

Area: 3,906,040 km² |

EPA State of Environment & Natural resource data preparation desk.

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List of Abbreviations and Acronyms

GFRA	Global Forest Resources Assessment
MEFCC	Ministry of Environment and Forest, climate change
SWGWR-	Surface Water and Ground Water Resources of Ethiopia
Be	Eutric Cambisols
Jc	Calcaric Fluvisols
MO	Organic additions (not specified) ... chroma, or both; by coarser texture; or by a combination of these properties
MU	Mineral additions (not specified).
Ne	Eutric Nitosols
To	Ochric Andosols

1. FOREST PART

Introduction

In Ethiopia, forest plantation development history has been over 100 years (Lemenih and Kassa 2014). Similarly, deforestation has a long history. High deforestation has been practiced in Ethiopia since the 20th century to expand agricultural land and human settlement areas. At the beginning of 1900, in the early century, averagely 40–35% of the total area of the land was covered by forest, in the early 1950s; it dropped to 16% and declined to 3% to 2.5% in the 2000s (GFRA, 2015).

Ethiopia has nearly 17.35 million ha (15.7% of the country's area) of forest resources, including bamboo, dense woodland, natural forests, and planted forests. Plantation forest also comprises public industrial plantations and private woodlots. Most of the natural forests exist in the southwestern and south-eastern parts of the country (MEFCC, 2015). Oromia, the former SNNPR and Amhara together contain approximately 93.5% of the total plantation resources in the country.

The Southwestern Ethiopia Peoples region was split from the former southern nations, nationalities, and Peoples 'Region (SNNPR) on 23 November 2021 by referendum. The region consists of six zonal administrations and its capital which include the Keffa (Bonga), Sheka (Tepi), Bench Sheko (Mizan Teferi), Dawro (Tarcha), West Omo Zones (Jemu), and Konta special woreda (Ameya). Bonga is a town and woreda located in the South West Ethiopia Peoples' Region. It is one of the multi-capitals of the region and is situated on a hill in the upper Barta Valley. The town has a latitude and longitude of 7°16'N and 36°14'E, respectively. It's also separated by woreda and kebele administration. Area coverage of the region is 3,906,040sq.km the regional working language is Amharic. The population size is 3,501,832 and urban and rural households is 129,508 and 654,452 respectively.

The South West Ethiopia Peoples National Regional State is situated in the southwestern part of Ethiopia with a total area of approximately 3,906,040 km². The forest resource of the region that may qualify as 'forests' following the definition of FAO (2001) is estimated to be around 42.1%

of the total area of the region. The overall forest resources of the country and region-specific have shown increased for the last 15 years we emphasized on a regional level due to local understanding of the people which is << people think tree as a life >> even cut they replaced it. On the other hand, the Kefacoffee and Sheka forest biosphere nomination in 2010 contributed to the plus of forest. Hence detecting the state, challenge and response of this change on livelihood and ecosystem service and communicating to relevant actors and decision and policy makers is an important role of EPA.

Some Definitions and Concepts of Forests

The legal definition of the forest of Ethiopia is defined as “trees, plants and other bio-diversity accumulation at and in the surrounding of forest lands, roadsides, riverside, farm, and grazing lands as well as residential areas or parks that grow naturally or developed in some other ways”. This is the legal forest definition of Ethiopia (According to Ethiopia’s Forest Proclamation No. 1065/2018).

According to MEFCC (2015), the technical forest definition of Ethiopia used for MRV purposes is Young natural stands and all plantations established for forestry purposes which have yet to reach a crown density of 20 % or tree height of 2 m and an area of more than 0.5ha are included under forest, areas normally forming part of the forest area which are temporarily unstacked as a result of human intervention or natural causes but which are expected to revert to forest.

FAO (2001) defines a forest as “land with a tree crown cover of more than 10% and an area of more than 0.5 hectares; the trees should be able to reach a minimum height of 5 meters at maturity”.

Woodland: is an open stand, at least 10 meters tall with a canopy cover of at least 40 percent and its field layer is usually dominated by grasses. It is a low-density forest forming open habitats with plenty of sunlight and limited shade.

A **shrub** or **bush** is a small- to medium-sized woody plant. Unlike herbaceous plants, shrubs have persistent woody stems above the ground. They are distinguished from trees by their multiple stems and shorter height and are usually under 6 m (20 ft.) tall(Anna and

William,2006). Plants of many species may grow either into shrubs or trees, depending on their growing conditions.

Forest degradation is broadly defined as a reduction in the capacity of a forest to produce ecosystem services such as carbon storage and wood products as a result of anthropogenic and environmental changes (Mosisa, 2015).

Deforestation is the complete removal of forest and conversion of its land use for other land uses other than forest.

1.1 State and Trends of Forest in the SWEPR

Forest serves for economic, socio-cultural and ecological values. Globally, either directly or indirectly the livelihoods of hundreds of millions of people have been depending on forest products (Anonymous, 2008). Mostly, indigenous forest dwellers were the primary users of forest resources to a higher degree for domestic uses and income generation.

According to FAO, 2011 stated forests is important to all of us given their contribution to sustainable development and their role in human well-being. However, Ethiopia is the center for diverse flora and fauna, these resources are faced with forest resource degradation. Forest degradation can be a serious environmental, social and economic problem with the potential to adversely affect millions of people who depend on forest goods and services including the extinction of biotic communities leading to a reduction in biodiversity, soil erosion, global warming, and loss of income to forest dwellers (Friis et al. 2011). In addition to this, the degradation of the forests can destroy the entire forest cover and biodiversity, and it mainly occurs because of anthropogenic changes (Abraham, 2016). The major cause is the growing influence of forest-based livelihoods, illegal harvesting of forest products, and expansion of farms (smallholder and commercial farms), overgrazing and other activities (MEF, 2014).

The vegetation types in Ethiopia can be classified into four parts which include Acacia Commiphora, Combretum Terminalia, Dry Afromonotrne, and Moist Afromontra (MEFCC, 2017).

In Southwestern Ethiopia, people's regional state is known by forest due to the traditional beliefs and ecological knowledge that have aided the conservation of forests up to now in the region. As a result, forest areas in the region are part of the largest continuous forest remaining in the country about 56 percent of the forest cover not only that by far the largest in the Horn of Africa.

The region contains a high habitat diversity which is broadleaf forests, bamboo forests, riverine forests, wetlands, moorland, agricultural land and rural areas that add up to an interesting landscape matrix, crucial for the conservation of thousands of species. Moreover, it covers a unique biogeographic gradient with hot and humid lowland areas up to cold and wet highlands.

A long tradition of sustainable forest management has been developed by local communities, called Kobo forestry, mainly for honey production though also for harvesting wild coffee and cardamom. These lands were found between 900 to 2700 m.a.s.l. and several rivers of upper catchments, such as Baro-Akobo and Omo. Areas higher than 2300 m, however, are mainly dominated by alpine bamboo (*Arundinaria alpine*).

The dominant forest type in the region, between 1000 and 2300, is the Afromontane forest which includes a majority of endemic wild plants with considerable economic value such as *Coffea arabica*, *Aframomum corrorima*, and *Piper capense*. These forests are characterized by canopy dwellers from the genera *Podocarpus* and *Pouteria* and also play roles in not only water regulation of the rivers but also biodiversity conservation. In other words, they are biodiversity hotspots of global interest forests for instance, according to *Coffea arabica* is a flagship species in the Kafa biosphere reserve.

Less than 150,000 ha of highland bamboo forest remains in the country, with a significant part of it found in the Sheka zone (13,552 ha; Woldemariam & Fetene, 2007). Also, the region has varied crops like coffee (*Coffea arabica*), teff (*Eragrostis tef*), cardamom (*Aframomum cororima*), and ensete (*Ensete ventricosum*) are among the most important. Most of the plant species recorded in the area have one or more types of local use. This shows the high dependency of the local community on the forest, and the importance of conserving it (Woldemariam & Fetene, 2007).

In general, the total forest cover of the region is about 42.7 % of the total land area of which grazing land, is about 335,179 km², which is about 8.5 %, Bamboo forest is about 78,152.76, which is about 2% and man mad forest is 53,589.57 which is about 1.37%.

1.2 The challenge of forest coverage

Forest degradation is a serious problem environmentally, socially and economically particularly in developing countries. It is estimated that as much as 850 million hectares of forests and forest lands are degraded (Dinku Shiferaw Jote, 2017). Yet, it is difficult to quantify the scale of the problem as at national and regional levels forest degradation is perceived differently by the various stakeholders who have different objectives (Anteneh et al., 2013).

Deforestation and Forest Degradation: - The forest cover of southwestern Ethiopia peoples has been declining at an alarming rate due to agricultural activities which covered 46,940 ha of forest land lost between 1987 and 2005. Moreover, in Gesha, Masha, Anderacha, Yeki, Sheko, and North Bench districts in the region, about 61, 00 ha of forest land was lost between 1987 and 2005 because of NTFPs exploitation. Recently, over 2455 ha of forest land has been leased for investors working on plantations of coffee and spices in the Sheka biosphere reserves.

Loss of Plant Biodiversity: - Conversely, the conversion of biosphere reserves into semi-forest coffee systems and other land uses has influenced and will have prolonged impacts on the diversity of the moist forest, if management measures are not carried out. Floristic composition or species diversity was severely changed in the southwest remnant forest blocks which include all the biosphere reserves.

After 2010 Kefacoffee and Sheka Biosphere were nominated as better for conserving natural resources but the people blamed it why incorporate it into the carbon financing system? However, the area is mostly covered by forest acknowledged by UNESCO but financial problems in protecting the forest area.

Nowadays, however, population pressure and investors are responsible for to pressure on the remaining forest. The net change in forest cover measures any gains in forest cover – either through natural forest expansion or afforestation through tree-planting – minus deforestation.

According to regional EPA 2023, informed that the net change of the region with a positive change is 561.84 ha re-growing forests are approximately less than by 7 times they're losing it. Whereas, the negative change is 3904.5 losing more than they're able to restore.

Green legacy project is very important to developing reforestation activity which strengthens the tree planting activities but continues support needed in the nursery sit preparation.

Fortunately, the region is full of natural resources which is mostly market exchange depends on raw-material distribution. As a result, it minimized work opportunities for the community and loss asset building.

The expansion of agricultural activities is responsible for minimizing the forest areas. Which is needed as legal ground for conserving it.

1.3 Response forest resources in the SWEPR region

The government of Ethiopia for the achievements of the Sustainable Development Goal incorporated into GTP one and two improved forest cover from 2010 to 2015 by 0.3 %. Green legacy project planted 32.5 billion seedlings at the national level whereas, in the region planted by man-mad 144.34 ha were planted. The regional government is focused on jobless people and finding job opportunities for 2540 males and 501 females total of 3041 were involved in different jobs. These activities directly or indirectly saved the forest cover of the region. The dense forest of the region has a biosphere reserve of keffacoffe and Shekazone recognized by UNISCO. In addition to this by approval of EIA about 266,004 and 442 ha of land were given to investors for agricultural and industrial activities respectively.

1.4 Recommendation

Therefore the following problem-reduction method is needed

- Adaptation options should focus on reforestation, afforestation, area closure and ensuring better management of soil and water,

should be possible.
- Improve the integration and co-ordination between policies across many sectors, especially agriculture and investment biro.
- Finding new job opportunities to the youth.
- Access different industry opportunity to proper utilization of the many raw materials especially 78,000 ha bamboo forest which needs necessary industry otherwise naturally it fall after 45 years.
- Widely intensify seedling site.
- Treat planted forest

2. STATE AND TREND OF LULC SOUTH WEST REGION OF ETHIOPIA

According to Ameneshewa et al., (2023), Southwest Ethiopia is the area where both Afromontane and Eastern biodiversity hotspots are located and composed of several diverse fauna and flora species. The Southwestern Ethiopian Afromontane rain- forests are the center of origin and diversity for wild *Coffea Arabica*. The areas have also constituted four biosphere areas (*Kaffa, Yayu, Sheka, and Majang*).

The existing high-value bio-diversity within the areas is the main factor for the demands of conservation activities. The livelihood of a majority of the communities within the area is profoundly dependent on the forest resources which have been upheld by systems of indigenous conservation practices called the "*kobo* system". However, due to pressure from the outside as well as numerous other causes, it is increasingly challenging for these environmentally friendly indigenous cultures and practices to endure and be passed down through the generations. This necessitates maintaining environmentally sound methods of forest management and conservation practices called the "*kobo*" system.

The figure below, "[Fig 1](#)," reveals that six locations were designated by UNESCO as core sites. These locations contain a total of 52,606.8 ha of dense forest, from which a core zone of approximately 12395.1 ha of dense forest was established from *Masha* woreda. The *Shato* core area is one of the three core sites in this woreda, with a total area coverage of 5023ha. The *Sheka* zone has a population of 308,988, while the *Masha* woreda has a population of 85,005 (or 27.5% of the zonal population), according to projected demographic estimates from the Shekazon finance and economic development department (2022). *Masha* woreda is the second-most densely inhabited woreda in the zone after *Yeki*woreda, which has a population density of 274.8/sqkm. *Masha* Woreda has a total area of 763.73 sq km. The total population of *Yeki* Woreda has decreased from 173,455 in 2021 to 165,983 in 2022, because of insecurity a year, inhabitants were displaced to surrounding Woredas. This finding was purposively selected five kebeles of *Masha*Woredasuch as; *ShayLimat* (chewaqa), *Keja*, *Welo*, *Beto*and *Yepho*. Due to their proximity to two massive plantation projects, which contribute to a high rate of forest degradation, and the fact that these kebeles share a common boundary with the UNESCO-listed

Shatocore area, the most degraded site in the zone. A total of 11,404 people, or 13.4% of the total population of the study area, reside in the five kebeles. The populations of Keja, Welo, Beto, Yepho, and Shaylimatare 3,392, 4,981, 1,008, and 1,113, 845, respectively.

The majority of Masha's workforce is young and is engaged in agricultural activities. Cereals such as honey, enset, corn, grains, teff, beans, peas, and various spices are the main subsistence crops. Among them, the arable land area represents about 23.9%, grazing land represents 2.8%, forest land 40.5%, cultivated land 5.5%, non-arable land 5.9%, and settlement lands 21.4%. Surveys conducted in this area show that honey, enset, livestock, annual crops, sugarcane, vines, chatand gesho, cardamom, wild coffee, palm, banana, and time are the main means of survival, in descending order of importance. The area is also famous for its important meat and dairy products from goats, sheep, dairy cows, and other domestic animals. In addition to agricultural activities, there are also transactions among rural residents in the small market in Kebele, where people buy and sell coffee, honey, and other products (Ameneshewa et al., 2023).

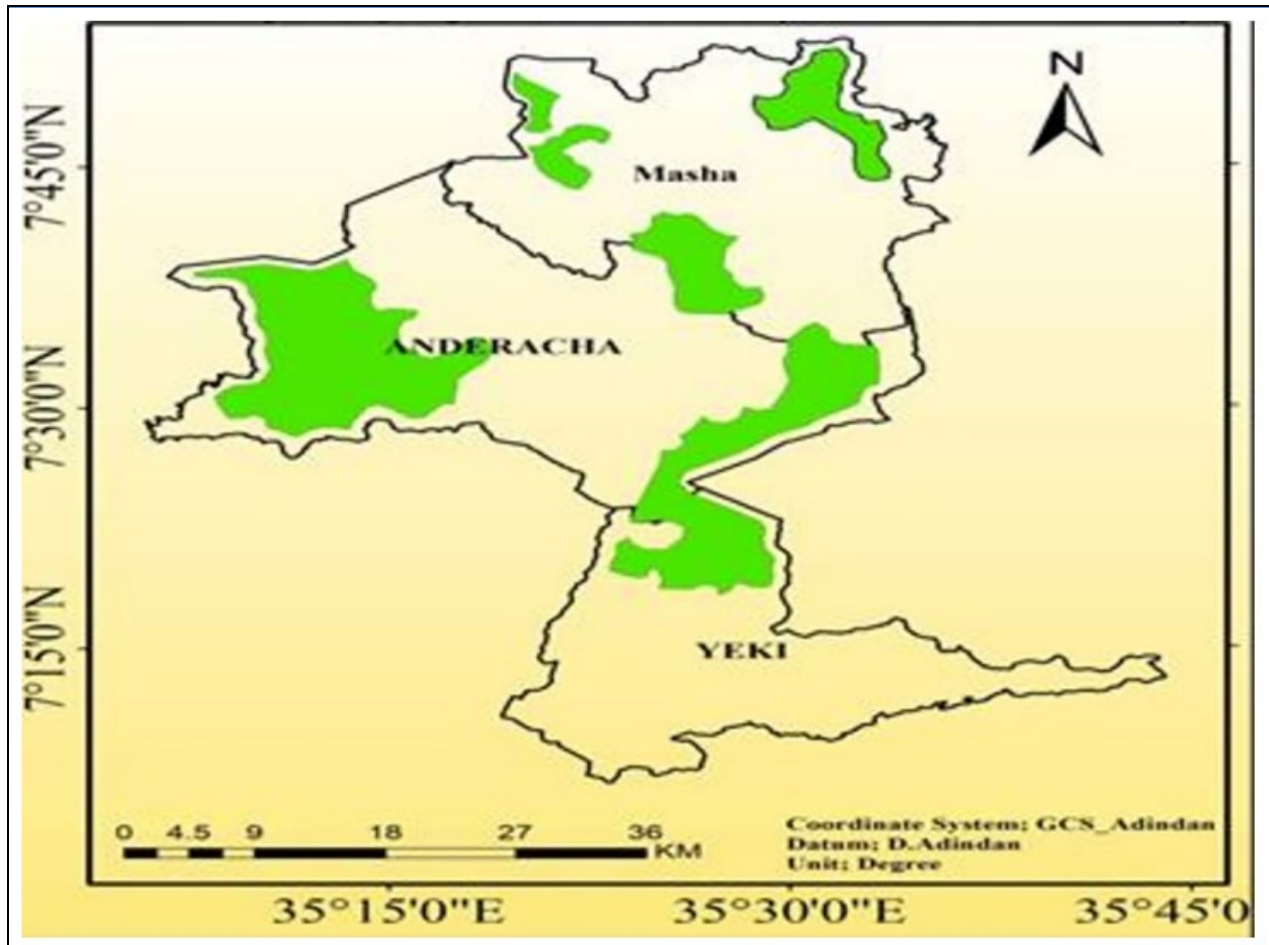
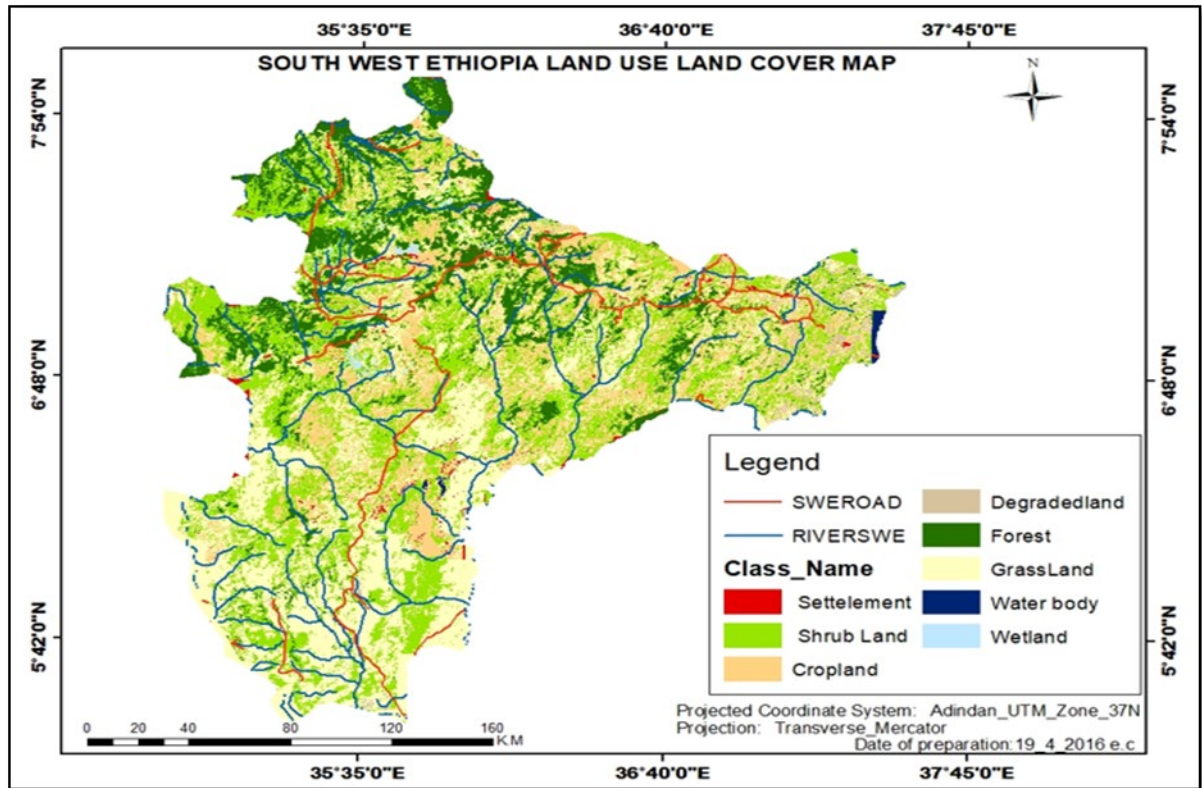


Figure 1:- Map of the biosphere reserve of Shekazone (core area).

source; (ameneshewa et al., 2023s & hekazone forest and environment protection department).



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Figure 2: Southwest Ethiopia land use land cover map2023

From the above map, the following land cover class was extracted.

Table 1: land use land cover map analysis result of southwest Ethiopia 2023

No	Land use types	Area_Ha	AREA_SQ
1	Waterbody	3432.97	105.62
2	Shrub	1291296.26	13065.17
3	Settlement	123930.85	324.08
4	Degraded land	58705.15	416.56
5	Wetland	26632.29	266.26
6	Grassland	1194429.25	12359.88
7	Cropland	695690.66	7038.69
8	Forest	512750.24	5482.50

Grand Total	3906867.67	39058.76
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From the total coverage of the region Waterbody:-Shrub, Settlement, Degraded land, Wetland, Grassland, Cropland, and Forest 3432.97, 1291296.26, 123930.85, 58705.15, 26632.29, 1194429.25, 695690.66, and 512750.24 respectively. Hence Largly the region is covered by shrubland and grasslands.

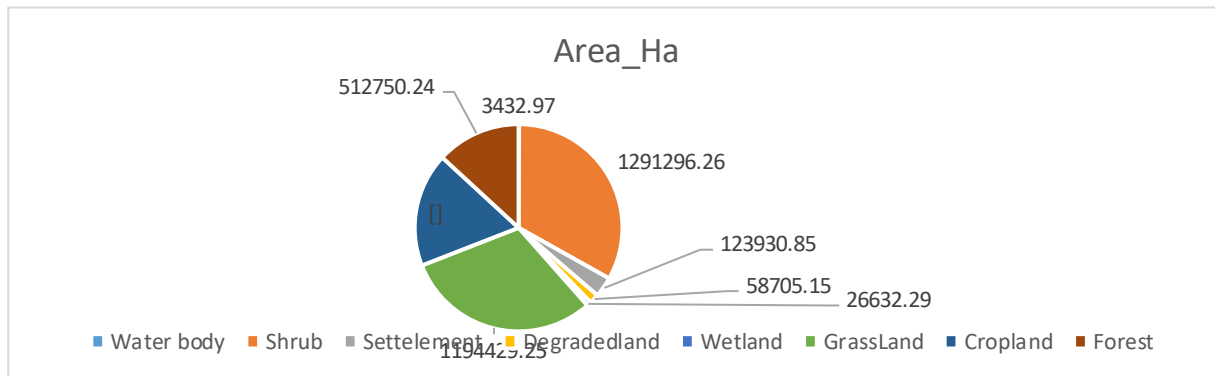


Figure 2 South West Ethiopia Land Cover (SWELC) Area coverage in hectares.

According to Habtamu Niguse in the region, Annually 394.5 hectares of forest are lost while 561.84 ha gain. To cool down the political fever, 50% of the forest will be affected. There are four major lakes Chofore, Deno, Monsu, and Shesha (EMA, 1988). And there are about 26 major rivers basins in the region such as:- Omo, Gojeb, Akobo, Gejet, Beko, Gemadro, Gurachi, Shitamasi, Barash, Gahamayo, Meneshi, Menisa, Zigna, Yegechiya, Koma, Zoa, Wogaye, Gumi, Sherma, Woshi, Dibo, Sor, Kerma, Bitno, Dibo, and Baro (Souther Nation Nationality and People Region State Breau of Finance and Economic Development (SNNPRS BOFED), 1997).

The major Mountains of the region are:- Shetra, Rosha, Shita, Tuta, Gazo, Shambe, Tama zoze, Wozol, Gumati, Issera, Kumkuma, Chida, Muda, Shobita, Wota, Galefotchguto, Mena, Yema, Yeba and Yeguchi located above sea level (elevation) 3348, 3258, 3161, 2820, 2658, 2651, 2432, 2610, 2455, 2488, 2541, 2709, 2827, 2549, 2500, 2544, 2828, 2828, 2613, and 2539 respectively(BOFED, 2010).

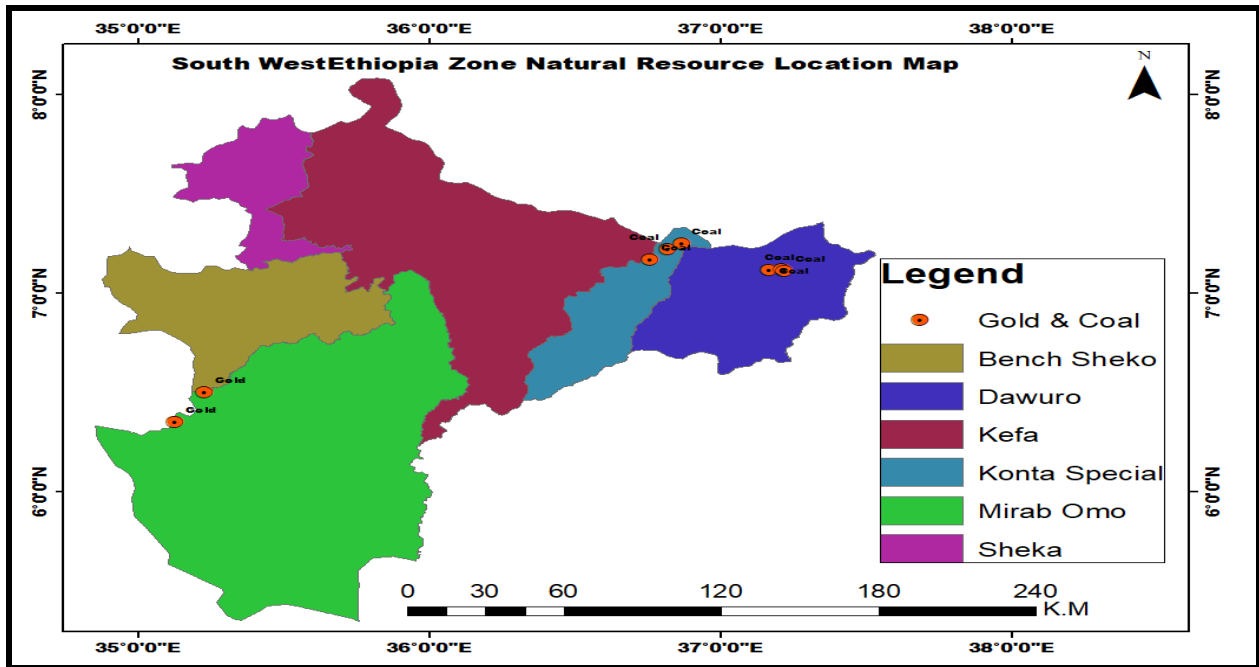


Figure 3:- The above map shows the main exploited mineral occurrences of the southwest region of Ethiopia.

Gold was located in Benchsheko zone in Dizi (bero) and Surma Woreda, in a Kobo basin Anomalous areas, delineated and commercially exploitable placer gold deposits were identified while Gabisa, Gassana, Shola, and Godare village or kebele between $6^{\circ}21'00''$ - $6^{\circ}30'00''$ N latitude and $35^{\circ}08'00''$ - $35^{\circ}14'00$ E Longitude, Artisanal mining is being carried out by illegal miners. Gold found in Surma Kutula huwala, Magologna, Segelu and Gulub kebele, its potential is not yet known.

Gold in Adikas kebele was found between $5^{\circ}45'00''$ - $6^{\circ}04'00''$ N latitude $35^{\circ}21'00''$ - $35^{\circ}45'00''$ E longitude about 3000 K.M² and Exploration Adikas Mining Company.

About iron preliminary information was there in Kefa Dawuro zone in cheta midiraga net toragora kebele.

Even if not studied well iron was found bench-sheko zone sheko woreda itaqa, bazuka, and gariqa kebeble.

Coal (Lignite) and Carbonaceous Shale, a mineral found in Dawuro zone and Konta sp. in Waka & Tercha zurya and Konta sp. worda in Tabeno, Gozo Shasha, Mela, Boee ara, and Chida kebele btween 7°7'00" latitude 37°10'15" longitude and 7°7'15" latitude 37°13'00" longitude, 7°6'42" latitude 37°13'30" longitude 7°13'14" latitude 36°49'19" longitude respectively Preliminary survey was conducted by different geoscientists (Water, 2003).

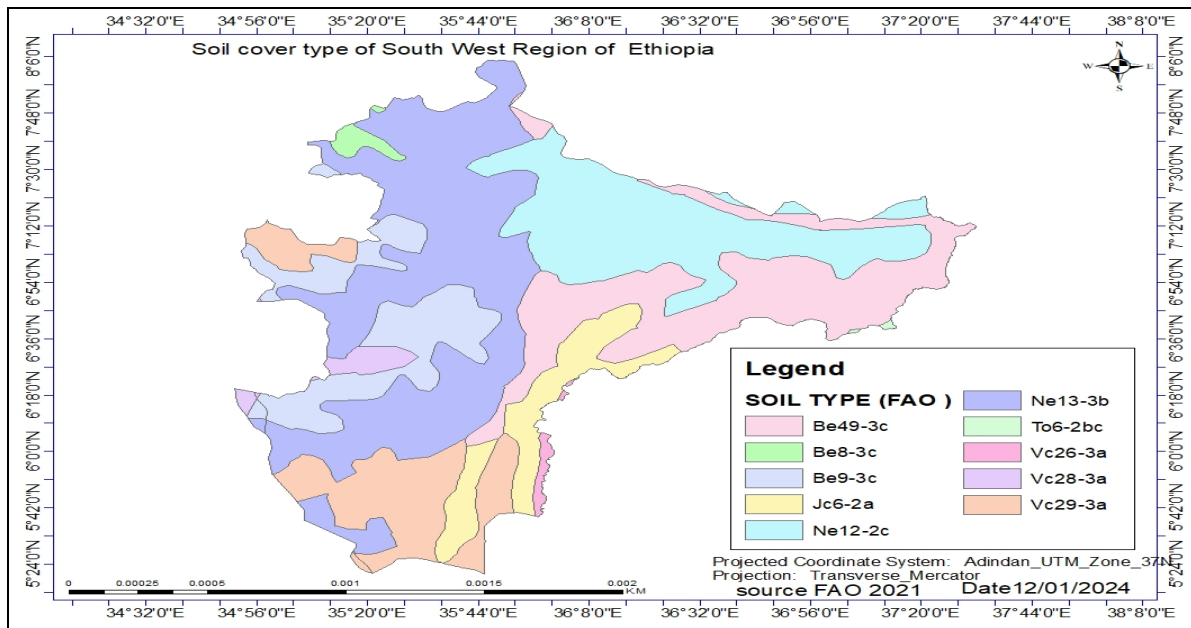


Figure 4:- Mapping Unit Name and Texture Units (TEXUNITS).

Table 2 soil mapping unit name, amount, or nature of topography and SQKM.

Mapping Unit Name	% of MU with Coarse	% of MU with	% of MU with Heavy	% of Dominant Soil in the	% of MU with Flat	% of MU with Rolling	% of MU with Mountainou	SQKM
Be49-3c	0	40	60	50	10	30	60	1196
Be8-3c	0	40	60	50	25	20	55	5922
Be9-3c	0	30	70	60	25	15	60	1438
Jc6-2a	0	100	0	50	90	10	0	870
Ne12-2c	0	90	10	50	10	35	55	1065

Ne13-3b	0	30	70	40	40	55	5	3652
To6-2bc	0	100	0	90	0	55	45	346
Vc26-3a	0	30	60	70	100	0	0	1535
Vc28-3a	0	30	70	70	100	0	0	8435
Vc29-3a	0	30	70	70	100	0	0	4075

Largely the region covered by Eutric Nitisols map unit name, ne 12-2c, and ne13-3b, % of mu with coarse texture, % of mu with medium texture, % of mu with heavy texture, % of dominant soil in the mu, % of mu with flat topography, % of mu with rolling topography, and % of mu with mountainous topography 0, 90, 10, 50, 10, 35, 55, and, 0, 30, 70,40, 40,55, & 5 respectively.

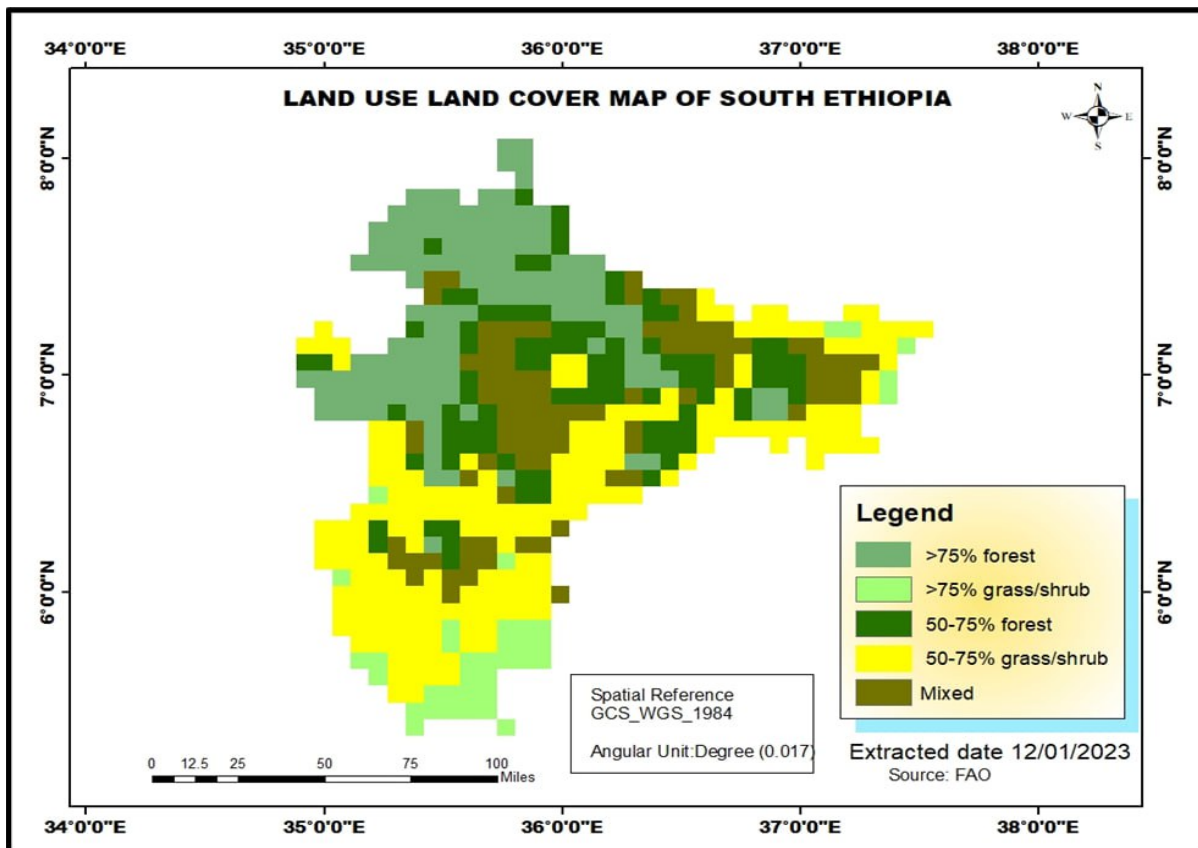


Figure 5:LULCC.

2.1 THE MAIN CHALLENGES OF LULCC THE REGION

- i. The livelihood is completely dependent on the forest:- for example in the Sheka zone charcoal and wood are found to be the best sources of income because the price also increased dramatically, hence the dependency on the forest is increasing and must be managed.
- ii. Even if the majority of forests are demarcated society does not use the Carbon trade.
- iii. The structural problem is that it is not read by the federal government and the lack of skilled manpower is also another challenge.
- iv. In the region, 78152 hectares of Bamboo are there but there are no more agro-process industries.
- v. There is a high forest cover in the region, but the practice of paying for carbon trading leads to deforestation.
- vi. Nursery stations are demolished and renovated every year, there is no continuity.
- vii. There is a Forest resource utilization problem.
- viii. According to Caro and other experts in SWPRSBA, no protection intervention for the wetlands of the region hence the wetlands are disappearing because of agricultural land expansion and are distributed to jobless Young people.
- ix. The region is known for its forest resources, and it spends a lot of money to protect it, but these costs are not included in the budget formula.
- x. The increasing of illegal merchants about natural resources especially, forest resources and mining, mostly illegal gold exchange becomes a security problem in the region.
- xi. Investment expansion and the forest distribution for investment were not considered environmentally friendly concepts.
- xii. Lack of transportation to manage the forest and the federal unfair distribution of cars and budgets.
- xiii. Lack of seed plasticity
- xiv. Corruption

xv. Lack of justice only one expert

2.2 RESPONSE

- a) According to Caro SWPRSBA majority of forests are demarcated
- b) EIA is organized at the level of the director; a feasibility study is done before any investment activity is done.
- c) The regional administrator said that if we do not say go on there not reach to cabinets, Have a political commitment and establish the cabinet.
- d) Although the guide says that the investor will evaluate the investment by facilitating private transportation by EIA experts, we have prohibited it in order to prevent unnecessary closeness and corruption.
- e) Although the guide says that the investor will evaluate the investment by facilitating private transportation by EIA experts, we have prohibited it in order to prevent unnecessary closeness and corruption.

2.3 RECOMMENDATION

- ✓ The carbon trade concept must reform the context of the region, the government should give any incentive measure to hige forest cover area of the society. On the other way, Deforestation will be reduced if the community benefits from carbon trading.
- ✓ Instead of using the forest and wetland as a temporary solution, a long-term solution should be provided by supporting the law.
- ✓ Participatory forest management should continue to be strong

3. Water Resource

Water plays a crucial role in the economic and social development of human life. Ethiopia is known as the "water tower" of East Africa because it is rich in water resources. Based on recent information, it has been found that our country has 124.4 billion cubic meters (BCM) of river water, 70 BCM of lake water, and 30 BCM of groundwater resources. This presents a great opportunity to develop irrigation and hydropower production, with a potential of 3.8 million hectares of land for irrigation and 45,000 MW of power generation (SWGPRE, 2014). The water resources of Ethiopia are abundant, with 80-90% found in four river basins in the west, including Abay (Blue Nile), Tekeze, Baro Akobo, and in the southwest Omo-Gibe.

However, the country's economic and regional dependence on rain-fed or climate-sensitive agriculture highlights the importance of using water resources for climate-smart agriculture to promote economic development. If we use water resources properly, it can significantly contribute to the development of climate-smart agriculture and the overall economic growth of the region.

This report presents information on the river basin of southwest Omo-Gibe in the regional state of southwest Ethiopia peoples including the water sector challenges and stakeholder responses. The relatively new regional state makes it difficult to obtain detailed data on river, lake, and groundwater resources measured in cubic meters. However, it is known that there are 26 rivers and 5 lakes in the region. As far as irrigation is concerned, 1,319.36 hectares of land were cultivated by 1,504 people through 15 projects in the same area of the region.

Table 3 Major River Basins of the Region

<i>N o</i>	<i>River</i>	<i>Major tributaries</i>	<i>Areas of drainage</i>	<i>Destination</i>
1	Omo	Gojeb, Sharma, Dalacha, Denchiosaka, Guma, Eigna, Mansa, Muie, Mago, Giyno	Oromiya, Gurage, Hadiya, Kembat atembaro, Kaffa, Wolayita, Gamogofa, Dawro, Bench Maji, Dehub Omo, Konta, Yem,	Dehub Omo L.rudolf
2	Gojeb		Kaffa & Dawro & Konta,	Omo River
3	Akobo	Dima, Gilo, Gejet, Akula	Bench Shako	River Baro
4	Gejet	Furfura	Bench Shako	Bench Shako
5	Beko		Kaffa & Shaka	Kaffa & Sheka
6	Gemadro		Sheka	Baro River
7	Gurachi		Sheka	Baro River
8	Shitamas i		Sheka	Baro River
9	Barash		Sheka	Baro River
10	Gahama yo		Sheka	Baro River
11	Meneshi		Sheka	Baro River

12	Menisa		Issera	Omo River
13	Zigna		Issera & Tocha, Tarcha Zuriya	Omo River
14	Yegechi ya		Issera & Tocha, Tarcha Zuriya	Omo River
15	Koma		Genna & Zaba Gazo	Omo River
16	Zoa		Genna & Mareka	Gojeb River
17	Wogaye		Tocha & Tarcha Zuriya	Gojeb River
18	Gumi		Kaffa	Omo River
19	Sherma		Kaffa	Omo River
20	Woshi		Kaffa	Omo River
21	Dibo		Kaffa	Omo River
22	Sor		Kaffa	Omo River
23	Kerma		Kaffa	Omo River
24	Bitno		Kaffa	Omo River
25	Dibo		Kaffa	Omo River
26	Baro		Kaffa/Sheka	Atbara

Source; - SNNPRS BOFED, Socio-Economic profile, 1997.

Most rural communities rely on groundwater from shallow wells, deep wells, and springs; rainwater is also a common source. According to the Water Mineral and Energy Bureau Annual

Report 2022, the coverage of potable water in the region was 35.7% in 2022 and increased to 39% in 2023. However, urban areas still have better access to water than rural areas.

Table 4: Potable water coverage in 2022.

S/N	Name of Zone	Potable water coverage by % in 2022		
		Urban	Rural	Average
1	Shaka	38.7	35.92	36.3
2	Kaffa	43.7	39.57	39.9
3	Bench Shako	48.8	30.21	33.0
4	Merab Omo	-	21.25	21.3
5	Dawuro	24.4	39.65	37.7
6	Konta	-	30.02	30.02
Region		41.6	35.9	35.7

Source- Finance, Economic and Development Biro, 2023.

Table 5: Summary data for the 2015 fiscal year, the number of constructed irrigation facilities

S/N	Zone	Number of lower irrigation construction
1	Sheka Zone	19
2	Kaffa Zone	2
3	Bench Sheko Zone	12
4	Mirab Omo	6
5	Dawro Zone	15
6	Konta Sp.werada	1

Total	55
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Table 6: Small irrigation project under construction

S/N	Zone	Number of irrigation projects	The total amount of irrigated land in He/R	Total number of irrigation water user in Household members		
				Male	Female	Total
1	Sheka Zone	1	66	53	7	60
2	Kaffa Zone	5	395	330	77	407
3	Dawro Zone	5	495	505	95	610
4	Bench Sheko Zone	2	144.36	160	57	217
5	Konta Sp.werada	1	100	80	30	110
6	Mirab Omo	1	119	80	20	100
Total		15	1,319.36	1208	286	1,504

Source: - SWEPR Water Mineral and Energy Office, 2022.

Lake

In the Southwest Ethiopia Peoples Region, there are four natural and one artificial lake, along with several major swamps or wetlands. The natural lakes cover a total surface area of approximately 132 sq. km, These lakes are mostly concentrated in the Dowuro zone and are significant tourist attractions. Hence, the national government of Ethiopia has emphasized on the tourism sector by building the Halala Kela Resort and Chebera Churchura projects, which were completed and opened to the public 2023.

Table 7 : Major Lakes of the Region

<i>No</i>	<i>Lake</i>	<i>Area(sq.km)</i>	<i>Location</i>	<i>Maximum depth(m)</i>	<i>in Altitude</i>
1	Chofore	65	Dawuro/Issera	9	2200
2	Deno	15	Dawuro/Tocha	3	2150
3	Monsu	34	Dawuro/Issera	6	2010
4	Shesha	18	Dawuro/Tocha	4	1985

Source; - National Atlas of Ethiopia, A.A. 1988.

The water supply of rural communities is mostly on groundwater through shallow wells, deep wells, and springs additionally harvesting rainwater is also common. According to the water policy of Ethiopia has Water Mineral and Energy Biro annual report 2022, indicated that the regional potable water coverage is 35.7% in 2022 and 39% in 2023.

Table 8: Potable water coverage in 2022.

S/N	Name of Zone	Potable water coverage by % in 2022		
		Urban	Rural	Average
1	Shaka	38.7	35.92	36.3
2	Kaffa	43.7	39.57	39.9
3	Bench Shako	48.8	30.21	33.0
4	Merab Omo	-	21.25	21.3
5	Dawuro	24.4	39.65	37.7
6	Konta	-	30.02	30.02
Region		41.6	35.9	35.7

Source- Finance, Economic and Development Biro, 2023.

Table: 9 Small irrigation project under construction

S/N	Zone	Number of irrigation projects	The total amount of irrigated land in He/R	Total number of irrigation water users in Household members		
				Male	Female	Total
1	Sheka Zone	1	66	53	7	60
2	Kaffa Zone	5	395	330	77	407
3	Dawro Zone	5	495	505	95	610
4	Bench Sheko Zone	2	144.36	160	57	217
5	Konta Sp.werada	1	100	80	30	110
6	Mirab Omo	1	119	80	20	100
Total		15	1,319.36	1208	286	1,504

Source: - SWEPR Water Mineral and Energy Office, 2022.

Table 10 Summary data for the 2015 fiscal year, the number of constructed irrigation facilities

S/N	Name of Zone	Number of lower irrigation construction
1	Sheka Zone	19
2	Kaffa Zone	2
3	Bench Sheko Zone	12
4	Mirab Omo	6
5	Dawro Zone	15
6	Konta Sp.werada	1
	Total	55

3.1 Challenge

Water resources are not equally distributed at the national level and recurring challenges of drought and water scarcity are faced. It is important to regulate the usage of water resources to ensure sustainable and equitable distribution among all groups. In the region, water resource challenges are largely associated with the production of coffee. Due to this, more than 300 coffee purification machines were responsible for polluting many rivers in the region.

3.2 Response

We do not have any available data about the resource. We would love to provide you with the information you are looking for, but unfortunately, at this time we do not have any available data about the resource. We apologize for any inconvenience this may cause and hope to be able to assist you with your request in the future.

3.3 Recommendation

"By working together, the national and regional governments successfully overcame a staggering 61% shortage of water. This serves as a powerful example of the positive outcomes that can be achieved when people come together and work towards a common goal. Let's continue to collaborate and tackle other challenges facing our society with the same spirit of determination and unity."

4. Mineral Source in the Region

Ethiopia has a limited identified asset of precious metals and other natural resources such as gold, potash, natural gas, copper, and platinum. Natural gas is the most abundant natural resource in our country and also the largest deposit compared to African countries. Still all this potential, natural gas has not been properly exploited yet. The potential is so high that the geology of some parts of the country, like that of the Ogaden basin.

The deposit of minerals is crucial to solving social and economic problems not only at a regional level but also at a national level. In the southwest region of Ethiopia, there are diverse minerals such as gold, iron, and coal. The potential of mineral resources in this region is high and can help to reduce unemployment rates in the country while positively contributing to the national gross domestic product. However, traditional mining methods limit the income generated from these resources.

Table 11 Mineral Occurrences of the Region

No	Type of mineral	Location					
		Zone	Woreda	Village (Kebele)	latitude	Longitude	Status & other Remarks
1	Gold	Bench Sheko	Dizi(Bero)	Akobo basin	6°21'00" - 6°30'00" N	35°08'00" - 35°14'00" E	Study conducted major Anomalous areas delineated and commercially exploitable placer gold deposits identified
				Gabisa			Artisanal mining is being carried out by illegal miners
				Gassana			
				Shola			
				Godare			
			Surma	Kutulu huwala	504500-60 04 00	35021 00-35 45	It's potential is not yet known
				Magologna			
				Segelu			
				Gulub			
				Adikas			

					N 3000 K.M ²	00 E	tion
2	Iron	Kaffa Dawuro	Cheta & Issera	Cheta- Midragan et, Toragora			Preliminary information
		Bench- Sheko	Sheko	Itaqa, Bazuka, gariqa			Not studied well
3	Coal (Lignite) Carbonaceous Shale	Dawuro	Waka & Tercha zurya	Tabeno	7°7'00"	37°10'15"	Preliminary survey was conducted by different geoscientists
				Gozo Shasha	7°7'15"	37°13'00"	
				Mela, Boe ara	7°6'42"	37°13'30"	
		Konta sp.wera da	Konta sp.wored a	Chida	7°13'14"	36°49'19"	
					7.16975 ⁰ - 7.25002 ⁰ N	36.76316 ⁰ - 36.87195 ⁰ E	EER Pvt.ltd.Co./ Exploration/ 26 KM2

Source - SNNPS, Bureau of Water Resource Annual Report

2002 E.C. and 2003 E.C.

4.1 Challenge

There have been reports of illegal mineral exploitation and land sealing in the region. Additionally, there is no access to asphalt road construction, which poses risks for full maiming activities. Traditional methods of maiming are also intensifying, and agricultural land is being converted into unfavorable or declining land productivity. Furthermore, there have been changes in soil content, including increased soil acidity.

4.2 Response

The regional government is trying to control illegal mineral mining activities.

Ethiopia has acknowledged the importance of the Environmental Impact Assessment system. This system not only helps protect the environment but also facilitates sustainable development, enforces the right to a clean and healthy environment, promotes transparency and accountability in administration, and encourages public participation in decision-making. The EIA service has been implemented in the traditional building and industries level in the southwestern peoples regional state.

Table 12: The number of licensed associations

S/N	Zone	The number of licensed associations for traditional construction and industrial mineral
1	Sheka Zone	17
2	Kaffa Zone	16
3	Bench Sheko Zone	35
4	Mirab Omo	28
5	Dawro Zone	25
6	Konta Sp.werada	20
	Total	141



Figure 6: Rock mineral resource in the region

4.3 Recommendations

Control black market

Improved risk management method

Reforestation

Soil treatment methods

Used modern mining activates

Facilitate better road access

At the governmental level, an illegal mining control task force should be formed. The task force should incorporate various sectors, step by step, from top to bottom administrative bodies.

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