

# SGG REPORT: TREE-PLANTING AROUND KILIMANJARO

## INTRODUCTION

Since 2008 Sustainable Global Gardens [SGG] has been encouraging tree-planting in Kilimanjaro and Arusha regions of Tanzania. Many of these activities have been financially supported by several Rotary Clubs in the UK and The Sustainability Trust, while local work has been organised under the auspices of various Tanzanian Rotary Clubs [e.g. Tengeru, Machame, Moshi, Rombo Mkuu and Same]. The largest single scheme so far has been the secondary school tree-planting competition managed by Rombo Mkuu Rotary between 2013 and 2016. This scheme resulted in a total of 9,000 trees being planted within the grounds of the 25 competing schools. Such success encouraged Rombo Mkuu Rotary to undertake a similar competition for 20 primary schools in Rombo District, and that competition was launched in December 2016. Much of this report concerns early progress in this latter competition. The latter part of this document also makes a proposal concerning how Rotary Clubs could greatly increase tree-planting around Kilimanjaro during the next Rotary year.

## FIELD OBSERVATIONS

On 12th April Aloyce Kimario, President of Rombo Mkuu Rotary Club, and Rotarian Brigitta Hamaro undertook a monitoring visit to 4 of the primary schools in the tree-planting competition



In the main field at Boma Primary 176 trees were counted. 116 of these trees [see above left] had been planted in the 5 years previous to the start of the competition in December 2016, but 60 had been planted since that date. A few of the trees planted were fruits e.g. avocados [see top right]. Most of the field remains open, but the school wish to plant another 250 trees here in the next few years. On the 12th the schools of Boma, Ibukoni, Reha and Ngaleku were visited, and a total of 240 recently planted seedlings counted.



What was immediately noticed at Reha Primary School was the original classrooms, built in 1962 at the time of Independence but still in use [see top left]. Most of the buildings there are of better standard [see top right], but what the Head here hopes is that sponsors who can upgrade the whole school can be found. There is much to be done. An obvious project would be a water-harvesting scheme to improve water supply in this dry area. This requires a water tank to be constructed as well as guttering to collect rainwater from the classroom roofs. Most of the primary schools visited require such water supply schemes as a matter of urgency.

In the meantime Reha School demonstrates agricultural innovations which will offer greater incomes or better nutrition to farming households. Squeezed between two classrooms is this small vegetable garden of Chinese lettuce & a seed bed for trees [see middle photo]. In front of the newer buildings bottles are being used for drip irrigation to grow lettuce. The main farming improvement though is agroforestry, and 99 young trees were counted at this school.

Are there any Rotary Clubs interested in combining improved water & sanitation with a little tree-planting and gardening to improve the learning environment?



At Makorosha Primary a pupil runs across the school sports field towards class. This is not an uncommon situation in the lower areas of Rombo: large patches of bare ground but clear evidence that trees will grow. In schools those trees are usually around the classrooms while the outer school grounds have been cleared of trees [see top left]. Yet Makorosha is trying to reverse this by planting seedlings around this field & using channelled surface run off to water the young, vulnerable trees [see middle left]. Notice here the shallow water channel running all the way from the school buildings to this young seedling.



Other schools have problems of severe drought, but have managed to plant trees. This is Saseni Primary where 144 trees were counted [see below right]. Often seedlings at Saseni were planted in a shallow basin where surface water could collect during occasional heavy showers.



Schools visited on 13th April included Makorosha, Saseni, Kirokomu, Munga and Horombo Primary Schools. At these 5 schools a total of 577 young seedlings planted since the last rains in December were counted. Thus, at the 9 schools visited a total of 817 trees have been planted in the last 5 months so this is a satisfactory start to the 3 year competition, especially in view of the severe drought which has occurred in the last few months. My view is that 7 of the 9 primary schools had made a good effort in view of widespread water shortages. However, during the school visits it was clear that there is a need for fuller training of the primary teachers responsible for their schools environmental programme. SGG has agreed to help run a one day workshop later this year for those involved in this competition.

Not all visits took place on the slopes of Kilimanjaro. On 18th April two primary schools and a centre for disabled children were visited around Same town. Same District is very different from Rombo in that much of the lowland around the town is associated with dryland bush, limited tree cover, marginal farming - and recently widespread environmental degradation. It has much lower population density, so schools often have the advantage of large school grounds for tree-planting if adequate water can be found.



The school grounds at Kigogo Primary in Ishinde village show many of the landscape features typical of the Same plains. Tall trees are few, there are large patches of bare ground even during the rains, and soil erosion gullies cross the land - all signs of environmental damage [see top left]. However, this school has the advantage of nearby water as the school is close to the borehole and pipeline constructed by Same Rotary Club with a recent global grant.

At the school pupils proudly display some of the Neem trees recently planted in front of the classrooms [see bottom left]. Noel Amon of Same Rotary and the Head Teacher Bwana Shemganja stand next to other Neem trees [see bottom right]. On the same day we counted a total of 269 young trees, mainly Acacia & Neem.



The other two institutions visited were Same Primary School and Mama Kevina Centre of Hope for the Disabled. Both of these institutions were mentioned in the last report, but as they had not undertaken further tree-planting since then trees were not counted. Both institutions have other priorities at present as they wait for adequate rain for planting.



Same Primary is unusual in that it hosts significant numbers of albinos & blind children who live in a hostel next door. The school illustrates well the view that many parts of East Africa require not a new school but improvements to the school which already exists. In the case of Same Primary the cemented floor of many classrooms is now a series of holes and the walls have structural cracks [see top left]. Outside that classroom, the school demonstrates how it is possible to grow vegetables on a small scale - in this case in old sacks [see top right]. The situation at Mama Kevina Centre of Hope for the Disabled is completely different. The Centre has new buildings, but they treat more than 250 disabled who come to the centre for a 'therapeutic week'. Their immediate need is for at least 10 wheelchairs. Both the Same Primary & the Centre of Hope would like to plant and have sufficient land for at least 200 trees within their grounds.

A major project for SGG during the last 3 years is the promotion of pesticidal plants, which can be used as a cheap method of pest control by small-scale farmers. You can read more about this project at [www.nri.org/options](http://www.nri.org/options). Most of this work has been done outside Rotarian circles, but this April Rotary Clubs at Rombo Mkuu and Machame arranged 3 training sessions for a total of 59 local farmers. Part of those training workshops involved the distribution to farmers of approximately 2,500 *Tephrosia vogelii*. This shrub

is not only a general purpose insecticide, but also a 'soil improver' which can readily increase both organic matter and nitrates in soils. Thus, it is a very useful component within agroforestry, although it is a woody shrub rather than a tree. Next year SGG will be visiting most of the communities mentioned above in order to further promote the planting of Tephrosia.

Probably the most important aspect of this SGG field visit to North East Tanzania is that it provided myself with an opportunity to talk to Rotarians from 5 different local clubs at Machame, Moshi, Mwika, Rombo Mkuu, and Same. At each of these clubs there is a desire to engage in tree-planting, and I have been assured by the current Assistant District Governor Rn. Amon Noel that there are other local clubs also wishing to plant trees. This is hardly surprising as it is clear to everybody living close to Kilimanjaro that the world famous ice cap, which has attracted so many people to this beautiful part of the world, is disappearing as a consequence of climate change. The causes of such climatic changes are complex, but widespread local felling of trees has been a contributory cause.



Tephrosia vogelii can be grown interplanted with crops, or around the edge of a banana plot - as here [see top left]. In order to provide adequate pest control for both crops in the field and those in stores, a farmer needs on average about 30 such Tephrosia plants. A training session for local farmers at Kilamfua School, near Rombo Mkuu [see top right]. An important part of early training is to give each attendant some seedlings to grow on their own farms [see bottom left]. In order to supply seedlings for training, a series of nurseries have been established. Here is the nursery with Tephrosia vogelii seedlings for Machame Rotary.

There are several obstacles to successful tree-planting in North-East Tanzania. Nearly everybody whom I met as part of the monitoring for Rombo Mkuu primary school competition mentioned the poor rains in December & the subsequent severe drought which had affected Rombo District in the last six months. Furthermore, there was a fear that the much needed rains of April-May would also fail. Yet in April a week of heavy rain caused flash flooding, damage to houses, destruction of crops in at least 3 locations around Kilimanjaro. It is difficult for farmers to cope with such weather extremes, but it also encourages farmers to plant more trees as a protection against both soil erosion and climatic instability. The other obstacle to large-scale planting is funding, and this reason means that the new Rotary year starting in July 2017 presents a unique opportunity for environmentalists in Tanzania and elsewhere in Africa.

If the global community of Rotarians accepts the challenge within RI 2017-8 President Ian Riseley's appeal for every individual Rotarian to plant a tree, Sustainable Global Gardens [SGG] can offer a special service to make that vision a reality. During the last 11 years of working as a development charity in East and Southern Africa, SGG has established an extensive network of farmer groups, local NGOs, Church groups, schools as well as the above-mentioned Tanzanian Rotary clubs - all offering adequate space and a willingness to plant trees. The SGG website [www.sustainableglobalgardens.org.uk](http://www.sustainableglobalgardens.org.uk) gives a good indication of what SGG does and can offer to other Rotary Clubs involved in African humanitarian and environmental projects.

It is impossible to say with any precision what is the capacity of SGG to organise &/or implement the planting of how many trees. However, it can be noted that since 2014 SGG has organised the planting of more than 30,000 trees among small-scale farmers in Busia County, West Kenya as well as about 10,000 in schools within Rombo District. As there are several other smaller tree-planting schemes to consider, we think SGG can claim to have facilitated the planting of more than 50,000 young trees. My view is that if Tanzanian Rotary Clubs work in partnership with SGG and ESRAG during Ian Riseley's presidency a planting target of 100,000 can be achieved within Kilimanjaro region.

Who would wish to plant their trees in Kilimanjaro Region or elsewhere in East Africa? SGG has assumed that 80-90% of Rotary Clubs would wish to plant for the benefit of their local community or at least within their own district. However, there are some Rotarians who may wish to do otherwise. These include:

- Rotary clubs in large cities where there is a lack of suitable green space available for new planting;
- Rotary clubs with overseas projects and partners, and who would like to make tree-planting an addition to their prime interest in a humanitarian scheme such as water provision, sanitation, improved education, support for orphans etc. Furthermore, SGG can supply contact details for a wide variety of situations where local partners want basic humanitarian support, but are willing to plant trees as part of their local contribution to any humanitarian scheme;
- Rotary clubs who might wish to consider the economics and value of tropical tree-planting.

Prices for young seedlings will, of course, vary throughout the world, but generally prices for seedlings in East Africa will be much lower than prices available to most Rotarians in industrialised economies. For example, SGG frequently buys seedlings in East Africa for the equivalent of 20p or less whereas those in the UK can be several times that price. Moreover, tropical seedlings usually grow at a much faster rate than those planted in temperate climates, so carbon capture can also be more rapid;

- the main justification for a Rotary club planting in East Africa is that, whereas tree-planting in the economically prosperous countries is primarily for environmental purposes, in rural Africa tree-planting is much more directly linked to immediate humanitarian need e.g. a source of income to pay for education & better health, a provider of fruit & improved child nutrition, the main supply of energy. This is an excellent opportunity to unite environmental improvement with Rotary's great humanitarian traditions!

Note how quickly tropical trees can grow. The photo on the left was taken in 2008 when Mamsera school was being built & the field in front newly planted with seedlings. The photo on the right was taken in February 2016. It shows the same school classrooms and the same field, which now contains a variety of 8 year old trees. Some of those *Acrocarpus fraxinifolius* trees are now more than 20 metre tall - that is an average annual growth of 2.5 metres. If you wish to store a lot of carbon quickly, African trees and soil are the locations to do so.



Why has Gladys Ochieng planted a small, densely packed woodlot of 600 *Grevillea robusta* on her small farm? [see below left]. The answer is simple. Gladys manages an orphanage which provides a home for some of the most vulnerable children around Busia [see below right]. Frequently she has insufficient funds for food, medical and school costs. If the situation gets bad, she can fell a few trees to cover costs. This may not be what most Rotarians have in mind, but it is worth remembering that for many African farmers the most compelling reason for tree-planting is as a source of income. Such tree felling can be quite sustainable provided the farmer remembers to plant two seedlings for every one felled.



Another question which Rotary clubs may wish to consider is, "If we intend to plant trees in Tanzania or elsewhere in Africa, what exactly do we need to do?" Once again, the answer is simple.

Sustainable Global Gardens wishes to use whatever resources we can muster to help Rotarians anywhere in the world to overachieve President Ian Riseley's tree-planting challenge. If your Club can do this without any assistance from SGG that is excellent, but if you would appreciate some help try the following:

- email Rotarian Paul c/o Sustainable Global Gardens on [sgginfo16@gmail.com](mailto:sgginfo16@gmail.com), and let us know your tree-planting plans. Depending upon your planting location in Africa, we may be able to offer you advice, contact details or a tree-planting project where your club can meet President Ian Riseley's challenge. Paul is also willing to give talks on the multiple benefits of tree-planting in Africa;
- if your club wishes to plant in Africa but not be deeply involved in the practicalities, you can donate your funds to SGG who will undertake the planting your club requires. It has previously been the policy of SGG to provide a written field report for any donation of £50 or more. We would like to maintain that practice, but please understand that it might take some time to produce such field reports if many Rotarians take up this offer;
- to donate funds to SGG you can -
  - 1] send a cheque to Sustainable Global Gardens, 20 Kensington Gardens, Whitley Bay, Tyne & Wear NE25 8AR, UK
  - 2] make a direct bank transfer to Sustainable Global Gardens with account no. 50274364, sort code 20-59-97, swiftbic code BARCGB22, and IBAN no. GB73 BARC205997502743 64
  - 3] pay through SGG's website [www.sustainableglobalgardens.org.uk/get\\_involved](http://www.sustainableglobalgardens.org.uk/get_involved)
  - 4] whatever payment method your club chooses, we would like to receive an email from you so that we can keep a record of who is planting what where;
- if your club wishes to take full ownership of a tree-planting project but does not have the necessary contacts, SGG can provide a choice of suitable locations, both Rotary and non-Rotary schemes in Tanzania and elsewhere;
- make Rotary year 2017-2018 the time you work with the young people of Africa to improve their

future.



Paul Keeley  
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