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. This work would therefore fall within Rotary's 'economic and community development' area of focus. Such work also contributes to UN Sustainable Development Goals no 1and 2, the eradication of extreme global poverty and hunger, the foundation aims of SGG. For the foreseeable future most of SGG's planting will continue to be of this type.

SGG has noticed in recent years that many East African farmers have become aware of the changing climate in their locality. Streams that once flowed are now dry beds. Other localities seem to be increasingly affected by erratic, unpredictable rains and flash floods. Some towns, such as Moshi, are now experiencing unprecedented high temperatures. Many in North-East Tanzania can only watch as the glaciers on Kilimanjaro continue to shrink. Many of those farmers are also aware that

- their lifestyle makes a relatively small contribution to the emission of greenhouse gases which have caused global warming and climate change. The main contributors to greenhouse gas emissions are the prosperous industrialised economies of Europe, North America and East Asia. Thus, on the basis of 'the polluter pays principle', it is reasonable to expect [or at least hope] that the more prosperous will be willing to donate some compensation to those suffering most from climate change;
- personal visits within their own East African communities quickly establish that places with good tree cover are more comfortable for living and more productive for farming than those places which are treeless. In addition there is also the widespread perception among those African farmers that 'trees can bring more rain';
- thus, there are many who are prepared to plant trees inside & outside their own farms, along river banks, on steep, rocky terrain unsuitable for agriculture or restore degraded forest areas in an effort to halt rapid climate change.

This project, therefore, also allows anybody who wishes to make a personal contribution to climate change mitigation to sponsor East African farmers who are able to plant trees on their behalf. The arrangements for this partnership will be made by Sustainable Global Gardens [UK charity reg. no. 1116243]. Any funder who wishes to have further information about Sustainable Global Gardens [SGG] is invited to browse the website www.sustainableglobalgardens.org.uk where there are instructions about how to donate.

This project concerns tropical tree-planting, but SGG is also aware that some donors may wish to reduce their carbon footprint by tree-planting in the UK. SGG does not want to deny such donors that option, so we would be pleased to fund an environmental partner who is implementing a scheme to plant 25,000 indigenous trees in the Yorkshire Dales. At present this particular scheme is 5,000 trees short of that planting target, which requires £12,500 of additional funding. Donors should indicate their preference for the Yorkshire Dales or elsewhere in the British Isles, if that is the case.

RELEVANT INFORMATION

The original plan was to launch this agroforestry & carbon capture project in late 2019. However, SGG and the whole of Europe have been severely disrupted by the coronavirus crisis in 2020. In early 2021 it looks likely that the project will not get fully underway until much later this year when SGG hopes to undertake a field visit to East Africa, make new agreements and payments to African planters, and generally monitor progress. For the present SGG's main efforts will be focussed on raising awareness about tropical tree-planting for carbon capture & small-scale farm improvements, and securing sponsorship for this activity. However, we do not quite know what the future will bring!

As SGG is still in the preparation stage of this project with neither all the stakeholders nor the available budget yet known, the formal writing of all relevant project details is not yet done. However, the formal version of the project will include the following points:

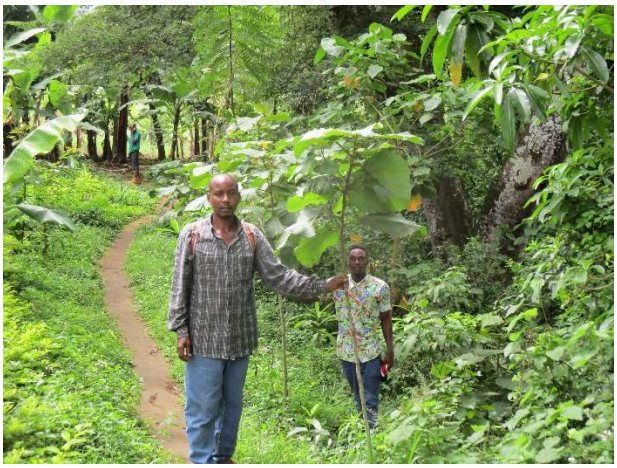
- the fundamental aims of SGG are poverty & hunger alleviation within locations where incomes are typically below $2/day. We strive to contribute to UN Sustainable Development Goals 1 [i.e. end poverty in all its forms everywhere] and 2 [i.e. end hunger, achieve food security, improve nutrition and promote sustainable agriculture]. Most of the projects we have supported are located in rural regions of Eastern and Southern Africa;
- SGG's general strategy is to partner with small-scale, semi-subsistence farmers and to promote various innovations which can increase farm productivity and household incomes. Such innovations have included microirrigation, improved composting, use of natural pesticides, permaculture methods, microfinance, and agroforestry. For the last 5 years agroforestry has been by far the most important innovation as we have clear evidence that this is one of the most effective methods of enabling poor farmers to move out of poverty;
- SGG has several years' field experience of tree-planting in Kenya, Tanzania and Malawi. In 2017-8 SGG registered 41,475 trees newly planted in those locations as part of a Rotary International initiative. Under SGG's present circumstances we believe SGG has the capacity to arrange through our local African partners the planting of up to 100,000 trees with perhaps 10,000 trees for carbon capture, 10,000 fruits for improved nutrition, and 80,000 trees for multipurpose use;

The location of carbon capture trees will be significantly different from SGG's previous planting locations. Until 2020 virtually all tree-planting was located on farms or on school grounds within those farming communities. These locations will continue to account for most SGG planting, but we are now looking also for planting sites where trees can continue to grow with limited interference from neighbouring villagers.

Good planting sites for carbon capture include:

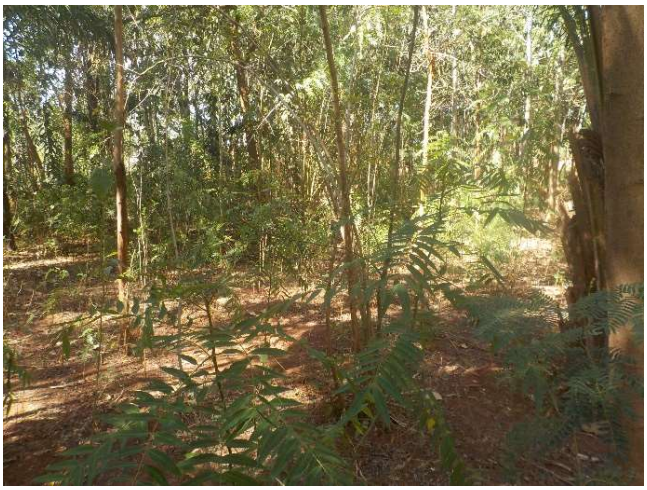
- remnants of forest which can be restored or extended. Ngarasero forest *[see left]* near Usa River in Tanzania is a good illustration of this;
- riverine sites, especially where riparian land is steep & unsuitable for agriculture. Tanzanian farmers are not supposed to cultivate crops within 20m of streams in order to protect water supplies;
- summit & watershed sites where soil is stony after previous soil erosion;

- preferred tree species will also be somewhat different from previous schemes. For carbon capture SGG favours the planting of large indigenous species [eg.Albizia schimperiana, Cordia Africana, Maesopsis eminii, Milicia excelsa, Trichilia emetica etc.], although onsite conditions will have a considerable influence on which particular species is planted. SGG will continue to promote certain tree species [e.g. pawpaw, moringa] but not for carbon capture: these species are suitable for farms but have soft wood and limited carbon capture potential;



Close to Ngarasero forest there are various smaller patches of land where the forest could be extended, sometimes with the possibility of linking together two areas of forest. Such linkage can establish 'wildlife corridors' and help maintain the biodiversity of the forest. Here *[see above left]* is an example of Ngarasero forest extension with trees planted in the last 3 years. Different species are best planted according to different site conditions *[see above right]*. To the left of the path is level terrain and farmland where more than 100 Grevillea & Casuarina have been recently planted around a banana shamba. To the right of the path is very steep ground & a river. Here 'mikuyu'/fig species and 'loliondo'/Olea capensis have been planted.

Even in areas of high population density, it is possible to find small pockets of relic forest being conserved. Here is a plot of land near Matayos, Busia in West Kenya *[see below left]* with mature indigenous species. There are now many farmers who enjoy the pleasure of living among trees. Here is another patch of forest near Matayos *[see below right]*. Both of these situations where the land owner has no desire to fell trees for economic gain offer suitable sites for carbon capture and improved local biodiversity.



- SGG has received many donations & small grants in support of tropical tree-planting. The justification for planting in East-Southern Africa is threefold : a] young seedlings are much cheaper to buy in African markets, so SGG advertises on the basis of "plant a tree for 20p" and a donor plants many more trees than could be planted in the UK where a young 'whip' with protective sleeve & stake typically costs about £2.50p; b] trees grow much faster in the humid tropics; c] tropical trees have all the environmental benefits of trees planted in the temperate world but also much greater 'humanitarian benefits' as they are often used as a 'reserve bank' to cover educational/medical/other occasional costs;
- thus, this particular project has as a unifying theme 'Support for the Environment', but within that theme there are two aspects. One is to implement tree-planting in various African locations as a strategy for both income-generation and on-farm environmental improvement. The second aspect is to provide a tree-planting mechanism for those who wish to reduce their carbon footprint;
- the 'carbon capture' aspect is a pilot scheme, so the planting target is set at 10,000 for trees planted in tropical locations to enable African farmers to become accustomed to this type of enterprise. Of course, there is an additional planting target of 5,000 for those who are prepared to pay a significantly higher premium to offset their carbon footprint with tree-planting in the British Isles;
- this carbon capture tree-planting requires approximately 100 farmer participants [this will not be difficult as SGG has had contact with more than 250 farmers for more than 5 years in Busia County alone] who will have 100 trees each registered for carbon sequestration. Each farm will be georeferenced so that strict monitoring, transparency and accountability can be maintained;
- for carbon capture each participating farmer will agree to take care of the registered tree for a period of 5 years. To ensure that farmers comply with this, the tree nursery will be paid 15p, the farmer will be paid 10p when the tree is first monitored, and a further 75p 5 years after the initial tree registration;
- an alternative approach is to include well established trees which are 2 years old, have a height of at least 3 metres and a girth of at least 15 cms. SGG has detailed records concerning trees planted in a previous project, and these trees will be excluded. Eligible trees will be registered, farmers paid an initial 25p, provided the farmers can ensure that those trees will be maintained for another 5 years when they will be paid the remaining 75p;
- SGG estimates that the likely number of beneficiaries for carbon capture trees is 480. This is based on 4.5 being the average farmer household size in Busia, West Kenya where many of these trees will be registered. This project will also provide work for several local tree nurseries, typically employing 2-3 persons so perhaps 20 persons in total. Most of the local fieldwork & monitoring will be undertaken by local coordinators, with whom SGG has worked for several years. SGG estimates that 10 coordinators will gain significant income from this occasional work;
- for agroforestry tree-planting participating farmers can join this project in two ways. They can plant a new seedling. That seedling will be checked after several months to ensure that the seedling has survived. If it is well established the farmer will be paid the initial 20p. As SGG has been promoting tree-planting for several years, most farmers we know plant seedlings at the time most suitable for themselves and then wait to claim their 20p when a SGG representative visits their farm;
- such payments & tree registration began in October 2019;
- after the initial registration most of the participating farmers will be visited on an annual basis, so SGG can produce regular progress reports for significant donors. However, all carbon capture locations will be visited before the final payments are made after 5 years. At that time farmers will be offered further 'carbon payments' if they wish to maintain their 100 trees for another 5 years;
- SGG's priority is to promote tropical tree-planting, and we are now looking to extend our tree-planting activities to new locations in Uganda, Malawi, Zambia etc.

PROGRESS SO FAR

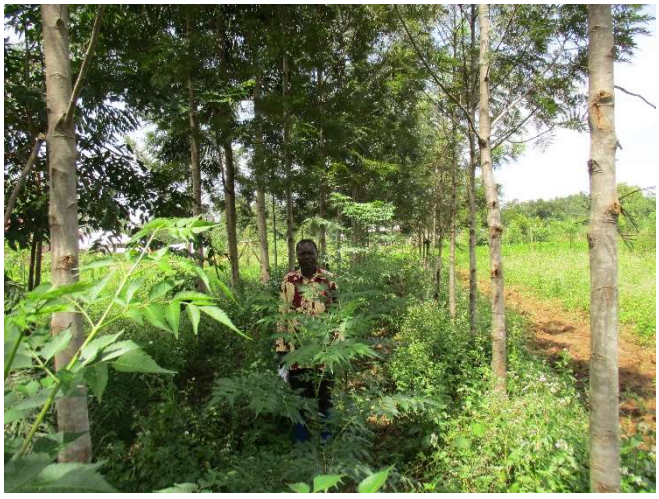
From 2018 onwards the Rotary Club of Newcastle-Gosforth raised funds to sponsor a tropical tree-planting project, similar to the SGG-Rotary Tropical Tree-Planting project of 2017-8, to be implemented by SGG at the first opportune moment. In addition SGG undertook its own fundraising work at this time with much of that funding raised by giving talks about tree-planting to Rotary clubs.

The actual implementation started in earnest from October to early December 2019 when SGG undertook a field monitoring visit to Kenya and Tanzania. The following was recorded during the field visit and reported to D1030 District Team in April 2020:

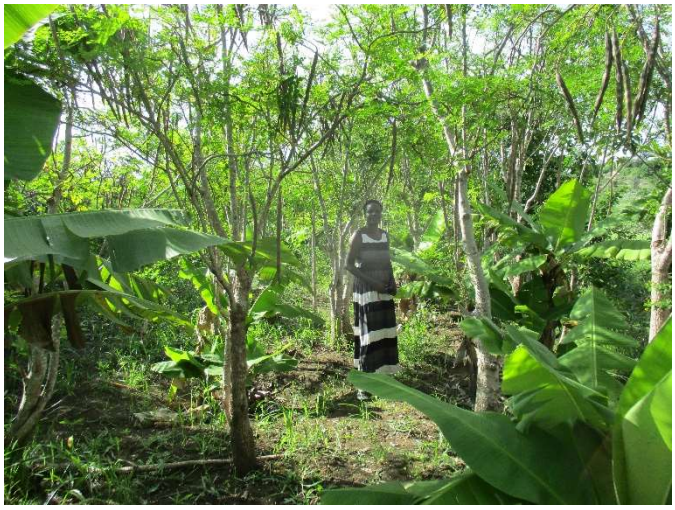
"The focus has been on agroforestry planting of species useful to farmers as economic & community development is a fundamental aim of the planting. Fieldwork by Rn Paul Keeley in November 2019 established the following planting locations:

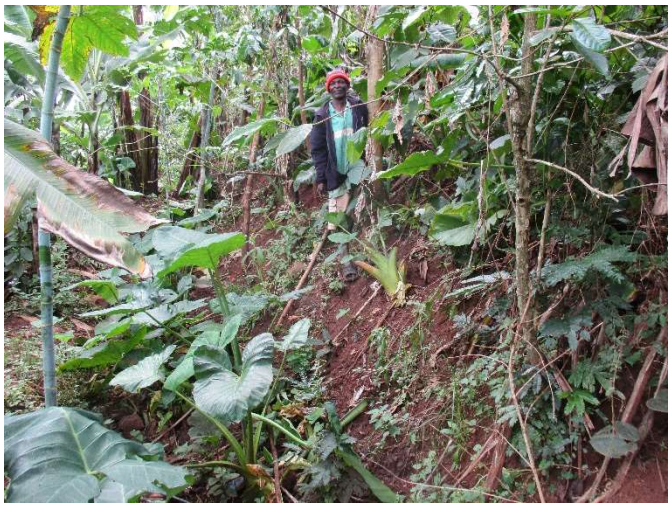
1. *1250 seedlings planted by Trees4Kili, mainly used to cover former rubbish dump site in Boma Ng'ombe, Tanzania,*
2. *1375 seedlings planted by Samia cluster of OVC ['orphans &/or vulnerable children'] farmer groups, West Kenya,*
3. *1935 seedlings planted by Matayos cluster of OVC farmer groups in West Kenya,*
4. *Bungoma Rotary Club pledge to plant 3350 trees during the subsequent rains,*
5. *grant of Ksh 25,000/- [approximately £200] for Bungoma Rotary Club to purchase & plant 250 avocado seedlings,*
6. *1564 seedlings planted onfarm by Kitale & Birunda Friends, Kenya,*
7. *1245 seedlings planted on farm plots by Mlai family in Rombo District, Tanzania,*
8. *405 seedlings planted by Ndaswa farmer group in Rombo District. Tree counting here is incomplete with about a quarter of farms counted,*
9. *Usa River Mali Hai group in Tanzania where 1607 trees counted & a further 2,000 pledged for 2020,*
10. *Same Rotary Club with 2505 seedlings planted mainly through the Lutheran Diocesan youth programme.*

In January 2020 a grant of £200 was made to Rn John Philip of Newbury Rotary Club to support the planting of fruit trees on Ukerewe island, Tanzania."



Here *[see above left]* is an example of agroforestry planting on a small-scale farm in Busia county, West Kenya. In this belt of trees there is a mixture of Grevillea robusta, Melia Azerdarach, & Makhamia lutea, but elsewhere on the farm there is a fruit orchard. As SGG and a group of Birunda Friends *[see above right]* walk along a farm path,we are counting recent tree-planting by the farmer. The trees here to the right of the path are Markhamia lutea, a favoured indigenous species often planted along field boundaries.





On many farms which are part of the SGG-Rotary planting programme farmers have adopted an agroforestry system where trees provide a new cash crop amongst the customary food crops grown on the farm. Here *[see above left]* a farmer on Rusinga island, West Kenya has dedicated this small plot to growing Moringa oleifera for income generation. On Kilimanjaro farmers are looking for a new cash crop to replace coffee, which has suffered from poor prices in recent decades. This farmer *[see above right]* has recently planted 65 avocado as there is a ready market in the locality.

By the end of 2019 SGG had recorded a total of 26,464 with 10,587 counted in Tanzania and a further 15,877 trees in Kenya. Furthermore SGG records showed that by this time there were 142 African planting partners, of which more than 120 were individual small-scale farmers. At this stage the majority of funding came from Newcastle-Gosforth Rotary who sponsored most of the 15,486 trees mentioned in the D1030 report. Thus, it was established that a single Rotary club could facilitate the planting of more than 10,000 trees in a single year. What we wanted to encourage in 2020 was for individual Rotary districts in the British Isles to take on the challenge of planting 10,000 trees in one year.

Before New Year 2020 the great majority of planting was done within an agroforestry land use system primarily for the purpose of income-generation, but 2020 brought significant changes to the programme. One such change was a policy to encourage similar tree-planting in areas outside SGG's customary locations, preferably in partnership with other NGOs & Rotary clubs. One example of this was the £200 grant given to the NGO 'UK to UK' for tree-planting in Ukerewe, Tanzania. Another example would be the 4,000 trees planted in Malawi with SGG funding. By May 2021 new tree projects were being established in Mubende Uganda and also on the Zomba plateau in Southern Malawi.

The most significant change in 2020 was the inclusion of tree-planting for carbon capture within this project which was previously focussing on agroforestry development. Thus, this project is suitable not only for NGOs and Rotary clubs but also individuals – particularly those who wish to offset their carbon footprint. We were aware that there is increasing concern about global climatic change amongst the general public, but we were uncertain whether those concerned would be willing to donate precious funds to establish carbon sinks in Africa. Thus, our initial planting target for overseas carbon capture is set at 10,000 although SGG would be very pleased if carbon capture schemes accounted for a much higher proportion of the overall 100,000 tree target. Of course, it should be remembered that all the trees, including agroforestry species, will have some carbon capture impact.

The other major development of 2020 was the coronavirus pandemic, which has resulted in limited fundraising and a postponement of field monitoring work. This means delays in all aspects of the project, but with more than 30,000 trees already recorded by mid 2020 we are in a good position to complete this project within 12 months after the end of coronavirus and associated travel restrictions.

PROSPECTS FOR 2021 AND ONWARDS

Although project progress has been limited since March 2020 when the UK went into national lockdown, it is not the case that nothing has happened. During 2021 SGG may not have been able to check progress during field visits to planting locations, but we have had success in gaining significant new support for this project. In May 2021 SGG has £14,035.41p funding specifically allocated to tree projects. Such funding has come from 12 Rotary clubs, 3 commercial sponsorships, 2 UK funding trusts, and countless individuals. As these funds are largely paid after SGG has counted & monitored trees during fieldwork, a task which could not be done during 2020, SGG has most of these funds, which are still to be paid to African planters for the environmental services they have provided.

Some of the first spending will go to this project near Kitale, West Kenya. This is the Kipsaina WASHplus project, which is being promoted by the Satellite E-club of Barnard Castle. This project is primarily concerned with biodiversity around a wetland & improved water supply. SGG believes that adding a tree-planting component to any Rotary overseas project is an excellent way to get the local community involved and ensure the success of that project.

SGG's involvement here is to use this locality for planting specifically for the purpose of carbon capture. By February 2021, SGG has requested the planting of 1225 trees for this purpose. Each tree cost £1 so that payments to farmers can be made over a 5 year period in recompense for the loss of some of their land and for proper care of the trees. It can be considered as a payment for environmental services.

This nursery has 20,000 seedlings of indigenous species currently ready for sale, so here is an opportunity for any Rotary club or individual who wishes to offset their carbon footprint to contribute in a very practical way to climate change mitigation.

Coronavirus and lockdown has meant that many rotarians are kept back at the planning stages of their environmental projects, but life must continue on the East African small-scale farms which are implementing this SGG-Rotary project. Our farming partners continue to plant trees, even if they have to wait until the end of 2021 to receive their remuneration for environmental services. SGG anticipates that many, probably most, of those new trees planted in 2021 will conform to the following policy preferences for the project:

- support at least 10 community-based organisations [CBOs], school or Rotary planting groups with a small grant which will allow the planting of at least 1,000 trees each. It is intended that at least 4 of these 10 small grants are invested with new partners in new locations so that more beneficiary farmers can be engaged;
- these various schemes should benefit a total of at least 1,000 farmers;
- our priority will be to support agroforestry systems where planting is on farms and the trees will belong to the farm household. We know that this improves the survival rate of young seedlings when they are vulnerable in the first year after transplanting. A major benefit of this strategy though is that we shall be making a direct contribution to poverty and hunger reduction in rural Africa;
- we shall plant trees useful to farmers and appropriate to the environmental conditions on farm. These include fruits [e.g. avocado, mango, bananas, pawpaw, jackfruit]; medicinal & nutritional species [e.g. Azadirachta indica, Moringa oleifera], natural pesticides [e.g. Tephrosia vogeleii] as well as multipurpose species [e.g. Grevillea robusta, Markhamia lutea, Maesopsis eminii];

- Rotary clubs and planting partners should work with SGG, who will take responsibility for monitoring the tree-planting and payment to farmers for the work they have done;
- SGG will also provide a progress report for all significant donors;
- SGG will look for funding support from both Rotary clubs and any others, either individuals or groups, wishing to contribute to poverty and hunger eradication or carbon capture through the strategy of tropical tree-planting. The SGG network can readily find thousands of poor farmers wanting to plant trees, far more than a single Rotary club or Rotary District can support on their own. If your Rotary club or district wishes to get involved in this activity, SGG asks you to accept "The Ten Thousand Tree Challenge" ;

Here is what SGG plans to do in the Kilimanjaro region. Here *[see below left]* a farmer shows his young avocado within the banana plot. This work has been supported by SGG and implemented by Mamba Rotary Club. SGG is also looking for plots where degraded forests can be restored. Here *[see below right]* an area of degraded terrain has been replanted. This school with sufficient land to plant more than 40,000 trees has been supported by SGG and the neighbouring Mwika Rotary Club. There is plenty of room for carbon capture planting here.

SUMMARY

This document explains the basis of this SGG-Rotary tree-planting and conservation project, which promotes both on-farm agroforestry and planting for the purpose of carbon capture. It also describes progress made so far. 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. Thus, although SGG currently holds a budget of £8,000 approx. for tree-planting, we have nowhere near sufficient to reward farmers for what they are doing to improve the environment. This document is, therefore, a call for more funding support from those who wish to improve the planet on which we live. If you intend to contribute to that improvement or would like to find out more details about this project, please contact the main project coodinator at sgginfo16@gmail.com through the Sustainable global Gardens website, www.sustainableglobalgardens.org.uk. I am looking forward to hearing from you.

Paul Keeley

Past President of Newcastle-Gosforth Rotary Club D1030

Director of Sustainable Global Gardens

28th May 2021