

SOIL REGENERATION FOR AGRICULTURAL USE

AN EXPERIENCE FROM NIGER

STAGE 1: WHAT WAS THE INITIAL SITUATION OR CHALLENGE?

Most of the rural population in Keita, Niger, rely on agriculture as the primary means for income, including the rearing of small ruminants. Such populations have faced challenges in conducting agricultural practice for a number of reasons.

Firstly, the fertility of soil, a necessity for growing crops, was low. The agricultural system relies on practices such as the cultivation of millet or sorghum, which year after year causes the depletion of soil nutrients.

In addition, soil during the crop season are exposed to heavy rains, resulting in soil compaction, erosion and consequently, a low capacity to retain water. Soil exposed to heavy rains also suffer from poor aeration.

Erosion, together with the depletion of soil nutrients and low aeration are the cause for low soil fertility since the most fertile layer that contains the organic matter is swept away. All these effects lead to challenges for farmers to grow plants and food for consumption or to be sold in the market, as the quality of the soil is not sufficient.

In addition to poor soil, farmers also faced consequences of inadequate livestock management.

Given the scarcity of forage, every single square meter of communities in Keita are permanently grazed, preventing the grass from rest and recovery. In the long run, the permanent grazing exhausts the perennial grass' reserves until the plant dies.

This effect, multiplied by thousands, provokes the decay of grasslands, which leaves the surface of the soil uncovered. Soil degradation and inadequate livestock management have contributed to desertification and an environment where growing crops is challenging.

STAGE 2: WHAT DID YOU DO?

Action Against Hunger and AleJAB conducted a field visit to Keita with the objective of starting a pilot experience under Holistic Management (HM). HM is an approach that helps to develop strategies for managing herds of domestic livestock to heal the grasslands. Livestock under HM are gathered in packed herds for short periods of time.

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TED-Ex talk on Holistic Management: <https://www.youtube.com/watch?v=vpTHi7O66pl>

During this time, intensive trampling, defecation and urination increase soil fertility. Following this, livestock are removed from the area in order to give grass and crops the time and space needed to grow and recover.

The first two days of the visit were dedicated to train Action Against Hunger's teams as well as staff from Keita. The local leaders were very motivated by the Holistic Management approach hence they selected an extremely degraded land as the experimental plot. According to the local leaders' testimony, this land had been abandoned when agriculture was no longer viable due to low production outputs.

After the estimation of the available cattle in the village, AleJAB's Holistic Management expert calculated the duration of the animal confinement inside the plot in order to have a meaningful "animal impact" (sufficient urine, manure and trampling on the soil). It was decided that the animals should spend seven nights, and then completely seal the plot for the few plants to rest and recover.

After the completion of this first week, this operation was repeated in the second experimental plot of land. The community proved their high interest and motivation in this initiative in the sense that they gathered all the available cows in the village (approximately 18), and they committed to

guard their livestock during seven nights out in the open.

STAGE 3: WHAT DID YOU LEARN?

The pilot showed instant results as grass began to grow in previously deserted plots of land. The results motivated most of the local leaders who chose community lands abandoned due to low productivity after years of agriculture, to test the effects of short intensive grazing and long resting periods.

Although the scale of the selected plots for the pilot is small and does not have a meaningful impact in the overall livestock productivity, the pilot experience has been a success since it has proved the villagers and people from other communities that desertification can be reverted through appropriate livestock management.

The experimental plots have been useful in two ways; i) to test HM in Action Against Hunger's area of intervention, ii) to demonstrate its positive effects among the involved communities.

The good results obtained so far have raised big expectations in the local population to scale up the area under Holistic Management. From an environmental perspective, this methodology has proved its effectiveness in improving vegetation and soil coverage.

Nevertheless, the lands where the HM process will be scaled-up belong to several villages, accounting for thousands of people who share the same territory. The next major challenge will be to bring together all the population towards a common goal.

In addition to this, twice a year the concerned area under HM is used by transhumant herders as a corridor to move their livestock southwards and back forth to Northern Niger. A strong Governance model will be essential for guaranteeing a proper implantation of the methodology.

Additional experimental plots will be implanted in new areas of intervention in Niger, Mali and Burkina Faso, to replicate the successful experience of Keita and Mayahi.

STAGE 4: HOW DID YOU MONITOR YOUR LEARNING?

For the implantation of experimental plots in new areas of intervention Action Against Hunger will organize sensitization and training sessions with key stakeholders in the communities (AAH's local staff, public servants from the technical services, local chiefs), who will meet with local leaders that have tested HM in their communities. In a similar way than the Farmer's Field School methodology, peer farmers will share group observation, discussion, analysis, presentation and collective decision making, under the supervision of an expert in HM.