



# Report of the Community Conservation Resilience Initiative



# in Ethiopia

## Country report on Ethiopia Community Conservation Resilience Initiative (CCRI) November 2015

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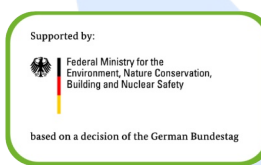
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**Cover photo:** Group portrait, members of participatory sketch mapping process, Mio Kebele, Ethiopia. Cath Traynor/CIC

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## EXECUTIVE SUMMARY

The Bale Mountains, in the Oromia Region of southeast Ethiopia are a biodiversity hotspot and the Bale Mountains National Park is the most important conservation area in Ethiopia. For generations, local communities have stewarded their natural resources through Sacred Natural Sites (SNS), these are biologically diverse natural cultural centres where local communities gather to help one another, resolve conflicts, establish common law, and worship. They represent deep spiritual relationships between communities and nature. Communities from the *kebeles*<sup>1</sup> of Dinsho-02, Mio and Abakera, in Dinsho District assessed the roles and resilience of SNS for community conservation in and around The Bale Mountains National Park.

The communities used participatory mapping, spatial data collection, focal group discussions, and semi-structured interviews to examine both biophysical aspects and threats to their SNS. 26% of the participants were women. The assessment, revealed that historically there were 72 SNS. These were typically located on hills or knolls, and they were associated with a range of biophysical features including springs, streams, wetlands, indigenous forests and wild animals. However, over the last 50 years 54 SNS have been destroyed and only 18 currently remain, and some of these have been reduced in area or deforested. The majority of SNS lie outside the boundary of Bale Mountains National Park and receive no formal government protection.

Key internal threats centre on community perceptions and attitudes. Many community members failed to understand the true meaning and value of SNS. Some have sought to undermine and marginalise SNS custodians. The land allocation system within the *kebeles*, which allows SNS land to be allocated to individuals for farming, has resulted in the destruction of SNS. Furthermore, SNS have been converted to agricultural land and wetlands have been drained. Land shortages have also pushed some religious faiths to begin to use SNS as burial grounds, which threatens their integrity.

A significant external threat is the lack of formal recognition or protection for SNS within Ethiopian law. SNS are not recognised in Ethiopia's legal framework and the contribution they make to biodiversity, conservation, ecosystem services provision, and the nation's cultural heritage is not acknowledged. Globalisation, modernisation and acculturation also threaten SNS. The traditional knowledge systems that gave rise to SNS and the customs and traditions that maintain them are often regarded as backward.

Community-initiated solutions to counter internal threats include raising of awareness within the community regarding the value and significance of SNS, and enhancing the capacity of SNS custodians to enable them to fulfil their roles and responsibilities. The Community Conservation Resilience Initiative has already produced some successful examples of SNS conservation that can be used as models. Peer-to-peer learning exchanges between communities are required so that these successful approaches can be shared and adapted. Additionally, a SNS elders group should be formed to revive customary laws, norms and ethics regarding SNS and to develop new by-laws for the conservation of SNS.

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<sup>1</sup> A kebele is the smallest administrative unit of Ethiopia and refers to a well-defined collection of settlements or villages.

To counter external threats existing conservation legislation, cultural heritage policies, and relevant articles in Ethiopia's 1995<sup>2</sup> constitution that support SNS need to be enforced. However, these mechanisms do not specifically target SNS and are insufficient to ensure their full protection. Therefore, a national level policy that addresses SNS is required. Furthermore, formal recognition of the value of SNS and the role the communities play in conservation could then enable SNS to be included in Ethiopia's biodiversity conservation commitments and actions under the Convention on Biological Diversity (CBD).

Recommendations from the assessment include a range of initiatives. First, create a network between the SNS custodians from different communities with quarterly meetings to plan community-led strategies and activities for SNS conservation. Additionally, scale-up the assessment to include other *kebeles* in Dinsho District and the Bale Zone. Communities also need financial and technical support to manage SNS; for example, fencing initiatives and reforestation efforts. Finally, advocacy is needed at all levels within the Cultural and Tourism Office, Rural Land Administrative and Environmental Protection Office and the Bale Mountain National Park authorities. All of these initiatives will strengthen community conservation and resilience in the area and need support from outside actors.

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<sup>2</sup> Articles 39(2), 44, 51(5), 90, and 91



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Photos in Figures 1, 2, 3, 25, 26 and 27: Cath Traynor.

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Figure 5 courtesy of Global Maps, 2006.

## ACRONYMS

<b>ABN</b>	Africa Biodiversity Network
<b>ARCGIS</b>	Geographic Information System software
<b>BMNP</b>	Bale Mountain National Park
<b>CBD</b>	Convention on Biological Diversity
<b>CCRI</b>	Community Conservation Resilience Initiative
<b>DWRLAEPO</b>	Dinsho Woreda Rural Land and Environmental Protection Office
<b>EBSAP</b>	Ethiopian Biodiversity Strategy and Action Plan
<b>FAO</b>	Food Agricultural Organization of the United Nations
<b>FGD</b>	Focus Group Discussion
<b>GDP</b>	Gross Domestic Product
<b>GOE</b>	Government of the Federal Democratic of Ethiopia
<b>GPS</b>	Global Position System
<b>HHs</b>	House Holds
<b>Ha</b>	Hectare(s)
<b>ICCAs</b>	Indigenous and Community Conservation Areas
<b>IUCN</b>	International Union for Conservation of Nature District Office of Agriculture
<b>MAB</b>	Man and the Biosphere's
<b>masl</b>	Meters Above Sea level
<b>MELCA</b>	Movement for Ecological and Community Action
<b>PSM</b>	Participatory Sketch Mapping
<b>SER</b>	Social Ecological Resilience
<b>SNS</b>	Sacred Natural Sites
<b>SPSS</b>	Statistical Package for Social Sciences
<b>UN</b>	United Nations
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organization.
<b>VES</b>	Visual Encounter Survey



# 1. INTRODUCTION

## 1.1. Ethiopia

Ethiopia currently has a population of over 86 million, it is the second-most populous country in Sub-Saharan Africa, and the population growth rate was 2.5% in 2014 (World Bank Group, 2015b). Between 1974 to 1991 the socialist-inspired Derg regime ruled Ethiopia, this military dictatorship outlawed private land ownership and promoted collectivisation, villagisation and resettlement. Following the downfall of the Derg, the Federal Democratic Republic of Ethiopia was formed, the country is composed of eight regional states and three city-states, largely based upon ethnicity. Each region is divided into smaller administrative regions, these are district (or *woredas*), zone, and *kebele*.

Over the last decade Ethiopia's average economic growth rate was 10.8% per year (2003/4 – 2013/14), which is over twice the regional rate of 4.8% (World Bank, 2015b). These growth rates have been driven predominantly by the agricultural sector, with the manufacturing sector providing more modest contributions. Presently Gross Domestic Product (GDP) is growing at 11% per annum which is the fastest growing rate in Africa (World Bank Group 2015a). The agricultural sector contributes 45% of Ethiopia's GDP, and 90% to Ethiopia's export value, with coffee, live animals, leathers, flowers and sesame key export items. Over 83% of the population are involved in agriculture (GOE, 2014). Despite high growth the Multidimensional Poverty Index (MPI) <sup>3</sup> in 2011 was 0.564, and among developing countries Ethiopia has the third highest rates for the percentage of people who are destitute (58%) and/or poor (87%) (OPHI, 2015).

Nine vegetation-based major ecosystems exist within Ethiopia, and over 6,500 species of higher plants, 277 species of mammals, 862 bird species have been recorded. Approximately 14% of the land area is classified as protected areas. The Government of Ethiopia became a signatory to the Convention on Biological Diversity (CBD) in 1992, and it was ratified in 1994. The Ethiopian Biodiversity Strategy and Action Plan (EBSAP) aims to "address interlinked issues comprising biodiversity protection and management for food security (poverty reduction), health and livelihood improvement of the Ethiopian population especially the rural communities (farmers and pastoralists) whose survival depends on the use of natural resources" (GOE, 2005).

Ethiopia has taken steps to implement the Convention and has developed legislation on access to genetic resources and associated community knowledge<sup>4</sup>, and initiatives for Article 8(j) include devolution to district level, as recognized in the Ethiopian Constitution and capacity building of local indigenous communities (CBD 2015). The rights of local communities to their innovations and practices has been recognized in law, and there is an Ethiopian National Traditional Healers Association.

The latest National Report to the CBD recognizes that farmer and pastoralist communities rely upon their traditional knowledge including for their healthcare, and that the diverse local customary laws contribute to the management and conservation of biodiversity (GOE 2014).

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<sup>33</sup> MPI is based upon 10 indicators in the health, education, and standard of living dimensions.

<sup>4</sup> Proclamation No. 482/2006.

The area of forest is estimated to be 12, 499, 000 ha (11.4% of total land area), however, this is according to the FAO definition of “forest” which includes forest, high woodlands and plantations. The latest Global Forest Resource Assessment for Ethiopia, which is not based upon a national assessment but various data sources, suggests that the area of “forest and other wooded land” has increased by 0.3% between 2010-2015 (FAO, 2015). However, closer scrutiny of the National Country Report suggests that this may be attributable in part, to an increase in the area of plantations (which have increased by 462, 578 ha), and a decrease in the area of forest and high woodland (which have decreased by 768, 491 ha and 564, 411.5 ha respectively) (FAO, 2014). Indeed, elsewhere in the report forest deforestation since 2010 is estimated to be 1.25% per annum (FAO, 2014).

The land tenure system is complex, as it reflects Ethiopia’s history of feudal systems, as well as influence of the Derg regime, and more recently the emergence of private property rights. Today, there are pressures both to promote private property rights as well as to promote more socially equitable access. The majority of farmers have insecure land tenure, as all land is formally owned by the state, and farmers only have usufruct rights (Crewett et al. cited in Bezabih et al. 2014). Historically, gender norms related to property ownership, inheritance and division of assets after divorce have been unfavourable to women, and these have in turn resulted in negative social consequences (Kumar and Quisumbing, 2015).

To address the issue of insecure tenure the Government of Ethiopia (GOE), changed the Federal land law in 1997 and 2005, it has been implementing a land certification programme since 1998, and over 6 million land certificates have been issued. An assessment reported that the process was “participatory and cost-effective”, and that it reduced conflict, improved local level governance, and assisted to empower women (Deiniger et al., 2006). The smallest administrative unit in Ethiopia, is the *kebele*, and the land administration committees at this level had to contain at least one women.

The positive impact of land certification upon women has been substantiated by more recent research based upon analysis of rural household data; Kumar and Quisumbing (2015) report that the community-based land registration process which began in 2003, coupled with the impacts of the revised Family Code of 2000 <sup>5</sup>, have produced mutually reinforcing effects on women’s rights and welfare.

In February 2015 a National Taskforce on Women’s Land Rights was formed, the Taskforce will deliberate on women’s land rights issues and hopes to influence the formation and influence of land policy in Ethiopia (USAID, 2015).

## 1.2. Oromia region

The main ethnic group is the Oromo, although members from others groups have settled in the region. The approximate population growth rate in Oromia is 2.9 % per annum (CSA, 2007 cited in Kidane, 2012).

Following the GOE alternations to Federal land laws, the Oromia region issued a regional law in 2002 with corresponding rules and regulations for implementation.

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<sup>5</sup> The revised Family Code gives equal rights to women and men, in marriage, inheritance, and property.

Following this joint certification of husbands and wives took place, and where polygamy exists, certificates can be issued for a husband and his wives, or a husband's name can occur on those individual land certificates of each of his wives (Holdon and Tefera, 2008). Some researchers view joint land titling as an important first step to counter the historical patrilineal inheritance of land, however, males still tend to dominate household decision-making processes regarding land, and thus further empowerment and legal support for women is required to reduce gender inequalities (Holdon and Tefera, 2008).

### 1.3. Communities

Currently approximately 1.5 million people live in Bale Zone, and the main towns are Robe (48,000), Goba (33,000), and Dinsho *Woreda* (district) 40,000 people. The majority of the population are Oromo-speaking farmers and cattle herders.

Prior to the 1990s, human settlements were sparse and the area was inhabited by seasonal pastoralists who grazed their cattle in the highlands during the dry season, a practice referred to as *godantu* (Barbre, 2013). In the 1980s post drought resettlement and in the 1990s villagization programmes established settlements of people from the Northern regions. The expansion of agriculture in the lowlands forced the pastoralists to resettle permanently in the highlands (Stephens et al., 2001). Today in many areas permanent agriculture is practiced with the cultivation of barley and wheat commonplace, and some areas can support two crops per year due to high rainfall (Bussman et al., 2011). Whilst crops are cultivated, livestock tend to be grazed in the forest and afro-alpine higher elevation area (Bussman et al., 2011), and within the Erica heathland traditional fire management is practiced to improve pastures, provide fresh shoots for grazing, reduce pests, and to reduce livestock loss to predators (Johansson, 2013).

In the past communities had a wealth of traditional knowledge regarding medicinal plants, and in a nearby area anthropological research reported that 46 species were used in human medicine and 13 species for veterinary purposes. However, the authors commented that due to the provision of western medicine in rural areas, the traditional use of plants for healing purposes is declining and consequently traditional knowledge is also in decline (Bussman et al., 2011).

Muslims make up the predominant religion (77 %), Orthodox Christians (20 %), and Protestants (1%) (FZS, 2013).

### 1.4. Bale Zone and Bale Mountains

The Bale Mountains National Park (BMNP) is at the core of the Bale Mountains, the park was established in the late 1960s, it covers approximately 2,200 km<sup>2</sup>, encompasses mountains and forests, and was established to protect the afroalpine habitat (the largest area of this habitat type on earth). The Bale Mountains area contains the largest population of the endangered, endemic species of the Ethiopian wolf (*Canis simensis*) and Mountain Nyala (*Tragelaphus buxtoni*). (FZS, 2007). Unique plants are also found in BMNP, for example Lobelias and *Senecio* species, and the endemic plant populations are important reservoirs of plant genetic diversity (Kidane et al., 2012). The rainforests in the south of the park, the Harennna Forest, is the native habitat of wild coffee and



represent the second largest moist tropical forest in Ethiopia. The park also conserves the hydrological system of the Bale Mountains which provides fresh water and economic benefits to 12 million downstream users in SE Ethiopia, northern Kenya, and Somalia (FZS, 2007).

BMNP is a UNESCO worldwide Bio-Region, a potential world heritage site, one of 34 recognized Conservation International Biodiversity Hotspots, and an Important Bird Area (Kidane et al., 2012).



**Figure 1: The endemic Menelick's Bushbuck and Mountain Nyala**



**Figure 2: The Afroalpine ecosystem, habitat of the Ethiopian wolf**

### **1.5. Landscape change in the Bale Mountains Zone**

Landscape level land use change has been studied in the Bale Mountains region using remote sensing data, these studies indicate that over the past four decades there has been considerable transformation of the natural habitats, and in particular within the ecotone which exists between the afroalpine and afroalpine areas. The key drivers of land use change were reported to be rapid population growth and resettlement,

agricultural expansion, land clearing and deforestation, and intensified use of fire for management (Kidane et al., 2012). The most recent National Report to the CBD highlights that the Afroalpine and Subafroalpine Ecosystems which are found at altitudes of 3,200 – 4,620 masl are threatened by the increasing human and livestock populations and the expansion of agricultural areas. To address these issues, management and business plans for BMNP have been developed, and improved environmental management is underway (GOE, 2014).

Analysis of deforestation between 1986 and 2009 suggests that the annual average rate is 3.7% (Dupuy, 2009 cited in Watson, 2013), which is nearly three times the national average.

## **2. SACRED NATURAL SITES**

### **2.1. What are Sacred Natural Sites?**

Sacred Natural Sites are defined as “areas of land or water having special spiritual significance to peoples and communities” (Wild and Mcleod, 2008), the Nature component distinguishes these sites from Sacred Sites, which are areas of spiritual significance to peoples and communities. Sacred Natural Sites (SNS) are often perceived to be areas where individuals and communities can connect to Nature and the universe in meaningful ways. These sites are places of respect, religious practice, worship and veneration, often they have distinctive natural features, but they can also be found within the general landscape and be seen as ‘normal’ by outsiders. Virtually any landscape feature can be regarded as having spiritual values (Verschuuren and Wild, 2012) and SNS can be found at a variety of scales from individual features, such as a tree, water feature or rock outcrop, to landscape features such as mountain ranges.

### **2.2. Indigenous faiths and mainstream religions**

Sacred Natural Sites can encompass areas recognised as sacred by indigenous peoples as well as natural areas which institutionalized faiths and religions utilize for purposes of worship or remembrance (Oviedo and Jeanrenaud, 2007 cited in Verschuuren and Wild, 2012). Verschuuren and Wild (2012) highlight that most SNS are associated with either indigenous or mainstream religions (or the intersection of these), and that in the case of the former SNS typically relate to natural elements that are imbued with spirits that reside in nature, and the case of the latter SNS tend to relate to associations with a transcendent deity, religious person, saint or holy men rather than the natural elements of the site itself (Verschuuren and Wild, 2012). SNS are considered to include both spiritual and religious values.

### **2.3. Custodians, guardians and stewards**

Typically there are individuals who are associated with a specific SNS and ensure that they are looked after and that rituals and ceremonies performed within them are done so respectfully, they may be referred to as custodians, guardians or stewards. These people play a special role and take on certain responsibilities for the wellbeing of the SNS and the associated community, they may be shamans, spiritual leaders, and

keepers of the unique biological, cultural and spiritual knowledge associated with the SNS.

## 2.4. Global occurrence

It has been recently estimated that globally there may be over a quarter of a million SNS on Earth (Rutte, 2011). Within the African continent, a high diversity of SNS have been reported in countries including Kenya, Nigeria, Cote d'Ivoire, Togo, and Mozambique, however research has tended to focus upon the countries of Benin, Tanzania and Ghana (Dudley et al., 2010), in the case of the latter, at least 2000 sacred groves have been documented (Ntiemoa-Baidu, 1995 cited in Rutte, 2011).

## 2.5. Sacred Natural Sites in Ethiopia

In Ethiopia, a recent study reported, more than 8,000 church forests associated Orthodox church communities in the Amhara Regional State in the north of the country (Reynolds et al., 2015). In Southwest Ethiopia, research conducted by Doffana (2014) illustrated that the threatened 'yellowwood' tree (*Podocarpus falcatus*) owes its preservation to the maintenance of ancestral rituals; *P.falcatus* is a venerated totemic tree which personifies ancestors, and local people have maintained their belief system and rituals, which have resulted in the conservation of stands of these trees. Through these processes the community have preserved their genealogical roots and express their ethno-historical-identity (Doffana, 2014).

# 3. COMMUNITY CONSERVATION RESILIENCE ASSESSMENT

## 3.1. Objectives

The objectives of the Community Conservation Resilience Initiative (CCRI) assessment were the following:

1. To explore the roles of SNS for biocultural diversity and ecosystem conservation;
2. To assess the evolution and trends in SNS conservation since the 1960s to present day;
3. To evaluate threats facing SNS and management challenges facing their custodians; and,
4. To investigate the interaction between SNS and the socio-ecological resilience of the communities.

## 3.2. The community areas

Three communities participated in the CCRI assessment, they were from the *kebeles* of Aberkare, Dinsho-02 and Mio, all these *Kebeles* lie within Dinsho District, Bale Zone, Oromia region, Ethiopia. The landscape of Dinsho district is composed of gentle slopes and high mountain massifs which include plains and undulating areas as well as more hilly parts. The altitude ranges between 2800 and 4000 masl. The total area of Dinsho district is 6,036 square kms and the three *kebeles* are found on the borders of the BMNP.

The three *kebeles* were selected based upon their significance for conservation of BMNP, the challenges and threats facing community access to and sustainable



management of their natural resources and biodiversity, and the relative ease of accessibility of the areas. The total land area of the three *kebeles* is 17,169 ha which comprises approximately 30% of the total land area of the district (DWRLAEPO 2014).

Abekare *kebele* has a total area of 7,561 ha and 504 ha (7%) are covered by forests. It has 1,117 households (1028 males and 89 female households) and a total population of 9,139 people (Table 1). Relative to the other *kebeles* of the district it contains dense settlements and a high population (DWRLAEPO, 2014).

Dinsho-02 *kebele*, is 5kms distance from Dinsho town, the *kebele* was previously two independent *kebeles* (Zallo-Ababo and Karra-Arri), these were united in 1991 into Dinsho-02 *kebele*. The total area of the *kebele* 5,885 ha, of which 788 ha (13%) is covered by forests. There are 939 households (821 male and 118 female) within the *kebele* and the total population is 7,954 people (DWRLAEPO, 2014).

Mio *kebele* has a total land area of 3,723 of which 320 ha (9%) are covered by forests. The *kebele* has 602 households (564 male and 38 female households) and a total population of 8,680 people. Mio *kebele* plays an important role for potable water contribution within Bale zone; more than seven districts within Bale zone receive their drinking water from this *kebele*.

**Table 1: Household and population number in the three selected kebeles**

<i>Kebele</i>	House Holds (HHs)			Population Number		
	Male	Female	Total	Male	Female	Total
Abekare	1,028	89	1,117	5,070	4,069	9,139
Dinsho-02	821	118	939	4,942	3,012	7,954
Mio	564	38	602	3,450	5,230	8,680
<b>Total</b>	<b>2,413</b>	<b>245</b>	<b>2,658</b>	<b>13,462</b>	<b>12,311</b>	<b>25,773</b>

(Source: DWRLAEPO, 2014)



**Figure 3: Ploughing agricultural land neighbouring a SNS, Dinsho-02**

The main economic activities of the selected *kebeles* are agricultural, including animal husbandry and crop production (Figure 3). All the three *kebeles* are located in high land areas of Bale zone, cattle, sheep and horse are the main livestock of the area, and vegetables, wheat, barely, beans, lentils, cabbage and garlic are the main crops produced. Both the agricultural and animal husbandry systems are extensive production systems and for subsistence purposes (Dinsho district Agricultural and Rural Development Office).

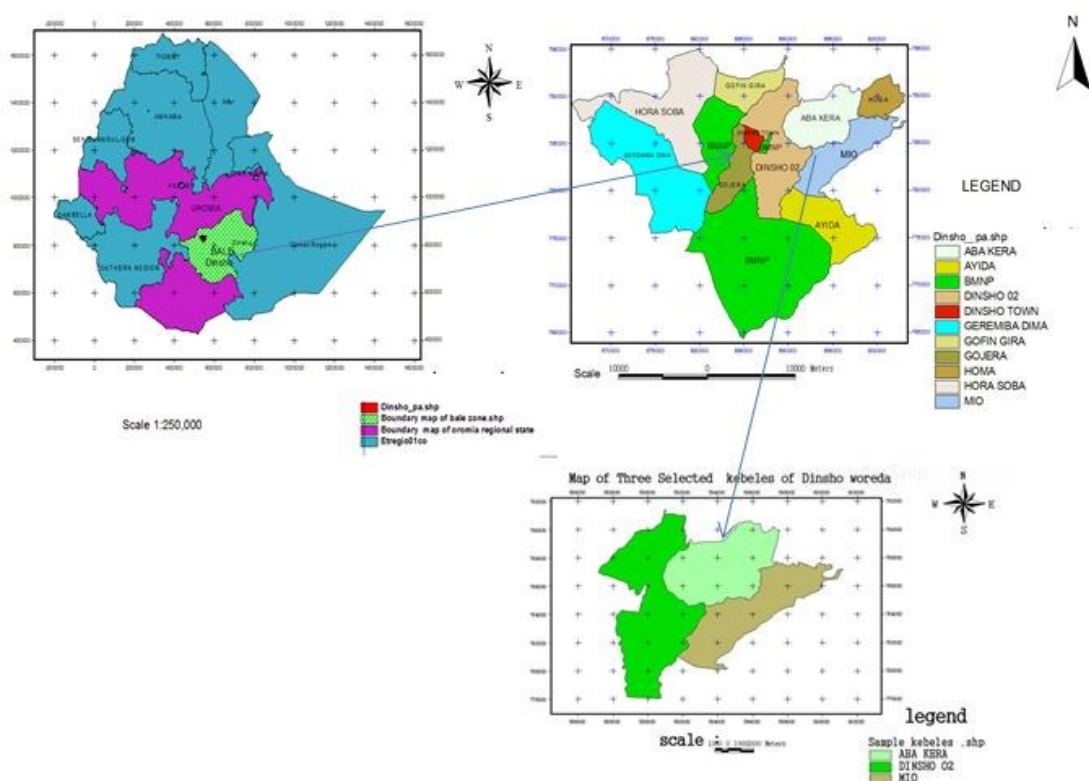


Figure 4: Maps showing Ethiopia and Oromia Region, Bale Zone, and the three selected *kebeles*

### 3.3. Community members participating in the resilience assessment

Within each *kebele* participants in the assessment were drawn from elders, women and youth; in total 96 community members participated, 50% of these were elders, and 30% women (Table 2).

Table 2: Participant number and category within each of the three *kebeles* involved in the assessment

<i>Kebele</i>	Number of respondents (sample size)			
	Elders	Women	Youth	Sub-total
Abakera	20	10	10	40
Dinsho-02	15	8	9	32
Mio	10	7	7	24
<b>Total</b>	<b>45</b>	<b>25</b>	<b>26</b>	<b>96</b>
<b>Average age</b>	<b>67</b>	<b>55</b>	<b>26</b>	<b>-</b>

### 3.4. Methodologies

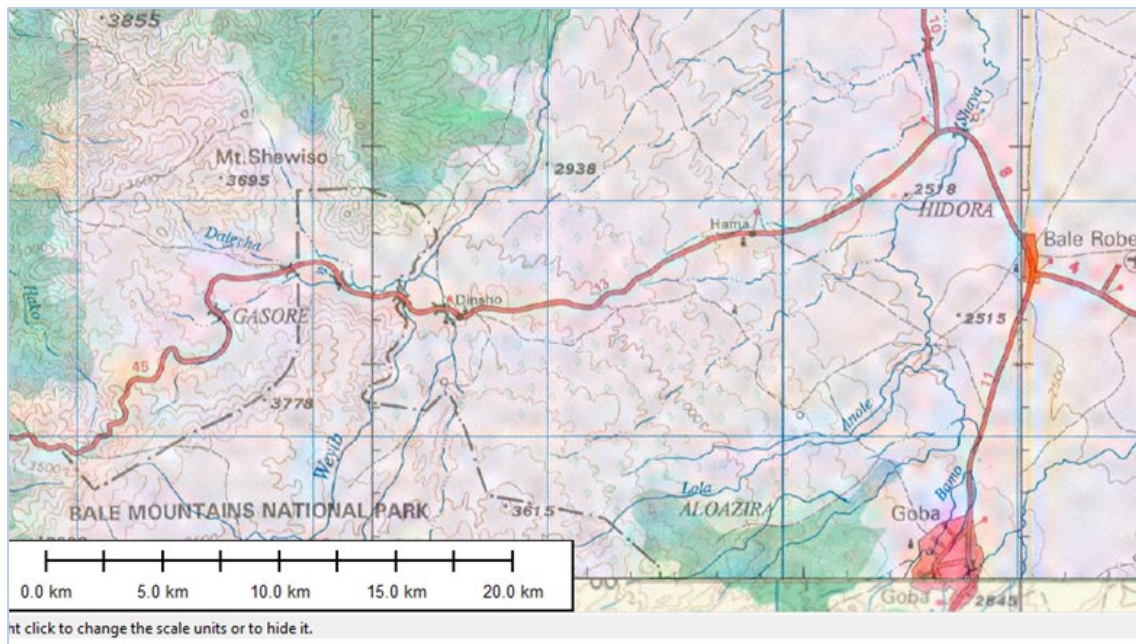
#### 3.4.1. Sources of data and data collection

Quantative and qualitative data were collected through a variety of methods which are explained in more detail below.

##### 3.4.1.1. Participatory sketch mapping

Participatory sketch mapping (PSM) was conducted in each of the three *kebeles*. Basic topographic maps were produced by digitizing 1:50,000 maps and scaling them up to

1:8,000 for each *kebele*, and then enlarging these to a suitable size for PSM (Figure 5). Only key reference points were kept on these maps, these included roads, rivers, mosques and churches. A similar base map of the 3 *kebeles* was also produced by enlarging a 1:50,000 map to 1:16,000 scale.



**Figure 5: Topographic map of the study area**

During each PSM exercise at the *kebele* level, participants were orientated using the key features and then the aim of the mapping exercise explained, which was to produce two maps, first a map of historical SNS, and then a separate map of existing SNS (Figure 6). Bio-physical features connected to historical and existing SNS, such as water sources, e.g. springs, streams and wetlands, hillslope, and forest cover were recorded. Discussions during the PSM exercise also revealed social, cultural, ecological, and economic aspects of the SNS.



**Figure 6: Orientation at the start of the PSM process**





Figure 7: Discussions during the PSM process



Figure 8: A close-up view of the map produced through PSM by participants in Dinsho-02 kebele



Figure 9: Participants display historical and present SNS maps produced through PSM

#### 3.4.1.2. Transect sampling and visual encounter surveys

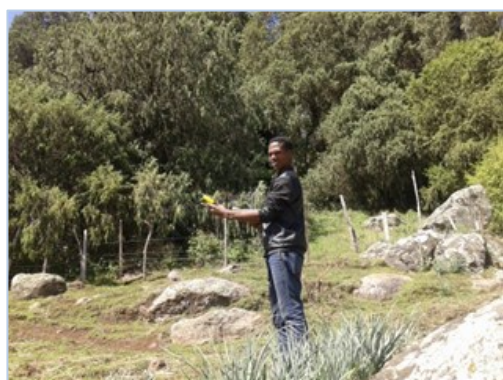


Figure 10: Spatial data capture using handheld GPS

Transect sampling is a useful technique to practically map and observe the locations of current SNS and to evaluate their status and area covered. This technique was used to capture the locations, extent and bio-physical features of existing SNS based upon the results of the PSM within each *kebele*. Geographic Positioning Systems (GPS) were used to capture the spatial locations of SNS during the transect walks (Figure 10). The visual encounter survey (VES) was used to map the location of bio-physical features associated with the SNS, and these were recorded on a note book.

#### 3.4.1.3. Focus group discussions

The focus group discussion (FGD) methodology was employed to gather qualitative data from participants. Local people who are reliant upon the local natural resources and who regularly interact with their local environment through their daily activities are often particularly aware of environmental changes and their impacts, and it is preferable to engage with this group regarding studies of an ecological nature (Dawson *et al.* 1993). Thus, participants for the FGDs were drawn from this group. Within each of the *kebeles* a FGD was conducted with 6-8 participants at the end of the PSM process (Figure 11), and then a combined FGD was organised with approximately 16 participants from each of the *kebeles*. The FGDs were informal and each started with a coffee ceremony. During the FGD ideas, beliefs, practices and behaviours regarding the SNS were further explored and elaborated, and the roles of SNS for conservation within the context of socio-ecological resilience (SER) explored.



Figure 11: Focus group discussions

#### 3.4.1.4. Historical time series data collection

To complement the quantitative data on historical and existing SNS, historical time series data collection was employed with the aim to reveal the oral histories of SNS through time since the 1960s and to tie these in with major socio-political events. To achieve this, community elders were targeted, *kebele* chair persons were asked to recommend suitable elders who had a strong awareness of their environment, and who had been



living in the area for the past 40-50 years. These elders composed 50% of the total participants in the assessment, their ages ranged between 57-72 years, with an average age of 65 years. These elders identified key historical periods, impacts upon SNS and discussed social-ecological resilience issues. The historical time series data was collected through FGD, key informant interviews and informal interviews with the elders (Jones et al., 2006; Christensen and Krogman, 2012).

#### 3.4.1.5. Community validation of data collected

A community validation workshop was organised with 20 of the 96 community participants who had conducted the resilience assessment and four relevant government officials from Dinsho District (Figure 12). The initial results were presented and discussed in detail, this process ensures that there were no crucial misunderstandings or bias from the facilitator (Bryman, 1988; Lincoln and Guba, 1985).



Figure 12: Community validation of data collected

### 3.5. Analysis

The quantitative data, including the number, spatial distribution, and extent of SNS were analysed using ARCGIS and ARCMAPS software data analysis methods (Bazeley 2006; Teddlie and Tashakkori, 2006; Onwuegbuzie and Johnson 2006). The results from the PSM, transect sampling and VES were triangulated against one another for accuracy.

The qualitative data collected through FGD and semi-structured interviews was analysed using SPSS. The historical time series data was analysed in a similar way to institutional history analysis methods (Shambu Prasad et al., 2006), and the free hand curve measurement of secular trends. The significance of SNS for cultural, social and economic values was collected through closed questions (“yes” or “no”), followed up with more questions exploring these perceptions.



### 3.6. Findings of the community resilience assessment

#### Testimony: A Sacred Natural Site is...

“A Sacred Natural Site is;  
A place of love,  
A cultural place;  
A home for wildlife;  
A source for water;  
A place where people gather together, to help one another and people in need;  
A place where we conduct worship;  
In times of drought, a place where we pray to God for the rains to come;  
A place where conflicts between neighbours or religions can be resolved;  
A place where people of different religious faiths can come together and pray for peace.”

**Adam Tura, Elder, Abekare kebele**



(Photo: Cath Traynor)

#### 3.6.1. Community perceptions: Sacred Natural Sites

The participants in the CCRI assessment were asked to describe what their SNS meant to them. The responses were varied, but there were common themes amongst them all, and the description of SNS, by the elder Adam Tura, of Abekare kebele, provides an excellent description, which captures the key elements. SNS offer a space where conflicts can be resolved, and one participant commented that this was because within the SNS people always spoke the truth. Some respondents also highlighted that the SNS are places of healing, and that when community members were ill, particularly with mental illnesses, they would be brought to the SNS, and they would be healed. Many respondents reported that prayers conducted within the SNS were answered swiftly, and many reported deeply personal experiences regards fertility and childbirth, where prayers, ceremonies and rituals associated with the SNS resulted in positive outcomes.

#### 3.6.2. Historical and present Sacred Natural Sites

The mapping of historical SNS through PSM identified 73 SNS within the 3 kebeles, and transect sampling and VES produced 72 historical SNS, thus, 72 is taken as the number of historical SNS (Figures 13 and 14). Of these 72 historical SNS, 96% were hills, knolls or mountains. Sixty-nine of the SNS were covered by indigenous forests, and only 3 were composed of an individual tree, or a small stand of trees or shrubs. These historical SNS were strongly associated with biophysical features such as springs, wetlands, streams, and wildlife. The area of individual SNS ranged from 0.14 -146 hectares, and in total the 72 historical SNS covered an area of almost 400 ha. All of the

historical SNS were important for cultural values, and 70 for social, economic and/or ecological value (Table 3).

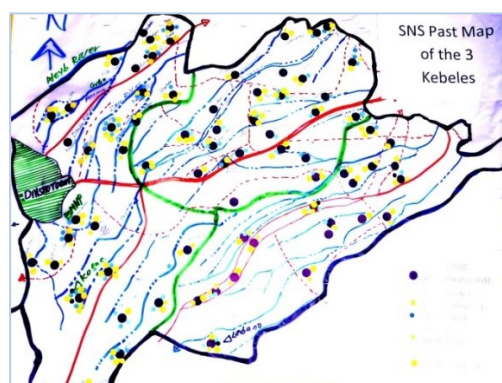


Figure 13: Map of historical SNS in 3 kebeles produced by PSM

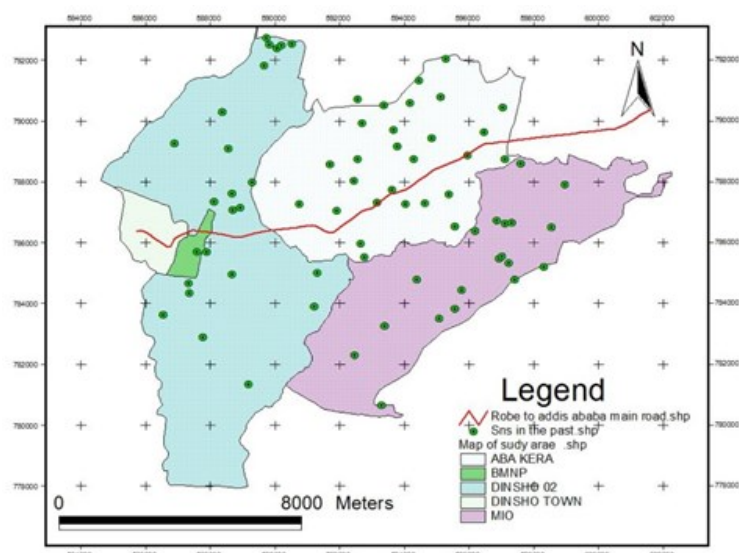


Figure 14: Map of historical SNS in 3 kebeles captured in ARCGIS

Table 3: Number of historical SNS, their bio-physical characteristics and importance for SER

Kebeles	Total SNS	SNS forested	SNS few trees	Land area of SNS (Ha)	connected biophysical ecosystems					Connected SER			
					Spring	Wet land	Streams	Mammals & birds	Only birds	Cultural	Social	Economic	Ecological
Abakera	26	25	1	77.5	22	7	5	24	1	26	25	25	25
Dinsho-02	26	24	2	230.4	25	7	3	24	1	26	25	25	25
Mio	20	20	-	88.7	17	5	4	19	-	20	20	20	20
<b>Total</b>	<b>72</b>	<b>69</b>	<b>3</b>	<b>396.6</b>	<b>64</b>	<b>19</b>	<b>12</b>	<b>70</b>	<b>2</b>	<b>72</b>	<b>70</b>	<b>70</b>	<b>70</b>

The PSM and transect sampling and VES revealed that of the 72 historical SNS, only 18 SNS remain within the 3 *kebeles* studied, these are termed 'present' SNS (Figures 15 and 16). The present SNS are all covered by indigenous forests, they cover approximately 217 ha in total (Table 4).

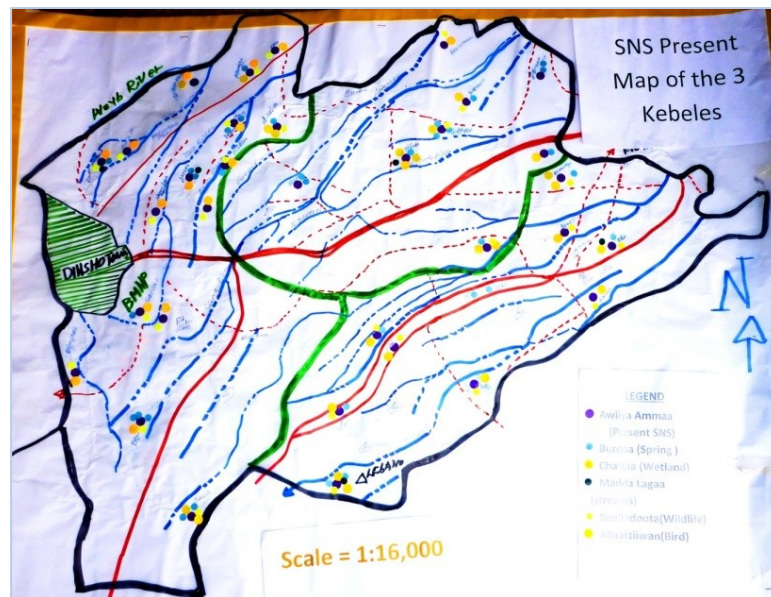


Figure 15: Present SNS and biophysical features produced through PSM

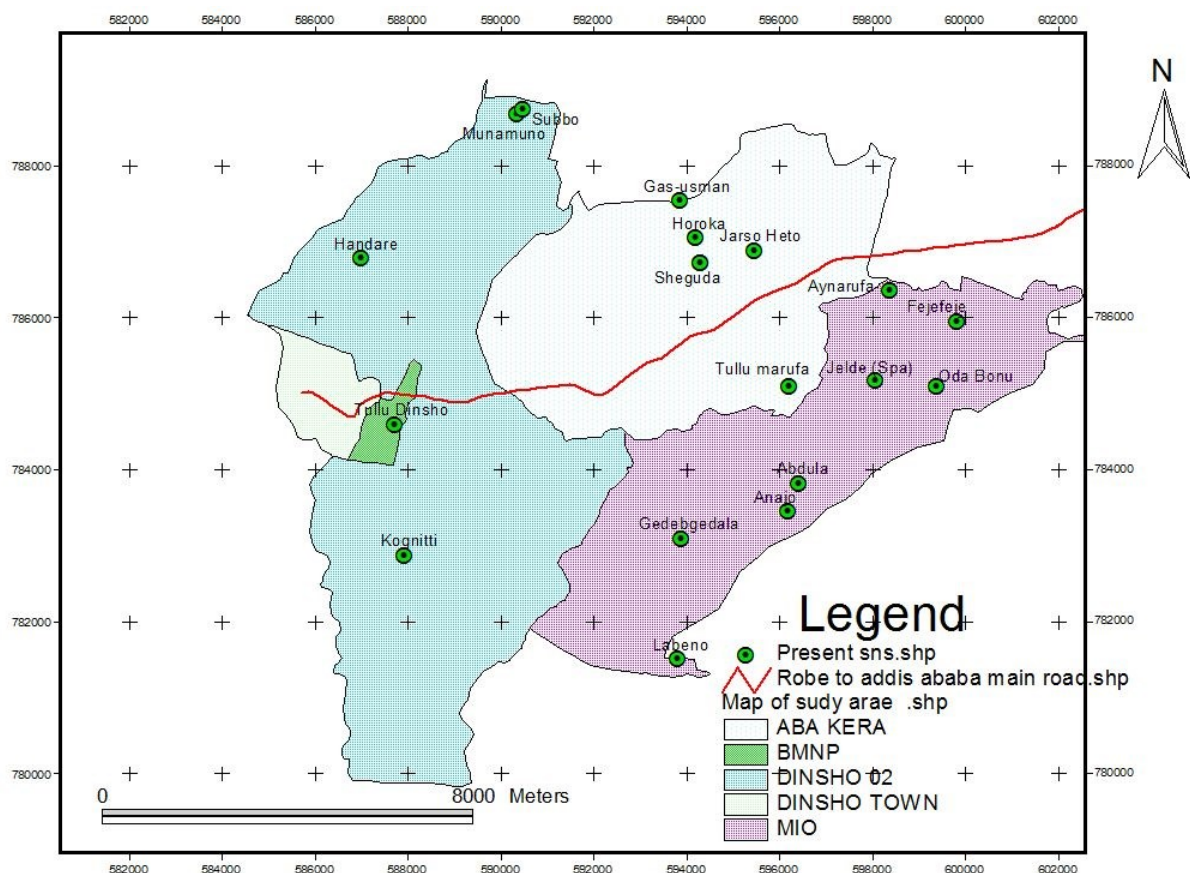


Figure 16: Present SNS captured in ARCGIS



Table 4: Summary of the Identified Present SNS and other connected ecosystems

Kebele	Total SNS	SNS forested	Destruction &/or destructed SNS	Land area of SNS (Ha)	Connected biophysical ecosystems					Connected SER			
					Spring	Wet land	Streams	Mammals & birds	Only birds	Cultural	Social	Economic	Ecological
Abakera	5	5	21	9.17	13	3	2	5	9	1	1	5	5
Dinsho-02	5	5	21	157.13	12	3	2	5	8	1	1	5	5
Mio	8	8	12	38.17	12	1	4	8		2	2	8	8
<b>Total</b>	<b>18</b>	<b>18</b>	<b>54</b>	<b>204.5</b>	<b>37</b>	<b>7</b>	<b>8</b>	<b>18</b>	<b>17</b>	<b>4</b>	<b>4</b>	<b>18</b>	<b>18</b>

### 3.6.3. National socio-political development since 1960's and their impacts upon Sacred Natural Sites

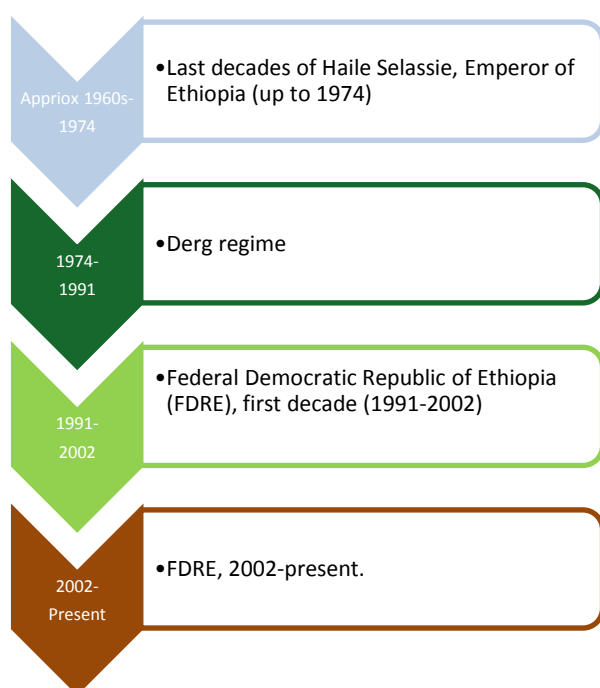


Figure 17: Key historical time periods influencing SNS since 1960s

Following on from the results of the mapping which illustrated historical and present SNS, the elders, were then encouraged to discuss in more detail how SNS conservation practices had changed over the past half century, and to identify some key influential factors. These discussions revealed that national socio-political developments within Ethiopia have had a major impact on SNS, and the elders identified four key historical time periods: (i) the last decades of Haile Selassie, Emperor of Ethiopia (up to 1974); (ii) the Derg regime (1974-1991); (iv) the Federal Democratic Republic of Ethiopia (FDRE) (1991-2002); and, (iv) the FDRE 2002-2015 (Figure 17).

The discussions revealed that during the last decades of the reign of Haile Selassie as Emperor of Ethiopia, the SNS were conserved. At this time the land tenure of the forests (which included the SNS as the majority were covered in forests), were classified as either, state forest, private forest, or protected forest, and all forests were well conserved. Land ownership was clear and owners were responsible for forest conservation and they were not permitted to destroy SNS, which were distributed throughout the landscape. Settlements were scattered, the population density was low, and there was little pressure upon natural resources, for example, wood was collected for fire wood and other uses, however, selling these resources was unprecedented and

considered an odd practice. At this time the spiritual and emotional connection of the communities to their SNS was strong. Towards the last years of Haile Selassie's reign as Emperor, there were calls for land reform from the peasants who were subject to the decisions and practices of their land lords. In 1974 the police and the armed forces established the Derg, a co-ordinating committee, which gradually became powerful.

In September 1974, the military arrested and imprisoned Haile Selassie, and the Derg took power. They introduced the land proclamation law for Peasants in 1974, in March 1975 they officially abolished the monarchy, and they began to implement the Land Reform Bill, which made private land ownership illegal, and permitted collective land use under *kebele* councils. At this time, with the exception of settlements, virtually all the land was forested, however, following the Land Reform Bill, and the hunger for grazing and farm land, forests were converted for agriculture, and degraded due to grazing pressures and through over-harvesting forest products.

The Derg embraced communism and in the 1980s it implemented collectivization, villagization, and resettlement programmes, which had devastating impacts upon forest cover and resources (Tarekegn, 2001; Messay and Bekure, 2011). These programmes were carried out on a large scale, and were accompanied by extensive deforestation and soil erosion. In the study area, the re-settlement of communities into *Kebeles* damaged SNS and forests, as forest resources were used for building construction. A key impact of the Derg regime resettlement programme, was that existing communities who had a close association with a SNS were moved and relocated away from the SNS. This had a double impact, first the community were no longer able to conserve the SNS and protect it from destruction, furthermore, they were relocated to new areas, where they did not have knowledge of or close ties with SNS in those areas. As a result, the spiritual, social, cultural, ecological and economic connection between SNS and the community of areas were detached. Thus, more than 35 % of the SNS territories within the assessment area were damaged during the early period of the Derg regime and up until it failed in 1991

Since 1991 up to the assessment date (2011-2015), the participants reported that SNS were destroyed and damaged during the transition period (1991-1992), up to when Ethiopia was granted full independence in April 1993. In this period, there has also been a general lack of understanding concerning the values that SNS represent, and custodians have been the target of psychological campaigns to undermine them and their respect eroded. There has also been a government policy to provide land to unemployed youths, and the implementation of this has included that some SNS lands were re-allocated to youth. Land shortages have also meant that some religions have also begun to use SNS land as burial sites (Table 5, Figures 18 and 19).

**Table 5: The trend of SNS conservation practices since 1960s**

Dates	Historical period	No of SNS	Conservation status		
			High	Medium	Low
1960s-1974	Last decades of Haile Selassie	72	✓		
1974 - 1991	Derg regime (1974-1991)	42			✓
1991 - 2002	FDRE(1991-2002)	30			✓
2002 - 2015	FDRE (2002-2015)	18		✓	

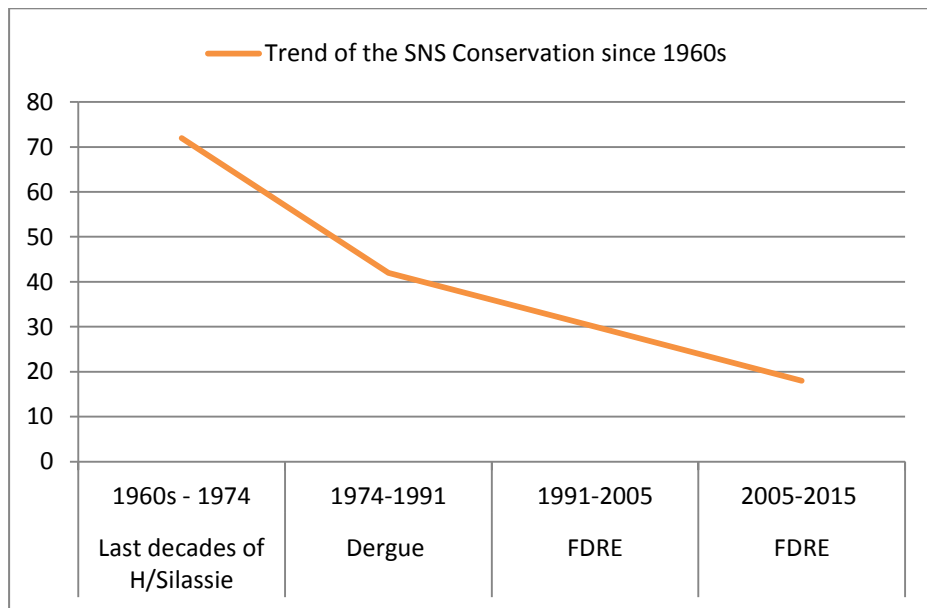


Figure 18: The decreasing trends of the SNS from 1960s - 2015

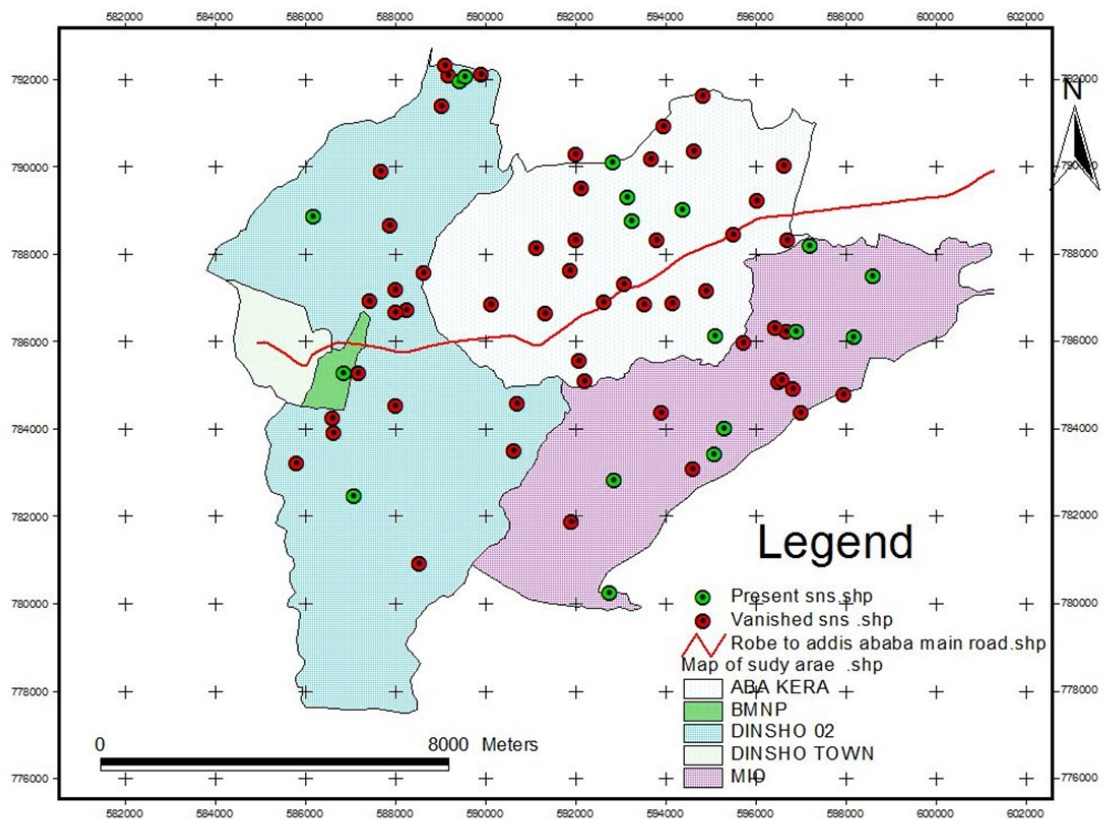


Figure 19: Map illustrating the historical SNS which have been destroyed/vanished and existing SNS



### 3.6.4. Sacred Natural Sites and biophysical ecosystems

#### 3.6.4.1. The association between SNS and water sources

The assessment revealed that of the 72 historical SNS, 69 of them were covered by forests, and of these 42 (60%) were associated with water sources (63 springs, 12 streams and 19 wetlands were reported). The widespread distribution of historical SNS across the landscape and the strong association with water sources (Figure 20) meant that in the past individual settlements and villages had access to fresh water. Participants reported that in the past, the water volumes in rivers and streams was high and that most flowed throughout the year, furthermore, the wetlands were also deep, they too contained high volumes of water, which were discharged perennially.

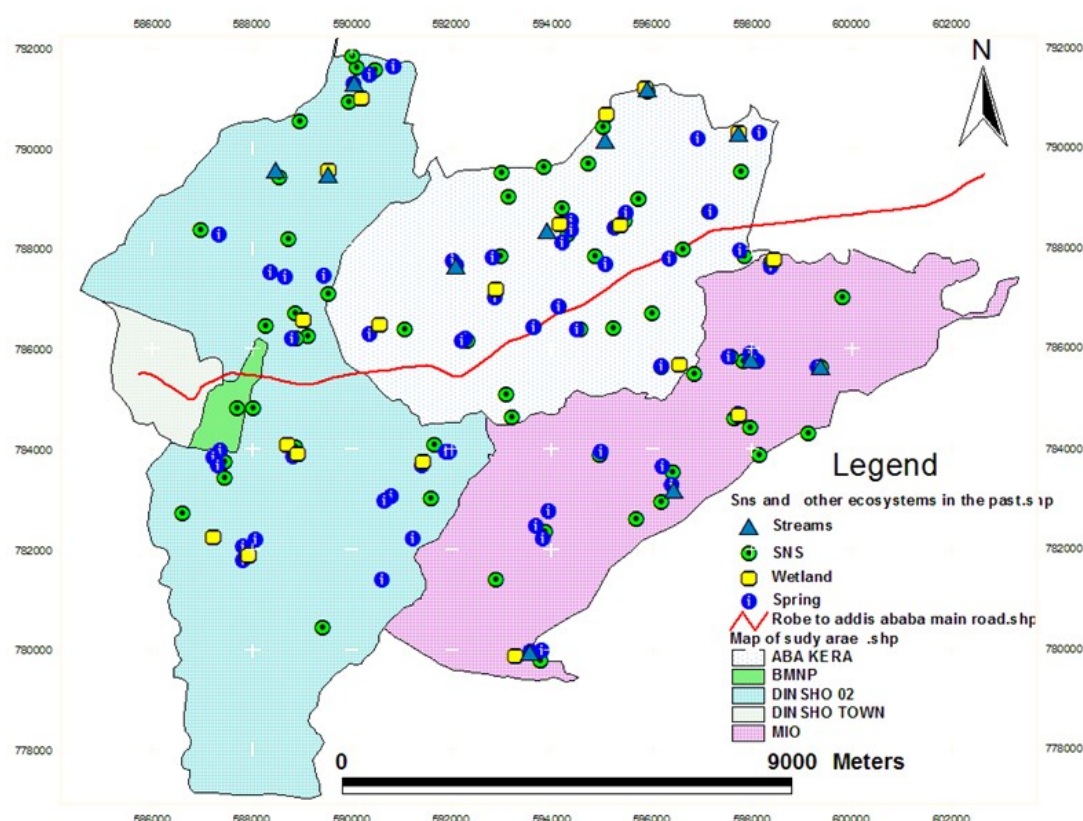


Figure 20: Historical SNS and associated water sources

The map of present SNS and associated water sources revealed that the number of water sources has declined in parallel with the decline in SNS, the number of springs decreased from 63 to 36, streams from 12 to 8, and wetlands from 19 to 8 (4 of which are reported to be drying up). In the past 43 SNS discharged water, whilst presently only 17 do so, and the participants stated that the volumes of water are much lower than those in the past, and it has decreased at an alarming rate (Figure 21).

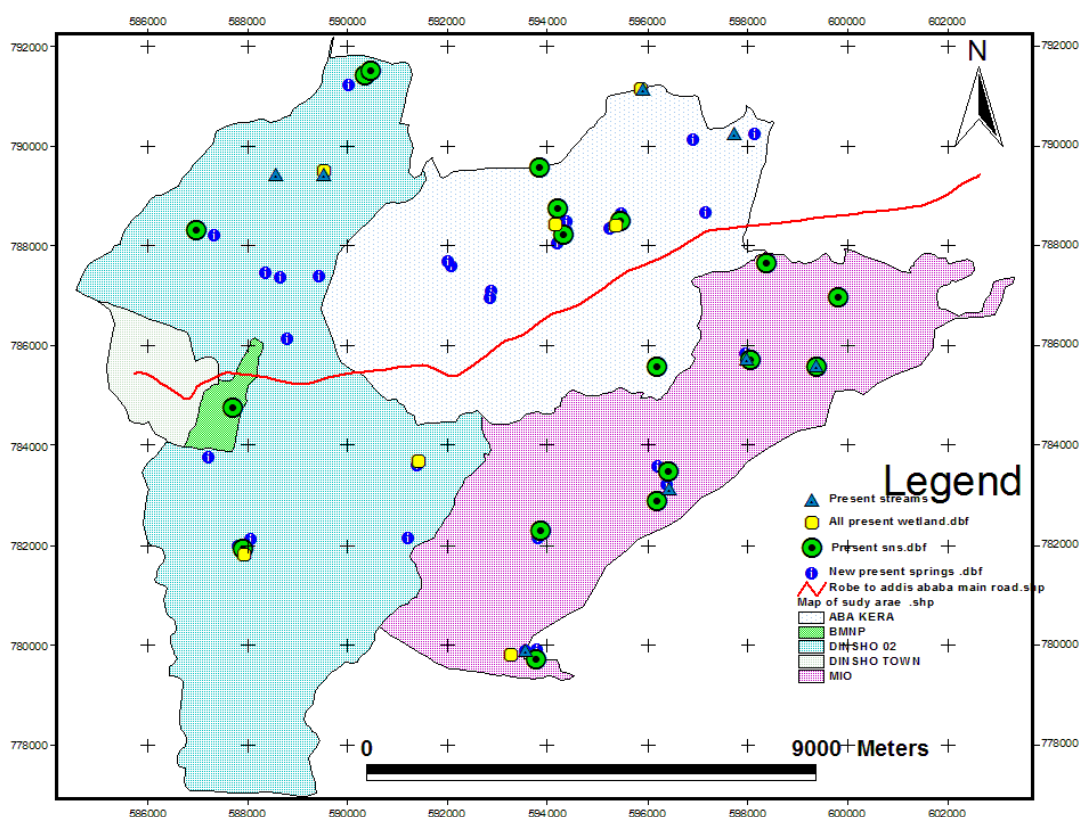


Figure 21: Present SNS and associated water sources

#### 3.6.4.2. The association between SNS and flora and fauna

The assessment revealed that of the 72 historical SNS, 96% (or 69) were covered by indigenous forests, these forests provided a habitat for wild animals, and participants stated that in the past lion, leopard, wild dog, Hyena, Jackal, warthog, Duiker, Bohor Reedbuck, Mountain Nyala, Serval Cat, Civet Cat, Caracal and Aardvark were all found within the SNS and the *kebeles* (Table 6).

Table 6: Summary of the identified SNS and others biophysical ecosystems

Kebele	Period	Features associated with SNS			Connected biophysical ecosystems			SNS hosting wild animas
		Total SNS	SNS covered by forests	Areas coverage (Ha)	Spring	Wet land	Streams	
Abakera	Past	26	25	77.49	22	7	3	25
	Present	5	5	9.17	13	3	2	4
Dinsho-02	Past	26	24	230.4	25	7	4	24
	Present	5	5	157.13	12	4	2	5
Mio	Past	20	20	88.71	17	5	5	20
	Present	8	8	38.17	12	1	4	9
Total	Past	72	69	396.6	64	19	12	69
	Present	18	18	204.47	37	7	8	18

Today, all of the remaining 18 SNS are covered in indigenous forests, and the dominant tree species are *Hypericum revolutum*, *Rapanea simensis*, *Hagenia abyssinica*, *Erica arborea*, *Schefflera volkensii*, *Discopodium eremanthum* and bamboo tree and *Olea Africana*, and the dominant herbs are *Euphorbia dumales* and *Solanum giganteum* and plus *liana*. Regards fauna, of the 13 mammal species which frequented the SNS in the past, 5 species, namely lion, leopard, wild dog, civet cat and Aardvark have totally vanished from the area, and four have become rare. Respondents said this was due to disturbances within SNS as well as the surrounding landscape. Medicinal plants were abundant within the SNS in the past, and the sites also provided useful shade for wild and domestic animals. Generally, existing SNS are less connected with biophysical ecosystems and wild animals than in the past (Figures 22 and 23).

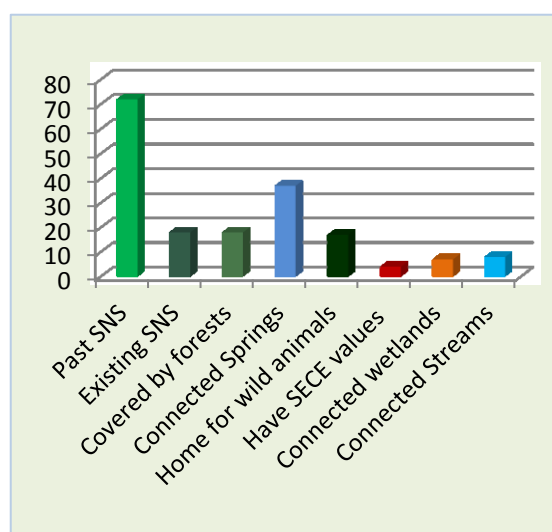


Figure 22: Existing SNS and Connected biophysical ecosystems

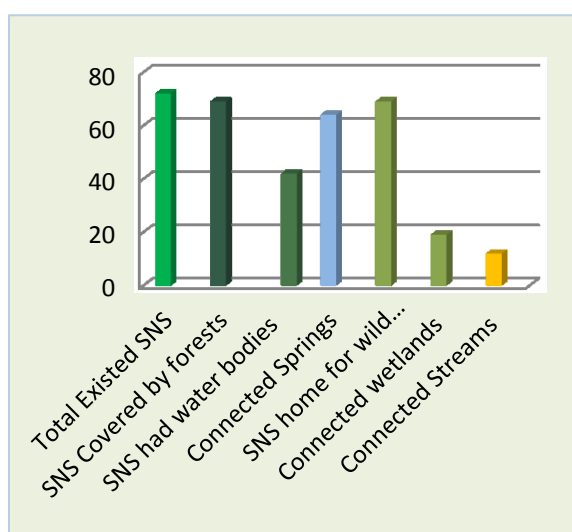


Figure 23: Historical SNS and connected biophysical ecosystems around 1960s

### 3.6.5. Sacred natural sites and biocultural conservation

#### 3.6.5.1. Roles of custodians for conservation

Within the communities there are custodians who take responsibility for the SNS, these custodians have a variety of local titles, including *wembera*, *kalu*, *boku* and *bahira*. According to the participants, individuals carrying the title *wembera* are responsible for mobilizing the communities to conserve their SNS and creating a sense of ownership. The community members recognized and respected the custodians and their guidance was widely accepted.

In the past, the communities paid special attention to the SNS custodians, and the participants indicated that prior to the Derg regime, the SNS custodians worked towards raising awareness within their communities regards the conservation of nature and culture.

### 3.6.5.2. Roles of community for conservation

Beautiful landscapes that were rich in natural resources were selected as SNS, and this was an indigenous approach to conserve biodiversity, and is referred to as *Awlia*. In the area, SNS or *Awlia* means lover of God, faith in God, or place of peace, and these areas were exceptional examples where deep relationships between the communities and Nature were developed.

The communities had been worshipping at the SNS for over ten generations, and as those who wished to worship in these areas had a strong moral obligation to conserve all living things within the boundary of the SNS. Indeed, the main criteria to join the members who worshipped within the SNS was to live in harmony with all living things, and thus the communities have been actively practising biocultural conservation for generations. Furthermore, the flora and fauna found within the SNS were referred to locally as '*woyoma*', which means 'respect'. Thus, the SNS were bases of humanitarian and harmonious thinking since all living things were equal with human beings.

The SNS were clearly demarcated and the harvesting of young trees and plants from within their boundaries was prohibited, and the collection of dry wood was only permitted for ritual ceremonies. There were also clear rules regards wildlife, and hunting within the SNS was prohibited, and any animals which were being hunted outside the SNS and escaped into the SNS were allowed to live.<sup>6</sup> Plants and wildlife found within the SNS boundaries were protected. Thus, the SNS acted as breeding areas for wildlife and also sources of seeds for trees and plants, as these areas were largely undisturbed and also secure. The communities also reported that within the SNS human-wildlife conflict was uncommon.

Transgressing these rules was considered sinful and people doing so were regarded as *mujaza* (a person who carried out unethical or unacceptable actions) and they would be cursed or banned by the entire surrounding community, thus demonstrating the full support of the community for the SNS rules and regulations.

### 3.6.5.3. The social significance of Sacred Natural Sites

*Awlia*, as referred to above, is the local name for SNS within the study area, and as peaceful places the SNS play an important role in enhancing the social bonds within the local communities. There are informal norms associated with SNS, for example, dispute resolution mechanisms, whereby the elders associated with the SNS are always available to assist individuals to resolve conflicts within and between families, neighbours and their society in general. The essence of the SNS, is as a centre of tolerance, an area free of discrimination and dominance, a centre of harmonization, hospitable to all humans as well as fauna and flora. The SNS are seen as a multi-social system of equality and democracy.

The SNS are rich sources of social capital and values, such as trust, norms, commitment, reciprocity, sanctions, and societal connectedness.

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<sup>6</sup> Tesfaye Abera, Mio Kebele.



Associated with the SNS are societal norms associated women, they have special roles within the SNS, they are highly respected within the SNS, and worship and rituals.

### **Testimony: Sacred Natural Sites - women & Sinqe stick**

Women highlighted that they have clear rights within the SNS, for example, women who carry a 'Sinqe'<sup>4</sup> stick were respected; if a woman's husband has attacked or hurt her, she and two other women will gather and publically shame their husbands, in what is referred to as an "illite". They will yell and shout in the SNS, other women will hear them and come and join, raising their voices together and the husband will then slaughter a bull to apologise to his wife; within SNS there was a customary norm of non-violence towards women, and no SNS ceremony was considered complete without the participation of women.

The women would look after the stick, and keep it beautiful, by treating it with oils. When they attended the SNS ceremonies, they would carry the stick, and also grass with its point' (i.e. grass which had not been cut), and they would walk to the SNS. When others saw them with their stick, no one would cross their path, or push in front of them, people would give them space and let them to walk first. Women stated that when they carried their stick to the SNS, and gave their prayers, their prayers were answered quickly. The stick is only for the woman intended, no-one else can use it.

**Hadjiussein & Seada Inbrahim, Dinsho-02 Kebele**



Photos: Cath Traynor

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<sup>7</sup> A Sinqe has been described in the literature as a ritual stick granted to women by their mothers, to perform ritual, as "well as to symbolize her hanfala (feminine) migra (rights) and wayyoomaa (respect).[Hussein, 2004: 113.]

### Testimony: Gender issues

“Sacred Natural Site ceremonies without women are considered incomplete.”

**Kebabush Senbeta,  
Abakera Kebele**



Photo: Cath Traynor



**Figure 24: Agricultural tools stored within the SNS trees**

The SNS also served as one of the areas to develop, ratify, and announce community customary laws.<sup>8</sup>

The SNS also served as safe places to store or reserve materials, for example during the CCRI assessment, the author Tesfaye Tolla, observed that agricultural tools were stored under trees within the SNS (see figure 24).

Generally, discussions with the community participants revealed that there is a strong bond between the SNS and society, and that the SNS played a significant role regarding social values and norms.

#### **3.6.5.4. Cultural significance of Sacred Natural Sites**

The worship,<sup>9</sup> ceremonies,<sup>10</sup> and rituals<sup>11</sup> practiced within the SNS by the custodians and community members is culturally significant, as an important part of these activities includes a variety of thanks giving chants, and cultural hymns and songs. Poems were also composed in the local language and readings performed as part of the activities. The custodians were very careful and specific regards the words they used during activities, and these tended to have multiple and abstract meanings. Cultural musical instruments, such as drums were used, and musical arrangements composed and performed. Many of these musical instruments were crafted by community members

<sup>8</sup> Nigussie Shime, Mio Kebele.

<sup>9</sup> Defined here as the expression or feeling of reverence and adoration for a deity.

<sup>10</sup> Defined here as a public occasion, especially one celebrating a particular event, anniversary or achievement.

<sup>11</sup> Defined here as a solemn ceremony consisting of a series of actions performed according to a prescribed order.



using local sources of materials, and they played important roles in community identity, inheritance and art.

The combination of continuing to actively participate in worship, ceremonies and rituals within the SNS, and that these activities are composed of a variety of cultural aspects and activities, performed in the local language, means that the local culture is not only sustained but also dynamic and developing.

### 3.6.5.5. The spiritual significance of Sacred Natural Sites

The discussions during this assessment indicated that those worshipping at the SNS had developed strong spiritual and emotional attachments with the SNS as well as the surrounding community members. The worshippers evaluated the benefit of SNS spiritually rather than in material terms, and when they observed increases in the number of wild animals and the health of the ecosystems within the SNS, they considered this a sign of good fortune and believed that God accepted their prayers and responded to them.

Generally, the communities believe that there are very strong spiritual powers associated with the SNS, and they also believe that the areas had their own guards, such as leopards and snakes, which protected the SNS from bad spirits. Furthermore, the assessment results indicate that even today, the flora and fauna within the SNS are

not generally targeted for harvesting, not because of environmental laws, but primarily because people fear being cursed by the elders. Thus, the belief that SNS are areas where spirits are strong and powerful, influences people's behaviour within the SNS, interaction between fellow worshippers, and also an individual's own spiritual feelings and connections.

For many there was a profound level of connection between the community and their SNS, perspectives were very holistic. SNS were also closely associated with healing, a traditional healer from Mio kebele, explained that he healed community members with medicinal plant parts gathered within the SNS, and in his lifetime "cutting of one tree is like killing a man".

The SNS and the custodians were associated with healing in many different ways; a community member from Mio kebele stated that "if someone from the community is sick, especially with a mental illness, people will take them to the SNS, they will be healed and able to go on their own without

#### **Testimony: Connectedness**

"Our lives are directly attached to Sacred Natural Sites: We live on it, and under it, we get our rain and good water from them, our day-to-day life depends upon the SNS. As we like our life, we have to conserve our Sacred Natural Sites."

**Mio, Community member**



Photo: Cath Traynor

help”. Many interviewees, shared personal experiences relating to fertility issues, and the positive influence of the SNS, custodians and community prayers regards overcoming infertility, and/or helping to produce boys or girls – when their existing children were all of the same sex. There was no selection for a particular sex, rather parents hoped for families composed of both boys and girls. One interviewee who had been married for four years but was childless, described how the custodians organised a praying programme for him, the custodian predicted he would eventually have seven children, and indeed he did. Another described how 50 years ago there was a cholera outbreak, his mother sought sanctuary in the SNS, where she avoided illness and eventually gave birth to him, he was born because of the SNS and has recently been working to revive them.

#### **3.6.5.6. The economic significance of Sacred Natural Sites**

Within the SNS the main purpose of worship and praying are to wish good fortune for the community and others, donating to needy people, and to pray for rains or it's optimisation. These aspects have a bearing upon the economics of the community and its stability, furthermore, the culture of supporting one-another and those less-fortunate than themselves, also has economic ramifications, both directly and indirectly.

The societal norm of utilizing local materials, harvested from the surrounding area by the community themselves, also helped to make the community self-sufficient, and helped to minimize the susceptibility of the community to external economic influences, such as inflation and deflation. As the majority of materials the communities utilized were sourced and used locally, the community had a small ecological footprint. The SNS were also sources of medicinal plants, wild fruits, and spa water, all which contribute towards the communities health and well-being. Thus, it is clear that the SNS contribute positively towards the economies of the communities in their surroundings.

### **3.7. Consequences of Sacred Natural Site destruction**

As already explained, in the past there were 72 sacred natural sites in the area studied and these were rich in biodiversity, all these sites were associated with various biophysical ecosystems. All the 72 SNS played a significant role in the social, cultural, ecological and economic values of the surrounding communities. Due to their strong connection with SNS, the communities were physically, mentally and socio-culturally stable. Their resilience abilities were also practical, because the conservation of SNS resulted in healthy local ecosystems and the provision of ecosystem services, such as fresh water. This assessment has demonstrated that today, more than 75% of the SNS which existed in the past have been completely destroyed, or they have been reduced in size, and/or their key ecological features damaged with negative consequences as explained in greater detail in the sections below.

#### **3.7.1. Impacts upon rainfall intensity and duration**

Participants explained that in the past (prior to the Derg regime), from March to November, during the rainy season, rainfall was heavy and continuous which was beneficial. They reported that today, the length of the rainy season has shortened considerably, and the amount of rain has also reduced.

### 3.7.2. Impacts upon biodiversity

Historically the SNS were high in biodiversity, with a variety of flora and fauna, including many indigenous, as well as endemic species occurring within their boundaries. The indigenous plants were valued for their medicinal properties, as well as culturally, spiritually and economically. Respondents reported that plant biodiversity had declined sharply within the SNS, and there had been a parallel decline in how the community valued plants. As a result, the connections between the socio -ecological systems were becoming less strong and disappearing. As reported in section 3.6.4.2. faunal diversity was also decreasing, and several species of wild animals were no longer seen within the SNS.

### 3.7.3. Land degradation and soil fertility

The full or partial destruction of SNS and conversion to alternative land uses, as well as the degradation of existing SNS impacted upon the fertility of the soil in areas surrounding the SNS. The destruction and degradation of SNS, deforestation over-grazing, wetland drainage, and alternative land use practices, has resulted in negative impacts upon ecosystem service provision, with the consequence that soil fertility in the surrounding areas has declined. In the past, the surrounding areas were part of rotational agricultural practices, where there were fields were left fallow for a time, these areas used to be fertile and productive, crops could be grown without chemical inputs and harvests were high. Respondents said that this was no longer the case nowadays.

### 3.7.4. Water bodies

The destruction and the degradation SNS has negatively impacted the water bodies associated with them; respondents reported that the majority of streams and wetlands associated with SNS discharged lower volumes of water than in the past. More than 50% of streams, 45% of springs, and approximately 80% of wetlands had dried up or become dryer, and the water discharge of existing water bodies had dramatically reduced.

## **4. THREATS TO SACRED NATURAL SITES**

Community participants of the resilience assessment considered current internal and external threats to their conservation initiatives centred around the various SNS within their areas.

### **4.1. Internal threats**

Key internal threats center around community perceptions and attitudes. Many community members failed to understand the true meaning and value of SNS. Some have sought to undermine and marginalize SNS custodians. The SNS custodians reported that some of the community members caused them psychological and mental harm, through actions such as excluding them from social relationships, excluding them and/or their children and relatives from intermarriage, and a lack of interest and support to conduct proper funeral ceremonies, such as praying over the body of a deceased custodian or a family member.

The land allocation system within the kebeles, which allows SNS land to be allocated to individuals for farming, has resulted in the destruction of SNS, as they have been converted to agricultural land, in this process many wetlands have also been drained. Munamuno Sacred Natural Site, Dinsho-02, provides such an example, the digging of drainage channels within the wetland area allowed for the lower slopes of the SNS to be ploughed for agriculture (Figures 25 and 26).



**Figure 25: Wetland drainage has allowed ploughing for agriculture, Munamuno SNS, Dinsho-02**



**Figure 26: Drainage channels dug into the wetland surrounding Munamuno SNS, Dinsho-02**

Land shortages have also pushed some religious faiths to begin to use SNS as burial grounds, this was never practiced in the past, and threatens the integrity of existing SNS.

There has also been a policy of addressing deforestation through planting exotic, fast-growing trees species, such as eucalyptus. This has taken place within some of the SNS areas around springs, streams, and wetlands and has resulted in the drying up of these water bodies.

## **4.2. External threats**

A key threat is the lack of awareness concerning the meaning and value of SNS and their biocultural importance. There is no documentation regarding the flora and fauna and biodiversity associated with SNS, nor how SNS positively contribute towards ecosystem services, not just in their surrounding areas, but also further afield, for example, the water sources associated with SNS positively impact upon the provision of clean, water both in terms of the quantity and timing of water delivery. The sacred biocultural aspects of SNS have also not been documented and therefore are poorly understood. The role of custodians is largely unrecognized beyond their communities, and the importance of SNS for spiritual well-being of the communities unacknowledged. The combination of these factors means it is very difficult to convince government departments and officials of the value of SNS for conservation and well-being of the community.

A significant external threat is the lack of formal recognition or protection for SNS within Ethiopian law. SNS are not recognized in Ethiopia's legal framework and the contribution they make to biodiversity, conservation, ecosystem services provision, and the nation's cultural heritage is not acknowledged. There is no specific government body which takes



responsibility for the status and conservation of SNS, and thus no individuals in government are directly responsible for them.

There are also existing government policies which are negatively impacting upon SNS, for example, the current land allocation policy aims to provide unemployed youths with access to land, under the implementation of this policy, areas of SNS have been allocated to youth, and these areas converted to agriculture.

Globalization, modernization and acculturation also threaten SNS. The traditional knowledge systems that gave rise to SNS and the customs and traditions that maintain them are often regarded as 'backward'.

## 5. CONCLUSIONS AND RECOMMENDATIONS

The process of undertaking the community conservation resilience assessment has produced profound impacts upon many of the participating community members, their families and the broader community. The testimony from Mr. Adam Haji-jarso, Dinsho-02 kebele eloquently illustrates how as a result of the mapping process the community became acutely aware of the scale of deterioration within their SNS which resulted in the community considering how they could halt and reverse this trend. Thus, the assessment has been the spark for the communities, and the communities themselves are displaying resilience. Resilience here is understood to be the capacity of a system to deal with change and continue to develop, withstanding shocks and disturbances, and using such events to catalyse renewal and innovation (Moberg and Simonsen Undated). These findings are substantiated by earlier work on participatory mapping, Belay (2012) reported that participatory mapping can contribute towards resilience building, and that learning and the desire for change can emerge as a result from the mapping process within individuals and communities and that this can be harnessed to enhance the longer term resilience of social-ecological systems.

### Testimony: Impacts of participating in the community conservation resilience assessment

After the assessment, which showed the loss of SNSs in the area, the community was pained to see what they have lost, and now we have to consider how to conserve and ensure the sustainability of the remaining SNS for the future. The assessment reminds us of the legacy of the past 12 generations, and now we are starting to revive the conservation activities that they practiced. The assessment was a wake-up-call, and each of us saw what we had lost.



**Adam Haji-jarso, Dinsho-02 kebele**

Photo: Cath Traynor

Cultural resilience is also apparent, the use of local language, local materials and local skills to make musical instruments, composing of poems, prayers and chants, suggests that some of the cultural aspects connected to the SNS are relatively strong and resilient. The custodians and the communities themselves initiate and inspire these

practices, and they utilize locally available resources and local skills, they are not reliant upon outsiders, or outside resources, in order to practice their culture.

The link between the communities culture and Nature within the SNS and associated activities, is an example of how the cultural-ecological systems are inextricably linked – they are not viewed as separate. There is also a positive feedback loop between culture and the SNS: sustaining and conserving the SNS provides a sacred space where the community can practice their culture, and practising their culture associated with the SNS strengthens the communities ties with the SNS.

The community members who participated in the PSM and FGD agreed (95%) that the SNS has a vital role for the conservation of their biocultural diversity. In the past the SNS were part of a broader set of values, beliefs and traditions which were attached to the landscape and its features.

Through the community assessment the participants have also demonstrated that the new insights and knowledge they gained concerning the scale and pattern of SNS destruction and deterioration has spurred them onto consider actions they can take to conserve and enhance the remaining SNS and their associated ecosystems. To counter the internal threat within their own communities regards the misunderstanding of the true meaning and value of SNS, awareness raising within their own communities was suggested. Mr. Amino Adem, from Abakera kebele provides a testimony of the value of awareness raising and the positive results action can have on the ecosystem services associated with SNS.

#### **Testimony: Raising Awareness of Sacred Natural Sites and their Ecosystem Services**



Photo: Cath Traynor

Working for the revival of Sacred Natural Sites is very important, we need to raise awareness of SNS with communities. For example, one SNS was an important wetland, it had been allowed to dry out and people began using it as a football pitch. We revived the SNS and its wetland, and soon after it began to discharge water. We need to raise awareness within the community of the value of SNS and the services they provide for us, then the community will better understand why they should be preserved.

**Amino Adem, Abakera kebele**

In Mio kebele, the CCRI has already produced another successful community-initiated example of SNS conservation; a fence was built around the Gedebgela SNS and as a result, there has been a reduction of incursions onto the site and harvesting pressures, in the 18 months since the fence was erected (Figure 27).

Peer-to-peer learning exchanges between communities are required so that these successful approaches can be shared and adapted.<sup>12</sup> Awareness raising should include the value of SNS in adapting to climate change

<sup>12</sup> Teshuma Abera, Community member from Mio kabele

To counter internal threats the capacity of SNS custodians should be enhanced to enable them to fulfil their roles and responsibilities. Additionally, a SNS elders group should be formed to revive customary laws, norms and ethics regarding SNS and to develop new by-laws for the conservation of SNS.

Additionally, community participants suggested that the CCRI be scaled-up to include other *kebeles* in Dinsho District and the Bale Zone. Communities also need financial and technical support to manage SNS; for example, fencing initiatives and reforestation efforts.



Figure 27: Boundary fencing has reduced incursions into Gedebgela SNS, Mio Kebele

### Testimony: Testimony: Adapting to Climate Change

SNS are important to minimize the impacts of climate change. Now we are experiencing a change in rainfall patterns, there is a shortage of rain and insufficient fresh water. SNS provide essential sources of water for our crops and animals, and our communities. Destroying SNS destroyed not just forests, but also our water sources, and with it our ability to cope with changing weather conditions. We are interested to conserve our SNS because they can help us adapt to climate change.



**Adam Tura, Abakera kebele**

Photo: Cath Traynor

To counter external threats existing conservation legislation, cultural heritage policies, and relevant articles in Ethiopia's 1995 Constitution <sup>13</sup> that support SNS need to be

<sup>13</sup> Articles 39(2), 44, 51(5), 90, and 91

enforced. However, these mechanisms do not specifically target SNS and are insufficient to ensure their full protection. Therefore, a national level policy that addresses SNS is required, this could be modelled upon the national law (Interministerial Order No. 0121) in Benin, which is the first law in Africa to recognise sacred sites and communities role in protecting and governing them (ROB, 2014). advocacy is needed at all levels within the Cultural and Tourism Office, Rural Land Administrative and Environmental Protection Office and the Bale Mountain National Park authorities.

The Government of Ethiopia has recently begun to formally acknowledge the important role that community conservation initiatives can play in the conservation of the countries biological diversity and at the landscape level the SNS network could be considered in this light. Two community conserved areas have already been demarcated and legalized as protected areas in Ethiopia. The Guassa-Menz Community Conserved Area, has revived the Quero system, an indigenous communal management system, to sustainably manage the area's valuable *festuca* grasses, which cover the central highlands in Amhara National Regional State. This CCA was legally recognized in 2008, and was the first formally acknowledged CCA in Ethiopia, and this was achieved in part through collaboration with local government, as the CCAs boundaries were legally demarcated and recognized in the regional parliament, which should provide additional protection and security to the area and traditional livelihoods (UNDP 2012). The Abune Yoseph Community Conservation Area (ACCA), in the north-eastern highlands of Ethiopia, is an Afromontane area governed by the Abune Yoseph Community Conservation Council, whose members are drawn from 4 *kebeles* adjacent to the conservation area. The local population belong to the Arhara ethnic group, they are predominantly farmers and herders, growing barley and wheat crops, maintain livestock herds, and utilize wild plants, for example Guassa grass (*Festuca abyssinica*) for thatching and rope making, and many other plant species for medicinal and household purposes. Traditional grazing of livestock in the Afroalpine pastures is still practiced (Eshete, 2015). The council is responsible for natural resource management and conservation, and setting open and closed periods for resource harvesting (ACCA 2015). In the case of the communities participating in the CCRI, formal acknowledgement by district, zonal, regional and national government regards the contribution of the SNS network to the conservation of Ethiopia's biodiversity and support for the custodians and communities could be an essential step towards ensuring that existing SNS are conserved and degraded SNS restored and revived.

At the regional level, the 'Statement of Common African Customary Laws for the Protection of Sacred Sites' could be utilized, this calls for the Custodial governance systems of SNS to be recognized and respected and provides other importance guidance (ABN, 2012).

International human rights and environmental laws that recognise the value of SNS and the roles of custodians and communities in conservation should be harnessed<sup>14</sup>. Indeed, if the Government of Ethiopia formally recognized the role and impact of communities and their SNS upon biodiversity conservation, these initiatives could be included in

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<sup>14</sup> For example, the *Convention on Biological Diversity* (CBD) Articles 8(j) and 10(c) and the: Akwé: Kon Voluntary Guidelines



national level assessments, and contribute towards Ethiopia's obligations under the CBD. Currently, the National Biodiversity and Action Plan (GOE 2005) and Ethiopia's Fifth National Report to the CBD (GOE, 2014) do not include mention of sacred natural sites nor acknowledge the contribution of communities in this regard.

The internationally recognised UNESCO Biosphere Reserves, which promote reconciling the conservation of biodiversity with its sustainable use, could be employed, indeed, this approach has already been successfully employed in Ethiopia to register and protect the Sheka Sacred Forest. The Sheka Forest Biosphere Reserve, is important for the conservation of Afromontane forest, and the area also includes bamboo thickets, wetlands and agricultural areas. The forest provides important products for the local communities, which includes forest products as well as non-forest products, such as medicinal plants, honey, and wild fruits. The communities are committed to maintaining the longevity of the ecosystem which includes practicing ecologically sustainable agriculture (UNESCO 2015). Alternatively, the nomination of BMNP to be a UNESCO World Heritage site, could extend the geographic area of the nomination to include the SNS in the *kebeles* assessed.

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## VIDEOS

Two video's related to SNS conservation in the Bale Mountain area are available from MELCA & the Gaia Foundation:

- [Reconnecting with the Sacred: Community-led Revival of Nature and Culture in Bale](#), Ethiopia (The Gaia Foundation & MELCA, 2014); and,
- [Revival](#), A film by MELCA Ethiopia and teh Giaia Foundation, follows a meeting of African Sacred Natural Site Custodians in the stunning highlands of Bale, Ethiopia. There they gathered to celebrate MELCA Ethiopia's ten years working to revive Sacred Natural Sites and customary law in Ethiopia, to exchange knowledge, stories and experiences.