Annual Report
EthioTrees – Tembien Project

February 2016 – February 2017

Annual Report

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EthioTrees – Tembien Project

Annual report February 2016 – February 2017

Submitted by: EthioTrees vzw
Date of submission: 30 – 01 – 2018

Summary

Project overview	
Reporting period	February 2016 – February 2017
Geographical areas	Dogua Tembien (Tembien Highlands), Tigray Region, Ethiopia
Technical specifications in use	See approved PDD EthioTrees

Project indicators	Historical	Added/ Issued this period (2016-2017)	Total
No. smallholder households with PES agreements	N/A	0	0
No. community groups with PES agreements (where applicable) by Feb 2017	N/A	3	3
Approximate number of households (or individuals) in these community groups	N/A	950	950
Area under management (ha) where PES agreements are in place	N/A	541	541
Total PES payments made to participants (USD)	N/A	-	-
Total sum held in trust for future PES payments (USD)	N/A	-	-
Allocation to Plan Vivo buffer (tCO_2) (12% for risk buffer and leakage)	N/A	664	664
Saleable emissions reductions achieved (tCO_2) (88% of the estimated total project Carbon Benefits per year)	N/A	4,873	4,873
Unsold Stock at time of Submission (PVC)	N/A	-	-
Total Unsold Stock (PVC)	N/A	-	-
Plan Vivo Certificates (PVCs) issued to date			**0**
Plan Vivo Certificates requested for issuance (Feb 2016 - Feb 2017 Vintage)			**4,873**
Plan Vivo Certificates available for future issuance (REDD only)			**0**
Total PVCs issued (including this report)			**4,873**

Part A: Project updates

A1 Key events

- Start of the project: February 2016.
- Formation of the associations was completed at the earliest phase of the project, i.e. by March 2016.
- Several trainings have been organised over the reporting period: 1 training per exclosure (n = 3) was organized.
- Collection of baseline data was performed at 3 initial project exclosures by February 2016 (Meam Atali, Adi Lehtsi, Gidmi Gestet) (see PDD).
- Collection of baseline data was performed at 3 additional exclosures (December 2016 – January 2017) (Afedena, May Huwo, May Genet) (see Annex 1).

A2 Successes and challenges

- Main successes included the successful start of the project, the collection of all required baseline data, the organisation of trainings, and the accomplishment of the formation of the associations.
- Main challenges included the creation of awareness of environmental degradation and management by the local population, and the lack of information and investment for proper management of the exclosures.
- Trainings and group discussions have taken place. The main focus of these discussions was the protection of the exclosures (keeping out the grazing) and on management of the exclosures (seedling planting and seedling irrigation, and soil and water conservation (percolation ponds, soil bunds and trenches).

A3 Project developments

Below, we give an overview of the project developments that have affected the governance, operations, contractual relationships or legal basis of the project:

- Establishment of an aromatic oil distillation center in Hagere Selam and start of the distillation/extraction activities with one new employee. The distillation focuses on extraction of aromatic oil from *Boswellia papyrifera* (the dominant frankincense tree of Tigray) resins and is still in an experimental phase.
- Agreement with the *woreda* administration (provincial level) was accomplished. Additionally, agreements with the *tabia* administrations (village level) have been made.
- Formations of the associations were formalized. Examples of certificates of registration are available upon request.
- There are no relevant updates to the project documentation:

A4 Future Developments

- EthioTrees expanded the number of project exclosures with three new sites by January 2017. These include May Genet, May Huwo and Afedena. All sites comply with the eligibility criteria set in the PDD (see further). The baseline data, plan vivos and credit estimates of these sites are given in Annex 5. Plan Vivo Certificates for these sites will be requested for issuance *ex post* using the annual report of the period February 2017 – February 2018.
- Further activities this year have included trainings, seedling planting and seedling irrigation, and the installation of soil and water conservation structures such as percolation ponds, trenches and soil bunds.

Part B: Project activities

B1 Project activities generating Plan Vivo Certificates

- We list the technical specifications being used in the project, the area covered and participants using these in table 3 below. We only include those areas where PES agreements have been signed.

Table 3: Project activity summary

Name of technical specification	Area (Ha)	No smallholder households	No Community Groups
Ecosystem Restoration in the Tembien Highlands	541 ha	950	3

- EthioTrees has expanded the number of exclosures with three new sites by January 2017. These include May Genet, May Huwo and Afedena. All sites comply with the 10 requirements set in the PDD:

1. These project sites are located on limestone lithology;
2. Soils of these project sites are dominated by Leptosols, Regosols, and Cambisols and not by Vertisols;
3. Sites are located between 12–15° N latitude and 36° 30'–40° 30' E longitude (see Annex 5);
4. All sites have tropical semi-arid climate;
5. The altitude of the project sites varies between 1500 and 3000 m asl (see Annex 5);
6. Grass harvesting (using a cut and carry system) is permitted in accordance with the PES agreement;
7. The exclosures are located on former degraded rangelands or wastelands and not on former croplands or important grazing lands;
8. There is a set of clear rules (village by-laws) to ensure that the local population can receive ecosystem services of non-forest timber products (honey from bee hives);
9. There was willingness to establish a formal association of landless farmers;
10. To avoid increased grazing pressure elsewhere in the village, there is clear effort by the local population to encourage livestock feeding in the stable.

B2 Project activities in addition to those generating Plan Vivo Certificates

- The project started an aromatic oil distillation center in Hagere Selam. Besides, trainings were performed to support non-timber forest production, including incense production in Adi Lehtsi and honey production in Meam Atali. In Adi Lehtsi, the training included tapping, storing and sorting of the incense resins. The linkages with market access in Mekelle (merchants) were discussed and discussions focussed on strategies to strengthen the 'negotiation power' of the farmers at the regional market.

Part C: Plan Vivo Certificate issuance submission

C1 Contractual statement

- This issuance is based on signed PES agreements with participants complying with all the

minimum requirements stated in these agreements.

C2(b) Issuance request for projects where issuance is made on the basis of ongoing activities on land already managed by the project (calculated *ex-post*)

Table 5: Statement of tCO2 reductions available for issuance as Plan Vivo Certificates based on activity for reporting period February 2016 – February 2017.

Area ID	Total area (ha)	Tech. Spec	Saleable ER's (tCO_2) available from previous periods*	Total ER's (tCO_2) achieved this period**	% Buffer	No. of PVCs allocated to buffer from ER's achieved this period	Saleable ER's (tCO_2) from this period	Issuance request (PVCs)	ER's (tCO_2) available for future issuances
Adi Lehtsi	*412*	*Ecosystem restoration*	0	4536	*12*	544	3992	3992	-
Gidme Gestet	*46*	*Ecosystem restoration*	*0*	270	*12*	32	238	238	-
Meam Atali	*83*	*Ecosystem restoration*	*0*	731	*12*	88	643	643	-
TOTAL	**541**		**0**	**5,537**	**12**	**664**	**4,873**	**4,873**	**-**

C3 Allocation of issuance request

- As there have not been any issuances yet, we did not fill in Table 6 below with allocation details:

Table 6: Allocation of issuance request

Buyer name/ Unsold Stock	No. PVCs transacted	Registry ID (if available) or Project ID if destined for Unsold Stock	Tech spec(s) associated with issuance
Ethiotrees	*4,873*	*104000000014099*	*Ecosystem Restoration*
TOTAL	-	-	-

C4 Data to support issuance request

- We provide the monitoring data for areas of land and participants which support our issuance request in Annex 1.

Part D: Sales of Plan Vivo Certificates

D1: Sales of Plan Vivo Certificates

- There are no sales of Plan Vivo Certificates to date (nor forward sold certificates for current issuance request).

Part E: Monitoring results

E1: Ecosystem services monitoring

- We provide annual monitoring results that support the request for new issuances in annex 1.
- We do not provide results for ongoing monitoring for all participants/areas where Plan Vivo

Certificates have been issued in annex 2. *(as there is no issuance yet)*
- All monitoring targets were achieved.
- No corrective actions needed to be agreed with participants during this reporting period.

E2: Maintaining commitments

- As no participants have resigned or been removed from the project, or had Plan Vivo Certificates allocated against their activities, we do not provide a table with their details in annex 3.

E3: Socioeconomic monitoring

- We provide the results of monitoring of socioeconomic impacts (survey) every 5 years after baselining (impact indicators). Nevertheless, on a yearly basis, the project monitors its activities (yearly activity-based indicators).

  These activities include in this reporting period the formation of the associations and the organization of 3 training sessions at the different sites. The project established an aromatic oil distillation center in Hagere Selam and started the distillation/extraction activities with one new employee (see above). The general aim is to valorize the frankincense production in the region and upgrade the value chain.

  The restoration project has also clear benefits for the wider communities living around the project exclosures (estimation is 950 households). The most important factors include reduction of erosion and gullying, conservation of soil nutrients and groundwater. For instance, forest restoration will locally benefit water availability for the upslope communities. Overall, we expect a net gain in (ground)water availability, also for the upslope communities. For instance, in the village of Adi Lehtsi, the walking distance to drinking water during the driest months of the year (i.e. downslope to the Geba river) is at least 4 hours. Establishing ponds is starting to benefit this upslope community.

E4: Environmental and biodiversity monitoring

- We provide the results of monitoring of environmental and biodiversity baselines at the three newly added sites (performed during December 2016 – January 2017), according to our monitoring plan, in annex 5. Plan Vivo Certificates for these sites will be requested for issuance *ex post* using the annual report of the period February 2017 – February 2018.

No changes to the monitoring plans or protocols of the project need to be reported in the updates section of this report.

Part F: Impacts

F1: Evidence of outcomes

- We report research outcomes, patterns or trends from ongoing monitoring or other information which supports the impacts – socio-economic, environmental or cultural – which the project has had every 5 years after baselining. In annex 7, we provide a short description of activities with photographs. Up to date, no scientific publications resulting from the project are available yet.

Part G: Payments for Ecosystem Services

G1: Summary of PES by year

- No payments were made to date. There is no participants' failure to achieve monitoring targets.
- There are no funds being held by the project coordinator at reporting period end and there are no withheld payments at reporting period end.
- All payments will be made in line with the terms of PES agreements signed.

Part H: Ongoing participation

H1: Recruitment

- EthioTrees recruited three new associations in December 2016. These include May Genet, May Huwo and Afedena. All sites comply with the eligibility criteria set out in the PDD.

H2: Project Potential

- No participant or area under management is on the project's 'waiting list' i.e. where a PES agreement is not yet signed but a *plan vivo* is in use.
- EthioTrees recruited three new associations in 2017. These include May Genet, May Huwo and Afedena. All sites comply with the 10 requirements set in the PDD:

Table 9: Details of potential project participants

Wider engagement	
No smallholder households with *plan vivos*	0
No community groups with *plan vivos*	3 additional sites: May Genet, May Huwo and Afedena
Approximate number of households (or individuals) in these community groups (if known)	320

H3: Community participation

- We briefly report on the community meetings held throughout the reporting period and attach the pictures of these to annex 7.

Part I: Project operating costs

I1: Allocation of costs

- We completed the table below summarizing project costs during the reporting period and the sources of income used to meet these costs.

Table 10: Allocation of costs

Expense	Narrative	Amount (if possible in USD$)	Contribution from sale of PVCs	Contribution from other sources

Investments	Costs for soil and water investments, planting, office and motorcycle	6500	0	100%
Functioning	Materials, paper, equipment, transport costs	4200	0	100%
Personnel	Wages for project coordinator and distillation expert	5600	0	100%

Annexes

Annex 1. Monitoring results that supports the issuance request

Carbon estimation of the issuance period (see PDD)

Total Carbon Benefits = "Total Carbon" x "Area" x "Molar Conversion Factor" (see PDD)

TCB (Adi Lehtsi) = 3.0 x 412 ha x 3.67 = 4,536 tCO_2 per year

TCB (Gidmi Gestet) = 1.6 x 46 x 3.67 = 270 tCO_2 per year

TCB (Meam Atali) = 2.4 x 83 x 3.67 = 731 tCO_2 per year

Total Carbon Benefits of the Project = 5,537 tCO_2 / year (excluding 12% risk buffer & leakage)

Ecosystem Services Monitoring

Activity	**Activity Indicator (measure annually)**	**Annual Targets**			**Results**
		Full Target Achievement	**Partial Target Achievement**	**Missed Target**	
Restoration activities	Area of each exclosure undergoing active restoration activities	>10%	=10%	<10%	Meam Atali >10% Gidmi Gestet >10% Adi Lehtsi >10% → *Guarding and restoration activities were covering all areas*
Tree Planting	Number of seedlings	4000 seedlings	3000-4000	<4000 seedlings	→ *6080 seedlings were planted in total*
	Survival Rate	>30%	25-30	<30%	→ *Preliminary survival rate is 79%*

Socioeconomic Monitoring

Activity	**Activity Indicator (measure**	**Annual Targets**	**Results**

	annually)				
		Full Target Achievement	**Partial Target Achievement**	**Missed Target**	
Capacity-Building	Number of organized trainings for landless farmers (M/V) per year per exclosure	1		0	*Meam Atali = 1* *Gidmi Gestet = 1* *Adi Lehtsi = 1*
	Participants from more vulnerable groups (women, youth, elderly people)	>25%		<25%	*Meam Atali ≈ 35%* *Gidmi Gestet ≈ 30%* *Adi Lehtsi ≈ 40%*
Availability of grass fodder	Beneficiaries of grass fodder per exclosure	>3	<3	<1	*Meam Atali: cut-and-carry system implemented* *Gidmi Gestet: cut-and-carry system implemented* *Adi Lehtsi: cut-and-carry system implemented*
Countering displaced grazing	Number of observations of displaced grazing mentioned during the yearly meeting of association, other NTFP users and the village council	<2	2	>2	*Meam Atali = 0* *Gidmi Gestet = 0* *Adi Lehtsi = 0*
Countering timber harvesting on public lands	Number of observations of timber harvesting on public lands mentioned during the yearly meeting of association,	<2	2	>2	*Meam Atali = 0* *Gidmi Gestet = 0* *Adi Lehtsi = 0*

	other NTFP users and the village council				

Environmental Monitoring

Activity	Activity Indicator (measure annually)	Annual Targets			Result and mitigating actions
		Full Target Achievement	**Partial Target Achievement**	**Missed Target**	
Water Management	Number of Percolation Ponds per exclosure	2	<2	<1	*Meam Atali = 2* *Gidmi Gestet = 2* *Adi Lehtsi = 2*

Annex 2. Ongoing monitoring results for all participants

First annual report, therefore only first monitoring results are presented

Annex 3. Reallocation of commitments

Not relevant for this report

Annex 4. Socioeconomic monitoring results

Not relevant for this report

Annex 5. Potential Project Expansion

Here we add the baseline data, plan vivos and credit estimation for the three new sites: May Huwo, May Genet and Afedena. We follow the same methodology and table formats as described in the approved PDD.

Soil and biomass data

	Table G6: Summarized results of the vegetation survey								
Area	Compart-ment	Average circum-ference (cm)	Average diameter (cm)	St. dev. of diameter (cm)	Average crown diameter (cm)	Aver. height (cm)	Aver. number of trees per plot	Carbon content per compar-tment (ton C / ha)	Carbon content all comp (ton C /ha)
May Getnet	A (20x20 m)								2,68
	B (10x10 m)	7,89	2,51	1,25	90,27	191,11	17,43	1,49	
	C (5x5 m)	4,97	1,58	0,83	61,76	108,12	9,53	1,19	
May Hibo	A (20x20 m)	43,38	13,09	5,91	303,84	398,74	3,6	3,64	8,15
	B (10x10 m)	10,49	3,34	1,90	121,08	212,20	21,6	4,07	
	C (5x5 m)	4,55	1,42	0,70	51,57	107,02	4,6	0,44	
Afedena	A (20x20 m)								5,10
	B (10x10 m)	16,18	5,15	1,55	166,16	182,92	8,7	3,87	
	C (5x5 m)	6,55	2,08	1,09	78,49	87,41	5,2	1,23	

Carbon benefit calculation

TCB = (TCclimax – TICS) / 20

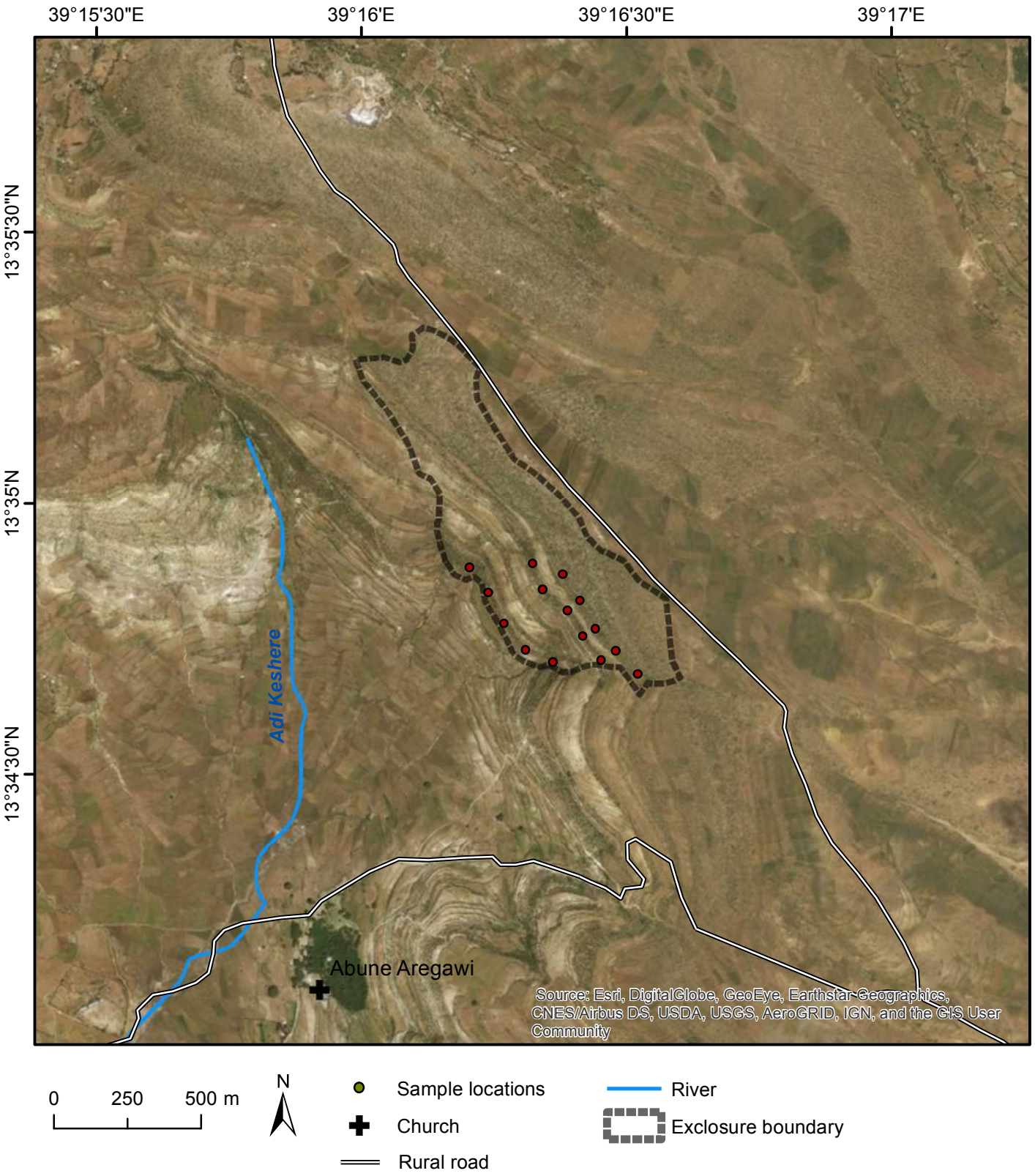
This yields:
TCB (May Getnet) = (TCclimax – TICS) / 20 = (102.5 – 71.9) / 20 = 1.5 tC/ha/yr
TCB (May Hibo) = (TCclimax – TICS) / 20 = (102.5 – 75.2) / 20 = 1.4 tC/ha
TCB (Afedena) = (TCclimax – TICS) / 20 = (102.5 – 64.3) / 20 = 1.9 tC/ha.

Summary
By taking into account the area of each exclosure (May Getnet = 51 ha; May hibo = 53 ha; Afedena = 81 ha) and the project period (20 years), as well as the molar conversion factor of 3.67 (Mekuria et al., 2011), we calculated the total benefits for all project areas combined. tCO2 per year..

TCB (May Getnet) = 1.5 x 51 ha x 3.67 = 281 tCO2 per year
TCB (May hibo) = 1.4 x 53 x 3.67 = 272 tCO2 per year
TCB (Afedena) = 1.9 x 81 x 3.67 = 565 tCO2 per year
Total Carbon Benefits of the added sites = 1,118 tCO2 per year

Plan vivos and maps

May Genet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Adi Keshere
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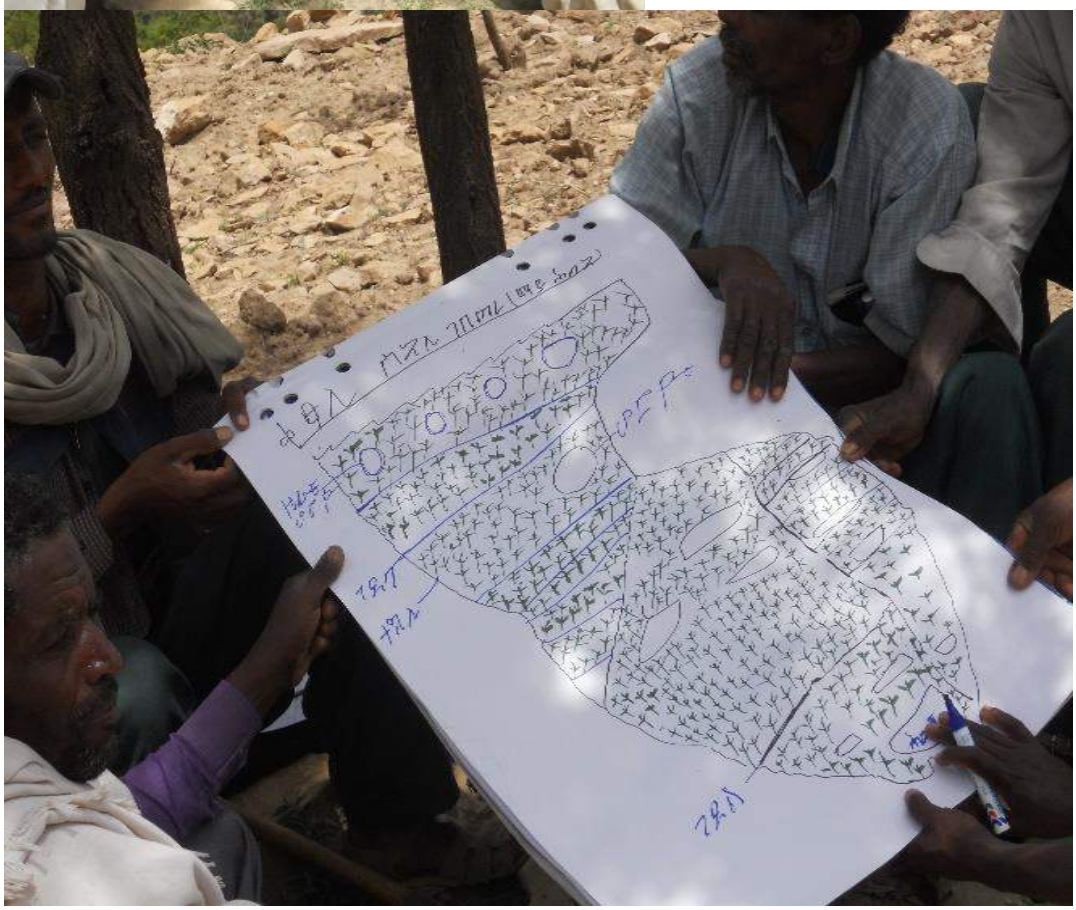
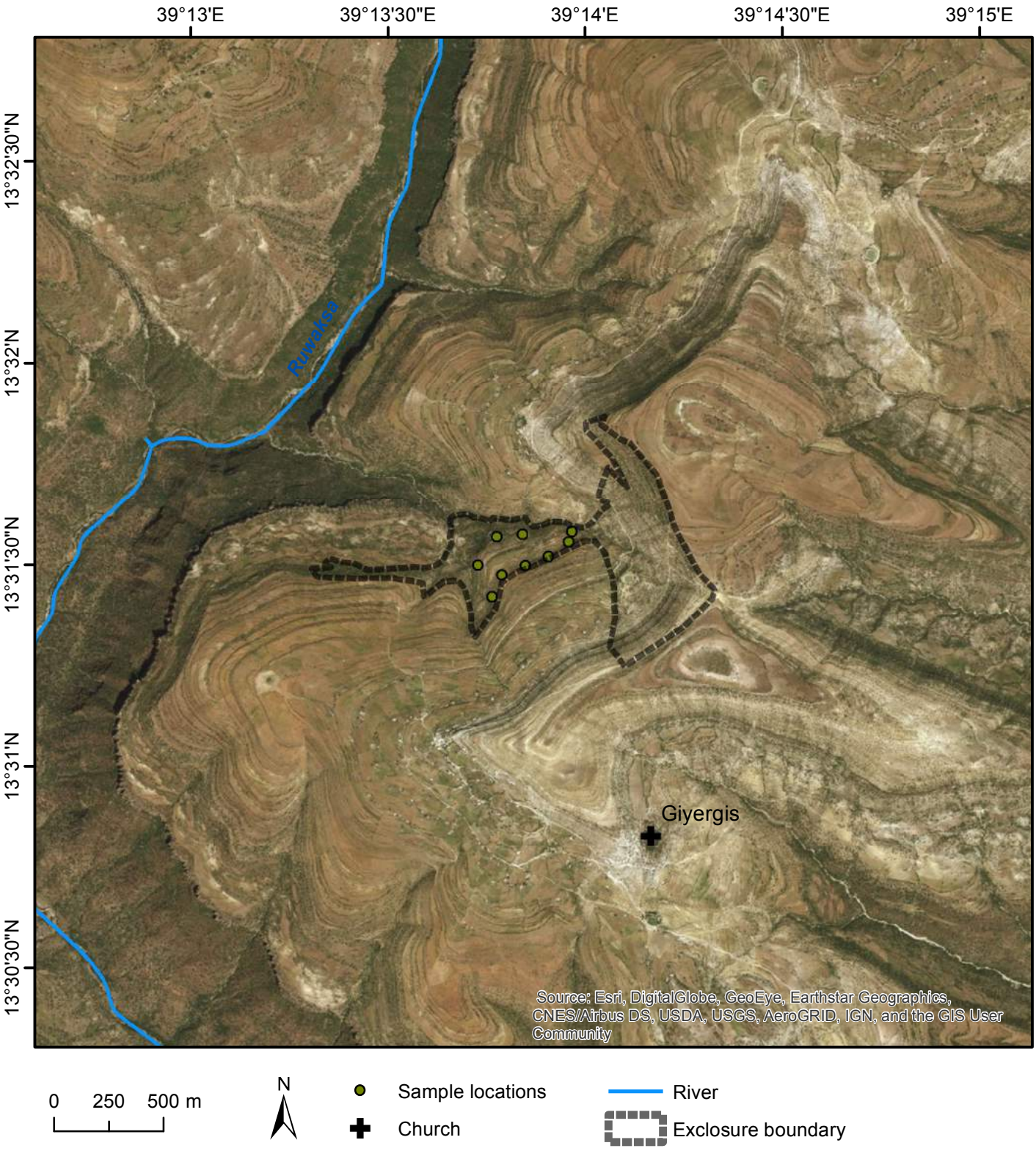
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
0
250
500 m
N
Sample locations
Church
Rural road
River
Exclosure boundary

May Huwo

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Ruvaltsa
Giyergis
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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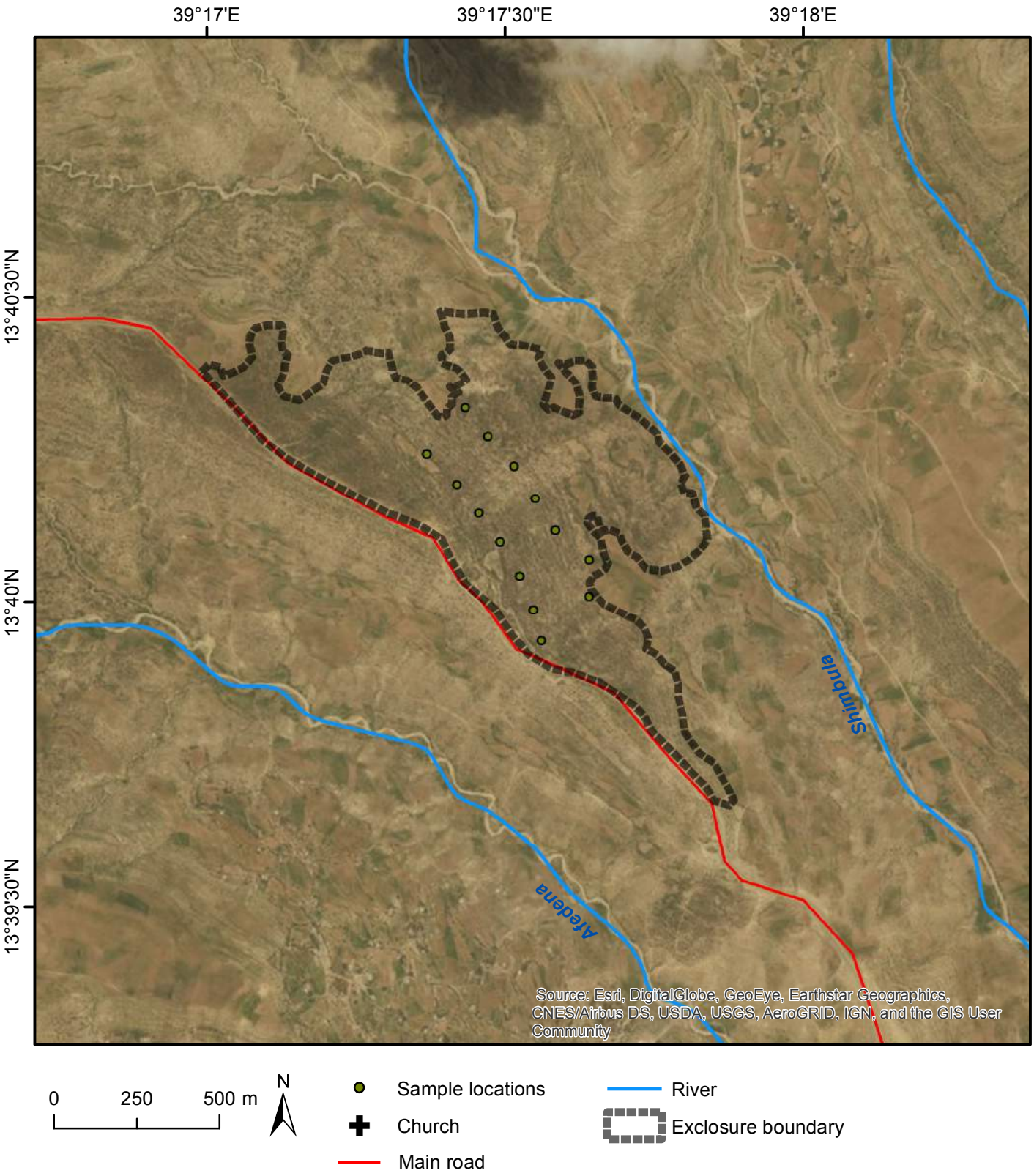
N
Sample locations
Church
River
Exclosure boundary

Afedena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13°40'30"N
13°40'N
13°39'30"N
Shimbuia
Atedena
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
0
250
500 m
N
Sample locations
Church
Main road
River
Exclosure boundary

Annex 6. Impacts

Not relevant for this report

Annex 7. Community meeting records (summary)

Giving training at Gidmi Gestet exclosure

Based on the produced plan vivos, the project coordinator, Seifu Gebreselassie, gave technical training for 12 association members, basically focused on management of the exclosure. The main focus of these discussions was on protection of the exclosures (keeping out the grazing) and on management of the exclosures (seedling planting and seedling irrigation, and soil and water conservation (percolation ponds, soil bunds and trenches).

Members recommended introducing sustainable forest management, avoiding deforestation through grazing and adding different structures with a focus on percolation ponds and some stone bund structures. In the further future, members would like to introduce honey bee production and want to see the area covered by olive trees.

Giving training at Adi Lehtsi

Based on the produced plan vivos, we gave training for 13 members that were selected from the association of the *Boswellia papyrifera* association. The main focus of these discussions was on protection of the exclosures (keeping out the grazing) and on soil and water conservation (percolation ponds).

We further gave training to 27 members for each *Boswellia* association; those include 13 from Amanit (Adi Lehtsi village); 8 participants from Endaselassie kebelle and 6 from Walta kebelle. The training basically focused on sustainable tapping and management of the *Boswellia papyrifera*, collection, quality separation and how to strengthen the links between other cooperatives and the market at Mekelle. This training was integrated with the agriculture office NRM and the cooperative department.

Giving training at Meam Atali

Based on the produced plan vivos, we gave training for 11 honey association members, basically focused on management of the exclosure. The main focus of these discussions was on protection of the exclosures (keeping out the grazing) and on management of the exclosures (seedling planting and seedling irrigation), and soil and water conservation (percolation ponds, soil bunds and trenches). Discussions proceeded on honey extraction and the difficulties of working without extraction material.

The nearby main nursery site allowed transporting seedlings by vehicles to the different exclosures or to a temporary nursery, in order to reduce the long distance of carrying by humans and to avoid losing seedlings and increase the survival rate.