



Phalombe, Malawi

Nachitukula Primary School

Tackling flooding by saving forests



**WORLD'S
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Introduction

Nachitukula Primary School is located in Phalombe district in Malawi and stands out for its deep integration of environmental and social action within their school infrastructure. Phalombe district is one of three districts in Malawi most heavily affected by mass flooding, which devastates local communities and ecosystems annually. Nachitukula School has also a teaching school - Phalombe Teacher Training College, which was born as part of a mitigation strategy, centred around the Climate Action and Sixty Million Tree Planting initiative. Phalombe Teacher Training College graduates around 600 student teachers. These are trained and sent off to over 50 different primary schools with the purpose of teaching primary students how to reforest their communities and fight back against the adverse effects of the ever-increasing climatic changes. Nachitukula Primary School's students were the first to form part of this programme and have been exemplary for other schools the training college works with, planting thousands of trees around their community. Aside from seeing their ecologies thrive again, the school's ultimate hope is those future teachers have a deep integration of sustainability, empathy, and collaboration into their practice.



School Profile



Country:
Malawi



Region:
Phalombe



School type:
Public school



Location area:
Rural



Student population:
1501 to 2000



Prize Category:
Environmental Action

“We need to understand the social fabric so when we do these activities with the members of the community, they will own the programme.

We do the tree planting together with members, we are increasing dialogue, interaction and we are increasing the importance of trees amidst people”.



In-depth look

CONTEXT AND CHALLENGE

Nachitukula Primary School sits within the Phalombe district, found in the Southern Region of rural Malawi. Phalombe is one of three districts in Malawi most heavily affected by mass floods, provoked by tropical cyclones coming in from the South-West Indian Ocean and man-induced deforestation. While flooding has always been an issue for these communities, climatic changes and the removal of surface cover have increased the frequency and volume of floods. The latest cyclone, Cyclone Ana, lashed the southern and central districts of Malawi in late January of this year, washing away hundreds of thousands of people's homes. In a matter of hours, Cyclone Ana destroyed critical infrastructure, livelihoods and

local ecosystems, something which is not unfamiliar to residents in Phalombe.

Over time, deforestation and changes in climate have not only increased events such as Cyclone Ana but have also resulted in soil erosion, loss of biodiversity, increased greenhouse gasses and a notable drop in crop yield (the main source of food and income for the +400 000 citizens of the district).

Phalombe Teacher Training College works with Nachitukula Primary School. The two were designed as part of a proposed solution to the ever-increasing floods back in 2015. Currently, the Phalombe TTC has 1350 students enrolled, while Nachitukula School hosts 1789 primary school learners.



The primary school was opened back in 1973 and is accredited by the Malawi National Examination Board. The academic programme is organised in phases. These are the infant phase (grades 1 & 2), junior phase (grades 3 & 4) and senior phase (grades 5,6,7 & 8). Beyond the conventional curriculum subjects, students are also taught agriculture and how to work with the land. Learners grow crops and trees on school grounds, a process which is not only an opportunity to learn practical agriculture but also a tool for food sovereignty at the school.

Meanwhile, the sister training college offers a two-year Primary School Teacher Training course where prospective students apply and are selected by the Ministry of Education. Successful candidates go on to follow a TWO IN - TWO OUT - TWO IN structure, meaning that students attend the college for two terms, then spend the following two terms in Nachitukula and now other Teaching Practice Schools around the district.

Later trainees return to college and spend two additional terms learning before graduating. In their time within the school, students are given a broad education with deep involvement in growing social and environmental consciousness. While out practising, students act as teacher trainees, where one of their primary focuses lies in teaching primary school children how to adequately raise tree seedlings, plant them, and then maintain them. This involves a lot of hands-on learning, going to sites in the community where trees are planted and watched over by students and student teachers themselves. Beyond this, the curriculum of the college and primary school focuses on fostering a broader social and ecological consciousness, working closely with the communities and families of the young learners.



“Model of using schools working with the community is of paramount importance, another lesson was the integration of the ecosystem first approach, to look after nature so it looks after us, we also learned community collaboration – as they take responsibility of proper management of youth are empowered.”

- Rhana Kapito, Principal



EXPERTISE AND APPROACH

The primary school focuses on generating radical, environmental change in the district. Here, members of staff, the Ministry of Education and the Department of Disaster Management placed the Climate Action and Sixty Million Tree Planting Initiative at the heart of the college's ethos and curriculum. The initiative seeks to combat deforestation and its devastating effects through the restoration of forests and woodlands which were once abundant in the area. Student teachers are taught the importance of reforestation, of preserving their ecologies and communities. Currently, the student-teachers follow a four-week structure when starting to learn about climate change and its impact at college. In the first week, the students explore the causes of floods in their areas. In the second week, they identify the effects and during the subsequent weeks students start planting the trees. During this step, student teachers do a lot of other activities like planting flowers around the school to promote biodiversity and practising sustainable agriculture. For example, in agriculture, the school would grow their own crops and feed the students. These activities have deeply promoted school attendance and outcomes.

During science classes, the college student teachers learn about local ecosystems and the native species of trees that need to repopulate flood-affected areas. Some of these species include *Khaya anthotheka*, *Sena siamea*, *Sena spectabilis*, *Albizia lebeck* and *Grilicidia sepium*. They also learn of endangered species such as *Widdringtonia whytei* (Mulanje Cedar). Mulanje cedar is a species of tree in the family Cupressaceae, and removing this has damaged the environment. Learners acquire the practical skills needed in order to know how to propagate trees as well as how to care for and plant seedlings appropriately.



They are taught the importance of community collaboration, often having members of the communities around the training schools participate in the planting project. The trained teachers take these learnings and acquire skills to translate them to young learners, teaching them the same concepts they have learned around propagules, planting trees and the importance of sharing with family and community members. Beyond this, Nachitukula hopes to expand its project to the 2062 schools nearby. Nchessie speaks of how these schools all have campuses which have no vegetation growing. He hopes that, in collaboration with the school's management, the Department of Forestry, parent-teacher associations and school committees, the college's student teachers will be able to implement tree nurseries in each one of these schools.

In parallel, soon after identifying Nachitukula as a demonstration school, it was observed that the school had no natural flood management initiative in place. In the words of Teacher Andrew Nchessie, a key integrant and founder of the initiative, "natural flood management is the alteration, restoration or use of landscape features to reduce flood risk. In this regard, trees are a vital part of natural flood management". Therefore, trees were planted strategically to reduce flooding from rivers and surface runoff. Nchessie explains how trees directly intercept rainfall through their canopies, water also evaporates from the drops that remain on leaves or otherwise trickle down the trunk to permeate into the soil.



“We seek to create a dialogue to take care of nature – we provide students with life skills.”



OUTCOMES AND RESULTS

Tree Expansion

Today, 60 million trees are being planted on over 4,000 hectares of land in Phalombe. The success of the project within the two sister schools has brought forward interest from other schools around the district and the rest of Malawi. During the 2019/2020 growing season, a total of 250,000 tree seedlings were raised. The trees were planted in and around the school, including the wider community. The community became very interested in the 2020/2021 growing season. The primary school, guided by training teachers, worked with the community to raise seedlings. This led to the community's donating land and 550,000 tree seedlings were raised. Beyond tree planting, the college makes use of school grounds for student teachers to practice tree planting, but also to grow crops and increase biodiversity by planting flowers and other plants native to the region.

Change to come: moving beyond Nachitukula

The tree seedlings being planted include the aforementioned species native to the area; *Khaya anthotheka*, *Sena siamea*, *Sena spectabilis*, *Albizia lebeck* and *Grilicidia sepium*. These were specifically selected to best suit the local environment. Nchessie notes that while change is slowly happening, for the time being, the biggest impact can be seen in the shifting mindsets of the student teachers, the primary school students that are under their wing, and the surrounding communities. Community collaboration has been astounding, as mentioned by the school's social science teacher.



Nchessie and the college already worked with 760 schools, keeping in mind here that each of these schools where student teachers practice has implemented the planting project.



Key Steps

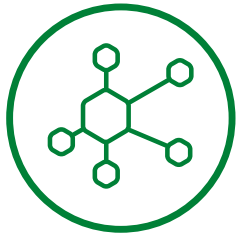


LOCAL OBSERVATION

Nachitukula Primary School based itself on the college's structure and trainees' abilities. Teacher Andrews Nchessie and the education board of the two schools began by making observations of what was happening and developing an understanding of what was really causing the floods that threaten their livelihoods. Teacher Nchessie explains how during his observations of the local ecology in Phalombe, he witnessed rampant deforestation, erratic rainfall, frequent drought, increased soil erosion and floods. He also saw that sectors in agriculture, sanitation, environment, and education suffered greatly following periods of flooding. Worse of all, he observed how the severe floods in Malawi affected thousands of lives, sometimes even claiming lives. Through his research, Nchessie mentions how between 1946 and 2013, floods accounted for 48% of major disasters, and their frequency and severity are increasing. He mentions how the Lower Shire Valley in southern Malawi, composed of Chikwawa, Nsanje and Phalombe districts are the most at risk.



Further research led the staff to look towards deforestation as one of the main contributors to regular mass floods.



EXPANDING EXPLORATION

The second step that the schools took in developing the expertise was to understand the scope of their challenge. They mobilised a group of staff who travelled and visited sixteen flood-affected districts. They visited fourteen districts out of sixteen representing (86%). During this visit, they identified the siltation of rivers as a cause for rivers remaining shallow, settlements being closer to riverbanks, and hilly areas being bare and having no trees. The effects of climate change were visible. Apart from destroyed crops and property, the unprecedented levels of rain affected the generation of electricity and most of the districts were experiencing blackouts. They saw first-hand how roads and bridges were washed away, cutting off access to some flooding areas. Emergency shelter and sanitation services were overwhelmed by the demand. Displaced families had limited or no access to clean drinking water. There were no proper sanitation facilities. Schools had been turned into emergency shelters. Books were either soaked or damaged. What remained clear during their visits was that deforestation was at the heart of all these.





FINDING SOLUTIONS & PLANNING

The third step in developing the expertise was to devise steps to start solving the problem of flooding. Having identified deforestation as the main contributor, the schools began planning a project that could counter this. The staff began by preparing a series of lessons to cover the theory behind establishing a tree nursery. The aim was to enable students to acquire knowledge and skills in tree nursery establishment and management practices. The first lesson was on identifying factors to consider before deciding on the type of nursery. The second was on exploring materials needed for nursery establishment and steps to be taken while preparing a new nursery. The third was on finding out the conditions needed for the nursery seeds and transplant beds. The fourth was to identify the type of nursery layout to be built in Nachitukula. Next came investigating the methods of sowing seeds in a nursery and creating nursery management ways. An additional and final lesson given to students was on developing ways of controlling pests and diseases and maintaining nursery records. Through these theory lessons, students acquired knowledge and theoretical skills on how to raise tree seedlings.





MOVING INTO ACTION

The fourth step that the college took was to let classes from Nachitikula from grades 4, 5,6,7 and 8 establish tree nurseries and ensure that they took good care of them. In the morning and late afternoon students following a roster were seen watering the nurseries in addition to weeding as soon as the weeds appeared. Controlling pests and diseases from attacking the seedlings was cardinal. While this was happening, teachers supervised the students. Since the students were keeping records of the seedling management, teachers spent a good amount of time checking the records. To ensure the seedling survival, care and management of the seedlings became an assignment whose scores contributed to the termly grades. The students became more creative and worked so hard to increase the survival rate of the tree seedlings. During the 2019/2020 growing season, a total of 250,000 tree seedlings were raised. The trees were planted in and around the school including the wider community. The community became very interested that the 2020/2021 growing season, and the school worked with the community to raise seedlings. This led to the community' donating land and 500,000 tree seedlings were raised.





EXPANSION & COLLABORATION

The fifth step that the school took was to let the school participate in climate action activities of the world under the 'Climate Action and Sixty Million Tree Planting Initiative'. The formal tree planting programme was born from hefty and profound research done by part of the college and the Ministry of Education. Now, they seek to work with over 750 schools and seek to make an impact not only in Phalombe but around the entire country. The next step is to provide 10 tree seeds to all the students from all schools in Malawi. Therefore, each child will raise 10 tree seedlings which, in total, during the 2021/2022 growing season will have 49,995,667 tree seedlings. Lastly, the initiative is also developing instructive audio and video messages to be distributed to radio and TV stations in Malawi and each will broadcast the messages 10 times a day. The content will feature how to plant and raise min-nurseries. Their hope is to promote food sovereignty, restore the ecologies which once thrived in these areas and reduce the negative effects of environmental changes. Results will begin to arise as the ecosystems targeted by the project reap the benefits of the thousands of trees planted in Nachitukula and the other 50 schools involved.




Advice and Guidance

Floods are a reality in many African countries, the main cause usually being deforestation. It is imperative to continue pushing programmes such as the college which directly address the core causes of environmental changes in their area. For this, they believe in the education of communicators and teachers, through research and exposure to other contexts where similar challenges are being experienced. To push a programme such as the Sixty Million Tree Planting project, one must start locally but work towards regional, national and international collaboration. Teacher Nchessie explains how it is critical to learn to collaborate with others who seek to make similar changes in the world so that we are “encouraging and learning from one another”, and implores other schools to learn from programmes and contexts like Malawi, so that they may start to mimic similar climate action.

More information

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