# Control the propagation of an invasive species: *prosopis juliflora*

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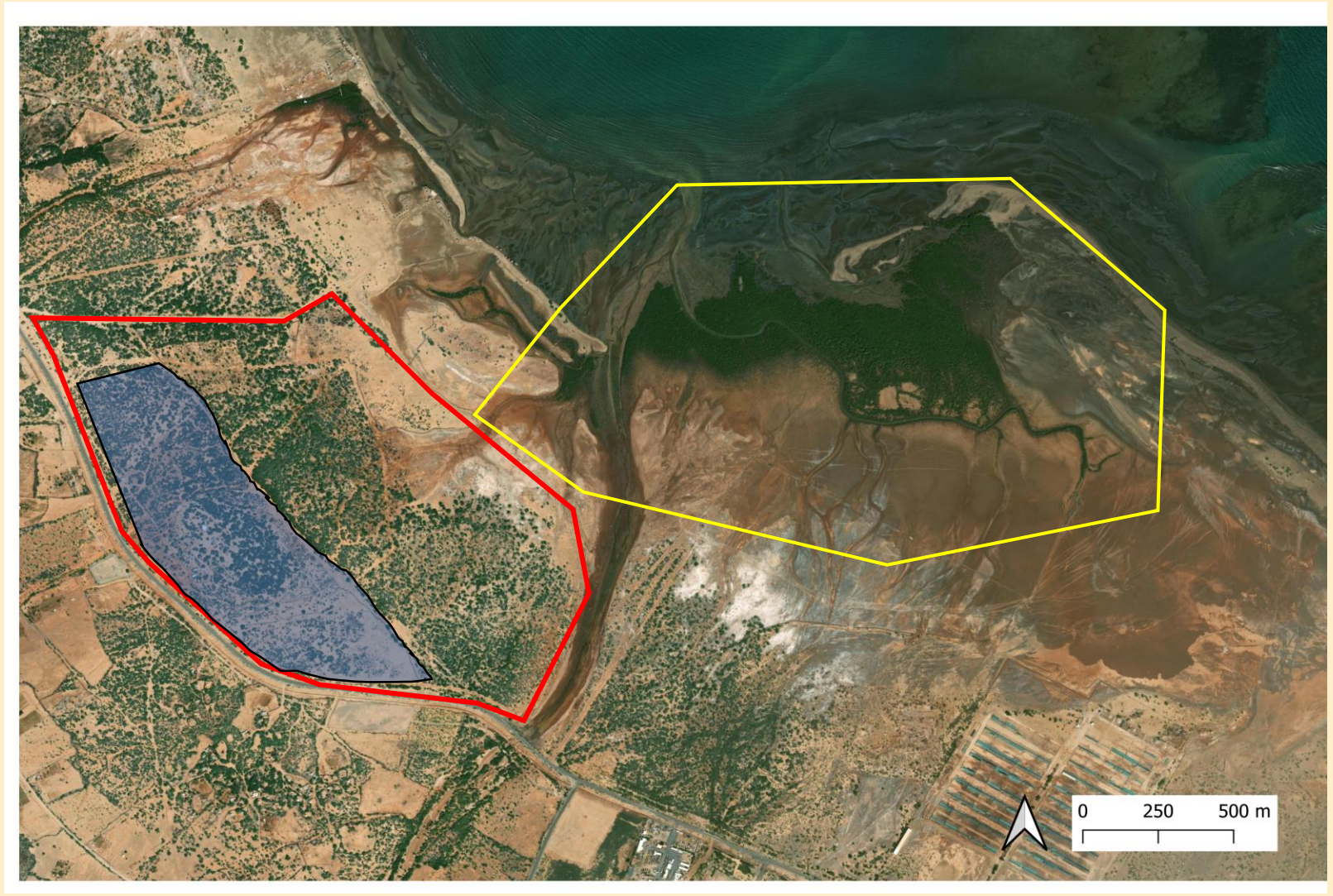
# Overview of the main land features







Mangrove

Wildlife shelter (*Vachellia sp*)

*Prosopis Juliflora*

# The Mangrove



- **Environmental Education**
- **Mangrove restoration**

# A threatened ecosystem



- **Overgrazing by camels**
- Cutting trees for firewood
- Pollution
- Non-sustainable touristic activities

# Mangrove restoration



## Plantations


# An invasive species: the *prosopis juliflora*



- ***Prosopis juliflora*** is a shrub or small tree in the family Fabaceae, a kind of mesquite
- It is native to Mexico, South America and the Caribbean
- Considered as invasive weed in Africa, Asia, Australia and elsewhere

# Current issues with the *prosopis juliflora*



- its aggressive growth leads to a monoculture, denying native plants, water, and sunlight, leaves are not eaten by native animals and livestock
- Seeds remain viable for up to 10 years
- Seeds are spread by cattle and other animals, which consume the seed pods and spread the seeds in their droppings
- Deep root system that dry up groundwater
- Very difficult and costly to eradicate

# Positive aspects of *prosopis juliflora*



- The flowers attract insects
- The trees provide shelter, nesting site, shade
- Help to stabilize dune, and prevent erosion
- Fix azote in the soil
- Can growth on salty, poor quality soil
- The sweet pods are edible and nutritious both for livestock and humans.
- Can be used as firewood

# Current issues with the *prosopis juliflora*



# Our goals

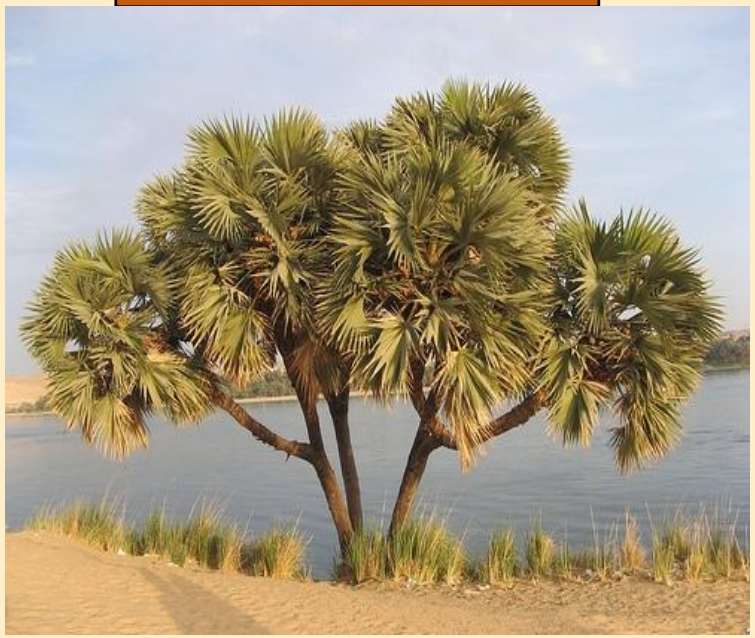


Remove *prosopis*

Restore native vegetation

*Vachellia nilotica*

Gardening activities



*Hyphaene thebaica*

# Tree plantation



# Tree plantation



# Control prosopis invasion



# Building facility



# Our current usage of prosopis Juniflora



***Prosopis juliflora***

**Charcoal**

1

2

3

4

5

6

# Our current usage of prosopis Juniflora



# Our current usage of prosopis Juniflora



***Prosopis juliflora***

**Charcoal**

7

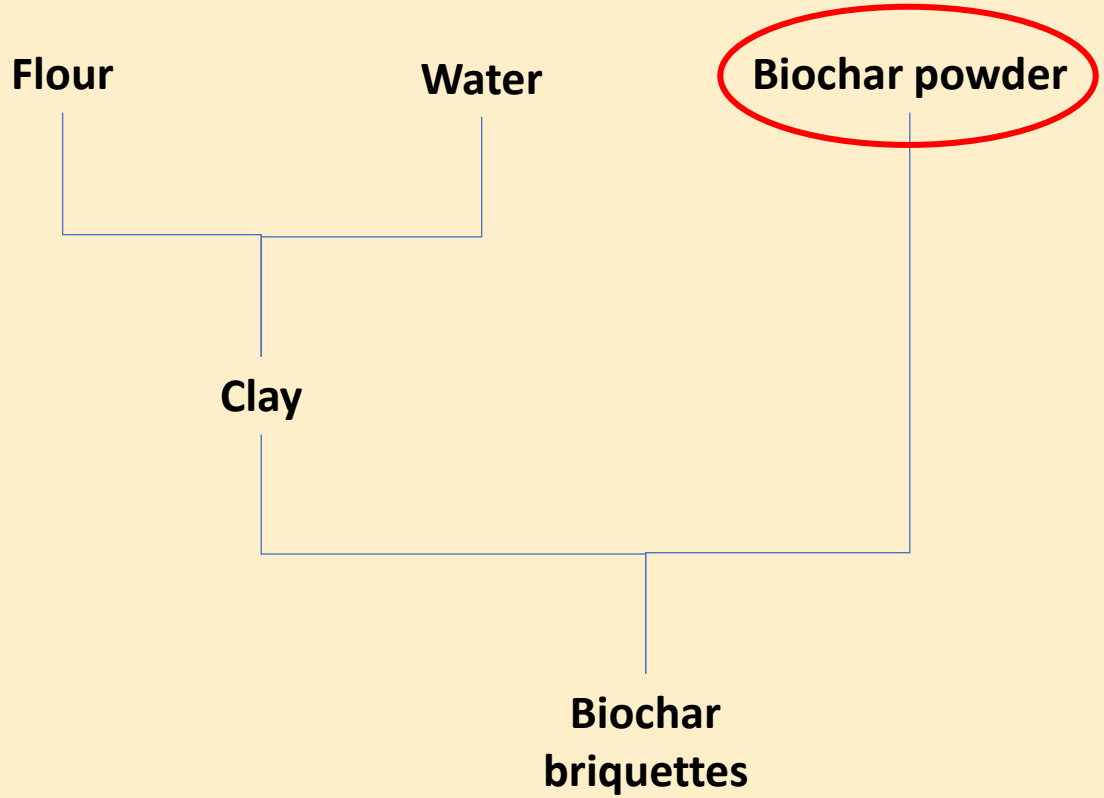
8

# Our current usage of prosopis Juniflora



# The process to make biochar briquettes





# How to Make BIOCHAR form Prosopis ?




Cutting tools

Oven for pyrolyse

charcoal griding machine

***Prosopis juliflora*** → **Cut tree** → **Crushed wood, leaves** → **Pyrolyse** → **Biochart** → **Biochart powder**

# How to Make BIOCHAR form Prosopis ?

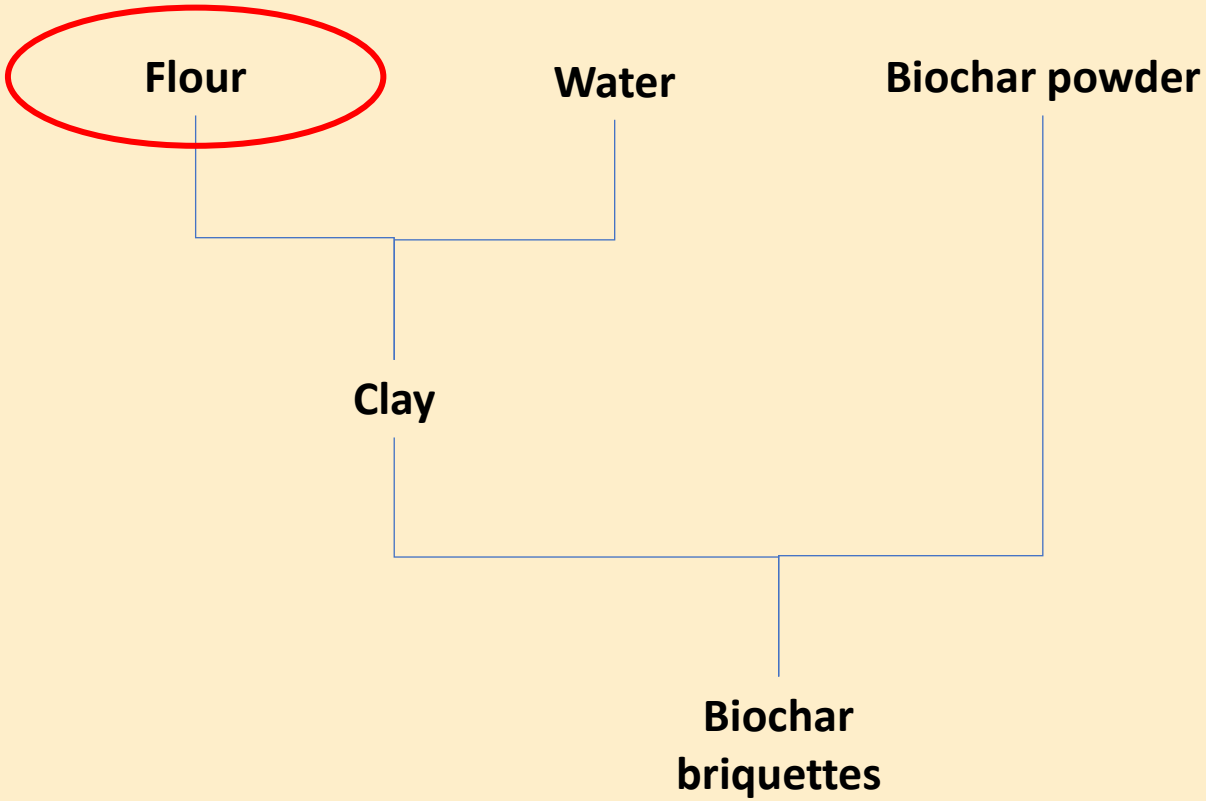


# How to Make BIOCHAR form Prosopis ?



# The process to make biochar briquettes





# The process to make biochar briquettes



- We collect prosopis pods and let it dry.

# The process to make biochar briquettes



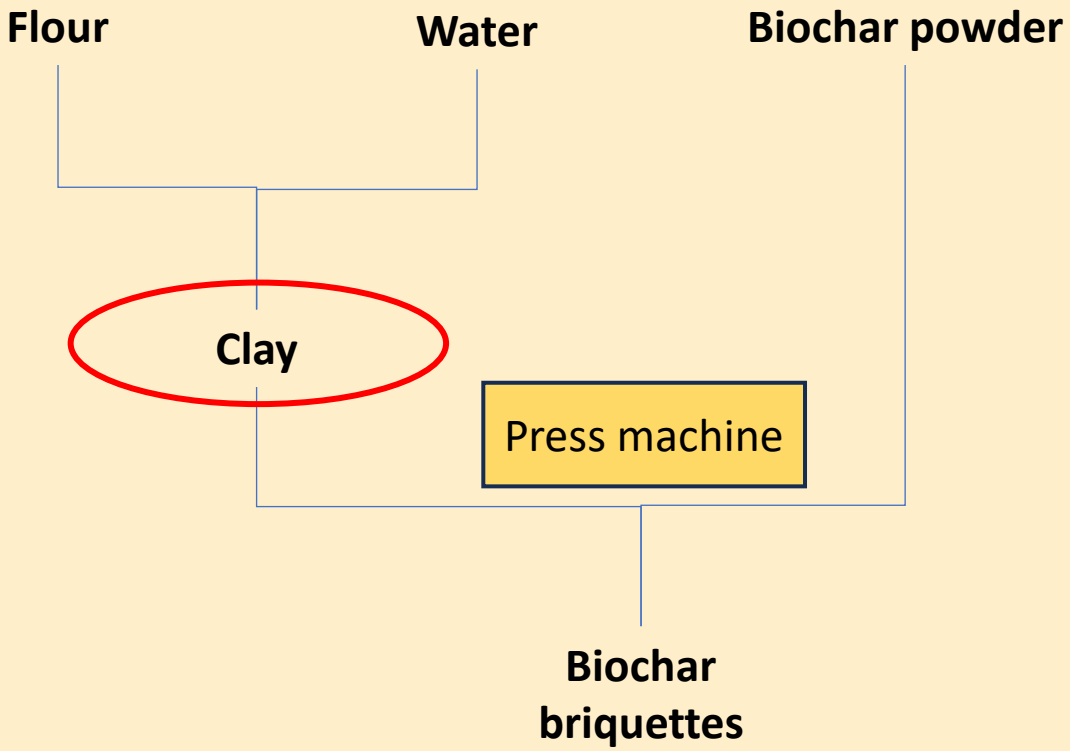
- We make flour

After griding the pods, we separate the powder from the seed capsule

Due to the high amount of sugar, the flour solidify naturally

# The process to make biochar briquettes






# Manual press machine model



- Can be designed and manufactured locally in Djibouti

# Manual press machine model



- Our press we built

# How to Make BRIQUETTES form Prosopis ?



# How to Make BRIQUETTES form Prosopis ?



# Future plans



***Prosopis juliflora***

- Collect pods on tree → Dry → Flour → Food
- Collect pods on the ground → Dry → Flour → Biochar briquettes

Grinder grain mill

# Possible future usages of prosopis juniflora



***Prosopis juliflora***

**Flour**

**Biochar**

**Compost**

**Lighters**

**Charcoal**

**Food**

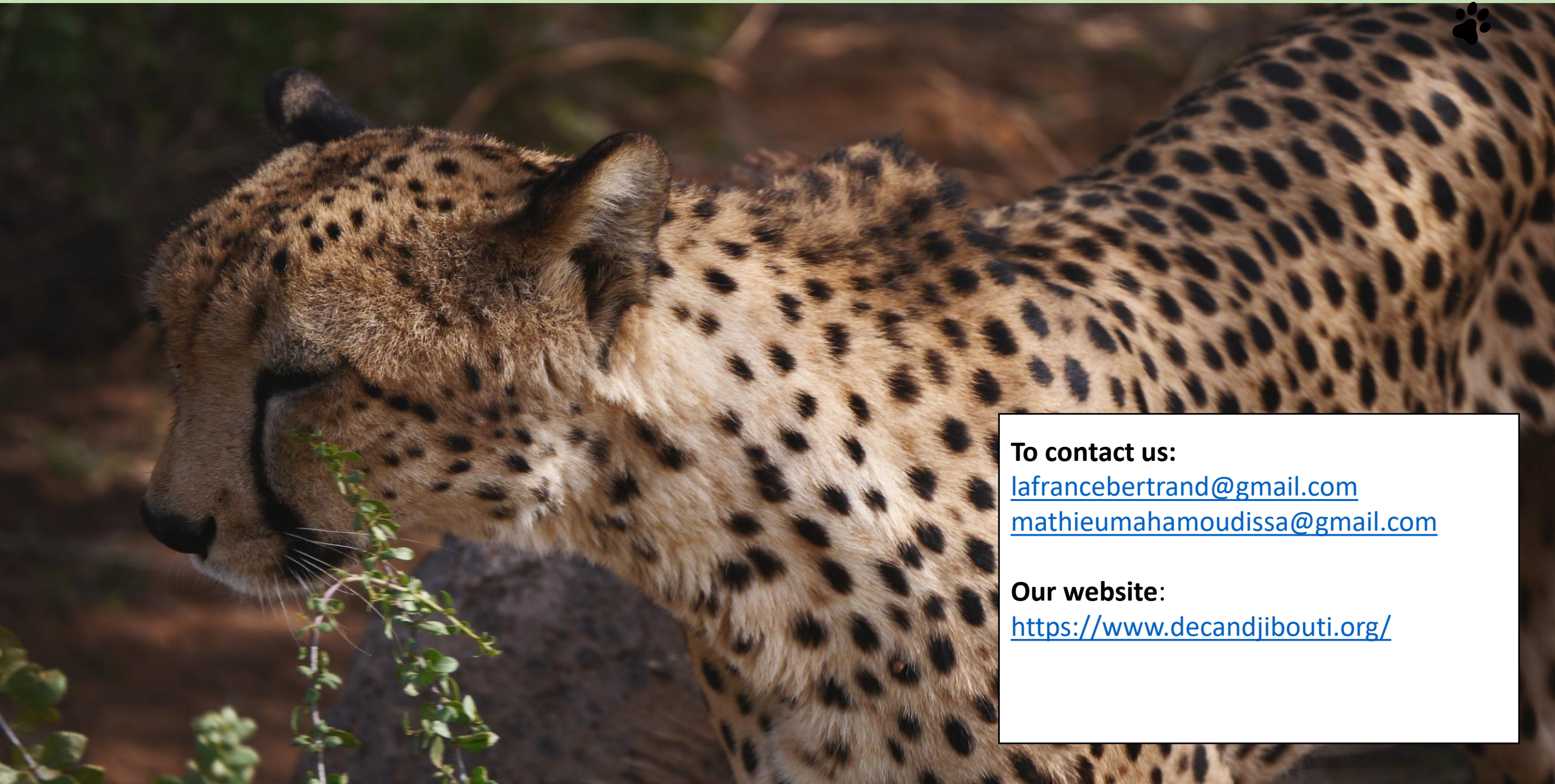
**Biochar briquettes**

**Fertilizer**

**Soap**

# Thank you for your attention!





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