

FAMILIES IN ACTION

Motivation and peer learning as
drivers for change



Qualitative and participatory evaluation of Greening Africa projects
(2015-2020)

STORIES OF CHANGE

August 2022

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Cover photographs: from left to right, Cristina John posing in her kitchen next to her improved cooker and below, her husband, Ramadhani Juma carrying water on his bicycle to irrigate their tree plantation in Ndoroboni (Sarame, April 2019); Ngolomo William with his fodder plantation (above) and Josephine Boka with her house in the background, both in the community of Nchemu (Vilima Vitatu, April 2019). Photo credits in this document go to Marco Arango Quispeinga (2019) and Oihane de Gana Romero (2022).

Oihane de Gana Romero has prepared this document in the framework of the consultancy "Participatory final evaluation with the qualitative approach of the Greening Africa projects" carried out between 28 March and 13 April 2022 in Mwada, Sangaiwe, Vilima Vitatu and Sarame (Manyara region, Tanzania). The information to write these stories has been collected between March and April 2022, and, in the case of Greening Africa 1 participants, also includes information collected between March and April 2019 in Sarame and Vilima Vitatu.

Introduction

In a project such as Greening Africa, success can be measured in different ways: for example, in terms of the number of innovations adopted, the percentage of participating families or the number of trees planted by the families themselves, to name but a few. That is one side of the coin: when we evaluate the success of a project and its results quantitatively, i.e. by numbers. This is perhaps the traditional and most commonly used way in the world of cooperation and development.

However, there is also another way of looking at the results of a project and that is the qualitative vision: to show that which "cannot be seen at first sight" (and is more difficult to measure), but which is perceived and felt when talking to the protagonists of the project (families, communities, technical team, allies). They are testimonies and stories that show us the experiences lived, what has been learned and, above all, what motivated the change and what drives the families to continue working. These stories also tell us about the processes: how they were carried out, what had the greatest impact, what difficulties there were along the way and how they were overcome, giving us **a vision that is "not measurable in numbers", but which includes the connotations that a percentage cannot explain.**

From my point of view, if we add both, the qualitative and the quantitative views, we get a fairly complete picture of the project and its results, i.e. we see both sides of the coin. Combining both visions in an evaluation process shows us their impact on the families and also gives us many clues regarding the sustainability of the innovations adopted by the families.

Thanks to the impact study conducted by Marco Zeisser Polatsik between March and April 2022, we have extensive quantitative data on the results of the project in the villages of Sarame, Vilima Vitatu, Mwada and Sangaiwe:

- 85% of the more than 2,600 families living in the four villages have participated in the project (2,293 participating families).
- More than 1,000 hectares of trees have been planted in the project work area by the 2,293 participating families.
- 91% of the participating families have planted fruit trees and implemented their vegetable gardens. All families mention having consumed both products, especially fruit, which was new to the family diet.
- The 2,293 participating families have the knowledge and have implemented actions to improve their households and contribute to the recovery of their natural resources. The families have invested their own resources in this (around 100 euros per family).
- Access to good quality water has been improved thanks to the construction of more than 100 family wells and rainwater tanks.

This document completes the picture presented in the final report of the "Participatory final evaluation with a qualitative approach". The collected testimonies become **stories of change**, show the path travelled by Greening Africa¹: how the project has brought about changes in families such as Josephine Boka, Ramadhani Juma and Ngolomo William. In this sense, each testimony tells us what they do differently from what they did before (innovations adopted), what they have achieved (results at the family level) and what they dream of for their future. As mentioned before, these stories explain the nuances behind the figures and are an input to analyze the project's results with greater concreteness and clarity.



Greening Africa technical team (coordinators, facilitators and executive director) in April 2019.

¹ Taking into account the two phases of the project: Greening Africa 1 (2015-2019) and Greening Africa 2 (2017-2020).

"No rush... but no pause": Timeline of the Greening Africa projects

Since 2015, the Greening Africa project has been a journey full of learnings and challenges. Initially, it was planned for an implementation period of 03 years, which was adapted according to the progress of the work process with the families and communities until reaching almost 4 years of implementation for each phase². The Tanzanian reality constituted a challenge for the implementation of the Pachamama Raymi methodology: it was the first time we had worked on the African continent and there was a lot to know and learn. However, for each obstacle, the project team, together with the participating families and communities, found a solution and learning and new knowledge took place. The path has been made step by step and with constant work, that is "without haste, but without pause".

To know this path, I will take a brief look at the history of the project through a **timeline**. My main source of information to construct this timeline has been the voices of its protagonists, i.e. the families, community authorities and participating juries as well as the local project team. Each of these voices tells a story of change and **together they reconstruct, in a way, the history of the project**. This can help to **better understand (and value) the work process** followed by the Pachamama Raymi methodology.

In this timeline, the people I interviewed have identified important moments, which I will call **milestones**. By milestones, I understand those moments that have been important for the project's actions because they have marked a change, either progress or setback. It is important not to confuse milestone with activity: the main difference between the two is that the milestone marks a change in the work process (ALBOAN, 2006)³.

Among the milestones identified, **families** particularly mention the following:

1. **Study tours**, especially in Gichamedea, Sarame and Iringa.
2. **Contests**, with special emphasis on afforestation.

In addition, the **project team** also highlights study tours and others such as:

3. **First fruit and fodder harvest**.
4. **Weather events** such as drought and heavy rains, specifically in 2018, strongly affected the plantations and harvests.

² Greening Africa 1 was implemented from early 2015 to May 2019 in 11 communities in Sarame and Vilima Vitatu districts, while Greening Africa 2 was implemented between early 2017 and December 2020 in 9 communities in Mwada and Sangaiwe districts.

³ ALBOAN, Cooperation and Development Initiatives, Padre Arrupe Human Rights Institute and Hegoa. 2006. *The Adventure of Systematization. How to look at and learn from our practices*. Bilbao: ALBOAN, Padre Arrupe Human Rights Institute, Hegoa

FIGURE 1. GREENING AFRICA'S TIMELINE WITH ITS MAIN MILESTONES

Timeline



In the figure above, I present the **timeline of the project**, marking the main milestones chronologically. These milestones are **not a recounting of project activities** but are moments identified by the interviewees as having marked a change in Greening Africa's work process. The project closure in December 2020 is not a milestone, but it appears to mark the end of the process.

In the following tables, I detail these milestones, describing and analyzing what they were, what they consisted of, why they were important to their protagonists and what impact they had on the process:

TABLE 1. CORRELATION OF MILESTONES WITH THE PHASES OF GREENING AFRICA

Milestone	Project phase	
MILESTONE 1. Team building (2015)	Greening Africa 1 (2015-2019)	
MILESTONE 2. GA 1 first contest (August 2015)		
MILESTONE 3. Study tour to Iringa (2015)		
MILESTONE 4. Heavy rainfall in Sarame and Vilima Vitatu (2016)		
MILESTONE 5. GA 2 (2017)	Greening Africa 2 (2017-2020)	<ul style="list-style-type: none"> • 09 communities or subvillages • 02 villages (Mwada and Sangaiwe) • 1,370 participating families = 89% of resident households
MILESTONE 6. "Janga" - Disaster (2018)		
MILESTONE 7. Launch of afforestation contests		
MILESTONE 8. Study tour to Gitsamedia and Sarame (August 2019)		
MILESTONE 9. "Mafanikio" or "mwaka wa mafanikio" - Successful year (2019)		
GA 2 closure (December 2020)		

TABLE 2. A BRIEF ANALYSIS OF IDENTIFIED MILESTONES

MILESTONE 1. Team building (2015)	
What happened?	Before starting its activities, the project formulation mission in Tanzania had already identified a small local team to start working. This team consisted of 01 executive director (a Dutch engineer resident in the country) and two Tanzanian farmer experts, who were joined by a small group of 03 Peruvian farmer experts who would assist with the implementation of the Pachamama Raymi methodology. After several changes, it was Toribio Huilca, a Peruvian farmer expert, who did not speak Swahili or English but knew the methodology perfectly well, who took over the practical management of the project until the end of the project in December 2020: first as a consultant, and officially, from 2017 onwards, as coordinator and, later, executive director. Toribio learned Swahili in less than four years, helped identify the team of coordinators and facilitators, trained them and followed up on the activities in the field. By the end of the project in 2020, a group of more than 80 Tanzanian farmers, including coordinators, facilitators and jurors, had been trained in the Pachamama Raymi methodology and were in charge of implementing the project in the field.

Impact on the project	<p>The Greening Africa project can be considered a successful example of south-south cooperation between Peru and Tanzania, and of farmer-to-farmer peer-learning: there is currently a local Tanzanian team of farmer experts trained in the Pachamama Raymi methodology, who live in the working area and continue to work on their own plantations and businesses.</p> <p>From a technical point of view, the implementation and adaptation of the Pachamama Raymi methodology have been a trial-and-error process rich in learning (best-suited forest species, location of quality water sources, etc.). The fact that the team was made up of Tanzanian farmers has fostered a horizontal relationship with families and communities, a key factor for successful peer-learning. From a project management point of view, the team has been consolidated since Greening Africa 2, with more clarity and experience in the Tanzanian context with regard to accounting and administrative issues.</p>
The assessment given by the participants	<p>The adaptation of the Pachamama Raymi methodology to the Tanzanian context is described by the people interviewed as a continuous process of trial and error that has ended up achieving good results. Much of the success is attributed to the project team: the families interviewed highlight the trusting and close relationship with the project's executive director, coordinators and facilitators. This horizontal relationship and the constant advice given to the families through visits to their homes has been as key as the contests in maintaining motivation.</p>

MILESTONE 2. Greening Africa 1 first contest (August 2015)

What happened?	<p>The first step to work in the communities is the presentation of the project, first to the local authorities and then to the families in different meetings for this purpose. At these meetings, the project is launched, making it known among the families, explaining and distributing the rules for participating in the first contest. In this first one, families are encouraged to participate with their animals, dances, etc. The first Greening Africa competition was organized in Vilima Vitatu by Toribio Huilca and Guillermo van Immerzeel in coordination with the local authorities and included prizes for the best bicycle race, the best goat and the best dance, among others. This same dynamic was repeated in the different participating districts (Sarame, Mwada and Sangaiwe) to present the project and motivate their participation.</p>
Impact on the project	<p>This first Greening Africa activity is designed to familiarize families with the dynamics of the competitions and to motivate them with prizes. It is also a good opportunity to get to know each other (families, authorities and project team), to prepare for and experience participating in a contest and to witness the actual awarding of prizes. It also helped to start identifying more farmer experts within the communities themselves to be part of the project team as facilitators and jurors.</p>
The assessment given by the participants	<p>It is described as a time of celebration and sharing their culture through dances, for example, is highly valued. Some people mention that they started to understand the project better, but most of all they were motivated to participate in the project because they wanted to know more about the benefits of improving the house or planting trees.</p>

MILESTONE 3. Study tour to Iringa (2015)

What happened?	<p>Iringa is a region relatively close to the Manyara region (about 3-4 hours by bus) where there is a community called Kosima Moto, which has specialized in planting timber trees. The study tour in Iringa lasts 02 days (plus two days of travel) in which the families see in situ how a community is organized to plant and harvest the wood from the trees. The project team organizes the trip and the community of Kosima Moto is in charge of training.</p>
Impact on the project	<p>Before discovering the Kosima Moto community, study tours were conducted in places such as Dodoma or Arusha where the experiences visited were run by the state or by companies. These first visits did not achieve the desired impact in terms of motivation because the families did not identify with these experiences. Finding successful experiences of Tanzanian farmers in forestation, such as in Iringa and later in Gichameda or Sarame, has meant a great change because it is as a result of these visits that the project begins to grow: the families "just stopped their ears", learn from other farming families and return to their communities motivated to start working. People return not only trained but also motivated and have signed commitments to plant trees on their plots of land. It is also mentioned that, as a result of the visits to these experiences, new ideas arise in the team to improve the income of the families, such as, for example, the production of passion fruit, the improvement of livestock or beekeeping.</p>

The assessment given by the participants	Finding experiences such as those of Iringa, Gichamedia or Sarame has not been easy because, as Toribio mentioned, there were not many and they were little known. It has been hard work that has involved travelling, asking questions and getting to know. However, now, after the work of Greening Africa, there are already more experiences to visit among the same families who have participated in the project in Sarame, Mwada and Sangaiwe.
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MILESTONE 4. Heavy rainfall in Sarame and Vilima Vitatu (2016)

What happened?	After a severe drought season between 2014 and 2015, which particularly affected agriculture, 2016 started with very heavy rains. These rains caused several houses to collapse and many plantations and crops to fail.
Impact on the project	Some families who had started to improve their houses watched how the walls of their houses (made of a mixture of earth and reed) collapsed and their newly planted trees rotted due to excess water. This situation greatly discouraged the families, especially in Vilima Vitatu, who had put in a lot of effort. In addition, the first year of tree planting had also not worked well because the project was poorly advised by the local government on which seeds to buy and which varieties were best suited to the area.
The assessment given by the participants	"We had our ups and downs because we didn't know anything about Africa," Toribio Huilca shares during my interview with him. After this bad experience, the project team started to look for new seeds and to investigate which ones would grow and adapt to land with little water. This has generated a great deal of knowledge in the team and in the families, ensuring the availability of timber, fodder (<i>gliricidia sepium</i>) and fruit tree species adapted to the area. The fruits of this research process can be clearly seen in Mwada and Sangaiwe (Greening Africa 2) where the project had very good results in afforestation.

MILESTONE 5. Greening Africa 2 (2017)

What happened?	Despite all the difficulties, Greening Africa 1 had many lessons learned and promising first results in terms of families' progress in improving their homes, their family diets and their tree plantations. This first phase laid a solid ground for continuing the work and reaching out to more families and communities. With the support of GAL financiers, it was decided to start a second phase of the project in two new districts, Mwada and Sangaiwe.
Impact on the project	This second phase of the project marks the beginning of the consolidation of Greening Africa's work in Tanzania, especially in afforestation. Thanks to this accumulated knowledge, it has been possible to reach more families than in the first phase and more quickly: there was a trained team and a functioning office; it was known what species of trees to plant and where it was best to locate the nurseries, etc.; good experiences had been identified for study tours; water tanks were available to irrigate the plantations if necessary, etc.
The assessment given by the participants	The general consensus is that more and better work has been done in this second phase. More work has been done because more families have been reached. We have worked better because we had a consolidated team in the field, a team in the office that made the work easier and people were very motivated. The motivation came not only from the project strategies (contests, study tours) but also from the expectations generated by GAL, whose results were already known by several of the participating families in Mwada and Sangaiwe.

MILESTONE 6. “Janga” - Disaster (2018)	
What happened?	<p>On the one hand, in Sarame and Vilima Vitatu, there was little rain and the drought increased. Newly planted trees started to dry out. There is also a reference to a problem with insects (e.g. ants), which attacked fruit trees and fodder. Furthermore, not all land in Vilima Vitatu is good for growing fruit trees. Added to this is the dispute in Maramboi between the Chem Chem company and the Barabaigh people, who wanted to be evicted from the land because they live in a part of the conservation area. In the community of Kigongoni, between 2017 and 2018, families had to start from scratch twice because the army came and destroyed their houses.</p> <p>In Mwada and Sangaiwe, on the other hand, it is mentioned that after the internship in August 2018, tree planting increased and people were very enthusiastic. However, there was little rainfall and the trees started to dry up. They also point out that "in Sangaiwe, most of the land is salty, salty, which makes the trees not grow well". The families did not yet know much about the management and care of their trees because they were just starting to plant. Regarding the fruit trees, the families did not yet know how to care for them because they needed to be grafted.</p>
Impact on the project	The lack of water for irrigation meant that quite a few trees died in the field and this started to demotivate the participants. The families, especially in Mwada and Sangaiwe where the project was in its first years, had been working very well and with enthusiasm. In order not to lose that motivation, it was later proposed to implement afforestation competitions.
The assessment given by the participants	The project field team (coordinators and facilitators) describe this year as a disaster, especially for afforestation. This is because, although there was already a lot of knowledge about which trees to plant and the nurseries were working very well, the lack of rainfall worked against them once the seedlings were out in the field.
MILESTONE 7. Launch of afforestation contests (2018)	
What happened?	This type of competition was proposed by the project team to encourage families who were interested in planting trees. Those contests were awarded once a year, after each afforestation campaign, and worked at the communal level. Greening Africa 1 held only two such competitions while Greening Africa 2 was able to organize up to four in total.
Impact on the project	<p>The cash prizes in these competitions were higher than in ordinary contests and the families and communities were motivated a lot by these. Thanks to them, larger areas of tree plantations can be seen in Mwada and Sangaiwe than we saw in Sarame and Vilima Vitatu (that is more than 05 ha). In addition, families in Mwada and Sangaiwe have slightly larger plots of land than in Sarame and Vilima Vitatu, allowing them to devote more space to their plantations.</p> <p>The previous years, 2015 and 2016, were difficult years for afforestation work: although good seedlings were produced in the nurseries when it came to taking them to the field, they did not take root, either because the plants were not adapted to the hot climate or because of the salinity of the soil. As a result, the first plantations failed and this discouraged people who had started out very enthusiastic. After a lot of research and field trials to find the best seeds and plants for the area, timber, fruit and fodder species (<i>gliricidia sepium</i>) were found that were well adapted to the climate and soil, marking a turning point in the project.</p>

The assessment given by the participants	These contests mark a turning point in the project's afforestation work, especially in Mwada and Sangaiwe, where the participants threw themselves into these competitions. The families interviewed speak with great enthusiasm about the contests and how, thanks to them, they have made progress in their plantations. Especially in GA2, the interviewed families mention tree planting as their main motivation for participating in the project: they wanted to know how to plant and care for trees, as well as to plant different types of trees on their land. Before the project, they planted trees for medicinal reasons (e.g. malaria), but not to take care of the environment. Now the families are happy with their plantations for several reasons: in the medium term, they see that the climate has improved because, where there are trees, it is not so hot and it rains more; also, those who have fruit trees have harvested, consumed and, in many cases, sold the fruit, making a good income for the families; and finally, they hope in the long term, in about 6 to 8 years, to sell the wood from their trees and generate more income. The motivation to plant trees remains intact in all the families interviewed and this is thanks to the project.
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MILESTONE 8. Study tour to Gichamedia and Sarame (August 2019)

What happened?	<p>Unlike Iringa and the first study tours, the experiences in Gichamedia and Sarame are within the work environment and show the participating families and authorities the economic and environmental benefits of planting fruit and timber trees. The visit to Gichamedia and Sarame lasts one day. In Gichamedia, the families are mainly involved in planting timber trees, while in Sarame, the emphasis is mostly on fruit trees.</p> <p>In the case of Sarame, two participants of Greening Africa 1, Ramadhani Juma and Lucia Doga, who, thanks to the project, have changed their cash crops to timber and fruit (mango) tree plantations, are visited.</p>
Impact on the project	These are the first experiences identified within Greening Africa working area and, moreover, they are purely family experiences. These characteristics (proximity and management by families) have made participants identify more quickly with them, feel motivated and learn more. Furthermore, the fact that two experiences of project participants (Sarame) are included is a positive indicator of the benefits of the project for the participants themselves.
The assessment given by the participants	The participants highly value the study tours, in general, as an opportunity to see in situ and learn about the benefits of the project. In particular, they value this internship to Gichamedia and Sarame because they feel very identified with the families: if someone like me has managed to have this plantation, so can I, and that is why they came back more motivated to work on their plantations.

MILESTONE 9. “Mafamikio” o “mwaka wa mafamikio” - Successful year (2019)

What happened?	It was a year with a good rainy season and therefore a successful afforestation campaign. The trees that were planted at the end of the year, in Mwada and Sangaiwe, did very well. In addition, the Greening Africa 1 families who had planted fruit trees started harvesting their first fruits, consuming and selling them.
Impact on the project	The first visible results of the afforestation work are beginning to be seen. The success of the afforestation campaign has greatly motivated people. In May 2019, GA1 ended with a high level of participation (81%) and with the interest of the families to continue planting trees. Several families identified the sale of fruit as a business opportunity or at least a way to generate extra family income.
The assessment given by the participants	The project team is very positive about the success of the afforestation campaign this year. The GA1 families who started harvesting fruit, consuming it and/or selling it, greatly appreciate the improvement in their family diet (children could eat fruit more frequently, without having to buy it, and not only as a special treat at Christmas), as well as the additional income it brought them (250-500,000 Tzs - 10 to 200 euros).

Sources: interviews with participants and workshop with the local Greening Africa team (March-April 2022).

“ Experiences that inspire”: Greening Africa’s Stories of Change

Martín Baranda and his future dreams (Makirinya, Mwada)

“I want to continue planting trees around my farm. I also want to sell some of my cattle and buy a dairy cow so I can have milk for my family and to sell”



Martín Baranda is 76 years old and has very clear ideas. We visited him one morning in March 2022. As it was early in the morning and not too hot yet, we sat down in the courtyard of his daughter-in-law's house to talk. Martin has 07 children, the youngest of whom is 20 years old and still lives with him and his wife. When we ask him about his plans for the future, he answers clearly that he wants to continue planting trees and thus improve the quality of his land. He is also thinking of eventually setting up a small family business:

"I want to improve the conditions of my land so that I can grow more crops such as sesame or maize, not only for my family's consumption but also to be able to sell and start a business. I also want to improve my cattle, selling the cows I already have and buying fewer but better ones that give milk"

Like most families in his subvillage, Martín and his family are farmers and cattle ranchers. They have a large plot of land, about 20 hectares, and about 20 head of cattle, mostly cows. The maize crop has so far been the main income for his family, and, if they had to pay for any additional expenses such as buying medicine, they sell one cow a year.

When Greening Africa 2 started working in the districts of Mwada and Sangaiwe, Martin Baranda was the chairman of Makirinya, a community of 147 families located in Mwada, not far from the main road to Babati, the capital of the Manyara region. As chairman he supported the work done by the project: "At that time, the environment was not good and we decided to start planting trees. We welcomed the Greening Africa project and continued planting trees. The difference between now and five years ago is the trees we already have in the community". Recalling the early days of the project, Martín says that the families who were most willing to participate were those who saw the importance of planting trees and, moreover, had a large plot of land: "Thanks to these families, others who had not planted trees became interested in doing so when they saw the results, the benefits, but by then, the project had already ended".

In the past, families planted trees for health reasons, to use them as medicine (for malaria, for example). Now, however, thanks to the Greening Africa project, Martin has learned the benefits of planting timber, fruit and fodder trees by seeing what other families in Gichamedia or Sarame do: "We have started eating fruit after participating in the project".

In 2021 he started harvesting his fruit trees (papaya, passion fruit and guava) and hopes to harvest mangoes this year. In addition, he has learned to associate his maize crop with his trees because trees provide multiple forest services, including soil remineralization and water harvesting. When asked about his tree plantation, he proudly shows it to us: he has planted everything from fruit trees to cedars to fodder for his cattle. He says: "I am happy not only for my cows but also for me". In the dry season, he is feeding his cows with the fodder he keeps.

With the cash prize won in one of the Greening Africa contests and with the money from the sale of the passion fruit in 2021, Martin has started to build a new house, first buying the calamine for the roof and now making the furniture for the rooms himself (tables, beds,

chairs). He has many plans and dreams for the future and all he says, thanks to his trees: "I am proud because thanks to the project I now have fruit and, thanks to the fact that there are now trees, the environment has improved and the land is not dry, because the trees attract rain".



From left to right: papaya tree with associated maize crop on Martin's farm; in the background, with a calamine roof, is the new house being built by the Baranda family in Makirinya (March 2022).



From left to right: Martin's plantation of timber trees is very green, while his maize crop is starting to dry out in the field due to a lack of rain (March 2022).

Bonita Patrick and the happiness of achievement (Burunge, Mwada)

"What I will never forget is that my children will always be proud of me because I worked so hard with Greening Africa to improve our home"



Bonita lives up to her name and is a pleasure to talk to. Although we arrived unexpectedly at her home, the 38-year-old participant, who has 03 grown-up children, welcomed us warmly into the house she shares with her husband, and took a break from her work on the farm to sit down and talk to us about her experience with Greening Africa.

She tells us that she knew about the project even before they started working in Mwada: "The first time we heard about the project was in Vilima Vitatu when my husband visited a relative of ours there and discovered that they had planted a lot of fruit trees". A year later, in 2017, the project came to work in Burunge B, the community where Bonita and her family live, and they did not hesitate to get involved.

One of the first activities he participated in and which motivated him the most was the internship in Gichamedea and Sarame: "I saw timber trees in Gichamedea. There I met a man who had a lot of timber trees and was harvesting them and making money. When we went to Sarame, we saw the fruit trees of Ramadhani (Juma), who did not have much money but had dug the holes to plant trees himself. There I said to myself that even when I go back home, will dig the holes and ask Toribio for the mango trees to plant them. So I was very happy to visit both places". Bonita now has a plantation with 180 timber trees and 97 fruit trees (mango, papaya and guava) and has already started harvesting papaya and mango: "instead of buying them, I just pick them from the tree", she says. She also sells them to her neighbours for about 1,000-2,000 Tzs (0.40-0.80 euros) in the small shop she has at the entrance of her house.

In addition, with support from the project facilitators, Bonita and her family have learned how to improve their house, for example by building a more efficient kitchen and a latrine. To do this, they have invested part of the two prizes they won in the Greening Africa competitions (about 1,130,000 Tzs; about 486 Euros) and their own money; the other part of the prizes they have used to support their children with their education. She tells us that the exercise of imagining their future through talking maps has helped them feel closer to it: "We paint our house and write our future plans, so we work hard to make sure we stick to our plan".

For Bonita, one of her main achievements as a project participant has been the improvement of her livestock: "Before I didn't take care of my cow but after the learning process I took good care of my cow and improved my milk production". She now has a barn where she feeds the calves of her two dairy cows. The challenge here is to get her cows to eat the fodder because as they are not used to it yet, they have to be mixed and they eat a lot.

The main challenge has been the lack of water: during the project they had to go to the public fountain to fetch water for their consumption and also for irrigation. Now, thanks to the work they have done, they have water near their house, but: "When they came to see my cow and my mango trees, they asked me how I managed to plant mango trees if I don't have water. Then the Village Executive Director liked what the people did with Greening Africa and advised them to connect the water pipe to the house so that they could continue planting more trees".

The time flew by as we chatted with Bonita and she showed us her work. Before saying goodbye, we asked her if she thinks that Greening Africa has contributed to the improvement of her community and she answered: "We improved our living conditions in terms of health, like boiling water before drinking it, we learned how to prepare drinking water and how to have a balanced diet. So, without a doubt, the families who continue to do what they have learned from the project continue to benefit from it".



Bonita Patrick with her two baby cows inside the stable she has built (April 2022)

Paskali Izdori Leonsi and his two small businesses (Burunge, Mwada)

"By the time Greening Africa came to an end, families had already seen the benefits of the project, so they asked me to continue producing seedlings in the nursery and to produce more variety"



We visited Paskali early one morning, before the heat of the day, at the site of one of Greening Africa 2 nurseries in Burunge B community (Mwada). The land is located close to the road and a small lagoon, so it is a privileged place to produce and sell seedlings. During the project, the 28-year-old farmer, who is married and has two children aged 2 and 4, worked as the nursery's caretaker, but he also helped to accompany the families: "During the afforestation campaigns, I visited the families to show them how to plant: the space between one hole and the next, that they were all lined up, etc.". His job was to support the families in planting the trees properly. It is a job he enjoyed and from which he learned a lot.

When the project ended, the nursery, as such, continued to operate for a while longer "because people are still planting and need to buy seedlings", he says. Afterwards, the project team

closed down and handed over all the machinery used in the nursery, such as the trolley, the tool for digging the holes, the generator for pumping water, and the tank, to the Mwada (Village Executive Officer) municipal authorities so that they could use it and continue the work. However, it was Paskali who took over: "I realized that people still need to continue planting trees and so I decided to continue production at the nursery". So he simply continued to produce seedlings on the same land without knowing who owns the site (Village Office) or asking for permission. From the project he received leftover plastic to bag the seedlings: "I still use it to this day. I haven't bought anything so far".

He is currently producing papaya, guava and avocado seedlings, and in July he will start producing seedlings of timber trees and other fruit trees. To produce the seedlings he needs natural fertilizer, sand, soil, bags and seeds. The cost he invests is not much: he buys natural fertilizer and some seeds, but mostly he collects the seeds from the big trees free of charge.

So far, he is doing very well, and that is why he has taken over the nursery as a small business. He has produced 3,700 seedlings in 2021 and in 2022, 4,200 seedlings, both timber and fruit trees because both are in equal demand. His main buyers are families from the area, but also from other places: "People come from Mwada, but also people who are passing through on their way to Magugu or Arusha". When he sees families in the communities who care about trees, he tries to motivate them to continue planting, so they come and buy. The wholesale price (more than 100) is Tzs 500 per sapling (0.20) and Tzs 700 per fruit tree (0.28). When retailing (less than 100), the price goes up to Tzs 1,000 (0.40 euros). People usually buy between 20 and 30 saplings, but there are also people who buy more than 100: "Some people come to buy because they see other people's trees and ask them the address of where they bought it. That's why they come". With what he sold in 2021, he made an income of approximately Tzs 2,100,000.00 (842 euros), not discounting the production costs which are minimal, well above what he earns from growing maize (at around 400 euros per harvest).

However, the nursery is not Paskali's only business. Thanks to the project, he has discovered one of the medium-term economic benefits of planting trees: selling fruit. His fruit plantation has become his main source of income for the family. He has almost 3 hectares of papaya planted, distributed between Burunge B and Ngoley, which are in full production. On a monthly basis, he is able to earn a total of Tzs 3,000,000 (1,200 euros), selling between 1000 and 1200 papayas every 10 days. For a year and a half, he sells papaya every month, after which production decreases and then increases again. Buyers come from Arusha and Dodoma: "There are many buyers. Sometimes they even fight to buy", jokes Toribio, Greening Africa executive director, who is familiar with Paskali's work.

Paskali is happy with his two businesses, the nursery and the sale of papaya. Like other families we interviewed, he is optimistic about the future and has plans for his family: "I want to improve my nursery business. I would like to find better land because where it is now when it rains, it floods because the lagoon next to it fills up to the top. So I want to find another place and produce a wide variety of seeds because it's a good business".

Josephine Boka and the hope (Nchemu, Vilima Vitatu)

"The Greening Africa project has taught us from the very beginning. That's why I value everything I have done with them very much"



We met Josephine Boka, a farmer from the subvillage of Nchemu (Vilima Vitatu) in 2019 when she was 54 years old - she is now 57 - and was preparing to participate in the last Greening Africa 1 competition ([see video](#)). Then, as now, she spoke to us with great affection about her experience and participation in the project: she had her half-hectare plantation of fruit and wood trees; she was starting to work to improve her livestock and had made several improvements to her home with the construction of her latrine and, above all, her well and the purchase of a water tank: "I am very, very, very, very happy. Before we had so many difficulties to get water... We used to get up at 3am to fetch water, but now we have water on our land", she now recounts.

Ten other neighbouring families also have access to this swallow well free of charge. A quality water source is a rare and precious commodity in Vilima Vitatu, where most of the accessible water is very salty and cannot be used either for human consumption or for crops and plantations. The "Water for All" project implemented by Greening Africa in 2018 helped many families in the district to locate where there was quality water on their land and motivated them to build a family and community wells.



Josephine in front of the future map painted on her kitchen wall (April 2019).

She currently has about 600 timber trees and around 450 fruit trees, including papaya and passion fruit. Some fruit trees died and she replaced them because she has access to water from her well: "When a tree has died, I have replaced it", she says. She tells us that she has replaced the papaya with other types of trees and, in addition, she has added 60 more trees than she planted with the project. To do this, Josephine has put into practice what she learned with Greening Africa

and has produced the papaya seedlings from her own trees. She has also bought other fruit trees (pomegranate, tipisi, tikarranga, zambara-violet) in Babati and Arusha.

Now three years later, she tells us that the sale of fruit and eggs has become the main income for her family. Until this year, every three days she harvested and sent papayas to Arusha and other markets outside Vilima Vitatu: she sells each papaya for a maximum of Tzs 2000 (about 0.86 euros) in the community and Tzs 3000 (1.29 euros) in Arusha: "When I sell the fruit in the community, the price is lower because many families have fruit trees. However, it is not the same in Arusha: there I can sell papaya for Tz3,000 a piece and I can sell a lot of them". To send the fruit to Arusha, she contacts the buyer and sends the order by bus (the shipping is paid by Josephine and costs Tz10,000, about 4.30 euros). She also sells passion fruit and guava. This year she has not yet had a good harvest because there has been little rain and the fruits have not finished ripening.

Since she participated in Greening Africa, she has had the idea of having fewer cows, but improved by zero grazing, with the aim of having more milk and that with its sale she could have new income for her family. In 2019 she had a barn for her cows and was growing fodder to feeding them. She now has 30 cows together with her neighbours, of which 03 are dairy cows, 50 goats and 20 chickens: "So far I have already sold 06 cows. When the harvest is not good, I usually sell more than I have already sold". Like many families in the area, for Josephine her livestock is like her petty cash: she sells them when she needs money for an expense or unforeseen situation.

Apart from this year's drought, Josephine shares another problem that is putting her future plans on hold: the concession granted by the local authorities to a phosphate mining company on the three hills that give the district its name. "We have to leave our home and we are going to be paid for it. We have agreed and have already signed the papers. That's why they haven't seen any more improvements on my farm: because we have to move", she says sadly. "I am not happy about this situation because I have lived here for a long time, all my children were born here and that is why we have a large piece of land. So moving to another place is not good". We received the news in silence, like a cold shower. Josephine tells us that the state is not providing them with new land to move to, but that they have to look for it themselves: "The land we are going to is on the other side of the hill. We already know the site and it's 20 x 20 feet, which is quite a bit smaller than what we have now". For now, she says, they can only wait for their land to be valued and paid for before they move: "They will pay me for the trees, but they will measure the size of the trees to pay proportionally. So what they pay will vary according to the size of my trees".



Josephine's garden with fruit trees planted today (left) and when we visited her back in 2019 (right).

In spite of all this, Josephine continues to look to the future with hope, because she has a future plan to fulfill: "I don't want to give up my project to continue planting trees. I will continue to do it, especially the fruit trees because I have sold fruit and thanks to that, I have been able to pay the school fees for my children who are in secondary school and university. The money from selling the fruit I have saved at the Village Community Bank to save. This has helped me to send my children to school, and to pay school fees. So I will not stop planting trees".



On the right, the Boka family well in 2022 and on the left, Josephine using her well when we visited her back in 2019.

Ismaili Ramadhani Juma and a life-changing decision (Ndoroboni, Sarame)

"I am very happy. I think planting trees was a good decision. When I get more water, I will be able to do more than I have done. Even the environment has improved, the weather is good when there are trees"



Ramadhani Juma enjoys receiving visitors, and it is a pleasure to hear him speak with such enthusiasm and affection about his work. Since the 30-year-old farmer decided, when he was a Greening Africa 1 participant, to switch from maize to timber and mango trees, he has regularly received visits at his plantation and has shared his experience with many families: "They come to learn about trees, how to plant them... I teach them. My neighbours also come to ask me why I decided to plant trees and I explain to them that they are an investment for the future: when you get older, you won't be able to farm. That's why it's good to have an investment like trees because you can harvest them and get money". Sharing with others what he has learned and achieved helps to create new references and motivate more families to do the same: "People who come from other regions of the country to Ndoroboni, when they see the plantation, they don't think I am the owner, because they think you have to have a lot of money to do this. They think I am the worker. I have put a lot of effort into my plantation".

Ramadhani lives in the community of Ndoroboni (Sarame) with his wife Cristina (29 years old), their three children and two other children, who are close relatives staying with them so that they can go to school. Like most families in his community, before participating in



Maize associated with timber trees (April 2022)

Greening Africa, he was mostly dedicated to agriculture. However, since he learned about the benefits of planting trees by visiting the experiences of other farmers like him, he changed his occupation. Today, he takes care of his more than 1000 trees almost full time: "I am here on my plantation all day long, working: every day of the week and all year round". He tells us that he works from 6 o'clock in the morning until late at night. Moreover, as he learned from the project team, he associates his trees with his maize crop every year: "We have enough to eat for the family. I do it this way to protect my land so that the cattle can't get in when they see the maize".

He has about three hectares of land, of which two full hectares are trees. He has everything: cedar, mango, guava, papaya... even cashew: "I have planted only these trees but with the help of Greening Africa. Now when people come to visit me on my plantation, they eat the fruit and are happy. This

is thanks to Greening Africa", he proudly shares as we walk through his plantation, a 15-minute walk from his home. Greening Africa provided him with seedlings and taught him how to plant and care for the trees during his first years. Ramadhani put his effort and labour into caring for and watering his seedlings with water that he brought from 1.5 km away by bicycle. The last time we visited him in 2019, he shared his dream: "Ndoroboni will be a small forest because of the many trees that have been planted. It is the inheritance for the new generations. Trees are things you can remember in your life". Now we can see from his plantation that his dream is in the right direction!



Ramadhani with his timber trees in 2019 (left) and today (right).

Each year Ramadhani rents a hectare of land to grow a cash crop such as millet or sunflower to earn income for family expenses: "I am renting land so that I can cultivate while I wait to harvest the fruit and, later, the wood". This year he has not rented land to cultivate "because I didn't have enough money for the seeds, for the workers and for the rent". His first mango harvest was in 2020, two years after planting, and in 2021, production increased. He believes that this year there will be more fruit production "because not all the trees are producing mangoes yet". He sells the mangoes by the piece, at Tzs 300 per piece (0.13 euros), reaching an average income of Tzs 120,000 (52 euros) per bag of harvested fruit: "I am happy with my mangoes because I didn't expect to harvest so much in such a short time". He also mentions that his mangoes are very good: "They are so sweet that during the harvest I have to keep an eye on the farm so that they don't get stolen".

His cedars are bigger than they look in the video we filmed when we visited him in 2019 ([see video](#)): "There will be about 06 more years before I can harvest the wood". Thanks to them, he is looking forward to the future: "I think these trees are going to change my life. With the sale of the wood, I will improve the welfare of my family, I will be able to pay for my children's education and I will also build another house". He says that when she harvests the wood, he plans to plant again: "I will pull out the roots and plant again".

Returning home, after visiting his plantation and before we board the carriage back to Magugu, he shakes hands with us and, by way of farewell, says: "You are welcome to visit me again anytime. I wish you a good trip. Please tell people about me, what I do, what we saw. I will pray that you will be well, healthy and live longer. I will pray that the coronavirus does not bother you and that we can meet again". We keep our promise, Ramadhani: Thank you from the bottom of our hearts for sharing your story with us.



Ramadhani and his mango tree plantation (April 2022)

Ngolomo William and his support for his children's education (Nchemu, Vilima Vitatu)

"Nchemu will continue to develop because now families are working hard: they have planted trees, children are going to school and people are working hard to improve their houses, even building new ones"



Ngolomo is 49 years old and belongs to the Mbugwe ethnic group. His name is related to millet leaves. He lives in Nchemu sub-village in Vilima Vitatu district with his wife, Klotilda Roman, and their five children.

He has been a participant and, for three years, also a judge at Greening Africa: "First I was a judge in Nchemu because I could speak Barabaigh and then I have been judging in Bulkeri and Kiteto, both in Sarame village". As a juror, he learned that to mentor and work with families, the first thing you have to do is to be an example and build your "jicko" (improved cooker), arrange your house, have your tree plantation and then you can go and visit people and convince them to do it and be able to show them in practice how it is done: "If you are the first one to do it, then people can visit you and see how you have done it. You can advise them...". Ngolomo says that when he talked to other jurors, his advice was always "don't give up, because at the beginning it's hard for people to understand what you have to do, but with time, it gets easier". Learning and teaching is a two-way process that takes time and a great deal of patience, and Ngolomo is well aware of that.



On the left, Klotilda and Ngolomo are at the entrance of their kitchen and on the right, Ngolomo is in front of his stable with his two improved cows (April 2019).

When we met Ngolomo in March 2019, he told us a lot about his present and future plans to improve his cattle ([see video](#)) so he could start a business selling milk. He had built a stable for his improved cows and, since 2018, had a space set aside for controlled calving. His improved cow already had a calf, born in February 2019, of which he is very proud: "This calf does not look like the others, it is quite different. Also the milk from this improved cow is different from the milk I get from the others". That year, in 2019, he sold his goats to put his children through school and university.

Three years later, his plans to set up his business are still on hold. In 2020, he had to sell his two improved cows to support his children's education. His eldest son is studying veterinary medicine at the university in Morogoro: "I sold my dairy cows to pay for his university fees, the baby cow for Tzs 250,000 (107 euros) and the mother for Tzs 600,000 (257 euros)". He tells us that education in Tanzania, even public, is very expensive. University costs around Tzs 1,100,000 (470 euros) per year. Apart from his eldest son, he has four others who are studying kindergarten, primary and secondary school, costing between Tzs10,000, 12,000 and 200,000 (between 5, 6 and 85 euros) per year for each of them, plus an additional contribution in species (beans, maize) that they have to hand over or if they do not have enough harvest or do not cultivate, they have to pay as well. Ngolomo and Klotilda's dream is that their children can continue their education and support them in whatever they need to do so: "I want to improve my family's living conditions, to send my children to school, so the trees will remain my investment in the future. If I need money, then I will sell my trees", he says.

During the project, Ngolomo planted 500 timber trees, 55 fruit trees and almost half a hectare of fodder. Today, he keeps 490 timber and 03 fruit trees, from which he has already eaten and even sold fruit. With Greening Africa, he learned how to dry fodder, which he uses to feed part of his 25 cows and 25 sheep in the dry season. He would like to learn more about fodder because he doesn't always know how to handle it: "I want to learn more about fodder

trees, like the different varieties there are. If we can get that learning, me and other families will improve our skills because we are starting to forget some things we have learned with the project".

When asked about the changes he sees in Nchemu after Greening Africa, he doesn't hesitate, it's the trees: "The big change is the trees because now we have them. I remember he came to see the plantation and asked me if the trees were mine. I thought they were from the government. So I told him yes, they were mine and he was surprised. That's why I think the big change is the trees because the climatic conditions have also changed". He says he wants to plant one more hectare of trees and continue to improve his livestock. In short, he wants to start his future plans almost from scratch: "I will start by building the house for the dairy cow; food is not a problem because I have the fodder trees; then I will sell some of the beef cows to be able to buy my dairy cow" and so on until he gets his improved cattle and starts his dairy business. All with one goal in mind: to achieve his dream of being able to educate all his children.



Fodder plantation (left) and, in the back, Ngolomo's timber tree plantation (right) in Nchemu (April 2022).