General Idea:

One of the major cause of chronic poverty in Haiti is soil erosion and infertility. This is quite concerning because agriculture primary source of income. One factor behind the soil erosion is Haiti’s topology. It is ~ 75% mountainous, with 60% of the land with a slope gradient exceeding 20%[pg2]. Secondly, the bimodal rainfall pattern. With two rainy seasons interspersed with periods of draught, soil experience alternating extreme environments that facilitate soil erosion through winds (dry season) or water during heavy moisture/rain surplus [pg2]. Furthermore, drought also leads to soil crusting which leads to erosion up “first heavy rainfall”[pg2]. Another cause of soil erosion comes form the type of soil found in haiti. There are four major typesL Udepts, Ustepts, Fluvents, and Udults. Though each have their own specific characteristic, they all share the common quality of not being ideal for plants without supplements to support it—be it the shallowness or sandiness of Udepts and Ustepts,or high rate of erosion found in fluvents, or the low native fertility of udults. These topological factors combined with the massive deforestation for fuel or more land (to grow crops), has greatly increase rate of erosion, diminished crop yields. Lack of soil minerals replenishment also aids to the low crop yield. This combined with inefficient use of water, makes farming a daunting task for Haitian farmers.

Some tactics thar have been used to fight of erosion around the world rock-walled terraces or living erosion barriers (such as vertiver)[pg3]. Another effective method to fight of soil erosion is cover crops—which carpet the soil, protecting it from excessive rainfall or wind.

Solutions for deforestation are, use of fast growing trees (like bamboo), promoting sustainable tree harvesting practices such as coppicing, more efficient cooking stoves promoting oil from crops.

Some notable practices that are used in soil fertility and erosion-control interventions are terraced system [5], ramp pay[5], canal diversions[5], and canal diversion[5].

Christina’s suggestions:

* Make Electricity accessible and affordable to all
  + Institutional + urbanization
* Solar panels lamps
* Filtered water
* Access to education or capacity building
* Recycling tech
* Job creation
  + Institutional change

There are many financial reasons behind the state of the agriculture—ranging from failure of government investment in agriculture sector, to lack of connection between farmers and NGO’s.

Problem: Food insecurity via agriculture

Possible cause:

* Cost to set up Industrial agriculture input is much higher than the output
* The amount of control over the market is rather small for farmers and in turn reduces the revenue gained.
* The knowledge and technology required to sustain industrial agriculture is considerable sophisticated (new to region, require special machinery, special care etc)
* **There’s in increase in chemical inputs while the outputs are decreasing**
* **Industrial agriculture doesn’t use its resources efficiently**.
* **Monocultures decrease resistances to pest**. To mitigate such decrease in resistance, pesticides is often placed on plants/soil. However, there is an overabuse of pesticides. Polyculture is much more forgitving and resilient.
* **Efficient use of water and clean water is not heavily practiced by small farmers as access to clean water or knowledge of efficient water usage is not known.**

Solution Proposal:

* A Device that can support polyculture growth
* Utilize water efficiently
* That can clean/filter water pollution
* Lower cost of input relative to output in the long run
* Informing people on methods of efficient farming