

Problem

**Madagascar:** deforestation caused by the production of fuel for domestic use

40% loss of forests

More than 2 hours a day for the supply of fuels

Loss of biodiversity

2-7% of total anthropogenic CO<sub>2</sub> emissions\*

Release of CO and PM

16,500 premature deaths per year

Target

Development of sustainable technology for the recovery of solid fuel from biowaste

Biomaste + Processing = Briquettes

Stop deforestation  
Biodiversity conservation  
Reduction of emissions  
Reduction of dangerous pollutants

Proposed solution

Creation of a sustainable local supply chain for the transformation of biowaste in biomass briquettes and charcoal briquettes

Biomaste → Mechanical treatments and biodyring → Biomass briquettes

Charcoal briquettes ← Pyrolyzation → Heat Generation

Impacts

Environmental impact calculation (biodiversity, CO<sub>2</sub> emissions,...)

Impacts calculation to support the design with LCA approach

LCA Life Cycle Assessment

Positive impacts on SDGs

- 3 GOOD HEALTH AND WELL-BEING
- 7 AFFORDABLE AND CLEAN ENERGY
- 11 SUSTAINABLE CITIES AND COMMUNITIES
- 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
- 13 CLIMATE ACTION
- 15 LIFE ON LAND

\* A portion of these emissions is caused by domestic cooking of food

# CHAR:MIÉ

Polisocial Award 2022

Progetto finanziato da Polisocial Award 2022 - Politecnico di Milano  
Project funded by Polisocial Award 2022 - Politecnico di Milano

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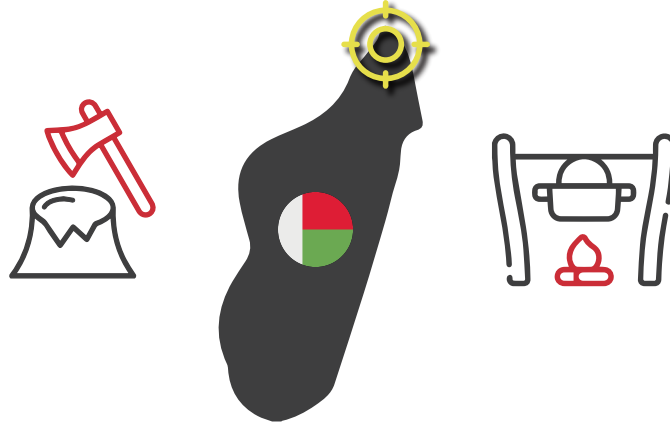
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January 2023 - June 2024



# Problem



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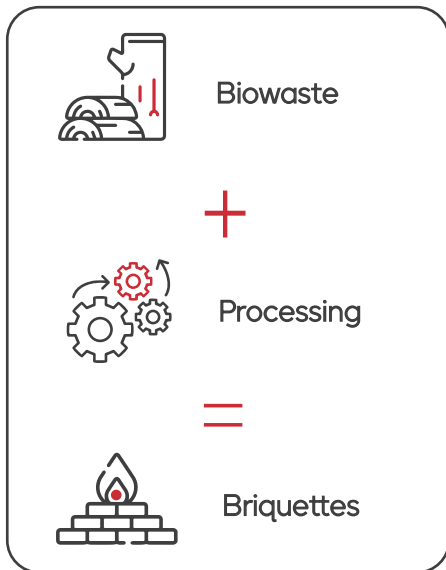
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Target



Development of sustainable technology  
for the **recovery of solid fuel**  
from biowaste

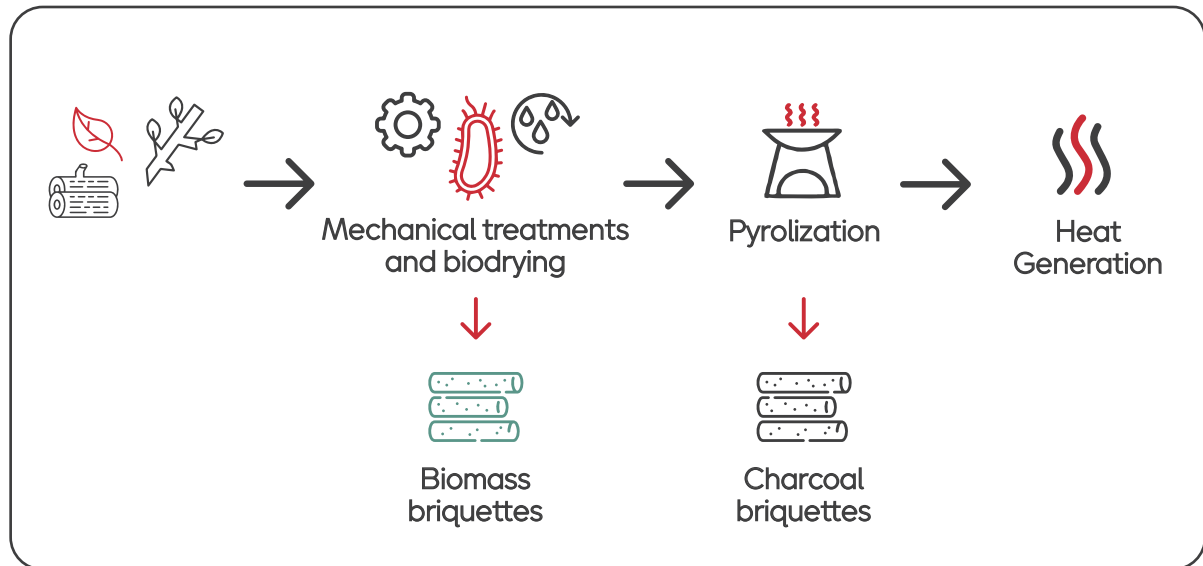


Stop deforestation  
Biodiversity conservation  
Reduction of emissions  
Reduction of dangerous  
pollutants



## Proposed solution

Creation of a sustainable local supply chain  
for the transformation of biowaste  
in **biomass briquettes**  
and **charcoal briquettes**





## Impacts

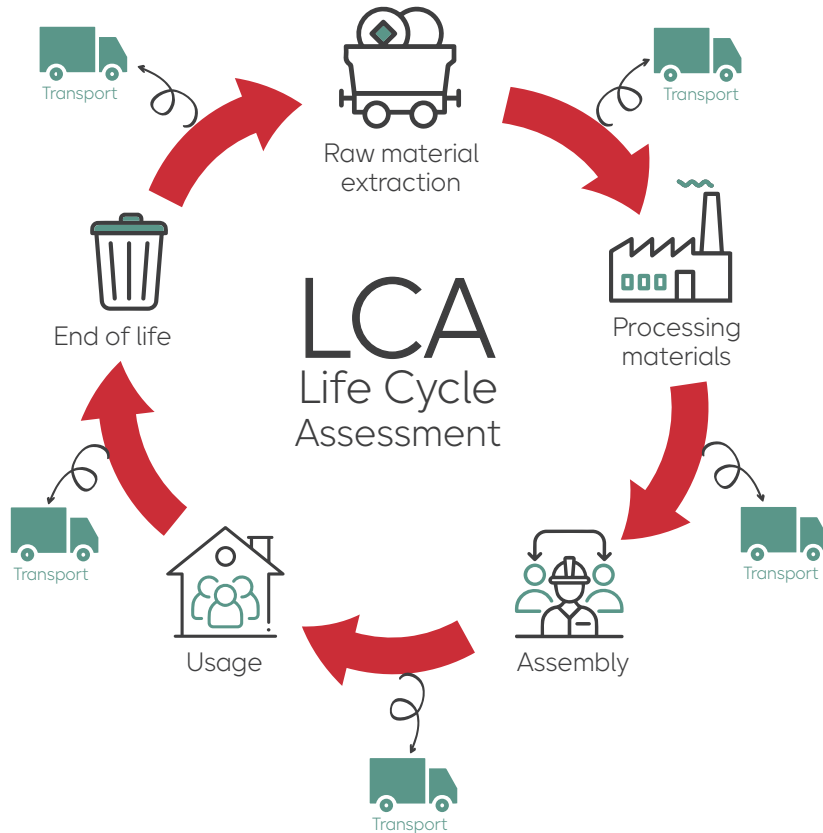


Environmental impact  
calculation (biodiversity,  
CO<sub>2</sub> emissions,...)



# Impacts

Impacts calculation to support the design  
with LCA approach





# Impacts

## Positive impacts on SDGs





# [www.polisocial.polimi.it](http://www.polisocial.polimi.it)

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Info/contacts: [charme-project@polimi.it](mailto:charme-project@polimi.it)

## CHAR:ME

Polisocial Award 2022

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GROWING A SUSTAINABLE FUTURE

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**Demetra**