

SGG-ROTARY TROPICAL TREE-PLANTING AND CONSERVATION PROJECT

INTRODUCTION

Sustainable Global Gardens [SGG] has been promoting tree-planting in East Africa for several years. Most of the trees planted so far have been planted on small-scale farms and have been directly useful to the farmer, such as fruits [e.g. mango, avocado, pawpaw, bananas, citrus fruits] or multipurpose species [e.g. *Grevillea robusta*, *Azadirachta indica*, *Markhamia lutea*, *Moringa oleifera*]. The main purpose of such tree-planting has been improvement of the environmental conditions & production on the farm, together with improved socio-economic status for the farming household. The work contributes to UN Sustainable Development Goals [SDGs] no 1 and 2, the eradication of extreme global poverty and hunger, which are the foundation aims of SGG. Such activity also falls within Rotary's 'economic and community development' area of focus. The strategy of working directly with small-scale farmers means that SGG contributes to UN SDG no 17, international cooperation & partnerships, at grassroots level. Most of SGG's tree schemes continue to be of this sort.

After 2019 SGG began tree-planting for an additional two purposes. One was for climate change mitigation and adaptation. SGG field monitors have noticed increasing concern about climate change in all our project locations. We also note that our African partners are increasingly aware that they suffer from the problem of increased atmospheric carbon which originates from Europe and other developed economies. SGG accepts the 'polluters should pay' principle. This implies that, although we view reduction of carbon emissions in developed economies as the priority action to reduce climate change, we also accept support for African small-scale farmers as justified compensation. Investment in tropical tree-planting not only provides such recompense in rural Africa but also aids climate change mitigation to benefit us all. SGG's tree-planting for carbon capture contributes to UN SDG no 13.

SGG is also aware of the loss of biodiversity in our several project locations, and yet there is often spare land available where wildlife habitat could be restored without significant damage to local farming. On such land forest restoration offers a solution which provides not only improved habitat but also a 'carbon sink', better water supply, and new employment opportunities outside agriculture. Degraded forest areas and mangroves both offer opportunities for needed regeneration work, and some of SGG's new planting schemes are found in such locations. Furthermore, SGG partners experienced in such forest regeneration work have often concluded that natural regeneration, or 'rewilding', can be a more effective process than simple tree-planting. Thus, this action of forest regeneration is included in SGG's tree project portfolio and contributes to UN SDG no 15.

EARLY PROGRESS

The original plan was to launch this agroforestry, carbon capture, forest restoration project in 2019, with a planting target of 100,000 in that year. However, SGG and much of the world was severely disrupted by the coronavirus crisis in 2020-2021, and SGG was unable to undertake the key task of tree monitoring. The project has therefore been extended into a four year programme, which is meant to finish in December 2022.

The first years of this project were documented in February 2021 in [SGG-RotaryTP+Cproject\[1.2.2021\]](#), which was updated and modified in May 2021.

The May 2021 report summarised progress as follows:

”At the time of writing SGG has a total of 80,035 trees either counted/confirmed by SGG or recorded by SGG’s local coordinators or planned for planting before July 2022. This number of trees may well be in the ground by the time of SGG’s next monitoring & payment field visit, so SGG is now looking to secure further funding support so that this project can exceed the 100,000 planting target. Concerning the number of farmers participants, there are now 178 entries on SGG records of planting schemes, yet SGG estimates that we still have hundreds of farmers still to visit.”



Much of the early tree counting was done among small-scale farmers in Busia, West Kenya. Siguli Self-Help Group established a tree nursery and then gave out a selection of 10 seedlings to members & nearby farmers. Here [see above left] a member is pleased to receive seedlings which include *Moringa oleifera*, *Grevillea robusta* & pawpaw. By November 2019 SGG recorded 32 farmers had planted 1,723 trees in this locality. Some planters were starting to gain valuable experience in tree-planting. This farmer [see above right] had not been very successful with her first tree-planting of *Grevillea* in 2014, but by 2019 she had two small woodlots where she had planted *Mwarobaini nusu*. Her neighbouring farmers had discovered that this species was more resistant to termites and better suited to this locality with unreliable rains. SGG recorded 437 trees planted by 7 farmers from the Mukwano group at this time.

By the end of the November 2019 field visit to Kenya & Tanzania, SGG had recorded a total of 20,847 seedlings planted or pledged to be planted by Easter 2020. Most of the funding for the farmer payments came from a generous donation by the Rotary Club of Newcastle-Gosforth, who were the first UK club [to SGG’s knowledge] to meet the “Ten thousand Tree Challenge” of funding the planting of 10,000 trees in Africa.



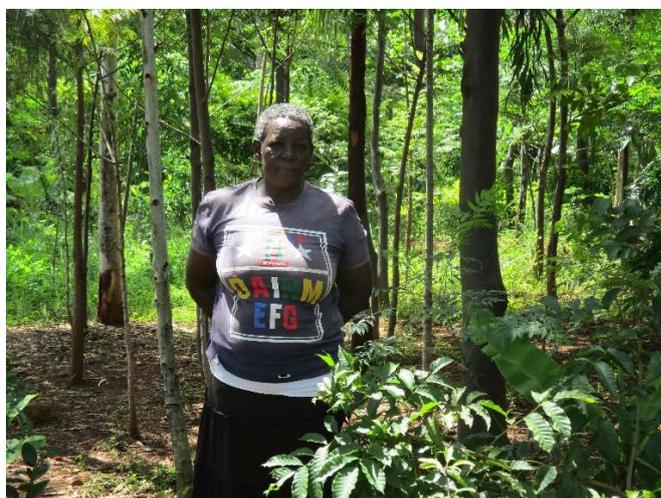
In Tanzania there was a slightly different approach to tree-planting. Although there were many small-scale farmers who adopted a strategy of agroforestry planting, there were others more concerned with forest restoration. Here [see upper photo] our guide stands next to a recently planted tree amidst an area of degraded forest. This land is part of an estate whose prime business activity is hospitality for nature tourism. The owners wish to use spot-planting of indigenous tree species to improve the local biodiversity, especially birds. Much of SGG's investment in Tanzania passed through various Rotary clubs, who often favoured planting on neighbouring school grounds in order to promote better environmental education among the young. Here [see lower left] in these secondary school grounds SGG counted in November 2019 149 trees planted that year. Of these 92 were avocado fruit trees, some of which are seen in the photo. This was part of the tree-planting work of Mamba Rotary club. However, of the 8,717 trees counted in North-East Tanzania at this time, only 1,212 were recorded as being in school grounds. Many of the other trees were planted in public spaces [e.g. along roads], but most were planted on farms. Furthermore, SGG believes that there are still many more farms were monitoring still has to be done.

The November 2019 field monitoring was the last visit to East Africa until May 2022. During the covid years with associated travel restrictions, SGG received tree count reports from local partners and also a significant increase in grants, but was unable to confirm any claims about tree planting. Nevertheless, as mentioned earlier, by May 2021 SGG had records suggesting that about 80,000 trees had been planted in 175 locations, the great majority of whom were small-scale farmers practising an agroforestry approach to tree-planting. Monitoring those tree-planting claims in 2020-2021 may have been impossible, but in those years new opportunities arose and SGG managed to broaden our funding sources. By May 2021 the Rotary clubs of Newcastle-Gosforth, Sherwood Sunrisers, Newcastle, Berwick, Wymondham, West Vancouver, Tyneside, Milton Keynes, Barton-le-Clay, Stokesley, Kings Lynn, Thornbury, Newport Pagnell and Harrogate had all made significant donations for tropical tree-planting work. Those contributions were further boosted by grants from two funding trusts, the Souter Charitable Trust and The Tula Trust, and also a start-up commercial company, PithSupply. This fundraising meant that SGG would be able to reward the many tree-planters for their efforts whenever SGG was next able to visit and monitor the many tree-planting locations on record.

RECENT PROGRESS

The next opportunity for SGG to monitor tree-planting and confirm farmer claims occurred in May 2022 with a six weeks visit to Western Kenya. Before my arrival in Nairobi what concerned me was the possibility that many of the farmers who had been past partners with SGG might have neglected tree-planting when faced with so many other concerns. I was very pleasantly surprised that the opposite was the case, Indeed, the farmers known to us in West Kenya seem to have taken to tree-planting in a way that seemed unimaginable a decade ago. After a busy period of fieldwork, SGG had records by July of an estimated 38,728 surviving trees counted in 213 different locations. At this stage the total number of trees planted since early 2019 and recorded by SGG reached 140,025 trees. Bearing in mind that SGG still has to count and monitor trees planted in Malawi and Tanzania [which will be done in January-March 2023], we are now optimistic that we may reach a 200,000 new tree-planting target by the end of this year.

There are several purposes and planting strategies within this project, and the following section of the report will illustrate some of these.



There are many planting strategies used in agroforestry, but the tree species chosen is always useful to the farmer. Here [see top left] three lines of *Gevillea robusta* separate the farmer's home enclosure from his maize plot. Sometimes farmers prefer to have a woodlot. Some of the trees here [see above] are older than 4 years, planted in a previous project so they were not counted now. Nevertheless, there were 53 non-fruits & 13 fruits counted by SGG in this 'little forest'. The farmer here has a small woodlot of Mwarobaini nusu nearby, but here [see left] next to the path is a line of *Sesbania sesban* which separates the farmers maize field from rough pasture land. *Sesbania* is a highly nutritious fodder crop.



[see above left] The community group Nyusa Farmers have established a kitchen garden in order to increase the production of vegetables & fruits to improve the nutrition of children under their care. During SGG’s monitoring visit, the vegetable plots included cowpeas, amaranth, sukumawiki, groundnuts, onions, pumpkins, soya beans and various ‘indigenous vegetables’, but there were also 10 young avocado, 5 jackfruit, a mango, a pawpaw and several banana clumps in this small garden plot. Here [see above right] Hendrica Onyango stands in her maize plot and holds one of her 22 new citrus trees. She also has 12 mangos and 8 avocados scattered around her farm as well as an estimated 88 non-fruit trees.



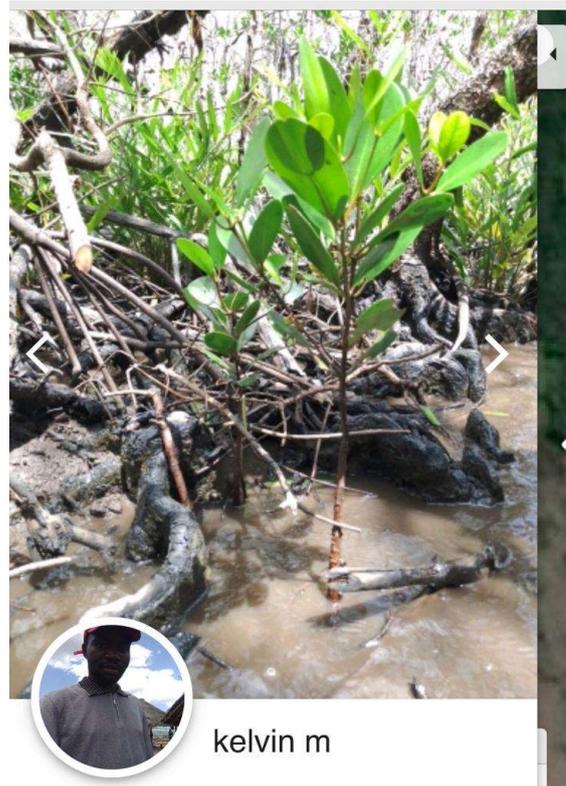
Some Kenya farmers have completely different strategies for tree-planting. Here [see upper left] the farmer has planted about 1400 eucalyptus, Grevillea and cypress – all fast-growing exotics on less than one quarter of his 6 acre farm. The plan is to leave the woodlot for 10 years, then sell all the timber, and replace it with indigenous species. Such timber production will provide a far greater income than the other three-quarters of his farm. The species mentioned are all exotics and not the environmentalists favourite species, but SGG believes it is very reasonable for small-scale farmers to generate what income they can on these smallholdings.



SGG has recently noticed an increased interest amongst Kenya farmers to reestablish much of the tree cover which was found in their localities fifty years ago. However, here [see lower left] is a rather unusual farm near Bar Ober. The farmer has established a “food forest”. Nearly all the farm has a canopy of mature trees, but there are also small patches where cassava, millet, and other cultivated crops are grown. This type of land use is much more resilient to climate change than neighbouring farms with open fields, so it is likely that this pattern of land use will increase in the future. This farmer, who has many large trees, is interested in maintaining his forest for carbon capture purposes.

One benefit of the 2020-2021 covid years is that SGG managed to establish working partnerships with other likeminded NGOs who had field staff permanently in East Africa. Most of these NGO partners have their own website, and readers of this report are invited to find out what these other NGOs are doing. One important partner is Fairtree, who have been pioneering the idea, very similar to SGG's strategy, of renumerating tree-planters for the work that they do. We invite you to browse <https://fairtree.org>. This NGO complements SGG projects in that most of our tree-planting has been done in humid area where there is seasonal but adequate rainfall for farming, whereas Fairtree has considerable field experience in the marginal drylands of East Africa. Another NGO of importance to SGG is ACES, the Association for Coastal Ecosystem Services. In 2021 when SGG had some slight involvement in COP27, we discovered that mangrove forests are much more effective at carbon capture than terrestrial woodland. ACES are specialists in mangrove restoration work and associated community development, with an award-winning project on the South Kenyan coast. See <https://aces-org.co.uk> for details. Yet another SGG partnership is with rotarian Fiona Barretto from the Rotary club of Amherst, New York State. She is active in both the planting of mangrove in the villages between Dar es Salaam and the Rufiji Delta and also the promotion of *Moringa oleifera*.

For all three of these collaborations SGG's main involvement has been funding of their projects with SGG also maintaining the roles of occasional monitor during field visits and writer of reports to SGG's own sponsors.



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Fiona Barretto and her community groups have promoted moringa and mangrove restoration along the Tanzanian coast. A large moringa nursery was established [see above left] with Wymondham Rotary Club providing a donation for 2,500 of these seedlings. *Moringa oleifera* is often regarded as a 'miracle tree' with several, scientifically established health benefits. Not only can it be eaten in local dishes, but there is also potential for commercial sales in overseas markets. SGG has also paid for the planting of 7,733 mangroves. Mangrove forests are important as effective locations for carbon capture, a necessary habitat for fish nurseries, and as a protective barrier against storm surges & coastal flooding. Here [see above right] is a novel way of planting: a local villager plants a young mangrove in an area of degraded forest, he takes a photograph with his name as proof of the planting, and then gets paid directly for his 'environmental service'. SGG believes this is a great incentive for local people to get involved in the improvement of their own environment. Fairtree use the same payment system, but in other locations.

The main collaboration in 2023 is likely to be with ZombaTreez. For the last few years SGG has looked for possible projects in Malawi on the grounds that SGG is a poverty & hunger alleviation group and Malawi is one of the poorest in the world. It has a UN HDI ranking of 169 out of 191, with most of the countries below being located in the Sahel or in a state of war. SGG has previously invested in tree-planting in Malawi with a donation, originally from the Rotary club of West Vancouver, of 4,000 trees to be planted by the NGO Wells4Zoe, but a ZombaTreez collaboration offers the potential of relatively large-scale environmental improvement, with a different strategy for planting, and combined with agricultural/horticultural development.



ZombaTreez are based at Zomba Forest Lodge. The Lodge area itself is well-wooded but much of the surroundings are degraded forest or pine plantation. The original aim of this project was to replant areas of degraded hillside [see above left]. This usually required local community volunteers to clear areas of bush [see above right] and then spot plant seedlings of indigenous tree species [see below left]. The main problem here is the locality is very vulnerable to bush fires at the end of the long dry season [see below right], so much effort is invested in fire suppression by local community groups who are rewarded for their work by ZombaTreez who support various community activities. Although spot-planting continues, ZombaTreez have noticed that natural regeneration, or rewilding, combined with fire prevention can be more effective at forest restoration than simple tree-planting. This is one of SGG's main forest regeneration schemes, and £2,000 has already been donated to aid reforestation here.



What specific contribution is SGG making to this project? While ZombaTreez focus mainly on forest restoration, SGG has invested in activities which will improve the productivity of the small farms on which the local villagers depend. For the first part of this 5 year project, SGG has funded training in the Tiyeni ‘deepbed’ farming method. See www.tiyeni.org for details. [See below left for an illustration of Tiyeni training]. This method emphasises the benefit of breaking up the sub-soil hardpan as an aid to greater root penetration, greater infiltration of scarce rain etc which usually results in greater harvest yields. SGG will also train villagers on the establishment of kitchen gardens, starting in January 2023. Both of these project components will include tree-planting on an agroforestry basis. A further aspect of SGG’s intervention here is that in 2023 we will discuss with local partners the possibility of using some of the forest trees for carbon capture.



SUMMARY

What I like about these 4 ZombaTreez photos is that they illustrate a rural African community working together for their own benefit. They are also working to protect their environment [*the conservation group banner in the upper right photo says that 4,184 trees have been protected*] and to increase the tree cover in their locality [*see two lower photos*]. Those trees will act as a carbon sink and help mitigate against climate change, and so benefit us all. The same is true for all SGG’s other planting locations, where common themes are community action for poverty alleviation, environmental improvement and action against climate change. We therefore invite all who read this report to contribute to the continuation of this work.

Paul Keeley

SGG Managing Director.