World Agroforestry Centre

Traditional agroforestry system: Balinites, sesame, sorghum, millet

Forest Landscape Restoration in a Refugee Setting in NW Uganda

Cathy Watson 27 Feb 2019 Manila

I million South Sudanese refugees entered NW Uganda in 2016-7

- ICRAF did not ‘do’ refugees so I took annual leave
- Journalists said the area was “scrub”
- Refugees were settling in mosaic of almost pristine woody savannah, open/closed woodlands with riverine forest.
- Clan land – used for collecting thatch, NTFPs and hunting
- This land has subsequently provided 200,000 refugees with over $100M worth of fuel, poles, thatch, timber, fruit


SOMERSET

Community land was much more degraded

- Long history of growing tobacco, which was cured with indigenous trees removed from the landscapes.
- Eucalyptus, mango trees, some Vitex for fruit and a lot of heavy pruning and coppicing
- Collapsing river banks
- Almost industrial levels of charcoal production for capital city
- Brick making consuming vast quantities of wood
- But still some towering mahogany and traditional agroforestry systems

Social setting: mostly women and children, aid agencies not environmentally inclined, lots of silos, severely under resourced local government

We got a six month project – arguing that…


find a job dating more International edition

theguardian

browse all sections

Working in development

'Switched on' Uganda welcomes refugees – but at an environmental cost

With the refugees being given land, voices are calling for education and funds to prevent the total destruction of trees

Cathy Watson in Yumbe, northern Uganda
Chief of programme development, World Agroforestry Centre, Nairobi

Thu 2 Mar 2017 15.37 GMT

402 5

Women stand between the borders of Uganda and South Sudan near Bibi Bidi, resettlement camp. Photograph: Justin Lynch/AP

Simon Modi, 17, has just crossed into Yumbe in northern Uganda from South

Agroforestry was the way to integrate "woody biomass" because of its potential to generate multiple benefits and complement rather than compete with agriculture in a situation of constrained space.

UKaid from the British people

german cooperation DEUTSCHE ZUSAMMENARBEIT

Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

World Agroforestry Centre

In cooperation with:

Uganda made land available to refugees, so they had “space”

- Provide some fuel from w/i settlements.
- Reduce conflict over natural resources
- Improve soil -> food production
- Directly improve diets (fruit, oil, leaves).
- Improve water regulation, groundwater recharge
- Buffer against climate extremes: Protect biodiversity.
- Protect and create livelihoods.

Further arguments for agroforestry

- Can offer resilience and sustainability in landscapes under human pressure.

- Tree growing in host communities could off-set wood requirements in refugee settlements and provide income.

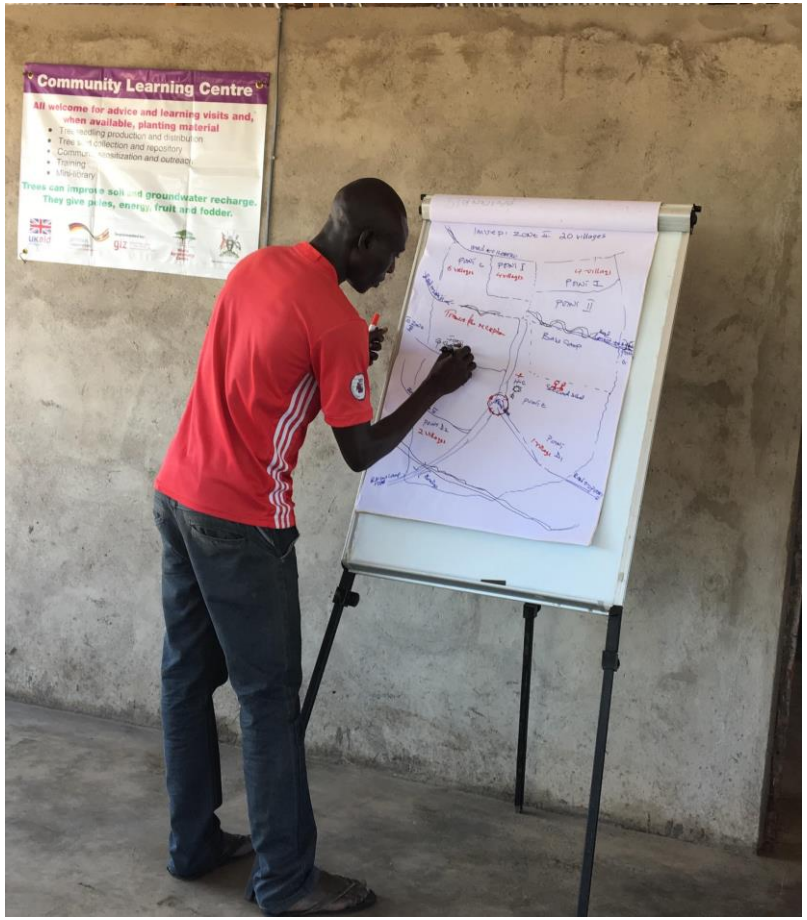
But we ended up doing as much restoration of common areas and protection of existing trees as we did agroforestry.

We did fall in the trap of counting seedlings raised & planted. But we followed up –> 70% survival.

We had to adapt our initial plans wth regard to species.

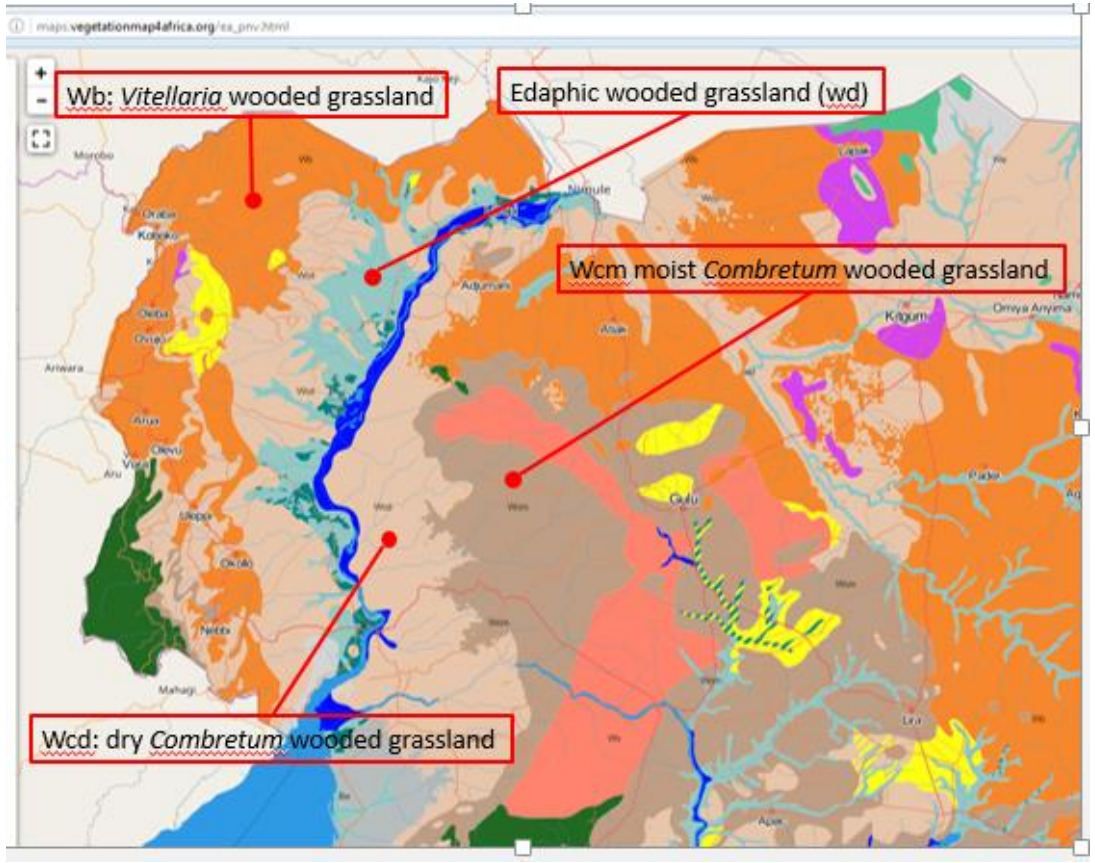
On discovering the number of stumps, we did more ANR than expected.

Refugee & host communities defined their vision



Local leaders spoke; we undertook studies, mapping

- Biomass survey
- Tree inventory
- Nutritional survey
- Brick survey



Assessment of the potential tree density per ha

Assessment area	Standing tree density per ha	Stump density per ha	Potential tree density per ha
Buffer	244.56	33.40	277.96
Rhino Camp settlement	229.65	56.39	286.04
Imvepi settlement	479.71	50.99	530.70

Stump diameter of most commonly harvested species.

Species	Stump diameter		
	>10 cm	>15 cm	>20cm
Acacia hockii	51%	21%	5%
Combretum fragrans	75%	45%	23%
Combretum collinum	75%	39%	20%
Combretum molle	58%	38%	24%

Dominant tree species with dbh height greater than or equal to 10 cm

Buffer		Imvepi		Rhino Camp	
Species	Density per ha	Species	Density per ha	Species	Density per ha
Isoberlinia doka	13.12	Acacia hockii	25.25	Combretum fragrans	10.15
Combretum fragrans	4.95	Combretum fragrans	20.79	Lannea schimperi	8.90
Pseudocedrela kotschyi	4.46	Combretum collinum	19.31	Acacia hockii	7.27
Bridelia scleroneura	3.71	Combretum molle	12.62	Grewia mollis	5.89
Combretum collinum	2.97	Grewia mollis	11.63	Combretum collinum	5.76
Entada abyssinica	2.97	Lannea schimperi	7.92	Maytenus senegalensis	5.51
Ficus sycomorus	2.97	Bridelia scleroneura	5.45	Combretum molle	4.26
Sterculia setigera	2.48	Lannea barteri	5.45	Balanites aegyptiaca	2.26
Pterocarpus lucens	2.23	Allophylus africanus	3.47	Lannea barteri	2.13
Cussonia arborea	1.98	Acacia sieberiana	3.22	Bridelia scleroneura	1.75
Ziziphus abyssinica	1.49	Piliostigma thonningii	2.23	Tamarindus indica	1.63
Stereospermum kunthianum	0.50	Ziziphus abyssinica	2.23	Lonchocarpus laxiflorus	1.13
Others	17.58	Others	32.42	Others	18.55
Total (n/ha)	61.39		151.98		75.19

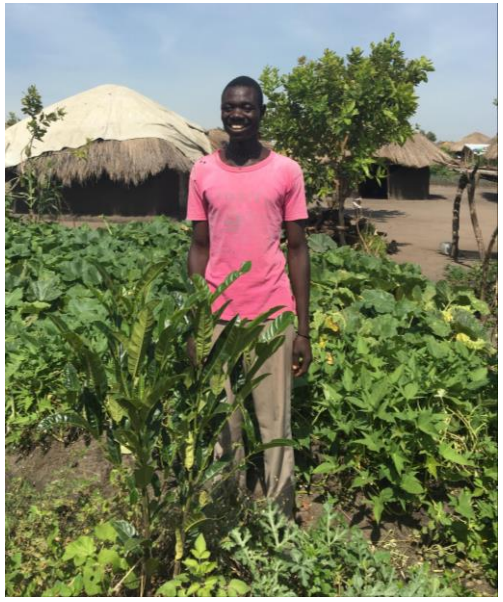
Household survey on wild food collection

	Frequency (n=119)	Percent (%)
Household harvests wild foods	28	23.5
Types of wild foods		
Fruits	29	24.4
Vegetables	14	11.8
Nuts and Seeds	2	1.7
Roots and Tubers	1	0.8
Others	1	0.8
Where wilds foods are collected		
Own farm - fields, fallows	5	4.2
Other farms	5	4.2
Road side	6	5.0
Idle land - not used land	11	9.2
Natural habitants e.g. forest, bushland, river banks	23	19.3
Reasons for collecting wild foods		
To reduce expenditure on the cost of food	11	9.2
Medicinal value	9	7.6
Are readily available	15	12.6
To diversify the diet	15	12.6
To improve food taste	17	14.3
Cultural (we have always collected food from the wild)	13	10.9
Sell of wild foods		
Yes, some of them	4	3.4
No, used only for own consumption	24	20.2

We raised and planted 156,00 seedlings in six months

We showed that refugees and hosts wanted + protected trees. Many species grew fast

Refugees with 50x50m plots asked for on average 53 trees.
Those with 30x30 M wanted average 33 trees.
Many seedlings well protected, especially fruit trees.



Jackfruit in June

Young refugee farmers stand next to their trees in Oct 2018

We documented that trees were more than fuel + construction material – key source of nutrition

Out of 80 species, 31 had edible parts

Critical for dietary diversity, especially for children. A major reason to preserve biodiversity

We pivoted to Assisted Natural Regeneration

“There’s stump regenerating every one to two metres”

@ 100 stumps regenerating per hectare.

We learnt - you do not always need to encourage planting – encourage leaving trees when opening land

We supported livelihoods, some new – e.g. honey

But was it FLR? – Yes but early stage

1. Focused on a landscape ☑
2. Engaged stakeholders ☑
3. Aimed to restore social, economic, ecological functions ☑
4. Aimed to conserve, not destroy ☑
5. Tailored to local context, variety of approaches ☑
6. Managed adaptively ☑

Still to do

- Vulnerable groups
- Benefit sharing
- Management plans
- Greater landscape focus

END