

Fuel briquettes from rose residue in Ethiopia

10 Jan 2019, Ir. E.R.P. Keijsers



Aim

- The project aim is to develop a business plan for converting rose residue into marketable briquettes in Ethiopia. Other aims include determining market demand for fuels and how to efficiently process the residue into good quality briquettes.
- Main drivers
 - Accumulating residues from rose cultivation
 - Deforestation because of charcoal production

Team

- Soil & More Ethiopia
 - Ahmed Hussen
 - Aart van de Bos
- WFBR:
 - Wolter Elbersen
 - Edwin Keijzers
- TALO Projectmanagement BV
 - Ger Bal
- HAS Den Bosch
University of Applied Science
 - Rob Bakker
 - Rene Schoorl
 - Luc van Bommel
 - Romein Houwink

Workplan

- Student recruitment
- Start meeting between all partners (partly Skype)
- Three months stay in Ethiopia at Soil and More of two students from HAS
 - Biobased technology student
 - Business student
- Supervision by WFBR and HAS (incl. visit)
- Final meeting to recapitulate results (partly Skype)

Hurdles

- The ownership/use of the industrial site of Soil & More Ethiopia is debated by the local authorities. Access to the plot is denied. Access to the existing rose residues was thereby prohibited.
- Practical tests could not be performed in Ethiopia, because of the problem described above and bureaucracy. Some trials were performed back in the Netherlands.

Current status

- To co-ordinate with the study schedule at HAS, reports will be produced in January, the final meeting will be held end of January.
- The contact between Soil and More and the students in Ethiopia was several times a week. Wrap up of the results with all partners will be done based on the reports.

Three months stay in Ethiopia

■ Contacts

- Dutch Embassy
- Local authorities
- Owners of residues
 - Roses
 - Bamboo
 - Sawdust
 - Bagasse
 - Coffee
- Local experts
 - Charcoal production
 - Pellet markets



Practical trials in Netherlands

- Determination of properties of residues



- Briquette trial



Ethiopia

Hoofdstad Addis Abeba
Oppervlakte 1.104.300 km²
 (0,7% water)
Inwoners 73.918.505 (2007)
 105.350.020 (2017)
 (95,4/km² (2017))

Nederland
41.543 km² [4]
(ruim 18% water)

17.084.719 (2017)[6]
(411,3/km² (2017))



Ethiopia: Current charcoal use



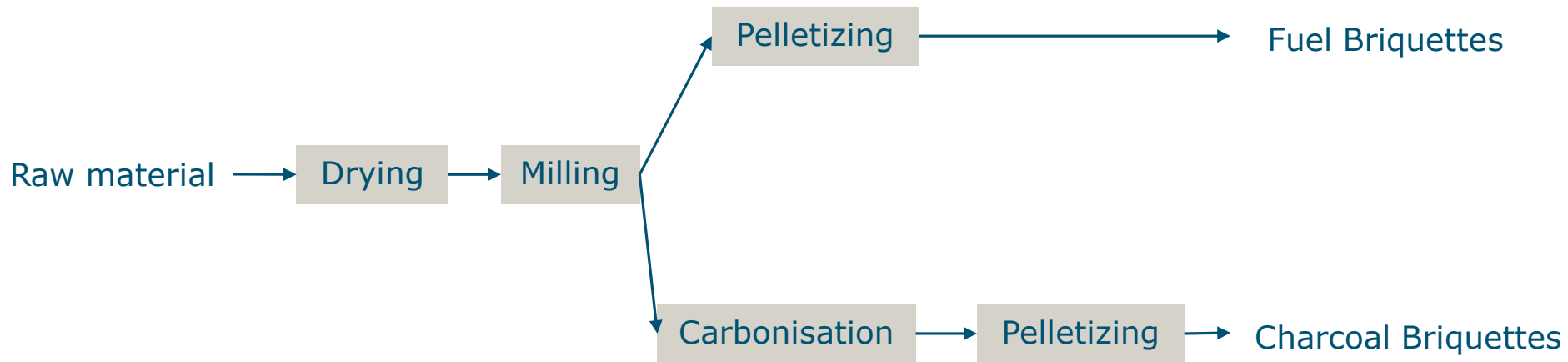
Rose production



Other raw materials



Production process

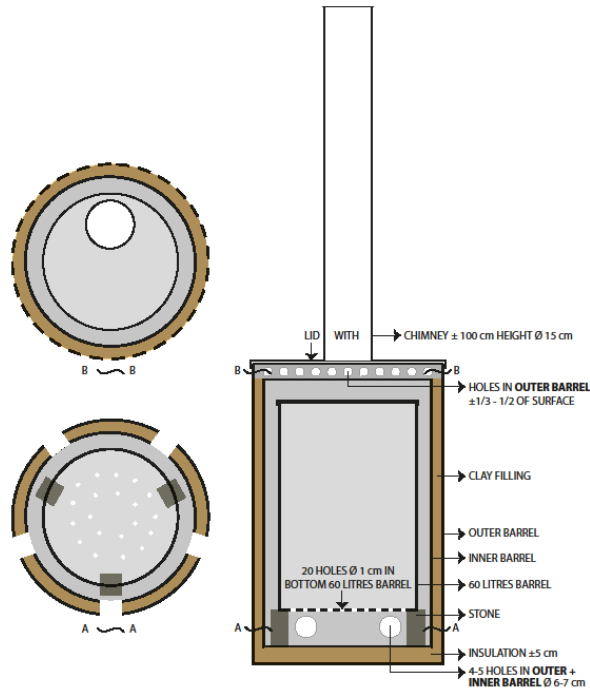


Production process: pelletizing



Production process: Carbonisation

CHARCOAL RETORT



Movi charcoal furnaces



Possible new cooperation parties

- Floriculture
- Advanced charcoal producers
- Charcoal producers near refuge camps

Outlook

- End reports students
 - Design of briquette mill
 - Business plan
- Wrap up meeting with entrepreneurs
 - Discussion on results
 - Possible co-operations

Thank you!



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