

Permaculture in the Democratic Republic of Congo

By Dom Kihara-Hunt, Sustrainability

Introduction

I have recently returned from working in the Democratic Republic of Congo (DRC), setting up and running a food security project, of which a large and important part was permaculture. This article is about the project, the country, the people and the permaculture in one forgotten corner of war-torn Africa.

I was working for GOAL, an Irish NGO. In DRC they had been working since 2001 in Goma and North Katanga (see the map), based in Manono, where I was.

GOAL-Manono was running two projects, a health project and a food security and infrastructure rehabilitation project, and it was the latter project that I was hired for, to be the agriculturalist. I started in November 2002.

About the Author

Dom has been working in participatory natural resource management since 1994, in Cambodia, UK, Australia, East Timor and DRC. He was taught permaculture in East Timor.

He worked for GOAL in DRC 2002 – 2003.

He is now a trainer of permaculture and participatory methodology.

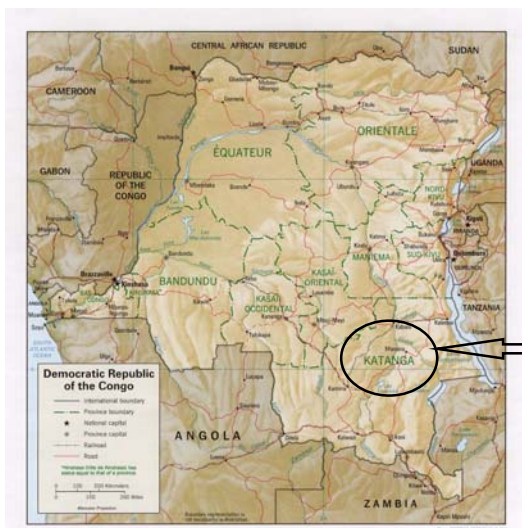
Contact him at dom@sustrainability.com

or check out what he does at

www.sustrainability.com

Some background on the project area

DRC, ex-Zaire, has been in one of the most protracted, bloody and forgotten wars in Africa, involving 8 African countries. It is also, in terms of resources, one of the richest countries in Africa, with the Congo river and forest, huge mineral resources and a small population. Their recent history of civil war is complex, and has contributed to millions of civilian deaths and massive displacement of the population. MONUC, the United Nations mission in the DRC, are presently brokering a peace deal that seems, finally, to be having some success, although there are still localised conflicts.



N. Katanga: GOAL project site, based in Manono

War came to Manono in 1999, when it was taken by the RCD (Rassemblement Congolais pour la Democratie, Rwandan backed rebels). MONUC established a presence in Manono in 2001, and declared the town de-militarised in 2002, when RCD soldiers stationed there moved off to defend another town. Surrounding Manono, in the rural areas, is land controlled by the Mai Mai: raggle-taggle militant groups, supposedly Government-aligned. They are characterised by their magic and their cannibalism (to become a Mai Mai, apparently, one must eat the flesh of your enemy!) Power grabs for the seat of local administration, Manono, are not uncommon. Thus far MONUC has managed to intervene.

There are about 90,000 families in the GOAL project area, which is roughly 22,500km², bordered by the Congo river and the Luvwa river. It is made up mainly of fertile sandy soils with open bush. Flood plain grasses and alluvial soils are found near rivers, with sparse savanna further from the rivers. There are some rocky hills in the south of the area, covered in stunted forest. There are 2 distinct seasons, the wet that lasts for 6-8 months and the dry that lasts for 4-6 months depending on the year.



The Congo River

The majority tribe in the area are the Wa-Luba, and there are also the Mutembo, a tribe who's physiology is half-way between the pygmy and the normal Bantu people. The Wa-Luba are agricultural, the Mutembo are hunter-gatherers.



Temporary houses, Kahongo

Local agriculture is at a subsistence level only. The population density and the pressure on the land is very low. In the rural areas, for someone to farm it is enough to ask permission from the village chief to use some land, and a 1ha plot is granted. There is little incentive to care for the land, because once the soil is depleted (in about 3-4 years with no fertilisation, mulching, fallow periods or crop rotations) they can simply move on to another plot. On observation, much of the 'bush' has infact been cultivated, only visible at the end

of the dry season when the fires burn the grasses away. The landscape becomes a tapestry of old raised beds. The fires are used for hunting, for regrowth of soft grasses for pasture, and to control snakes.

The basic crops are maize, peanuts, cassava, rice, beans and some vegetables. They also keep pigs, goats, sheep, cattle, ducks and chickens. As with all traditional cultures there is a wealth of knowledge about the uses of plants – which ones make insecticide, medicine, food or for ceremonies, and there is also a deep-rooted tradition of hunting (clearly – there almost no wildlife left).

The Food Security and Infrastructure Rehabilitation project

The project was set up and funded by the Irish government to fix up the roads, rehabilitate the markets and boost food production in North Katanga. GOAL had 2 engineers in Manono and I was hired as the agriculturalist to do the food production side of things. I was given an essentially empty slate to work with, within the constraints of needing to boost agricultural production across the region, and to establish three agriculture centres. The goals and methodology were left up to me. It was A perfect opportunity to get permaculture rolling.

Three Agriculture Centres

The first task was to set up the three agriculture centres. Briefly the vision here was to establish model farms for demonstration, trial new techniques and species, produce seed for distributing to innovative



A chicken house and chicken tractors, Kahongo

farmers and as training venues. Each centre has a school building, office, latrines and store room as well as the farm itself.

I had the opportunity of being able to design farm plans for them. One of them I did myself, one was done by students of a training course, and one was designed with staff of the centre.

Every centre has a chicken tractor in it. Chickens are commonly kept by locals, but are not well looked after. They are rarely fed, so have to fend for themselves pinching people's food, running amok in fields and avoiding feet of the children! They suffer from an annually occurring disease, *cloxyssomiasis*, caused by eating food mixed with their faeces. Simple management of chickens would go a long way to solving these problems. Furthermore, the tractor system also demonstrates that chickens can also fertilise, weed and remove pests from the farm. We are growing onions, garlic, aubergine, amaranth, tomato, ochra, cabbage and chinese cabbage in the tractor systems, and protecting them from bugs with



Vegetables and a chicken tractor behind the school building, Mulongo Agriculture Centre

chilies, tobacco and lemon grass. We plant these plants in among the crops and make insecticide mixes too.



Chinese cabbage and a goat house

We are growing staple crops, intercropped in rotation: maize, peanuts, sweet potatoes, kidney beans, cassava and soy beans. Rice is grown with taro in the wet season, and ducks are kept in the same space, providing snail control and fertiliser. Fruit orchards also have goats (careful of the young trees).

Compost and mulch comes from the grasses that grow everywhere, fast, mixed with goat and chicken droppings, and recycled crop parts (especially from legumes like peanuts). We also tried, with some success, liquid fertiliser from soft leaves, cow manure, sugar and water, left to ferment for a couple of months and then applied when watering ('fertigation').

The agriculture centres were also places to trial building: wells (comparing traditional style wells with more western approaches using concrete well rings), latrines (ventilation methods on pit latrines) and school buildings (solar-cooled).



Solar-cooled building, Manono

The most important function of the centres was the training, which I will go into below.



The Extension workers in the training course

An extension service

I hired 30 people to become the region's extension service – 9 mobile teams (on bicycle) visiting fields and villages, providing technical assistance to farmers, doing research for GOAL and generally being the interface between the project and the population. They were invaluable to the success of the project and represent the future of the project – furthering permaculture the Congolese way.

Training

To start their job, I gave them three weeks of training. Week one was in PLA (Participatory Learning and Action – skills for the facilitator of participatory research, planning and evaluation) and the next 2 weeks were a Permaculture Design Course. I believe I am the first person to ever run a PDC in the DRC.



Students mulching raised beds

Permaculture, predictably, went down really well. They loved the self-sufficiency angle. These people have never been given training and opportunities to improve their lives without becoming dependant on something or other. A training course that promotes cooperation, community and sustainability was well received. In fact, I was inundated with requests to do more.



Students making a compost bin

In response, we identified representatives from cooperatives and innovative farmers and invited them to another PDC. All apart from one attended, amazing as we did not provide accommodation or food, and some people had to walk for 2 days to get to the training venue! In total we had 72 people there. We had to evacuate half-way through as the town we were in looked like it was going to be invaded by a Mai Mai group, but luckily it wasn't, so the next day we returned and carried on.

It paid off too. Just before I left I was invited to visit a farm that had been set up by trainees of the first PDC. They had laid out a field with keyhole gardens and banana pits round the edge, and a giant fishbone garden in the middle. They had planted all sorts in it, and were busy composting and mulching. They had situated the field in town, at a busy junction, to be another demonstration field.



A keyhole-shaped germination bed

Infrastructure Rehabilitation

GOAL also rehabilitated about 600 km of rural roads in the area, connecting farm to market. People were paid to do the work; clearing, leveling and digging canals, which had the secondary function of injecting some well-needed cash into the rural areas.



A normal North Katangan road

The roads led to health centres and the main market points – 5 in all, and GOAL rehabilitated them too. Before I left 4 were in use already, where only 2 were used when I came. The 5th one was not yet used as it was waiting for river trade to start again. It was not safe enough to do that yet. The market, however, will wait until the time is right.



Mulongo market prior to rehabilitation

Distributing Seeds and Tools



Scene from a village distribution

The DRC is slowly recovering from war, and when I arrived people were still emerging from the bush, where they had existed for years in some cases. Some people returned with, literally, nothing. Almost nobody in the entire region had seeds and agricultural tools, so an important part of boosting agricultural production was distributing seeds and tools. We distributed to 10,000 families, and targeted the most remote and poor who live in areas with fertile soils (in order to maximise production).

Each family got a pack of 7.2kg, within which there were seeds of rice, maize, peanuts, kidney beans, soy, tomato, onion, aubergine, amaranth, one machete and one hoe. When distributing, we also gave out a leaflet with comic strip instructions on how to plant the seeds (seed depths, distances, shade, water and soil), composting, raised beds, and seed saving and storage. This was the first time ever (apparently) that anyone had given a leaflet to the local people.



Receiving a seeds and tools pack

The distribution was a logistics challenge extraordinaire: everything had to be flown in (no other way into North Katanga), including the trucks. We flew in 80 kg of seed, tools and associated materials and two 4WD trucks. We rehabilitated a huge warehouse to store the seeds in while we packed them into the 10,000 family packs. We had to combat a huge outbreak of weevils and another outbreak of theft (beans were hot property).



Broken down en route.

Meanwhile the extension teams were getting family lists and setting up committees in each village, to oversee the distribution and make sure people were not losing out or taking more than one pack per family. They also had to decide where to distribute to – not easy to choose 10,000 families out of 90,000.

Where is the project going now?

The agriculture centres and the extension service are still running, and discussions are being held for them to be taken over by local groups of some description. There are no groups ready at this stage to do so,

including the local administration, but the time is right to start training and preparing for a more sustainable future.

Training courses run through the centres will be increased with the hiring of 2 permanent trainers in each centre, to run short courses in topics requested by farmers in the area. The mobile extension teams will find out what the people want to learn, inform the trainers at the centre who will provide the course (free). The people will be informed when the course is by the extension teams. There may be more opportunities for longer courses and PDCs too, depending on demand and funding.

Another distribution, to another 10,000 families, will take place too, to reach the vulnerable people that the first distribution missed out.

GOAL will also embark on 2 new avenues: small-scale irrigation and donkeys. There are countless areas perfect for irrigation, either by holding back flood waters for the duration of another growing season, or by hand-digging simple canals and gravity-feeding water to fields. GOAL will start off with 2 pilot sites, to learn the ropes. The technical side is not that difficult, but the community side is. Although there has been irrigation in North Katanga before, it was never owned by the locals. There would be a massive task to organise people, ensure water is properly managed by community-elected committees, get the structures built and maintained and used properly, and all the training that would have to go with it.

The donkey project is born out of requests put to GOAL by locals, for transport. Engine-powered transport is unfeasible in North Katanga, regardless of the environmental consequences of it: there is no fuel, mechanic or way to import cars, and no money to buy them if there were. Donkeys, however, are suited to the climate, strong and can be trained. They will pull a cart full of produce to the market and a plough around a field. All hardware needed for the successful use of donkeys, like cart wheels, bridles and plough blades, can be found locally.

Some Concluding Remarks

GOAL set out to improve food security, and within one year we could see significant improvements. Malnutrition cases in the health centres were largely a result of disease, and the 2 main markets in the area expanded three-fold in the year I was there.

However, perhaps more importantly (and not predicted), GOAL helped re-start the rural economy of North Katanga. Roads linked farms to markets, markets were rehabilitated, money (or buying power) was given to people and the means of production provided too.

This project has a real chance of becoming sustainable, due to the emphasis on training and the sustainable nature of the training courses, permaculture. Structures come and go, fields get burned, but as long as people live their ideas will travel with them. Important technical ideas that people need to take in are, in my opinion, composting, storage and crop integration. Composting will enable people to use the same field over and over again, so they can stop shifting and leave the bush for wildlife and wild foods. Better storage of seed and harvests will help them have sufficient food for generations, not just a few years.

With the peace process comes the possibility for people to invest in their futures again, put effort into their farms and lives and stop running. In the meantime, though, they have to eat, so they have to plant. I was criticised for handing out machetes to people, as they could use them as weapons. I disagree – machetes are an essential agricultural tool, and they need reasons to stop fighting. The seeds and tools distribution allowed 10,000 families to grow enough food. The effort they put in to get their new fields going, and the focus we put on sustainable agriculture, will stabilise the population. They are running out of reasons to keep fighting. If things go the way I hope, the training, demonstrations and support provided by the agriculture centres and the extension service will help ensure that they develop their farming in a socially and environmentally positive way. Permaculture can help people reach self-sufficiency