ETHIOPIA AMHARA

A COMMUNITY BASED APPROACH TO RESTORE DEGRADED LANDS

November 2016 Report

WeForest
Making Earth Cooler

TREES

800,000 seedlings

BENEFICIARIES

1500 target families

A total of 800,000 seedlings are being prepared in the nurseries thanks to the support of donors and sponsors

THE PROJECT

Ethiopia has suffered widespread deforestation as a result of agriculture, charcoal production and fuelwood and timber harvesting, causing extensive soil erosion and the formation of gullies. The region of Amhara has seen the brunt of Ethiopia's deforestation and in Machakel *woreda* (district), where the project is located, only 6% of the land is forested. Here soil fertility has declined to such an extent that local people struggle to grow crops and raise livestock. WeForest partners with the Hunger Project, to restore community land, river banks and farmlands in Ethiopia's Amhara region through reforestation and land restoration. Trees will be planted in agroforestry systems on farm and grazing lands to increase biomass and land productivity as well, and fruit and timber trees offer additional economic and nutritional products. Business schemes will be established like apiculture and cooking-stove production

KEY DETAILS:

Location: Machakel, East-Gojjam zone, Amhara region

GPS: 10° 19' 75" and 10° 41' 00" N Lat. 37° 16' 46" and 37° 45' 42" E Long

Restoration approach: Framework planting[1] and agroforestry

Partners: The Hunger Project

[1]Framework planting is a technique that involves planting species in ways that promote the natural succession of the forest

PLANTING UPDATE

MAY - OCTOBER 2016:

- 3 nurseries established
- 5 sites selected for restoration
- Ecological data collection

Three nurseries were established; the Farmer Training Center was set up as a new nursery and two abandoned nurseries were taken over and re-established by the project. The nurseries are located in Kidus Yohanes and Gusquam sub-villages and the new nursery is located in the kebele (village) of Amar Webesh. The nurseries will produce seedlings for the project as well as to nearby villages. The current capacity of the Kidus Yohanes and Gusquam nurseries is 250,000 and 100,000 respectively and work has begun to expand the capacity of the two nurseries. Together, all three nurseries will have the potential to produce around 1,000,000 seedlings per year. The nurseries preparations involve fencing, bed and soil preparation, soil potting, land clearing and store constructions. From now, they will produce a total of 600,000 seedlings that will be planted in the next rainy season around June to August 2017.

Figure 1. Preparations are underway to prepare the nursery bed for seedling production

PLANTING SITES

Five planting sites have been identified so far and total 34.1 hectares (ha). These sites are:

- **Wekel got** in Lydamot village - 8.8 ha (Figure 2)
- **Kidus yohanes got** in Amar Webesh village - 6.37 ha (Figure 3)
- **Kidus yohanes got 2** - 5.37 ha (Figure 3)
- **Gebsema got** in Embulit Tesas Dar village - 12.4 ha (Figure 4)
- **Gebsema got 2** in Embulit Tesas Dar village - 0.44 ha

The project is in the process of identifying more planting sites and recruiting more villages to expand the area under for reforestation. So far, one additional village has been visited and mapped for inclusion in the project:

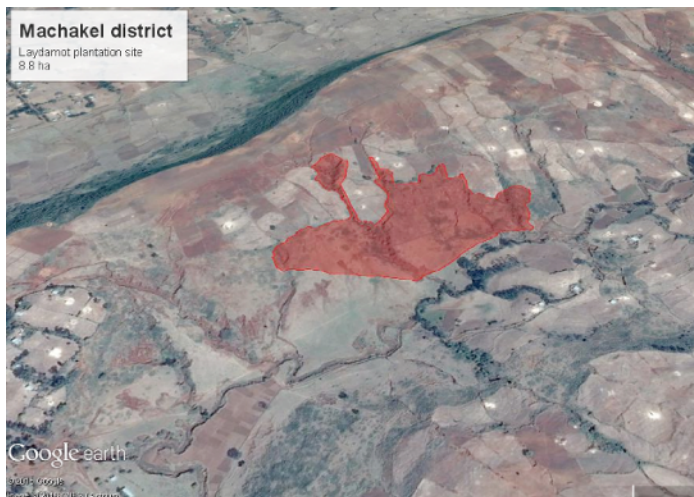- **Shola amba got i**n Debre kelem village - 3.7 ha
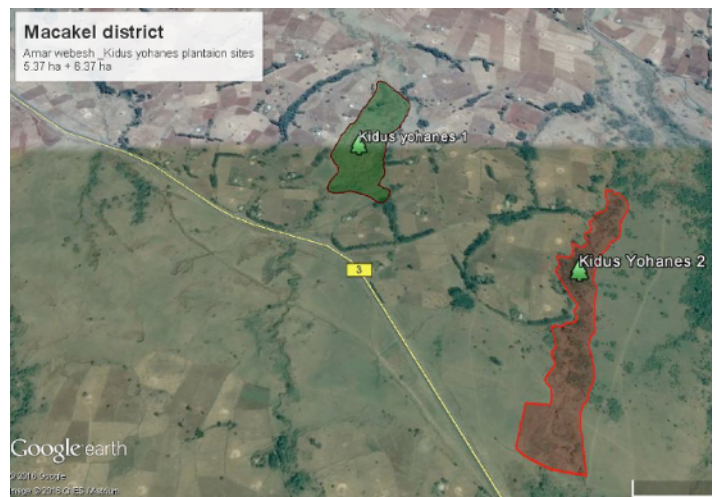

Figure 2. Wekel got polygon

Figure 3. Kidus yohanes got and Kidus yohanes got 2 polygons

Figure 4. Gebsema got and Gebsema got 2 polygons

Figure 5. Shola amba got polygon

ECOLOGICAL DATA COLLECTION

Machakel region is experiencing high levels of environmental degradation. Deforestation rates are as high, and only 7% of degraded forest fragments remain. 97% of the agricultural land consists of annual crops and together with erratic temporal and spatial distribution of rain patterns, much of the land's fertile top soil is washed away creating gullies. To estimate the vegetation in the remaining forest patches, 11 transects were conducted. The results demonstrate that forest fragments are dominated by few species, mainly *Acacia abyssinica* and *Croton macrostachyus*. Forest cover is observed to be low and shrub and bush cover dominate. This indicates a high level of degradation of the remaining forest patches.

Figure 6. Gullies caused by soil erosion cover the landscape

Figure 7. Livestock grazing in degraded forest

SPECIES:
- >20 species planted
- Main species: *Faidherbia albida Juniperus procera, Moringa stenopetala, Olea europaea, Acacia decurense, Podocarpus falcatus, Ficus vasta, Coffea arabica, Rhamnus prinoides*

Figure 8. A yellowwood tree (*Podocarpus falcatus*)

Figure 9. Gešo (*Rhamnus prinoides*) produce edible berry-like fruits

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SOCIO-ECONOMIC UPDATE

MAY - OCTOBER 2016:

- Community mobilization and group discussions among the project's 3 *kebeles*
- 5 livelihood development schemes identified
- Inclusion and mapping of one additional village "Debre Kelem"
- 300 semi-structured interviews in 3 villages (Amar Webesh, Lay Damot and Embule Tesas dar)

Three *kebeles* (neigborhoods) are included in the project so far: Laydamot Kebele, Amar Webesh, Embuli Tesas Dar Kebele. Communities have been informed and engaged in discussions surrounding the details of the project, which have involved creating awareness, securing plantation sites and identifying the preferred livelihood schemes. Five livelihood schemes were identified through consultations with community leaders. They will be organised as "micro-enterprises" lead by local community leaders. These are apiculture, brick production, animal fattening, micro-financing schemes, input dealers and suppliers for forestry and agroforesty. The project will carry an agroforestry component to increase biomass and land productivity, and promote income generation and food security from non-timber forest products. The nurseries have been established and expansion and preparations for seedling production are underway. The team have had meetings with community leaders from a fourth kebele, Debre Kelem, to discuss inclusion in the project and with positive feedback from the community leaders.

Figure 10. Meeting with village leaders from Debre Kelem to discuss inclusion in the project


Figure 11. Children of participating families will benefit from the increased income of their parents

SOCIO-ECONOMIC RESEARCH

To understand the reasons why deforestation rates are so high in the area and to focus the project on the needs of these communities, 300 semi-structured interviews and focus group discussions were conducted. Results demonstrated that there is a high level of illiteracy (Graph 1). An average family consists of 5 people, owns 1.4 ha of land and earns US$47 per month. The knowledge on land degradation is poor and families cut around 5 trees per month mainly as fuel for cooking, for construction and charcoal burning (Graph 2). Tree planting is performed at the household level but mostly as woodlots with fast growing and exotic Eucalyptus species. There is high interest in increasing income and agricultural productivity and integrating trees that provide food and fodder into the landscape. The major economic activity in the region is farming (Graph 3). Out of the variety of crops grown by households, cereal is the most common (Graph 4).
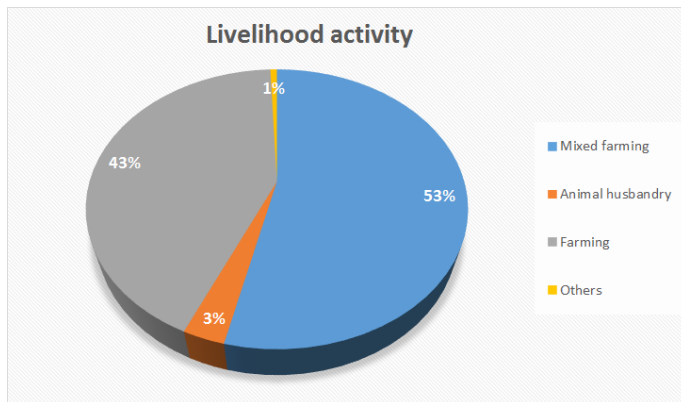
Graph 1. Graph to show the level of education of respondents
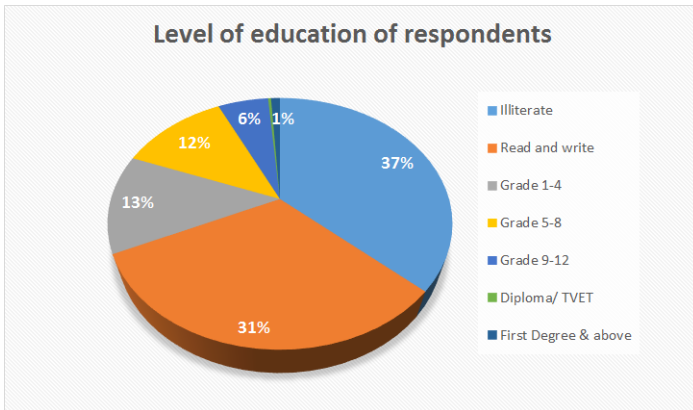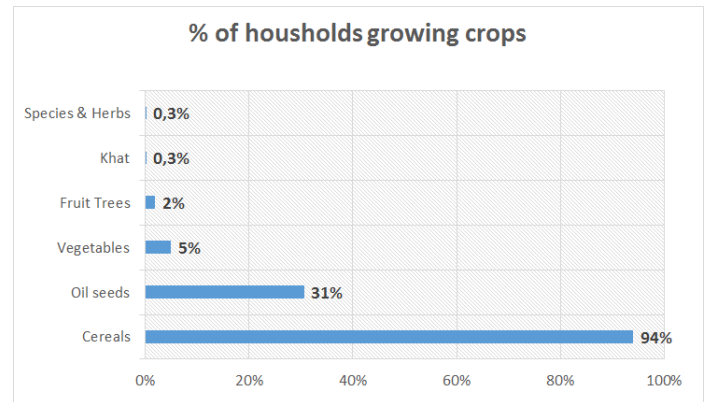

Graph 2. Graph to show the reasons for tree cutting
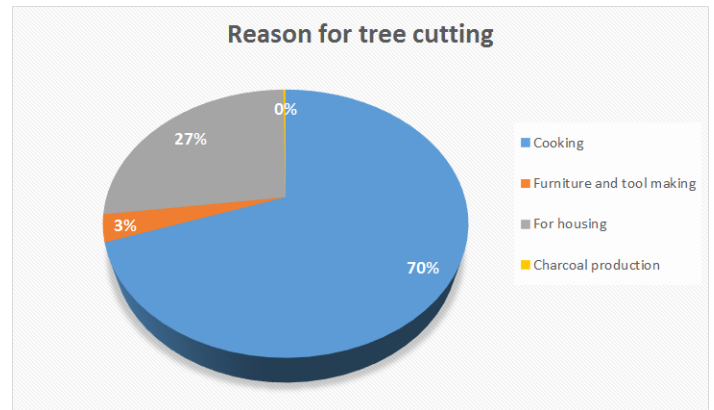
Graph 3. Graph to show the most common livelihood activities

Graph 4. Graph to show the % of households growing different types of crops

AGROFORESTRY FOR PROMOTING FOOD SECURITY AND NUTRITION

Agroforestry systems have been shown to increase agricultural productivity by increasing nutrients, water and shade availability for crop growth and providing increased food and income opportunities. Mulenesh Nigussie (Figure 12), a student from the 9th grade, said "I am happy to see this tree nursery in our village. I hope the nursery will produce coffee and *Rhamnus prinoides* (known locally as *gešo*) for the coming planting season, and I will get a chance to plant both in my garden". *Gešo* is an African shrub with many uses in Ethiopia, providing food and important ecosystem services in the form of erosion control and windbreaks when planted as a hedge. The fruits of this tree are edible and all parts of the plant are harvested and used for nutrition, medicine or religious purposes. In Eritria and Ethiopia, it is used in a manner similar to hops. The stems of the plant are boiled and the extract mixed with honey to ferment a mead called *tej*. *Gešo* is also used in the brewing of *tella*, an Eritrean and Ethiopian beer.

THE THREAT OF GULLIES

For the government office at regional level, land rehabilitation is the first priority on the political agenda. Therefore this project reflects local priorities. Support is received from from the local and regional governments, working with local communities, to design a plan to restore degraded land and integrate trees in the landscape so as to increase food security, income and resilience, while combating environmental degradation. Much of this land degradation takes the form of gullies. Gullies are channels resulting from erosion and caused by the concentrated but intermittent flow of water usually during and immediately following heavy rains. They are one of the most destructive forms of erosion and are prevalent throughout Ethiopia. Andwalem Adane (Figure 13), a local boy from the 5th grade, explained during an interview that he is worried about the gullies because it threatens his family's land. The project targets gullies for this particular reason. Through soil and water conservation techniques and tree planting, it is possible to restore these degraded lands to healthy productive forests and agroforestry systems.

Figure 12. Mulenesh talks about the prospect of planting coffee and *gešo* (*Rhamnus prinoides*) in her garden

Figure 13. Informal interview with 5th grader Andwalem Adane reveals his concern for the future of his family's land

THANK YOU