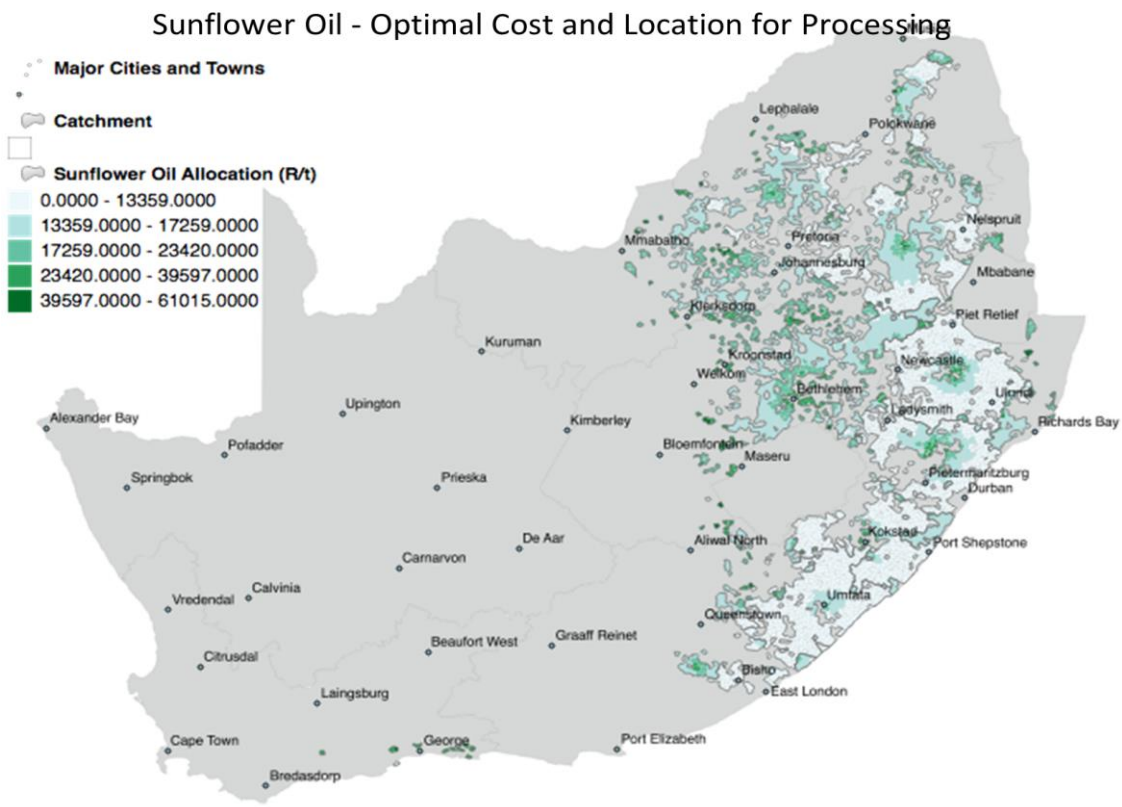
THEME: FEASIBILITY	Prepared by: Wim Hugo, SAEON

Sunflower Oil - Biodiesel Transesterification



Author(s): Hugo, W

Date: 2015

Meta-Data

Title	*Sunflower Oil - Biodiesel Transesterification*
File(s)	*WP10_07_SUN_NOT_02.shp, WP10_07_SUN_NOT_002_catch.shp*
Author(s)	*Hugo, W*
Publication Date	*2015*
Citation	*Hugo, W. 2014. Feasibility of BioEnergy production in South Africa, BioEnergy Atlas for South Africa, DST/ SAEON 2014, Section WP10_04*
License	*Creative Commons 4.0 BY SA (No restrictions on re-use, proper citation and attribution requ*

Abstract	** Technical Challenges -* *Technology is relatively simple and has high conversion efficiency.* ** Cost Challenges -* *Despite efficiency, levelised costs are high, due to mainly 2 factors (1) the input cost of raw material is high, and (2) operating costs are high due to feedstock (methanol) and distillation operations. Selling oilcake has a significant effect on final product cost, with a 50% oilcake internal subsidy reducing the costs by R 6,500/ t (0.65 R/kWh). This would bring production cost into line with current range of diesel prices.* ** Environmental Challenges -* *Greenhouse gas savings are significant provided land use changes are carbon neutral. Limiting cultivation to subsistence cropland should assist with this goal.*
Keywords	*biodiesel, feasibility, model outputs, sunflower, sunflower oil, transesterification*
Caveats	http://bea.dirisa.org/resources/metadata-sheets/WP10_07_META_SUN.pdf
Web Meta-Data	
Web Resource	http://app01.saeon.ac.za:8086/geoserver/BEA/wms?service=WMS&version=1.1.0&request=GetMap&layers=BEA:WP10_07_SUN_NOT_02&styles=&bbox=16.451920000028533,-34.83416989569374,32.892531746697685,-22.125030000001036&width=512&height=395&srs=EPSG:4326&format=application/ope

Methodology/ Protocol

Processing/ Provenance	*As described above*

Important Attributes

MESO_ID	Meso-zone ID
PRICOST	Sunflower Oil - Optimal Cost and Location for Processing, R/ton
ALLOC	Catchment ID

References and Sources

[1]	Croezen, H and van Valkengoed, M. GHG Emissions due to deforestation, Delft, 2009 - http%3A%2F%2Fwww.ce.nl%2F%3Fgo%3Dhome.downloadPub%26id%3D932%26file%3Dghg-emissions-due-to-deforesta.pdf
[2]	Von Maltitz, G. Estimates of Land Use Effects of Major Products and Feedstocks, Work Package 9, in BioEnergy Atlas for South Africa, W Hugo (ed), DST 2013
[3]	Witi, J and Stevens, L- Greenhouse Gas Inventory for South Africa, 2000-2010, Department of Environmental Affairs, 2013 - https://www.environment.gov.za/sites/default/files/docs/greenhousegas_invetorysouthafrica.pdf
[4]	Nahman, A. and Godfrey, L. Economic value of South Africa's Waste (Preliminary), CSIR CSIR/NRE/GES/ER/ 2014/0015/A for DST, 2014, http://www.wasteroadmap.co.za/download/economic_value_sa_waste.pdf and http://www.wasteroadmap.co.za/download/trends_in_waste_management.pdf
[5]	US Environmental Protection Agency, Emission Factors for Greenhouse Gas Inventories, EPA, 2014 - http://www.epa.gov/climateleadership/documents/emission-factors.pdf
[6]	From Waste to Jobs: What 75% Recycling means for California, NRDC, 2014 - http://www.nrdc.org/recycling/files/green-jobs-ca-recycling-report.pdf

[7]	Sunflower Oil - Biodiesel Transesterification - Catchments: http://app01.saeon.ac.za:8085/geoserver/WP10/wms?service=WMS&version=1.1.0&request=GetMap&layers=WP10:WP10_07_SUN_NOT_002_catch&styles=&bbox=18.145830027206735,-34.39130985789482,32.892531746697685,-22.502897526269876&width=512&height=412&srs=EPSG:4326&format=application/openlayers