



RSB
Roundtable on
Sustainable Biomaterials
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ROUNDTABLE ON SUSTAINABLE BIOMATERIALS

Feasibility Study for the production and processing of the *Brassica carinata* (Ethiopian Mustard) crop for Biofuels in Ethiopia

December 2021

The Roundtable on Sustainable Biomaterials (RSB) is looking for a consultant or group of consultants and interested parties to develop a Feasibility Study for the production and processing of ***Brassica carinata*** (Ethiopian Mustard) as source for the production of biofuels, including Sustainable Aviation Fuel (SAF).

The ideal applicant is a consortium of at least two consultants, where a local consultant with experience in biofuel sector development in Ethiopia works with an international consultant with extensive experience in developing feasibility studies in bioenergy sectors (including SAF production and technologies).

Background

The international community is working towards reducing greenhouse gas (GHG) emissions to limit the extent of climate change. The aviation sector has significant climate goals and currently accounts for about 2% of global GHG emissions – a figure expected to grow dramatically in the next decades. The International Civil Aviation Organization (ICAO) is coordinating the climate change mitigation strategy for the international aviation sector and recommends the use of sustainable aviation fuel (SAF) as a way to address the carbon footprint of the sector. Operational use of SAF is already possible, since SAF that has received technical certification to date can be blended with fossil kerosene. Ethiopia is a signatory to ICAO and the flag carrier, Ethiopian Airlines, is also part of international commitments and directives set for the aviation sector.

The potential for biofuel development in Ethiopia is immense. Current trends show that Ethiopia's biofuel production is focused on using sugarcane for ethanol, and jatropha, castor and palm oil for biodiesel production. Ethanol production is linked with government-owned sugar estates and biodiesel with private investment. Ethiopia has been producing bioethanol from the sugar by-product molasses for more than a decade. Recently, RSB in collaboration with key stakeholders, has developed a SAF roadmap for Ethiopia. The roadmap identifies potential feedstocks for SAF production in the country, including castor, Jatropha, agricultural residues and ***Brassica carinata*** (Ethiopian Mustard), among others. *Brassica carinata* (Ethiopian Mustard) in particular stands out as a prominent potential feedstock suitable for SAF production. To this end, this study is being commissioned to provide a better understanding and insights on this specific feedstock's potential.

The long-term ambition is for Ethiopia to become the leading SAF producer and supplier in Africa, supporting the decarbonisation of the national airline while driving local sustainable economic development. Moreover, given the strategic positioning of Ethiopia, Addis Ababa is fast becoming a regional hub and investments into airport expansions will also allow it to host and serve international airlines.

Objectives

The main purpose of this call is to find a suitable consultant, or group of consultants, to carry out a feasibility study to understand if *Brassica carinata* (Ethiopian Mustard) is a viable feedstock for biofuel production. The consultant should:

1. Identify and map current production and uses of *Brassica carinata*, and provide information on:
 - a. Price points and markets
 - b. Competition with the food and alcohol markets
 - c. Current production models (e.g., monocropping vs intercropping, average farm size and yield, farming practices such as till or no-till, irrigated or non-irrigated, high/low inputs, etc.)
 - d. Number of people employed
 - e. Sustainability practices already adopted based on the RSB Principles & Criteria
 - f. Economics of growing the crop in a small-scale and plantation setting.
2. Identify and map potential production capacity, taking into account agro-ecological considerations including land availability, need for irrigation and other farming inputs and (optionally) current and future climatic conditions.
3. Map existing large and small-scale farming operations and co-operatives that could potentially grow the crop.
4. Use a template provided by the RSB to collect farming and transport data to enable RSB to perform a greenhouse gas life-cycle assessment (GHG LCA) of a potential biodiesel supply chain using the RSB GHG Calculator.
5. Estimate the investment required, as well as the potential socio-economic impact, of scaling *Brassica carinata* production to feed a biodiesel plant, and the necessary requirements (i.e., the necessary licenses) that are relevant for the production of *Brassica carinata* in Ethiopia.
6. Carry out financial feasibility for a biodiesel plant, identifying ideal location, investment incentives, local barriers, technology availability and human capital (skilled labour) etc.

Scope of Work

The consultant, or group of consultants, is expected to deliver the following:

- Project work plan (delivered by month 1)
- Preliminary report (delivered by month 4)

- Presentation during a stakeholder validation workshop organised by the RSB (delivered by month 5)
- Final report (delivered by month 6)

The final report shall be in English and produced using an RSB reporting template and delivered by no later than 14 June 2022.

Management & Supervision

The consultant, or group of consultants, will be working closely with the RSB Regional Representative for East Africa. It will report to the RSB Regional Representative who will be collaborating and supervised by the RSB team.

Qualifications

The consultant, or group of consultants, shall demonstrate the following:

- Experience in developing similar technical feasibility studies in energy crops and biofuel production and processing for investments in Africa
- Experience in agricultural yield modelling
- Experience in working in renewable energy, biofuels, agricultural, bioenergy sectors
- Strong research, report-writing, analysis, facilitation, communication and interpersonal skills, particularly in the English language
- Experience working in multicultural environment.

Application

To apply, please submit a brief proposal that includes:

- An overview of how you would approach this project (project methodology)
- Details about previous experience in carrying out similar feasibility studies
- CVs of all consultants involved in the project
- Budget
- References

Please send the proposal to Mr Yitatek Yitbarek at the email address yitatek.yitbarek@rsb.org, by Friday 17 December 2021.

Questions Regarding This TOR Document

Any questions regarding this TOR must be sent by *10 December 2021*. Please note that it is the applicant's responsibility to provide a clear proposal in accordance with this TOR. In

the event of a lack of clarity in the proposal, RSB will not contact the respondent to request additional information.

ABOUT THE RSB

The Roundtable on Sustainable Biomaterials (RSB) is a global, multi-stakeholder and independent organisation that drives the development of a healthy bioeconomy through certification, innovation, advocacy and collaborative partnerships. RSB offers practical solutions to ensure the implementation of environmental and social sustainability on the ground and is the world's most trusted, peer reviewed global certification system for sustainable biomass production and conversion.

RSB is recognised under the European Commission's Renewable Energy Directive, and enjoys the endorsement of the international NGO community, UN organisations and key stakeholders in the biofuel, biochemical and bioplastic industries. Aviation is a key sector for the RSB, with RSB being the preferred sustainability partner for SAF development and most of the major SAF initiatives being already RSB certified or having a public RSB commitment to certification.

For more information visit: <https://rsb.org/aviation/>