

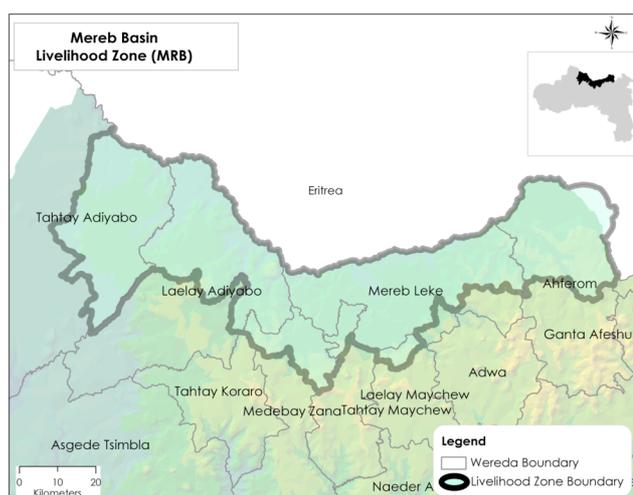
Livelihood Profile Tigray Region, Ethiopia

Mereb Basin Livelihood Zone

February 2007¹

Zone Description

The Mereb Basin Livelihood zone, borders Eritrea and is in Tahtay Adiyabo, Laelay Adiyabo, Laela Maychew, Medebay Zana, Mereb Leke, Ahferom and Tahtay Maichew woredas. The zone is predominantly in the *kolla* agro-ecology, surrounded by mountains, undulating terrain and slopes that descend into Mereb river. The vegetation is mainly bush scrub and acacia. The main river is Mai Shawesh, which is a tributary of the Mereb river. There are also numerous intermittent streams. The major towns in the zone are Rama, Adi Daero, Sheraro, Selekleka, and Enticho. This is a moderately area populated zone with annual rainfall of 300-500mm. The weather is generally hot because of the low altitude. The livelihood zone shares borders with Eritrea to the north, Gulomekeda to the east, and Tahtay Koraro, Tahtay Maychew, Laelay Maychew and Adwa to the south. Water for human consumption is collected from shallow and deep wells (fitted with hand and motorised pumps) springs, rivers and streams.



This is a mixed farming zone engaged in both crop production and livestock rearing. Sorghum, finger millet, maize and teff are the main crops cultivated. Sorghum and finger millet are the staple food crops. Surplus food crops are sold in the local market. Sesame and groundnuts are the main cash crops that are cultivated. Agricultural activity is dependant on unreliable *kiremti* rains that fall from June to September. The soil is sandy and infertile. Land preparation is typically a male activity, done using ox drawn ploughs. The zone regularly has to contend with poor yields and a food deficit. In addition to infertile soils and erratic rainfall patterns, pests are a major hazard to crop production. The most common pests are the stalk borer which attacks sorghum, and the shoot fly which attacks millet and teff. The effects of the pests are aggravated by the general unavailability of treatment in the local area.

The main livestock reared are cattle, goats, and chickens. Livestock are important for providing draught power, income and food. Livestock sales are one of the major income sources in the zone. Goats are sold throughout the year, though sales increase during the festival season. Goats are sold 6-10 months after birth. Demand for oxen increases during the land preparation period. Cattle herds are normally allowed to grow during good years to build assets that can earn households significant amounts of income in the event of a bad year. Outside of a bad year, cattle are sold when they are no longer productive i.e. oxen are sold when they can no longer plough, and mature females are sold after their reproductive life. Oxen and mature females are replenished from within the herd. Additional income from livestock is earned from the sale of livestock products. The main livestock products are butter and eggs. Livestock products are a source of both food and income for residents of the zone. During the dry season, livestock find drinking water from the Mereb river and streams. However, in both good and bad years, livestock migrate to western Tigray in search of water and pasture. The main hazards to livestock are Anthrax, Black leg and Pasteurellosis. Vaccination against these diseases is available free from the Bureau of Agriculture and Rural Development (BoARD).

Most households received loans from the household credit package. Loans ranging from 900ETB to 1000ETB were available to all wealth groups. Loan amounts taken varied according to wealth group; repayment terms depended on the type of livestock package. The very poor and poor had access to loans that ranged from 150 Ethiopian Birr (ETB) to 200 ETB. These loans were used for chicken purchases. These loans are to be repaid within two years. The middle and better off had access to loans that were between 1200ETB and 1500ETB. These loans were used for cattle purchase. Repayment is over 4 years. Repayment on all loans can be suspended in the event of a drought. All loans have a 9%

¹¹Field work for the current profile was undertaken in February 2006. The information presented refers to September 2005-August 2006 (EC 1998), a good year by local standards. Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2011). The exchange rate January 2006 1USD = 8.676ETB.

annual interest rate, and repayment begins one year after loan disbursement.

The Productive Safety Net was initiated in 1997 Ethiopian Calendar (E.C). It is designed to protect the assets of chronically food insecure households through the provision of food and cash entitlements. Household with able-bodied members get access to their entitlements through public works activities. Households without labor receive support without participating in public works. In this zone, beneficiaries are receiving cash entitlements. The daily wage rate is 6ETB for 5 working days a month, over a six-month period, from January to June.

The other important livelihood activity in the zone is gold panning on the Mereb river bed. This is mainly done by young males during the wet season.

Markets

The main crops sold are sorghum, finger millet, sesame and groundnuts. Sorghum and finger millet are supplied from Adiabo lowland zone and transported through Sheraro, Rama, Gerhu Sirnay, Daero Tekli, for the destination market in Selekleka. Sesame and groundnuts are sourced from Rama and other parts of the livelihood zone, and shipped through Adwa, destined for Mekelle. These crops are mostly traded during the post-harvest season from November to April. Sorghum is sold for 175ETB per quintal (100kg), while finger millet and sesame are sold for 190ETB and 450ETB per quintal.

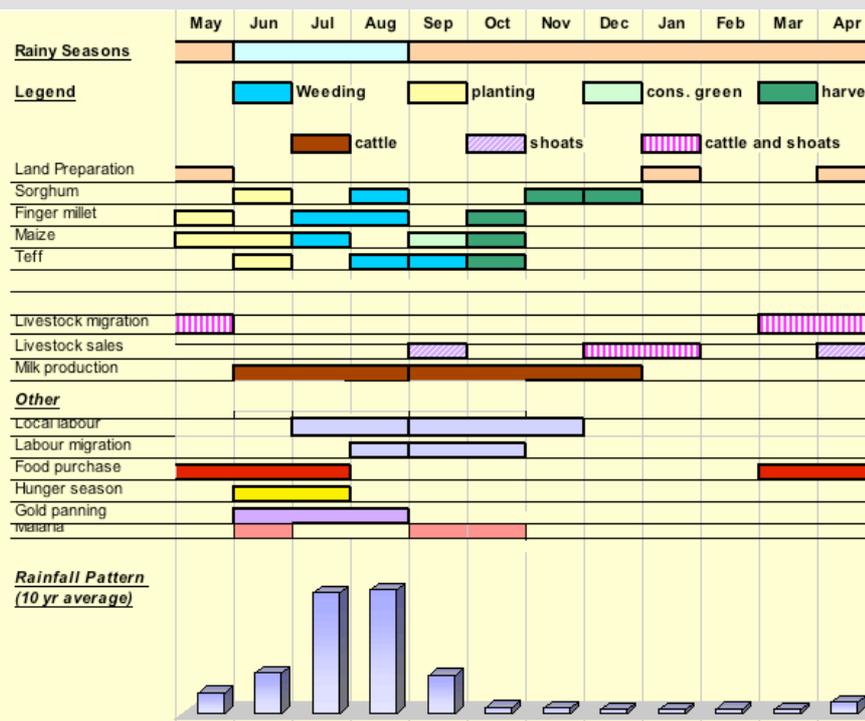
Sorghum is imported into the zone from Adiabo lowland and Humera sesame livelihood zone between April and September, as the hunger season approaches. During this period, sorghum is traded for 180ETB per quintal. Teff and maize is supplied from Gojam/Amhara region, through Endasselassie, and sold to markets in Adiyabo, and Mereb. Pulses in the Adiyabo market are imported all year round. Pulses come through intermediate markets in Endasselassie from either Selekleka, or from Olfa, Southern Tigray via the Mekelle market. Pulses are sold for 500ETB per quintal.

The main livestock on the market are cattle, goats and chicken. The source market for cattle and goats is Adi Nabrered, and the destination market is Sheraro. Cattle go through the intermediate market in Adiyabo, while goats go through several intermediate markets in Rama, Adwa, Gerhu, Sirnay, Enticho, and Adiyabo. Cattle are mainly sold in December and January. The middle sell cattle for 800ETB, while the better-off sell bigger animals for 900ETB. Goats are mainly sold during the festival periods in September (New Year/*Meskerem*), December/January (Christmas/*Gena* /Epiphany/*Timkat*) and April (Easter/*Fasika*). Chicken are sold during the same months as goats and are available in all local markets. Butter is also sold in the zone.

Residents of the zone migrate to Humera every year between July and October for weeding and harvesting activities on the sesame farms.

Market access is good. The road network is in fair condition. However, historical trade routes on both sides of the Mereb river are inaccessible because of the Ethiopia and Eritrea border conflict.

Seasonal Calendar



The four seasons are the dry season *Hagai*, from December to March; *Asmera*, from mid-March to mid-June, *Kiremti*, from mid-June to mid-September, and *Kew'e* from mid-September to mid-December.

Agriculture production is mainly dependant on the June to September *kiremti* rains. The agriculture season begins with land preparation activities from January to May. Long cycle crops, sorghum, maize, and finger millet, are planted in May. Short cycle teff is planted a month later in June. Weeding is in July and August. The consumption year begins with green consumption of maize in September. Main harvest of teff, maize and finger millet follows in October, and sorghum is harvested in November/December. Local agriculture labor opportunities are available for land preparation,

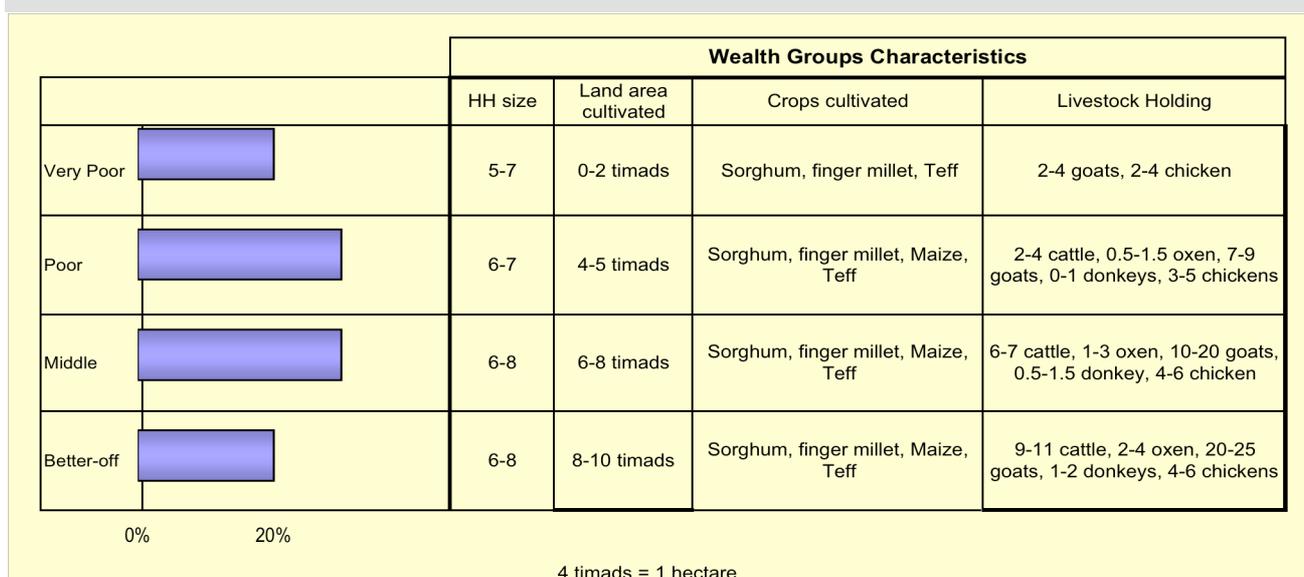
planting, weeding and harvesting activities through the farming season.

Livestock production starts with milk production at the start of the rainy season in June. The wet season lasts for four months, and the dry season follows for another three months up to December. Butter production and sales follow the milk production season. Cattle are mainly sold in December and January, and goats are mainly sold during the festival periods in September, January and April. Livestock migrate to Mereb, Tekeze, Adi Tsetser, Dedebeit and Badme from March to May in search of water and pasture. During bad years, livestock migrate for extended periods to the same locations.

The poorer residents of the zone migrate in search of labor opportunities. The majority of households migrate to Humera from August to October for weeding and harvesting employment on sesame farms.

The hunger season peaks from June to July. During the hunger period, residents survive on food purchases. The poor and very poor start purchasing food in March when own stocks are exhausted. The peak food purchase period, when all wealth groups are accessing most of their food on the market, is during the hunger period. During this time access to income is the primary livelihood strategy. The very poor and poor earn income from labor opportunities, PSNP, and gold panning, while the middle and better off mainly sell eggs and hides.

Wealth Breakdown



Wealth is determined by the size of land cultivated and number of livestock owned, especially plough oxen. Land is used for the cultivation of sorghum, maize, finger millet and teff. Sorghum and finger millet are both the main food and cash crops. There are no crops cultivated exclusively as cash crops. Access to land allows households to produce a surplus that can be sold for income. To get access to more land, the middle and better-off rent in land from the poor and very poor. Crop sharing arrangements secure half the harvest for the very poor and poor from the land they rent out to the middle and better-off.

Livestock are important because they provide draught power for land utilization, income and food. The very poor and poor rent-out land because they do not have oxen to utilize all the land they own. There are two local arrangements to provide access to oxen for the very poor and poor. The common strategy is that the very poor and poor provide two days human labor to the better-off in exchange for access to a pair of oxen for one day. Alternatively, they exchange straw that is used for cattle feed, with access to oxen labor. Most households usually sell goats, and cattle are less frequently sold to allow the herd to grow. Cattle are preferably sold after their productive lives, unless households encounter hardship that requires access to significant income or a need to diestock. Livestock products such as butter, eggs and hides are also important for income. Livestock products and goat slaughter provide food. The middle and better-off slaughter 1-2 goats respectively.

The biggest constraints to wealth are lack of oxen, infertile soils and erratic rainfall patterns. The border conflict with Eritrea has limited the amount of grazing land and access to markets.

Sources of Food – A good year (2005-06)

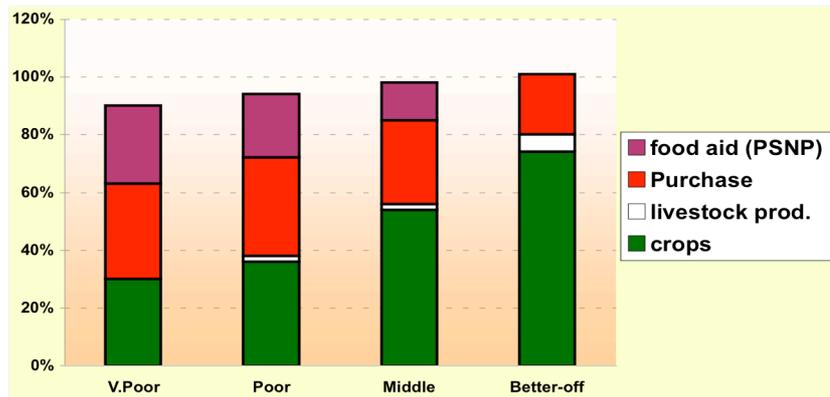
The main source of food for the middle and better off is own crop production. The staple food crops produced are sorghum and finger millet. The contribution of own crop production to food intake increases from the very poor to the better off because of increasing land under crop production.

Food purchases are also important. This is the largest food source for the very poor. Then main staple purchased by all wealth groups is staple sorghum. In addition to sorghum, the very poor and poor also purchase finger millet.

The main non-staple purchases are chick peas, sugar, and oil. These are necessary dietary compliments, though the very poor do not afford to purchase chick peas and oil, they only purchase sugar. Staple food purchases decline from the better-off to the very poor, while non-staple food purchases increase from the very poor to the better-off. The very poor have the highest dependence on the market, and the least reliance on own crop production.

PSNP food also provides a significant source of food for the very poor and poor and to a lesser extent to the middle wealth group.

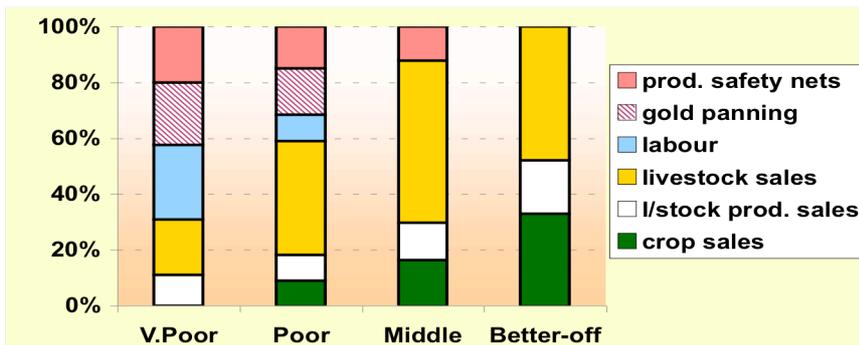
Livestock products consumed are butter, eggs, and for the middle and better-off: goat meat.



In the graph, food access is expressed as a percentage of minimum food requirements, taken as an average food energy intake of 2100 kcals per person per day.

Sources of Cash – a good year (2005-06)

The graph provides a breakdown of total cash income according to income source.



Livestock sales generate the biggest income source for the poor, middle and better-off. The main livestock sold are goats, but cattle are also sold particularly by the middle and better-off. The poor might sell a cow every second year. Income from the sale of cows varies by wealth group. The better-off sell bigger animals and so receive a better income from the sale. All wealth groups sell chickens. Livestock products sold include butter, eggs and skins. Skins are sold only by the middle and better off who slaughter goats for consumption.

Annual income (ETB)	1,500-2,000	2,200-2,700	2,750-3,250	3,500-4,000

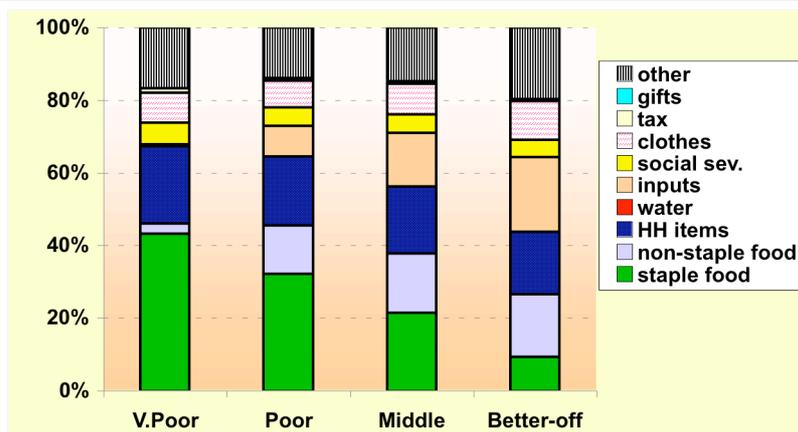
Crop sales earn significant income particularly for the better-off. The main crops sold are sorghum and finger millet. Sorghum is sold only by the middle and better-off. Finger millet is sold by the poor, middle and better-off. Only the better off sells Teff. Sesame and groundnuts also sold to provide some income for the poor, middle and better-off. The contribution of crop sales to incomes ranges from 10–30% as one goes from poor, to better-off.

Labor sales are the biggest income source for the very poor. They provide weeding and harvesting labor on the farms of the middle and better-off. They also migrate to Humera to work on sesame farms from August to October during the weeding and harvest period. Agricultural labor pays 12ETB per day. The poor also engage in construction labor. In addition gold panning is important. Gold panning is done in the Mereb river bed during the rainy season from June to August.

The very poor, poor and middle are beneficiaries of the PSNP. In this zone, usually 2-4 people participate in the PSNP program. In some kebeles they receive food in others they receive cash. Those receiving cash in the program earning 6ETB per day for 5 working days per month from January to June; those receiving food get 15kg per person per month.

Expenditure Patterns – a good year (2005-06)

All wealth groups are purchasing staple food. Staple food purchases are the biggest expenditure for the very poor and poor households. Food purchases (sorghum) increase from March to July. Non-staple food purchases (sugar, pulses, oil) are significant for the poor, middle and better-off. The very poor have very limited non-staple food expenditure. The poor, middle and better-off also spend essential inputs expenditure on fertilizer, tools, seeds and animal drugs to improve agricultural productivity. The middle and better-off also hire laborers.



The graph provides a breakdown of total cash expenditure according to category of expenditure.

The very poor spend a minimal amounts on livestock drugs but otherwise do not purchase seeds or fertilize or other inputs.

Other expenditure is mainly credit repayment for loans taken to purchase livestock packages before the reference year, but also includes expenditure on transport, community obligations.

Household items expenditure on kerosene, grinding, soap, utensils and coffee comprises 20% of expenditure for all wealth groups. Expenditure on social services (health and education) is approximately 5% for all wealth groups whilst expenditure on clothes is 7-10% for all wealth groups.

Hazards

Land degradation poses the biggest threat to food security in the zone. It is a chronic hazard that arises from deforestation and poor land management practices. It presents the biggest threat to long term food security. Pest attacks are also chronic problems. The main pests are stalk borer that attacks sorghum, shoot fly that attacks millet and teff and striga weed which attacks mainly sorghum

Erratic rainfall and hailstorm are intermittent hazards that occur once every three years.

The main livestock hazards are Anthrax, black leg and *pasteurellosis*

Border insecurity with Eritrea is a chronic hazard that has blocked access to trade routes, and pasture and water for livestock.

Response Strategies

The poor do not have any new livelihood strategies to engage in, and their main response strategy is to intensify labor sales, both locally and through migration. Labor migration is intensified through allowing more household members to migrate for longer periods, and if necessary to more distant places.

The better-off expand the sale of livestock. In a bad year, they begin to migrate along with the poor households in search of labor.

Summary

The Mereb Basin Livelihood Zone is a predominantly *kolla* lowland agro-ecological zone, with undulating terrain has sandy and infertile soils that yield minimal production. This livelihood zone tends to be a food deficit area. Crop production is generally constrained by poor soil fertility, land degradation and erratic rainfall exacerbated by border conflict which has reduced access to grazing land and water. These constraints to production are further exacerbated in the case of the very poor by the lack of oxen, insufficient money to pay for inputs – which forces them to rent out some land under sharecropping arrangement. Livestock make a significant contribution to household incomes in all wealth groups. In addition the poor and very poor turn to a variety of income sources, including sale of labor, gold panning, and PSNP. Half of the income earned from these activities is used to purchase staple food. The better-off on the other hand spend limited amounts on staple food, and are able to invest in agricultural inputs to improve productivity.