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Root it or lose it

How should societies decide what can be extracted, accelerated, protected, or collectively governed?

Platoniq Creativitat i democràcia

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SOILATHON · SESSION 2 · 23 NOVEMBER 2026

Restoring Sahelian soils with what farmers already have

Zaï, half-moons, compost and rainwater harvesting in Niger: what works, who drives it, and where it stops

Souleymane Ousmane Mamadou
Agroecology and land tenure officer, National Network of Chambers of Agriculture of Niger (RECA)



Tassa pits filled with organic matter, Tahoua region (photo RECA)



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OUR CONTRIBUTION

Four steps, one question

1

Sahelian context

Fragile sandy soils, wind, storms and pressure on land

2

Institutional practices

Zaï, half-moons, water harvesting, compost, field schools

3

Farmer innovations

How a farmer union built its own soil strategy

4

Limits, and what works

Manure, labour, land, guarding, and the sites that prove it works

Our Soilathon challenge (Soil literacy): how can locally appropriate soil restoration practices be shared, adapted and made accessible to more farmers?

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Part 1

The Sahelian context of Niger



At the gates of the Sahara: sandy soils, short rainy seasons, recurrent droughts since the late 1960s, and a fast-growing rural population that lives from the land.

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1 · SAHELIAN CONTEXT

Land is Niger’s main capital, and it is shrinking

10.76 M ha

million hectares of degraded land in Niger in 2010 (national baseline)

100,000 ha

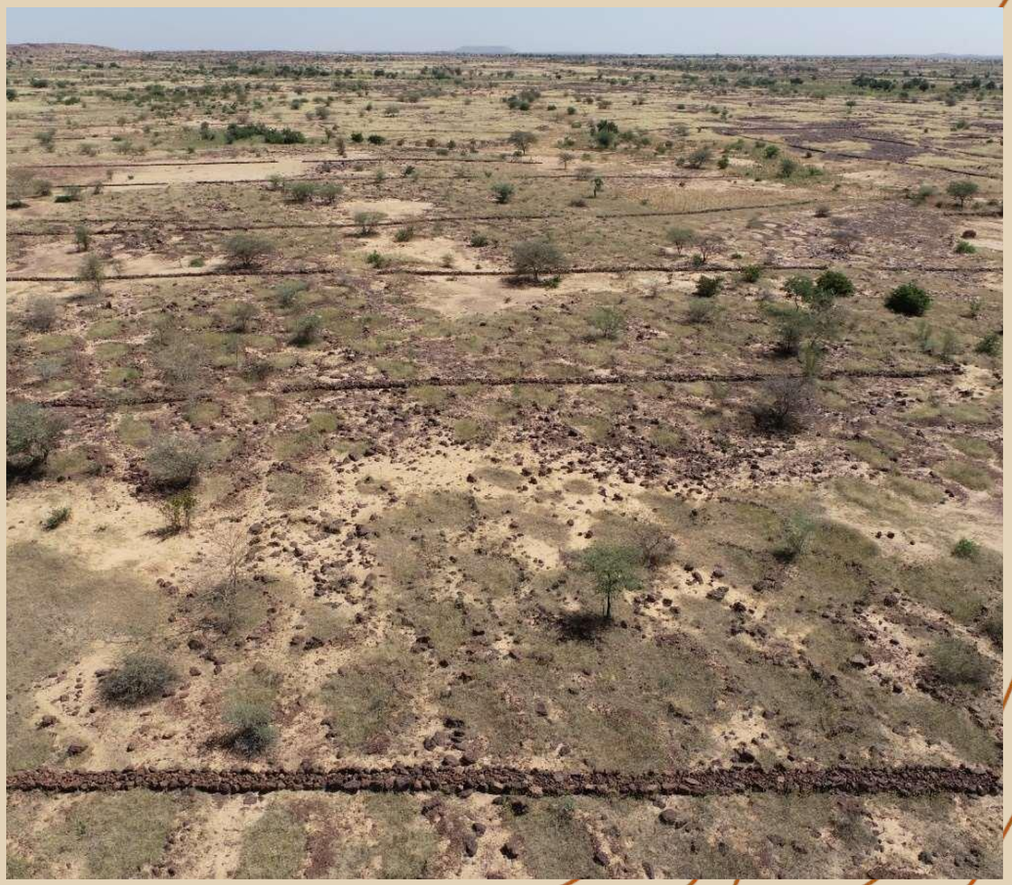
of arable land lost every year, according to national estimates

0.1 – 1.57 %

organic matter in Niger’s soils: poor to very poor, with little phosphorus

3.2 M ha

million hectares Niger has committed to restore by 2030 (AFR100, Great Green Wall)



Stone lines across a degraded plateau: restoring land one contour at a time



Sources: national catalogue of sustainable land management (GDT) sheets, Ministry of Environment with WFP, 2022 (vol. 1 and 5); 2010 baseline cited in the Sokorbé half-moon study (IJBCS, 2024)

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How a sandy field loses its fertility

Soil
Sandy soils with little organic matter and phosphorus: water drains away

→

Wind and storms
The harmattan and violent first rains strip the topsoil

→

Crusting
Bare, crusted surfaces: rain runs off instead of soaking in

→

Pressure on land
No more fallow, continuous cropping, falling yields

Then the cycle starts again, on the next field.

What Niger brought to Session 1: farmers already use zaï, half-moons, compost and natural regeneration. What is missing is dissemination, soil-testing tools, research and funding.

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1 · SAHELIAN CONTEXT · TIGER BUSH

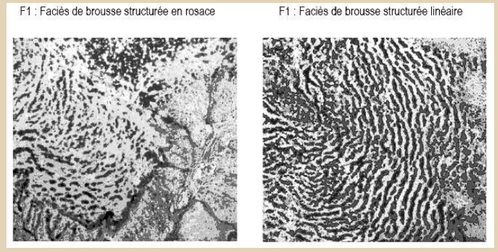
Tiger bush: bare strips that feed the woodland



Seen from above: wooded bands across the slope, bare strips in between.



Youri plateau, 25 km from Niamey: dense tiger bush, still in good condition.



The bare strips are not wasted land. They are the impluvium that harvests runoff for the woodland below.

57%

of the rain runs off the bare strip and is caught by the band below

50 cm

a year: the pioneer front of the band moves up the slope

5 m

depth of soil moisture under the thicket

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Sources: RECA, GDT note no. 1 (5 January 2013), after Dr A. Ichaou, “Le Parfait Aménagiste Forestier” (2004); RECA and CRA Tillabéri, Youri plateau working note (May 2018)

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Working with tiger bush, not against it

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WHAT NOT TO DO

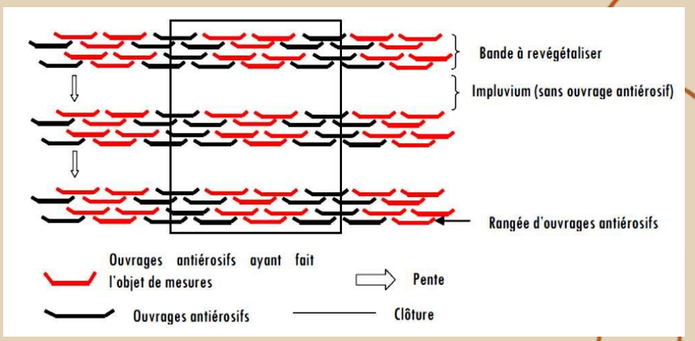


Kirtachi–Falmey, 2011: half-moons dug right on the impluvium.



Youri, 100 ha in 2016: about 10% of trees left, 5 to 20 cm tall after two rainy seasons.

WHAT TO DO INSTEAD



Parc W trial, 2007: 8 m bare strips kept as impluvium, bands of 4 rows of 5 m trenches, staggered.

Digging the impluvium creates a small drought

Each half-moon keeps water that the thicket below needed. These soils are part of a working ecosystem, not “land to recover”. Any intervention must stay light.

Close parts of the bush in rotation, for a time.

Rebuild bands only where the bush is degraded.

Ask researchers (University, INRAN) before digging.

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Sources: RECA, GDT note no. 1 (5 January 2013), after Dr A. Ichaou, “Le Parfait Aménagiste Forestier” (2004); RECA and CRA Tillabéri, Youri plateau working note (May 2018)

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Part 2

Practices promoted by institutions

Niger’s national catalogue of sustainable land management (GDT) sheets: 7 volumes, updated in 2020–2022 by the Ministry of Environment with WFP support, used by projects, extension services and RECA.

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2 · INSTITUTIONS · ZAÏ (TASSA)

Zaï: water and manure in one pit





A traditional Sahelian practice, called tassa in Hausa. Dug in the dry season, sown after a first rain of 20 mm.

Feature	Standard
Pit size	30–40 cm wide, 20–30 cm deep
Density	10,000 pits per ha, staggered
Organic matter	200–400 g per pit, about 3 t/ha
Work	100–120 pits per person per day
Millet yield	830–1,200 kg/ha on degraded land
Cost	about 255,800 FCFA/ha (≈ €390)
Lifespan	1 year: dug again each dry season

Source: GDT sheet 1.4, Zaï agricole (Ministry of Environment, 2021). €1 = 655.957 FCFA.

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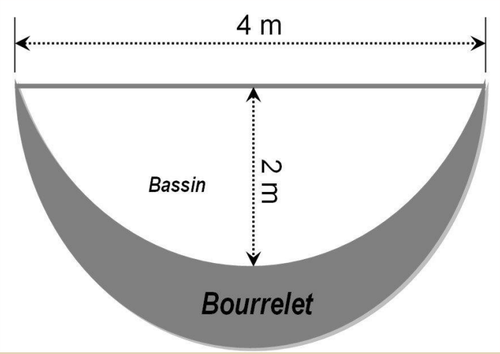
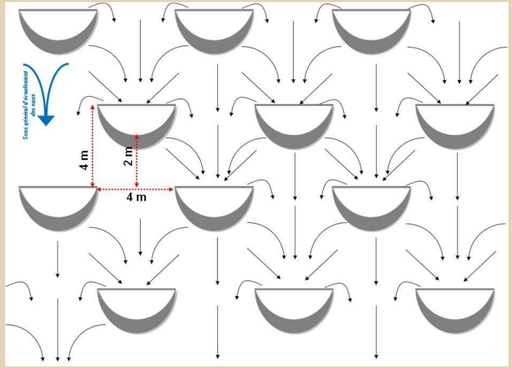
Half-moons: catching runoff on crusted land









Feature	Standard
Shape	basin 4 m wide, 10–30 cm deep; bund 30–40 cm high
Density	313 per ha, staggered on the contour
Organic matter	10 kg compost or 15 kg manure each
Work	3 half-moons per person per day
Millet yield	800–1,200 kg/ha
Cost	about 273,800 FCFA/ha (≈ €417)
Lifespan	3–5 years; manure renewed every 2 seasons

Source: GDT sheet 1.5, Demi-lune agricole (Ministry of Environment, 2021)

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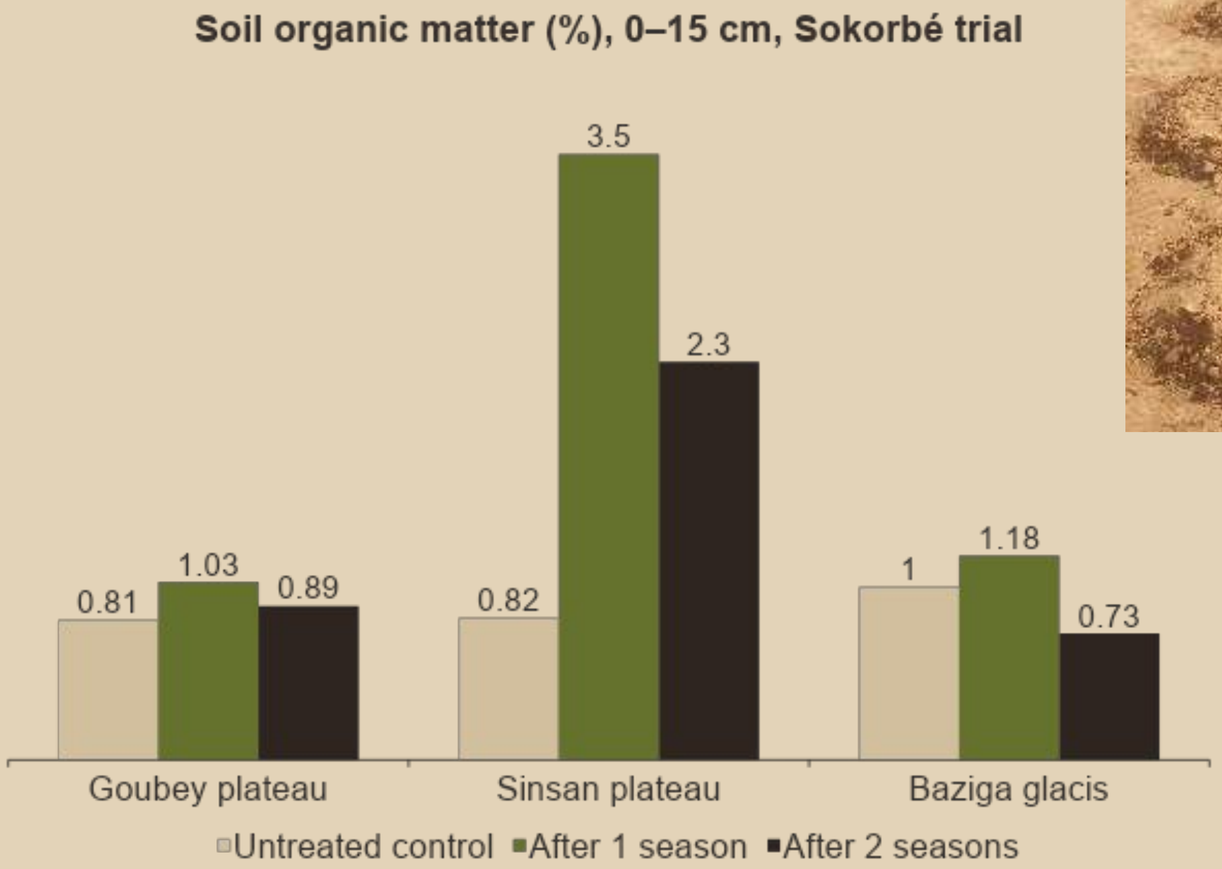
Research confirms the gain, and its fragility





Multifunctional half-moons add zaï pits and trees: 250 per ha, about 672,400 FCFA/ha.

In Sokorbé (Tillabéri), organic matter and pH rose in the first season, then organic matter fell again when no new manure was added.

Sources: Abdou Moumouni University, Sokorbé half-moon trial 2021–2022 (reca-niger.org); GDT sheet 1.8

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Water harvesting at landscape scale



Banquettes: long earth bunds that hold rainwater on plateaus



Stone lines along the contour, every 20 to 50 m



Half-moons and trees on a restored plateau

Toudou Adrawa, Tahoua

About 1,500 ha of plateau restored between 2014 and 2020

Kadjigui, Tahoua

The site committee sells over 1,000 sacks of grass seed a year and became a cooperative

How it is built

Cash for work, then 3 to 4 years closed to grazing, with paid guards

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Sources: RECA information note on plateau land recovery, Tahoua, August 2025; RECA monitoring of WFP/FAO sites, 2014; GDT sheets 1.10 to 1.16

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Dune fixation: stopping the moving sand



Palisades of doum palm fronds in a grid, Goudoumaria (Zinder).



Setting up the palisades: a group job, by hand.



Once fixed: grasses and shrubs hold the sand above the basin.

Mechanical

Palisades of Leptadenia or doum palm: 1.5 m high around the edge, 1 to 1.2 m inside, spaced 20 times their height. Mulch and manure on bare patches.

Biological

Sow Andropogon gayanus, Cenchrus, Aristida and Pennisetum before the rains; then Prosopis on the crests and local acacias on the rest.

564,720 FCFA/ha

including 3 years of guarding and repairs. Done by the rules and well managed, the dune is fixed for good.

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Source: Ministry of Environment and Fight against Desertification, SLM technical sheets for Niger, vol. 2 (biological techniques), sheets 2.1 and 2.2; photos GDT Zinder/UNDP, ProDAF Zinder

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Compost: turning residues into fertility

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Heap, above ground

Layers of stalks, husks, manure and green leaves up to 1.2–1.5 m, watered and turned after 15 days and after 1 month. Ready in 60 to 90 days.



Fiche technico-pratique sur la préparation et l'utilisation du BOKASHI

1. CONTEXTE

Au Niger, la dégradation des terres et la baisse progressive de la fertilité des sols constituent des contraintes majeures pour la productivité et la durabilité des systèmes agricoles. La faible teneur en matière organique de nombreux sols, l'érosion, la diminution de la disponibilité des résidus organiques et la pression croissante exercée sur les terres agricoles contribuent à la dégradation de leur capacité productive. Ces contraintes sont accentuées par les effets des changements climatiques, notamment l'irrégularité des précipitations, les épisodes de sécheresse, l'augmentation des températures et les vents violents.

Dans ce contexte, la restauration et l'amélioration de la fertilité des sols constituent un enjeu central de la transition agroécologique au Niger. La valorisation des ressources organiques disponibles localement, notamment les résidus agricoles, les déjections animales et certains sous-produits

Source: GDT sheet 5.2, Compostage (national GDT catalogue, 2022)

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How institutions spread these practices



Field schools

Agro-pastoral field schools (CEAP): a group tests a practice on a shared plot through the season, with a village savings and loan group attached.

7× faster

Mechanised tassa

A tine on the ox or donkey plough cuts the pits: from about 300 to 50 person-days per ha. Burkina Faso trials: +34% grain.

Free

Sheets, notes, radio

GDT sheets, RECA notes on reca-niger.org, rural radio, WhatsApp clips and relay farmers. Most documents exist only in French.

Accueil | RECA-Niger

Sources: GDT sheet 5.1, CEAP (2022); RECA Brèves n°7, mechanised tassa, November 2012

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What the Chambers of Agriculture document today

Manure contracts

Regional Chamber of Agriculture of Maradi

A practical guide to the exchange between farmers and herders to fertilise dune fields: crop residues and feed in return for animals penned on the field.

12 to 15 days

Composting with black soldier fly larvae (INRAN)

The larvae turn organic waste into fertiliser for market gardening and protein-rich feed for poultry and fish.

3 field schools

RACINE project, Tahoua Regional Chamber

Three farmer field schools on agroecology, January to April 2026, run by RECA and the NGO COSPE with Italian cooperation funding.

These sheets complement the GDT catalogue: they start from farmers' practices or from waste already available in the village.

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Sources: reca-niger.org, articles 2112 (manure contracts, CRA Maradi), 2147 (biocomposting, INRAN), 2122 (RACINE project, CRA Tahoua)

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Part 3

Innovations by farmer organisations

The Union of Farmer Groups Alhéri de Gobéri, Boboye department, Dosso region: a union that combines old practices, its own innovations and outside support into one soil strategy.

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3 · FARMER ORGANISATIONS · UNION ALHÉRI DE GOBÉRI

A union that set its own soil strategy



2,938

members in 75 farmer groups, union founded in 2001

54%

of members are women

40

villages in 4 communes of Boboye

41

relay farmers who advise their peers, with 2 field staff

One rule: use every bit of organic matter available, lose nothing.



Women’s market gardens at Gobéri. The union also runs an input shop, 12 cereal banks and a rural radio.

Source: RECA / ACOTAF capitalisation note n°1, agroecological transition at Gobéri

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Moving organic matter from village to field

Carts to carry manure

198 animal-traction kits (cart, plough, 3-tine cultivator) since 2017. Members pay 15% upfront and 85% on a 3-year interest-free credit. Repayment rate: 98%.

Small ruminants for manure

170 kits of 3 animals in 2021–2022, mostly for women: 80,000 FCFA credit, repaid by fattening and selling the ram. Ten animals penned at night give about 9 t of manure a year.



Manure contracts with herders

An old pact: the farmer leaves crop residues and gives some feed; the herder pens the animals on the field at night and moves them so the manure spreads.

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Source: RECA / ACOTAF note n°1, Gobéri; manure contract guide, CRA Maradi. Carts co-funded by LuxDev (PADAD); animals through Mooriben (PAIE).

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Farmers turn “weeds” into soil builders





Guiera senegalensis (sabara)

Bushes kept and pruned trap sand and leaves and build micro-mounds. June 2017, after a dry spell: millet survived only on these mounds.





Pergularia tomentosa

Research advises cutting it deep and burning it. Gobéri farmers cut it high so it regrows and holds soil through the dry season. Open question: does it spread to grazing land?

Source: RECA / ACOTAF note n°1, Gobéri; INRAN technical sheet on Pergularia control (reca-niger.org)

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Trees in fields, women's gardens

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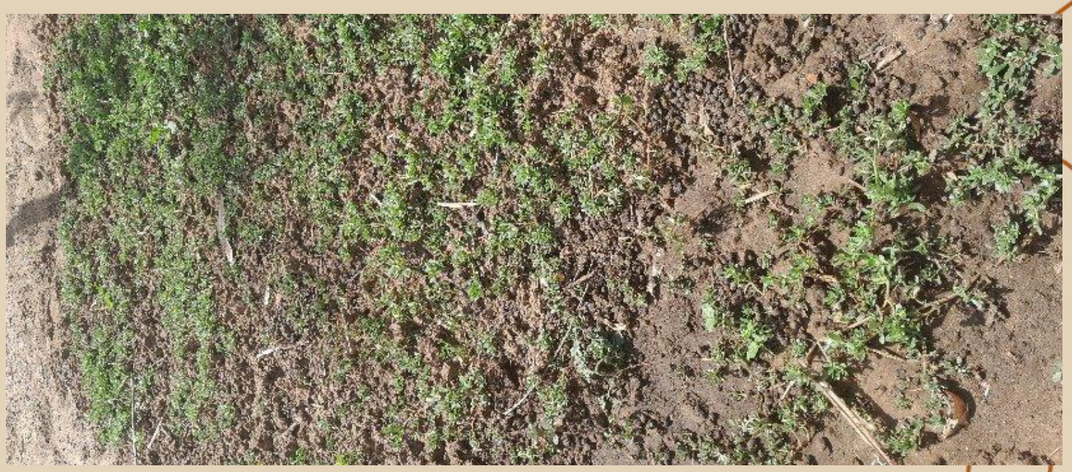
≈ 5 million ha

of farmer-managed natural regeneration (FMNR, in French RNA) in southern Niger since the mid-1980s. Farmers protect and prune shoots that regrow from stumps. Regulated by decree n°2020-602 of 30 July 2020; costs only 4,000–10,000 FCFA/ha.



Pruned branches become fences for women's gardens (Gobéri)



"Women's market gardening"

Mixed beds (onion, sorrel, cowpea, maize, trees) feed the family at every visit and give produce to sell each week. Purslane, once a wild plant, is now transplanted and grown. Almost no training module describes these systems.

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Sources: RECA; decree n°2020-602/PRN/ME/SU/DD; UNEP-CCCC policy note on FMNR in Niger; Grain de sel n°85 (2023); RECA / ACOTAF note n°1

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Part 4

The limits of our techniques



What we see in the field, especially when projects end. Being honest about failures is part of soil literacy.

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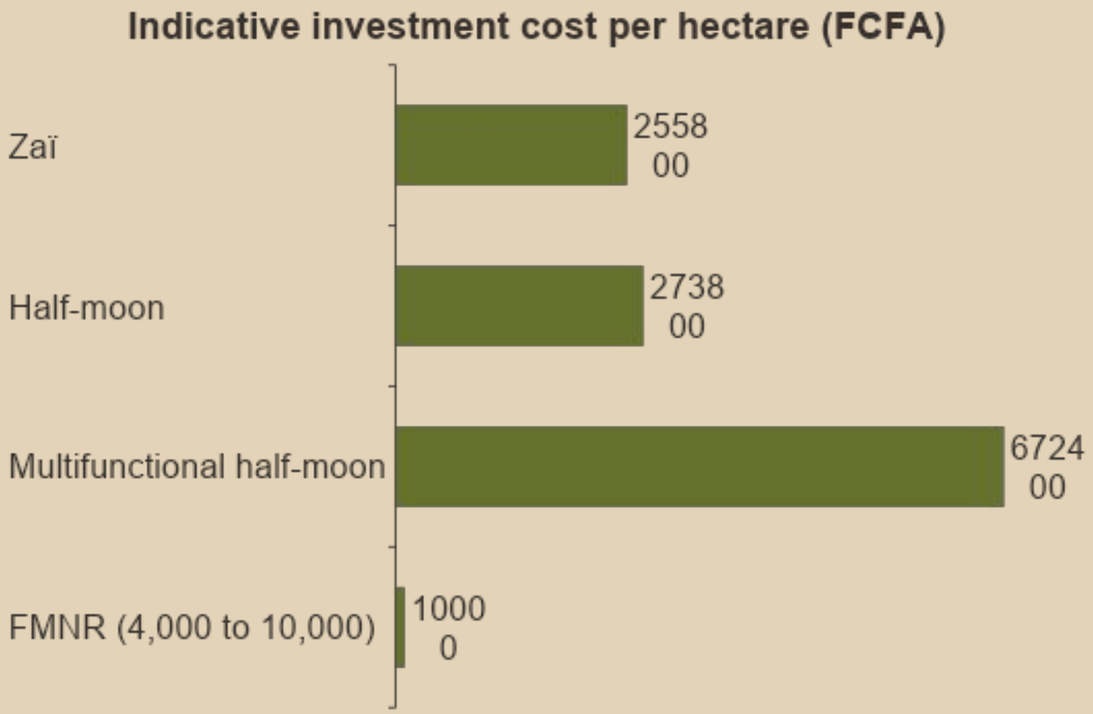
Costly in labour, hungry for manure



These sheets count a farm labour day at 2,000 FCFA; most of the cost is labour.

Manure is the bottleneck

Zaï need about 3 t/ha of manure every year. Few families have enough animals or carts.

Labour

100+ person-days per ha to dig zaï or half-moons, at the hottest time of the year.

Gains fade

In Sokorbé, organic matter fell after the second season without new inputs.

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Sources: GDT sheets 1.4, 1.5, 1.8 (2021); UNEP-CCCC policy note on FMNR in Niger; Sokorbé trial 2021–2022

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4 · LIMITS · SOCIAL AND INSTITUTIONAL

Who owns the land, who maintains it?

Land tenure

Best results on individual fields. On collective land, sites were grazed and abandoned. Women and poor households rarely get restored plots.

After the project

Cash for work builds sites; little is planned for what follows. Tahoua: no management plan after closure, tree cutting, unsold seed and straw, guards unpaid.

Knowledge gaps

No affordable soil testing, little research on farmers' own practices, and failures are rarely documented or shared.

Uneven adoption

Gobéri: over 80% of members use land management and microdosing, only 10% use biopesticides (slow, costly, labour-heavy).

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Sources: RECA monitoring of half-moon sites, 2014; RECA note on Tahoua plateaus, 2025; RECA / ACOTAF note n°1, Gobéri

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Same works, same failure, 5 km apart



Forest half-moons dug in early 2011. October 2011, after the rains: 0% of trees alive.



Same site, February 2014: no natural regrowth, half-moons gone. Back to square one.



5 km away, 2013: the same NGO, the same works. Some gum trees alive, but grazed.

What shocked us

Not the failure itself, but repeating it a few kilometres away with no change of practice. Very many gum-tree plantations have 0 to 5% of trees alive after three years.

The expected result should not be a number of half-moons or seedlings, but a number of living trees three years later.

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Source: RECA, study of WFP-supported asset creation activities, part 1: observations on soil restoration works (field missions 2013, report of 12 March 2014)

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Wrong place, wrong model



Tiger bush

The bare strips are not wasted land: their runoff feeds the wooded bands. Digging there harms a working ecosystem.



Livestock corridor

Kirtachi: well-built banquettes, trees planted, on the daily path of the village herds. Grazed by November, bunds trampled.



“Cut-price” half-moons

Each operator copies its own model. Asked why: “we always did that one.” The budget decides the design.



Reinforced half-moons

Same technique, done properly: very good regrowth. The difference is in the choices, not the name of the work.

Project dossiers copy pages on climate and population, but rarely justify the site and the works. A field school needs a precise diagnosis; a restoration site should too.

Source: RECA, study of WFP-supported asset creation activities, part 1: observations on soil restoration works (field missions 2013, report of 12 March 2014)

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Trees: a fence is not enough



2011, no guard: trees and grass died in the first dry season.



2012, fenced with 3 rows of barbed wire: 10% alive, under 20 cm.



Gum tree planted July 2013: still 10 cm.



Acacia nilotica, same age, same site: three times taller.

Same result with or without fence

On hardened soils, seedlings die whatever the guarding. Soil, species and planting size matter as much as the guard.

Guarding must be realistic

Successful sites always had an “extraordinary” guard. One guard cannot watch day and night, 7 days a week.

Plant for 50%, not 100%

Aim at 50% survival in very good conditions and plant denser. PLCE double rows: 60% losses, yet a new woodland.

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Source: RECA, study of WFP-supported asset creation activities, part 1: observations on soil restoration works (field missions 2013, report of 12 March 2014)

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Wake the soil up before planting



Deep half-moons

They trap fine earth, organic matter and seeds. After 2 to 3 years, dense natural vegetation returns.



Mechanised subsoiling

Tines between banquettes (PLCE project): still visible from space after 7 years, very good tree growth.



Delayed effect

All gum trees died in year 1; 4 to 5 years later Guiera covers the bund. Build first, plant 1 to 2 years later.



Useful “less noble” plants

Trenches colonised by Leptadenia hastata: browsed by animals, leaves sold and eaten by women.

On hardened soils, a seedling in a small hole cannot survive. Forest zaï with manure, as Yacouba Sawadogo did in Burkina Faso, restarts soil life first.

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Source: RECA, study of WFP-supported asset creation activities, part 1: observations on soil restoration works (field missions 2013, report of 12 March 2014)

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Growing grass is easy, renewing it is hard

Managed: grass allowed to set seed



Half-moons seeded in 2012: seeds harvested and sold, more grass in 2013 than in 2012.



Trenches from 2007: grazed only after seeding. Cover stable in 2013, no Sida cordifolia.

Not managed: grazed during the rains



Banquettes from 2007, January 2014: grazed in the 2013 rains, few seeds. The grass cover may disappear.



Same type of trenches a few km away, unmanaged: no renewal from year 2, colonised by Sida cordifolia.

Most pastoral dossiers say nothing about grass management.

Annual grasses must finish their cycle and drop seed; otherwise there is no pasture the next year. The rule that works: no green grazing, let the grass seed, then harvest and sell the straw. It is a change in how grazing land is governed, not only a matter of guarding.

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Source: RECA, study of WFP-supported asset creation activities, part 1: observations on soil restoration works (field missions 2013, report of 12 March 2014)

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4 · LIMITS · RECA FIELD VISITS

Three sites, one lesson: the works alone are not enough

Youri, Tillabéri · 2018

Guelielh plateau: just over 350 ha developed in 2014–2016. On 100 ha of forest half-moons, about 10% of trees survive after two rainy seasons. The 12 ha fenced site, with a guard paid by the commune, produces straw that is sold; the 5 unfenced hectares next to it lost all their trees.

Tchinguewa, Sokorbé · 2025

Silvo-pastoral half-moons from 2013 are being repaired. Guiera senegalensis dominates; planted species have often disappeared. Communities were not consulted; with no land status or boundary markers, new fields are appearing on the restored plateau.

Grazing areas, Dosso · 2025

Four silvo-pastoral half-moon sites (2023–2024) invaded by Sida cordifolia, up to 80–90% cover in some areas. Late seeding, a 4-month grazing closure that was too short, herders absent from management committees.

What works: a local management agreement, a fence or a guard, and works chosen with all users, herders included.

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Sources: RECA information notes: Youri, May 2018; Tchinguewa (Sokorbé), July 2025; Dosso grazing areas, October 2025 (reca-niger.org)

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Tahoua 2025: no guard, no consultation, no trees



Founkoye, 2021

Banquettes at 21,000 FCFA each, built on sandy soil: almost gone. 10 trees planted per banquette, hardly 3 alive.



Nearly 100% loss

Bauhinia, Acacia nilotica, Piliostigma: not one plant found. The site was never guarded; goats pulled seedlings in year one.



Rouafi, 2021

Stone lines slowed the runoff, but herders open breaches. Trees planted with no water pit: 20 cm after 4 years.



Sakolé, 2020

Seedlings grown by an experienced women's group. No guard after planting: five years later, empty half-moons.

Works and species chosen by the partners, without the villagers. Guarding paid for 0 to 4 months, against 3 to 4 years on the sites that succeeded.

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Source: RECA, information note on plateau land recovery in Tahoua region (field visits June and August 2025)

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Part 5

When done well, they work extraordinarily

Despite all these limits, the same techniques have turned bare plateaus into pasture, income and woodland. Cases from Maradi, Tahoua and Tillabéri.

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5 · WHEN DONE WELL · OUMARAOUA, MARADI

Oumaraoua: 444 ha brought back by five villages



Before (2006): bare, crusted pasture.



The same site after 7 years.

444 ha

recovered with 29,809 person-days

90%

survival of 88,882 planted seedlings

1.5 M

FCFA a year from straw and seed

20

volunteer guards from 5 villages





Why it held

The commune owns the site; rules and fines were set in village assemblies; income is shared between the group, the 5 villages and the commune, through a bank account. President of the Republic’s prize, National Tree Day 2014.

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Source: PASADEM capitalisation note, community management of the Oumaraoua recovered site (IFAD: PPILDA 2006–2012, PASADEM from 2013)

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5 · WHEN DONE WELL · TOUDOU ADRAWA, TAHOUA

Toudou Adrawa: 1,500 ha of bare plateau turned green



November 2000, before the works.



November 2023, after works from 2014 to 2020.



Trees and grass on the 2020 site. Game has come back.



Site treated in 2020: September 2007.



The same site, February 2024.

Stone lines slow the water, half-moons and trenches hold it. Closed for 4 years, 2 guards paid from wage deductions and straw sales.

Source: RECA, information note on plateau land recovery in Tahoua region (field visits June and August 2025)

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5 · WHEN DONE WELL · TAHOUA PLATEAUS

Kadjigui, Fadara, Sabra: plateaus that now pay their way



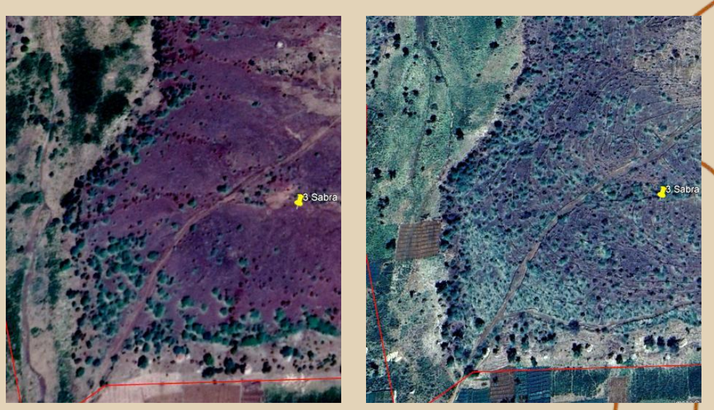
Kadjigui, 150 ha (2020–2023)

At least 1,000 sacks of grass seed a year at 1,000 FCFA, plus 150,000 FCFA of straw. Fines: 100 FCFA per goat, 500 per cow. The committee became a cooperative and its account also helps the health centre.



Fadara, over 100 ha (2019–2021)

Before (left): bare land, no grass. August 2025 (right): a dense grass cover. Straw rule: the gatherer keeps two bundles, the committee one. The committee replanted gaps with its own seedlings.



Sabra, since 2014

Satellite, December 2013 and February 2025: the plateau has greened. Every part treated with stone lines, half-moons or trenches carries vegetation after 5 years.

Source: RECA, information note on plateau land recovery in Tahoua region (field visits June and August 2025)

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5 · WHEN DONE WELL · YOURI PLATEAU, TILLABÉRI

The fence and the guard make the difference



12 ha fenced with 4 rows of barbed wire (2015): grass cut and shared every year.



5 ha next door, no fence: after 3 years, not one trace of vegetation.



Hassane Marou, the site guard, paid by the commune of Youri.

A fence costs less than failure

Without it the works are cheaper, but add nothing. It stops cattle, not goats: trees only 15% alive, 40 cm at most.

The guard is the key person

On the sites we visited, success comes mostly from the guard and how he sees his role. At harvest, the site becomes a small straw market.

Tahoua confirms it

Sites closed 3 to 4 years with 2 to 3 paid guards are green. Sites guarded 0 to 4 months failed.

Source: RECA and CRA Tillabéri, land recovery on the Guelielh plateau, Youri (working note, 10 May 2018)

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5 · WHEN DONE WELL · GRASS FIRST

Andropogon gayanus: a perennial grass worth planting



Youri: Andropogon planted in zaï pits, near the market.



Dry season: tufts ready for fodder, thatch and seed.



Sabra, August 2025: a plot closed to grazing for grass seed production.

Why it matters

A palatable perennial grass of the Sahel, sown on half-moons, trenches and dunes. At Youri, zaï pits gave a very large fodder and straw harvest: a cheap option to test.

What it needs

At Sabra it fades after 5 years with no management plan. Seed sales stall. It needs cutting rules, reseeding and a local seed bank.

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Source: RECA and CRA Tillabéri, land recovery on the Guelielh plateau, Youri (working note, 10 May 2018); RECA, information note on plateau land recovery in Tahoua region (field visits June and August 2025)

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CONCLUSION · TWELVE YEARS OF RECA FIELD NOTES

2013, 2018, 2025: the same lessons

2013

RECA study of WFP-supported sites

In the plateau zone along the Niger river, at least half of “restored” sites show very weak results. Huge experience, little capitalisation, no sharing of successes and failures.

2018

Youri, Tillabéri

About 10% of planted trees alive after two seasons. Only the fenced site, with a guard paid by the commune, produces straw.

2025

Tchinguewa and Dosso

Communities not consulted, no land status, no management plan. Grazing areas invaded by Sida cordifolia.

We know what fails. What is missing is a system that learns: one that measures results years later, shares failures as well as successes, and changes practice.

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Sources: RECA study of WFP-supported sites, March 2014; RECA information notes: Youri, May 2018; Tchinguewa, July 2025; Dosso grazing areas, October 2025

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OVERALL CONCLUSIONS

Q&A ADDITIONAL THOUGHTS

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FOR OUR SOIL LITERACY CHALLENGE

What could travel, and what we ask for

1. Start from what farmers already do and observe: sabara mounds, Pergularia, manure contracts, women’s gardens.
2. Fund the flows, not only the works: carts, animals and compost, so that organic matter reaches the field every year.
3. Secure access to land and a local management agreement before digging, especially for women, young people and herders.
4. Measure with farmers: living trees and grass three years later, simple soil tests, shared records of successes and of failures.
5. Put knowledge in local languages, field schools and radio, not only in reports.

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CONCLUSION · FOR THE POLICY SESSION OF 3 DECEMBER

What we ask of funders and policymakers

1. **Pay for results, not for works:** living trees and renewed pasture three years later, measured with the users.
2. **A real site dossier:** diagnosis with all users, herders included; choices validated and signed by a forester or soil specialist.
3. **Fund the after-project:** a guarding fund set aside from the works budget, grazing and seed rules, a local agreement and a clear land status.
4. **Share failures openly:** a public library of case studies, successes and failures, in local languages, for NGOs, farmer organisations and communes.
5. **Research with farmers:** forest zaï, trees suited to each soil, native plants such as Leptadenia, and a simple guide: which works, which trees, for which soil.

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🌍 Final Reflections

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LET'S DISCUSS

Questions for the breakout rooms

? In your territory, which local practice is ignored by research or extension services?

? What stops farmers from getting enough organic matter: land, labour, animals or transport?

? Which of these practices could work on Mediterranean dryland soils, and what would have to change?

Free documents (mostly in French): **reca-niger.org**

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