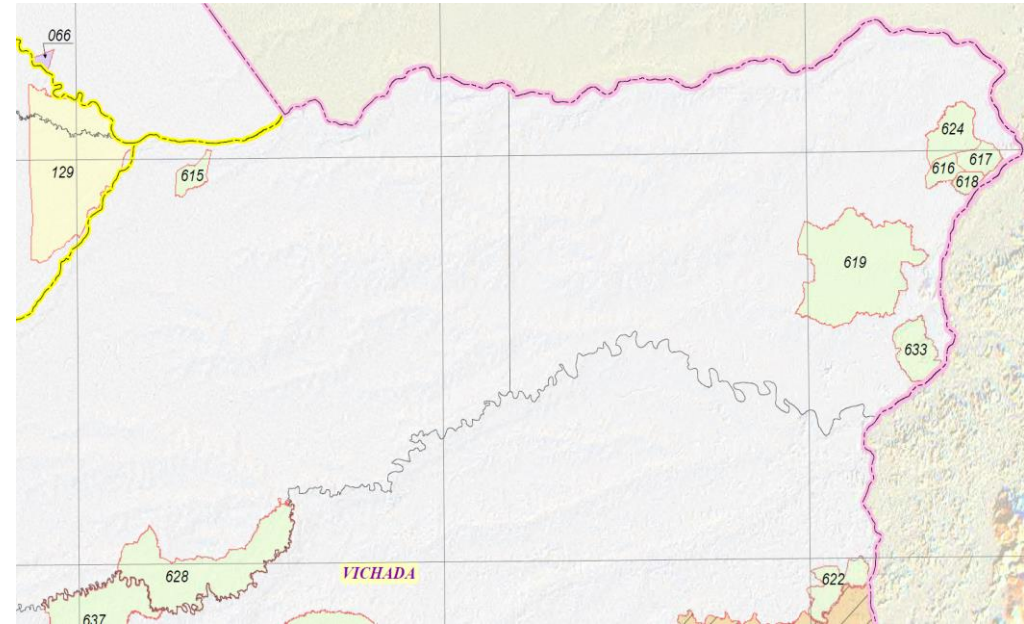
Sensitivity analysis



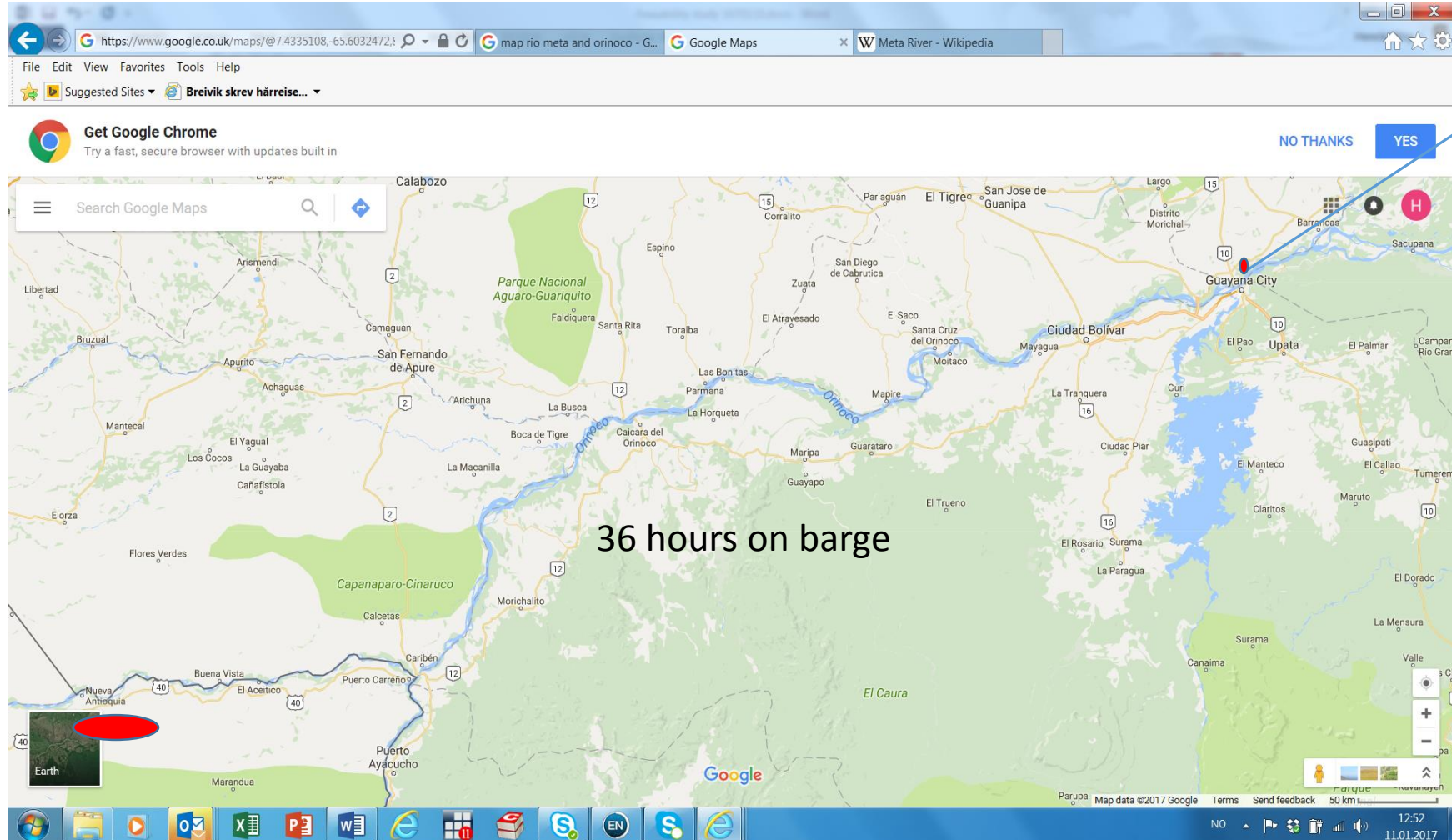
Calculations by Quantis International for Prestige (Gmünder, 2017)

Few indigenous and local inhabitants

- Population density 0,74/km²
- Most idle state land
- Indigenous reserve (no 615)
- Only 1000 ha by river
 - Fish, hunt, farm close by
 - No activity on Savannah
 - 3 groups, 600 individuals total
- No conflicting interests
 - M of Interior pre-certifies
 - Little risk of migration
- More activity and urbanization can affect lifestyle



Close to Europe....

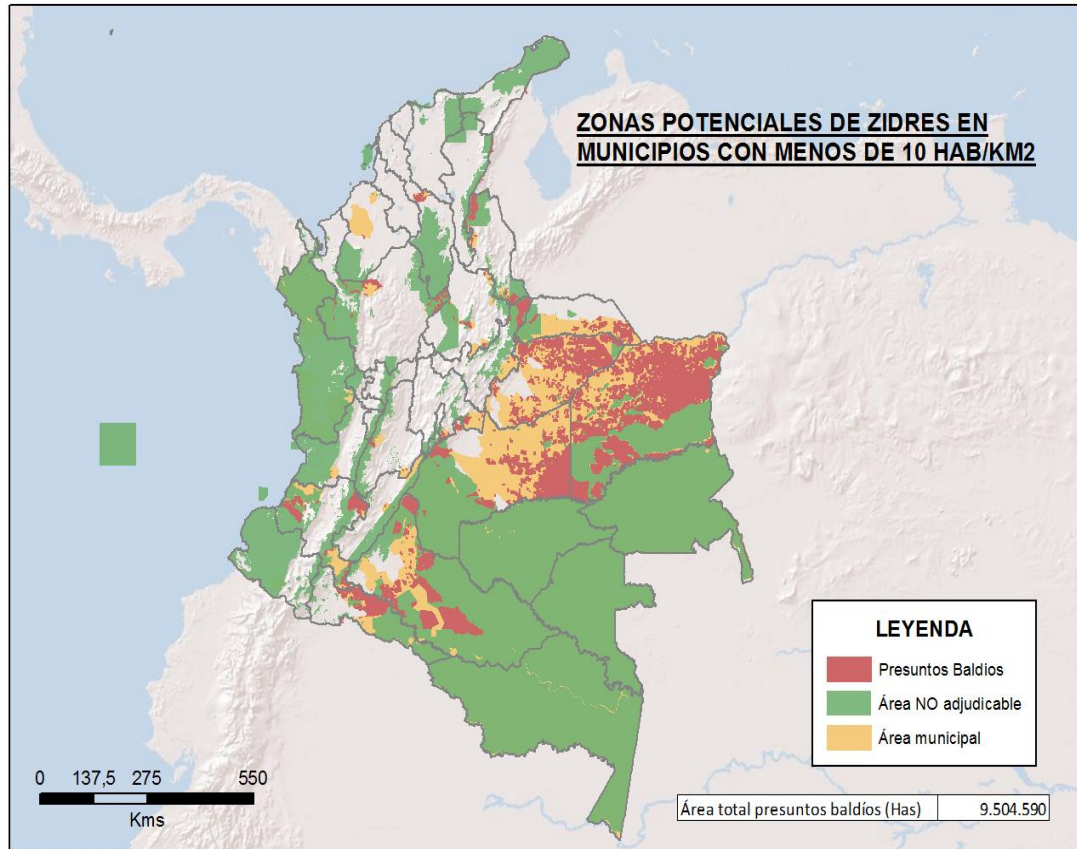


NO THANKS YES

Tankers to Norway

Transport on barges on Orinoco River through Venezuela, Cartagena if politically not possible for the moment

Eligible for industrial agriculture programs



- Zonas de Interés de Desarrollo Rural y Económico (ZIDRES)
- Private investment in infrastructure
- Land need large investments
- Lease state land for 30 years
- Accepted by Constitutional court
 - More than family unit accepted
 - No associative production needed
- Low population density
- Small scale production no alternative

Supply Norway, develop Colombia

- Fruit 1,200,000 t/year with 20 t/HA without irrigation
- CPO 252.000 t/year, 21% oil content
- 280 million liter biodiesel will substitute 7.5% of Norwegian diesel consumption
- 770 million usd investment
 - 8000 usd/ha on land improvement
 - 5 extraction mills
 - Refinery/biodiesel plant
 - Roads
- Initiate agricultural cluster
 - Increase food production, lower costs with infrastructure and service providers
 - Reduce pressure on rainforest with alternative expansion
 - Urbanization for 75.000 individuals, three different companies

Coordinated effort

- Several nurseries, 3-5000 ha/y
 - Full production 2023-24
- ISCC RED, RSPO and POIG
 - All must qualify for certification
- Build peace
 - «Integral rural reform»
 - High wages to attract workers
 - Associated production/contract farming
 - Coca substitution
 - FARC regintegration
 - Internally displaced people



Need government support, not money..

- Initial finance from Interamerican Development Bank *if*
 - Secure land rights
 - Long term sales contracts
- Politicians support sustainable palm as the climate solution (norway)
- Active state building local institutions (colombia)
- Discipline producers (EU RED and norway large order)
- Open international transport routes (norway and colombia on venezuela)
 - Meanwhile export through Cartagena, Colombia

Willing to pay for sustainability

- Sustainable palm best solution given 20% mix policy in Norway
 - Norwegian forest will take time, expensive and changes nature
 - Rainforest palm oil not allowed
- NGOs and consumer concerns
 - Rainforest Foundation, food yes if POIG, no palm in biodiesel (can't differ)
 - Zero, no palm in biodiesel (transfer bad reputation)
 - Bellona, regenerate soil fertility in Jordan, not studied biodiesel
 - WWF internationally demonstrate palm satisfy EU RED in Los Llanos
- Can't trace origin of HVO, so all biodiesel must be certified anyway
- Boycott all meat, soy, corn, since some from rainforests?
- No foods for biodiesel, idle land and no CO2 capture better?