

FACT SHEETS BASED ON 28 SLM DEMONSTRATIONS

IN ACHOLI SUB-REGION INCLUDING ADJUMANI,
NORTHERN UGANDA



EXECUTIVE SUMMARY

A total of 28 Sustainable Land Management (SLM) demonstrations were established as part of the International Fund for Agricultural Development (IFAD) funded project entitled 'Scaling-up SLM practices by smallholder farmers: working with agricultural extension services to identify, assess and disseminate SLM practices across 9 districts - Lamwo, Adjumani, Amuru, Gulu, Nwoya, Agago, Kitgum, Pader and Omoro in Northern Uganda. The demonstrations were based on some of the successful and documented practices in the Global WOCAT SLM database primarily recommended by the UNCCD (see <https://www.wocat.net/library/media/222/UGACAT> <http://www.ugacat.ug/>; <https://qcat.woca.net>). Practices were documented under a partnership between the World Overview of Conservation Approaches and Technologies (WOCAT) and Uganda Landcare Network (ULN) in collaboration with the Government of Uganda (GOU) IFAD supported Project for the Restoration of Livelihoods in Northern Uganda (PRELNOR). A cross section of stakeholders were involved in assessing the demonstrations under farmer to farmer learning visits. The following statements reveal some of the views on lessons learnt and interest built.

"For our group, we planted trees and beans and the trees (*Grevillea*, *Calliandra* and *Sesbania*) are doing well compared to the beans. We plan to try again in the next season and see how trees do with crops during a drought season" **Tabu Richard, Gulu**

"Wow! next season I will grow water melon as cover and cash crop in my garden. How can I get good seed?" **Angee Irene, Gulu**

"We have planted tree species of *Grillicedea* and *Sesbania*. These trees improve soil fertility through litter, provide humus to the soil, attract rainfall, good for firewood and can be used as animal feeds and don't compete with crops" **Mrs Abwoono Hellen, Gulu**

"Coffee farming in Northern Uganda failed because of politicians who came to distribute seedlings without sensitisation and this made some people not to take up coffee. It should be the role of researchers, extension with expert farmers, private sector to distribute seedlings and then policy makers provide an environment where ripe coffee is not stolen from gardens" **Ongai Andrew, Nwoya**

"I now confirm this project is complementing governments work and we are happy with you. Please we extend our Sub-county appreciation for your support and involving women in this project" **Angee Agnes; LC 3 Women Councillor Kitgum**

"I have learnt about the advantages of mulching beans and conservation farming towards increasing soil fertility, keeping moisture in the soil and controlling and management of weeds" **Christine Orach Pader**

"As a group, we are happy because of the trees, they are growing very fast and are doing well. We request that if there are more seedlings we are given more so that we plant more to enjoy the benefits of growing trees with crops. These trees are only 2-3 months old". **Olwoch B James, Agago**

"I have learnt that our group should not rely on fish farming alone but also apiary, agoroforestry and zero grazing because if all the fish die or group will have no income". **Alex Okecon; the Chairman of the fish farming group**

"I now know the recommended plant spacing of banana (3 x 3 m) and pit dug at a depth of 60 cm x 60 cm" **Oryem Bosco, Pader**

PROCESS OF ESTABLISHING SLM DEMONSTRATIONS

Table 1: Steps taken in establishing SLM demonstrations with host farmers

Step 1	Planning workshop of ULN technical staff and field team in Kampala and project site
Step 2	Selection of initial Phase 1 technologies to be implemented with 12 host farmers
Step 3	Identification, selection of host farmers and site selection involving a cross section of stakeholders
Step 4	Technology establishment with host farmers on selected demonstration sites
Step 5	Review of the technologies for demonstration following meeting with IFAD mission
Step 6	Mobilization and selection of 16 host farmers
Step 7	Selection of 13 technologies for demonstration per district aligned with PRELNOR priority crops
Step 8	Selection of 3 host farmer groups in 9 districts supported by PRELNOR
Step 9	Develop budgets, monitoring frameworks and schedules for demo establishment
Step 10	Support host farmers for clearing land, first and second ploughing, planting and purchase of inputs
Step 11	Procurement of inputs seed and seedlings by host farmers and technical team
Step 12	Establishment of demonstrations with PRELNOR recruited extension, district technical team
Step 13	Planning and facilitating exchange visits with PRELNOR extension, district technical team
Step 14	Developing Monitoring and Evaluation (M&E) tools
Step 15	Farmer learning exchange visit with simultaneous M&E

Table 2: Farmer-to-farmer exchange visits around SLM demonstrations

Date	Technology of the group that was visited	District Visited	Technology of the Group that visited	District of the group that visited	Participation by Gender (Visiting group)				Participation by gender (Host group).			
					M	F	GPM	NGPM	M	F	GPM	NGPM
16/9/2019	Water Melon + Mulching	Gulu	Beans +Maize	Amuru	8	23	18	13	6	5	8	3
7/9/2019	Apiary	Moor	Beans +Agroforestry	Amuru	18	10	20	8	5	3	4	4
8/9/2019	Ground water fed fish ponds Aquaculture	Amuru	Tomato hybrid+ Mulching	Omoro	15	15	23	7	5	5	8	2
10/9/2019	AF Fruit trees + Maize	Kitgum	Compost +Maize	Kitgum	12	10	16	6	12	7	15	4
12/10/2019	Apiary	Omoro	Aquaculture	Amuru	16	10	14	12	3	6	5	4
14/10/2019	Mulched Coffee+ Banana + AF	Nwoya	Compost +Beans	Nwoya	19	11	22	8	5	4	9	0
15/10/2019	Compost +Banana +AF	Adjumani	Apiary	Adjumani	18	8	17	9	10	5	8	7
16/10/2019	CA + Mulching+Beans	Pader	Soya bean + Agroforestry	Pader	15	12	18	9	5	8	7	6
17/10/2019	Soya bean + AF	Pader	Beans and Cassava	Pader	15	10	17	8	3	5	6	2
18/10/2019	AF + Beans	Agago	Maize +Beans	Agago	19	10	22	7	3	1	4	0
31/10/2019	Apiary	Lamwo	soya bean	Lamwo	21	9	19	11	8	3	7	4
1/11/2019	Intercropping (Cassava and Soya Beans)	Lamwo	Cover crop- (Water Melon)	Lamwo	8	6	10	4	3	2	3	2
GRAND 440				Total	184	134	216	102	68	54	84	38
					318		318		122		122	

Table 3: RADIO and TV PROGRAM to popularize the SLM demonstrations:

Location	Radio/ TV Station	Schedule 1	Schedule 2
Gulu	102 MEGA FM	12/12/2019	15/01/2020
Kitgum	MIGHTY FIRE 915 FM	17/12/2019	16/01/2020
Adjumani	RADIO AMANI LIMITED	20/12/2019.	17/01/2020
Kampala	NTV	27/12/2019	12/01/2020

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LIST OF ACRONYMS

As	Approaches
CDE	Centre for Development and Environment
CSA	Climate Smart Agriculture
GoU	Government of Uganda
IFAD	International Fund for Agricultural Development
GPM	Group Members
KTB	Kenya Top Bar
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MoLG	Ministry of Local Government
MoU	Memorandum of Understanding
NARO	National Agricultural Research Organization
NEG	National Expert Group
NEMA	National Environment Management Authority
NGPM	Non Group Members
PRELNOR	Project for the Restoration of Livelihoods in the Northern Region
SDG	Sustainable Development Goals
SF	Soil Fertility
SLM	Sustainable Land Management
SWC	Soil and Water Conservation
ToT	Training of Trainers
Ts	Technologies
UFAAS	Uganda Forum for Agricultural Advisory Services
ULN	Uganda Land Landcare Network
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
WOCAT	World Overview of Conservation Approaches and Technologies

ACKNOWLEDGEMENT

Uganda Landcare Network (ULN) working closely with WOCAT team acknowledge a range of partners, institutions and individuals for their active participation in the establishment of 28 SLM demonstration in Northern Uganda. This team include: Local government authorities of the nine districts (Lamwo, Adjumani, Amuru, Gulu, Nwoya, Agago, Kitgum, Pader and Omoro), Directorate of Extension under Ministry of Agriculture Animal Industry and Fisheries (MAAIF), National Agricultural Research Organisation (NARO) staff at Kawanda and Ngetta, Project for Restoration of Livelihoods in Northern Uganda (PRELNOR) - PMU Staff and extension. This project could not be realised without the support of the International Fund for Agriculture Development (IFAD) and the enabling policy environment created by Government of Uganda. Host farmers and visiting groups are all appreciated.

A big thank you to ULN field team and SLM National Experts Group (NEG).



Back row left to right: Prof. Moses Tenywa (chair); Mr. Stephen Muwaya (UNCCD) Focal point), Mr. Mathias Wakulira (ULN Secretary), Dr. Drake Mubiru (NARO Scientist), Mr. Rick Kamugisha (ULN Knowledge Management Specialist), Mr. Sunday Mutabaazi (Commissioner Emeritus -Policy Analyst). Front row left to right: Dr. Grace Nangendo (GIS Specialist), Dr. Joy MB Tukahirwa (ULN Team Leader)

Front row left to right: Dr. Grace Nangendo GIS Specialist; Dr. Joy MB Tukahirwa (ULN Team Leader)

Demonstration Site 1: Compost Manure for Maize in Kitgum District

Host farmer 's contacts:

Mr. and Mrs. Oringa Daniel Banya | +256 777362250

Extension worker responsible:

Mr. Akera Samuel | +256 781 600 137

ULN staff responsible:

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Miss Betty Adoch | email - betteadochf@gmail.com | +256 782 723 345

Compost manure for Maize cropping system is an attractive SLM technology to both male and female and is recommended for soil fertility enhancement through improvement of soil organic matter and nutrients that ultimately improve soil health and productivity.

About **30 bags of 100kg** each are heaped and buried in pits of **5x3x1.5m**. Heaps are layered in order of: plant waste-animal waste-loam soil-grass-manure-soil and covered with polythene and allowed to decompose. When ready, this supplies an acre of land planted with Maize at a spacing at **50 x 20 cm**.

Establishment and maintenance Costs in UGX include:

UGX 350,000 – Purchase, transportation, preparation and application of Manure

UGX 100,000 – Equipment (spades, hoes, wheel barrow and polythene)

UGX 125,000 – Purchase of 25 kgs of maize seed

UGX 80,000 – Weeding

At harvest, an acre of maize planted with compost yields up to **12 bags of 100 kgs** per season. With **UGX. 1000 per kg**, this translates into **UGX. 1,200,000** compared to **3 bags** harvested from a maize garden planted with no compost realizing **UGX. 300,000**.

Use of compost is labor-intensive and the variability of manure quality depends on the source of materials. To replicate, one needs high quality compost and regularly monitoring of the garden to protect crop from being affected by vermin.

What is innovative about the technology 'Compost and Maize?'

Potential for increased yields and income with reduced costs. Convenient for both male and female farmers with men actively engaging in carrying compost materials and composting process

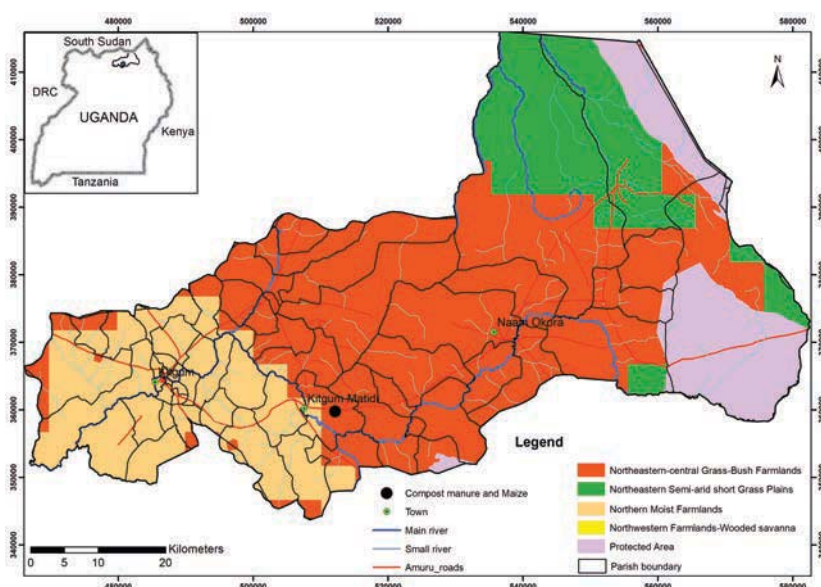


Demonstration Site 1:

that increase social capital among small scale farmers.

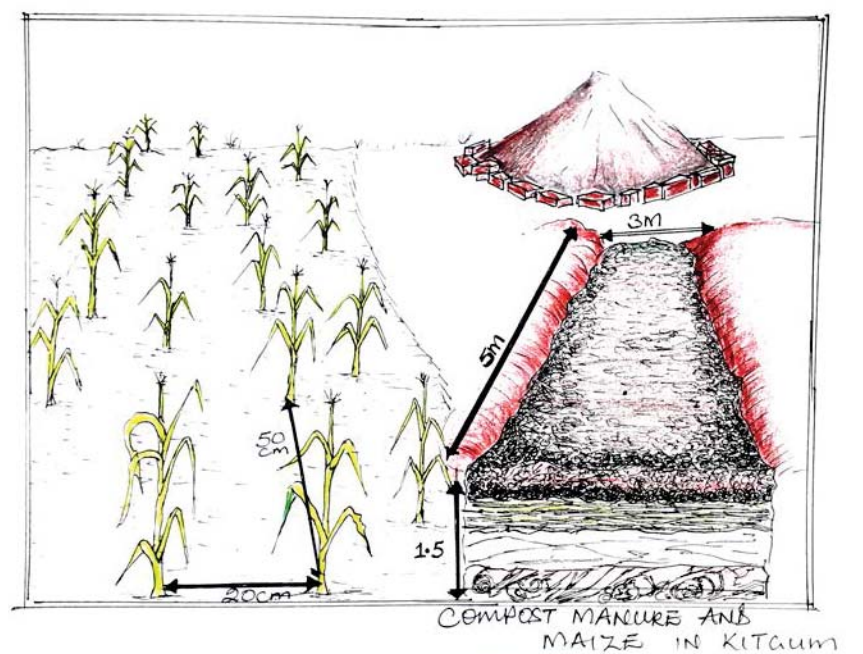
How can you visit the demonstration site?

Site is located in Lagampii Village, Pawidi Parish, Lagoro Sub-county, 2 meters off Kitgum – Lagoro Sub-county murram road. To visit contact, the Host farmer, Extension worker or ULN staff for arrangements.



MAP showing location of demo site in the District

Technical drawing



Compost Manure and Maize in Kitgum

Demonstration Site 2: Agroforestry, Grevillea and Citrus Washington Navel in Kitgum District

Host farmer 's contacts:

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Extension worker responsible:

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ULN staff responsible:

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The agroforestry demonstration site comprises of Gliricidia, Grevillea and Citrus (Washington navel) tree species established on an acre of land to provide a practical experience and a knowledge sharing centre for both male and female farmer group members.

Different tree species are planted in rows, one species after the other at the spacing of **3x3m** except for citrus (Washington navel) seedlings which are spaced at **5x5m**. A total of **80** citrus (Washington navel) tree seedlings were planted with maize at a spacing of **50x 25 cm**. This technology aims at improving soil fertility, improving income from the sale of orange fruits after maturity, provision of fodder for the livestock, provision of fuel woods and wooden poles/ timbers from other tree species as well as conserving the environment.

The total cost of establishing and maintaining the demonstration is approximately **UGX. 1,780,000**; Labour - **UGX. 400,000**, tree seedlings - **UGX. 700,000**, equipment (hoes, panga, ropes) – **UGX. 180,000**, Transport – **UGX. 200,000**, sticker and sign post – **UGX. 300,000**.

After five years, the citrus shall have reached maturity and the fruits are expected to be harvested every season. Therefore, from **80** citrus trees, about **2 tons (2,000kg)** of citrus fruits can be harvested every season, with **UGX. 1,000 per kg**, a total revenue of **UGX. 2,000,000** per year can be realized.

What is innovative about the technology?

An agroforestry system that integrates Gliricidia sepium, Grevillea robusta and Citrus - Washington navel capitalizes on the design with potential to yield higher harvests, promote ecosystems and nutrient restoration after decomposition of the agroforestry trees litter. As a natural based enterprise where trees are integrated at a proper spacing, there is a potential to increase maize and citrus production.



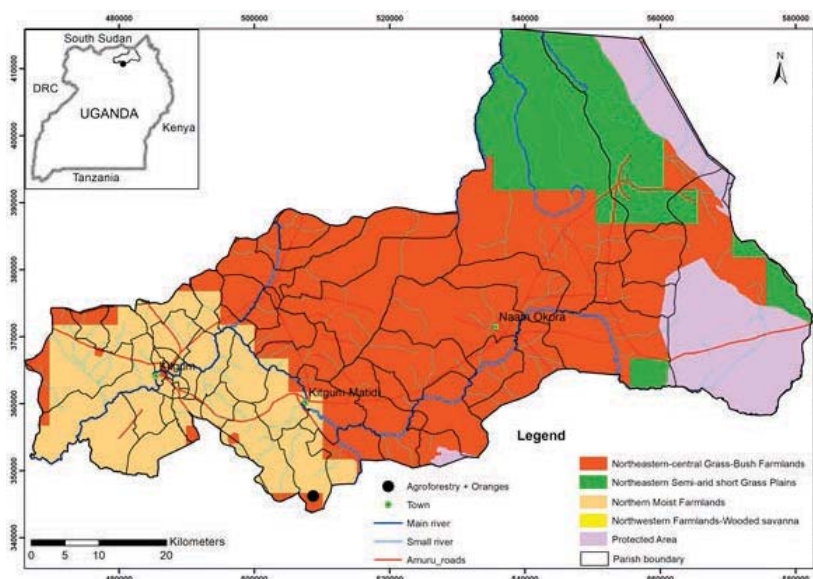
Demonstration Site 2:

How can you visit the demonstration site?

The demonstration site is located in Balakwa village, Lagoro Parish, Lakwor Sub-county, approximately 0.01km off Kitgum – Matidi Balakwa village murram road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.

Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2817/



MAP showing location of demo site in the District

Technical drawing



Agroforestry Grevillea and Citrus in Kitgum District

Demonstration Site 3: Intercropping Cassava and Beans in Kitgum District

Host farmer 's contacts:

Mr. and Mrs. Obol Daniel Odera | +256 777 362 250

Extension worker responsible:

Mr. Okello William | +256 772 695 417

ULN staff responsible:

Mr. Ocan Bosco | email - ocanbosca@yahoo.com | +256 782 595 646



What can you learn on this demonstration site?

Intercropping of cassava and beans is appreciated by farmers of all categories as an innovative SLM technology. Usually, an acre is planted with **20 kgs** of beans (NABE 15 variety) at a spacing of **50X10 cm** and **6** bags of cassava cuttings (NAROCASS 1 variety) spaced at **100X100 cm**

Cost implications (UGX)

UGX 1,200,000 – Establishment and maintenance

UGX 400,000 – Labour

UGX 500,000 – Purchase of inputs including sign post

UGX 180,000 – Purchase of cassava cuttings

UGX 120,000 – Purchase of bean seeds

The average yield per season is **20 tons** of cassava tubers which generates **UGX 8,000,000** at a price of **UGX 400,000 per ton**. For beans, **400 kgs** are obtained per season which translates into **UGX 800,000** with each **kg** of bean sold at **UGX 2,000**.

In comparison therefore, the total costs of establishment of an intercrop of cassava and beans is lower compared to when beans and cassava are planted in different gardens. The demonstration is mostly affected by changes in weather and incidences of pests and diseases which require attention of the farmer through support from extension workers.



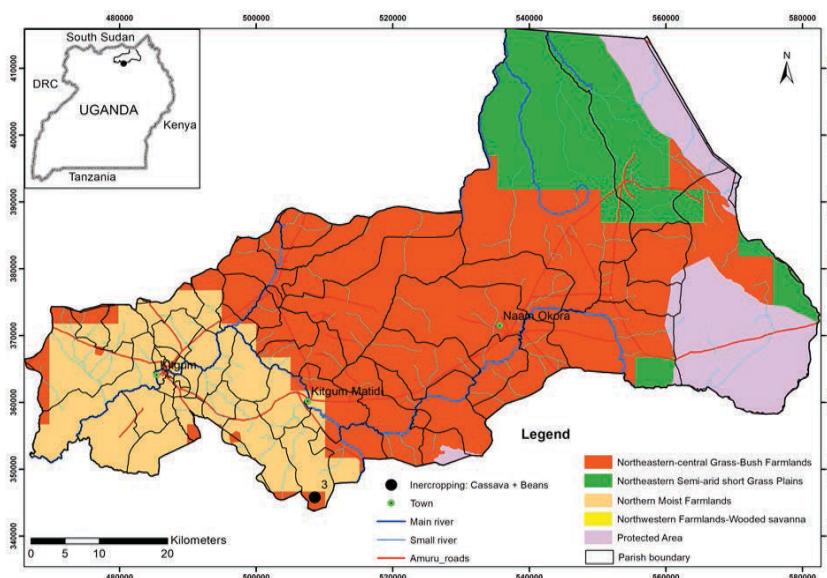
What is innovative about the technology 'intercropping Cassava and Beans'?

The main crop usually has the recommended seed rate of mono crop while the minor crop is planted depending on its relative importance and effect on the main crop with the synergy between nitrogen fixing beans contributing to increased yield of cassava

Demonstration Site 3:

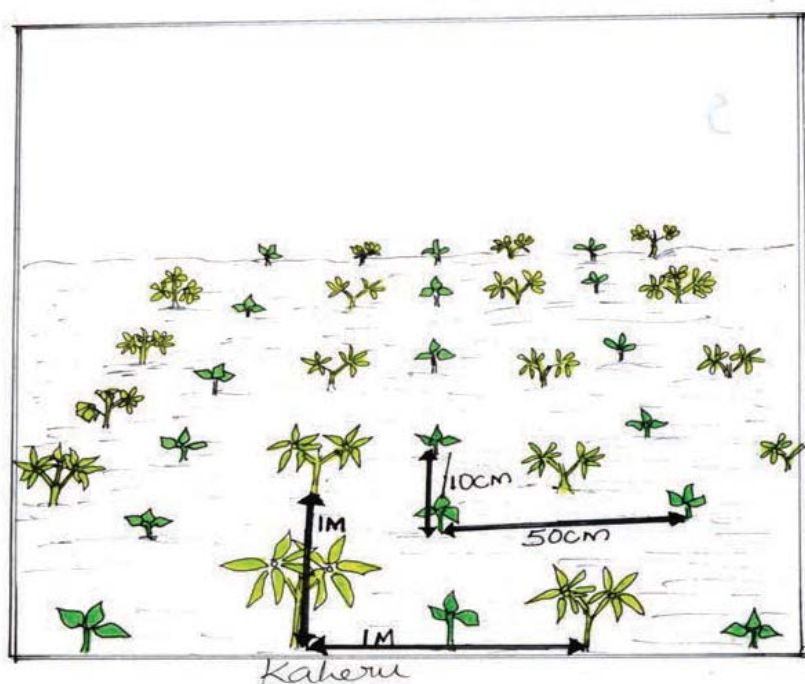
How can you visit the demonstration site?

The site is located in Baraka village, Lakwor parish in Lagoro sub county approximately **8-10km** off Kitgum–Matidi murram road. To visit, contact the Host farmer, Extension worker or ULN staff for arrangements.



MAP showing location of demo site in the District

Technical drawing



Intercropping Cassava and Beans in Kitgum

Demonstration Site 4: Water Melon as a Cover Crop in Lamwo District

Host farmer 's contacts:

Mr. and Mrs. Ojok Denis | +256 779 634 597

Extension worker responsible:

Mr. Akeru Samuel | +256 781 600 137

ULN staff responsible:

Mr. Ocan Bosco | email - ocanbosca@yahoo.com | +256 782 595 646



What can you learn on this demonstration site?

Water melon as a cover crop is appreciated by both men and women and the crop has a short gestation period of about 3 months. Its leaf structure and ability to grow over a wide ground surface potentially enables retention of soil moisture, reduces weeds growth and increases production. On an acre of land, **500 gms** of water melon seed are planted at a spacing of **2 meters**; with **2 seeds** per hole dug at a **30x20x10cm** in length, width and depth respectively. About **125g** of DAP fertilizer applied per hole to accelerate growth.

The total cost of establishing and maintaining the demonstration site is relatively low **UGX 1,850,000** thus easily replicable across small-scale farmers. The individual costs include; labour – **UGX. 950,000**, Water melon (Sukari F1 variety) seeds – **UGX. 600,000** and **100 kg** of fertilizer (DAP) – **UGX. 300,000**. The main challenge affecting the demonstration is lack of access to quality water melon (Sukari F1 variety) seeds. The challenge is minimized by purchasing the quality seeds for the first planting, then use the seeds from the fully mature harvested water melon for the subsequent seasons.

Due to fungal diseases and water melon flies, the crop requires aggressive pest and disease control measures. Seeking advice from the extension worker is highly advisable.

On average, a good harvest from an acre of land yields **4,000** fruits each weighing **4 to 6kgs** sold at **UGX. 3000** translating into **UGX. 12,000,000** per season.

What is innovative about the technology 'Water melon as a cover crop demonstration?

Water melon as a cover crop helps in suppressing excessive weed growth, controls excessive runoff and soil erosion, conserves soil moisture, fixes nitrogen in the soil, regulates soil temperature and improve soil fertility when the leaves litter and decompose



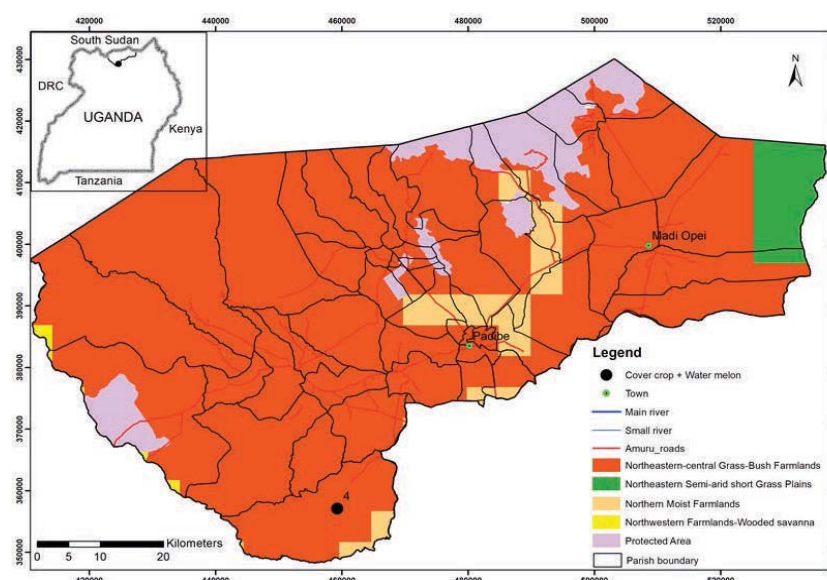
Demonstration Site 4:

How can you visit the demonstration site?

The demonstration site is located in Agwata Village, Cubu Parish, Palabek-gem Sub-county, approximately **0.5km** off Lamwo- Padibe Agwata village marram road. To arrange a visit, call the host farmer, Extension worker or ULN staff.

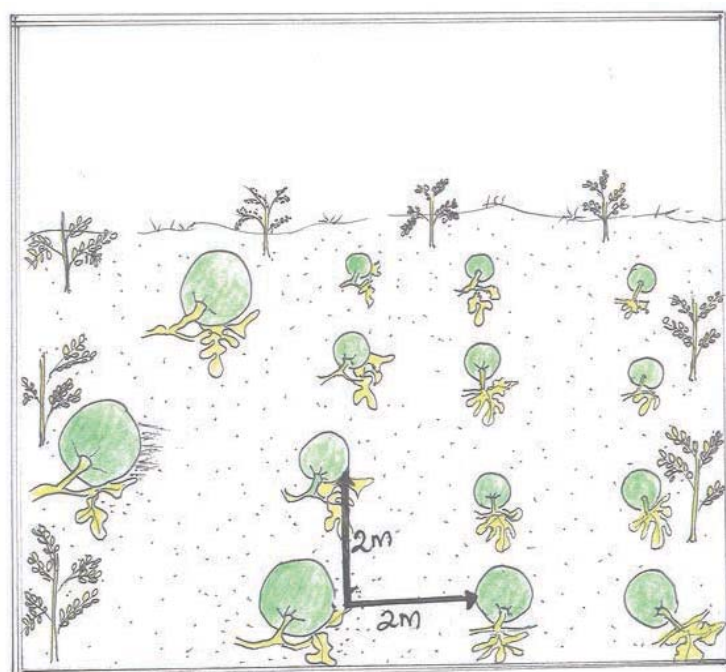
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2822/

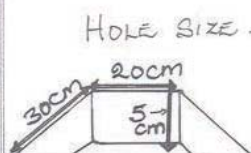


MAP showing location of demo site in the District

Technical drawing



**Water Melon as a Cover Crop
Planted in lines in Lamwo**



Demonstration Site 5: Apiary in Lamwo District

Host farmer 's contacts:

Mr and Mrs Abonga Samuel | +256-782613056.

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What can you learn on this demonstration site?

Apiary using Kenya Top Bar (KTB) hives acts as a crowd pulling learning center for communities comprised of youth, male and female farmers. On average, **25 hives** spaced at **3m x 3m** are cited on one acre of land integrated among trees for purposes of harnessing the environment towards increasing household income on perennial basis.

Compared to local bee hives, the costs of establishment are higher due to use of non local materials such as iron sheets and expensively built bee hives costing **UGX 120,000** per bee hive. Betting using wax is normally applied on the hives to increase faster colonization that enables the farmer to harvest **12-14 kg** from each bee hive when it's a good season, considering 1 Kg of honey cost of **UGX 10,000**, total income from apiary using improved hives translate to **UGX 6,000,000 – UGX 7,000,000** annually.

What is innovative about the demonstration 'Apiary?

Improved hives capitalize on the hive design with potential to yield bigger harvests. As a natural based enterprise, natural ecosystems where hives are cited are least disturbed hence promoting restored ecosystems and reversed deforestation. The enterprise has potential to generate steady income annually. Both male and female farmers participate complementing each other's roles towards maximizing benefits. Women specifically are prominently involved in citing hives, betting using wax, monitoring activities while male farmers are most involved in harvesting, carrying bee hives and marketing honey



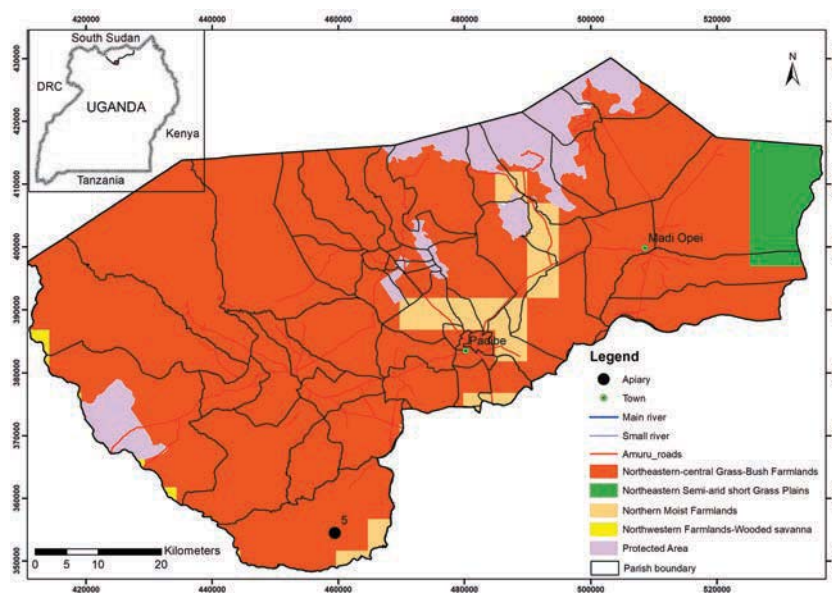
Demonstration Site 5:

How can you visit the demonstration site?

Apiary demonstration is located in Agwata Village, Cubu Parish in Palabek-Gem Sub County and approximately 10 km off Kitgum-Lamwo murram road.

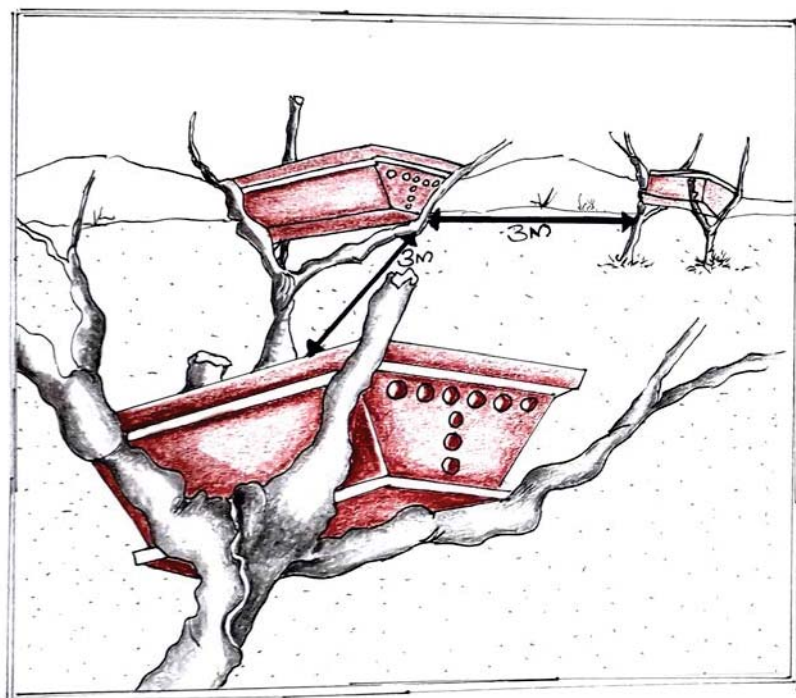
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2327/



MAP showing location of demo site in the District

Technical drawing



Apiary in Lamwo District

Demonstration Site 6: Intercropping Cassava and soya Bean in Lamwo District

Host farmer 's contacts:

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Extension worker responsible:

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ULN staff responsible:

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What can you learn on this demonstration site?

The demonstration site of Intercropping Cassava with Soya Bean is appreciated by both male and female as an information and knowledge sharing centre. On average, an acre of land is planted with **20Kg** of soya bean (MAKSOY 3N variety) at a spacing of **50x10 cm** and **6** bags of cassava cuttings (NAROCASS 1 variety) spaced at 1m. The demonstration may be affected by changes in weather, incidences of pests and diseases which require close supervision by the farmer, following proper agronomic practices and seeking advice from the extension worker.

The total estimated cost for establishing and maintaining an acre of the demonstration plot is **UGX. 1,150,000**. Individual costs include; labour – **UGX. 400,000**, Inputs (hand hoes, panga, ropes, pesticides, fungicides) – **UGX. 150,000**, cassava cuttings/planting materials – **UGX. 180,000**, soybean seeds – **UGX. 120,000** and sign post – **UGX. 300,000**. This cost is comparatively lower than where soybeans and cassava are planted in independent garden - **UGX. 1,800,000**.

This establishment can yield up to about 15 tons of cassava tubers and **600kg** of soybeans with each ton of cassava sold at **UGX 400,000** and Soya beans sold at **UGX 1,500 per Kg** translating into **UGX 6, 900,000** as total incomes.



What is innovative about the technology - 'intercropping Cassava and soya Beans'?

The main crop (cassava) is planted with Soya bean (nitrogen fixing crop) to increase the yield of Cassava.

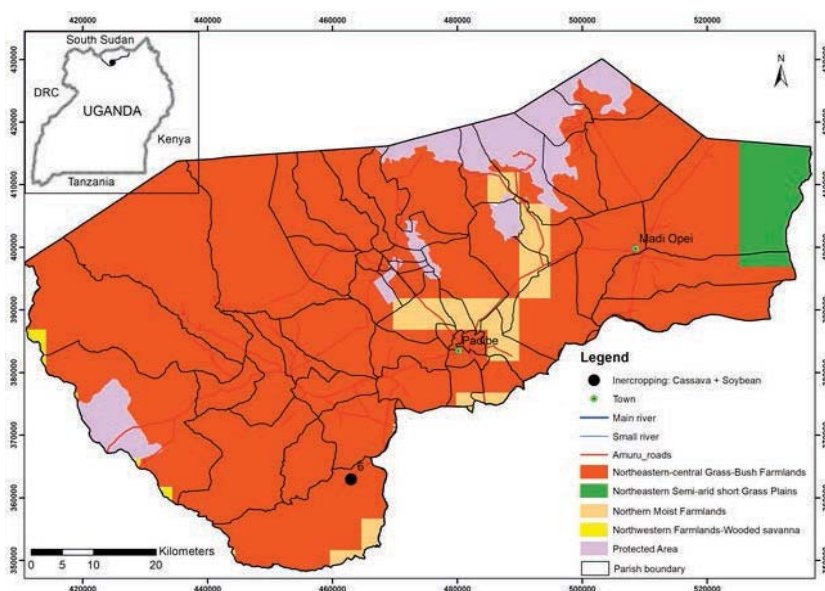
Demonstration Site 6:

How can you visit the demonstration site?

The demonstration site is located along community access road in Pawena Village, Gem Parish, Palabek-gem Sub county, Lamwo District. To arrange a visit, call the host farmer, Extension worker or ULN staff.

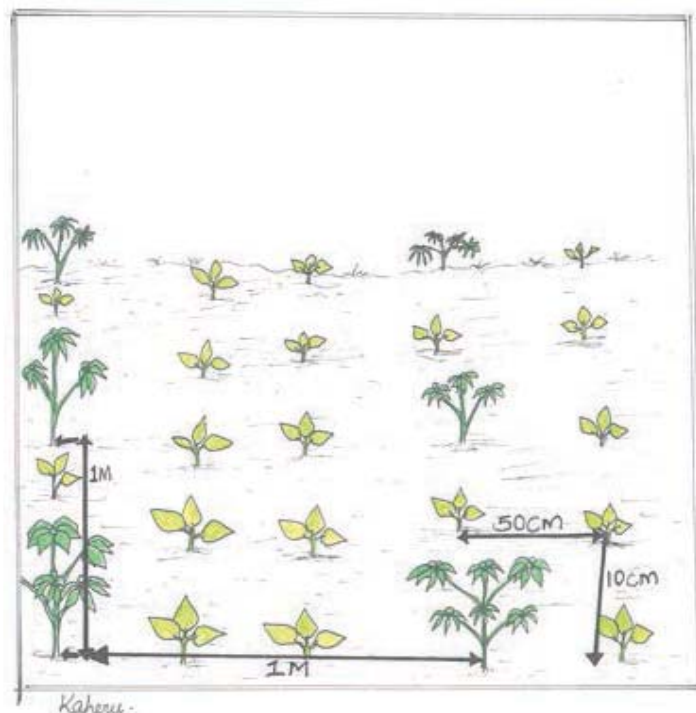
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2815/



MAP showing location of demo site in the District

Technical drawing



Intercropping Cassava + Soybeans in Lamwo

Demonstration Site 7: Conservation Basins and Beans in Nwoya District

Host farmer 's contacts:

Mr. and Mrs. Banya Martin and Mrs Acan Grace |
+256 791 095 975

Extension worker responsible:

Mr. Wokrachi Samuel | +256 773 542 764

ULN staff responsible:

Mr. Ocan Bosco | email -
odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Conservation basins are permanent planting basins used for three consecutive planting season without digging fresh ones.

Plant residues are slashed and left in the garden during construction and basins are excavated at **30X20X15 cm** in length, width and depth respectively. About 30kg of beans are planted per acre at a spacing of **75X25cm** between basins with **4-8 seeds** per hole. Half a bag (**25kg**) of DAP is applied per acre and thoroughly mixed with soil before covering the beans.

Cost implications (UGX)

Approximately **UGX 493,000** is required per planting season for expenses such as: Labour - **UGX 235,000**, Chemicals **UGX 70,000**, bean seeds **UGX 150,000**, ropes **UGX 18,000**, and measuring tape **UGX 20,000**.

Preferably, first weeding should be done **2 weeks** after planting and second after flowering. Protection from pests and diseases is essential to good product yield. Seek constant technical advice from the extension worker.

For a season, the demonstration can yield about **12 bags of 100 kgs** each which translates into **UGX. 1,440,000** at a price of **UGX. 1200 per kg**.

What is innovative about the technology - 'intercropping Cassava and soya Beans'?

Conservation basins planted with beans is particularly important for practical growth such germination, flowering and fruit set. The basins conserve water, reduce surface runoff and support extended crop growth. After harvesting, crop residues are put back into the basin to decompose and this can be done for three consecutive planting seasons.



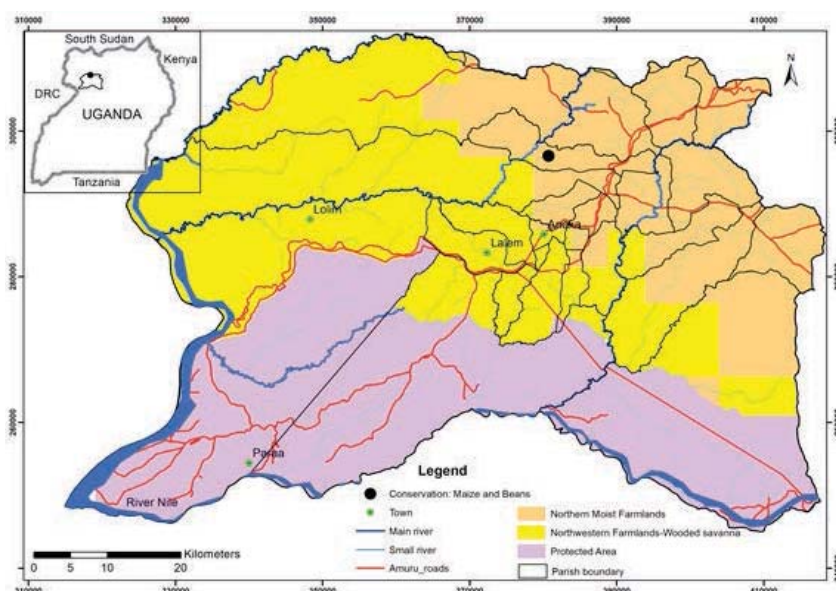
Demonstration Site 7:

How can you visit the demonstration site?

It is located in Ominyo Nyima Sub-county, Omiya Parish, Bwobonam B village about 0.5 km off Bwobonam B village murram road. To visit contact, the host farmer, extension worker or ULN staff for arrangements.

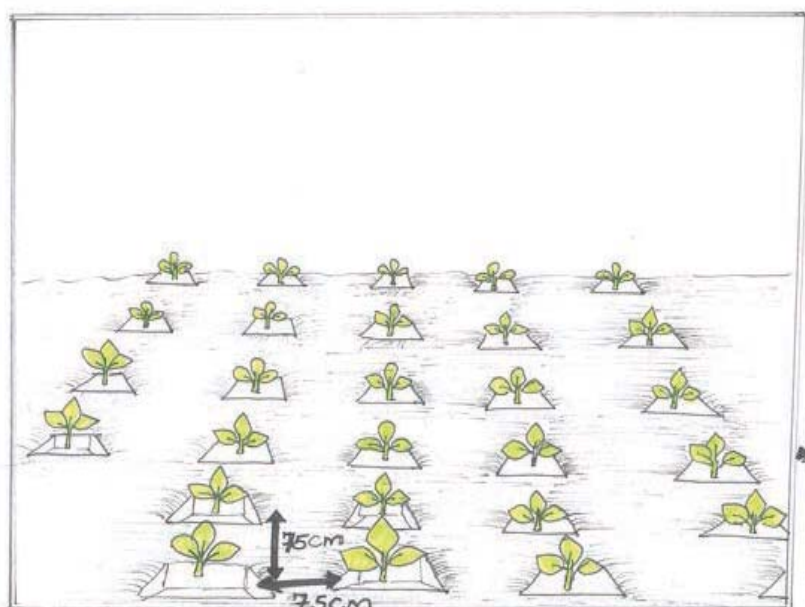
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_3307/



MAP showing location of demo site in the District

Technical drawing



Conservation Basins Maize in Nwoya

Demonstration Site 8: Compost manure and Beans in Nwoya District

Host farmer's contacts:

Mr. William Ongaba and Acan Betty |

+256 791 095 975

Extension worker responsible:

Mr. Wokrachi Samuel | + 256 773 542 764

ULN staff responsible:

Mr. Sunday Amalla Bale | email -

sundayamale@gmail.com | +256 776 351 768



What can you learn on this demonstration site?

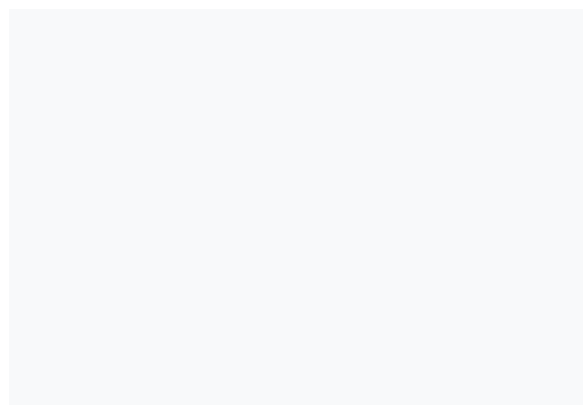
The demonstration of compost manure and beans is one of the integrated pests, diseases and soil fertility management system that cheaply avails organic matter for enhanced productivity while acting as a center for information and knowledge sharing. This demonstration is recommended for soil fertility enhancement since it has a high potential for rebuilding soil organic matter and nutrients that improve soil health and productivity.

At its establishment, about **30 bags** of plant and animal waste, and loam soil each weighing **100kg** are heaped and buried in a pit (**5m x 3m x 1.5m**) covered with a polythene paper and allowed to decompose. The compost manure is there after applied on one acre of land planted with beans in rows at a spacing of **50x20 cm**. The costs of establishment and maintenance include; labour – **UGX 350,000**, equipment (spades, hoes, wheel barrow and polythene paper) – **UGX 100,000**, beans seeds (**25-30 kgs**) – **UGX 125,000**, sign post – **UGX 70,000** and weeding - **UGX 80,000**. The use of compost manure is labour intensive and the variability of manure quality depends on the source of the materials used. The farmers should ensure regular monitoring with guidance of extension worker or expert farmers.

At harvest, an acre of land planted with beans on a site with compost manure, yields up to **10-12 bags (100 kgs each)** of beans per season with each kilogram sold at **UGX. 1,000** translating into **UGX. 1,000,000 – UGX 1,200,000** per season compared to 3 bags harvested from a beans garden on an acre of land planted without compost manure.

What is innovative about the technology 'Compost manure and Beans demonstration site'?

Planting beans in rows with compost manure provides a potential for increased crop yields with reduced cost since compost manure

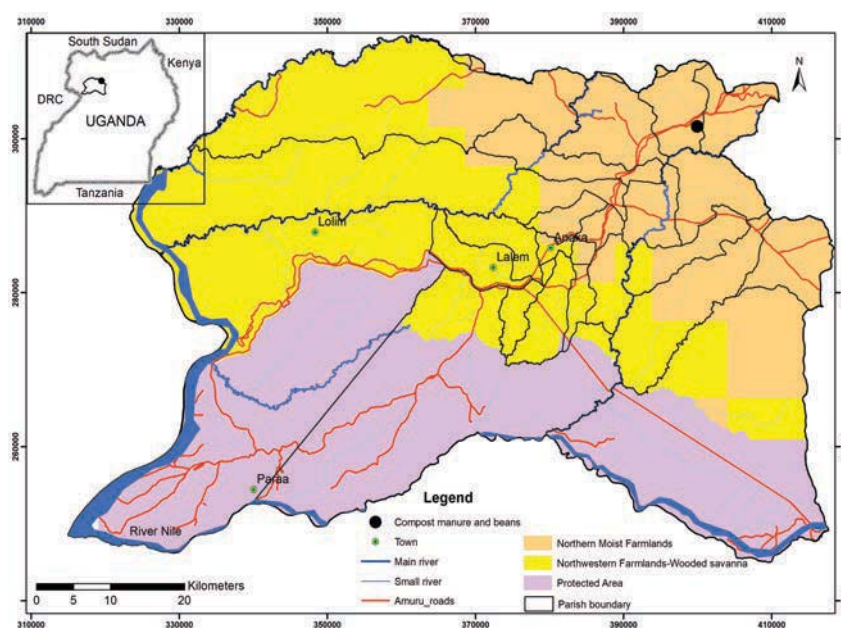


Demonstration Site 8:

material is locally obtained. At the time of harvest, the enterprise has potential to generate higher incomes compared to a garden with no compost manure applied.

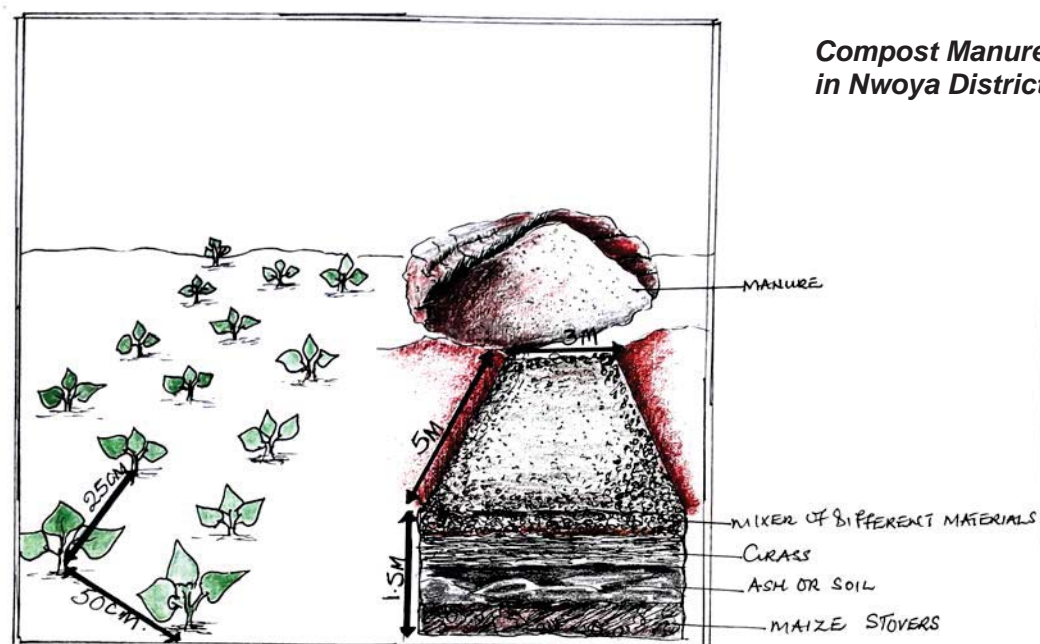
How can you visit the demonstration site?

Compost manure and beans demonstration site is located in Lalar village, Panyaboo Parish, Alero Sub-county approximately 5km from Alero Sub-county - Lalar village marram road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff for arrangements.



MAP showing location of demo site in the District

Technical drawing



Compost Manure and Beans in Nwoya District

Demonstration Site 9: Mulching Coffee, Banana and Agroforestry in Nwoya District

Host farmer's contacts:

Mr. and Mrs. Ongai Andrew | +256 772 686 338

Extension worker responsible:

Mr. Wokrachi Samuel | +256 782 262 918

ULN staff responsible:

Mr. Walter Odur | email -
odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Mulching Coffee intercropped with Banana and Agroforestry trees is an integrated and complementary cropping system attractive to both male and female farmers. The system simultaneously provides key advantages including water conservation, soil fertility improvement and erosion control. It also helps in weed control as well as creating a shading environment throughout the year.

On a one-acre garden measuring **40 x 100 m**, Coffee as a major crop planted **3m** apart, **114 plants** of Banana are intercropped at **6m**, with a maximum of **50** tree seedlings spaced at **9m**. Gliricidia sepium is planted **0.6m** apart along the borderline. Under this system, no weeding is required because of the grass mulch and leaves from intercropped plants. Coffee in northern Uganda is gradually gaining prominence and Uganda coffee Development Authority (UCDA) is supporting prepared farmers with free seedlings.

On average, about **1,900 Kg** of Coffee bean and **240** bunches of bananas are obtained per year @ sold at **UGX 10,000 - UGX 20,000** translating into **UGX 2,400,000 - UGX 4,800,000** annually per year including other products such as fodder and fuelwood. However, constant contact extension services are key.

What is innovative about the technology 'Compost manure and Beans demonstration site'?

This technology increases productivity per unit area. The system involves use of locally available mulch materials (grass) that retain moisture and eventually decompose as manure

Traditionally, coffee and banana farmers have been growing the crops as pure stands but as climate change and land degradation challenges set in, it's being realized that intercropping and introduction of agroforestry trees is the best combination to ensure sustainable production by small holders.



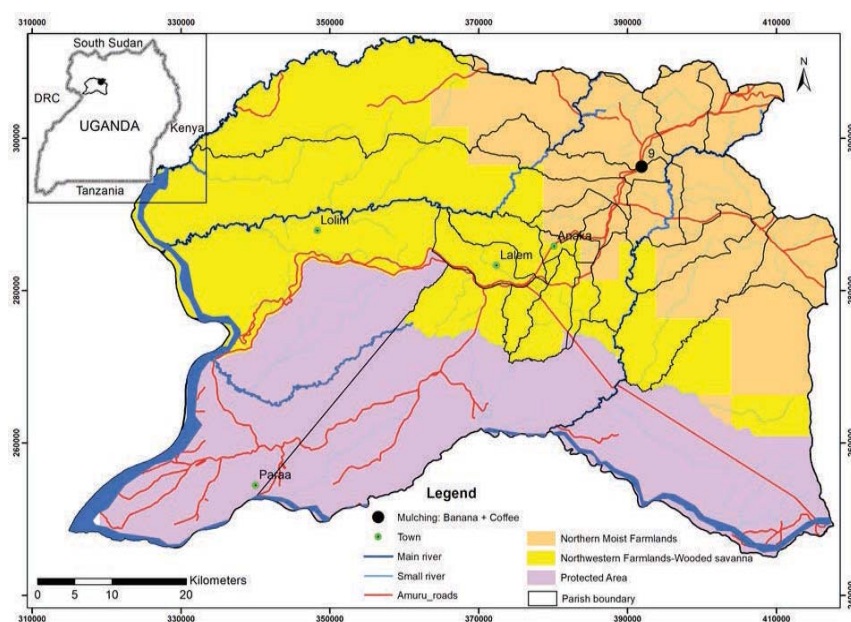
Demonstration Site 9:

How can you visit the demonstration site?

The site is located in Awing village, Taa Parish, Paimol Sub-county, 17 km off Gulu- Nwoya road. To visit call the host farmer, Extension worker or ULN staff to arrange the visit.

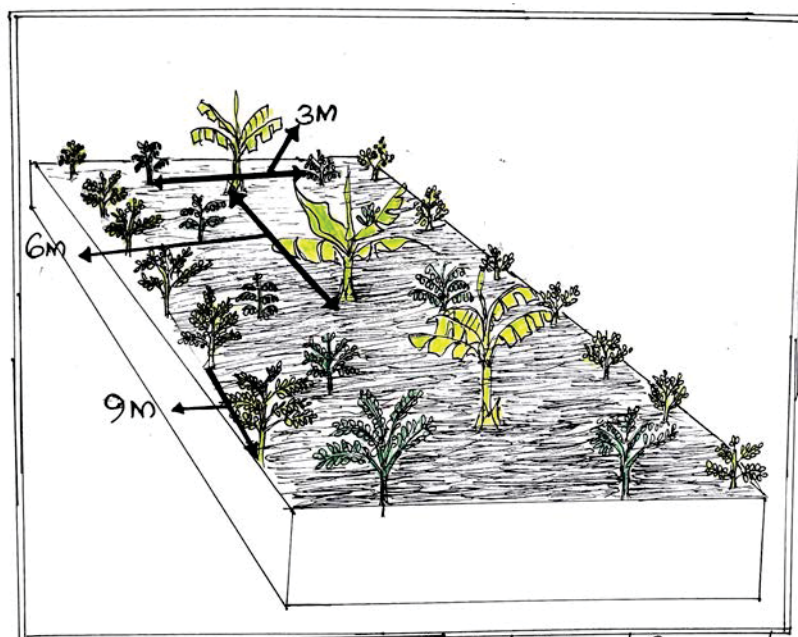
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2818/



MAP showing location of demo site in the District

Technical drawing



Mulched Coffee + Banana + Agroforestry in Nwoya

Demonstration Site 10: Agroforestry practices in Adjumani District

Host farmer's contacts:

Mr. Adrawa Kenyon and Mrs. Jane Adrawa |
+256 786 049 821

Extension worker responsible:

Mr. Koma William | +256 781 384 196

ULN staff responsible:

Mr. Sunday Amalla Bale |
email - sundayamale@gmail.com | +256 776 351 768

What can you learn on this demonstration site?

An agroforestry demonstration site comprising of *Gliricidia sepium* and *Calliandra calothyrsus* tree species established on an acre of land provides an ideal condition for farmer groups learning about tree and crops synergies.

Information and knowledge sharing centre and appreciated by both male and female farmer groups for its potential to increase soil fertility, increase production and household income.

Multi-purpose tree species are planted in rows, one species after the other at a spacing of **3 meters**, a total of **400** tree seedlings each costing **UGX.1000** are required. Maize is then planted at a spacing of 45x75cm; Up to 25kgs of maize seed is required for planting an acre of land.

The total cost (UGX) of establishing and maintaining the demonstration is relatively high at the stage of establishment – **UGX 1,070,000**; individual costs include, labour – **UGX 450,000**, tree seedlings – **UGX 200,000 - UGX 400,000**, maize seeds – **UGX 150,000**, equipment such as hoes, panga, ropes – **UGX 100,000** and sign post – **UGX 70,000**.

After about **5-10 years**, trees will have matured and are expected to be harvested and with each tree sold depending on the size and quality of the wood providing at least **50-100** pieces of timber each sold at **3000- 7000 UGX**.

On average, **250 kgs** of maize are harvested per season, with each kilogram of maize sold at **UGX 1,000** translates into **UGX 250,000** per season. An annual income of about **UGX 500,000** is expected from the maize and timber. The demonstration requires routine monitoring against wild fires and weeding to ensure proper growth and higher yields.

What is innovative about the technology 'Agroforestry'?

An agroforestry system that integrates *Gliricidia sepium*, *Calliandra calothyrsus* and maize, provides a potential for multiple yield. As a natural based tree enterprise, natural ecosystems where trees are



Demonstration Site 10:

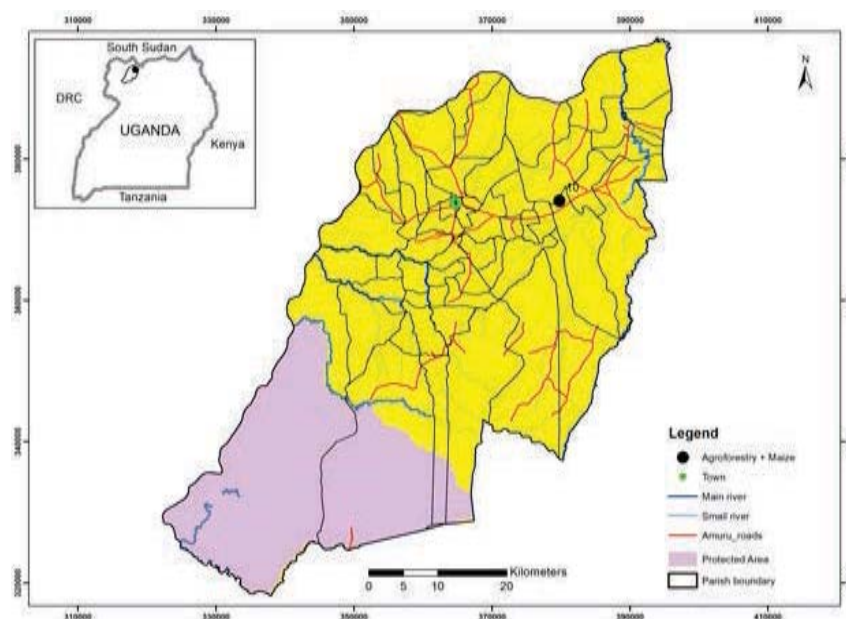
properly spaced and planted in lines with maize potentially increases maize production, promote ecosystems and reversed restoration after decomposition of the agroforestry tree litter on the ground.

How can you visit the demonstration site?

The demonstration site is located in Jurumini village, Adjugopi Parish, Dzaipi Sub-county approximately 30km from Adjumani town off the main road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.

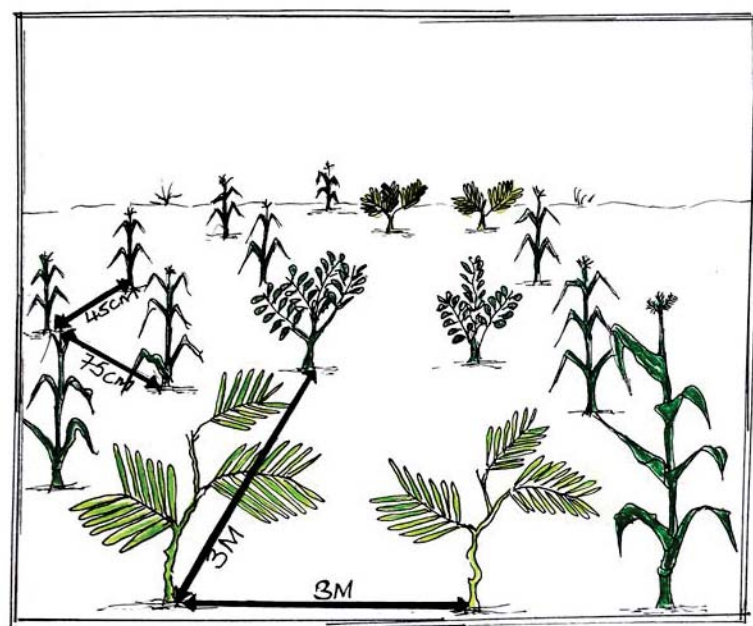
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2787/



MAP showing location of demo site in the District

Technical drawing



Agroforestry Practices in Adjumani District

Demonstration Site 11: Intercropping Maize and Soya Beans in Adjumani District

Host farmer 's contacts:

Mr. & Mrs. Lego Zakio | +256 783 525 768

Extension worker responsible:

Mr. Vudriko Vincent | +256 782 153 167

ULN staff responsible:

Mr. Sunday Amalla Bale |

email - sundayamale@gmail.com | +256 776 351 768

What can you learn on this demonstration site?

Intercropping maize and soya bean demonstration is appreciated by both male and female farmers. It is replicable with several benefits including increased production, food security, crops loss risk reduction, and soil erosion control. Usually under this practice, a leguminous crop (Soybean) is intercropped with a cereal crop (Maize) planted in rows on the same piece of land which otherwise would have required twice the size to produce the two crops. An acre is planted with about **30kg** of Soybean (Makossa 3N) at a spacing of **15x50cm** with **2 seeds** per hole. The maize is spaced at **45x75 cm** culminating into about **10 kg** for that acre.

For an acre of land, the involved costs (UGX) are; Labour – **UGX 365,000**, Soybeans Seed – **UGX 150,000**, Maize Seed – **UGX 50,000** and Equipment worth **UGX 100,000**.

On average about **500 kgs** of soybeans is obtained a season which translates into **UGX 1,500,000** at a price of **UGX 3,000** per kg. On the other hand, the yield of maize is about **250 kgs** and with a price of **UGX 1,000** per kg, total income is **UGX 250,000**. Routine monitoring against destruction from domestic animals, pests and diseases through constant contact with extension personnel for assistance.

What is innovative about the technology 'intercropping maize and soy bean'?

Planting two crops in one field reduces the labour requirement associated with cultivating each crop in a separate field and in case of failure of one crop, the other acts as a remedy. Intercropping, therefore, acts as a risk control measure used by smallholder farmers. The leguminous crop helps to fix nitrogen into the soil to be utilized by both crops. This in turn reduces the net demand for fertilizers, which would be an additional cost to the farmer. The leguminous crop also acts as a cover crop that contributes to soil erosion control.



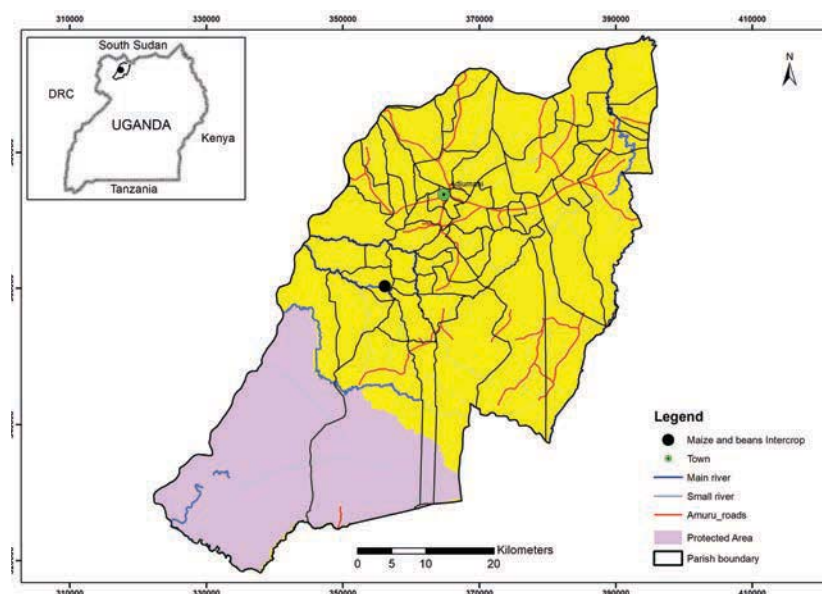
Demonstration Site 11:

How can you visit the demonstration site?

The demonstration site is located in sodogo village, Payaru parish, Ukosojoni Sub-county approximately **33 km** off Adjumani –Ukosojoni –Anak main road. To visit, contact the Host farmer, Extension worker or ULN staff for arrangements.

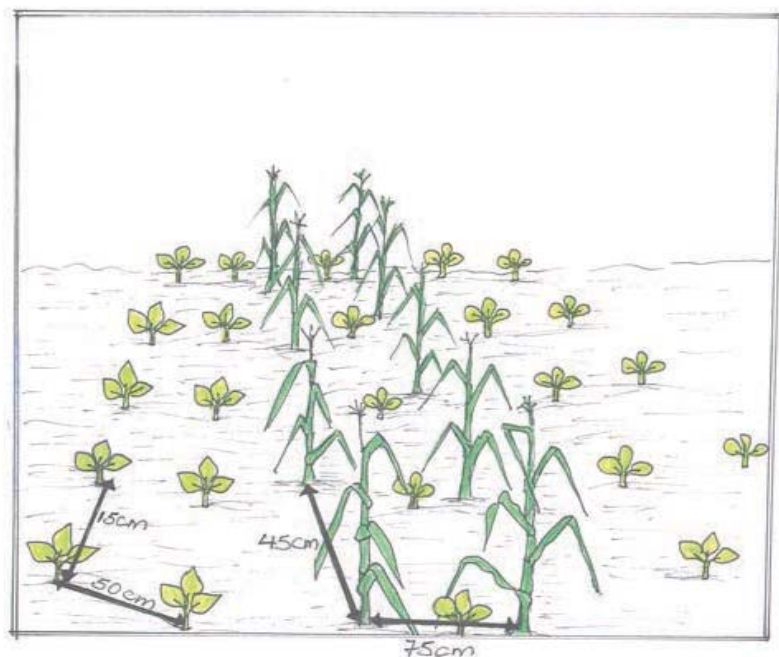
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2815/



MAP showing location of demo site in the District

Technical drawing



Intercropping Maize and Beans in Adjumani

Demonstration Site 12: Compost and Banana in Adjumani District

Host farmer 's contacts:

Mr. and Mrs Ojoadi Charles Wale | +256 777 976 527

Extension worker responsible:

Mr. Koma William | +256 781 384 196

ULN staff responsible:

Mr. Sunday Amalla Bale |

email - sundayamale@gmail.com | +256 776 351 768



What can you learn on this demonstration site?

Compost manure making and application is an agronomic practice for soil fertility enhancement; with a high potential to building up soil organic matter and nutrients that improve soil health and productivity. It also contributes greatly to other soil attributes like aeration, soil structure and porosity. The practice uses local materials like crop and animal wastes. The demonstration shows the process of collection, preparation and application of the compost manure applied on banana crop.

About **2,000Kg** of animal waste from cows/goats/sheep is collected and mixed with crop waste at a ratio of between **0.4 to 0.6** depending on which of the two is readily available. The mixed material is buried in a pit (**4x3x1.5m**) layered in order of plant waste/animal waste/loam soil layer/grass/manure/soil and covered with polythene to reduce water inflow. The process involves opening and turning the material every after **3 to 4 weeks** while ensuring that the decomposition of the materials steadily taking place.

Establishment and maintenance cost (UGX) is about **UGX 1,540,000**, required for buying animal waste, labour and polythene material. At the time of application, about **20 Kg** of compost manure is applied per banana stool and this can be utilized for two years.

At harvest in a good season, one acre of banana planted with compost manure yields up to **480** bunches per year, with each sold at approximately **UGX 30,000** translates into about **UGX 14,400,000**. Regular monitoring of the garden is required through consultation with the extension worker for guidance.

What is innovative about the technology 'Compost and Banana'?

Planting bananas on a site with compost manure provides a potential for increased crop yields with reduced cost since

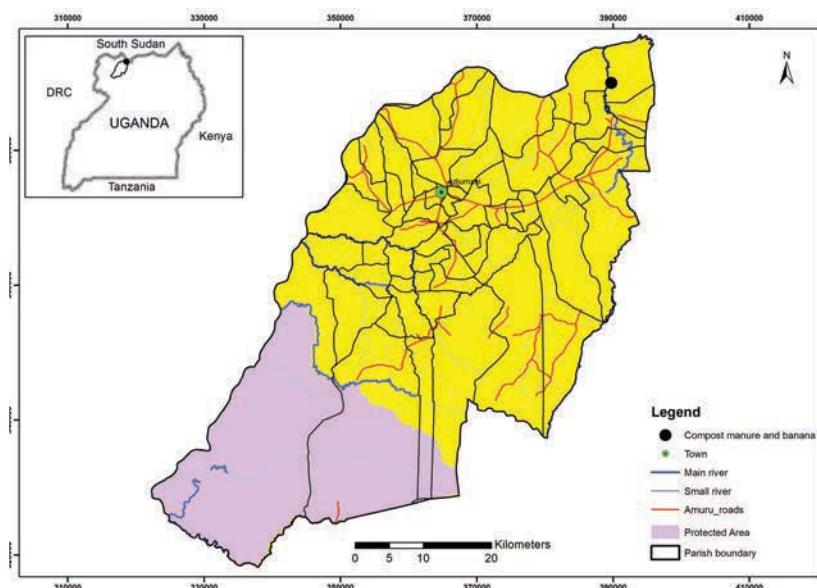


Demonstration Site 12:

compost manure material is mainly locally obtained. At the time of harvest, the enterprise has potential to generate higher incomes compared to a garden with no compost manure applied.

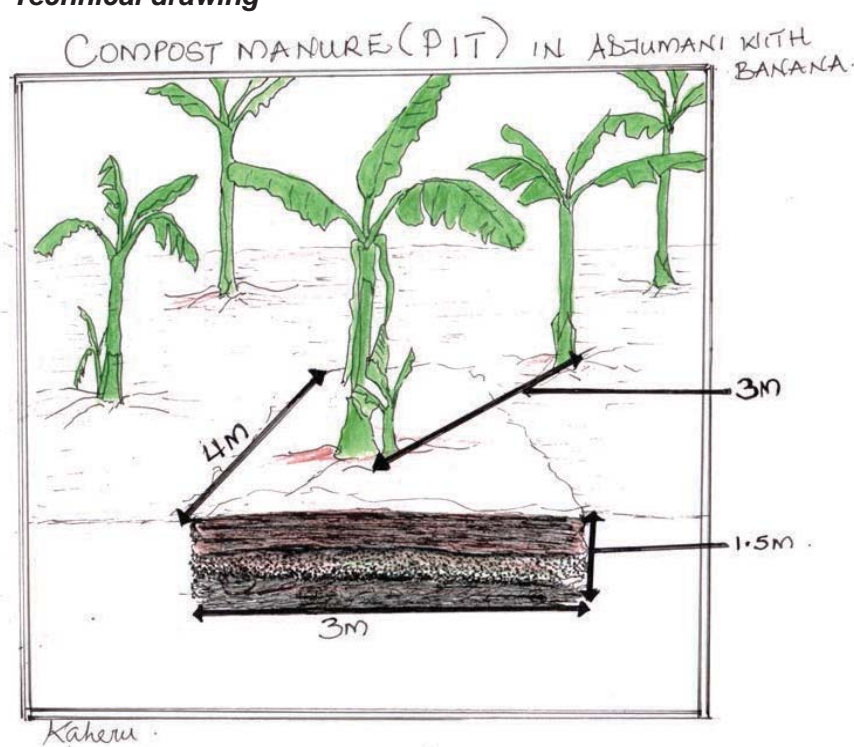
How can you visit the demonstration site?

The site is located in Elegu Central Village, Elegu Parish, Arinyapi Sub-county just 65km along Gulu-Atiak Sudan road, 6km off to Elegu Village. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.



MAP showing location of demo site in the District

Technical drawing



Compost Manure (PIT) with Banana in Adjumani

Demonstration Site 13: Agroforestry and Beans in Agago District

Host farmer 's contacts:

Mr. and Mrs Okello B James | +256 781 901 858

Extension worker responsible:

Mr. Kidega Geoffrey | +256 779 750 789

ULN staff responsible:

Ocean Bosco | email - ocanbosca@yahoo.com | +256 782 595 646

What can you learn on this demonstration site?

This is an agroforestry system that integrates multi-purpose trees such as *Grevillea robusta* and *Gliricidia sepium* with beans in a demonstration garden that is usually appreciated by both males and females as an information and knowledge sharing center.

The challenges that affect this technology are mainly extreme weather variation in the critical stages of plant growth and the incidence of pests and diseases especially on bean plants. The possible remedies for addressing the above challenges include; timely planting, following agronomic practices and close monitoring of the demonstration field by the group and the extension worker.

On an acre of land, *Grevillea robusta* and *Gliricidia sepium* seedlings are planted at a spacing of **3m** apart. The beans are then introduced spaced at **75X45cm**.

Cost implications (UGX)

Establishment and maintenance of the demonstration - **UGX 1,885,000**.

Purchase of tree seedlings and bean seed – **UGX 555,000** and **UGX 180,000** respectively Purchase of equipment including sign post and sticker – **UGX 160,000** and Transport – **UGX 350,000**

The enterprise has the potential to generate income of **UGX. 1,800,000** annually from the harvest and sale of beans when trees are still growing up to about **3-5 years**.

What is innovative about the technology of integrating agroforestry with beans?

Trees planted at a spacing of 3m improve the design by mimicking natural ecosystems. It thus has the potential to reduce surface runoff and improving soil fertility. Once the beans are Introduced in the system, there is potential for improved yields thereby improving food security and household incomes.



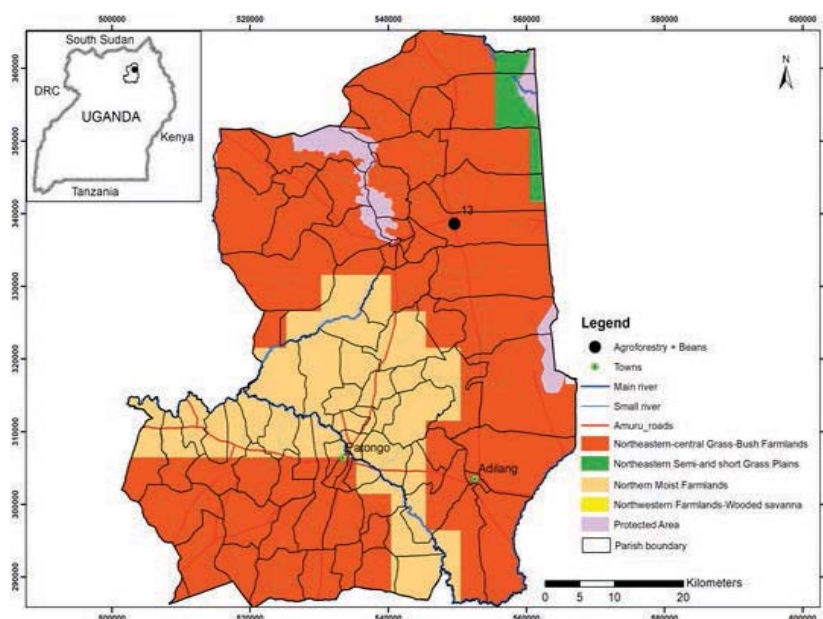
Demonstration Site 13:

How can you visit the demonstration site?

The site is located in Loka Pet, Pacabol parish, Paimol sub-county 10 km off Agago – Kalongo Loka Pet Murram road. To organize visit, contact the Host farmer, Extension worker or ULN staff.

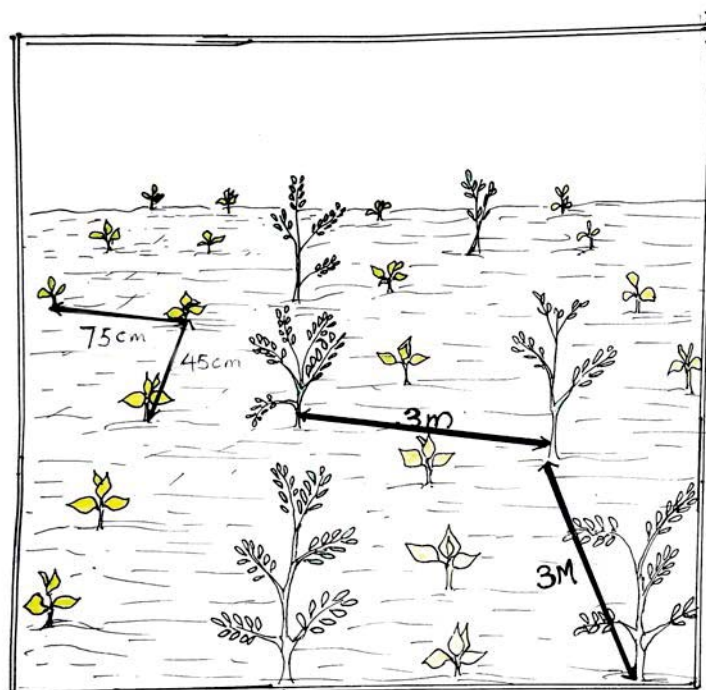
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2787/



MAP showing location of demo site in the District

Technical drawing



Agro-forestry with Beans in Agago

Demonstration Site 14: Intercropping Maize and Soya bean in Agago District

Host farmer 's contacts:

Mr. and Mrs. Ocan Samuel | +256 782 591 083

Extension worker responsible:

Mr. Kidega Geoffrey | +256 779 750 789

ULN staff responsible:

Mr. Walter Odur | +256 775 296 273

What can you learn on this demonstration site?

Intercropping maize and soya is appreciated by both men and women for soil fertility improvement, increased food and cash-crop production, and increased household income throughout the year. Under this practice, a leguminous crop (Soybean) is intercropped with a cereal crop (Maize) planted in rows on the same piece of land which otherwise requires twice the size of land to produce the two crop enterprises. The leguminous crop fixes nitrogen into the soil to be utilized by both crops thus, reducing the need for fertilizer application which would be an additional cost to the farmer. The leguminous crop also acts as a cover crop that contributes to soil erosion control.

Soybean (Maksoya 3N) is planted at a spacing of **20×50 cm** with **2** seeds per hole planted at seed rate of about **30 kg** per acre whereas maize is spaced at 60x90cm at a seed rate of **10 kg/acre**.

On an acre of land, the costs implication includes; Labour – **UGX 565,000**, seed for maize and soya - **UGX 220,000**.

On average, **400-500 kgs** of Soya bean and **200-250 kgs** of maize are harvested per season; with each kilogram of soya and maize sold at **UGX 3,000** and **UGX 1,000** respectively, translates into a total income of about **UGX 1,400,000 – UGX 1,750,000** per season.

What is innovative about the technology -

'Intercropping Maize and Soya bean'?

Intercropping Soya bean and Maize on the same field eases establishment and management with reduced cost associated to land preparation and weeding. The technology is replicable with benefits of increased production, food security, crop-loss risk reduction, and soil erosion control.



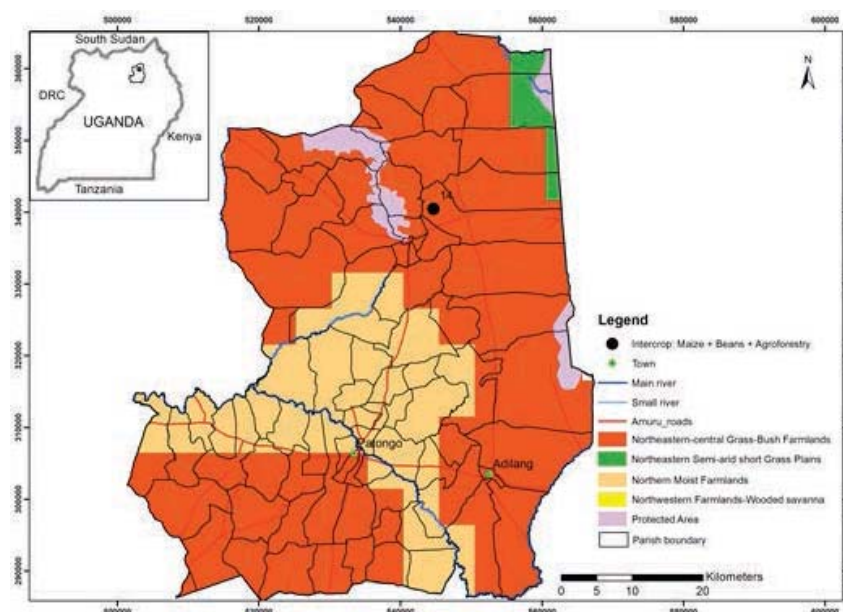
Demonstration Site 14:

How can you visit the demonstration site?

The demonstration is located in Kamonojui village, Pacabol Parish, Paimol Sub-county, approximately 10km off Palongo marram road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.

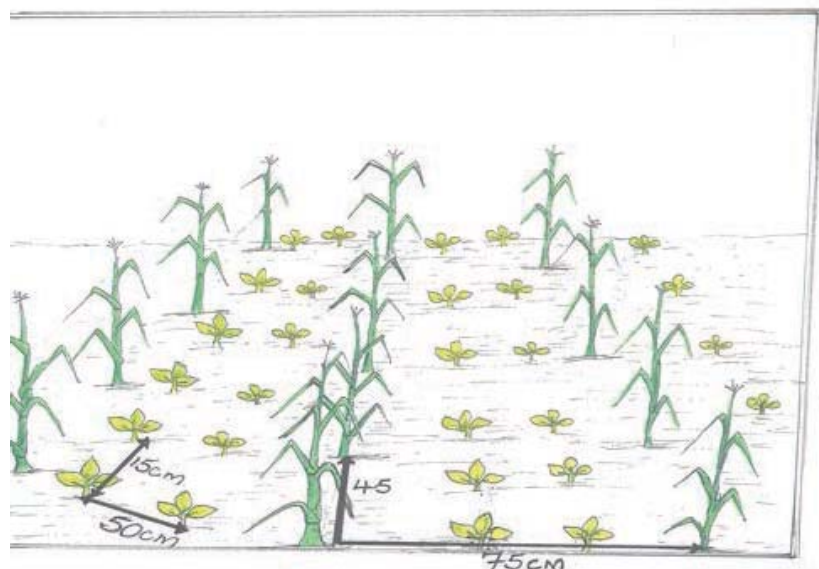
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2815/



MAP showing location of demo site in the District

Technical drawing



Intercropping Maize + Beans in Agago District

Demonstration Site 15: Apiary in Agago District

Host farmer 's contacts:

Mr. and Mrs. Odora Phillip | + 256 775 594 364.

Extension worker responsible:

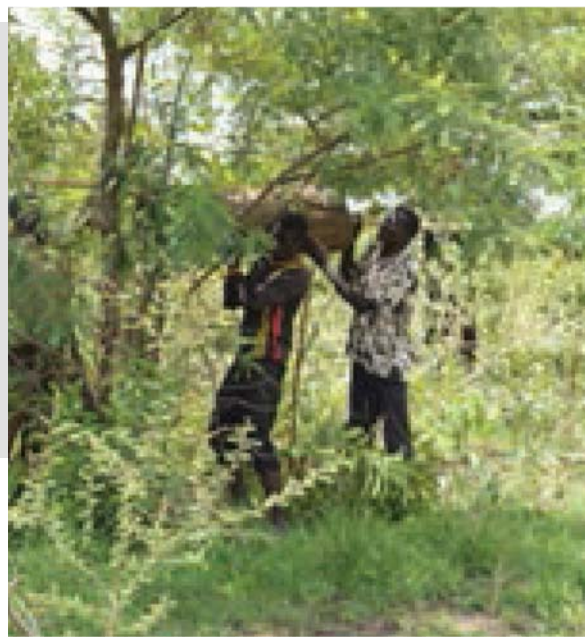
Mr. Kidega Geoffrey | +256 779 750 789

ULN staff responsible:

Mr. Walter Odur | odurwalter1984@gmail.com |
+256 775 296 273

Mr. Rick Kamugisha | rkamu2012@yahoo.com |
+256 772 638 166

Mr. Wakulira Mathias | mwakulira@yahoo.com |
+256 772 631 836



What can you learn on this demonstration site?

Apiary demonstration is both appreciated by men and women while excellent at harnessing the natural environment undisturbed. Other than the modern expensive harvesting **UGX 200,000** the costs of establishment are relatively low because the local beehives are made out and cited using local materials (mature trees). Maintenance is low cost after bees colonize the hive – a critical process in apiary also keeping off fire and vermin attack. Apiary presents learning centers opportunities for knowledge, information sharing for communities networking and collective decision making.

The demonstration is easily replicable due to the associated low costs establishment and maintenance. A local bee hive cost **UGX 30,000 - UGX 50,000** compared to a modern bee hive that cost **4** times yet not durable and highly susceptible to malpractices including theft.

On one acre of land, **28** local wooden bee hives can be cited at a distance of not less than **5 - 10 meters** from one hive to the other. On average of good harvest, each hive yields approximately **5 - 7 kg** of honey per season (**1 kg** cost **UGX 10,000** translating into **UGX 2,800,000 – UGX 3,3692,000** as total incomes per year. Managing the menace wild fires, fire line is encouraged combined with regular routine monitoring to manage additional threats including pests, diseases, contaminated water sources and pesticide usage in the neighbourhood farmlands



What is innovative about the demonstration 'Apiary'?

Apiary is a nature based enterprise best thriving in vicinity of clean uncontaminated water and flowing

Demonstration Site 15:

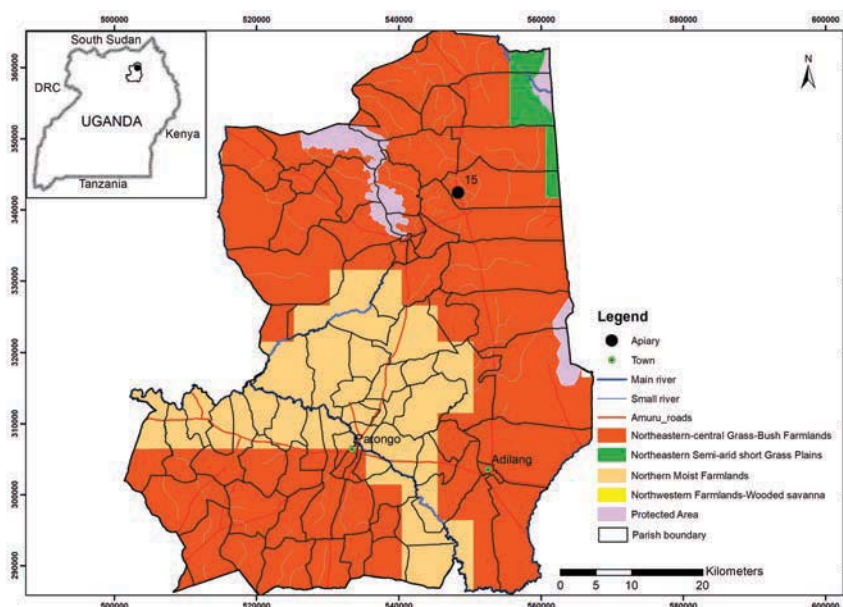
plants. The enterprise promotes restored ecosystems and reversed deforestation as well as steady increased household income throughout the year. Both male and female participate in complementing each other's roles towards maximizing benefits.

How can you visit the demonstration site?

Apiary demonstration is located in Akwang village, Taa Parish, Paimol Sub-county approximately 0.3 km off Pader-Agago murram road.

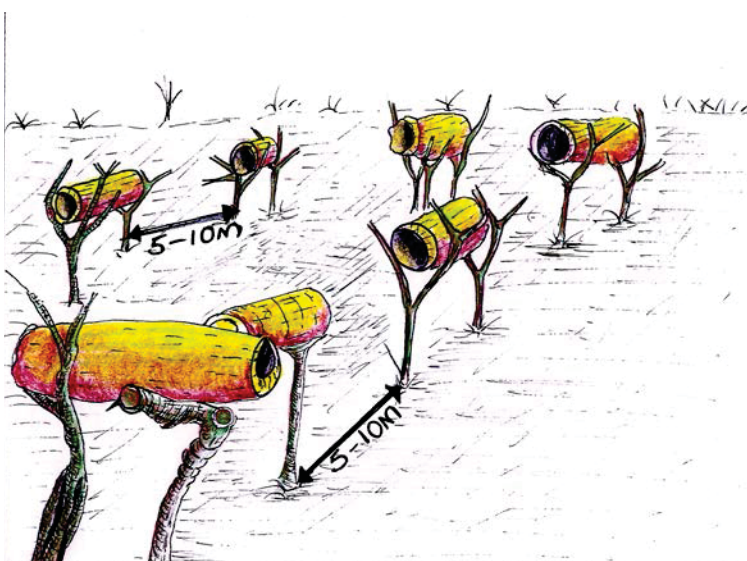
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2257/



MAP showing location of demo site in the District

Technical drawing



Apiary in Agago District

Demonstration Site 16: Mulched Water Melon and Agroforestry in Gulu District

Host farmer 's contacts:

Mrs Abwoono Hellen | +256 783 303 645

Extension worker responsible:

Miss Ajok Otto Janet | +256 776 186 247

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Mulched water melon (SUCARI F1) planted with trees *Grevillea robusta* and *Gliricidia sepium* seedlings are planted with trees at a spacing of 6m x 6 m on boundary is a short term (**3 to 4 months**) rewarding rain fed enterprise that is preferred by male and female farmers due its sweetness and ability to grow in big sizes. The system is potentially good for retaining soil moisture, reduce weeds, increase production and household incomes. On an acre of land, **500gms** of water melon seed are planted at a spacing of **2x2m**; **2** seeds per hole with **125g** of DAP applied per hole to accelerate vigorous growth, mulched with dry spear grass. Water melon are susceptible to fungal diseases and water melon flies thus may require aggressive disease control measures using Pheromone chemical to trap melon flies and fungicide for the control of fungal disease. Also, routine monitoring and seeking advice from the extension worker is highly recommended.

The demonstration is low cost and easily replicable with an associated cost totalling to **UGX 2,735,000**; individual cost includes, labour – **UGX 765,000**, water melon (Sukari F1 variety) seed – **UGX 600,000**, tree seedlings – **UGX 250,000**, fertilizer-DAP – **UGX 70,000**, mulch material and transport – **UGX 800,000**, sticker – **UGX 150,000** and sign post – **UGX 100,000**.

On average, an acre of water melon yields **1000** fruits per season each weighing **6 kgs**, each fruit is sold at about **UGX 5000** translating into an approximate annual income of **UGX 5,000,000**.

What is innovative about the technology 'Mulching, Water melon and Agroforestry'?

Mulched melon planted in Agroforestry system is a short-mid-term rewarding demonstration that restores degraded land as well as provision of income throughout the



Demonstration Site 16:

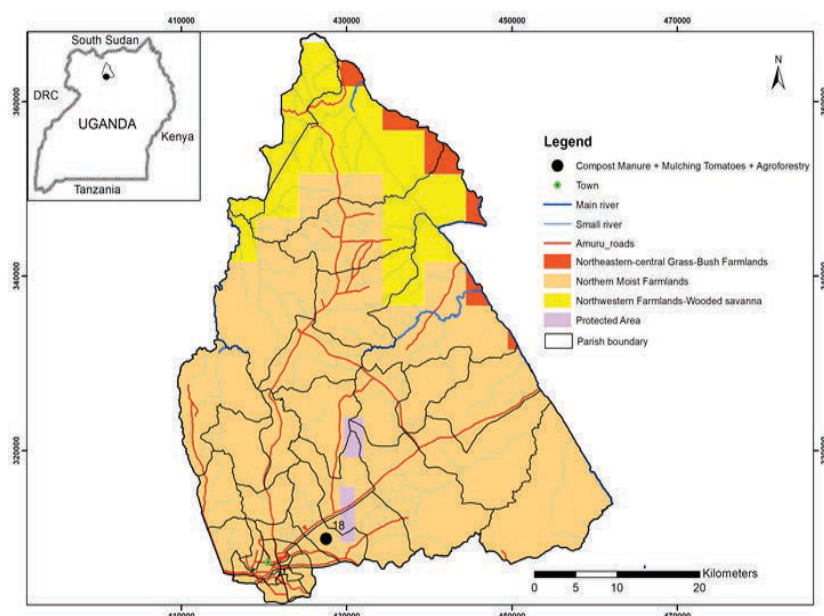
year. Planting of water melon in lines and use of locally obtained spear grass eases weeding with its associated cost thus rendering high chances of replicability by farmers.

How can you visit the demonstration site?

The demonstration is located in Ajanyi village, Paik parish, Acini Sub-county approximately 12km off Gulu- Kampala tarmac road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.

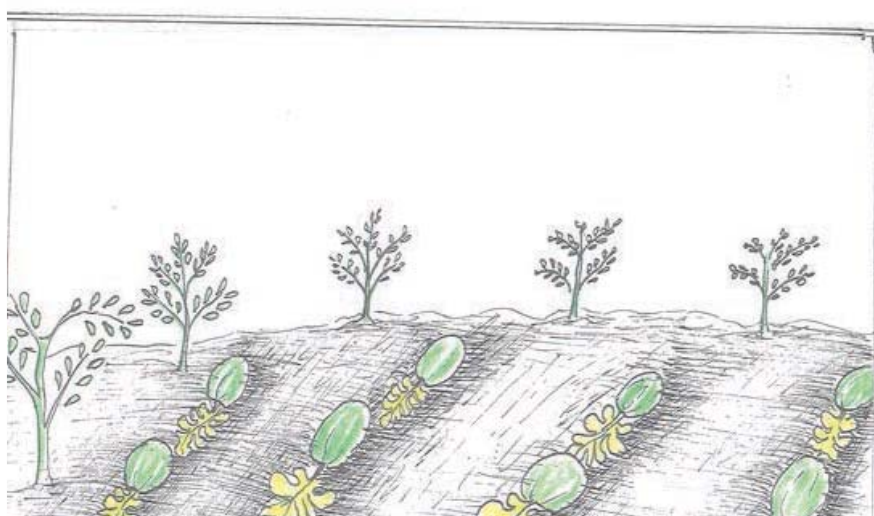
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2818

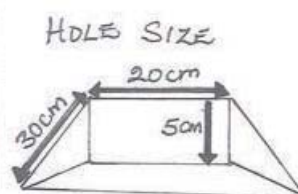


MAP showing location of demo site in the District

Technical drawing



Mulched Melon and Agroforestry in Gulu



Demonstration Site 17: Intercropping Maize and Soya Bean in Gulu District

Host farmer 's contacts:

Mr. and Mrs. Ange Doreen | +256 777 321 755

Extension worker responsible:

Miss Ajok Otto Janet | +256 776 186 247

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

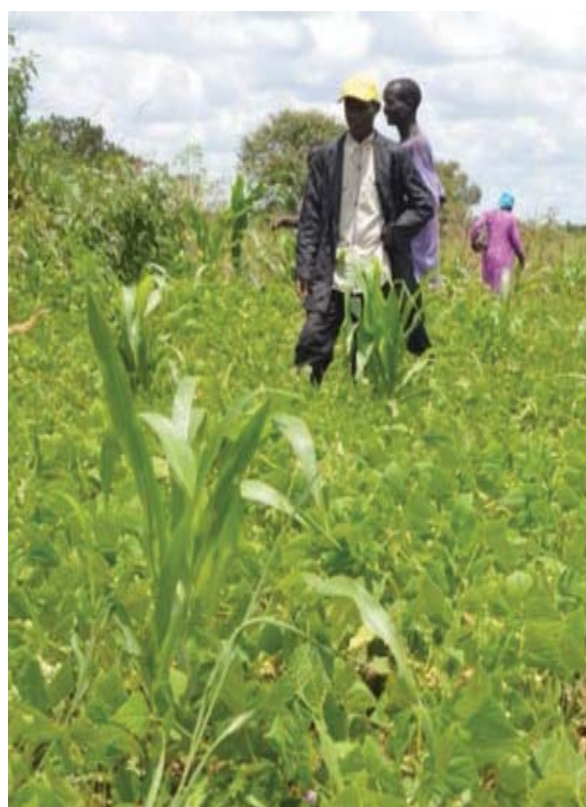
Intercropping maize and soya bean demonstration is appreciated by both male and female farmers. It is replicable with several benefits including increased production, food security, crops loss risk reduction, and soil erosion control. Usually under this practice, a leguminous crop (Soybean) is intercropped with a cereal crop (Maize) planted in rows on the same piece of land which otherwise might have required twice the size to produce the two crops. An acre is planted with about 30kg of Soybean (Makossa 3N) at a spacing of 20x50cm with 2 seeds per hole. The maize is spaced at 60x90cm culminating into about 10kgs for an acre.

For an acre of land, the involved costs (UGX) are; Labour **UGX 565,000**, Soybeans and Maize Seed (**UGX 220,000**).

On average about 500kgs of soybeans is obtained a season which translates into **UGX 1,500,000** at a price of **UGX 3,000 per kg**. On the other hand, the yield of maize is about **250 kgs** and with a price of **UGX 1,000 per kg**, total income is **UGX 250,000**. Routine monitoring against destruction from domestic animals, pests and diseases through constant contact with extension personnel for assistance.

What is innovative about the technology 'intercropping maize and soya bean'?

Planting two crops in one field reduces the labour requirement associated with cultivating each crop in a separate field. Intercropping, therefore, acts as a risk control measure used by smallholder farmers. The leguminous crop helps to fix nitrogen into the soil to be utilized by both crops which in turn reduces the net demand for fertilizers. The leguminous crop also acts as a cover crop that contributes to soil erosion control. This in turn reduces the net demand for fertilizers, which would be an additional cost to the farmer.



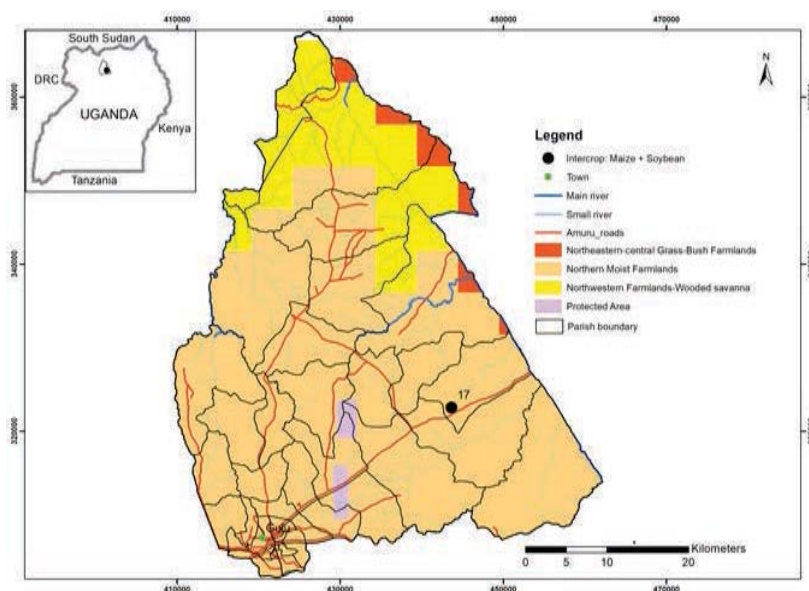
Demonstration Site 17:

How can you visit the demonstration site?

The demonstration is located in Ajanyi Village, Pagik parish, Paicho Sub-County, Gulu District. Approximately **10 km** off Gulu- Kitgum road. To organize a visit, contact Host farmer, Extension worker or ULN staff.

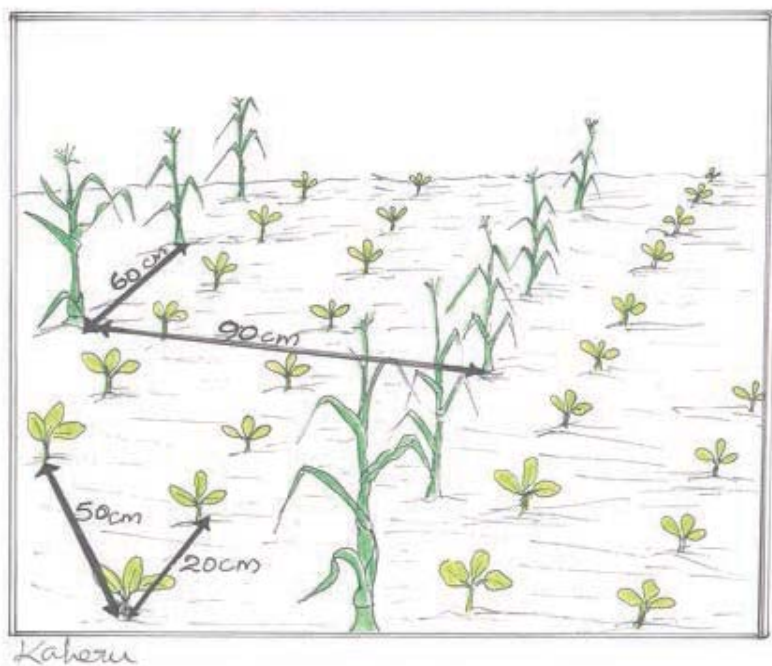
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2815/



MAP showing location of demo site in the District

Technical drawing



Intercropping of Maize and Soya in Gulu District

Demonstration Site 18: Compost Manure, Mulched Tomatoes and Agroforestry in Gulu District

Host farmer 's contacts:

Mr. and Mrs. Tabu Geoffrey | +256 779 748 288

Extension worker responsible:

Miss Ajok Otto Janet | +256 776 186 247

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Compost manure + Mulched tomato + Agroforestry demonstration is appreciated by male and female farmers for its potential to improve soil fertility in agro-ecosystems especially where soil has previously lost its fertility with high potential to building up soil organic matter and improve soil health. Compost manure is prepared and applied on the planted tomato garden mulched with dry spear grass in a cropping system that is easy to replicate. To prepare the manure, **30** bags of plant waste, animal waste, and loam soil each weighing **100kg** are heaped and buried in a pit (**5x3x1.5 m**) covered with a polythene paper and allowed to decompose. The compost manure is then applied on one acre of land planted with **1000** tomatoes seedlings in rows at a spacing of **50x20cm** with trees seedlings of Gliricidia spaced at **3x3 m**.

The entire cost (UGX) of establishment and maintenance is approximately **UGX 5,150,000** required for labour – **UGX 850,000**, purchase of equipment – **UGX 300,000**, weeding – **UGX 850,000**, purchase of water during the dry season – **UGX 300,000**, mulch material – **UGX 1,500,000**, tomato hybrid seedlings – **UGX 385,000**, tree seedlings – **UGX 250, 000**, Sign post – **UGX 150,000** and pesticides – **UGX 415, 000**.

At harvesting; the crop yields about **25 tons** of tomatoes per year; with one kilogram sold at **UGX 2200** translates into **UGX 25,000,000** as annual incomes. Spraying with Mancozeb and Rocket twice a week in dry season and thrice in dry season is recommended in case of pests (aphids and white flies) and diseases (early bright powdery and bacterial specks) using a ratio of 70 gms in 20 litres of water. To replicate one needs to use high quality compost manure and dry grass that is good enough to decompose and increase production when applied on the garden.



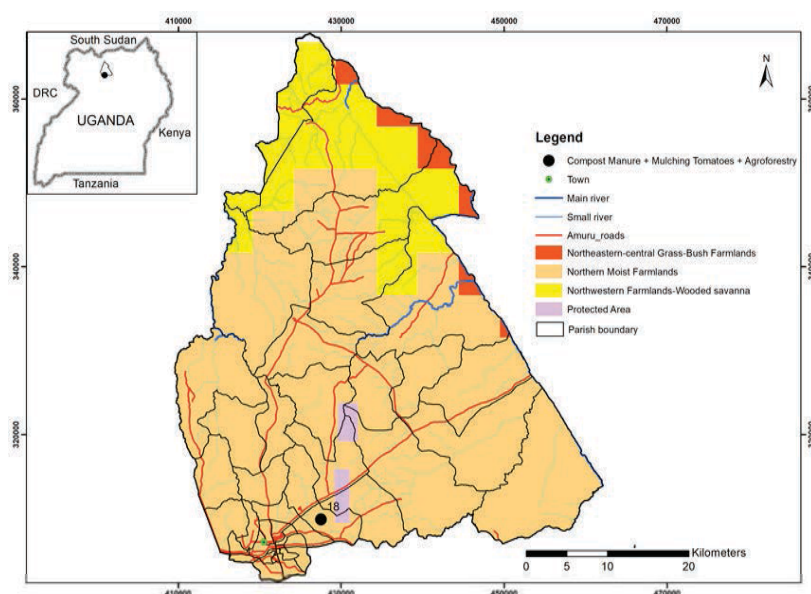
Demonstration Site 18:

What is innovative about the technology 'Compost + Mulched tomatoes + Agroforestry'?

Application of compost manure on a mulched tomatoes garden integrated with trees potentially increases yields with reduced costs since compost manure and mulch material (spear grass) is locally obtained.

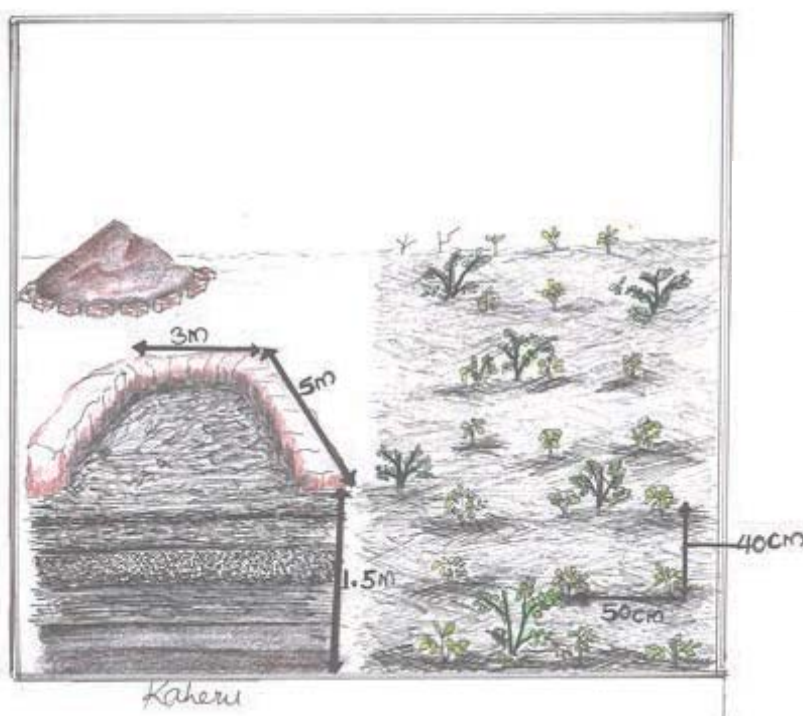
How can you visit the demonstration site?

The site is located in Oding Village, Oding Parish, Unyama Sub-county just 0.5km off Gulu Unyama National Teachers College Murram road. To arrange a visit, contact the Host farmer, Extension worker or ULN.



MAP showing location of demo site in the District

Technical drawing



Compost Manure Mulching Tomatoes + Agroforestry

Demonstration Site 19: Intercropping Maize and Beans in Pader District

Host farmer 's contacts:

Mr and Mrs Oola Bongo | +256 783 039 726

Extension worker responsible:

Mr Nazareco Francis | +256 772 723 325

ULN staff responsible:

Mr Ocan Bosco | email - ocanbosca@yahoo.com
| +256 782 595 646

What can you learn on this demonstration site?

Intercropping maize and bean demonstration is appreciated by both men and women when planted more than one crop in the same field. It is replicable with higher benefits including increased production, food security, crops loss risk reduction, and soil erosion control. Under this practice, a leguminous crop (beans) is intercropped with a cereal crop (Maize) planted on the same piece of land usually an acre or more.

About **30kg** of beans (NABE 14) is planted at a spacing of **15x50cm** with **2** seeds per hole while **10kg** of maize (LONGE 5H) is spaced at **45x75cm** for the acre of land.

Cost implications (UGX)

Establishment and maintenance costs – **UGX 1,000,000**
Labour – **UGX 565,000**

Purchase of maize and beans seed – **UGX 220,000**,
Equipment including sign posts – **UGX 235,000** Chemicals – **UGX 70,000**.

On average about **500 kgs** of beans is obtained a season which translates into **UGX 1,500,000** at a price of **UGX 3,000 per kg**. On the other hand, the yield of maize is about **250 kgs** and with a price of **UGX 1,000 per kg**, total income is **UGX 250,000**. Routine monitoring against destruction from domestic animals, pests and diseases through constant contact with extension personnel for assistance.

What is innovative about the technology 'intercropping maize and beans'?

Planting two crops in one field reduces the labour requirement associated with cultivating each crop in a separate field. Intercropping, therefore, acts as a risk control measure used by smallholder farmers. The leguminous crop



Demonstration Site 19:

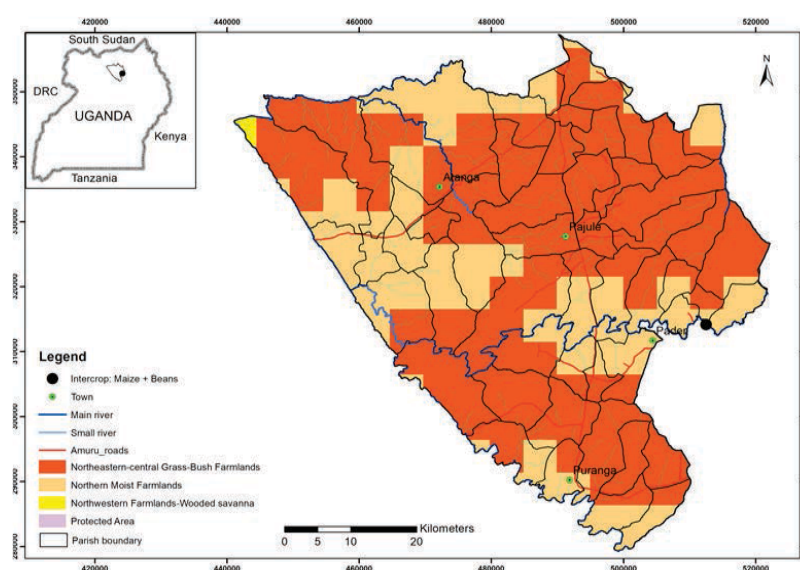
helps to fix nitrogen into the soil to be utilized by both crops which in turn reduces the net demand for fertilizers, which would be an additional cost to the farmer. The leguminous crop also acts as a cover crop that contributes to soil erosion control.

How can you visit the demonstration site?

The demonstration is located in Awere Sub-county, Parish. Rackoko Lunyiri East village approximately 1.5 km off Pader-Lunyiri East maram road. To organize a visit, contact the Host farmer, Extension worker or ULN staff.

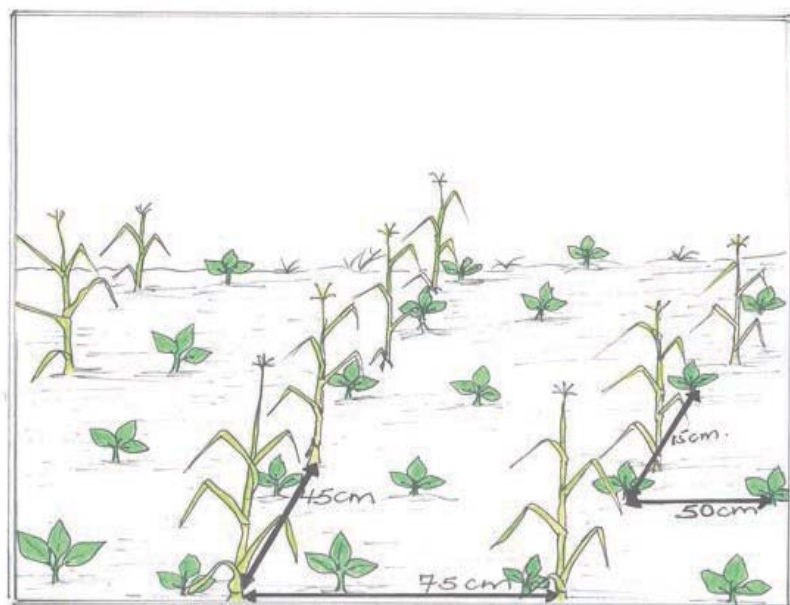
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2815/



MAP showing location of demo site in the District

Technical drawing



Intercropping Maize + Beans in Pader District

Demonstration Site 20: Agroforestry and Soya bean in Pader District

Host farmer 's contacts:

Mr. and Mrs. Oryem Bosco | +256 775 167 424

Extension worker responsible:

Mr Nazareco Francis | +256 772 723 325

ULN staff responsible:

Mr Ocan Bosco | email - ocanbosca@yahoo.com
| +256 782 595 646

What can you learn on this demonstration site?

Trees planted with Soya bean (Mak soy 3N) is an agroforestry system in a demonstration garden, with trees for soil fertility enrichment, thus increasing production and household incomes from soya bean in the short run and tree products in the medium and long term. This demonstration is appreciated by both male and female host farmers and group members as an information and knowledge sharing center. One acre of land is planted with tree seedlings of *Grevillea rubusta* and *Gliricidia sepium* species spaced at **3m** with soya bean spaced at **50x25cm** for purposes of reducing surface runoff and soil fertility improvement.

The total cost of establishing and maintaining an acre of the demonstration site is approximately **UGX 1,405,000**, with individual cost including; labour – **UGX 450,000**, **30kg** of soya bean (Mak soy 3N) seed – **UGX 180,000**, tree seedlings approximately **400** to **450** seedlings – UGX 105,000, equipment such as hoes, panga, ropes – UGX 500,000, Transport - **UGX 100,000** and sign post – **UGX 70,000**.

On average, 500kgs of soybean are harvested per season; with each kilogram of soya bean sold at UGX 3,000 translating into about **UGX 1,500,000**. The trees mature after about **3 years** providing tree products such as timber, wood and fodder. The system requires monitoring and guidance

What is innovative about the technology 'integrating agroforestry with soy bean?

An agroforestry system that integrates soya bean with trees is good for reducing surface runoff, improving soil fertility as tree litter decomposes on the ground, promote ecosystems and increases income from soya bean production.



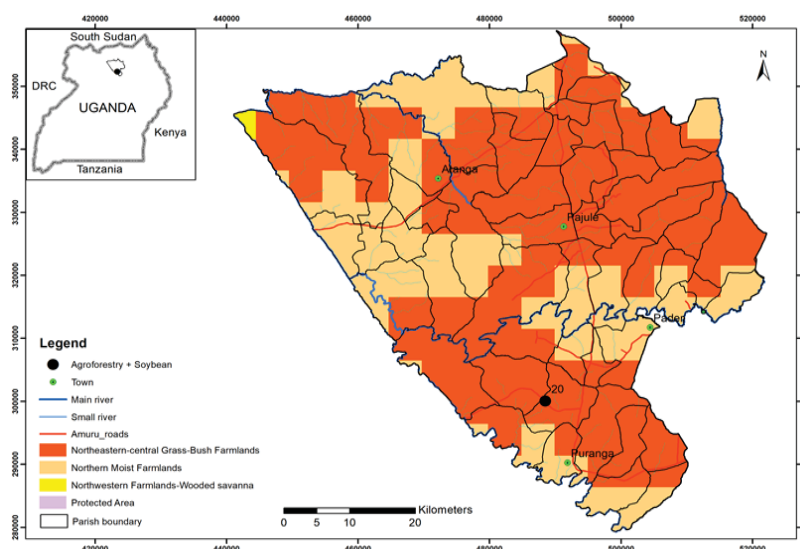
Demonstration Site 20:

How can you visit the demonstration site?

Agroforestry + Soya bean demonstration is located in Bolo Opet village, Rackoko Parish, Awere Sub-County, approximately **0.01km** off Pader - Awere sub-county murram road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.

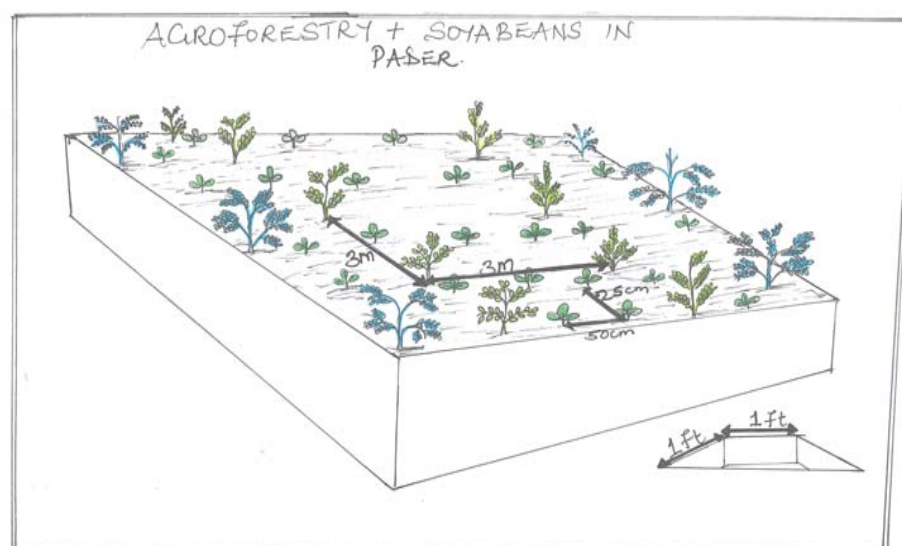
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2787/



MAP showing location of demo site in the District

Technical drawing



Agroforestry + Soyabean in Pader District

Demonstration Site 21: Conservation Basins, Mulching and Beans in Pader District

Host farmer 's contacts:

Mr. and Mrs. Olanya Valentine | +256 782 002 625

Extension worker responsible:

Mr Nazareco Francis | +256 772 723 325

ULN staff responsible:

Mr Ocan Bosco | email - ocanbosca@yahoo.com
| +256 782 595 646

What can you learn on this demonstration site?

Conservation basins planted with beans and mulched demonstration is a cropping system attractive to both male and female farmers. The system simultaneously reduces the risk of weeds, increases soil fertility after decomposition of mulch material, reduce surface runoff, support extended crop growth and retains sufficient water for beans' utilization and growth during the dry periods with little or no rainfall. During land preparation and basin construction, plant residues are slashed and left in the garden to decompose.

Basins are dug to **35x15x15cm** in length, width and depth. In each basin, beans are planted at a spacing of **75cm** with a seed 30Kg/acre planting **4-8** seeds per hole. DAP fertilizer is applied at the rate of half bag (**25 kg**) per acre and the fertilizer should be thoroughly mixed with soil before it is used to cover the bean seeds. About **100** bundles of dry grass are then laid on the garden as mulch material.

The construction and maintenance cost of **UGX. 793,000** is required to cover; Labour – **UGX 235,000**, Chemical – **UGX 70,000**, Bean seed – **UGX 150,000**, Ropes **UGX 18,000**, Mulch material – **UGX 300,000** and Measuring tape – **UGX 20,000**. The first weeding should be done **2** weeks after planting and the second after flowering.

Protection against pests and diseases should be done with guidance of Extension workers.

At harvest, one acre of conservation basins planted with beans and mulched can yield up to 10 bags (**100kgs**), each bag selling at about **UGX 200,000** translating into **UGX 2,000,000**.

What is innovative about the technology 'Conservation+ Mulching basins and beans'?

The technology is particularly important during critical crop growth stages such as germination, flowering and fruit-setting. After harvesting, crop residues are left in the



Demonstration Site 21:

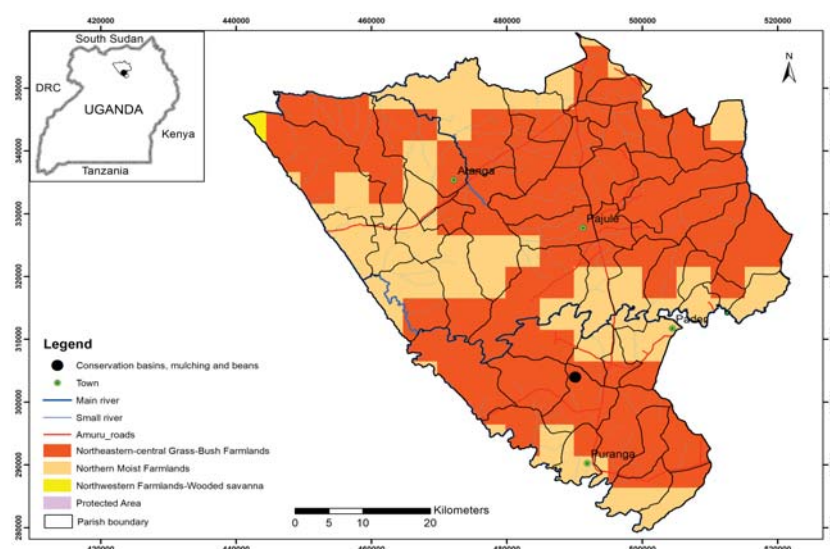
basin to decompose and add humus in to the soil. The dug basins can consecutively be used for three planting seasons without digging new ones which reduces the establishment cost.

How can you visit the demonstration site?

The demonstration site is located in Tik Tik village, Rockoko parish, Awere Sub-county approximately **5 km** off the main Pader-Awere Sub-county marram road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.

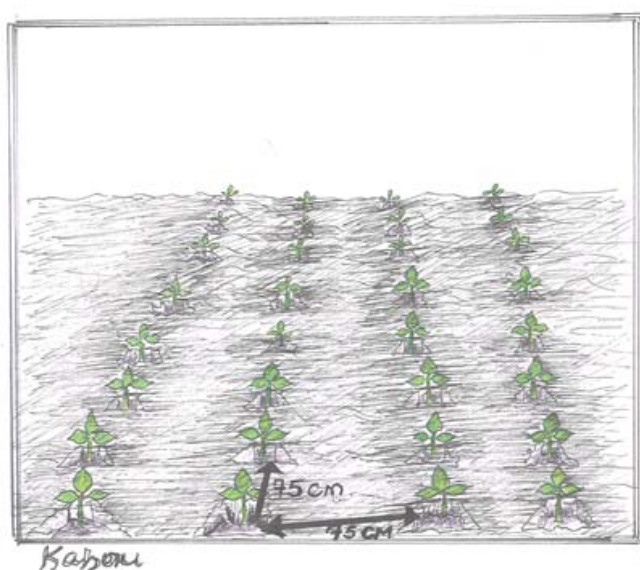
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2787/



MAP showing location of demo site in the District

Technical drawing



Conservation Basins + Mulching + Beans in Pader District

Demonstration Site 22: Mulched Tomato hybrid in Omoro District

Host farmer 's contacts:

Mrs. Acen Constance | +256 770 543 101

Extension worker responsible:

Mrs. Hope Akello | +256 772 661 061

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Mulched tomato hybrid demonstration acts as a learning opportunity for knowledge and information sharing across male and female farmers. The system retains soil moisture, reduces growth of weeds and increases household income due increased productivity.

On an acre of land, **10,000** seedlings of hybrid tomato are planted at a spacing of 40cmx50cm, mulched with dry spear grass.

The total establishment and maintenance cost is approximately **UGX 4,750, 000**; required for labour – **UGX 850,000**, equipment purchase – **UGX 300,000**, weeding – **UGX 850,000**, irrigation water – **UGX 300,000**, mulch material – **UGX 1,500,000**, tomato hybrid seedlings – **UGX 385,000**, Sign post – **UGX 150,000** and pesticides – **UGX 415,000**.

At harvest, an acre of hybrid tomatoes yields approximately **25 tons** per year; one kilogram sold at **2200** translates into an annual income of about **UGX 25,000,000**. Spraying with Mancozeb and Rocket twice a week in dry season and thrice in wet season is ideal in case of an attack of pests (aphids and white flies) and diseases (early bright powdery and bacterial specks). The chemical is mixed at a ratio **50-70gms** of the chemical in **20 liters** of water.

What is innovative about the technology 'mulched tomato hybrid'?

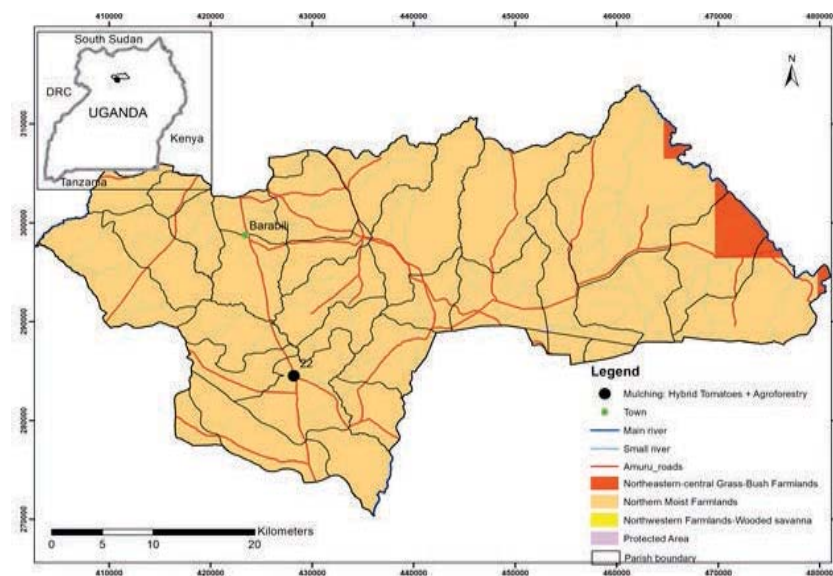
Mulched hybrid tomatoes use locally obtained spear grass mulch potentially reduces weeding costs, retain soil moist, increase fertility and increases productivity.



Demonstration Site 22:

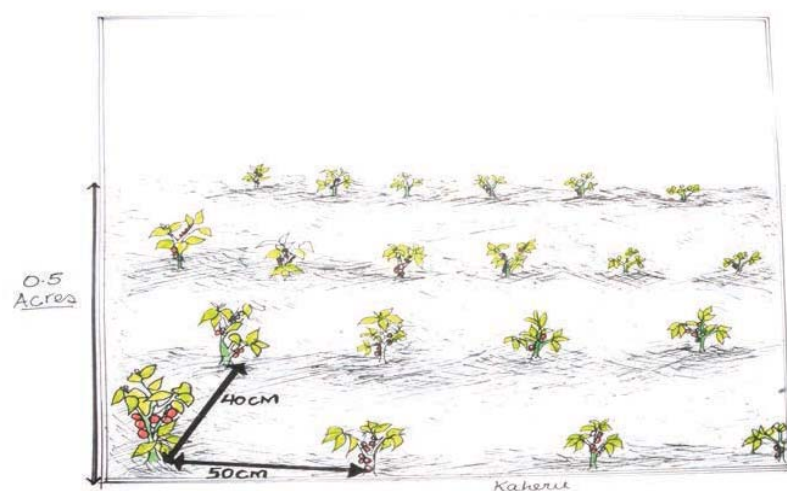
How can you visit the demonstration site?

Mulched tomato hybrid demonstration is located in Koro Abili Village, Labuuch Parish, Koro Sub-county approximately 0.5 km off along Gulu-Kampala tarmac road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.



MAP showing location of demo site in the District

Technical drawing



Mulching Tomatoes Hybrid in Omoro District

Demonstration Site 23: Apiary in Omoro District

Host farmer 's contacts:

Mr. and Mrs. Abel Mwaka | +256 782 89 502

Extension worker responsible:

Mrs. Hope Akello | +256 772 661 061

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Apiary demonstration using modern bee hives such as the Kenya Tool Bar (KTB) is appreciated by both males and females as an information and knowledge sharing opportunity.

On average using non local materials such as iron sheets and improved bee hives, **30** KTB hives can be accommodated on an acre positioned **3m** apart. The hives are integrated among trees and bedded with wax to quicken colonization.

Cost implication (UGX)

Establishment can cost up to UGX **4, 200,000** for purchase of items including: harvesting equipment, labour, wax, transport, and bee hives each costing **UGX 120,000**

A farmer harvests up to **14 kgs** of honey per hive. If the honey is processed and sold at **UGX 10,000** per kg, which translates into **UGX 7,000,000**.

What is innovative about the technology 'Apiary'?

Improved hives (modern bee hives) advance the design with potential for bigger harvests. As a natural based enterprise, the system reduces disturbances thus promoting restoration by reversing deforestation and improving soil profiles. The enterprise has the potential to generate income per harvest season



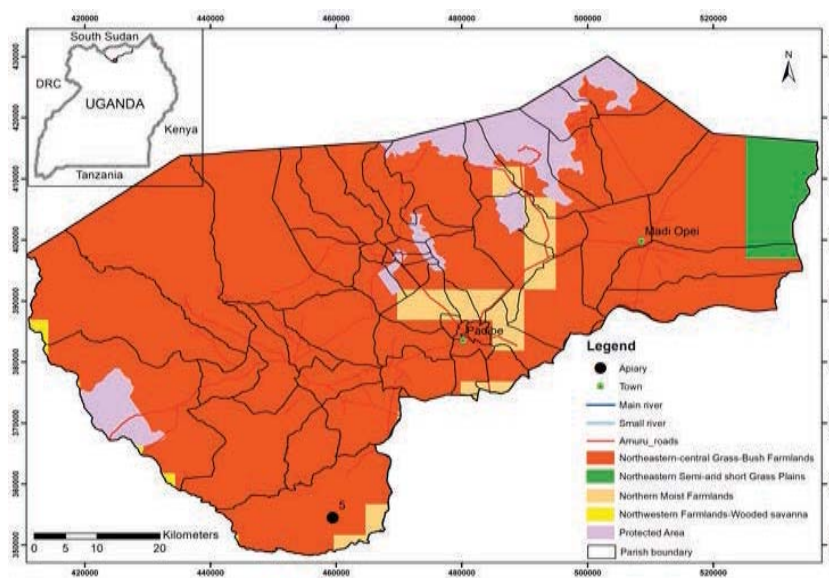
Demonstration Site 23:

How can you visit the demonstration site?

Apiary site is located in Pate Village, Paidwe Parish, Mbubu Sub County approximately 13 km off Omoro- Barabili marram road. To organize a visit, contact Host farmer, Extension worker or ULN staff.

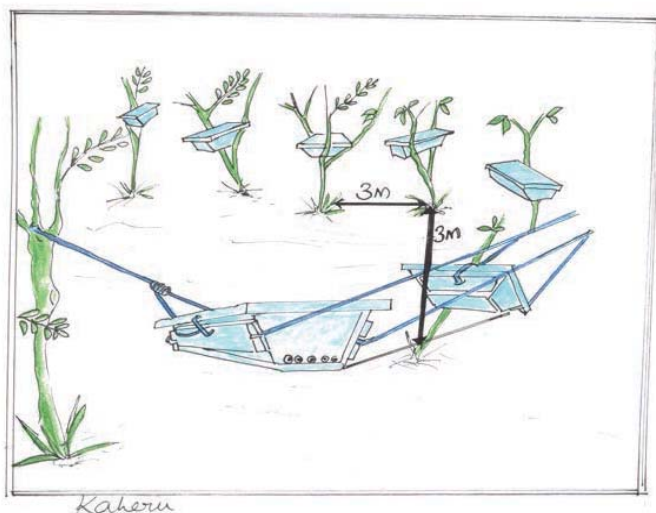
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2327/



MAP showing location of demo site in the District

Technical drawing



Modern Based Bee Hives in Omoro District

Demonstration Site 24: Conservation Basins and Beans in Omoro District

Host farmer 's contacts:

Mrs. Akidi Kala | +256 789 105 942

Extension worker responsible:

Mrs. Hope Akello | +256 772 661 061

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Conservation basins planted with beans demonstration is a cropping system attractive to both male and female farmers. The system simultaneously retains water during drought periods, reduces the risk of weeds, increases soil fertility after decomposition of slashed plant material and can be used for three consecutive planting seasons without digging fresh ones.

During land preparation and basin construction, plant residues are left in the garden. Basins are dug at **35x20x15cm** in length, width and depth respectively. In each basin, beans are planted at a spacing of **75cm** with a seed rate of **30Kg/acre** allowing **4-8** seeds planted per hole. Half a bag (**25kg**) of DAP fertilizer is thoroughly mixed with soil before it is used to cover the bean seeds. Preferably, first weeding should be done **2** weeks after planting and the second after flowering of beans with constant technical advice from the extension worker.

The system's maintenance cost (**UGX**) is relatively low – **UGX 693,000** required for; payment of labour - **UGX 235,000**, purchase of chemicals – **UGX 70,000**, bean seed - **UGX 150,000**, ropes – **UGX 18,000** and measuring tape – **UGX 20,000** for one planting season.

At harvest, the demonstration can yield up to **12** bags of **100 kgs** per season/acre, each kilogram sold at **UGX 12, 000** translating into an annual income of **UGX 2,400,000** from the two seasons.

What is innovative about the technology 'Conservation basins and beans?'

Conservation basins planted with beans is particularly important during critical crop growth stages such as germination, flowering and fruiting in case of sudden drought. The basins conserve water, reduce surface run off and support extended beans growth during dry seasons. After harvesting, the bean residues are ploughed back into the basins to decompose and add humus into the soil.



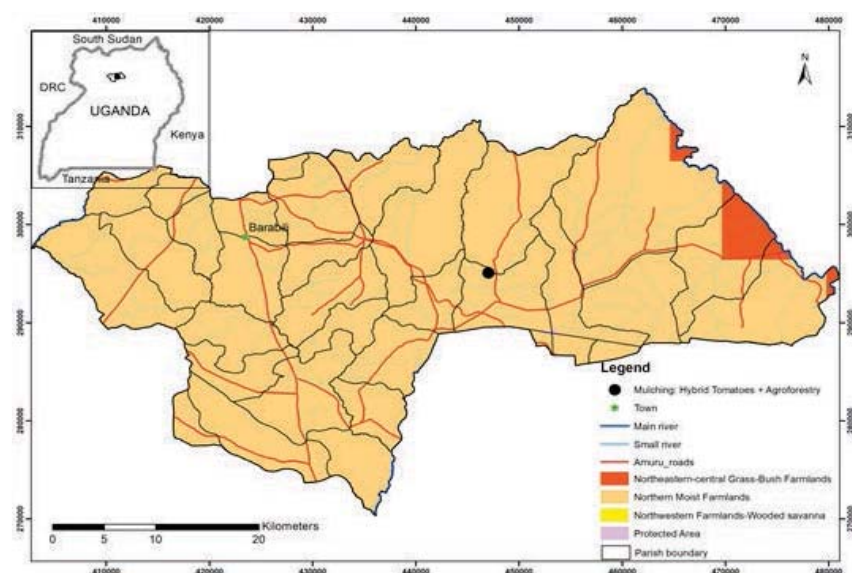
Demonstration Site 24:

How can you visit the demonstration site?

The demonstration site is located in Lagude village, Gem Parish, Lalogi Sub-county, approximately 3km off Lagude village murram road. To arrange a visit, contact the Host farmer, Extension worker or ULN staff.

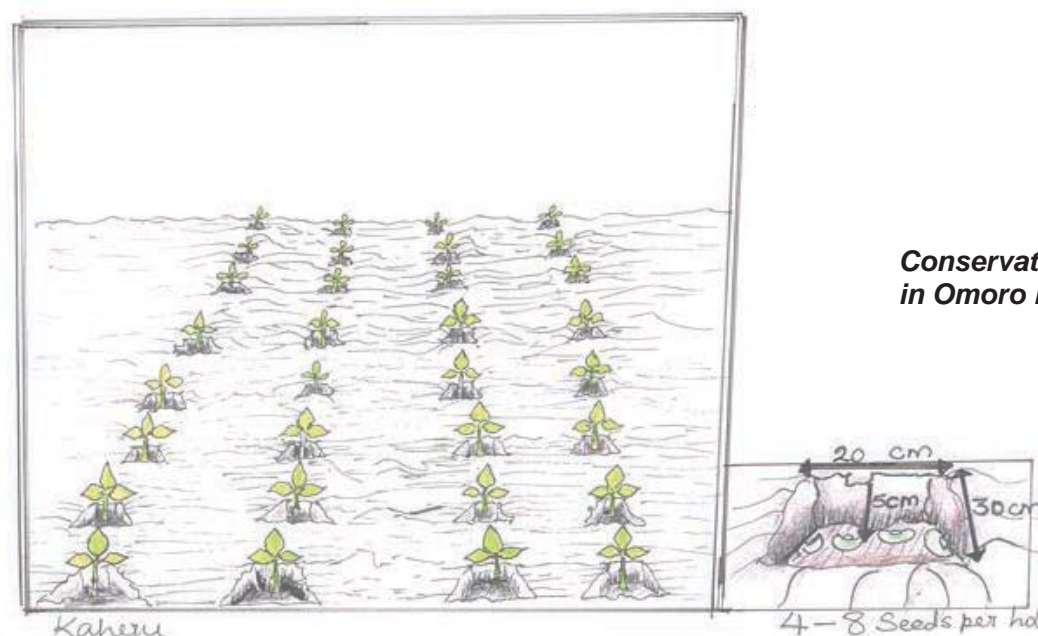
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_3307/



MAP showing location of demo site in the District

Technical drawing



Conservation Basins + Beans in Omoro District

Demonstration Site 25: Agroforestry and Beans in Amuru District

Host farmer 's contacts:

Mr. and Mrs. Tabu Richard | +256 778 031 492

Extension worker responsible:

Miss Abalo Ketty | +256 77 443 640

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Agroforestry trees and beans demonstration presents an appropriate enterprise and knowledge sharing opportunity for both male and female farmer groups.

The challenges that affect this technology are mainly; extreme weather variation in the critical stages of plant growth. The incidence of pests and diseases especially on bean plants also pose a serious challenge in the production. Possible remedies for addressing the above challenges include; timely planting, following agronomic practices and close monitoring of the demonstration field by the group and the extension worker.

On an acre of land, **400** seedlings of *Grevillea robusta* and *Gliricidia sepium* seedlings are planted at a spacing of **3m** apart. The beans are introduced spaced at **50X25cm**. Holes of different dimensions are dug for the trees (**15x15x10cm**) and beans (**25x50x10cm**) to reduce surface runoff.

Cost implications (UGX)

Key expenditures include labour **UGX 450,000**; 30kg of bean seeds **UGX 80,000**; purchase of tree seedlings **UGX 105,000**; equipment **UGX 90,000**; Transport **UGX 200,000** and sign post **UGX 70,000** totalling to **UGX 995,000**.

The enterprise can generate up to **500 kgs** of beans per season which translates into **UGX 1,500,000** if each kilogram of bean sold at **UGX 3,000**.

What is innovative about the technology 'Agroforestry and beans demonstration site'?

The system provides a potential to increase beans production, promote ecosystems and reversed restoration after decomposition of the agroforestry trees litter



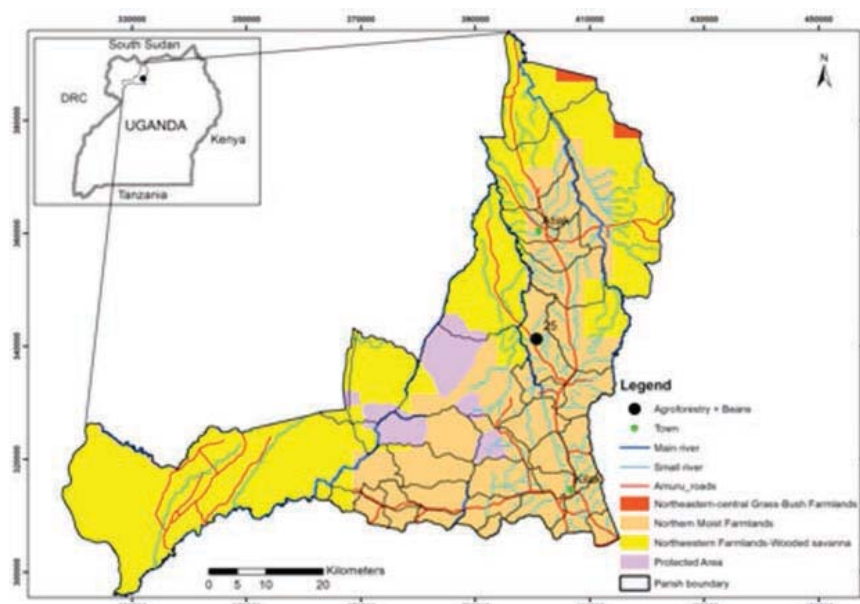
Demonstration Site 25:

How can you visit the demonstration site?

The site is located in Pabo Sub-County, Parubanga Parish, Abera village, 3 km off Amuru-Abera murram road. To visit, contact the Host farmer, Extension worker or ULN staff for arrangements.

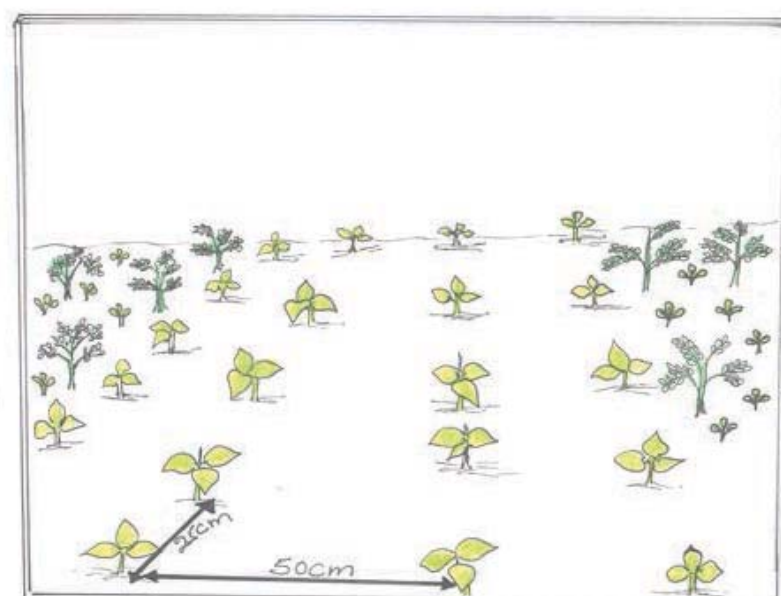
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2787/



MAP showing location of demo site in the District

Technical drawing



Agroforestry + Beans in Amuru District



Demonstration Site 26: Mulched Banana, Beans and Agroforestry in Amuru District

Host farmer 's contacts:

Mr. and Mrs. Nyeko Richard | +256 784 068 898

Extension worker responsible:

Mr. Wokrachi Samuel | +256 782 262 918

ULN staff responsible:

Mr. Walter Odur | email -

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What can you learn on this demonstration site?

Mulched Banana, Beans and Agroforestry trees is a system appreciated by both male and female farmers as a learning center and is easily replicated. It is also good at improving soil fertility, reducing weeds affecting the perennial crops, increasing production and household income.

On an acre of land, the components are planted as follows: tree seedlings of *Gliricidia sepium* spaced at **3m**; **10 kgs** of beans spaced at **50x25cm**; and **200** banana suckers planted at **3m** apart. To replicate high quality planting material is required coupled with regular monitoring as guided by the extension worker or expert farmer.

Cost implications (UGX)

The total costs of establishment and maintenance of an acre is approximately **UGX 1,620,000**. This covers labour **UGX 420,000**, 200 suckers **UGX 200,000**, 10 kg of bean seeds **UGX 50,000**, tree seedlings **UGX 400,000**, Equipment **UGX 130,000**, transport **UGX 350,000** and sign post **UGX 70,000**.

At the end of each season, income from an acre include: Up to **12** bags of beans each weighing **100 kgs** translating into **UGX 1,200,000** for unit price of **1000 per kg**; Up to **80** bunches of bananas translating into **UGX 1,200,000** for a unit price of **UGX 15,000**. Additional income is expected from tree products such as wood, timber and fertilizer to the soil.

What is innovative about the technology 'Agroforestry and beans demonstration site?

Mulching beans, banana and recommended Agroforestry trees is a perennial based enterprise. It has great potential to increase productivity per unit area and can be implemented at relatively low costs against the potential gains.



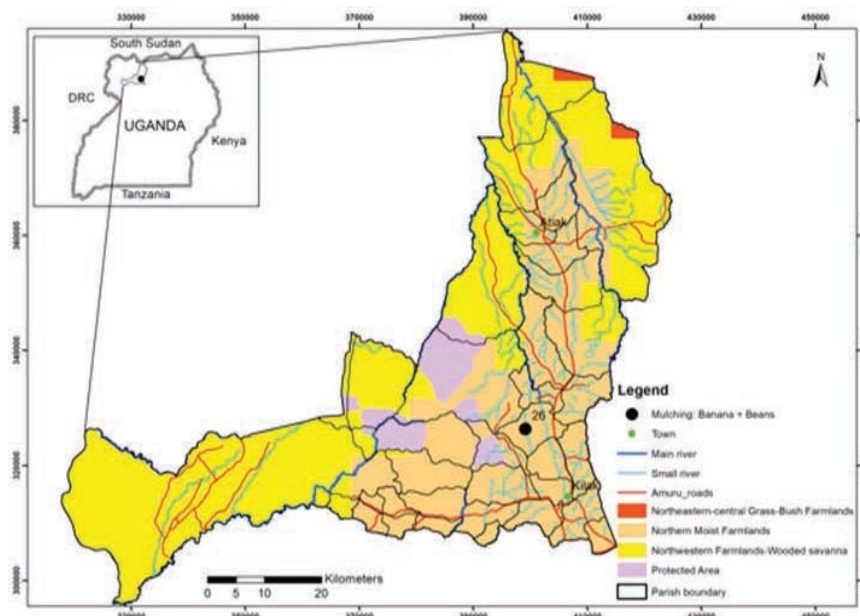
Demonstration Site 26:

How can you visit the demonstration site?

The site is located in Pabbo Sub-county, Palwongo Parish Pakumu Village approximately 0.5 km off Amuru- Atiak road. To visit, contact the Host farmer, Extension worker or ULN staff for arrangements.

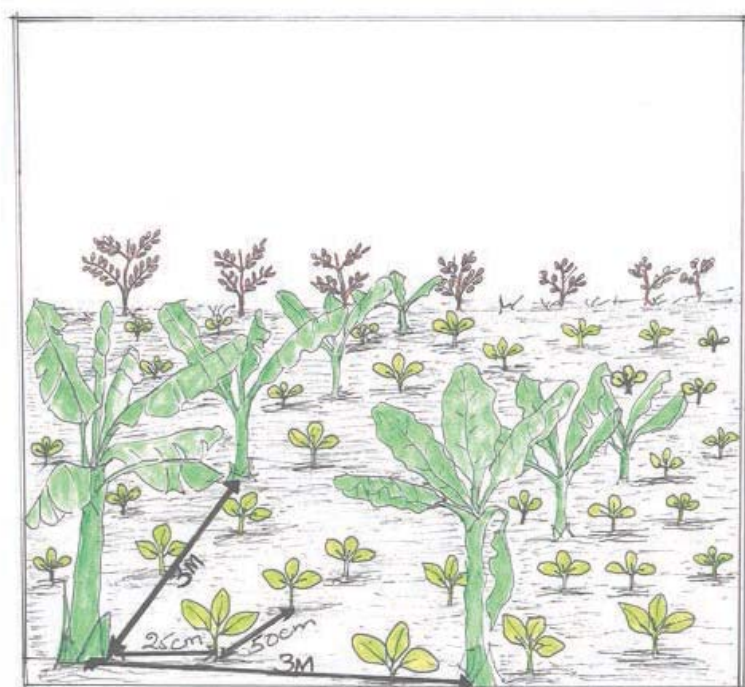
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2818/



MAP showing location of demo site in the District

Technical drawing



Mulched Banana + Beans + Agroforestry in Amuru District

Demonstration Site 27: Beans as a cover crop in Amuru District

Host farmer 's contacts:

Mr. and Mrs. Ochieng Michael | +256 784 767 747

Extension worker responsible:

Miss Abalo Ketty | +256 774 443 640

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

A system with beans as a cover crop is appreciated by both men and women as a demonstration for information and knowledge sharing among male and female farmer groups. The demonstration is affordable by typical small-scale farmers with the challenge being access to quality seed for the first planting. The farmer needs to ensure that post harvesting mechanisms are put in place to ensure that seed viability is maintained. This can be done with specialist advise from the champion farmers or extension workers.

About **30kg** of beans (NABE 14) is planted on an acre of land in rows spaced at **15×50cm** with **2** seeds per hole. Extension workers should be consulted on establishment and management technicalities that include selection of quality and quantity seed for planting, spacing and application of chemicals.

Cost implications (UGX)

On one acre of land, approximately **UGX. 775,000** is required for establishing and maintaining the demonstration. This covers labour **UGX 355,000**; equipment **UGX 135,000**; bean seed **UGX 145,000**; chemicals **UGX 70,000** and sign post **UGX 70,000**.

On average one acre yields up to **500 kgs** of beans per season. With each kilogram of beans sold at **UGX 3,000**, this translates into **UGX 1,500,000**

What is innovative about the technology 'beans as a cover crop demonstration site?

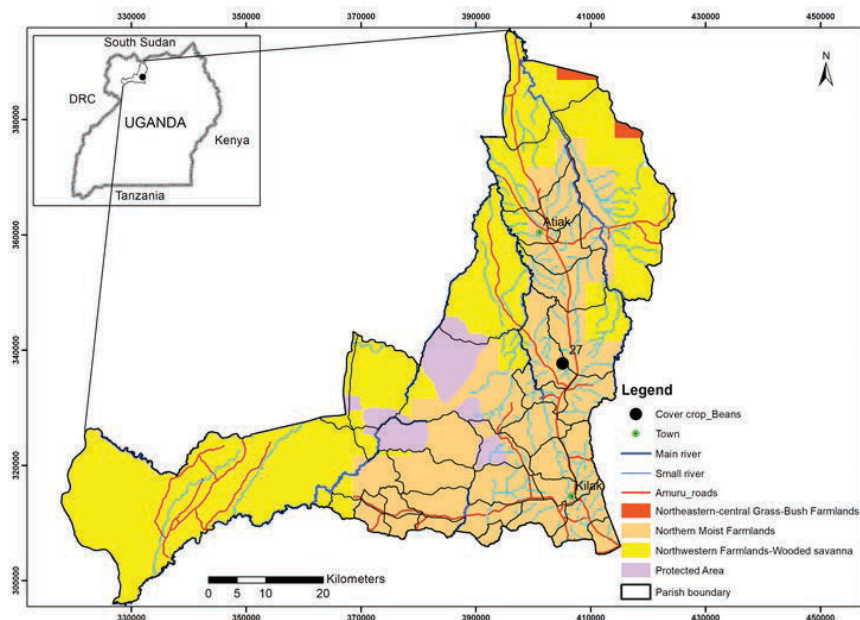
Due to the nitrogen fixing potential of the beans, there is a net reduction in the fertilizer requirement which in turn reduces the extra expenses of the farmer. Beans as a cover crop planted in rows help suppress weeds, control runoff, conserve soil moisture and soil structure. This ensures that production capacity of a unity area is increase.



Demonstration Site 27:

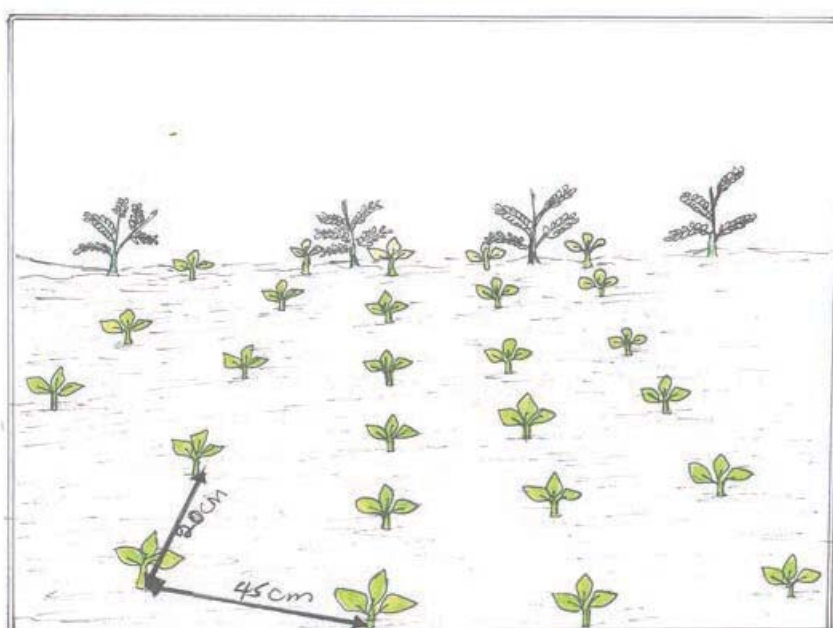
How can you visit the demonstration site?

Cover crops (Beans) demonstration is located in Pabo Sub-county, Parubanga parish, Abera village 3km off Amuru- Kilak –Abera village murram road. To organize a visit, contact the Host farmer, Extension worker or ULN staff.

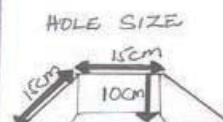


MAP showing location of demo site in the District

Technical drawing



Agroforestry with Beans in Amuru District



Demonstration Site 28: Ground water fed fish ponds in Amuru District

Host farmer 's contacts:

Mr. and Mrs. Alex Okecokon | +256 774 443 640

Extension worker responsible:

Miss Abalo Ketty | +256 788 945 199

ULN staff responsible:

Mr. Walter Odur | email -

odurwalter1984@gmail.com | +256 775 296 273

What can you learn on this demonstration site?

Ground water fed fish ponds site presents an appropriate enterprise for both male and female farmers for multiple benefits on perennial basis. These benefits include fish production for increased income and food security; improved nutritional value at household levels and availability of water for irrigation during dry seasons.

Fish production is a very sophisticated demonstration that requires permanent access to fresh water, constant extension services and supervision, none the less very profitable in short term usually **3 to 4 months**. Prospective farmers could engage in Savings and Loans Associations to access funding

Cost implications (UGX)

Three ponds of the same size established measuring **50x20x1.5 m** in length, wide and depth respectively cost about **UGX 1,498,000**. Each of these are stocked with **6000** fingerlings of Nile perch, Tilapia and Wild fish species.

Approximately, **UGX 248,500** required for stalling fish flies per pond. Regular feeding with **25 kgs** of RANAN and OMAL farm made feeds at about **2,500 per kg**.

At harvest, since the ponds accommodates 6000 fingerlings, each can yield **3 tonnes** of fish per season (**6 months**) which translates into an income of **UGX 16,000,000** per year.

What is innovative about the technology 'Ground water fed fish ponds?

Ability to harness environment to multiple benefits on sustainable basis with regular technical support.



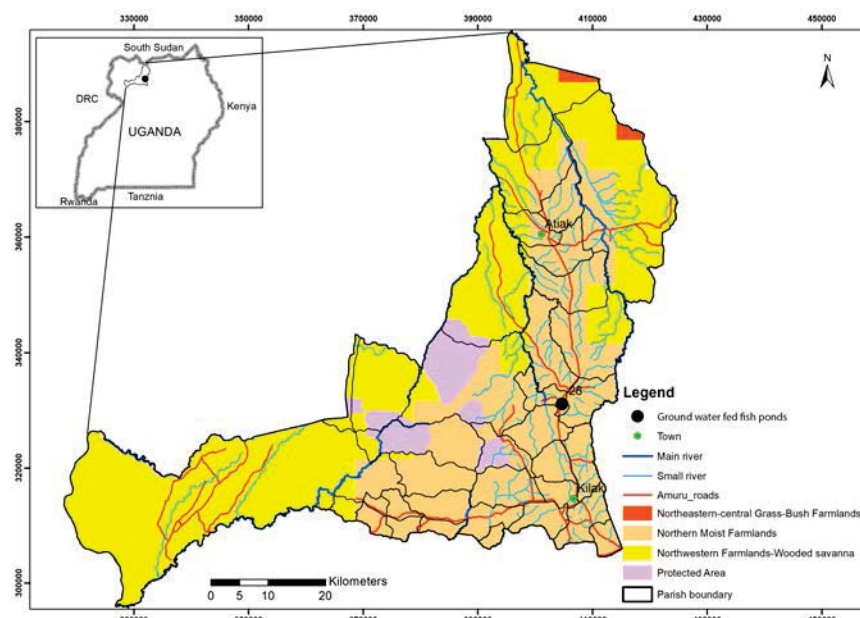
Demonstration Site 28:

How can you visit the demonstration site?

Ground water fed fish ponds is located in Palwong village, Pato Parish, Bobbi Sub-county approximately 40 km off Gulu –Juba Road. To Arrange a visit, contact the host farmer, extension worker or ULN staff.

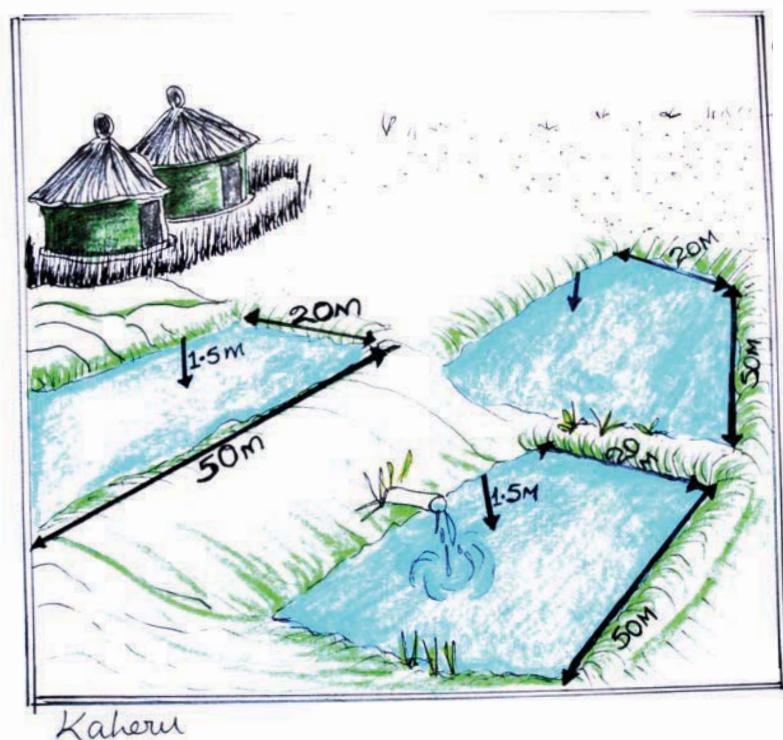
Further reading:

Technology documented in the WOCAT Global SLM Database: https://qcat.wocat.net/en/wocat/technologies/view/technologies_2796



MAP showing location of demo site in the District

Technical drawing



Ground Water Fed Fish Pond in Amuru District



Uganda Landcare Network

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