

## ST DENIS LIBOLINA SCHOOL PERMACULTURE FOOD GARDEN PROJECT REPORT 2023



*St Denis Libolina Garden Before (13 Feb2023)*



*St Denis Libolina Garden after redesigning (22 March 2023)*

Report By: **SCOPE Kenya**

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## **1. INTRODUCTION**

With financial support from Sustainable Global Garden (SGG), SCOPE Kenya, in collaboration with St Denis Libolina school community (Board of Management (BOM), teachers, pupils and parents), in early February 2023, initiated the process of transforming the bare school compound, into a productive edible landscapes with abundance of nutritious vegetables and fruits, through permaculture practices. The process started with intensive sensitization of key stakeholders (School management, teachers, learners and parents), followed by thorough planning and practical implementation.

By February 2023, the school was going through the challenges of sourcing food to feed the 425 children, accompanied by perennial challenges of accessing clean safe water. The situation forced children to either bring water from home or walk 2 Kilometers from the school to fetch water from the river. To add salt in the injury, the school has a big debt, owed to food suppliers, due to inadequate funding by the government and inability by parents to pay school fees. All this challenges has been a major contributor to poor academic performance, hence becoming one of the poor performing schools, in Bungoma County.

The transformation process had two component, one on training school community in permaculture practices, and the second, on practical redesigning of the school compound, and establishment of gardens. The process stimulated creative thinking among St Denis Libolina schools community, towards finding a long lasting and sustainable solution to food, nutrition and environmental conservation, as they embrace thriving in harmony with nature.

## **2. PROJECT IMPLEMENTATION METHODOLOGY**

To ensure that beneficiaries (*school management, teachers, pupils and parents*) understands, participate, benefit, own and sustain the project, SCOPE Kenya introduced a participatory human development model, which focused on empowering entire school community, to influence mindset change towards embracing school community initiated and managed gardening activities, for enhanced food and nutrition security. This ensured that, all stakeholders share a common understanding on the challenges experienced by the school community, and possible long lasting solutions, hence walk together, as a community towards a common vision for their school.

## **3. PROJECT SENSITIZATION, AWARENESS RAISING AND PLANNING MEETINGS**

To create awareness and develop a common vision for the school towards food security and environmental conservation through the implementation of the project, SCOPE Kenya conducted three days meeting with key stakeholders. This included, meetings with Board of Management (BOM), teachers, parents and pupils, with one day meeting with multistakeholder implementation committee. The meetings took place from 1<sup>st</sup> to 3<sup>rd</sup> February 2023, and held within St Denis Libolina school compound.



From this meetings, all stakeholders admitted that, the school was facing major food and water challenges, which was compromising the quality of education. They therefore agreed to work together and use available local resources, to grow food crops in their garden, to supplement the parent supported feeding program. The three categories of beneficiaries, (BOM, teachers & parents) admitted that, growing food in the school would reduce the heavy burden and expenditures on buying food from external sources and pupils would have access to healthy, nutritious food.



*St Denis management, teachers and parents during the sensitization and planning meeting at the school.*

**All the stakeholders agreed,**

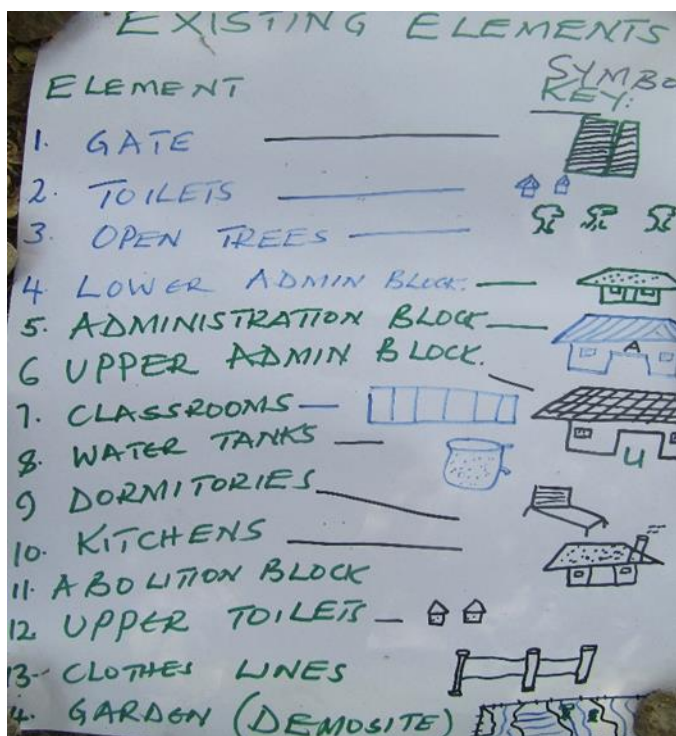
1. That all stakeholders will own, participate and maintain the project to ensure its sustainability.
2. That the school community will also contribute more resources towards the project requirements especially part of the available farm tools, seeds and seedlings, labour, security etc.
3. That the project should be implemented just before the onset of the expected long rains in March 2023.
4. That the exact dates of implementation are hereby set aside' from February 13th to February 24th 2023.
5. That parents will work in a shifted model of 10 \_ 15 (maximum) per each group on each day.
6. That teachers and pupils will unless otherwise remain in class till 3.00 p.m. and will replace the parents for 1 to 2 hours daily on the project.
7. That the school and SCOPE K will share the cumulative budget estimates for all the meals each day for two weeks.
8. That the management will be on the forefront to coordinate the entire process of all the preparations needed.

Following the above mentioned Resolutions, all the stakeholders will ensure every single piece is put together and affirm implementation.

## 1. PERMACULTURE TRAINING FOR PARENTS, TEACHERS & LEARNERS

With all stakeholders having a common vision on transforming the bare St Denis school compound into a sustainable climate resilient food forest, the practical activities started with parents, teachers and pupils taken through intensive theory and practical training in permaculture ethics, principles and practices. This was equip them with knowledge and skills, to guide them in redesigning the compound, establish soil and water harvesting systems, for supporting growing of crops. From the training, trainees' analyzed resources and situation in the school by then, and by using the acquired knowledge, they came up with new school flow diagram, showing the desired transformation, which meets their needs and conserves biodiversity.

### School Flow diagram.



*Existing elements in St Denis school before the project.*



*School flow diagram with proposed new elements.*



*Parents taken through introduction in permaculture.*



*Parents taken through training in practical designing of the garden*



To ensure continued food production, and noting that the school does not have a reliable source of water to irrigate the gardens, the first step was to put up a water harvesting systems, focusing on harvesting and storage of the rain surface run off to recharge the water in the soil. To also minimize soil erosion, teachers, parents and pupils were trained how to make and use of an A- Frame, to determine the contours. This was the first time, they learnt about the A- Frame and making of swales.



*The head teacher madam Gladys lead parents in making an A- Frame, for use in mapping contours, during the permaculture training at St Denis school.*

On average, we had 15 parents participating in gardening activities daily for the 12 days, and 200 children (class 5 to 8) directly involved, in both land preparations and planting.



*Parents being taken through the practical use of the A- Frame. Parents taking part in mapping contours in the school garden.*

In response, parents appreciated the new knowledge they had gained in garden planning and utilization for maximum food production. Linet Nyamboke (parent) said, *“I have today learnt that, I have been wasting my garden by failing to plan. I appreciate SCOPE Kenya for bringing the training in this school, and considering to invite parents for the training. The Permaculture knowledge will enable me to make maximum utilization of the garden and increase production, through proper planning and water harvesting”.*



Jane Nyongesa (parent) said, “Some people thought that, parents coming to learn and work in the school was a waste of time. However, the new gardening techniques we have been trained on, will enable us improve our farming hence increase the production and income. I wish I had gotten this training some years back, for my livelihood would be better”.

## **2. Participation of school pupils/learners.**

After classes (3.20pm), with support and guidance from the teachers, learners/pupils participated in gardening activities for one hour daily. Like parents, the learners were also taken through the theory and practical training in various gardening activities, through permaculture practices.

From our interaction, majority of those we talked to enjoyed working in the garden, and were appreciative for the opportunity given to them to participate in transforming their school, and ensure they have food to eat.



Pupils and teachers taken through training in using A-frame



**Left.** Pupils making water harvesting structures (swales)



**Learners at St Denis participate in practical activities on clearing the garden and collecting materials for compost making**



### 3. SHAPING THE SCHOOL LAND FOR WATER CATCHMENT & SOIL STABILITY.



Parents excavating swales for water harvesting.



Pupils under the guidance of teachers, making gardens

To enhance maximum food production, all stakeholders were taken through theoretical training, and practical activities, in developing the garden layout. This was by using the A-Frame to map contours, digging swales for harvesting, storing and distribution of the surface run off in the garden, as well as ensuring developing the new garden layout. A total of 5 swales was dug across the garden.



*Parents making swales for water harvesting and storage in the soil to boost food production in St Denis school garden*

### 4. FENCING

At project design stage, we had not foreseen the need for fencing around the garden, as there was an existing fence. However, at the inception of project implementation, we found the fence had been destroyed by termites and had fallen on the ground. To safe guard the gardens, in collaboration with the school management, we found it necessary to spend some money in re-



fencing the garden. The school contributed a mature tree from which timber was sourced from, while SCOPE Kenya, through the support from SGG, contributed money to facilitate in splitting timber, nails, wood preservative and payment for the skilled labour.



Children participate in practical learning about fencing.



Newly erected fence to secure the garden at St Denis School.

## **SECOND PHASE: PLANTING.**

With the onset of long raining season, which started in mid-March 2023, St Denis school community and SCOPE Kenya team embarked on an intensive planting exercise, which took 4 days, starting from Monday 20<sup>th</sup> to 24<sup>th</sup> March 2023. Once again, a group of 15 parents, came on board, to learn and provide free labour, to support the planting exercise.

In the afternoon, after classes, all teachers and pupils/learners from class 5 to 8, also participated in the planting sessions. To ensure production of a diversity of food crops, which meets the nutritional requirement, we planted a diversity of food crops, which included, assorted vegetables, root crops, cover crops, fruit trees and few agroforestry trees, as below,

- Exotic vegetables (600 *Kales*, 530, *tomato* & 260 *Capsicum seedlings*)
- Indigenous vegetables (4 kilos *Cow peas*, 25 grams *amaranth*, 25 grams *Black nightshade*, 100 *Bunch onions*, 100 grams *spider plant*)
- Root & Cover crops (*cassava*, *sweet potatoes*)
- Cereal ( 200 seeds of *maize* and 100 seeds of *climbing beans*)
- Herbs (10 grams of *Hibiscus (Roselle)*, 70 *Lemon grass* & 30 *Artemisia seedlings*).
- Fruit trees ( 5 *Mango*, 15 *grafted avocados*, 100 *pawpaw*) seedlings
- 5 *Moringa* tree seedlings
- 20 *Gravellea*, 10 *Bottle brush* & 10 *casuarina* tree seedlings
- 60 *banana plants in the swales*

To motivate and support gardening at village level, SCOPE Kenya distributed planting materials (seedlings and seed) to parents and pupils to also plant in their home gardens. The planting materials included, tomatoes and spinach seedlings from the school nursery, and Roselle, cowpeas and spider plant for direct planting.





*Pupils and teachers transplanting tomatoes among other vegetable crops. On the right, a mango tree seedlings planted at St Denis school garden.*



Teachers and parents transplanting vegetable seedlings at St Denis Libolina School garden (21<sup>st</sup> March 2023).





*Ready seedlings in the nursery (tomatoes, capsicum, spinach & kales) established in mid-February. Left: parents transplanting and carrying out direct planting of crops like cowpeas.*



*St Denis Garden Before the permaculture project started.*

*Well-designed garden 1 month after the project started.*



*The situation of the garden 3 weeks after planting. The once bare garden is slowly being covered with food crops.*



## 5. VERTICAL GARDENING

To maximize use of the available space in the school to grow more food, SCOPE Kenya introduced vertical gardening techniques at St Denis Libolina School. This was by using locally recycled plastic materials, mainly used in horticultural flower farms in Kenya. Single vertical garden accommodates approximately 100 vegetable plant, same quantity that could be planted in a 1x 6 meters garden.

The new gardening technology excited children, teachers and parents, for they had not seen such gardens before. For a start, we constructed 2 gardens. We placed one near the gate, and the other one in front of classes. We later planted assorted vegetables like, onions, amaranth, spinach and kales.

The future plan is to increase the number of vertical gardens to about 20, to be placed outside the office block, classrooms and some along the path towards the dormitories. Madam Gladys said “I foresee the school producing more vegetables/food, I now believe what SCOPE K national coordinator has been telling us, that we can produce enough food in our school. With vertical gardening technology, we shall double the space to grow more food.”



*Parents learning & making Vertical garden in St Denis.*



*Pupils preparing to plant vegetables in the vertical garden.*



*Project review meeting with parents & school management;*



*SCOPE Kenya meeting with development partners at St Denis school*



## 6. Garden management

For enhanced management of the garden, St Denis school teachers and SCOPE Kenya came up with following resolutions,

1. All teachers, under the leadership of the agriculture subject teacher will actively participate in managing the gardens.
2. The garden will be subdivided into small portions, which will be allocated to pupils in class 5 to 8, for them to take care of the crops.
3. Teachers and pupils will carry on the planting exercise in all the gardens located in front of the classes and office block.
4. Plant passion fruit seedlings along the fence around the garden.
5. Parents to donate more banana plants, cassava and sweet potato planting materials, to be planted in the school garden.

## 7. CHALLENGES

	Challenges	How we overcame	Recommendation
1	Inadequate organic manure to improve the soil fertility.	-Requested children to bring from home, though they brought very little. -We sourced 20bags from Poor Clare convent	-Source more manure -Intensify making compost, virmi culture -Grow leguminous crops for nitrogen fixation -Integrate small livestock like rabbits & chicken for manure production.
2	Inadequate water	-Established runoff water harvesting and storage in the garden - Bungoma Rotary club put up water storage tanks and gutters	- Intensify roof water harvesting and storage -Applying mulch to reduce moisture loss - Integrate agroforestry trees and soil cover crops -add more organic matters to improve the soil structure
3	Limited resources, (no project coordination/Monitoring cost)	-SCOPE Kenya contributed towards the coordination costs	-include project coordination e.g project Monitoring cost in the budget.

## Way forward

1. Plant more fruit/agroforestry trees in the school compound
2. Intensify making and use of compost manure to regenerate and improve the soil fertility for enhanced production.
3. Increase the number of vertical gardens in the school
4. Integrate chicken and rabbit to supply the garden with manure
5. Strengthen capacities for teachers, pupils and the newly formed community group (Libolina Precious group), through trainings in permaculture, leadership and governance, to enhance maintenance and sustainability of the project.
6. Support St Denis School and parents to establish onsite tree nurseries, to enhance access to fruit and agroforestry tree seedlings for planting in the school and at community level.
7. Discuss with the school management to develop a good project management and sustainability plan.





*Pupils harvesting local vegetables to supply the school Kitchen in St Denis school*



*Teachers are also buying organic vegetables from the school garden for their home consumption*



*The situation of St Denis Libolina Garden as at 9/5/2023*

*SCOPE Kenya appreciates Sustainable Global Gardens for supporting the project, which is enabling vulnerable school community, access organic healthy vegetables, from their own school garden.*