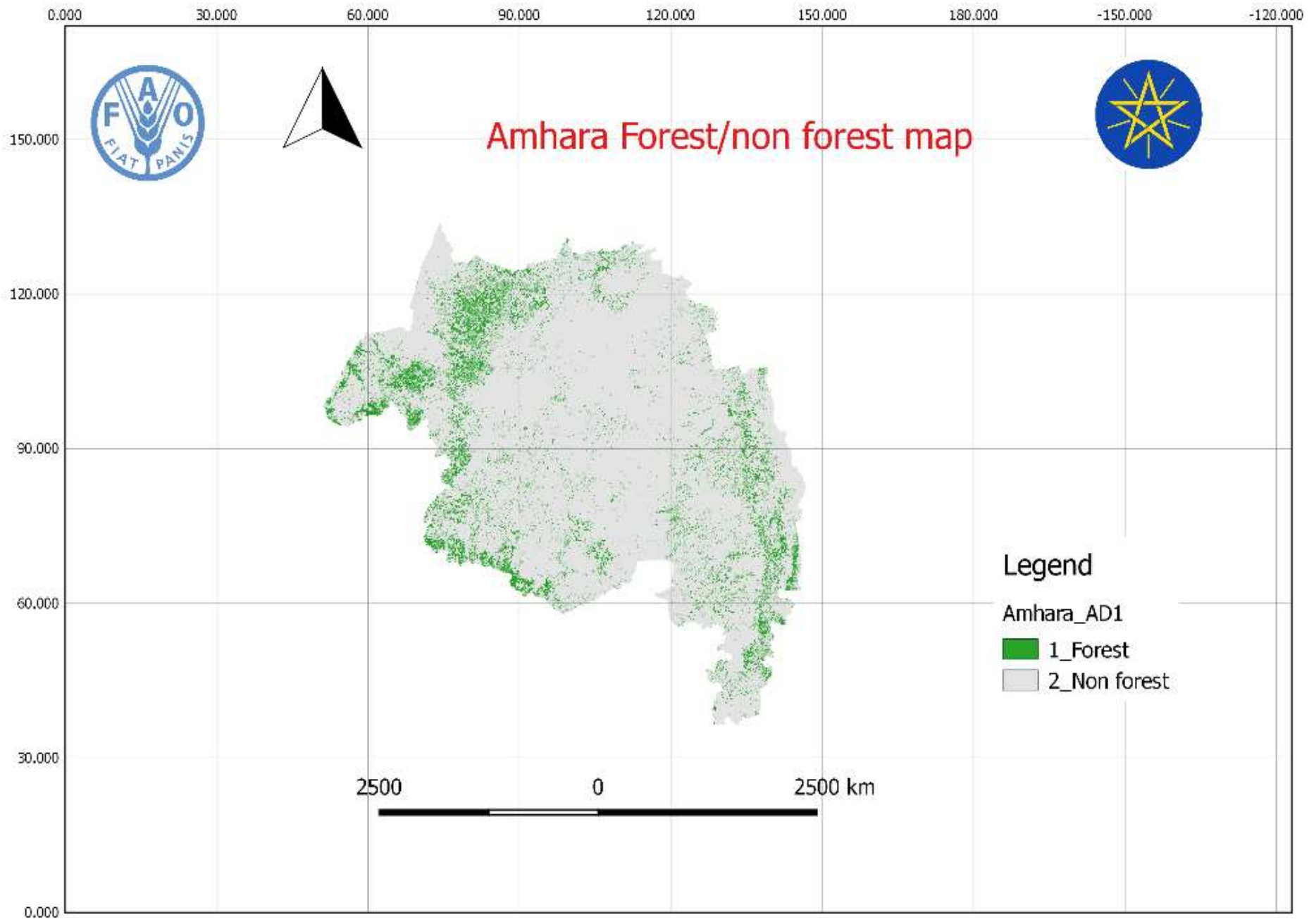


The Status of Dryland Forest in Amhara Region

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- **The Region has a heterogeneous ecosystems attributed to the variability in its altitude, topography, climate and landscapes.**
- **The major vegetation types are:**
 - **Afroalpine and subafroalpine, (in areas >3200 m.a.s.l)**
 - **Dry and evergreen montane forest and scrub (1500–2700 m)**
 - **Combretum-Terminalia woodland, (500–1900 m.a.s.l.)**
 - **Acacia-Comiphora woodland, (1000 -1900 m.a.s.l)**
 - **High and Lowland bamboo, and**
 - **Plantations**
 - **Agroforestry systems (Homesteads and trees on farmlands)**



Biomes	Area (ha)	Proportion
Acacia-Commiphora	380,876	9.14
Combretum-Terminalia	2,434,955	58.40
Dry Afromontane	1,328,158	31.86
Moist Afromontane	24,776.00	0.59
Total	4,168,765	

Forest loss and gain per Biome in hectare (2000-2013)

Biome	Forest loss	Forest gain
<i>Acacia commiphora</i>	8,886.00	8,382.99
<i>Combretum terminalia</i>	199,099.06	274.79
<i>Dry Afromontane</i>	18,141.72	55,593.30
Total	226,127	64,251.08

Amhara Emissions/Reductions per Biome per Year

Biome	Total per year	
	Emission (tonCo2e/yr)	Removal (tonCo2e/yr)
<i>Acacia-commiphora</i>	83,214 (3.1%)	78,504 (6.8%)
<i>Combretum-terminalia</i>	2,224,106 (83.7%)	3,070 (0.33%)
<i>Dry Afromontane</i>	350,880 (13.2%)	1,075,234 (92.9%)
Total	2,658,200	1,156,807



- **Increasing trend in terms of plantation in the mid and highland areas (36% zone, 76% in woreda)**
- **Annual transaction of forest products \$1.5 B**
- **Royalty.....10 m**
- **More than 75,000 jobs in the past 9 years**
- **Food security achieved**
- **The local economy highly mobilized**
- **Local environment improved**



The highland forest



Dryland forests

- The dominant forest biome belonging to the dry land forests are
 - Acacia – comiphora wood land
 - Comberatum- Terminalia wood land
 - Dry Afromontane vegetation that are found in the western escarpment of Amhara region
- The forest resources are found in the following zones
 - Awi (Zigem and Jawi)
 - West Gondar (Quara, metema, west armachiho)
 - Central Gondar Zone (Tegedie, Tachi armachiho, lay armachiho...)
 - North Gondar (adarkay, telemt.....)
 - West Gojam (Wonberma, Debre Elias, Abay Gorge)
 - Wag Hemra Zone (Dehana)



Characteristic species include:

- *Combretum* spp.,
 - *Terminalia* spp.,
 - *Oxytenanthera abyssinica*,
 - *Boswellia papyrifera*,
 - *Anogeissus lieocarpa*,
 - *Sterospermum kuntianum*,
 - *Pterocarpus lucens*,
 - *Lonchocarpus laxiflorus*,
 - *Lannea* spp.
 - *Albizia malacophylla* and
 - *Enatada africana*.
- AC are predominantly found in the drier lowlands of the eastern foothills
 - (Gubalafto, Kobo, Habru, Tehuwledre, Kalu, Dawa chefa, Efratana Gidim and Shewarobit areas)
 - and the inner Tekeze valley of Amhara Region in areas of altitude above 1000 and below 1900 m.a.s.l (ANRS 2004).

Why are these dryland forests important in the region?

Production Function :

- Gum and resin
- wood for construction,
- Fuel wood,
- farm implement,
- household furniture and utensils,
- fodder and shade for their animals,
- wild fruit, wild meat from hunting,
- herbal medicines,
- bee forage for honey production (wild honey and traditional apiculture),

Ecological services such as:

- soil and water conservation,
- climate amelioration
- habitat for wildlife
- serve as a 'green belt' protecting the region from expansion of Sahara Desert.
- recreation,

Examples of roles of NTFPs from dry forest resources (Metema and Quara district)

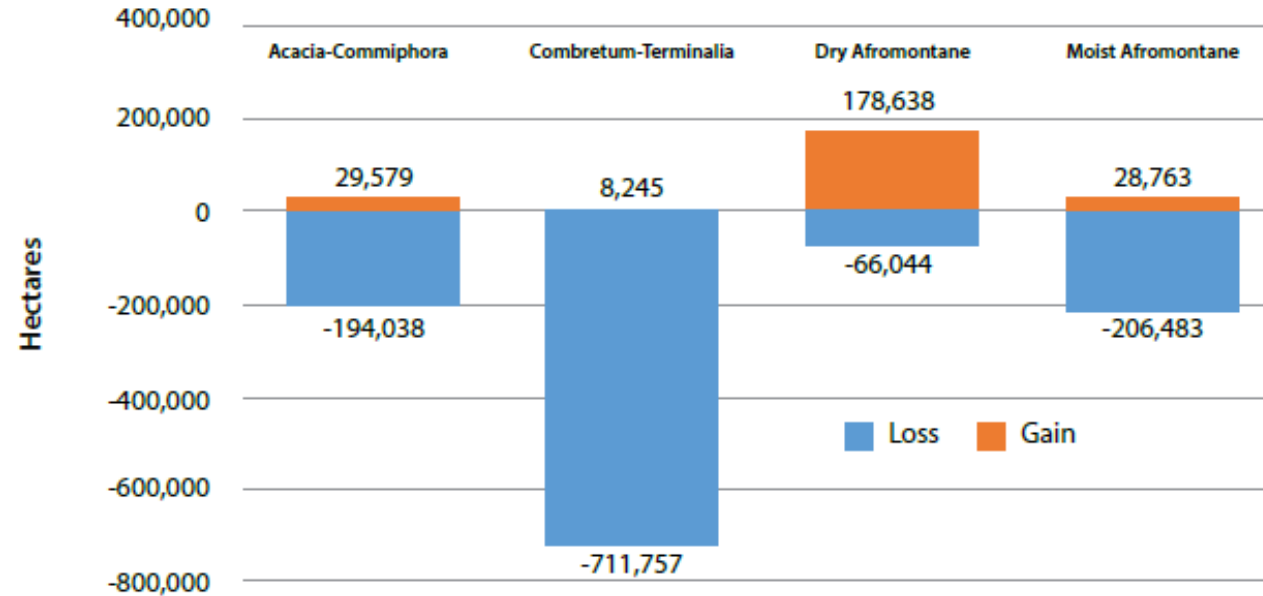
1. The average income from NTFPs accounts for **23.1%** of the total household income (**Gum and resin contribute about 60% of NTFP income**)
2. Income from NTFPs also helps 20% of the households to remain **above the poverty line.**

Table: Average income and average household income per capita (in Birr) and income shares by income source (n = 450 HHs)

Income source	Average income	Average income per capita	Income shares (%)
Crop production	40,565.43	9410.18	50.36
Livestock production	16,696.72	3912.33	20.73
Off-farm income	4122.444	936.17	5.118
Transfer payments	566.5556	131.58	0.703
NTFPs extraction	18,602.39	4179.84	23.09
Total	80,553.54	18,570.09	

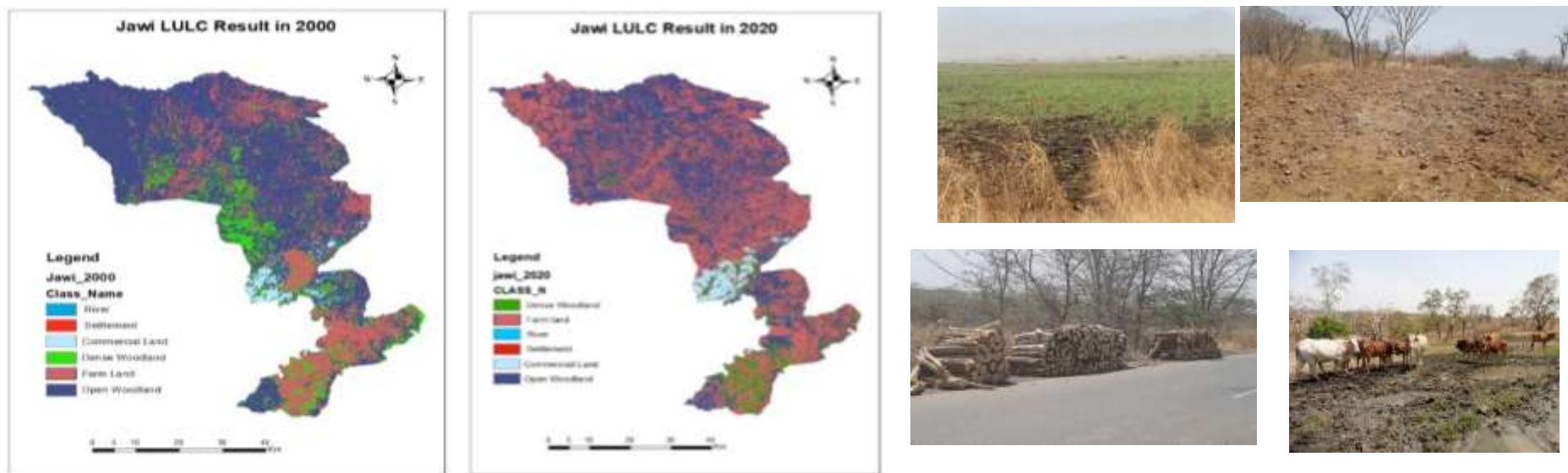


- A very high deforestation and degradation of dry forests



- Direct drivers
 - Massive land use transformation by investors and industries
 - Farmland expansion by small holder farmers
 - Uncontrolled, illegal harvest of wood (charcoal, poles, fuel wood)
 - Uncontrolled Grazing
 - Man made fire

LULC map of Jawi district in the year 2000 and 2020



Summaries of area of classified LULCC in 2000 and 2020.

Land cover classes	2000		2020		Change between 2000 and 2020	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Commercial farmland	8643.5	2.53	12115.4	3.54	3471.9	40.2
Dense woodland	33104.1	9.67	16377.2	4.78	-16727	-50.5
Farmland	85490.5	24.98	158292.7	46.25	72802.2	85.2
Open woodland	214283.1	62.6	153468	44.84	-60815	-28.4
River	492.6	0.14	1151.1	0.34	658.5	133.7
Settlement	267.5	0.08	883.4	0.26	615.9	230.2
Total	342281.3	100	342287.8	100		

Forest fire



ተ.ቁ	የእጣንና ሙጫ ደን ሃብት የሚገኝበት		የእጣንና ሙጫ ደን ስፋት በሄ/ር
	ዞን	ወረዳ	
1	ምስራቅ ጎጃም	ደብረ-ኤሊያስ	4387.2
2		ጎዛምን	19,911.31
3		ሸበል በረንታ	9246.11
4		ሁለት እጅ እነሴ	6071.00
5		ደጀን	
6	ምዕራብ ጎጃም	ወምበርማ	1587.00
7		ቡሬ ዙሪያ	9230.00
8		ሰሜን አቸፈር	290.00
9	አዊ ብሄረሰብ	ጃዊ	32,485.00
10		ዚገም	2158.3
11	ማዕከላዊ ጎንደር	አለፋ	1,232.73
12		ጣቁሳ	1347.00
13		ጠገዴ	458.00
14		ታቸ አርማጭሆ	1,635.00
15		ኪንፋንዝ	
16		ምስራቅ በለሳ	2950.93
17	ሰሜን ጎንደር	አዲአርቃይ	29805.00

18	ምዕራብ ጎንደር	ምዕራብ ኦርግጫቸው	12,350.00
19		መተማ	10,250.00
20		ቋራ	70,792.95
21	ደ/ጎንደር	መቀጥዋ	260.00
22		እብናት	3040.00
23		ላይጋይንት	1260.00
24	ሰሜን ወሎ	አይና ቡግና	657.60
25	ዋግኸምራ	ደሃና	6404.90
26		ዝቋላ	215.64
27	ደቡብ ወሎ	ወግዲ	203.70
28		መቅደላ	324.00

- **10 zones 28 woredas and more than 228,553 ha dry forest is used for gum and incense collection**
- **Gum and incense production has been issued to 7 investors, 27 youth associations in 7 zones and 10 woredas on 138,886ha of dryland forest area**
- **The total number of youth engaged in the gum and incense production are 2643 (male=2487 and female =156)**
- **In 2013 E.C alone a new 657.6 ha gum and incense land is transferred to the producers**
- **Until February 30, 2013 E.C 12,704 quintal gum and incense has been produced and out of this 1,061 quintal is reported to be exported and quite a gum lump sum of foreign currency has been earned.**

Wag Hemra (Dehana Woreda) *Boswellia Papyrifera* species





Bamboo resources

No	zone	No of <u>woredas</u>	Lowland bamboo	High land bamboo	total
1	North Gondar	6	3761.7	-	3761.7
2	South Gondar	4	95.5	-	95.5
3	<u>west Gojjam</u>	6	1199.48	1308.81	2508.29
4	<u>East Gojjam</u>	5	158.5	200	358.5
5	<u>awi</u>	6	2136.6	18530	20666.6
	total	27	7351.78	20038.81	27390.59

Problems encountering the *Boswellia papyrifera*









Excess Bark being removed and products not properly stored



Improper tapping and over exploitation of resources



Underlying drivers of dryland forest degradation

- Poverty
- Population growth (natural and migration)
- Non-forestry sector policies (development, investment policy)
- Poor Regulatory system and law enforcement (gov't failure)
- Ill defined understanding of the role of forests

Major challenges of the dryland forest areas

- **Forest Resources assessment has not been done (resources not documented, Inventory has not been done (ha, species,....))**
- **Agricultural investment on the cost of forest and Mofer zemet**
- **Illegal forest cutting for charcoal making and fuelwood**
- **Frequent Fire hazard**
- **Poor coordination and malfunctioning of stakeholders (justice)**
- **Only few forest guards are recruited due to budget shortage**
- **Low level of Awareness by the community and poor law enforcement**
- **Utilization inefficiency (Gum and incense)**

Possible area of interventions

- **Improvement of Gum and incense collection techniques, Supplying of better collection materials**
- **Implementation of Participatory forest management**
- **Forest guarding support (materials like binoculars, gps, tents, field materials....)**
- **Construction of fire breaks and organizing a fire control crew**
- **Market linkage**
- **Law enforcement (Supporting the forest protection task force)**



NO FOREST NO LIFE!!!

Thank you for your attention!!