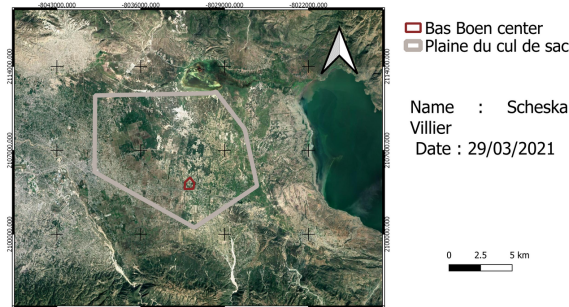


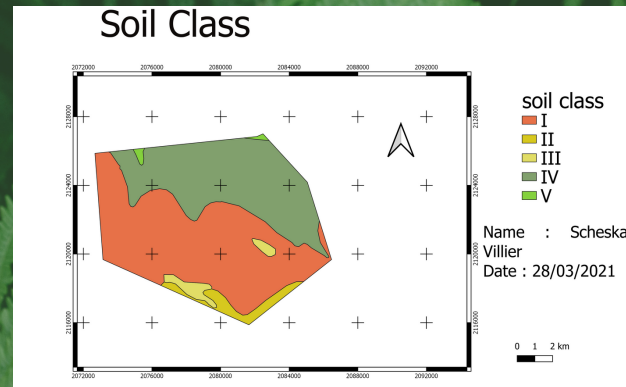
SUSTAINABLE AGRICULTURE PRACTICE BASED ON SOIL CONSERVATION

Plaine du cul de sac map



Agriculture represents 60% of the Haitian active population. Due to its high underground aquifer content, Plaine du cul de Sac is considered important agricultural support. Due to the intensive exploitation, the soil is facing high degradation. There is no nutrient input, such as organic matter. This affects the agricultural yield, as well as the economic income of farmers.

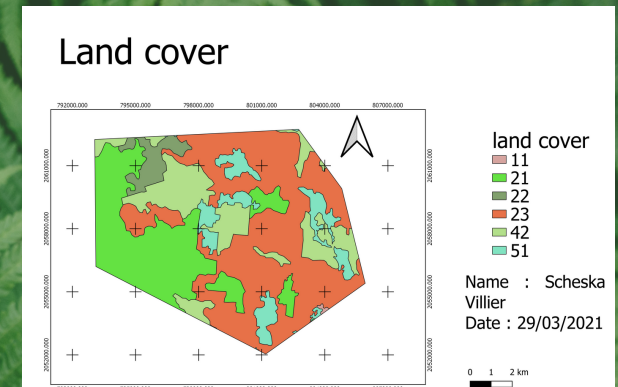
Soil class	description	Area (ha)
I	Excellent	178.40
II	Very good	33.53
III	Good	0.69
IV	Medium	92.75
V	poor	3.34



The soil class that predominates is class I :

- These are soil apt to intensive agricultural practice
- Good drainage
- Deep soil
- Those can be loam soil
- Its limitation goes with its erosive process
- For this reason his management should encaminate with nutrient incorporation, such as organic matter or fertilizer

ID	Land cover	Area (ha)
11	continuous urban	0.17
42	Savanna	143.88
21	dense agricultural crops	101.94
51	Outcrop of rocks and bare soils	1.72
22	dense agroforestry systems	2.96
23	moderately dense agricultural crops	93.61



As it is shown in the map below, in this community there is dense agricultural crop practice, in class I soil. However, there is a dense agricultural practice in type IV soil. The dense agricultural practice on this type of soil can cause problems. These are thin soil, with high degradability. It has a high ground slope, which makes it easily erosive... Thus, instead of implementing the agricultural practice, it would be better to practice agroforestry to diminish its erosive characteristic.

Cover crop

Those crops are considered green fertilizers. They better soil fertility and increase organic matter in the soil. They help the biofixation of soil nitrogen by the Rhizobium-legume symbiotic association. This will provide this macronutrient, that is so often provided by UREA, a mineral fertilizer.

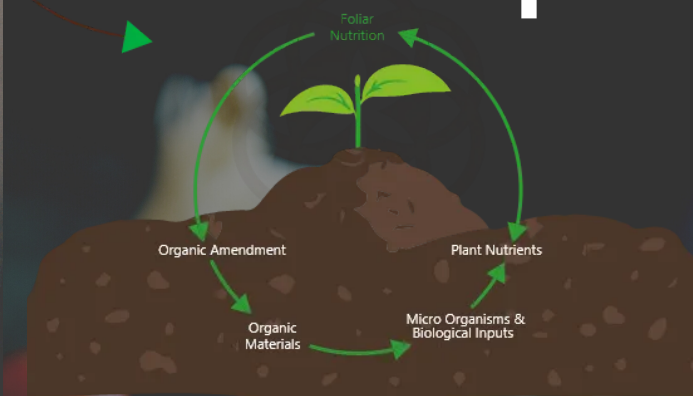
It will help with weed control, and limit soil erosion, as it will retain the soil layer

Type of cover crop

- Canavalia sp
- Crotalaria sp
- Lolap purpureus
- Cajanus cajan



Nutrient input



Fertilization is an important step to maintain the soil's fertility. It helps to provide soil nutrients. The fertilizer that is usually used is mineral fertilizer. In lowland plains, such as the case of la Plaine du Cul de Sac, it is better to use acidifying fertilizer, to minimize the soil alkalinity. However, for the small farmers, it can be difficult to get access to fertilizer due to the cost.

Thus, it could be a great alternative, using biofertilizer with microorganisms, using organic waste.

A type of fertilizer that can be elaborated and used by those farmers is liquid biofertilizer. It activates the soil microorganism. And it provides azote, potassium, and phosphore

Liquid biofertilizer elaboration

- It should be elaborate in a cool place, with no sun incident
- Fill a cloth bag, with descomposing leaves and semola. Close it hermetically
- Mix water with molasses, in a plastic recipient
- Put the cloth bag with the material in the recipient
- Then close it, and insert a hose, as it shows in the picture below
- Open it, afetr 20 days after the fermentation process
- It can be used during 6 months

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