

ILCHALAI RESTORATION PROJECT

Bunds and Stone Lines



JUSTDIGGIT
COOLING DOWN THE PLANET

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1. Background Information

1.1 Introduction

The Tsavo-Amboseli ecosystem located in South-West Kenya at the foot of Mount Kilimanjaro is an important area for wildlife and wider biodiversity. The area comprises of protected areas (Tsavo, Amboseli and Chyulu National Parks) and Maasai-owned communal land in the form of group ranches.

The Maasai communities living here are pastoralists and they rely heavily on their land and natural resources for their livelihood and wellbeing. However, they are facing increased pressures from population growth, a breakdown of their traditional nomadic structures, and the disappearance of traditional grazing regimes. Additionally, there are also more frequent and prolonged droughts that have caused significant livestock and wildlife mortalities in recent years.

In addition to climate change and varying weather patterns, the biggest driver of land degradation in specifically Kuku Group Ranch where we work has been overgrazing. The extensive degradation has left land so bare that it has lost its capacity to retain water after rainfall, and this continues to get worse. Water thus leaves the land quickly through surface runoff. Hence, a very high level of erosion is experienced including the loss of topsoil, and productivity of the natural pastures. In this way, the loss in grass cover is impoverishing the local Maasai community in the short term as it reduces the productivity and quality of their livestock. In the long-term, it decreases the value and quality of their land.

In an effort to bring back the productivity of the landscape, Justdiggit uses a number of restoration interventions that have been tried, tested and vetted. These interventions include the digging of demi-circular soil bunds and laying contour stone lines for soil and water conservation. This helps to reduce soil erosion by slowing down and retaining surface water and helps to bring back vegetation, making more natural pastures available to the community and wildlife. These interventions are simple enough to be replicated by the community member themselves, and other organizations, working and living in degraded areas in Kenya and other parts of Africa. Justdiggit aims to regreen the planet in the next decade, and this means creating as much replication of such successful interventions as possible.

In February 2022, Justdiggit started the implementation of yet another rainwater harvesting project on Kuku Group Ranch near the Ilchalai village, which aims to restore 521ha of degraded land. This project is set to benefit the local community in Ilchalai village through direct economic gains for 117 people, and indirect benefits to nearly 500 people in the village (given every household has about 4 people on average). It will bring back vegetation which will support livestock, which is the mainstay of the Maasai community, support wildlife and aid in better climate change adaptation, and eventually help in cooling down the planet.

1.2 Description of the Project Area

The Ilchalai project is located near the village of Ilchalai in the north-western corner of Kuku Group Ranch (S2.775540, E37.851500). Kuku Group Ranch is owned by the local Maasai community and is approximately 1200km². It is situated in the Oloitokitok Division of Kajaiido District in Southern Kenya and lies in the heart of the Amboseli-Tsavo ecosystem. Kuku Group Ranch is an important wildlife corridor between the national parks (Tsavo West, Chyulu Hills and Amboseli NP) and other protected areas in the region.

The Ilchalai area was highly degraded, with only sparse annual, low quality grasses present. The disadvantage of these annual grasses is that very shortly after the rains have stopped, they dry up, and they are also not of significant value to the livestock of the Maasai people. The land is not able to retain water, leading to a lot of surface runoff and thereby erosion when it rains. This has also led to the formation of gullies in the surrounding area. The Ilchalai area was deemed a good site for intensive restoration interventions, through water harvesting interventions such as the semi-circular soil bunds and stone lines in order to slow down water, and aid in the healing of the starting gullies.



Figure 1: Project site prior to project implementation

1.3 Implementing Organizations

JustdiggIt is an international organization with the goal of restoring degraded ecosystems and greening the earth. JustdiggIt has a specialty in using rainwater harvesting interventions to restore degraded rangelands. In order to maximize the success of our projects, we work closely with local implementing partners, who have a long-standing relationship with the local communities.

In Kuku Group Ranch, JustdiggIt works with the Maasai Wilderness Conservation Trust (MWCT) to implement our restoration interventions. MWCT works to protect the legendary ecosystems and astounding biodiversity of East Africa through conservation that directly benefits local Maasai communities through their conservation, health, education, livelihoods, and ecotourism programs. The JustdiggIt restoration projects form part of the conservation and livelihood programs at MWCT. Other local stakeholders who are critical in the implementation and success of the project includes the community members, community leaders, group ranch officials, and the grazing management committees. Most importantly, are the donors, who provide the resources needed to implement the

restoration interventions and ensure their long-term sustainability for the benefit of people, wildlife, and the environment.

2. The Implementation Process

Restoration takes time and so does our projects. In the case of semi-circular bund sites, there are three phases involved. Phase 1 is the “intervention phase” that involves the actual implementation of a restoration site which is the bund digging and seeding. This phase takes anything from a few months to a year and timing of rains play an important role. Phase 2 is what we call the “maintenance phase” and in this period (1-2 years after phase 1) the focus is on the protection and resting of the restoration sites to allow the vegetation to grow back. In this period trainings are conducted to build capacity of the local grazing committees and communities and agreements with communities and grazing committees around sustainable grazing management are made while rangers are employed to ensure the sites are not grazed by livestock while the vegetation is still vulnerable. Phase 3 is the “sustainability phase” and involves the handing over of the restoration sites to a capable community with the capacity to oversee its sustainable utilization in the long-term.

The Inchalai project started in February 2022 and is still in Phase 1. During this reporting period the following activities were undertaken:

2.1 Creating community understanding and buy in

Getting the buy in of the community is critical in ensuring the success and proper maintenance and sustainability of the project even past grant funding. Prior to beginning implementation, we held a series of community and leaders’ meetings to ensure a common understanding of restoration and its purpose, and the interventions proposed for the site. The following steps are involved in the community engagement process;

2.1.1 Group ranch officials and leaders’ meetings

The initial point of contact with the community was through the elected Group Ranch Officials and leaders. JDI together with MWCT expressed the interest to them to bring a new project which aims to restore degraded land within Kuku Group Ranch. The officials and leaders assessed potential sites and gave suggestions of areas that are highly degraded and that they think needed the physical interventions most.

2.1.2 Site selection

The MWCT Community Liaison Officer visited the sites with the community leaders after which the JustdiggIt Programs and Technical teams were invited to the sites to assess it for technical suitability. The suitability of a site is determined by a set of criteria which includes soil type, slope or gradient of the area, distance to closest settlements, extent or severity of degradation, size of the area etc. The site should be far enough from homesteads to minimize intrusion by livestock. It should also not be too far that people cannot reach it for implementation. The soils should also be suitable for vegetation growth and water retention (ideally, sandy – loam soil, equivalent or better) and the slope gentle. After assessing all the criteria in the field and further remote sensing from a desktop computer using ArcGIS software it was decided that the Ilchalai site was best suited for establishing the project.

2.1.3 Community meetings

An initial community meeting was held to discuss the desire to implement the project in Ilchalai village. This began by creating a common understanding of the state of the area in terms of degradation and

over grazing. The project team explained to the community the need for the interventions, and the roles that they can play for actively and passively restoring their degraded lands. This includes physical interventions like the semi-circular soil bunds, reseedling, laying contour stone lines and healing gullies. The passive interventions were highlighted as grazing management and allowing the site to rest from grazing for at least 2 years. The project team also explained how the interventions work, the meaning of restoration and tied it to the old grazing management practices of the community, like the “Olopolois” or “grazing reserves” for better understanding. Once the community had reached a point of understanding, a go ahead was given to proceed with the project.

2.1.4 The selection of the casual workers

The community leaders held a meeting with the community and came up with a list of people to work on the project. The project required 10 fundi’s, 6 technical team members and 100 diggers. The role of fundi’s is to supervise the diggers, ensuring good quality bunds and keeping track of the number of bunds each person dug. The selection criteria for fundi’s and the technical team are simple, they need to be literate, have a basic understanding of English and have strong leadership and organising capabilities to lead a team of diggers. The role of the technical team is to draw out the bunds ensuring the correct spacing, layout and measurements are followed, taking into account the slope of the area and the general flow of water when it rains. They are also responsible for the construction of contour stone lines in and around gullies and together with the fundi’s serve as the link between the JDI project team and the community helping to solve any issues that may arise during the implementation of the project. Diggers do not have to be literate, but they need to be in good health, physically strong and able to do manual labour.



Figure 2: Meeting in Ilchalai with the community prior to commencing the project.

2.2 The Trainings

Prior to beginning the project, an initial training was held for the whole implementation team (one day for the Fundis and Technical team; and another day for the diggers). The training included:

- Background to land degradation and restoration
- Bunds as an intervention
- Structure and layout of the bunds;

- Bunds dimensions and drawing
- Bund digging
- Seeding
- Laying stone lines
- Gulley healing

To maintain good quality of the bunds, we conducted a few refresher trainings with the team, during the implementation period. Every Saturday, a walk through and inspection of the bunds was conducted, and where there were problems it was address and corrected.



Figure 3: Bund measurement and drawing training with the technical team in Ilchalai

2.3 Bund Digging, Seeding and Stone Lines

After the training, the digging of the bunds commenced. For the first three days we had 80 diggers on the ground who each dug three bunds. The slow start was planned so that we can manage the quality of the bunds while the diggers were still getting familiar with the work and technique. On the subsequent days to the end of the project, we had 100 diggers, digging 6 bunds every day, and working 6 days a week. We also had 10 fundis, one head fundi and 6 technical team members on the ground each day.



Figure 4: Bund digging in Ilchalai



Figure 5: Seeded bund in Ilchalai

2.4 Setting up the Ranger Station

During the “maintenance phase” of the project, protection of the site from grazing is the main objective. The grass seeds that have been sown need time to establish well, and also the naturally occurring vegetation also needs to be allowed to regrow once the bunds have collected water after the rains. MWCT rangers (from the local community) are for this reason already employed from the start of the project and live onsite to ensure this protection. The work of the rangers is not to entirely “police” the community members, but to enhance and reinforce the restoration and grazing management education and outreach messages passed to the community. Essentially, they act as advocates of the project to the community.

2.5 Outreaches and Capacity Building of the Grazing Management Committee and Community

The land tenure system of Kuku group ranch is communal. The lands belong to all members of the community, and therefore the common grazing areas are free for everyone to use. In order to manage the common grazing areas well, the community elected the grazing management committee, to take authority over the common grazing areas and guide the grazing regimes. When the project is handed over to the community, after the maintenance phase, it is the grazing management committee that will be in charge of enforcing the grazing guidelines that will be developed for the site. For this reason, we embarked on outreaching and capacity building of the grazing management committees which will continue quarterly, or when there is dire need for the next two years to get the committee ready and capable of managing the site once fully restored.

In this reporting period we held a community meeting and grazing committee meeting in Ilchalai. The objectives of the meetings were to:

- Update the community on the projects progress;
- Collaborative discussion and planning for the project’s maintenance and sustainability phases;
- Identifying training needs for the grazing committees.

The meetings were impactful and well received by the community members. The capacity gaps and training needs identified and requested for by the grazing committee included;

- How they can restore more degraded lands on their own (adoption and replication of the physical restoration interventions)
- How to determine what number of livestock can graze an area and for how long (carrying / grazing capacity)
- Improving the livestock quality (Enhancing or promoting the growth and vitality of quality vegetation)
- How to identify and prevent pests and diseases (proper sites and beneficiary maintenance for to optimize benefits).
- Grass seeds provision to establish more Opolopolis after being trained on how to do restoration (grass seeds harvesting and storage from the rangelands / restoration sites to expand the project area on their own)



Figure 6: Grazing committee meeting in Ilchalai

The grazing committee meeting was attended by 15 members (all male because this is a task that is reserved for men in the Maasai community). The community meeting was attended by over 80 community members (30 of which were women). The 100 casuals working on the project also attended the meeting.

3. Project Status

We employed 117 (48 women and 69 men) people from the community to implement the bunds project. This team consists of 100 diggers, 10 fundis (supervision of the diggers and ensuring quality bunds are dug), 6 technical team members (drawing the bunds, gulley healing, laying stone lines, and conflict resolution – liaison between the project and the community members/diggers), and one head fundi supervising the whole team. We have also deployed three rangers on the site, and three more are yet to be added.



Figure 7: Bunds dug in Ilchalai

In total 42,220 bunds have been dug in this reporting period. As a result of varying weather patterns due to climate change, we are experiencing prolonged droughts in some parts, and very little rains in most parts of Kuku Group Ranch. Ilchalai, has fallen victim to reduced rainfall this season and the site has not received good rains. In May (last rainy season), when we had approximately 30,000 bunds on the ground, there were light showers of rain. Some of the bunds managed to get water, and there was very little growth in the bunds at that point. Important to note, there is already little vegetation growth in the bunds, in comparison to outside the bunds. We are however expecting the OND rains (October, November, December) to be above average. If so, it will allow the bunds to collect enough water for better vegetation growth.



Figure 7: State of Ilchalai bunds after the below average April/May rains.

4. Benefits of the project

4.1 Realized Benefits

The Ilchalai restoration project in Kuku Group Ranch improved the livelihood of 117 community members who were employed as casuals during the digging period at the time of implementation. Six community rangers have also benefited by employed for two years through the project. There is awareness that has been created in the community on restoration and grazing management. Interest

of the community to take an active role in the restoration, management, and sustainable utilization of their lands has also increased. There is also capacity building of the grazing committee that has been done, and more that will follow, to make them capable of sustainable management with the rest of the community.

4.2 Anticipated Benefits

Before the project the area was very dry with no vegetation cover. In the case where there was vegetation, it was poor quality annual grasses with stunted growth that could only reach carpet height. Through the bunds intervention we anticipate the site will be covered with good quality vegetation including perennial and palatable grasses, shrubs and trees; gullies will stop expanding and begin to fill up and no new gullies will form. Soil erosion will be controlled and in the long term there will be availability of pasture for the livestock and wildlife. Increase in productivity of the land.

Communities will gain more knowledge and understanding of the importance of land restoration and different restoration interventions. Adoption and replication at the individual level will also be promoted through education and outreaches, and capacity building on implementation. In the long-term, this is meant to increase the impact of the project beyond the actual implementation area contributing to the wider ecosystem.

5. Challenges Encountered and Solutions

Challenges	Solutions
The looming national and local elections. At the start of the project there were some disagreement amongst the leaders due to underlying politics that delayed the start of the project.	Numerous meetings with the community who intervened and expressed the need for the project to the leaders who finally came together and agreed to hold meetings and gave the go ahead to begin the project.
Elephants in the project area. There were interruptions of work with elephants passing through the project sites or grazing close to the project sites	MWCT rangers would be deployed to assist in patrolling the sites to ensure that the diggers do not come too close to the elephants and also chasing the elephants away from the diggers In some instances, the diggers had to begin digging a few hours later and wait for the elephants to pass.
Prolonged drought - After the first phase of the digging, we expected the April / May rains, but only received below average rainfall. The seeds that were in the ground did not have enough water to take root during this time.	After the rainy season we continued with bund digging and decided to postpone the seeding of these bunds until October, closer to the next rainy season to avoid mice and ants from foraging on the seeds.

6. Next steps

- Further training and capacity building of the grazing committee during the maintenance phase of the project as they prepare for managing the site
- Restoration and grazing management awareness creation to the community members. We are planning for at least one community meeting every quarter to refresh the community's understanding of grazing management, landscape restoration and bringing back vegetation to their lands.
- Seeding of the remaining 10,000 bunds, just before the long rains start in November.
- Monitoring and evaluation – This includes setting up monitoring points within the project area, which will be used to track the progress of the project in the subsequent years in terms of ecological improvements.