



BIOSPHERE RESERVE NOMINATION FORM

Chimanimani Biosphere Reserve 2021

INTRODUCTION

Biosphere reserves are areas of terrestrial and coastal/marine ecosystems, or a combination thereof, which are internationally recognized within the framework of UNESCO's Programme on Man and the Biosphere (MAB). They are established to promote and demonstrate a balanced relationship between humans and the biosphere. Biosphere reserves are designated by the International Coordinating Council of the MAB Programme at the request of the State concerned. Individual biosphere reserves remain under the sovereign jurisdiction of the State where they are situated. Collectively, all biosphere reserves form a World Network in which participation by States is voluntary.

The World Network is governed by the Statutory Framework adopted by the UNESCO General Conference in 1995 which presents the definition, objectives, criteria and the designation procedure for biosphere reserves. The actions recommended for the implementation of biosphere reserves are set out in the "Seville Strategy" and were further developed in the Madrid Action Plan (2008-2013). These documents should be used as basic references for the completion of this nomination form.

The information presented on this nomination form will be used in a number of ways by UNESCO:

- (a) for examination of the site by the International Advisory Committee for Biosphere Reserves and by the Bureau of the MAB International Coordinating Council;
- (b) for use in a world-wide accessible information system, notably the UNESCO-MABnet and publications, facilitating communications and interaction amongst persons interested in biosphere reserves throughout the world.

The nomination form consists of three parts:

Part one is a summary indicating how the nominated area responds to the functions and criteria for biosphere reserves set out in the Statutory Framework, and presents the signatures of endorsements for the nomination from the authorities concerned. Part two is more descriptive and detailed, referring to the human, physical and biological characteristics as well as to the institutional aspects. Part three consists of two annexes: the first annex will be used to update the Directory of Biosphere Reserves on the MABnet, once the site has been approved as a biosphere reserve. The second annex will be used to provide promotional and communication materials of the biosphere reserve. Tables, illustrations and maps as appropriate throughout the nomination form are welcomed.

The form should be completed in English, French or Spanish. Two copies should be sent to the Secretariat, as follows:

1. The original hard copy, with the original signatures, letters of endorsement, zonation map and supporting documents. This should be sent to the Secretariat through the Official UNESCO channels, i.e., via the National Commission for UNESCO and/or the Permanent Delegation to UNESCO;
2. An electronic version (on diskette, CD, etc.) of the nomination forms and of maps (especially the zonation map). This can be sent directly to the MAB Secretariat:

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PART I: SUMMARY

1. PROPOSED NAME OF THE BIOSPHERE RESERVE:

Chimanimani Biosphere Reserve.

2. NAME OF THE COUNTRY:

Zimbabwe.

The Chimanimani Biosphere Reserve, together with Honde Valley and Greater Harare Wetlands biosphere reserves were proposed to the Government of Zimbabwe by the Zimbabwe National MAB committee in 2015. A Maputo meeting (2019) proposed to form the Chimanimani Transboundary Biosphere Reserve. Figure 1 shows the location, and Figures 2a and 2b show the two catchment areas that originate from the proposed Chimanimani Biosphere Reserve.

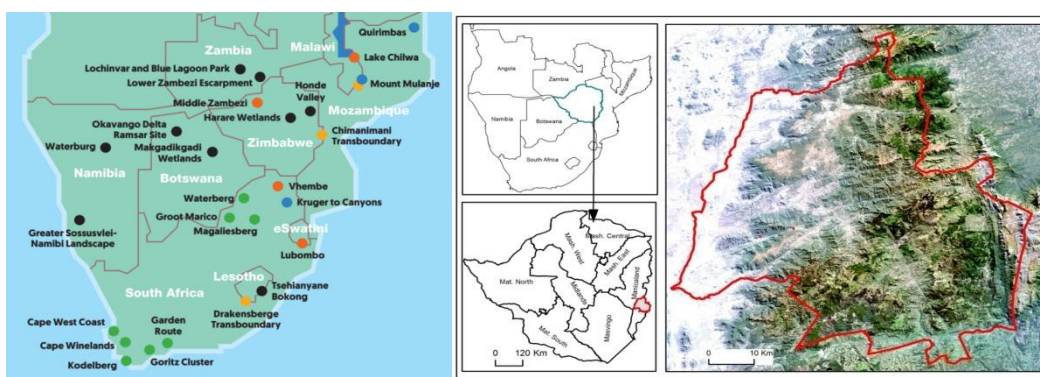


Figure 1: The Chimanimani Biosphere Reserve within the context of existing B.R.'s in southern Africa

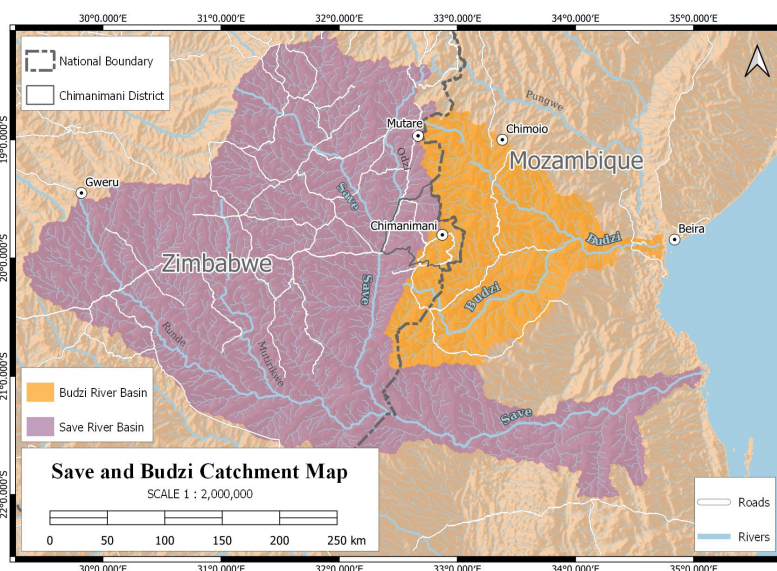


Figure 2: Budzi and Save catchment areas

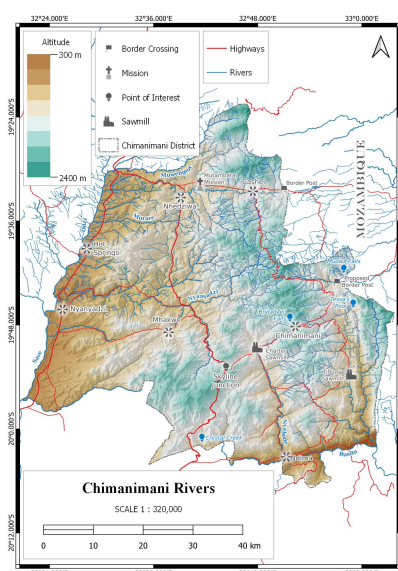


Figure 3: River systems in Chimanimani District

3. FULFILLMENT OF THE THREE FUNCTIONS OF BIOSPHERE RESERVES:

[Article 3 of the Statutory Framework presents the three functions of conservation, development and logistic support. Explain in general terms how the area fulfills these functions.]

3.1 "Conservation - contribute to the conservation of landscapes, ecosystems, species and genetic variation".

(Stress the importance of the site for conservation of biological and cultural diversity at the regional or global scales

Chimanimani District fulfills the function of biodiversity conservation because (See Table 1). It has:

- a high biodiversity;
- high endemism and number of rare species;
- unique geology of the Umkondo series;
- a diversity of landscapes from montane humid forest and grassland ecosystems to lowland semi-arid ecosystems;
- a wide range of land use systems (tourism, agriculture, forestry, mining).

Table 1: Levels of Biodiversity in the proposed Chimanimani Biosphere Reserve

Aspect of biodiversity	Level of biodiversity
Vegetation types	(i) forests, (ii) tree savanna, (iii) woodland and savanna woodland, and (iv) grassland
Plant taxa	2,182 plant taxa – over 30% of the estimated total plant diversity of the whole country
Plant endemism	74 endemics in Chimanimani Mountains alone
Mammal species	67 species
Important Bird Areas (IBAs) & bird species	2 IBAs, with 186 species in one IBA and 233 in the other IBA
Bird species of global concern	4 (Southern Banded Snake-eagle, Taita Falcon, Blue Swallow, and Blue-backed Sunbird)
Reptile species	40
Reptile endemism	1 species (the flat-lizard)
Amphibians	26

Chimanimani District encompasses a wide variety of environmental conditions and supports a corresponding array of biological diversity. Altitude varies from just over 300 m where the Rusitu River flows into Mozambique, to over 2400 m on Mt. Binga, the highest point of the Chimanimani mountains. This results in highly varied climatic conditions with low lying areas being relatively hot and dry and higher lying areas markedly cooler and moister. The underlying geology and resulting soils are equally varied, with representation of a variety of parent materials. The district supports a wide array of vegetation types including moist forests, miombo woodlands and montane grasslands and shrublands. While miombo woodlands are relatively widespread in Zimbabwe and beyond, moist forests and montane grasslands and shrublands are much more confined and largely restricted to the eastern highlands of Zimbabwe (plus adjacent portions of Mozambique). Additional patches on upland areas along the eastern flank of Africa from Zimbabwe north through Mozambique, Malawi, Tanzania, Kenya, Ethiopia and across the Red Sea to Yemen, collectively comprise what is known as the East African Montane Ecosystem. For forest communities, plant species composition varies in relation to altitude. Low and mid-altitude moist forests have largely been cleared and converted to alternative forms of land use. Chimanimani is one of the few locations which includes representation of small remnant patches of low and medium altitude forests. Chirinda Forest in the

neighbouring Chipinge District, in particular is the most extensive and best conserved remnant patch of medium altitude forest in the country. Higher elevation forests and surrounding montane grasslands and shrublands are restricted to higher elevation areas within the Eastern Highlands of Zimbabwe, including Chimanimani District, plus Vhumba, Penhalonga and Nyanga. Regarding the miombo woodlands, while the district is dominated by lower altitude miombo woodlands it includes a wide spectrum of miombo types ranging from dry to moist miombo woodlands.

The wider Eastern Afromontane ecosystem is recognized as comprising a global biodiversity hotspot (CEPF, 2012)¹. This hotspot stretches over a curving arc of widely scattered but biogeographically similar mountains, covering an area of more than 1 million square kilometers and running over a distance of more than 7,000 km from Saudi Arabia to Mozambique, Zimbabwe, and South Africa. Table 2 below summarises the biodiversity information of the wider Eastern Afromontane ecosystem.

Table 2: The wider Eastern Afromontane ecosystem as a biodiversity hotspot

Aspect of biodiversity	Level of biodiversity
No. of globally threatened or single site endemic species	1,308 species of plants, molluscs, crabs, Odonata, fish, amphibians, reptiles, birds and mammals
No. of Key Biodiversity Areas (KBAs)	310 (261 terrestrial and 49 freshwater)
Total area occupied by the KBAs	18,287,181 ha
No. top priority KBA sites of biodiversity importance	56
No. of Alliance for Zero Extinction (AZE) sites ²	25
No. of priority conservation corridors	14

Six KBAs were recognized for Zimbabwe. Three of these, the Chimanimani mountains, Vumba highlands and Nyanga mountains were identified as being of highest priority for conservation action. The Chimanimani mountains and Nyanga mountains KBAs were additionally recognized as comprising AZE³ sites. All six KBAs, together with the adjacent Chimanimani mountains Mozambique KBA, are included as part of what is termed the Southern Mountains Corridor, one of 14 priority corridor areas identified for conservation action. Among the six Zimbabwean KBAs, the Chimanimani Mountains KBA clearly stands out with 100 threatened species, as compared to 28 species for Nyanga, and lesser numbers for the other KBAs. These results clearly highlight the extreme importance of the Chimanimani Mountains KBA for conservation purposes. Table 3 below outlines the KBA sites, sizes, conservation priority levels and importance sizes in the Southern Mountain Corridor that include the Chimanimani Mountains and Chirinda Forest (at a later stage) in the proposed Chimanimani Biosphere Reserve.

¹ Critical Ecosystem Partnership Fund, Mainstreaming biodiversity conservation in a critical watershed www.birdlife.org

² These are sites where the last remaining population of an endangered or critically endangered species is found

³ The Alliance for Zero Extinction (AZE) was globally launched in 2005.

Table 3: Zimbabwe Key Biodiversity Area sites, their sizes, conservation priority levels and importance

KBA No	KBA Name	Corridor	IBA/AZE	Area (ha)	Conservation priority	No. of taxa of conservation importance
18	Banti Forest Reserve	Chimanimani-Nyanga Mountains	IBA	1,758	4	1
38	Chimanimani Mountains	Chimanimani-Nyanga Mountains	IBA/AZE	21,437	1	100
39	Chirinda Forest	Chimanimani-Nyanga Mountains	IBA	954	2	3
201	Nyanga Mountains	Chimanimani-Nyanga Mountains	IBA/AZE	28,863	1	28
235	Stapleford Forest	Chimanimani-Nyanga Mountains	IBA	23,223	2	13
252	Vumba Highlands	Chimanimani-Nyanga Mountains	IBA	25,385	1	8

**Figure 4 (left):**

Afromontane ecosystem KBAs in Zimbabwe and Mozambique

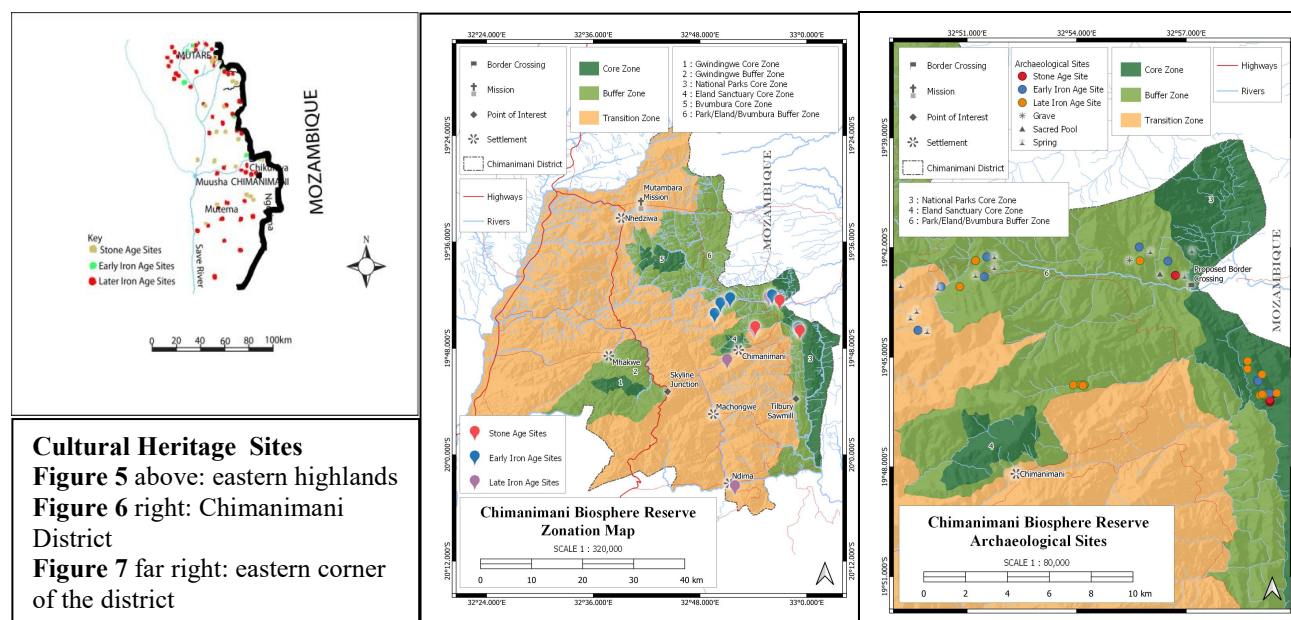
(Source: CEPF, 2012).

The proposed Chimanimani Biosphere Reserve has many sites of archaeological significance. Most of the important archaeological sites are concentrated in Chimanimani National Park, Outward Bound, Martin Forest, Charter and Saurombe Timber Estates, Chikukwa and Muusha Communal lands. The district has at least 88 historical and archaeological sites consisting of:

- Stone Age (9),
- Rock Art (20),
- Early Iron Age (9),
- Late Iron Age (41)
- and Historical (9) sites (See Section 10.6 & Annex V).

Figures 5 - 7 below and coordinates in Annex V show the location of these sites.

Apart from archaeological and historical sites, Chimanimani District has at least 19 other places of community importance (see Annex V) which qualify for an Intangible Cultural Heritage (ICH) database in terms of the 2003 UNESCO Convention for the Safeguarding of Intangible Cultural Heritage. Stakeholder consultations in the district revealed that there are several kinds of sacred landscapes, which have cultural importance: pools, springs, burial places, forests, shrines and ancient tunnels. These sacred places inspire conservation of the resources.



All these different kinds of site are an important part of the history of Zimbabwe and define the people of Chimanimani – mostly Ndau people and minority groups of Chigarwe, Ndebele, Masena, Zezuru, Karanga and people of European descent. Destruction of these places would cripple the local communities spiritually. Among the Ndau, the current governance structure consists of the ancestral guardian spirit at the top, followed by the chief, headman and village head. The three traditional leader levels hold land and land-based natural resources in trust for the ancestors. Among the Ndau, deceased founding patriarchs (chiefs) are considered the owners of natural resources, and to have the powers to cause rain and maintain the fertility of the land, as they are believed to continue to exist in spirit.

Chimanimani District has many cultural practices and resources that are essential to preserve because of their value to biodiversity conservation, and cultural diversity. The cultural resources include sacred forests, pools and places of conducting traditional ceremonies, archaeological and historical sites, and plants that have medicinal properties. Thanksgiving, rainmaking ceremonies, restrictions and taboos are some of the cultural practices that enhance conservation of ecosystems, habitats and species. Many of the conserved indigenous plants are used for enriching soil quality, treating livestock and preserving food. These cultural resources and practices are consistent with the national and global biodiversity and food security agenda.

3.2 "Development - foster economic and human development which is socio-culturally and ecologically sustainable".

(Indicate current activities and the potential of the proposed biosphere reserve in fulfilling the objective of fostering sustainable economic and socio-cultural development, including by securing flows of ecosystem services from the biosphere reserve).

The goal of establishing the Chimanimani Biosphere Reserve is to conserve ecosystem and species biodiversity and protect the mountain ecosystem as a watershed, enhance the district's resilience to climatic shocks and stresses, promote sustainable socio-economic development, and maintain and utilise local cultural resources and practices.

The planned socio-economic activities will focus on:

- (i) strengthening participatory, inclusive and coordinated biodiversity and climate change governance through government's involvement of communities, civil society, private sector, academia;
- (ii) supporting socio-economic initiatives which enhance a healthy, self-sustaining district community with functional industries and diverse livelihood systems;
- (iii) transforming Chimanimani into a green economic zone;
- (iv) climate-proofing infrastructure planning and settlement designing and reducing industrial activities and settlement in ecological sensitive areas; and
- (v) promotion and utilisation of culture, including indigenous and local knowledge, to protect the environment and enhance livelihoods.

Zimbabwe is party to the UN Convention on Biological Diversity (CBD), the UN Framework Convention on Climate Change (UNFCCC), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), International Covenant on Civil and Political Rights, and the International Covenant on Economic, Social and Cultural Rights. The Acts that govern the use and conservation of natural resources in the communal lands in Zimbabwe include the:

- Natural Resource Conservation and Use in Natural Resource Act (Chapter 150), which outlines national strategies for conserving and improving natural resources;
- Communal Land Forest Produce Act, No. 20 (1987), which regulates the use of forest produce in protected areas;
- Forest Act, which establishes the Forestry Commission and governs the conservation of timber; and
- Water Act, which controls the use of surface and underground water.

Climate change is expected to result in warmer and drier conditions over the interior of the African continent, including Zimbabwe. This can be expected to result in reduced availability of surface water, which will have a direct negative impact to virtually all wetland ecosystems in the country. This includes Chimanimani which is an important montane wetland watershed area which supplies water to downstream users and ecosystems. Sustaining this crucial ecosystem will mitigate the expected impacts of climate change. These include extreme weather events as frequently experienced in Chimanimani.⁴

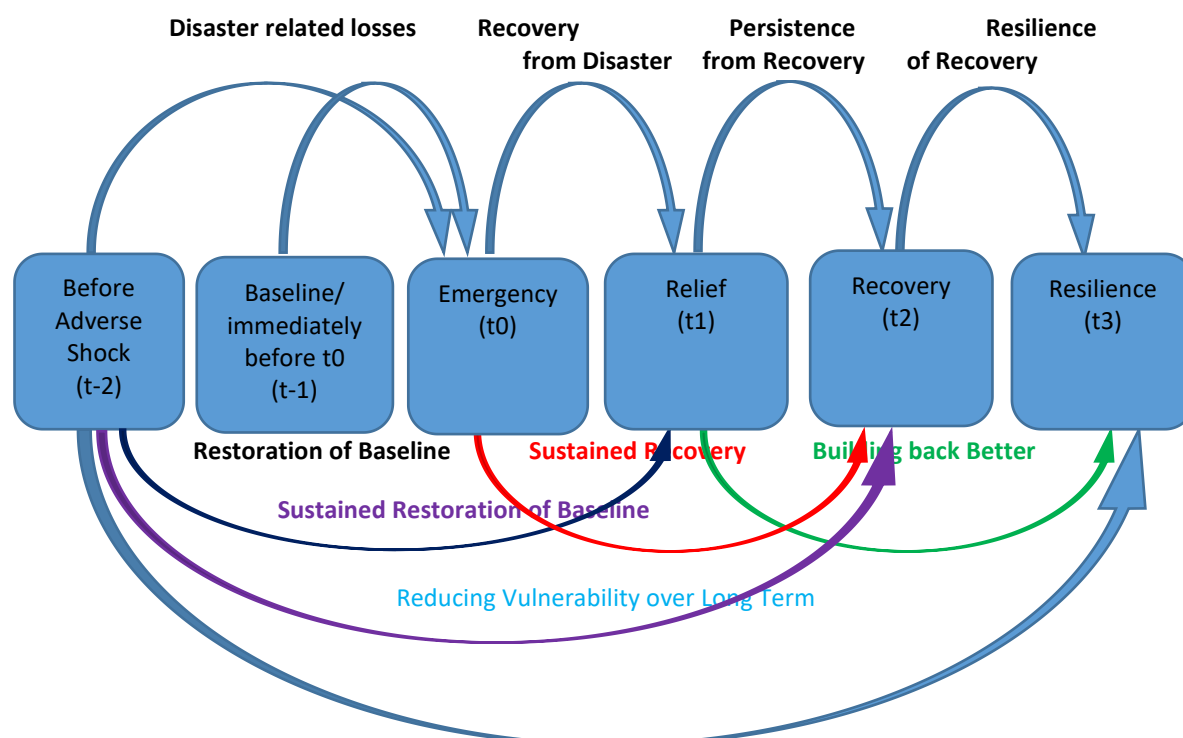
⁴ For in-depth study of the impact of climate change in Chimanimani see Manatsa, Chatiza et al (2020) Chapter 4

Reports and research carried out in the aftermath of Cyclone Idai (March 2019) helped to create in-depth transparency and disaster risk awareness at various institutional levels of government, civil society and rural communities. The various studies had shun a bright light on almost all aspects of the ‘before-during-and after’ of the catastrophe. Findings, critical observations and recommendations had been shared and debated at community level, in various stakeholder meetings and then at a global video event on 8 December 2020.

Long-term recovery assistance aids recovery to a pre-disaster ‘condition’ and to strengthen resilience. This phase usually starts six months after an emergency (Puri et al 2015)⁵ while the t_3 phase is a period way after disaster (see Figure 8 below). This is characterised by planning to reduce vulnerability of a population. The pace and nature of recovery and resilience is premised on pre-existing factors and the quality of the humanitarian system in place.⁶

Figure 8: Resilience Building Conceptual Framework

Source: Puri et al (2015:22)



Chimanimani learnt from the lessons of Cyclone Idai and began to develop a Vision of a Resilient Chimanimani (see Section 15.1.1 below). The findings and recommendations contributed to the revision of a District Recovery Plan, a District Development Plan and a District Disaster Risk Reduction Plan. In the proposed Biosphere, the participatory and inclusive governance and management of natural resources will be based on respecting the rights of communities and enhancing their resilience while at the same time improving the ecological resource base. This will support the generation of ecosystem services for the benefit of people and the environment. Some of the activities that will be implemented towards this end are: production of land use plans for climate smart villages by communities, local authorities and traditional leaders; rehabilitation of all rangelands through community based planned grazing management; integrated soil and water

⁵ Puri et al 2015:22

⁶ Manatsa, Chatiza et al, 2020 p. 12

management for improved and diversified crop production; conservation of indigenous forests and reforestation of bare lands; conservation of biodiversity, including threatened species; increasing agro-biodiversity in cropping areas; and building climate change adaption and mitigation capacity of communities and stakeholders. Sustainable economic development and livelihood improvements will include addressing poverty, food and nutrition security equitably in a gender-responsive manner; promoting nature positive production in agriculture and increasing crop and livestock production and productivity; enhancing access to fair markets and increasing rural incomes; establishing viable and circular value chains in the context of greening the economy.

Chimanimani has varied ecosystem services (ES) it provides in many different ways. According to an ecosystem service valuation done by the Parks terrestrial ecologist of this region in 2021 (based on the ES value coefficients of each land use/land cover (LULC) type database TEEB of McVittie and Hussain (2013)), Chimanimani has an ecosystem services value (ESV) supply worthy USD 204 297 088,63. Table 4 below shows the breakdown of the ecosystem service supply distribution per LULC type and valuation coefficients of similar biomes based on the TEEB database. Figure 9 below shows the land cover map of Chimanimani District.

Table 4: Value of ecosystem services supply per LULC in the proposed biosphere reserve

LAND USE / LAND COVER	Equivalent biome	Area (ha)-2020	US\$ (ha ⁻¹ year ⁻¹)	ES Values
Bare Land	Desert	3398,0255	0	USD 0,00
Built Up	Settlement	4865,273	0	USD 0,00
Shrub land	Grass/rangeland	172323,2396	293,25	USD 50 533 790,01
Cultivated land	Cropland	13027,5006	225,56	USD 2 938 483,04
Forest land	Woodland	7353,72	986,69	USD 7 255 841,99
Grazing land	Grass/rangeland	5435,7692	293,25	USD 1 594 039,32
Water body	Lakes/rivers	731,9807	8103,5	USD 5 931 605,60
Wood land	Tropical forest	137878,4914	986,69	USD 136 043 328,68
Total				USD 204 297 088,63

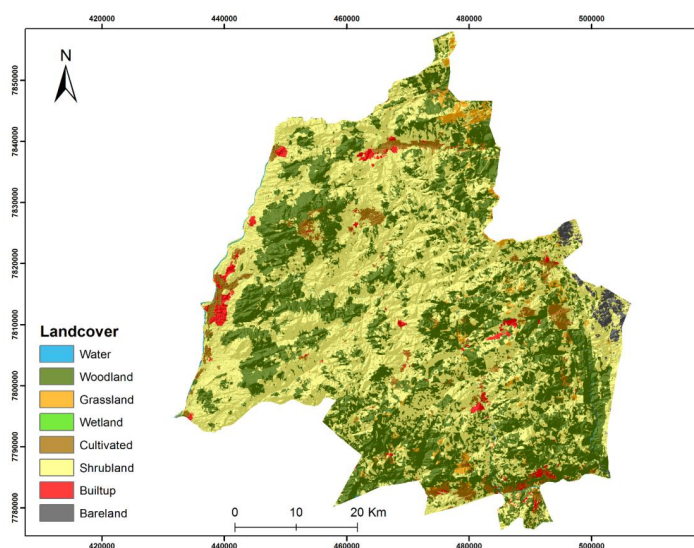


Figure 9: Land Cover map of Chimanimani District

Below, six themes have been chosen to describe some of the socio-economic activities and potentials of developments associated with the flow of ES and their sustainable use in the proposed Biosphere Reserve. Forestry is one of the main activities that contribute significantly to human livelihoods in the proposed BR. Key Forestry operators in this landscape include:

- Border Timbers (Charter, Tilbury and Saurombe estates),
- Allied Timbers (Chisengu, Tarka, Gwindingwe estates), and
- Wattle Company.

On average timber plantations currently produce 350m³ of timber a day, a drop from the former production volume of 800 m³ in the past decade. Regardless, at that rate, there are multifaceted benefits that are realized through direct employment and the development of business relations with external markets. Timber estates have designated conservation zones, which sustain biodiversity. Support from the Forest Stewardship Council (FSC), encourages sustainable forestry practices that enable conservation. The FSC certification and endorsement improves timber market and consumer interests.

Communities also benefit from non-timber forest products (NTFPs) as they harvest wild fruits, mushrooms and use grazing land for their livestock. Such benefits have been realized through the establishment of agreements such as the Memorandum of Understanding (MOU) which was signed between the Saurombe community and Border Timbers to allow controlled grazing in conservation zones. Some agreements have also been allowing enjoyment of cultural services by traditional leaders through conducting cultural ceremonies in conservation zones.

The Forestry Commission of Zimbabwe also has an office in Chimanimani district through which it administrates and manages natural forests outside of protected areas and private estates. The Commission provides law enforcement services and district management plans, which promote sustainable conservation of natural forests. It contributes the fulfilment of public beneficial functions of forests such as nature conservation, wildlife protection and land conservation.

Tourism: The area has numerous tourist destinations mainly for mountain hiking and birding. Tourism is one economic sector that brings immediate external money into the local economy. The estimated annual economic value of this to the local Chimanimani economy is US\$ 1,100,000. It also raises awareness of the existence and importance of the reserve and increases both local and foreign appreciation for its values. An association called Chimanimani Tourist Association (CTA) was formed to manage tourism activities within the proposed BR by providing technical advice on practices that ensure that locals benefit from tourism. Some of the specific community benefits from tourism have been training of guides and income generation for guides and porters. Tourist destinations are also encouraged to employ locals with the drive to promote their realization of benefits from ecosystem services through job creation and poverty reductions. For example, modest lodges, rest places, crafts and green markets along eco-cultural tourism trails can generate incomes and modest tourism levies could benefit communities close to tourist destinations.

The main tourist activities are:

- Birding in IBAs, which attracts regional and international tourists,
- Mountain hiking, which takes on steep topography
- Scenic viewing tourism, which is inspired by pristine and unique vegetation and geological features of the district
- Viewing of cultural and historical sites, and
- Game viewing in the Eland Sanctuary.

Agriculture: Communities in Chimanimani district engage in agricultural practises such as horticulture and livestock rearing. The total land under crop and fruit production measures 13,028 ha and grazing land constitutes 5435.8 ha. The main crops that are grown in the district are: maize, sorghum, millet, groundnuts, roundnuts, cowpeas beans and exotic fruits such as bananas, oranges, and natjies. The annual economic value of the crops grown in the district ranges is estimated to be \$1 387 787. Livestock production levels in the district are 65% beef cattle, 8% dairy cows, 12 goats, 5% sheep and 10% poultry. The estimated value of the livestock is USD 1 358 940. Sustainable agriculture is practised on 16 % of the agricultural land.

Apiculture: Apiculture is one of the key livelihood support activities in the Chimanimani district. The practice of apiculture is an activity traditionally undertaken in the district, using traditional beehives. Beekeeping has dual effects: the risk of contributing to the forest degradation, if trees are slowly killed through bark removal on one hand, and improving pollination on the other hand. It is estimated that over 740 households are involved in apiary projects with Natural Region 1 (wards 6, 19, 18) being the main area for apiary.

Mining: The presence of illegal gold panners in the Chimanimani, including in the core of the proposed Reserve, poses the greatest challenges to nature conservation. Precise estimates of the actual numbers are very difficult but the numbers have been in the range of 2000 plus. Gold panners started working in the highlands of the Chimanimani Mountains in November 2004 targeting areas mostly in streambeds. The law enforcement patrols by law enforcement agents tend, almost naturally, to focus on the areas where there are major concentrations of gold panners. This approach, however, leads miners to spread their activity to less accessible and more remote areas, which results in damaging more areas, and particularly areas of high biodiversity value. Since this year, however, there has been a reduction of such gold panning due to stricter control of access to the Park.

Artisanal mining (gold and diamonds), although a threat to ecosystem conservation and of concern to public health where mercury is used, is accredited to be one of the most important economic activities supporting livelihoods of people living in and around the Chimanimani district. The estimated value of small-scale gold mining in the district is US\$800 000 per annum. Mining should be formalised and organized to reduce its environmental impact by controlling where it is practised and by promoting mitigation techniques to ensure that it becomes sustainable.

3.3 "Logistic support - support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development".

(Please indicate current or planned activities).

Logistic support is presented in the context of the Lima Action Plan for UNESCO's MAB Programme and its World Network of Biosphere Reserves (2016-2025), which contains a comprehensive set of actions aimed at ensuring the effective implementation of the MAB Strategy.

3.3.1 Research agenda and partners

The proposed Chimanimani Biosphere Reserve will engage with educational and research institutions such as the Africa University, which is based in the province, or the Chinhoyi University of Science and Technology, which has conducted some of the biodiversity research work in the district. Other potential partners include the UZ, SIRDC and IES, the National Herbarium, the National Museum of Science, the Zimbabwe Parks and Wildlife Management Authority, BirdLife Zimbabwe and the Forestry Commission. Community members (women, youth and men), schools, other universities, research organisations, and governance structures at local, provincial and national levels and conservation partners will participate in the research. The research agenda, which will cover different aspects of biodiversity conservation, climate change adaptation and watershed management, will be jointly decided on.

3.3.2 Monitoring and survey of biodiversity and observatories related to climate change

Monitoring and survey of biodiversity and climate change will be informed by existing baseline information and identified gaps. Specific surveys and monitoring will include:

- Status of biomes and vegetation ecology.
- Status of vegetation cover and levels of deforestation.
- Status of water catchment areas, surface and ground water.
- Population status of wildlife species: birds, reptiles, amphibians, and mammals.
- Status of plant taxa.
- Status and distribution of invasive species.
- Incidence of wild fires and their impacts.
- Climate change trends and their impacts.

3.3.2 Research linked to management of territory

Research will be conducted regularly to establish how the management of the core zones and buffer zones is resulting in improved biodiversity conservation, ecosystem services production, educational and scientific value, and improved social and economic value. The research will be conducted with a view to continued improvement of the proposed Chimanimani Biosphere Reserve.

3.3.3 Education and awareness raising

It is proposed that soon after the registration of Chimanimani as a BR, committees will be established for the management and operation of the BR. The committees will conduct awareness programmes on climate change adaptation and mitigation, and to promote the protection and conservation of biological diversity inside the BR. The education and awareness raising will be conducted by a range of actors including government bodies such as the Environmental Management Agency (EMA), ZimParks, AGRITEX and the Forestry Commission, and CBOs such as TSURO, CELUCT, Nyahode Union Learning Centre (NULC). For example, AGRITEX, TSURO, CELUCT are currently involved in:

- planned grazing management,
- community based seed production, improvement and multiplication,
- agroecology as the science, practice and movement of sustainable agriculture, and
- watershed management.

EMA proactively supplies and transmits information regarding the protection, conservation and utilization of nature countrywide through their website, annual publications, posters and school clubs. The people who will be targeted for raising awareness will include learners in schools and colleges, educators, community members and leaders and entrepreneurs. Awareness raising

materials will include posters, pamphlets, booklets, articles, radio, and television programmes. Awareness building strategies will include use of roadshows, meetings with locals, workshops, school clubs, webinars and websites.

3.3.4 Education for sustainable development

The proposed Chimanimani BR will support Education for Sustainable Development. Africa University, Mutare Teachers College, and the Forestry College will use the proposed BR as a resource for developing learner and educator competencies future-oriented systems thinking and biodiversity conservation theory and practice. The core zone will be particularly useful for supporting learning and action on ecosystem services production by local residents.

3.3.5 Citizen Science

The people in Chimanimani have been studying, experimenting and using their knowledge and local resources to address their challenges and tap into opportunities for generations. For example, some smallholder farmers have developed strategies to reclaim land that was washed away by Cyclone Eline and others have developed ways of trapping moles. Local traditional healers have also developed solutions to human and animal diseases, and ways of controlling crop pests. Communities have also developed methods for weather forecasting, some of which were applied to predict Cyclone Idai. The proposed BR will help the local communities to continue developing their citizen science alone and in cooperation with other researchers such as formal researchers.

4. CRITERIA FOR DESIGNATION AS A BIOSPHERE RESERVE:

[Article 4 of the Statutory Framework presents 7 general criteria for an area to be qualified for designation as a biosphere reserve which are given in order below.]

4.1 "Encompass a mosaic of ecological systems representative of major biogeographic region(s), including a gradation of human interventions".

(The term "major biogeographic region" is not strictly defined but it would be useful to refer to the Udvardy classification system (http://www.unep-wcmc.org/udvardys-biogeographical-provinces-1975_745.html)).

Two classification systems are widely used for identifying terrestrial ecoregions of Africa and of the world (Udvardy, 1975; Olson et al. 2001; Burgess et al, 2004; Ecoregions 2017). Both classifications are closely comparable at all levels from realms to biomes and ecoregions and divide Africa between two realms: the Afrotropic or Afrotropical realm that comprises Sub-Saharan Africa plus Madagascar, with the northern part of Africa being included as part of the vast Palearctic realm that extends north to include all of the Mediterranean, Middle East, Europe, Russia and China. Within the Afrotropical realm the global classification recognizes 116 ecoregions, of which 103 belong to the Afrotropical Realm.

Chimanimani District has three ecoregions each of which belongs to distinct biomes: Tropical Moist Forests, Savanna Woodlands and Montane Grasslands Biomes (Table 5). There is close agreement between the two systems for two of the ecoregions, coastal moist forests and montane grasslands and shrublands, in terms of distribution and size. For the miombo woodlands the WWF southern miombo woodlands ecoregion represents a subdivision of the larger dry miombo woodlands ecoregion of Resolve (2017), which also includes WWF Ecoregion 49 (Angolan Miombo Woodlands) that encompasses much of central Angola.

Within Chimanimani, the eastern higher elevation parts of the district comprise part of Ecoregion 76 Eastern Zimbabwe Montane Forest-Grassland Mosaic (as part of the broader montane grasslands and shrublands biome) and the lower elevation, drier parts of the district comprise Ecoregion 53 southern miombo woodlands (within the extensive Tropical and subtropical grasslands, savannas, shrublands, and woodlands biome). The presence of tropical moist forests (Ecoregion 21 - Southern Zanzibar–Inhambane Coastal Forest Mosaic) is limited to several tiny remnant occurrences of medium and low altitude forests represented in the extreme southern portion of the Chimanimani National Park, the Haroni and Rusitu Botanical Reserves and Chirinda Forest. Higher altitude forest patches, such as those found elsewhere within the Chimanimani National Park, are included as part of the montane forest-grassland mosaic ecoregion. The lowland forests are outliers of moist forests that are elsewhere restricted to within about 50 km of the east African coast. Although small in size, these locations are of extremely high local, regional and global conservation significance. In terms of conservation status and conservation assessment the Southern Zanzibar-Inhambane Coastal Forest Mosaic Ecoregion is classified as critical but of Class IV priority for conservation; the Eastern Zimbabwe Montane Forest Grassland Mosaic Ecoregion as endangered and of highest priority for conservation (Class I); and the Southern miombo woodlands ecoregion, though vulnerable, of lowest conservation priority (Class V).

Within the complex mosaic of different biomes and ecoregions (see Table 5 below) the proposed Chimanimani BR will similarly encompass lands under a variety of different forms of tenure and use. In broad terms there are three main categories of land:

- *Protected areas:* These comprise Chimanimani National Park, the Eland Sanctuary, and the Haroni and Rusitu Botanical Reserves. These are areas that have been formally set aside for conservation purposes. Whilst settlement and agriculture are precluded from this area, to the south of the district the Haroni and Rusitu Botanical Reserves have been substantially compromised with additional settlement and agriculture encroaching on a small part of the adjacent Chimanimani National Park.
- *Forest Estates:* The District includes a number of large forest estates (Charter, Sawerombe and Tilbury under Border Timbers; Gwindingwe, Martin, Chisengu and Tarka under Allied Timbers; and Chimanimani Estate of the Wattle Company). These are developed and managed for production of pine, eucalyptus and wattle trees. Certain portions within these estates, such as wetlands and other areas not suited for timber plantings, are set aside and managed for conservation purposes. Following implementation of the land reform programme, from 2000 onwards, considerable areas of some forest estates have been encroached by settlement and small-scale agriculture, a damaging process which is still continuing.
- *Communal Lands:* The remainder of the district, comprising communal lands plus a number of resettlement areas, are utilized for small scale farming. This comprises a mixed farming system including both crop and livestock production. Arable areas are used for cropping, mainly under dryland conditions but with smaller and highly important portions of irrigated production. Non-arable areas are used for the grazing of livestock, principally cattle and goats.

Population densities are highest in the small-scale farming areas, intermediate for the forest estates and lowest (minimal) in the formal protected areas.

Table 5: Biomes and Ecoregions

Global		WWF Africa	
Biome	Ecoregion	Biome	Ecoregion
Tropical & Subtropical Moist Broadleaf Forests	28 - Southern Swahili coastal forests and woodlands 149,910 km ² Mozambique, Malawi, Tanzania	Tropical and subtropical moist broadleaf forests (tropical moist forests) 3,485,500 km ²	21 Southern Zanzibar–Inhambane Coastal Forest Mosaic 147,000 km ² Mozambique, Malawi, Tanzania, Conservation status: Critical Conservation assessment: IV
Tropical & Subtropical Grasslands, Savannas & Shrublands	42 - Dry miombo woodlands 1,192,640 km ² Malawi, Mozambique, Tanzania, Zimbabwe, Zambia, Angola	Tropical and subtropical grasslands, savannas, shrublands, and woodlands (Savanna-woodlands) 13,981,100 km ²	53 Southern miombo woodlands 408,300 km ² Mozambique, Malawi, Zambia, Tanzania Conservation status: Vulnerable Conservation assessment: V
Montane Grasslands and Shrublands	85 - Nyanga–Chimanimani montane forest-grassland 7,750 km ² Zimbabwe, Mozambique	Montane grasslands and shrublands (montane grasslands) 868,700 km ²	76 Eastern Zimbabwe Montane Forest-Grassland Mosaic 7,800 km ² Conservation status: Endangered Conservation assessment: I
Conservation status: Based on consideration of habitat loss, habitat blocks, habitat fragmentation and habitat protection, ecoregions were classified into five categories of current conservation status as follows: Critical; Endangered; Vulnerable; Relatively stable; Relatively intact			
Conservation assessment: Many ecoregions are clearly outstanding in terms of their biological importance but are under different levels of current and impending threat. Ecoregions were classified into five conservation priority classes based on a combination of biological distinctiveness and conservation status scores, as follows: Class I are ecoregions with globally important biodiversity values that are highly threatened. Class II are ecoregions with regionally outstanding biodiversity values that are highly threatened. Class III are ecoregions with globally or regionally outstanding biodiversity values that still offer opportunities for large-scale conservation interventions. Class IV are ecoregions with regionally or nationally important biodiversity values that are under threat. Class V are ecoregions with regionally or nationally important biodiversity values where opportunities for large-scale conservation interventions exist.			

4.2 "Be of significance for biological diversity conservation".

(This should refer not only to the numbers of endemic or rare species, but may also refer to species on the IUCN Red List or CITES appendices, at the local, regional or global levels, and also to species of global importance, rare habitat types or habitats with unique land use practices (for example traditional grazing or artisanal fishing) favouring the conservation of biological diversity).

4.2.1 FLORA

4.2.1.1 Species Occurrence

The establishment of the Chimanimani Biosphere Reserve would contribute to the conservation of Chimanimani District Biodiversity Hotspot that comprises of 2,182 plant taxa (Chapano and Mamuto 2003) and this is more than 30% of the estimated total plant diversity of the whole country. The Chimanimani Mountains alone is comprised of 977 taxa with 74 endemics which is more than Nyanga with 21 endemics or the Nyika plateau with 33 endemics. The district has existing wildlife management area with an authority already managing wildlife together with Environmental Management Agency (EMA) that has offices in the district as well. Chimanimani District is ecologically connected with Mozambique side forming the Chimanimani Trans-Frontier Conservation Area (TFCA). Table 6 below summarises the number and distribution of endemic and near-endemic taxa in the district.

Table 6: Endemic and near-endemic taxa in Chimanimani District
(see Annex IV for more detail)

Category	no. taxa
Chimanimani montane endemic	71
Chimanimani montane near-endemic	20
Endemic to Umkondo sandstone areas around Chimanimani Mts	7
Chimanimani foothills endemic	9
Chimanimani foothills near-endemic	1

Figure 10 below shows the percentage of conservation assessments of Chimanimani endemics and near endemics (updated from Timberlake *et al.* 2016b). EN (Endangered), VU (Vulnerable), NT (Near-threatened), LC (Least Concerned), DD (Data Deficiency).

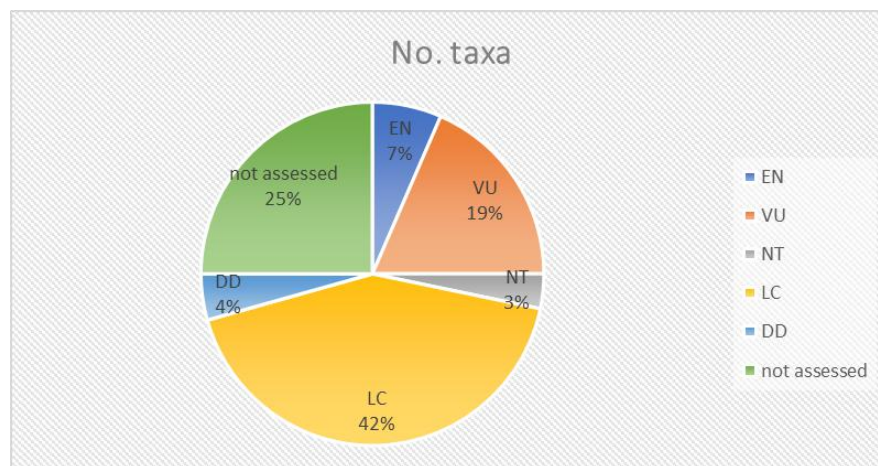


Figure 10: Status of endemic and near-endemic taxa

4.2.2 FAUNA

4.2.2.1 Species occurrence

Data on the occurrence of fauna within Chimanimani and Chipinge Districts is largely restricted to the three main protected areas of Chimanimani National Park, the Haroni-Rusitu Botanical Reserves and Chirinda Forest. Available data for the Chimanimani National Park has recently been well summarized by Timberlake (2017)⁷. For Chirinda Forest there is a visitors' guide that provides detailed information on the occurrence of mammals, birds, reptiles, amphibians and butterflies (Timberlake and Shaw, 1994). There is a similar but unpublished booklet that covers the lower Rusitu valley, including the Haroni and Rusitu Botanical Reserves. It has checklists on mammals, birds, reptiles, amphibians, fish and Odonata species. These comprise the main source materials for this lowland area. There is a need for updating some of the information. Information on birds is

⁷ Timberlake

available from BirdLife Zimbabwe and Birdlife International website. The information on birds is relatively up to date in terms of species lists for Chimanimani National Park, Haroni-Rusitu and Chirinda Forest.

Table 7 provides a summary of the numbers of species for different taxa recorded from the Chimanimani National Park, the lower Rusitu valley and Chirinda Forest. In general, bird species are most numerous (262 species for lower Rusitu valley, 216 species for Chimanimani National Park and 54 species for Chirinda Forest (BLZ, 2017), or 73 according to the Chirinda booklet (Irwin, 1994), followed by butterflies (199 species for lower Rusitu and 85 for Chirinda Forest), then mammals, then reptiles, amphibians and fish, and finally Odonata. Species richness is considerably enhanced by the presence and inclusion of representative species from three different biomes, the Afrotropical Highlands (montane grasslands, shrubland and forests), East African Coastal Moist Forests (lowland moist forests) and Zambebian savannas (dry miombo woodlands).

Table 7: Summary of available data on fauna occurrence

Taxa	Chimanimani District	Chimanimani Mountains	Combined Chimanimani National Park and lowlands	Haroni-Rusitu	Chirinda Forest - Chipinge District
Mammals		67		52	44
Birds		177		262	73
Birds Beasley		186			
Birds BLZ		216		262	54
Birds-Avibase	288	274			
Reptiles			61	40	27
Amphibians			34	26	15
Fish			51	14	
Butterflies				199	85
Odonata				22	

4.2.2.2 Species of conservation interest

Species of conservation interest include species that are endemic or near endemic to the area, species that are rare or have restricted distributions in Zimbabwe and species that are considered to be endangered. Altogether a total of 127 species of conservation importance are identified comprising 59 butterflies, 34 birds, 12 amphibians, 9 mammals, 8 reptiles, 3 Odonata and 2 fish species. A total of 22 red data species occurs within the area, comprising 2 mammals, 14 birds, 2 amphibians, 2 fish and 2 damselfly species. Table 8 below summarizes bird species of conservation interest occurring within the Chimanimani National Park/Chimanimani mountains (CNP), the Haroni Botanical Reserve and lower Rusitu valley (HR) and Chirinda Forest (CF).⁸ Status: (CR – Critically Endangered, EN – Endangered, VU – Vulnerable and NT – Near Threatened) and fulfilment of IBA criteria (A1, A2 and A3).

⁸Sources: Childes and Mundy, 2001; Birdlife International 2021a, 2021b and 2021c

Table 8: Bird species of conservation interest

Common Name	Latin Name	Location			Conservation Status	IBA Criteria
		CNP	HR	CF		
Chirinda Apalis	<i>Apalis chirindensis</i>	CNP	HR	CF		A2, A3
Steppe Eagle	<i>Aquila nipalensis</i>				EN	
Tawny Eagle	<i>Aquila rapax</i>				VU	
Egyptian Vulture	<i>Neophron percnopterus</i>		HR		VU	
Stripe-cheeked Greenbul	<i>Arizelocichlamilanjensis</i>	CNP	HR	CF		A3
Pale Batis	<i>Batissoror</i>	CNP	HR			A3
Barratt's Warbler	<i>Bradypterusbarratti</i>	CNP	HR			A3
Southern Ground-Hornbill	<i>Bucorvus leadbeateri</i>				VU	
Wattled Crane	<i>Bugeranuscarunculatus</i>				VU	
Southern-banded Snake-Eagle	<i>Circaetus fasciolatus</i>	CNP	HR		NT	A1, A3
Yellow-bellied Waxbill	<i>Coccygiaquartinia</i>	CNP	HR	CF		A3
Red-faced Crimsonwing	<i>Cryptospizareichenovii</i>	CNP				A3
White-tailed Crested-Flycatcher	<i>Elminiaalbonotata</i>	CNP	HR	CF		A3
Montane Blue Swallow	<i>Hirundo atrocaerulea</i>	CNP			VU	A1, A3
Bronze Sunbird	<i>Nectariniakilimensis</i>	CNP				A3
Roberts's Warbler	<i>Oreophilaisrobertsi</i>	CNP				A2, A3
Yellow-throated Woodland-Warbler	<i>Phylloscopusruficapilla</i>	CNP	HR	CF		A3
White-starred Robin	<i>Pogonocichla stellate</i>		HR	CF		A3
Gurney's Sugarbird	<i>Promeropsburneyi</i>	CNP			NT	A3
Scarce Swift	<i>Schoutedenapusmyoptilus</i>	CNP				A3
African Crowned Eagle	<i>Stephanoaetuscoronatus</i>	CNP	HR	CF	NT	
Gorgeous Bushshrike	<i>Telophorusviridis</i>	CNP	HR			A3
Bateleur	<i>Terathopiusecaudatus</i>		HR		EN	
Striped Flufftail	<i>Sarothruraaffinis</i>	CNP				A3
Taita Falcon	<i>Falco fasciinucha</i>	CNP	HR		VU	A1
Grey Cuckooshrike	<i>Ceblepyriscaesius</i>	CNP	HR	CF		A3
Olive Bush-shrike	<i>Chlorophoneusolivaceus</i>	CNP	HR	CF		A3
Orange Ground-thrush	<i>Geokichlagurneyi</i>	CNP	HR			A3
Chestnut-fronted Helmetshrike	<i>Prionopsscopifrons</i>		HR			A3
Woodwards' Batis	<i>Batisfratrum</i>		HR			A3
Black-bellied Starling	<i>Notopholiacorusca</i>		HR			A3
Plain-backed Sunbird	<i>Anthreptes reichenowi</i>		HR		NT	A1, A3
Lesser Seedcracker	<i>Pyrenestes minor</i>		HR		VU	A3
Swynnerton's Robin	<i>Swynnertonia swynnertoni</i>			CF	VU	A1, A2, A3
Total	34	21	22	10	14	4, 3, 26

4.3 "Provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale".

(Describe in general terms the potential of the area to serve as a site of excellence for promoting the sustainable development of its region (or "eco-region")).

There are agro-ecological, geological, socio-economic and geographical reasons why the proposed Chimanimani BR has potential to serve as a centre of excellence for promoting sustainable development in the country and the southern Africa sub-region. It will do so by linking ecosystem and biodiversity conservation with sustainable development, improving livelihoods, and providing local solutions to global challenges.

It has all the agro-ecological regions of the country, which makes it suitable for the growing of a wide range of crops, fruits, tea and timber plantations and livestock (cattle, goats and poultry) that are adapted to high rainfall and cool weather and those that are adapted to hot and semi-arid conditions. This means that there is great potential for different kinds of sustainable food systems and agro-based industries that can complement each other. The crops and livestock, coupled with wildlife and biodiversity conservation will serve as a strong foundation for a sustainable natural resources-based economy. The scenery, hiking, IBAs and high levels of species endemism, diversity and wide distribution of cultural and historical sites provide a good foundation for eco-tourism. At the same time the proper conservation and management of the Budzi and Save catchment areas are critical for the provision of multiple purposes of water to improve livelihoods and sustainable development in the catchment area and downstream: water for domestic use, livestock and wild animals, irrigation and ecosystem services.

More specifically, the establishment of the proposed Chimanimani BR will contribute towards:

- Eco-tourism in the Chimanimani that would benefit the local economy and communities through the creation of a market for community non-timber forest products such as honey, baobab powder, and crafts, fruits and guided tours and tourist accommodation.
- Regional, trans-boundary tourism by connecting visitors to the larger Chimanimani TFCA, which covers Mozambique and Zimbabwe, and the neighbouring Greater Limpopo TFCA, which covers Zimbabwe, Mozambique and South Africa.
- Increased eco-cultural tourism activity will enhance the utilisation of eco-tourism services and products, which will in turn rewards the sustainable utilisation of natural resources and motivate both the local authority and the community to conserve their resources.

Figure 11 below gives an overview of tourism features in Chimanimani.

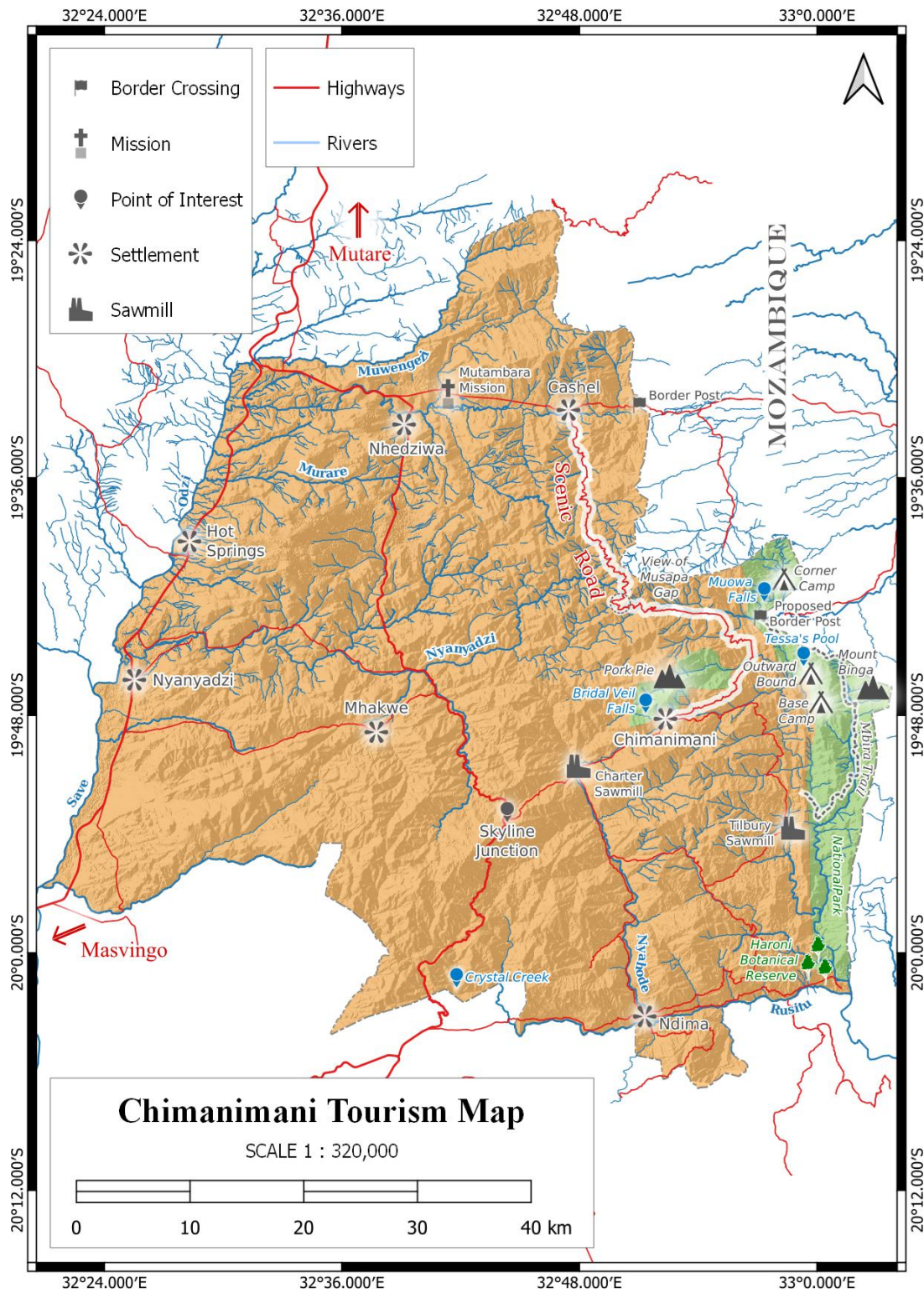


Figure 11: Map of Chimanimani Tourism Features

4.4 "Have an appropriate size to serve the three functions of biosphere reserves"

(This refers more particularly to (a) the surface area required to meet the long-term conservation objectives of the core area(s) and the buffer zone(s) and (b) the availability of areas suitable for working with local communities in testing and demonstrating sustainable uses of natural resources).

Table 9 below summarises the habitat and land use types of the three zones. Figure 12 shows their sizes and distribution. Each zone is large enough to meet its long-term objectives. The transitional area is also large enough to enable local communities to experiment with and implement sustainable development activities.

Table 9: Sizes of zones of the proposed BR

Zone	Size of zone	Habitat type	Land-use
Core	27,030 ha	Upland and lowland forests and two watersheds	Protected area, tourism and sustainable livestock management
Buffer	52,032 ha	All types of habitats found in the district	Protected area, and smallholder agriculture, and forestry plantations
Transition	274,406 ha	All types of habitats found in the district	Protected area, and smallholder agriculture, commercial agriculture and forestry plantations

4.5 Through appropriate zonation: "(a) a legally constituted core area or areas devoted to long term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives".

(Describe the core area(s) briefly, indicating their legal status, their size, the main conservation objectives).

There are five core zones in the proposed Chimanimani Biosphere Reserve, and they are individually and collectively big enough to meet the objectives. Covering a total area of 27,030 ha they are found in protected areas and communal areas.

Table 10: Location and sizes of core zones

Name of core zone	Northern most Latitude	Eastern most Longitude	Southern most Latitude	Western most Longitude	Size (ha)	Legislation
National Park, Eland Sanctuary & Haroni Botanical Reserve	-19.6509	32.80367	-20.04282	33.06256	18,930	Zimbabwe Parks and Wildlife Act Chapter 20:14
Bvumbura	-19.54019	32.66595	-19.68259	32.80867	4500 (est.)	Communal Areas Act and the Traditional Leaders Act
Gwindingwe	-19.78163	32.5037	-19.94336	32.73918	3600 (est.)	Communal Areas Act and the Traditional Leaders Act

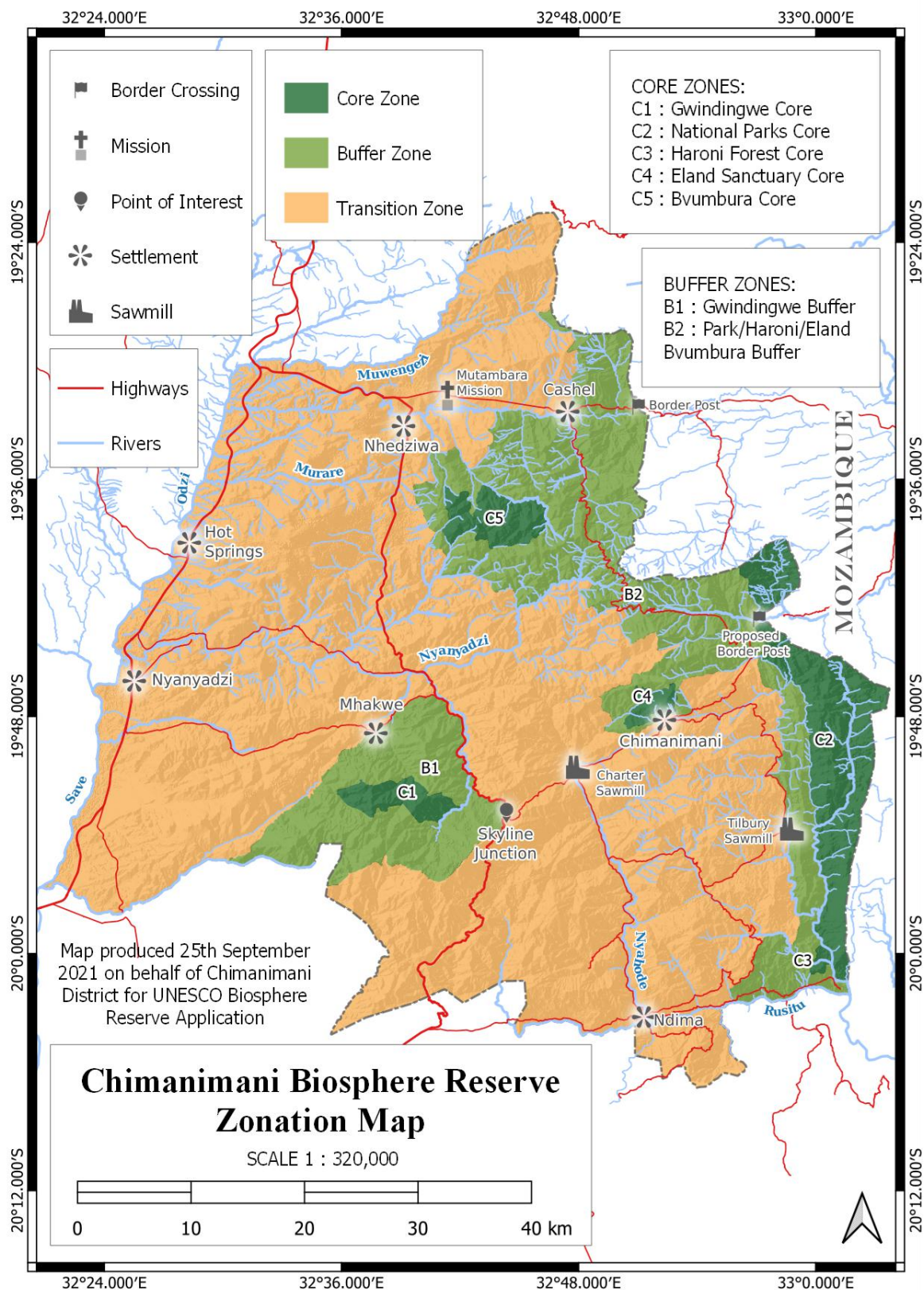


Figure 12: Zones of the proposed Chimanimani Biosphere Reserve

"(b) a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place".

(Describe briefly the buffer zones(s), their legal status, their size, and the activities which are ongoing and planned there).

The core zones are surrounded by buffer zones, which cover a total of 52,052 ha. Gwindingwe core zone in the southwestern part of the district is surrounded by Gwindingwe buffer zone. Bvumbura core zone in the north is surrounded by Bvumbura Buffer zone while the Eland Sanctuary zone, and Chimanimani National Park are surrounded by Eland Sanctuary and National Parks buffers zones respectively. The Bvumbura, Eland Sanctuary and National Park buffer zone form one large buffer zone stretching along the roughly 130 km long eastern border of the district with Mozambique. The buffer zones are under the jurisdiction of traditional leaders, Chimanimani Rural District Council and the state through the Department of National Parks and Wildlife. The buffer zones will: (i) control the spread of fire, exotic species and invasive species into the core area, (ii) enhance landscape conservation and reduce the risk of flooding, (iii) enhance watershed protection, (iv) safeguard wildlife and protected areas, and (v) reduce the risk of encroachment of human activities in the core areas, and (vi) provide opportunities for eco-cultural tourism.

The main activities in the buffer zone are:

- Small holder agriculture, which focuses on rainfed agriculture production, irrigated agriculture and livestock production in widely practised in the communal areas. The agricultural production systems cover both agroecology (sustainable agriculture) and conventional agriculture.
- Sustainable management and utilisation of non-timber forestry products in communal areas. The products include honey and wild fruits such as baobab.
- Commercial exotic tree plantations, which are on private land and provide an important source of timber for the district and country.
- Biodiversity conservation comprising of botanical gardens that are under the jurisdiction of the state.

Table 11 below explains the important features and potential value of the proposed buffer zones.

Table 11: Important features and potential value of buffer zones

Location of buffer zone	Important features
Around Core Zone 1: Gwindingwe Plateau	<ul style="list-style-type: none"> • Protect a major watershed • Reduce encroachment of human activities • Combat wild fires and limit the spreading of invasive species into pristine nature areas, which has high biodiversity
Chimanimani (west of Core Zone 2 & 3) National Park buffer zone	<ul style="list-style-type: none"> • The land has been under sustainable management for the last 30 years in the northwest of the core zone. • Covers sustainable agriculture, agro-forestry, preserved indigenous forest, beekeeping in the northwest of the core zone • Has cultural heritage sites and a community-owned cultural centre in the northwest of the core zone. • High mountain area and source of watershed in the southwest of the core zone • Limited settlement and agricultural activity focusing on small scale tea production southwest of the core zone

Around Core Zone 4: Eland Sanctuary	<ul style="list-style-type: none"> • Protect the sanctuary from encroaching fires • Safeguard wildlife and threatened species in the sanctuary • Potential for nature trails and hiking • Conservation of the Miombo Woodland for the environmental protection of surrounding communities (from landslides)
Around (Core zone 5) Bvumbura	<ul style="list-style-type: none"> • Farmers practise agroecological farming and indigenous reforestation • Opportunities to improve grazing management in the plateau and agroecological farming near rivers • There are opportunities for eco-cultural tourism

"(c) an outer transition area where sustainable resource management practices are promoted and developed".

(The Seville Strategy gave increased emphasis to the transition area since this is the area where the key issues on environment and development of a given region are to be addressed. Describe briefly the transition area(s), the types of questions to be addressed there in the near and the longer terms. The Madrid Action Plan states that the outer boundary should be defined through stakeholder consultation).

Through community engagement, Chimanimani Stakeholders unanimously opted for the inclusion of the whole district into the Chimanimani BR. Sustainable land use management and agroecology have been grounded in all areas of the district. Notably, sustainable grazing management projects have been prominent in the drier western low veldt areas, where small and large livestock assumes a much greater livelihood importance than in the high rainfall areas. Accordingly, all areas in the district that are not core zones or buffer zones are designated as transitional areas. Development interventions in these areas have been planned for at community level according to the specific conditions of the areas concerned. There are ward-based community structures and farmer experts in rangeland management, seed sovereignty, irrigation farming and many other techniques and approaches. A Permaculture site that promotes agroecology under semi-arid conditions is situated in Chaseyama (Ward 3 Chakohwa). The PORET Centre there is situated close to the Hot Springs in Rupise (Ward 5) and offers considerable potential for eco-based tourism.

(d) Please provide some additional information about the interaction between the three areas.

The economy of this diverse district is to be seen as intricately intertwined. People from the low veld look for seasonal employment in the high veld during harvesting time. There is a certain amount of internal migration within the district depending on food and nutrition security levels. Meat, river sand and small grains are traded from west to east, while maize, citrus, bananas, avocados and potatoes are traded from east to west. The western parts are geographically closer to urban markets and administrative centres like Mutare and Harare. Therefore, there are connections between the people of Chimanimani that affect transitional areas as much as the buffer zones and the core zones. The majority of people in the BR live in transitional areas but they will also benefit from the development of the core and buffer zones.

4.6 "Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and the carrying out of the functions of a biosphere reserve".

A Chimanimani Biosphere Reserve Trust oversees the operations of the BR according to its three main functions. The Board, and its Management Team, are consistently guided by the UNESCO MAB National Committee, which is part of a National Advisory HUB including the Ministry of Environment, Climate Change, Tourism & Hospitality Industry. Research Institutions and Partner Organisations may also be co-opted into this National Hub. Residents of buffer zones and transitional areas are represented in the BR governance system through elected committees.

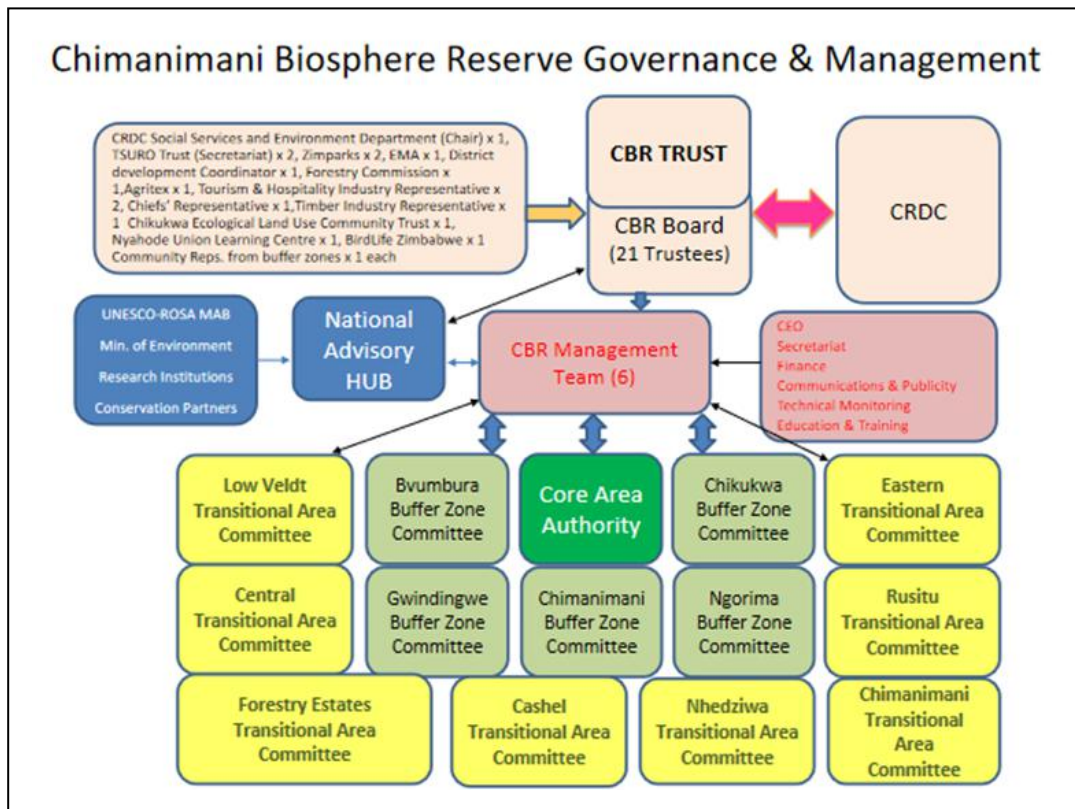


Figure 13: Proposed Chimanimani BR governance and management structure

4.6.1 Describe arrangements in place or foreseen.

(Describe involvement of public and/or private stakeholders in support of the activities of the biosphere reserve in core, buffer and transition areas (such as agreements, protocols, letters of intent, protected area(s) plans)).

The Chimanimani Climate Change Response & Watershed Management Policy (CCCR&WMP) mentioned the establishment of different conservation zones already in 2017. Section 8.3 (iv) reads: ‘Designate and establish intensive conservation areas (RDC Act 29:13, Section 61), e.g., by creating buffer zones around sensitive ecosystems, for the purpose of natural resources management.’ The core areas will be managed by the CBR Management Team in collaboration with the authorities responsible for the specific areas. The Management Team will work with decentralised buffer zone committees, and similarly so in the transitional areas. All entities (public agencies, private sector, civil society, communities) subscribe to the jointly developed Management Plan through signed Letters of Intent.

4.6.2 Have any cultural and social impact assessments been conducted, or similar tools and guidelines been used?

(e.g., Convention on Biological Diversity (CBD)’s Akwé: Kon guidelines; Free, Prior, and Informed Consent guidelines, Biocultural Community Protocols, etc.). (UNESCO’s Programme on Man and the Biosphere (MAB) encourages biosphere reserves to consider and respect indigenous and customary rights through programmes or tools, in accordance with the United Nations Declaration on the Rights of Indigenous Peoples (http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf when relevant and appropriate)).

All six Chiefs of Chimanimani District were part of the B.R. planning process. Traditional leaders gave their specific input during Key Informant Interviews. Research carried out by Practical Action / TSURO Trust in 2015 provided for detailed insights on the culture and polity; inheritance; marriage; household typology; migration; participation by gender. A qualified Archaeologist/Heritage Manager was engaged to carry out an inventory of both the tangible and intangible heritage resources in the districts in August 2021.

4.7 Mechanisms for implementation:

Does the proposed biosphere reserve have:

"(a) mechanisms to manage human use and activities in the buffer zone or zones"?

If yes, describe. If not, describe what is planned.

Access to core zones requires a notification of the BR Management Team, and in National Park areas compliance with ZimParks regulations. ZimParks will apply a measured judgement as to feasibility of NP regulations vis-à-vis tourism development and community benefits from ecosystem services. All buffer zones are guided by land use plans that guide settlement, resource allocation and economic activities. Community action groups and buffer committees monitor the implementation of plans and compliance with established rules.

"(b) a management policy or plan for the area as a biosphere reserve"?

If yes, describe. If not, state how such a plan or policy will be developed, and the timeframe. (If the proposed area coincides with one or more existing protected natural area(s), describe how the management plan of the proposed biosphere reserve will be complementary to the management plan of the protected area(s)).

A Management Plan will be developed in a participatory process after the successful designation of the Chimanimani Biosphere Reserve.

"(c) a designated authority or mechanism to implement this policy or plan"?

A Chimanimani Biosphere Reserve Trust, headed by a CBR Board, will employ a BR Management Team to implement the Management Plan in collaboration with committees and stakeholders. The Trust will be guided by the MAB National MAB Committee, the Ministry of Environment and other members of a National Hub. (see Section 4.6 above)

"(d) programmes for research, monitoring, education and training"?

If yes, describe. If not, describe what is planned.

Four Schools within buffer zones will receive the status of UNESCO Biosphere Reserve Schools: Mukombiwani Secondary School (Chikukwa), Chimanimani Government Primary School (Chimanimani Village), Tiya Primary School (Gwindingwe) and Muchadziya Primary School (Ngorima, Ward 22). These schools will be supported in eco-designed learning materials, climate risk adapted infrastructure and conservation-oriented learning and monitoring programmes. School children and young people from those communities will be linked to programmes of other conservation areas like Gonarezhou National Park.

The CBR will link up with a variety of scientific research and monitoring institutions and programmes. These include the Africa University in the province and ZimParks. Conflict sensitive capacity building and nature guide training will be offered to stakeholders, community members and especially young people in buffer zones and transitional areas. The district will work with the Africa University institute that pioneered post-graduate training in governance and conflict transformation in the country.

5. ENDORSEMENTS:

(If a large number of Authorities are involved, please enclose the additional endorsement letters as a separate Annex).

5.1 Signed by the authority/authorities in charge of the management of the core area(s):

Full name and title: _____

Date: _____

Address, email, phone number: _____

Full name and title: _____

Date: _____

Address, email, phone number: _____

5.2 Signed by the authority/authorities in charge of the management of the buffer zone(s):

Full name and title: _____

Date: _____

Address, email, phone number: _____

Full name and title: _____

Date: _____

Address, email, phone number: _____

5.3 Signed as appropriate by the National (or State or Provincial) administration responsible for the management of the core area(s) and the buffer zone(s):

Full name and title: _____

Date: _____

Address, email, phone number: _____

Full name and title: _____

Date: _____

Address, email, phone number: _____

Full name and title: _____

Date: _____

Address, email, phone number: _____

5.4 Signed by the authority/authorities, elected local government recognized authority or spokesperson representative of the communities located in the transition area(s).

Full name and title: _____

Date: _____

Address, email, phone number: _____

Full name and title: _____

Date: _____

Address, email, phone number: _____

Full name and title: _____

Date: _____

Address, email, phone number: _____

5.5 Signed on behalf of the MAB National Committee or focal point:

Full name and title: _____

Date: _____

Address, email, phone number: _____

PART II: DESCRIPTION

6. LOCATION (COORDINATES AND MAP(S)):

6.1 Provide the biosphere reserve's standard geographical coordinates (all projected under WGS 84):

Table 12 below provides the standard geographical coordinators for the proposed Chimanimani BR

Table 12: Standard geographical coordinates for the proposed BR

Cardinal points:	Latitude	Longitude
Most central point:	19°47'08"S	32°42'54"E
Northernmost point:	19°23'21"S	32°47'28"E
Southernmost point:	20°06'36"S	32°54'34"E
Westernmost point:	19°56'34"S	32°20'55"E
Easternmost point:	19°46'34"S	33°03'43"E

6.2 Provide a map(s) on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve (Map(s) shall be provided in both paper and electronic copies). Shapefiles (also in WGS 84 projection system) used to produce the map must be attached to the electronic copy of the form.

If possible, also provide a link to access this map on the internet (e.g., Google map, website...).

See Figure 12, page 23 (to be accessed on the CRDC website <http://chimanimanirdc.org.zw>)

7. AREA (see map):

Total: 345,014 ha

Table 13 below summarizes sizes of the proposed Chimanimani BR.

Table 13: Sizes of BR zones

	Terrestrial	Marine (if applicable)	Total
7.1 Area of Core Area(s):	27,030 ha	_____ ha	27,030 ha
7.2 Area of Buffer Zone(s):	52,032 ha	_____ ha	52,032 ha
7.3 Area of Transition Area(s):	265,952 ha	_____ ha	265,952 ha
TOTAL:	345,014 ha	_____ ha	345,014 ha

7.4 Brief rationale of this zonation in terms of the respective functions of the biosphere reserve. If a different type of zonation also exists indicate how it can coexist with the requirements of the biosphere reserve zonation.

(e.g., if national criteria exist for the definition of the area or zones, please provide brief information about these).

The areas designated as core and buffer zones ensure long term protection of the critical watershed areas in Chimanimani District, with all their biodiverse forms of life and ecosystem services offered to surrounding communities. They represent important areas along greater biodiversity corridors that are crucial to the survival of birds and wildlife, including threatened species. These corridors link Chimanimani with the Vhumba and Nyanga mountains to the north, Mozambiquan parks like Parque Nacional de Chimanimani and Gorongosa, Chirinda Forest in Chipinge and Gonarezhou National Park further to the south. All parts of Chimanimani are related to the core and buffer zones, which provides for widespread support for the CBR in the whole district.

8. BIOGEOGRAPHICAL REGION:

[Indicate the generally accepted name of the biogeographical region in which the proposed biosphere reserve is located.] (The term "major biogeographic region" is not strictly defined but you may wish to refer to the Udvardy classification system (http://www.unep-wcmc.org/udvardys-biogeographical-provinces-1975_745.html)).

Eastern Afromontane Ecosystem.

9. LAND USE:

9.1 Historical:

(If known, give a brief summary of past/historical land use(s), resource uses and landscape dynamics of each zone of the proposed biosphere reserve).

Agroecological regions I and II⁹ are high rainfall areas and all the core zones of the CBR fall into this category. The core zones are also characterised by a rugged terrain with high differences in altitudes within short distances, which make them unsuitable for agriculture. After attaining Independence in 1980, Tribal Trust Lands created under colonial rule were transformed into communal lands governed by the Communal Lands Act. In the communal lands all land is state land and there are no private property rights in the form of title deeds. Land is allocated by Village Heads to households, which have the traditional right to use the land and to pass on that right to their descendants. Usage of other resources like water is also negotiated at village level. The average household size of cultivated plots varies from 0.5 ha to 3.0 ha depending on climate and population density. Most of the communal lands are situated in the central to western areas (Agroecological regions III-V). The Chikukwa, Gwindingwe and Ngorima communal lands, where buffer zones have been established, lie in agroecological regions I and II.

In resettlement areas, residents have been given offer letters by Government, which however are not considered as collateral by financial institutions. The average household size of cultivated plots in resettlement areas is 5 ha. The buffer zones in Shinja Resettlement area lie in agroecological region III while Marti /Hangani lies in agroecological region I.

Forestry Estates are fall under private land ownership and mostly lie in agroecological regions I and II. Protected Areas are regulated according to the Parks and Wildlife Act (123:1991 and amended 19:2001) and related Statutory Instruments.

⁹ Agroecological Regions were redefined in 2020 (see Figure 14: Manatsa et al)

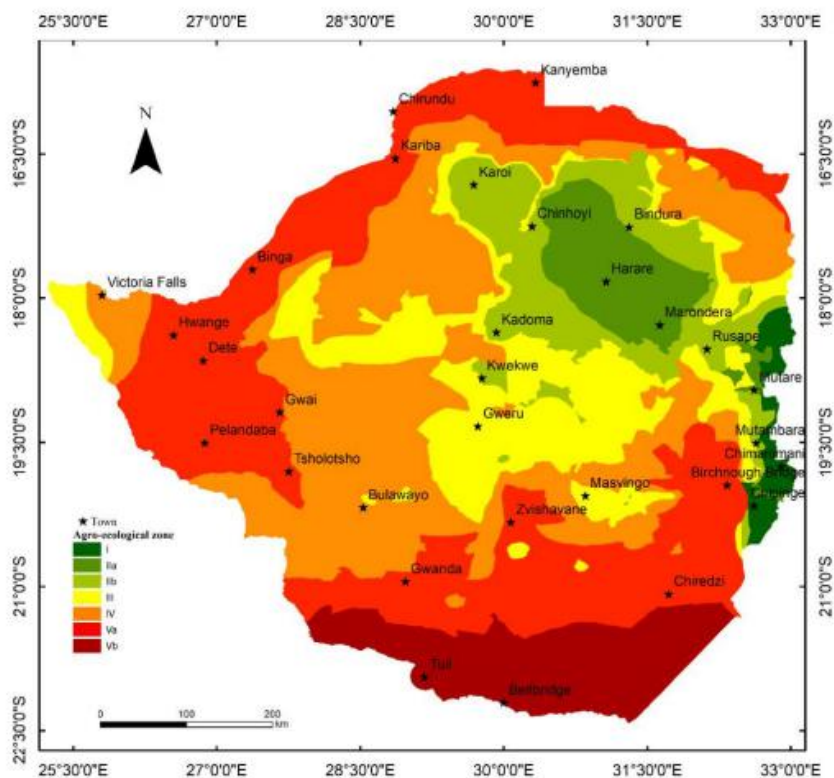


Figure 14: Agro-ecological regions of Zimbabwe

Source: Manatsa et al., 2020, p. 58¹⁰

9.2 Who are the main users of the biosphere reserve? (for each zone, and main resources used). If applicable, describe the level of involvement of indigenous people taking into account the “United Nations Declaration on the Rights of Indigenous Peoples”. (http://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf).

The main intended users of transitional and buffer zones the Chimanimani BR are small scale farming communities in the district. Many of them grow crops such as maize, small grains, beans, sunflower, pumpkins and the like. In some areas such as Rusitu, fruit production, including banana and citrus, form an important part of their cropping systems. Besides rainfed cultivation there are some irrigations schemes in the low veld that depend on water supply from the highland ecosystems. Livestock is held on common property, where there is a great need to practise controlled grazing in order to preserve and rehabilitate eroded rangelands. Resource users, traditional leaders and community-based organisations are supported in developing sustainable resource management approaches to the governance of the commons. Private companies involved in timber plantations are also important users of buffer zones. The main intended users of the core zone are educators, conservationists, and scientists.

¹⁰ Manatsa, D., Mushore, T.D., Gwitira, I., Wuta, M., Chemura, A., Shekede, M.D., Mugandani R., Sakala, L.C., Ali, L. H., Masukwedza, G.I., Mupuro, J.M., and Muzira., N.M. (2020). Revision Of Zimbabwe’s Agro-Ecological Zones. (In Press).

9.3 What are the rules (including customary or traditional) of land use in and access to each zone of the biosphere reserve?

Principles laid down in the CC&WSM Strategy, connected to the Chimanimani Climate Change Response & Watershed Management Policy have guided the formulation of rules and regulations:

- Pursue a relevant, implementable and practical community interest driven development agenda,
- Create awareness about the purpose and intrinsic value of biodiversity of plant & animal species,
- Participation and inclusivity of communities and stakeholders regardless of their age, gender, economic or social status, political affiliation, culture and belief systems,
- Equitable and just access to resources and sustainable livelihood development,
- Awareness creation and enforcement of local rules and regulations,
- Promotion of environmentally friendly and low carbon technologies, and
- Motivate industries and SMEs towards climate proofing of new investments.

Traditional by-laws are formulated for each Chiefdom and specify detailed regulations regarding: Fire; Livestock Management ;Water Sources; Soil Conservation, and Forest Conservation.

Stakeholder consultations identified the following regulations for different zones (Table 14). A plethora of national legislation governs the use of natural resources. For instance, stream bank cultivation, as well as cultivation of wetlands and their use, is restricted in Zimbabwe (GoZ 2002). Legislation restricting use of wetlands and other ecosystem goods include the Environmental Management Act (2002), the Water Act (2002) and the Communal Forest Produce Act (1988). Restrictions include, inter alia: pasturing or movement of livestock, felling of trees, cultivation or method of cultivation or use of land within stipulated distances from the riverbank, and erecting buildings near a public stream or water source. Government departments, such as the Agricultural and Technical Extension Services (AGRITEX) and local authorities (RDCs), are also charged with enforcement of rules or by-laws regarding soil conservation methods, environmental regulations and land use plans (GoZ 1982, 1988, Mbereko et al. 2007). In addition, traditional leaders such as chiefs, headmen and village heads are also empowered to enforce compliance with environmental regulations and/or by-laws (GoZ 2000). Informally, ancestral spirit guardians, known as *mhondoro* among the Ndaou people (as among other Shona people) – who inhabit Chimanimani – are also believed to control fertility and provisioning ecosystem services. For instance, it is believed that non-compliance with taboos in a spirit province results in the withdrawal of ecosystem goods and services from the people, such as the drying up of wetlands (Mukamuri 1995; Mawere and Wilson 1995; Mbereko et al. 2007).

The rules and regulations guiding activities, practice and behaviour in core, buffer and transition zones were extensively debated by a multitude of stakeholders and community representatives and finally jointly agreed upon. Table 14 below summarises the rules.

Table 14: Regulations governing different Chimanimani Biosphere Reserve zones

Core Zones	Buffer Zones	Transitional Zones
<ul style="list-style-type: none"> • No Settlements • Conservation of plants and animals • No hunting • No mining • No access without notification • Rules for visitors & guides • Payment for visits; free entry for monitors • No tree cutting, removal of plants, sand & other resources • Provision of water for surrounding communities • Controlled grazing permitted in some places 	<ul style="list-style-type: none"> • Settlements allowed and livelihood activities according to conservation rules • Strict fire precaution and control • All animals are herded • Conservation of spring forests and water sources • Soil & water conservation • Stabilised stream banks without cultivation • Mining only according to Environmental Impact Assessment without pollution of water sources • Control of invasive exotic tree species 	<ul style="list-style-type: none"> • Settlements and economic activities governed by existing Acts and Statutory Instruments: • Environmental Management Act • Waste management regulations • Water Act • Communal Forest Produce Act • CRDC Environmental By-laws • Chiefs' By-laws • Community resource governance rules • Disaster Risk Reduction regulations

Details of conservation rules and regulations concerning different acts and statutory instruments will be included in the CBR Management Plan.

10. HUMAN POPULATION OF PROPOSED BIOSPHERE RESERVE:

[Approximate number of people living within the proposed biosphere reserve]

Table 15 below summarises the population distribution in the three zones of the proposed BR.

Table 15: Population distribution in the proposed zones

	Permanently	Seasonally
10.1 Core Area(s)	0	_____
10.2 Buffer Zone(s)	17,134 (11 %)	_____
10.3 Transition Area(s)	137,154 (89 %)	_____
Total:	154,288 (100 %)	_____

10.4 Brief description of local communities living within or near the proposed biosphere reserve.

(Indicate ethnic origin and composition, minorities etc., main economic activities (e.g., pastoralism, tourism) and the location of their main areas of concentration, with reference to the map (section 6.2)).

The proposed Chimanimani BR is divided into 23 wards. Land use distribution is as follows:

- Forestry estates (42 %),
- Communal areas (34 %),
- Resettlement areas (17 %),
- National parks (5 %),
- Commercial farming areas (1 %)
- Semi-urban settlements (1 %).

According to the 2012 Census there were 32,801 households or 133,810 inhabitants in the district. At a projected annual growth rate of 1.15% the 2021 district population is projected at 154,288 people. Most of these (about 89 %) live in communal and resettlement areas. In these areas, small-scale farming is practised. About 60 % of the district population live in the western drier communal lands of the district, which is part of the transitional zone.

Chimanimani is mainly inhabited by Ndaou people and minority groups of Chigarwe, Ndebele, Masena, Zezuru, Karanga and some people of European descent. The Ndaou culture is referred to in more detail under section 3.1 above.

10.5 Name(s) of the major settlement(s) within and near the proposed biosphere reserve with reference to the map (section 6.2).

The table 16 below shows the major settlement within the Chimanimani BR.

Table 16: Major Settlements in Chimanimani

Major Settlements	Ward	Latitude	Longitude
Chimanimani urban	15 Chimanimani	19°48'12''S	32°52'19''E
Ndima Growth Point	21 Ngorima A	32°51'15''S	32°47'28''E
Nhedziwa Growth Point	4 Guhune	19°33'05''S	32°39'17''E
Machongwe Growth Point	13 Nyahode	19°55'28''S	32°49'30''E
Nyanyadzi Growth Point	8 Nyanyadzi	19°46'06''S	32°25'24''E

10.6 Cultural significance:

(Briefly describe the proposed biosphere reserve's importance in terms of past and current cultural values (religious, historical, political, social, ethnological) and others, if possible with distinction between material and intangible heritage (c.f. UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage 1972 and UNESCO Convention for the Safeguard of the Intangible Cultural Heritage 2003 (http://portal.unesco.org/en/ev.php-URL_ID=13055&URL_DO=DO_TOPIC&URL_SECTION=201.html) and http://portal.unesco.org/en/ev.php-URL_ID=17716&URL_DO=DO_TOPIC&URL_SECTION=201.html)).

The Chimanimani District has both tangible and intangible heritage resources. Tangible heritage is mostly in the form of Archaeological Sites that span from Early Stone Age (ESA) to Later Farming Communities (LFCs) as well as historical sites dating to the 19th Century (see table 17).

Table 17: Overview of Archaeological, historical & cultural heritage sites in Chimanimani BR

Location	Classification according to Period or type of Cultural Heritage							
	Early Stone Age	Middle Stone Age	Late Stone Age	Early Iron Age	Late Iron Age	Historical Site	Rock Painting	Sacred Place
Martin Forest				3			8	
The Corner							1	
Musapa Gap							1	
Binda					7			
Hangani					1			
Mwaoneke						1		
Steynsstroom A					1			
Dunhu ramapunha					1			
Chapanga					12			
Welgegund					22			
Weltevreden						1		
Outward Bound			2		1		10	
Melsetter Falls						1		
Saurombe				4		4		
Nyashoma Falls					1			
Mhakwe						1		
Mutema Ruins					1			
Muusha					1			
Chibwe			1					
Rockwood					1			
Misty Hill						1		
River Hill Farm			1					
Nyamzuri					1			
Heathfield			1					
Marangi Farm			1					
Albany farm	1							
Nyakamba Spruit			1					
Everglades				1				
Taaba Nchu		1						
Black Mountain Inn				1				
Shitwa					1			
Chikukwa								9
Dzingire								5
Derera								1
Machongwe								1
Myachituri								1
Nyabamba								1
Manyuka / Mhakwe								1
TOTAL: 107 sites	1	1	7	9	41	9	20	19

Most of the recorded sites are concentrated in Chimanimani National Park, Outward Bound, Martin Forest, Charter and Saurombe Estates, Chikukwa and Muusha Communal lands. Although the district does not have any declared National Monuments, most monuments are protected by the National Museums and Monuments Act 25:11. Currently the Government of Zimbabwe through NMMZ and the Ministry of National Housing and Public Works is working towards the erection of memorial plaques in Ngangu, Machongwe and Kopa in remembrance of the lives lost during the Cyclone Idai disaster which ravaged eastern Zimbabwe. These places were chosen mainly because they were the worst affected by the cyclone, recorded high fatalities and have the largest number of unaccounted for people.

Apart from archaeological and historical sites, there are several other places of community importance which qualify for an Intangible Cultural Heritage (ICH) database in terms of the 2003 UNESCO Convention for the Safeguarding of Intangible Cultural Heritage. ICH is defined as expressions and practices, knowledge and skills that among other things are recognised by communities, groups, and in some cases individuals, as forming part of their cultural heritage. This includes objects and spaces that are associated with manifestations of ICH. Interviews with traditional leaders revealed 21 sacred landscapes in the form of pools, springs, burial places, sacred forests, spiritual places and ancient tunnels.

These sacred landscapes are believed to be the abode of ancestral spirits. Rainmaking, thanksgiving ceremonies are conducted on an annual basis while appeasing ceremonies are conducted as per need. These rituals are normally under special trees or in sacred grooves on the land or mountains (*Madzimbabwe*). Various traditional ceremonies that are conducted within Chimanimani landscape define the people of Chimanimani. As such the places at which they conduct their ceremonies are worth preserving because these places are now their places of worship and connection points with the ancestral world.

While the management of archaeological heritage is clearly guided by the NMMZ Act, ICH is mainly managed at community levels by traditional mechanisms such as taboos, restrictions, myths, folklore and legends. These traditional management systems also known as Indigenous Knowledge Systems (IKS) have greatly helped in environmental management. Certain tree species such as Mahagoni (*Mukamba*) and groves (locally known as *gwasha*) are regarded as dwellings of ancestral spirits hence cannot be destroyed or harvested for firewood. Entrance to the sacred groves is restricted to traditional leaders and any other persons identified by the spirit mediums. Trees with medicinal properties are highly protected and violation of set taboos attract harsh penalties. Furthermore, ashes and leaves from some indigenous trees are used to enrich soil quality, preserve food, and treat livestock. The indigenous trees used for this purpose are held in high regard and conserved through the practice and enforcement of socio-spiritual prohibitions like taboos. It is worth noting that the body of local knowledge firmly rooted in the Chimanimani people's culture and traditions is relevant to and consistent with the national and global agenda towards strengthening and sustaining community food security and environmental management.

10.7 Specify the number of spoken and written languages (including ethnic, minority and endangered languages) in the biosphere reserve.

(Refer, for instance, to the UNESCO Atlas of Endangered languages (<http://www.unesco.org/culture/languages-atlas/index.php>)).

Most of the inhabitants of Chimanimani are of Ndaou origin. The district also has minority groups of Chigarwe, Ndebele, Masena, Zezuru, Karanga and some people of European descent. Ndaou is the mostly spoken by the people of Chimanimani village and Rusitu valley. People of Biriri, Mhakwe, Shinja used a mixed language but closely related to Manyika dialect. The people dwelling under Chief Mutambara land are commonly known as Vagarwe. Although not listed on the UNESCO Atlas of the World's Languages in Danger, in the academic realm, Ndaou is considered as an endangered language. In 2014, the Living Tongues Institute for Endangered Languages undertook a documentation exercise for endangered languages and Ndaou was among those languages. Even the the Ndaou speakers themselves fear that their language might become extinct if no efforts are done towards resuscitating it.

11. BIOPHYSICAL CHARACTERISTICS:

11.1 General description of site characteristics and topography of area:

(Briefly describe the major topographic features (wetlands, marshes, mountain ranges, dunes etc.) which most typically characterize the landscape of the area).

The eastern part of Chimanimani district is characterised by a highly rugged landscape with several plateaux at altitudes between 1700 and 1900 m above sea level. The highest peaks reach altitudes above 2200 meters. Towards the west of the district, altitudes decrease as the landscape opens up to the plains of the Odzi and Save river systems. In areas such as Ngangu, near Chimanimani, resistant quartzite rocks are interbedded with softer shales. In fact, the iconic landscape of the area is driven by the quartzites which form the caps or tops of the mountain ranges. At the top of these mountains, shallow soils are quickly washed away by rain exposing the impermeable quartz. In such situations, hazards of floods and landslides (“debris flows”) are high, where a mixture of boulders, cobbles, sand, mud and water flowed down a hillside in a fluvial fashion. The major difference in the landslide pattern between Rusitu and Chimanimani is attributed to the geology. Rusitu geology is deeply weathered dolerite and gabbro sills that give rise to deep porous soils. Chimanimani geology is resistant quartzites and shales with shallow soils.¹¹

11.2 Altitudinal range:

11.2.1 Highest elevation above sea level: 350 metres

11.2.2 Lowest elevation above sea level: 2436 metres

11.2.3 For coastal/marine areas, maximum depth below mean sea level: N/A

11.3 Climate:

(Briefly describe the climate of the area, you may wish to use the regional climate classification by Köppen as suggested by WMO (http://www.wmo.int/pages/themes/climate/understanding_climate.php)).

¹¹ Amended from Dr. Richard Owen in Manatsa et al (2020), Chapter 7

The climate within Chimanimani District varies considerably in relation to elevation. In terms of the Koppen-Geiger climate classification system, the lowest lying parts of the district experience a hot semi-arid climate (Bsh); the middle elevation areas a dry-winter humid subtropical climate (Cwa) and the highest elevation areas a dry-winter subtropical highland climate (Cwb). Throughout, rainfall is highly seasonal with the bulk of annual precipitation being recorded over the period November to March, and with the intervening months of April to October being relatively dry. Mean annual rainfall varies from about 400 mm for the lowest lying areas to over 1,400 mm for the highest elevation areas.

11.3.1 Average temperature of the warmest month: 19 °C (November)
(https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/chimanimani_zimbabwe_893813)

11.3.2 Average temperature of the coldest month: 12 °C (July)
(https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/chimanimani_zimbabwe_893813)

11.3.3 Mean annual precipitation: 300 mm, recorded at an elevation of 400 metres
1400 mm, recorded at an elevation of 1900 metres

11.3.4 Is there a meteorological station in or near the proposed biosphere reserve? If so, what is its name and location and how long has it been operating?

Chisengu (decimal degrees, latitude -19.914 and longitude 32.8849), operating for over 30 years.

11.4 Geology, geomorphology, soils:

(Briefly describe important formations and conditions, including bedrock geology, sedimentary deposits, and important soil types).

“The geomorphology of the southern end of the Eastern Highlands, i.e. between the Murari River in the north and Mount Selinda in the south, shows a strong petrological and structural control. River valleys following fault lines are particularly prevalent Although the Zimbabwe border marks the principal watershed of this region, the headwaters of the easterly flowing Musapa river cross into Mozambique through a gorge known as the Musapa Gap, about 15 km northeast of Chimanimani. ... The topography of the area surrounding Chimanimani shows a patchwork of the Post-Gondwana, African and Post-African erosion surfaces. Altitudes above 1950 m carry the Post-Gondwana surface in the form of a much dissected plateau from Pork Pie Hill (1973 m) adjacent to Chimanimani Village, northwards to Musapa (2144m). Plateau and ridges at 1770 m to 1900 m above sea level are far more widespread and give rise to the Sawerombi plateau, the Gwendingwe plateau and numerous others. They are principally composed of quartzites of the Umkondo Group. This is the African erosion surface which is also dissected by the younger Post-African cycle. Across the Gwendingwe plateau the slightly higher levels exhibit dolerite, whereas the quartzites appear some 80 m lower. Chimanimani village is situated across a Post-African saddle, which interrupts the Greenmount - Pork Pie African levels. The Bridal Veil Falls, with a drop of more than 50 m across the small Mutsarara River’s upper course, marks the contact between resistant Upper Quartzites and the softer Lower Argillaceous Formations, all of the Umkondo Group (Watson 1969).... The Haroni valley along the western flank of the Chimanimani Mountains falls principally within the Post-African erosion surface. Nevertheless, the lowest positions, towards the Haroni’s confluence with the easterly-flowing Lusitu river at less than 600 m altitude, show incision by the Pliocene erosion cycle.

The Chimanimani Mountains are distinct from the other Southern Mountains since they are offset to the east from the ridges and plateaux described above, and also since they are composed of different, more metamorphosed, rocks. The residual Gondwana erosion surface is present at elevations above 2200 m and therefore includes Dombe (2215 m), Binga (2440 m) and Mawhenge (2399 m) Southwards, altitudes drop and the Post-Gondwana erosion surface dominates at the higher levels. ... Between the eastern and western ridges stretches a grassy intermontane pediment, 1-2 km wide and up to 1700 m above sea level, which is underlain by the lower Quartz-Chlorite Schist of the Frontier Group. At higher levels, and particularly across the intermontane pediment north of Musapa Gap, the jointing, combined with inclined foliation, gives rise to large numbers of penitent rocks, i.e. inclined joint blocks (Ackermann, 1962). Where clustered within a few hectares, these leaning, rectangular blocks resemble an ancient cemetery wherein all the tombstones have slumped in the same direction.”¹²

11.5 Bioclimatic zone:

(Indicate the bioclimatic region in which the proposed biosphere reserve is located, refer to the table below and tick the appropriate box for each area of the biosphere reserve).

High resolution (5 arc min) mapping of the Koppen-Geiger climate classification for Chimanimani District was obtained from Kottek et al. (2006). According to this, the bulk of the BR is classified as moist sub-humid climate, including all of the core area, almost all of the buffer zone and roughly half of the transition zone (Table 18, estimated areas in hectares). A small part of the buffer zone and much of the remainder of the transition zone is classified as dry sub-humid, and the remaining small portion of the transition zone as semi-arid.

Table 18: Aridity index resulting from the use of P/ETP (Areas in ha)

Mean annual precipitation (P)/mean annual potential evapotranspiration (ETP)

Areas	Average annual rainfall/mm	Aridity index		Core area(s)	Buffer zone(s)	Transition area(s)
		Penman	(UNEP index)			
Hyper-arid	P<100	<0.05	<0.05			
Arid	100-400	0.05-0.28	0.05-0.20			
Semi-arid	400-600	0.28-0.43	0.21-0.50			27,440.59
Dry Sub-humid	600-800	0.43-0.60	0.51-0.65		2,602.60	101,308.50
Moist Sub-humid	800-1200	0.60-0.90	>0.65	27,030.00	49,429.31	137,202.95
Per-humid	P>1200	>0.90				

11.6 Biological characteristics:

List main habitat types (e.g., tropical evergreen forest, savanna woodland, alpine tundra, coral reef, kelp beds) and land cover types (e.g., residential areas, agricultural land, pastoral land, cultivated areas, rangeland).

For each type, indicate:

¹² Extracts from L.A.Lister - The Erosion Surfaces of Zimbabwe (Zimbabwe Geological Survey Bulletin No. 90 / 1987) p.44-48

- REGIONAL if the habitat or land cover type is widely distributed within the biogeographical region within which the proposed biosphere reserve is located, to assess the habitat's or land cover type's representativeness;

- LOCAL if the habitat or land cover type is of limited distribution within the proposed biosphere reserve, to assess the habitat's or land cover type's uniqueness.

For each habitat or land cover type, list characteristic species and describe important natural processes (e.g., tides, sedimentation, glacial retreat, natural fire) or human impacts (e.g., grazing, selective cutting, agricultural practices) affecting the system. As appropriate, refer to the vegetation or land cover map provided as supporting documentation.

The main vegetation types in the district are the Forest (Lowland forest: 320 m – 850 m, Medium altitude forest: 850 – 1350 m, Sub-Montane forest: ~1350–1650 m and Upper Montane: ~1650–2100 m), Woodland (*Uapaca kirkiana* woodland, *Brachystegia spiciformis* woodland and *B. tamarindoindes* Woodland), Scrub (Ericaceous scrub and Proteaceous scrub), Montane and submontane Grassland (on quartzite terraces, on schist slopes and Hydromorphic grassland) and Aquatic vegetation. The Ericaceous scrub is unique to the Chimanimani Mountains and this is of special importance for conservation. The Ericaceous scrub is often found between boulders and is confined to quartzite and it supports many of the endemic taxa. In addition to this, on the schist, a more open shrub grassland with *Protea* species and *Morella chimanimaniana* is found.

In the lowland, medium altitude and sub-montane forests, tree cutting for firewood and encroachment of crop fields is common. Natural and man-made fire poses a continuous threat to the sustainability of the grasslands and to forests as they suffer from periodic dry conditions and thinning. New alien species like *Vernonanthura polyanthes* (Beebush) have colonized different habitats within the district.

Figure 15 below shows the different types of vegetation in Chimanimani.

Chimanimani UNESCO Biosphere Reserve Nomination File

Vegetation Map - Draft 1
 Produced 9 Aug 2021
 Source: Wild, H. & Grandvaux
 Barbosa, L.A. (1967)

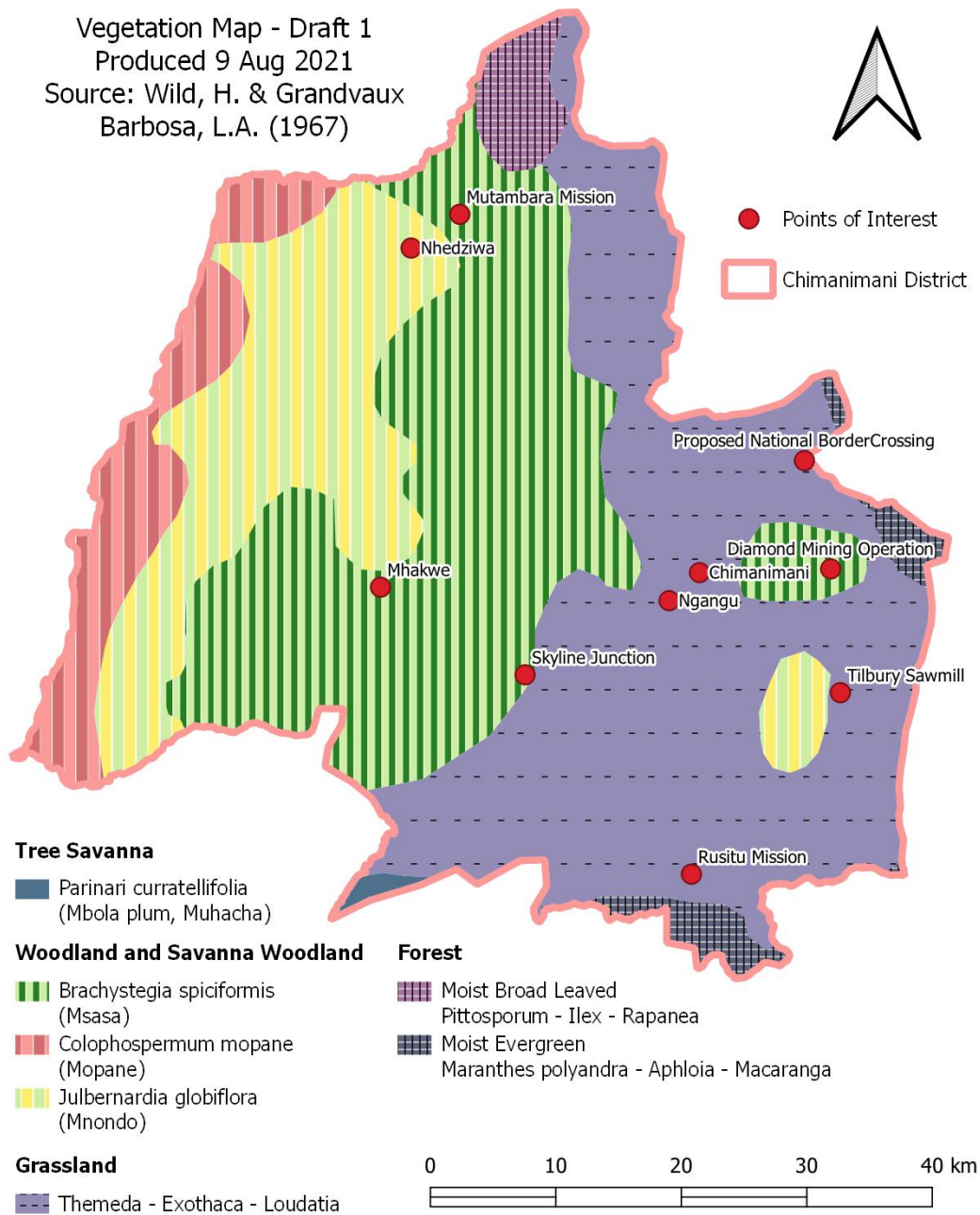


Figure 15: Vegetation of Chimanimani

12. ECOSYSTEM SERVICES:

12.1 If possible, identify the ecosystem services provided by each ecosystem of the biosphere reserve and the beneficiaries of these services.

(Please refer to the Millennium Ecosystem Assessment Framework and The Economics of Ecosystems and Biodiversity (TEEB) Framework

(<http://millenniumassessment.org/en/Framework.html> and

<http://www.teebweb.org/publications/teeb-study-reports/foundations/>)).

Communities in Chimanimani and the nation at large derive numerous benefits from nature. Table 19 below summarises the common ecosystems services, source and beneficiaries of ecosystems:

Table 19: Indicators of ecosystem services, source ecosystems and key beneficiaries

Ecosystem Services	Source Ecosystems	Key Beneficiaries
Medical	Forest, wetlands, floodplains	Communities in Chimanimani district and national pharmaceuticals
Genetic resources	Forests, croplands, water, wetlands, grasslands	Crop and animal breeders
Recreation	Forests, water, wetlands, grasslands, floodplains	Communities in Chimanimani district, national and international visitors
Water supply	Forests, water, wetlands, floodplains	Communities in Chimanimani district
Soil conservation	Croplands, wetland, forest, floodplains	Communities in Chimanimani district, and other districts within the same catchment
Flood control	Forests, wetland, floodplains	Communities in Chimanimani district
Water purification	Wetlands, water, floodplains	Communities in Chimanimani district, and other districts within the same catchment
Cognitive service	Forest	Local and international students
Aesthetic	Forest, grasslands, wetlands	Communities in Chimanimani district, national and international visitors
Grazing spaces	Grasslands, forests	Local livestock farmers in Chimanimani district
Ornamental	Forests, wetland	Communities in Chimanimani district, national and international visitors
Air quality	Forests, grasslands, croplands	The global community
Cultural and spiritual	Forest, water, wetlands	Communities in Chimanimani district, national cultural and spiritual visitors
Energy services	Forest, water, grassland	Communities in Chimanimani district and other adjacent areas derive energy resources from BR
Food	Croplands, forests, grassland, water	Communities in Chimanimani district and other nationals derive food resources from BR
Pollination services	Forests, croplands, wetlands, grasslands	Communities in Chimanimani district, and other adjacent communities with similar biomes

12.2 Specify whether indicators of ecosystem services are used to evaluate the three functions (conservation, development and logistic) of biosphere reserves. If yes, which ones and give details.

Indicators of ecosystem services are used to evaluate the three functions of the Chimanimani Biosphere Reserve through the assessment of performance of the service. Below is a summary of ecosystem services, the indicators and source of monitoring data:

Table 20: Indicators of Ecosystem Services

Ecosystem Services	Indicator	Units	Monitoring Data Source
Surface water supply	River discharge	Mm ³ per year	Modelled using hydrological models
Livestock production (meat production)	Density of animals per km ²	Number of livestock species per km ²	Department of livestock
Grazing capacity	Pasture days	Pasture days for LSU ha-1	Modelled using dry matter productivity
Soil organic carbon	Carbon sequestered by soil	grams of C kg-1 of soil	ISRIC soil database
Climate regulation	Carbon sequestered by trees	kgC/m ² /day	Remote sensing data (MODIS)
Soil conservation	Tonnes of soil protected	tonnes ha-1	Modelled using the universal soil loss equation
Recreation	Number of tourists visiting	Number of tourists per month	Tourism records from tourist destinations and the Ministry of Tourism

12.3 Describe biodiversity involved in the provision of ecosystems services in the biosphere reserve (e.g., species or groups of species involved).

- Plant species – Chimanimani district has a high plant species diversity, estimated to be around 977 species in and around the protected areas (Timberlake et al 2016, Wursten et al 2017). The common species include ferns and flowering plants such as cycads (*Encephalartos chimanimaniensis*) which provides aesthetic and ornamental services. Some of the prominent medicinal plants species such as the pepper bark tree (*Waburgia Salutaris*) and *Aloe chimanimaniensis*. The montane thickets and grasslands that perform the root binding function which is crucial to both soil and water conservation
- Mammals – The area is also associated with about 52 diverse mammalian species. The area used to have large herds of Eland and Sable antelopes which are reported to have been decimated in the process of realising ecosystem services through hunting. Currently, the common mammalian species left include klipspringer, aardvarks and bushbucks which attract both local and international tourists. Although the wildlife populations have decimated over the years communities still benefit from consumptive tourism such as hunting to fend their families.

- Birds – Chimanimani is one of the important bird areas due to its rich avifaunal species. It is estimated that there are over 185 bird species in the Chimanimani district (Beasley 1995). The primary avifaunal species of particular conservation interest is the Blue Swallow (*Hirundo atrocaerulea*), generally found in montane grassland. This among other bird species of high conservation value brings in local and international visitors for bird watching and educational purposes which boosts tourism in Chimanimani. Some bird species such as the sunbirds (*Nectariniidae*) provide pollination services to agricultural and forestry species.
- Reptiles and amphibians - The herpetofauna of the Chimanimani area is diverse with numerous species being rare and endemic to this part of the country. Previous surveys arrived at an estimate of 40 lizards and 26 amphibians. The endemism of some of the species makes this region attractive to many researchers doing herpetological studies particularly those interested in the Cave Squeaker frog (*Arthroleptis troglodytes*) and Flat-lizard (*Platysaurus ocellatus*). This facilitates the enjoyment of the cognitive ecosystem service from this area through research and monitoring activities which are primarily done as herp collection trips.
- Fish – Recent estimates have indicated that Chimanimani has a total of 63 diverse fish species. Most of the fish species are a source of relish to many communities in Rusitu and Haroni. Additionally, the role of fish species in the purification of water in the Busi river system cannot be underestimated. Although excess pollutants from activities such as gold panning threaten the survival of fish in these river systems, fish species with high pollutant tolerance levels can survive and continue to provide water purification services.
- Insects – There are more than 300 species of insects in Chimanimani and butterflies species dominate. Most insect species play a crucial role in providing pollination services to farmers who heavily depend on crop cultivation in the area. Also, insects like bees promote apiculture activities in Chimanimani. Apiculture has been identified as a potential that can quickly transform the livelihoods of local communities which bear the brunt of grinding poverty and high levels of unemployment.

12.4 Specify whether any ecosystem services assessment has been done for the proposed biosphere reserve. If yes, is this assessment used to develop the management plan?

The terrestrial ecologist of the region conducted an ecosystem services assessment in the year 2020 based on the Remote Sensing and the TEEB database. Findings of this assessment were indicated in section 3.2 of this nomination form. Results of this assessment are yet to be integrated in the proposed management plans upon verification through a ground truthing exercise.

13.MAIN OBJECTIVES FOR THE BIOSPHERE RESERVE’S DESIGNATION:

13.1 Describe the main objectives of the proposed biosphere reserve, integrating the three functions (conservation, development and logistic), presented below (sections 14 to 16), including components of biological and cultural diversity. Please specify the indirect pressures and/or organizational issues.

1. The Objectives of the Chimanimani Biosphere Reserve are to:
2. Conserve and sustain the unique biodiversity of plants and animals in Chimanimani
3. Preserve cultural diversity and heritage to strengthen the socio-cultural development of the people of Chimanimani
4. Contribute to climate risk resilience of the district through agroecology, eco-tourism, sustainable forestry and other ‘green’ economic activities that generate incomes and improve livelihoods
5. Ensure adequate and sustained ecosystem services derived from BR core and buffer zones and other watershed areas in the district
6. Prevent and transform conflicts related to land use, environmental hazards, resources and people-nature conflicts
7. Contribute to strengthening participatory governance and accountable, transparent local institutions at village, ward and district level.
8. Engage educational and research institutions to foster specialised monitoring and learning about Chimanimani plants, animals, people and culture.
9. Create awareness about the Chimanimani Biosphere Reserve and share experience and information with a global network of biosphere supporters.

13.2 Describe the sustainable development objectives of the biosphere reserve.

(If appropriate, please refer to Agenda 21, Rio+20 and SDG post 2015).

The Chimanimani Biosphere Reserve will contribute to the following Sustainable Development Goals¹³:

Goal 1. End poverty in all its forms everywhere;

Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture;

Goal 6. Ensure availability and sustainable management of water and sanitation for all;

Goal 13. Take urgent action to combat climate change and its impacts; and particularly to

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

- 15.1 by 2020 ensure conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
- 15.3 by 2020, combat desertification, and restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land-degradation neutral world

¹³ The SDG’s were adopted by the United Nations in 2015 (see <https://www.undp.org>)

- 15.4 by 2030 ensure the conservation of mountain ecosystems, including their biodiversity, to enhance their capacity to provide benefits which are essential for sustainable development
- 15.5 take urgent and significant action to reduce degradation of natural habitat, halt the loss of biodiversity, and by 2020 protect and prevent the extinction of threatened species
- 15.9 by 2020, integrate ecosystems and biodiversity values into national and local planning, development processes and poverty reduction strategies, and accounts

Zimbabwe ratified the Biodiversity Convention in 1995, the Cartagena Protocol in 2005 and (by accession) the Nagoya Protocol on Access and Benefit-sharing in 2017. In Nagoya, the so-called Aichi Biodiversity Targets were formulated, on whose state of achievement Zimbabwe last reported in its Sixth National Report (January 2020)¹⁴.

The Chimanimani Biosphere Reserve will specifically contribute to the following national targets:

Aichi Target 8: ... adaptation and mitigation strategies are being implemented to reduce the impact of climate change on vulnerable ecosystems and communities.

Aichi Target 12: ... policies and strategies are being implemented to maintain and restore ecosystem integrity and reduce ecosystems degradation to enhance the livelihoods and wellbeing of all Zimbabweans, especially those of women, indigenous and local communities, and the poor and vulnerable.

Aichi Target 16: ... the traditional knowledge, innovations and practices of local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are being respected, integrated and reflected in the implementation of the NBSAP with their full and effective participation at all relevant levels.

13.3 Indicate the main stakeholders involved in the management of the biosphere reserve.

The CBR Board (see Figure 13, page 26) is comprised of public sector organisations, traditional leaders, community-based organisations and NGOs, and the private sector as follows:

Table 21: Stakeholder groups to be involved in the proposed Chimanimani BR

Stakeholder group	Stakeholder name	No of reps
Public sector	• CRDC Social Services and Environment Department (Chair)	1
	• District development Coordinator	1
	• ZimParks	2
	• EMA	1
	• Forestry Commission	1
	• AGRITEX	1
Traditional and community reps	• Chiefs' Representative	1
	• Community reps from 4 buffer zones: Chikukwa, Ngorima, Bvumbura and Gwindingwe	4
CBOs & NGOs	• TSURO Trust (Secretariat)	2
	• Chikukwa Ecological Land Use Community Trust	1
	• Nyahode Union Learning Centre	1
	• BirdLife Zimbabwe	1
Private sector	• Tourism & Hospitality Industry Representative	2
	• Timber Industry Representative	2

¹⁴ Government of Zimbabwe: Zimbabwe's Sixth National Report to the Convention on Biodiversity

13.4 What consultation procedure was used for designing the biosphere reserve?

See Section 17.3.1

13.5 How will stakeholder involvement in implementing and managing the biosphere reserve be fostered?

Key stakeholders are represented on the Chimanimani Biosphere Reserve Board, and a Dialogue Platform will monitor and debate BR developments every three months. BR related issues are discussed and managed within buffer zone and transition area committees in all rural areas of the district.

13.6 What are the expected main sources of resources (financial, material and human) to implement the objectives of the biosphere reserve and projects within it?

(Please provide formal commitments and engagements.)

The main expected sources of financial and material resources are:

- Conservation & sustainable development funding partners
- REDD+
- Tourism income & community tourism levies

14. CONSERVATION FUNCTION:

14.1. At the level of landscapes and ecosystems (including soils, water and climate):

14.1.1 Describe and give the location of ecosystems and/or land cover types of the biosphere reserve.

At an ecosystem level, the Biosphere Reserve will provide essential protection to two critically important ecosystems. The first of these is the high altitude afro-montane ecosystem that consists of a mosaic of evergreen forest, grassland and shrubland. This biome is of very restricted distribution nationally and beyond. It supports a high number of endemic plant species, plus many other plant and animal species of conservation significance. The principal occurrences of this type are within the Chimanimani National Park, with additional smaller portions within the Eland Sanctuary, Bvumbura and Gwendingwe, all of which will be protected as part of the core area of the Biosphere Reserve.

The second critical ecosystem is low and mid-altitude evergreen forests which support a wide diversity particularly of animal species. Again this is a very restricted ecosystem and most of the original extent has already been transformed leaving only small remnant portions. The Biosphere Reserve will provide essential protection to remnant occurrences to the extreme south of the Chimanimani National Park (core zone) and to additional patches within the Haroni and Rusitu Botanical Reserves immediately to the south (buffer zone).

The Biosphere Reserve will also provide important protection to miombo woodlands, both within the core zone, as well as the buffer zone and transition areas. Whilst miombo woodlands are

widespread within the country and the wider region, in recent decades these have been subject to widespread modification through much of their range. Chimanimani is important in that it includes a wide range of miombo types from higher elevation moist woodland, such as within the National Park and the Eland Sanctuary, down to the driest types found in the low elevation portions of the district.

14.1.2 Describe the state and trends of the ecosystems and/or land cover types described above and the natural and human drivers of the trends.

The afro-montane ecosystem is in a relatively healthy conservation state. Within this, wetland communities are of particular concern, having recently suffered major twin disturbances due to Cyclone Idai and due to small-scale alluvial mining, including within the Chimanimani National Park. Forest patches have also been impacted by numerous landslides caused by the cyclone and which has had the effect of creating openings within the forests, and in which the regrowth vegetation is vulnerable to fire. This is likely to lead to further fragmentation and reduction of the forest extent. Frequent fire is also having detrimental impacts to the shrubland and woodland communities, with many woody species now being restricted to rocky outcrops, and with a loss of large trees from woodland areas. The Afro-montane portion is not badly impacted by invasive plant species. Grazing by livestock is a concern in places.

For the lowland forest communities, the portion within the Chimanimani National Park is in relatively sound state, but outside of the Park the bulk of the forest occurrences has been cleared for settlements and cultivation. This is by far the most serious form of disturbance for these forests. Here efforts need to be directed toward restoration of these important ecosystems.

The miombo woodlands are subject to a wide range of pressures, including clearing for cultivation and settlements, grazing by livestock, cutting for firewood and timber, frequent fire and alluvial mining. The extent of these threats varies from area to area and also in relation to ecological conditions. For example the recently established invasive bee-bush (since 2000) continues to spread and colonise extensive tracts within the higher and moister elevation portions, to devastating effect, but seems to be precluded from the lower lying warmer areas.

14.1.3 What kind of protection regimes (including customary and traditional) exist for the core area(s) and the buffer zone(s)?

The major parts of the core area, comprising the Chimanimani National Park and the Eland Sanctuary, already enjoy a good level of protection as formal conservation areas designated under the Parks and Wildlife Act. Part of the Gwendigwe core area is protected as a watershed area by Allied Timbers. Significant parts of the buffer zone are included within various forest estates, and within these numerous parts are set aside and protected as conservation areas (particularly wetlands and areas that are too steep to support timber plantations). Within the Park/Eland/Bvumbura buffer zone, the portion under the Chikukwa community (Ward 10) benefits from a high level of conservation awareness within the community fostered by long support by CELUCT towards sustainable development. Elsewhere, the traditional leadership are strongly supportive of conservation efforts, particularly for purposes of protection of important watershed and cultural areas.

14.1.4 Which indicators or data are used to assess the efficiency of the actions/strategy used?

Monitoring programmes, to date, remain poorly developed for all conservation areas. It is anticipated that the Biosphere Reserve will provide important opportunities to develop and strengthen monitoring activities.

14.2 At the level of species and ecosystem diversity:

14.2.1 Identify main groups of species or species of particular interest for the conservation objectives, especially those that are endemic to this biosphere reserve, and provide a brief description of the communities in which they occur.

By far the most important group of species for conservation purposes, is the large number of endemic plant species that occur within the Chimanimani mountains. This represents the principal concentration of endemic plant species for Zimbabwe (and similarly for Mozambique), and for this reason Chimanimani National Park can be considered as the most important conservation area within the country. The majority of the endemic plant species are restricted to high elevation grassland and rocky areas (> 800 m) on quartzite deposits.

Faunal species of conservation interest tend to be more associated with evergreen forest communities. These occur across a wide range of elevation from montane to lowland situations, but with the lowland forests supporting particularly rich and diverse assemblages of species. Faunal groups of particular interest here include birds, reptiles and amphibians, as well as smaller species such as butterflies. Of particular interest are cycads, amphibians and insecta.

14.2.2 What are the pressures on key species? In other words: what are the threats (example unsustainable management of forest), their immediate causes (drivers of change like forest change or habitat change), their underlying causes (example overgrazing, fire, pollution), and the main driving forces (example: economic, political, social, external, etc.) and the area(s) concerned?

For the grassland endemic plant species, the most widespread threat is due to frequent burning with virtually all of the upland area being burnt on an annual basis. Whilst grasslands are adapted to fire, this frequency of burning is not natural, and a considerable number of endemic species are now restricted to rocky outcrops that provide a level of protection from fire. Illegal small-scale mining activities represent a particular threat for those species that occur in moister wetland areas. Much of the burning is also related to ongoing illegal mining activities, with miners deliberately setting fires both to clear vegetation and as a retaliatory measure to enforcement measures imposed on them by ZimParks. Other threats include the destruction of habitat, the encroachment on protected forests and the abuse of wetlands. Outside of the Park, uncontrolled grazing by cattle represents a further threat in some areas. Important underlying drivers relate to the national poor economic performance and resulting high levels of poverty, combined with weak governance and poorly resourced state institutions.

14.2.3 What kind of measures and indicators are currently used, or planned to be used to assess both species groups and the pressures on them? Who undertakes this work, or will do so in the future?

Again current monitoring activities are very limited but it is hoped that the Biosphere Reserve will assist in creating opportunities to develop and strengthen monitoring efforts. Following the arrival of Covid in Zimbabwe there was a disastrous proliferation of mining activities, particularly within the National Park. These have subsequently been brought under control and Zimparks are now carrying

out regular monitoring patrols specifically to prevent the recurrence of such activities. The CTA provided an important independent voice in bringing attention to this issue, and can play an important role in terms of monitoring in the future. Birdlife Zimbabwe is currently supporting the monitoring of bird species within the Park and other sites elsewhere in the district and are expecting to be able to expand on this important work, and which is linked to the training of community guides.

14.2.4 What actions are currently undertaken to reduce these pressures?

Zimparks are not in a position to implement any substantive fire management programme within the Park. However, fire is a key threat to timber plantations, and which typically have active fire management programmes aimed at preventing the incursion of fires into plantation areas. This creates a form of a buffer zone in places where the timber estates border against the national park. Elsewhere, the main activity is raising awareness among communities about the need to avoid burning. This work is carried out both through state agencies, such as EMA and the Forestry Commission as well as NGOs and traditional leaders. As stated, ZImParks have introduced a vigorous programme against gold mining activities within the Park, which is leading to a considerable number of arrests and prosecution of illegal miners.

14.2.5 What actions do you intend to take to reduce these pressures?

It is intended to continue and grow the above efforts, to continue to control mining activities, to create improved awareness about fires and to be able to develop a system of fire management that will provide improved protection for at least the National Park and Eland Sanctuary.

14.3. At the level of genetic diversity:

14.3.1 Indicate species or varieties that are of importance (e.g., for conservation, medicine, food production, agrobiodiversity, cultural practices etc).

Communities make use of a wide range of plant species for medicinal purposes, as sources of food, and for cultural practices. Certain species such as figs (*Ficus* spp.) are considered to be sacred and are protected by traditions from cutting, and often are focal points for carrying out traditional rituals. Given the poor state of the national economy, the public health system is in poor shape and due to cost factors (eg for transport and payments for medicines) is inaccessible to many people. This results in high reliance on traditional medicines, which draw on a wide variety of indigenous plant species. Poverty, particularly during periods of climate induced disasters such as droughts or floods, leads to high levels of food insecurity, and increased reliance on wild foods such as fruits, mushrooms and edible tubers.

14.3.2 What ecological, economic or social pressures or changes may threaten these species or varieties?

Key threats to medicinal and food plants comprise loss of habitat and in cases over-harvesting. Loss of habitat is driven by population growth combined with a lack of alternative economic activities, such that most people remain reliant on crop and livestock farming for their livelihoods, so driving increases in livestock numbers and continual clearing of new fields. The land reform programme has been another important driver of land use change, and has also fuelled a general decline in efficiency of governance, including in traditional controls over the use of natural resources.

14.3.3 What indicators, at the level of the species, are used, or will be used, to assess the evolution of population status and associated use?

This is an aspect that needs to be developed over the coming years.

14.3.4 What measures will be used to conserve genetic diversity and practices associated with their conservation?

As above, this is an aspect that will require increased attention and effort in the years ahead.

15. DEVELOPMENT FUNCTION:

15.1. Potential for fostering economic and human development which is socio-culturally and ecologically sustainable:

Chimanimani has the potential to develop a green brand for its district economy, which emphasizes:

- smallholder farmers and commercial farming entities market agroecological products at both local and national level. Sustainable input supplies for agroecological farming are readily available so that the practice is gradually deepening and spreading in the district.
- regenerative agriculture with income generating effects for appropriate technology small and medium enterprises;
- agro-processing through renewable energies and low energy footprint marketing of food products;
- Holistic Land & Livestock Management practices assist in the sequestration of carbon in soils, thus reducing greenhouse emissions; HLLM practise enables recovery of rangelands and improvement of the district herds; sustainable marketing of livestock increases the incomes of livestock owners, especially in the drier parts of the district.
- The District opts for a zero reduction in forest cover as from 2022.
- Commercial entities are committed to social and environmental codes regarding measures against pollution of water bodies and soils, reduction of monocultures, fire prevention and rehabilitation of land degraded after timber harvesting or mineral extraction.
- intermittent buffers of indigenous forest in otherwise fire-prone exotic timber monoculture.
- low greenhouse gas emissions in industrial processes;
- environmentally friendly practices in extractive industries;
- Eco-cultural tourism generates incomes for rural communities and the local tourism and hospitality industry.

15.1.1 Describe how and why the area has potential to serve as a site of excellence/model region for promoting sustainable development.

Sustainable development agendas have been embedded in agricultural practices and forestry operations for several decades. This is evident in the Chimanimani Climate Change Response & Watershed Management Policy of 2017 and related strategies. Smallholder farmers residing in about 200 villages have organised themselves in a number of sustainable development associations and initiated numerous agroecological sites of excellence. These include sustainable livestock

management on a total of 33,600 ha, crop production under organic conversion, large-scale soil and water conservation measures through contour swales, pit holes and small dams, agro-forestry and landscape planning according to topography and climatic conditions. Seed Sovereignty, and Food and Nutrition programmes are deeply rooted in the district. There is a district wide seed saving network supported by a community seed bank in Mhakwe, which operates in collaboration with the National Seed Bank. Given the wide range of climatic conditions in the district, there is a profound potential for learning from agricultural practices under low, medium and high rainfall conditions.

Having learnt from the catastrophe of Cyclone Idai in 2019, civil protection in Chimanimani is coordinated according to a multi-sector district disaster management plan, which brings together local and central Government, the private sector (especially the forest estates), civil society, development partners and community leaders. There are decentralized community civil protection structures, including ward DRR committees, that are well trained and resourced to offer first response services in case of disaster. Due to an unfolding global climate crisis, Chimanimani will be more and more affected by droughts, cyclones and similar severe weather and related climate change induced occurrences of floods, landslides, water shortages and crop failures. Due to the mountainous topography there are landslide hazards in certain areas and flood hazards in others, which are well known according to local indigenous knowledge and hazard maps provided by scientific institutions. Maps of Chimanimani landscapes and land use are available to inform district, ward and village development institutions and communities. They have been produced in an inclusive, participatory way, based on full recognition of the rights and obligations of resource users.

The District has developed a Vision of a Resilient Chimanimani, with the following aspects:

- A. A Climate Resilient Landscape;
- B. Safe & Healthy Settlements & Homesteads;
- C. Fair Resource Governance;
- D. Peace through non-violent Conflict Transformation;
- E. Sustainable Land Use & Agroecology;
- F. A Green District Economy;
- G. A Disaster Risk Reducing Infrastructure;
- H. Resilient Local Institutions & Empowered Rural Communities.

15.1.2 How do you assess changes and successes (which objectives and by which indicator)? According to the Chimanimani CCR&WM Policy, ‘observing change, in ecosystems and livelihoods alike, can only be achieved by monitoring key indicators and communicating anomalies and trends to those who can take action’.¹⁵ The specific monitoring tools, tailor made to the contexts and actors of specific key activity areas, will be developed as part of the overall CBR Management Plan.

15.2. If tourism is a major activity:

15.2.1 Describe the type(s) of tourism and the touristic facilities available. Summarize the main touristic attractions in the proposed biosphere reserve and their location(s).

Tourism in Chimanimani mainly focuses on hiking, trekking and trailing in the Chimanimani mountains, which provide for unspoilt natural beauty with pristine water falls and unique landscape views. Travel by bird-watchers, domestically and internationally, outside of one’s usual

¹⁵ CCCR&WM policy p.25

environment, for the purpose of viewing birds in their natural habitat, is referred to as 'Avitourism'. Avitourism is centred on components of the natural environment i.e. birds and their habitat and is therefore a sub-category of nature-based tourism. Chimanimani has attractive core birding assets compared to competitor destinations – particularly concerning species diversity, endemism and rarity. Though domestic avitourism represents a major untapped market, foreign avitourists also represent an important area of growth. Bird route development has a positive impact on local communities creating socio-economic wealth and environmental conservation.

Butterfly watching and exploration of rare mountain flora are combined with insights into the history and tradition of this complex and diverse environment where different geological, climatic, linguistic and cultural spheres meet. There are opportunities for horse riding, cycling and game viewing, and relaxing in hot springs in the western parts of the district. Besides the Chimanimani Hotel, established in the 1950's, there are numerous charming lodges run by local residents. Figure 11 (page 21) and Table 22 below illustrate the main tourism attractions in the district.

Table 22: Chimanimani tourism attractions

Tourism Attraction	Location	Coordinates	Tourism Activities
Chimanimani National Park (Main Park)	Eastern Border south	19°47'02''S/33°01'10''E	Hiking, trekking, avitourism
Tessa's Pool	Outward Bound	19°46'00''S/32°59'02''E	recreation
Haroni Botanical Garden	Rusitu / Vhimba	20°01'31''S/33°01'23''E	Avitourism in lowland tropical forest
Ngorima Culture Place	Rusitu / Dzingire	20°03'02''S/32°51'25''E	Culture in subtropics
CNP Corner Camp	Eastern Border Center	19°42'05''S/32°57'39''E	Easy access hiking, unique geology
Chikukwa Culture Center	Chikukwa communal land	19°42'51''S/33°56'33''E	Ndau traditional culture performances
Musapa Gap	Chikukwa communal land	19°43'08''S/32°57'22''E	Historical site
Musapa Viewpoint	Hangani	19°42'46''S/32°51'21''E	Mountain views
Cashel Scenic Drive	Along northern part of Eastern Border	19°42'26''S/32°50'02''E 19°32'59''S/32°47'34''E	Scenic route for driving or hiking
Chisebani Forest	Gwindingwe	19°54'01''S/33°44'21''E	High biodiversity
Bvumbura Traditional Community	Shinja Resettlement Area	19°39'31''S/32°43'39''E	Meeting remote agroecological farming communities
Bridal Veil Falls	Near Chimanimani	19°47'27''S/32°50'54''E	Waterfall suitable for functions
Chimanimani Golf Course	Chimanimani	19°48'40''S/32°52'00''E	Sports, horse riding
Pork Pie Viewpoint	Eland Sanctuary	19°47'14''S/32°52'25''E	Mountain views
Eland Sanctuary	Eland Sanctuary	19°47'28''S/32°51'22''E	Hiking, cycling, game
Hot Springs	Rupise Ward 5	19°39'01''S/32°28'05''E	Recreational spa

15.2.2 How many visitors come to the proposed biosphere reserve each year? (Distinguish between single-day visitors and overnight guests, visitors only visiting the proposed biosphere reserve or only passing on the way to another place). Is there an upward or downward trend, or a particular target?

It is widely recognised that the tourism sector is a significant contributor to export earnings in the Zimbabwean economy. Tourist arrivals in 2018 were recorded at 2,579, 974¹⁶ and contributed to 7.2% of GDP in 2018 and 2,294,259 and 6.3% of GDP in 2019. This amounted to 5.2% contribution

¹⁶ Tourism trends and statistics report, ZTA 2018, 2019

to employment in 2018 and 3.7% in 2019. Excluding those transiting, visiting friends and relatives (VFR) and leisure continued to be the major main purposes for the tourists followed by business in 2019. Zimbabwe was not spared from the negative effects of the COVID-19 pandemic which saw borders closed and airplanes grounded from the end of April 2020 until the end of September 2020. A total of 639,356 tourist arrivals were registered in Zimbabwe during the year 2020¹⁷.

Table 23: Estimated annual wealth generation by Chimanimani tourism (current & projected)

	Current (before COVID- 19 pandemic)	in the proposed Chimanimani Biosphere	Estimated percentage increase
Day visitors	5000	10,000	100 %
Overnight visitors (pple/night)	4000	16,000	400 %
Accommodation & Hospitality (US\$)	75,000	300,000	400 %
National Parks Fees	10,000	40,000	400 %
Guiding & Catering (US\$)	20,000	120,000	600 %
Cultural & community visits(US\$)	3,000	24,000	800 %
Recreation (US\$)	2,000	16,000	800 %
Local retail business	90,000	270,000	300 %
TOTAL Gross Income (US\$)	200,000	770,000	385 %

15.2.3 How are tourism activities currently managed?

Zimparks operate a District Headquarters, based in the Eland Sanctuary, and decentralised NP Offices in the Main Park, the Corner Camp and the Haroni Botanical Garden. Visitors make bookings and pay fees at an Office in Chimanimani Village or at the decentralised offices, which are however remote and not easily accessible by visitors. Visitors are guided by Zimparks rules according to statutory instruments. Special arrangements according to need can be made with the Zimparks Chimanimani Area Manager.

The Chimanimani Tourism Association (CTA) was formed to manage tourism activities within the proposed BR. The association works closely with Chimanimani Rural District Council, Zimbabwe Parks and Wildlife Management Authority and local communities to ensure all stakeholder involvement and participation in the process. CTA promotes participation of local communities in its activities to facilitate communities benefiting from opportunities generated by tourism. CTA operates a Tourist Information, where visitors can access maps and information materials concerning Chimanimani Mountains, accommodation and activities. They also have a website where visitors can keep in touch with what is happening in Chimanimani.

15.2.4 Indicate possible positive and/or negative impacts of tourism at present or foreseen and how they will be assessed (linked to section 14)?

Compliance of visitors with rules (littering, cutting firewood, fire etc) will be monitored by rangers, guides and local monitoring groups, and reported to the BR Management.

15.2.5 How will these impacts be managed, and by whom?

Newly developed trails will help to spread the impact of hikers in steep parts of the mountains to avoid causing erosion. Litter collection points will be arranged and fire monitoring towers will be established. Awareness campaigns concerning fragile ecosystems and appropriate socio-cultural

¹⁷ Tourism trends and statistics report, ZTA 2020

behaviour will be carried out. These and other measures will be coordinated by the BR Management Team.

15.3. Agricultural (including grazing) and other activities (including traditional and customary):

15.3.1 Describe the type of agricultural (including grazing) and other activities, area concerned, and people involved (including men and women).

The following estimates are based on statistics as provided by the ZIMVAC 2019 Assessment.¹⁸ The rounded figures of adults refer to the age group 18-59 (42 % in Manicaland).

Table 24: Economic Activities and Livelihoods (except Tourism)¹⁹

Activity	Location	Percentage of female practitioners	Percentage of male practitioners	Total number of adults involved	Contribution to district livelihoods
Crop production	Whole district	60 %	40 %	65,000	51 %
Horticultural production	Main wards Rusitu, 21-23	40 %	60 %	11,000	8 %
Livestock Management	15 / 23 wards	10 %	90 %	16,000	5 %
Bee-keeping	Whole district	30 %	70 %	2,000	1 %
Food processing	Whole district	80 %	20 %	13,000	2 %
alluvial mining	Wards 11, 12, 18, 19, 22,	5 %	95 %	2,000	1 %
Timber logging	Wards 11,12,13,14	5 %	95 %	2,000	2 %
Retail shops	Whole district	50 %	50 %	1000	2 %
Small and medium scale enterprises & informal trading	Whole district	50 %	50 %	10,000	15 %
Formal employment	main wards 11,12,14,15	20 %	80 %	5,000	13 %

15.3.2 Indicate the possible positive and/or negative impacts of these activities on biosphere reserve objectives (section 14).

The main risks on the Biosphere associated with the activities illustrated in Table 22 above are:

- Uncontrolled (and largely illegal) small-scale mining in core and buffer zones
- Invasion of informal (and largely illegal) timber loggers into commercial forestry estates
- Encroachment of crop farmers into protected areas

Among the positive impacts on the Biosphere are:

- Improvement of range land and watershed areas through sustainable livestock management²⁰
- Increased resilience of small farming communities through agroecological farming methods
- Protection of forests and key biodiversity areas through bee-keeping
- Increased access of remote villages to essential goods and services through informal trading, handicraft and appropriate technology artisans.

¹⁸ Zimbabwe Vulnerability Assessment Committee

¹⁹ Adapted from Manatsa et al

²⁰ As promoted by the Africa Center for Holistic Management

15.3.3 Which indicators are, or will be used to assess the state and its trends?

The specific monitoring tools, tailor made to the contexts and actors of specific key activity areas, will be developed as part of the overall CBR Management Plan.

15.3.4 What actions are currently undertaken, and which measures will be applied to strengthen positive impacts or reduce negative impacts on the biosphere reserve objectives?

A trend to enforce regulations concerning access to protected areas will continue through strengthening of Zimparks capacity (number, equipment and skills of rangers; improved administration). Local guides and community action groups will be involved in the day-to-day monitoring of activities within the buffer zones. The Biosphere Management Team will create publicity at local, national and international level to react to threats to the Biosphere Reserve as need arises.

Annual Review & Planning workshops and quarterly dialogue meetings will engage communities and stakeholders in the protection of CBR objectives.

15.4 Other types of activities positively or negatively contributing to local sustainable development, including impact/influence of the biosphere reserve outside its boundaries.

The success of the Biosphere is closely linked to the developments on the Mozambique Transfrontier National Park across the border.

The majority of rural households still relies on firewood as a source of fuel for cooking and, to a lesser extent, heating. There is a high potential to introduce renewable energies like solar power and wind turbines in places where they do not conflict with the movement and habitat of birds in particular. There is a need to carry out detailed feasibility and cost-benefit studies of such initiatives.

Recent moves by the Zimbabwe Ministry of Agriculture have included the adoption of agroecology as a key strategy towards achievement of the national development strategy. 15.4.1 Describe the type of activities, area concerned and people involved (including men and women).

N/A

15.4.2 Indicate the possible positive and/or negative impacts of these activities on biosphere reserve objectives (section 14). Have some results already been achieved?

Alluvial mining activities in Mozambique are a cause for concern.

The implementation of the Agroecological Policy, recently adopted by Zimbabwe, is likely to have a positive impact on the Biosphere.

15.4.3 What indicators are, or will be used to assess the state and its trends?

The specific monitoring tools, tailor made to the contexts and actors of specific key activity areas, will be developed as part of the Overall CBR Management Plan.

15.4.4 What actions are currently undertaken, and which measures will be applied to strengthen positive impacts or reducing negative ones on the biosphere reserve objectives?

Joint actions between Zimbabwe and Mozambique will have to be designed as part of a Transboundary Biosphere Reserve.

15.5 Benefits of economic activities to local people:

Benefits from tourism have been estimated in Table 21 (page 44) above. Local income for guides, porters, rangers and caterers is expected to increase by 600 % from US\$ 20,000 to US\$ 120,000, income from cultural and community visits is expected to increase by 800 % from US\$ 3000 to US\$ 24,000, local retail business is expected to increase its revenue by 300 % from US\$ 90,000 to 270,000.

Investment in sustainable development in the buffer and transition areas is expected to boost the economic and social resilience of small farming communities. Diversification of production and marketing systems will be supported by organised and subsidised sustainable input supply chains, and so creating a well resourced modern agroecological farming system. Ecological farming infrastructure will include watershed management and irrigation design within bio-diverse landscapes. Forests are conserved, rangelands are sustainably managed and agroforestry pockets are integrated into crop producing farmland. Increasing seed diversity will contribute to improved food security and a better nutritional status.

15.5.1 For the activities described above, what income or benefits do local communities (including men and women) derive directly from the site proposed as a biosphere reserve and how?

The people of Chimanimani will benefit from secure and increasing ecosystem services, above all the supply of sufficient clean water, to sustain their household and economic activities. The strategic focus on a green economy will provide the residents of the district with environmental security and long term prospects for sustainable development. A national and international focus on Chimanimani as a Biosphere will attract 'green' and sustainable investment. With easier access to Mozambique through the opening of a new border post, the movement of people and goods will become easier, legal and less hazardous, resulting in a boost for the local economy as a whole.

15.5.2 What indicators are used to measure such income or other benefits?

The specific monitoring tools, tailor made to the contexts and actors of specific key activity areas, will be developed as part of the overall CBR Management Plan.

15.6 Spiritual and cultural values and customary practices: (Provide an overview of values and practices, including cultural diversity).

Chimanimani is predominantly inhabited by the Ndaou people as well as the Chigarwe, Ndebele, Masena, Zezuru and a few European descents as minority groups. Although various explanations have been offered to account for the name Ndaou, it is widely held that "Ndaou" is a derivation from the people's traditional salutation "*Ndaou wee!*" in greetings and other social settings. When the Ngoni observed this, they called them the Ndaou people, the name itself means the land, the place or the country in their language. The Chimanimani communities like any other African community, have a wide range of traditional beliefs and practices which they have practised since time

immemorial. They believe in supernatural beings such as the gods/God whom they call Mwari, their ancestors (*vadzimu*), and clan spirits (*mhondoro*). They also believe in witchcraft, traditional healers and plant kingdom. Good health is understood as a sign of the spiritual world's happiness and ill health shows that the spiritual world has been aggrieved. The plant kingdom offers most remedies for the combatting of ill health. Tree bark, leaves and roots play an important role in the primary health care of the Ndaus. Among the Ndaus, the governance structure consists of the ancestral spirit at the realm followed by the chief, headman and then the village head. These traditional leaders hold land and land based natural resources in trust for the ancestors. In Chimanimani communities, religious life is predicted on the unceasing relationships that exist between the dead and the living. The dead founding patriarchs (the chiefs) are considered the owners of natural resources, are believed to have the powers to cause rain and maintain fertility of the land as they are believed to continue to exist in the spirit. It is widely held that when angered by the conduct of their people, the ancestors may cause disasters or even withhold rain until appeasement rituals are performed to acknowledge wrongdoing. Every birth, death, drought, harvest, conflict or fortune is marked by ritual connection with the spirits. Thus, death is less of a barrier to social interaction than one might initially assume.

15.6.1 Describe any cultural and spiritual values and customary practices including languages, rituals, and traditional livelihoods. Are any of these endangered or declining?

The Ndaus culture has largely remained remarkably intact. Traditional rituals (rainmaking, thanksgiving and appeasement ceremonies) continue to be conducted despite the fact that a greater population have been converted to Christianity. Rainmaking ceremonies are conducted just before the onset of the rainy season asking for a good farming season with sufficient rain. Thanksgiving ceremonies are conducted soon after harvesting as a way of appreciating the ancestors for the rains and good harvests. Appeasement ceremonies are mainly conducted when need arises or when it would have been communicated by the spirit medium. Traditional healing is highly practiced among the Chimanimani communities and remedies made from indigenous plants have always been a respectable substitute for conventional medicines. However, trees and herbs which are a source of medicine for traditional medical practitioners are disappearing at an alarming rate such that some traditional healers now cross into Mozambique to harvest trees and herbs which used to be abundant in Chimanimani. Cyclone Idai disaster accelerated the situation as it led to the destruction of a number of sacred landscapes that contained traditional medicine. Polygamy is also practised it is believed that it exemplifies the survival imperative that calls for many children and a large family group. It is widely held that polygamy played a social role among Shona communities. Sometimes polygamy occurred because of a custom that requires a man to look after the widow and children of a deceased brother or to beget children in the name of a brother who died without children. This was a societal obligation for the brother to sire children with the deceased's wife. This did not only ensure the welfare of the widow but the clan's continuance through the children sired in the widow's inheritance. It was practised to ensure co-existence and harmony within communities and between in-laws as well as to solve gender imbalance among communities due to the belief that men were fewer than women. This practice is fast disappearing due to Christian teaching of one man one wife.

Another common practice in Chimanimani is the practice of bride price (*roora/lobola*). In traditional African communities, in order for a marriage to be officially recognised, bride price should be paid. Among the Ndaus, the bride wealth acts as an official marriage requirement which allows men to marry as many wives as they can as long as they can pay roora (bride wealth) and take care of the wives.

15.6.2 Indicate activities aimed at identifying, safeguarding, promoting and/or revitalising such values and practices.

A number of initiatives have been undertaken by the government and private players to identify, safeguard, promote and revitalise customary practices and cultural values. The National Museums and Monuments of Zimbabwe carried out a documentation exercise of endangered traditional practices in 2015 in all the 7 districts of Manicaland. The exercise included filming of dances, songs and rainmaking ceremonies. Some of these practices are exhibited at Mutare Museum in an interactive exhibition titled: *The traditional lifeways of the Eastern Shona people* which was opened to the public in 2016. Chimanimani district actively participates in the National Culture Week celebrations. The Culture Week's format is Zimbabwe's way of celebrating and commemorating the United Nations Day of Cultural Diversity for Dialogue and Development. On top of these measures, the Primary Schools' Education Curricula also identify and promote customary practices through teaching subjects such as Visual Performing Arts (VPA) and Heritage Studies. Traditional dances and music competitions both for primary and secondary school children are also ways of promoting and revitalising traditional practices. The Chimanimani Festival of Arts which was established in 1988 and suspended/stopped in 2014 had greatly helped in safeguarding Chimanimani cultural practices. Some of the major donors to Chimanimani arts festival included Hivos, Culture Fund of Zimbabwe and African Distillers.

15.6.3 How should cultural values be integrated in the development process: elements of identity, traditional knowledge, social organizations, etc.?

People's cultural beliefs and values are crucial for development. There is a link between what one believes, and one lives for it is the totality of the values, norms, attitudes, beliefs of a society which shapes its social, political and economic organisation and inculcates a general feeling towards development. The inhabitants of Chimanimani still retain most of their values; they still converse in their own languages, still have their traditional style homes, traditional food, still possess own world views and are guided by the value of the community. As such, the communal outlook can also be the ground for cooperation (economic, political, and social) which promotes development.

15.6.4 Specify whether any indicators are used to evaluate these activities. If yes, which ones and give details.

(Examples of indicators: presence and number of formal and non-formal education programmes that transmit these values and practices, number of revitalisation programmes in place, number of speakers of an endangered or minority language).

No specific indicators have been used to evaluate the effectiveness of activities undertaken to identify, safeguard, promote and/or revitalise aforementioned cultural values and practices.

16. LOGISTIC SUPPORT FUNCTION:

16.1 Research and monitoring:

16.1.1 Describe existing and planned research programmes and projects as well as monitoring activities and the area(s) in which they are (will be) undertaken in order to address specific questions related to biosphere reserve management and for the implementation of the management plan (please refer to variables in Annex I).

Support for demonstration projects, environmental education and training

It is proposed that soon after the registration of Chimanimani as a BR, committees will be established for the management and operation of the BR. The committees will conduct awareness programmes to promote the protection and conservation of biological diversity inside the BR. The Environmental Management Agency (EMA), Zimbabwe Parks and Wildlife Management Authority (ZIMPARKS) and Forestry Commission will be conducting the monitoring surveys for sustainable protection and conservation of the natural resources. Over the years EMA has been collecting information related to the natural environment of Chimanimani and presents that to communities during awareness programmes such as roadshows and meetings with locals. EMA proactively supplies and transmits information regarding the protection, conservation and utilization of nature countrywide through their website, annual publications, posters and school clubs.

Research and Monitoring

Chimanimani district through its protected areas is recognised as high biodiversity and rich in endemic species. Most of its protected areas are also regarded to be the area of greatest avian diversity. However, baseline data on certain aspects are scarce and/or not gathered systematically. Comprehensive ecological data for an informed wildlife and conservation management is hence lacking. Research programmes and environmental monitoring schemes have been proposed to provide the managers in the conservation sector with the information necessary for decision making. Much of what is known about the ecology of the area draws on research done in the second half of the 20th century. For example, the most comprehensive report on vegetation ecology has been done by Phipps and Goodier in 1962. Their work described the different vegetation types in relation to soils in which they emphasized the contrast of grasslands on soils derived from schist with those derived from the quartzitic sandstone, they also highlight the importance of the recurrent fires on the vegetation

The district is facing several challenges and the most pressing ones are (1) uncontrolled artisanal mining in the core of the reserve, (2) expansion of agricultural land (3) wildlife poaching (4) continuous demand for timber logging, (5) annual recurrent wildfires and (6) natural disasters which could be related to global climatic changes.

Therefore, potential areas of research that need to be explored include:

- a) Generating basic species inventories - For conservation efforts to be effective, one needs to know what there is in the biosphere reserve. It is not surprising that there several plant species that are not known to occur in the area.
- b) Population status of wildlife species - The actual remaining number of large mammals and their distribution in the district is not well known. Of particular concern is the number of elands that has dramatically collapsed.
- c) Status of the vegetation ecology - Vegetation composition differs according to environmental variables, such as grazing pressure, soils, climate and fire regime. So far, no quantitative studies have been undertaken to characterise the vegetation composition and its driving

factors in the proposed BR. Knowing the vegetation units of the core area which harbours the rare and endemic species and the environmental factors determining their formation and dynamics is of prime importance for developing effective conservation strategies.

- d) Artisanal gold mining - artisanal gold panners have been active in the highlands of the Chimanimani reserve since Nov 2004 and efforts so far to evict all the miners have not been successful. To assess the effectiveness of any strategy to deal with the mining in Chimanimani district, it is proposed that a detailed survey of the highlands would map all the sites which have been affected by the mining and reciprocally areas that have not yet been affected.
- e) Wildlife poaching - The low density of large mammals in the Chimanimani district directly reflects the past and present high hunting pressure. However, in the absence of large predators, wildlife in Chimanimani will recover relatively quickly if proper protection is given and poaching is reduced to a minimum. Monitoring of wildlife populations is much needed with the main objective being to identify population trends and changes in the distribution of wildlife to assess the effectiveness of anti-poaching activities. It is worth noting that, due to the current low wildlife densities, obtaining precise estimates of wildlife populations in Chimanimani will be difficult at the beginning. Regardless, baseline surveys are necessary even if it is likely that statistically significant trends will only be detectable after several years of monitoring.
- f) Deforestation - Monitoring deforestation and land-use changes in general, is most easily done by comparing remote sensing data over time. The region ecologist has done some landcover mapping in the year 2020 using Remote sensing (figure 1). However, a scheme is needed to be elaborated, ideally in collaboration with the resident communities, for monitoring land-use changes in the field and which can be compared with these remote sensing-based information layers.
- g) Wildfire management- Wildfires are an annual recurrent phenomenon in Chimanimani district. Studies argue that fire is part of the Chimanimani ecosystem and that a great part of the endemic flora found there is fire dependant. A total ban of wildfires in the reserve, besides not be achievable, would also not be desirable. Increased recurrence of wildfires is however detrimental to some specific vegetation types. It is therefore imperative that we evaluate the frequency of burning and the extent of the area annually affected. Remote sensing data on wildfires, as registered by the MODIS satellite, can freely be downloaded online. The Environmental Management Agency(EMA) has over the years been generating such data at a national scale. However, little work has been done to narrow down the focus for the proposed BR. After the nomination process structures will be put in place to generate such data at a local scale so that it will then be used in setting up fire management programmes.
- h) Climate change - Global climate change will most likely affect high altitudinal areas more markedly than lowland areas. Species particular adapted to certain temperature ranges may disappear as their habits changes with increasing temperature and is hence of direct relevance for conservation. A detailed monitoring protocol for collecting vegetation and temperature data in the BR is desirable.
- i) Invasive species control- Mapping of the distribution of invasive species such as Bee bush and Kahili ginger is required in the BR. This information can be used for targeted control and guide in conducting awareness programs on strategies to effectively control invasive species in their areas.

- j) Problem animals - The main species involved in problem animals are baboons and wild pigs. Others are not serious such as porcupine, lions, leopards, monkeys, jackal, hyenas, elephants once in a while, buffalo too. Research needs to be done to identify factors driving problem animal distribution in the BR.

16.1.2 Summarize past research and monitoring activities related to biosphere reserve management (please refer to variables in Annex I).

Past environmental education and awareness programs in Chimanimani district include:

a) CELUCT Permaculture:

Chikukwa - The Full Story (Film Documentary by Gilian and Terry Leahy)

b) AGRITEX and TSURO - Holistic Land and Livestock Management, training is ongoing to encourage farming practices that conserve soil and water.

c) Climate Change adaptation and mitigation in the context of watershed management, including community based biodiversity monitoring by Climate Change Action Groups since 2013. Studies by Practical Action (2015), OXFAM (2016)

d) Building Resilience to Natural Disasters in populated mountain ecosystems (Interdisciplinary Multi.sector Research 2020)

e) Conflict Transformation in Zimbabwean Rural Communities (CELUCT publications: The Three Circles of Knowledge 2016, Journeys to Healing 2018, Harvesting Peace 2020)

f) Agroecology as a peace-building tool - University of Coventry 2019

g) Training of National Park guides & communities under CELUCT Harvesting Peace Consultancy

h) research into farm saved seed and seed exchange systems (Zimbabwe Gene Bank and the PELUM Zimbabwe Association).

16.1.3 Indicate what research infrastructure is available in the proposed biosphere reserve, and what role the biosphere reserve will play in supporting such infrastructure.

Local agencies and stakeholder organisations have participated in multi-actor research projects and established research collaboration with 5 Zimbabwean Universities and various research oriented Institutes and non-governmental research institutions. There are many trained research assistants from the Chimanimani community, who can carry out interviews and data collection exercises. Some research institutions have expressed an interest in setting up satellite research infrastructure in Chimanimani. There has been collaboration with renowned research institutions like i.a. the Potsdam Institute for Climate Impact Research (Germany), Cape Town University (SA) and the University of Coventry (UK). BirdLife Zimbabwe has commissioned various studies on the Mozambique and Zimbabwe side of the Chimanimani Transfrontier National Park area.

Agencies like Agritex, EMA and the Forestry Commission carry out research in connection with their provincial and national offices. Development partners carry out regular evaluations, baseline studies and monitoring exercises related to specific projects.

The CBR will contribute to strengthening local research infrastructure related to the meteorologic research station in Chisengu and climate change monitoring, soil science research projects, species population and status, cultural heritage and practice and other themes arising from community needs.

16.2 Education for sustainable development and public awareness:

16.2.1 Describe existing and planned activities, indicating the target group(s) and numbers of people involved (as “teachers” and “students”) and the area concerned.

Education syllabi at primary and secondary school level can be used as a foundation for nature based education in the classroom and as outdoor activities. Biosphere Clubs can be assisted with learning materials and environmental awareness campaigns can be carried out within the education sector. Nature learning trails and park visits, including destinations outside Chimanimani, can be arranged for young people and adults alike. Schools in buffer zones may have a target population of 4,000 students and 100 teachers, while schools in the transition area will have a target population of 20,000 students and 500 teachers.

Young people can be trained as nature monitors, and young adults can go through professional nature guide training courses. Small farming communities will be offered awareness creation and training opportunities in the areas of agroecology, tourism and hospitality and biodiversity conservation. This will target a population of 50,000 people.

Biosphere Reserve information spots will be established in at least 5 places, one of them growing into a CBR information center. The center will also link the CBR to global advocacy networks and campaigns that promote biodiversity conservation and sustainable development.

16.2.2 What facilities and financial resources are (or will be) available for these activities?

To be completed as part of the management manual

16.3 Contribution to the World Network of Biosphere Reserves:

16.3.1 How will the proposed biosphere reserve contribute to the World Network of Biosphere Reserves, its Regional and Thematic Networks?

A common public relations’ strategy will be developed as part of the management manual. This will have the aim of raising awareness and promoting Transboundary Biosphere Reserve publicity.

Information Materials, brochures and books will portray the focus of the CBR and share learning from its activities with the outside world.

Information will also be disseminated by electronic means, including websites, on-line newsletters, video clips and social media postings. Some young people of Chimanimani have been trained in Participatory Film Documentary production and facilitated screening skills. Such young people will spread visual material for monitoring and promotional purposes.

Learning events, cultural events and performing arts events will be organised, building on the experience of the once renowned Chimanimani Arts Festival. Examples of best practice concerning biosphere action will be promoted as demonstration projects and learning sites.

The CBR will design and set up a website and develop a logo that will promote the Chimanimani brand.

16.3.2 What are the expected benefits of international cooperation for the biosphere reserve?

The establishment of a Chimanimani Biosphere Reserve will shine a bright light on this special area. This will assist in creating transparency about actions (positive and negative) within the BR. The exchange with other Biosphere Reserves and the actors within them will enhance learning at many levels. There BR may attract investment into projects, capacity and infrastructure in connection with biodiversity conservation and sustainable development. Such investment is badly needed to build the resilience of the Chimanimani community in the face of increasing challenges due to climate change and global inequality. Especially the young people of Chimanimani deserve a chance to sustain their lives without having to destroy the ecosystem foundations that they rely on.

16.4 Internal and external communication channels and media used by the biosphere reserve:

16.4.1 Is (will) there (be) a biosphere reserve website? If yes, what is its URL?

To be established after approval of the nomination

16.4.2 Is (will) there (be) an electronic newsletter? If yes, how often will it be published?

A half-yearly newsletter will be established after approval of the nomination

16.4.3 Does (will) the biosphere reserve belong to a social network (Facebook, Twitter, etc.)?

To be decided by the BCR Management team

17. GOVERNANCE, BIOSPHERE RESERVE MANAGEMENT AND COORDINATION:

[Describe the following characteristics in the perspective that the site is being designated.]

17.1 Management and coordination structure:

The Chimanimani Biosphere Reserve (CBR) is coordinated by a CBR Board. This Board will be constituted at a full council meeting of Chimanimani Rural District Council (CRDC) after approval of the nomination application. CRDC is the local authority responsible for Chimanimani District, comprised of democratically elected councillors of 23 wards of the district. The CBR Board consists of 21 members (see Figure 13, page 26) representing the full range of Chimanimani stakeholders, including Government institutions, traditional leaders, community representatives of buffer zones, NGOs & civil society, private sector representatives of the key industries of forestry and tourism.

Each of the 21 Board members will be established in his / her personal capacity as a Trustee of the CBR Trust. The selection of Trustees will be based on an inclusive and participatory process. Each of the stakeholder entities above delegate one or two Trustees to the Board. They will select Trustees of high personal and professional integrity and capacity. The selection of Trustees by the stakeholder entities cannot be altered by other stakeholder entities including CRDC. A Deed of Trust will be designed to govern the operations of the CBR Trust in line with the provisions of this Nomination Dossier.

17.1.1 What is the legal status of the biosphere reserve?

The CBR is created under national law, according to the Parks and Wildlife Act 20:14 (123:1991 and amended 19:2001), following an application by the Zimbabwe Government to UNESCO in 2021.

The Parks and Wildlife Act regulates the authority in alienated land (private land, leased state land and leased trust land) and unalienated land (forest state land, parks and wildlife land and communal land) in relation to Protection of Animals and Plants (Parts IX, X, XI, XII, XIII and XIV). With reference to communal areas, Part XVI, Section 108 specifies that:

‘108 Appointment of appropriate authority

- (1) The Minister may on recommendation of, or after consultation with, the Authority (the Parks and Wildlife Management Authority, ed.), by notice in a statutory instrument, appoint a rural district council to be the appropriate authority for area of Communal Land as may be specified in such notice and may in like manner amend or revoke such notice’. (Parks and Wildlife Act, 2001, p.52).

At district level, according to the Rural District Council Act (RDC Act 29:13, Section 61), CRDC can designate and establish intensive conservation areas.

The CBR is constituted under the Chimanimani Biosphere Reserve Trust according to a CRDC Full Council Resolution. The Trust will be legally registered under the Registrar of Deeds, Harare. The founding Trustees make up the CBR Board defined according to section 17.1 above.

In this way, the CBR Trust, as an inclusive body representing the various Chimanimani stakeholders and communities, will be supported by legislation at local and national level.

17.1.2 What is the legal status of the core area(s) and the buffer zone(s)?

The core areas and the buffer zones have the status of Intensive Conservation Areas according to RDC Act 29:13, Section 61; and according the CCCR&WPM (Section 8.3 paragraph iv) adopted by CRDC on 11 September 2017 (Resolution number C3331, Full Council Number 165).

17.1.3 Which administrative authorities have competence for each zone of the biosphere reserve (core area(s), buffer zone(s), transition area(s))?

- ZimParks have the competence for all National Parks Areas under their jurisdiction;
- CRDC (represented by its Social Services and Environment Department) has the competence for all other core zones on state land;
- Private companies and other private entities have competence to all areas according to their title documents;
- Chiefs, Headmen and Village Heads exercise competence within their customary jurisdiction;
- The CBR Board (represented by its BR Management Team) has the competence for all core areas, buffer zones and transition areas according to the Objectives as stated under Section 13.

17.1.4. Clarify the respective competence of each of these authorities. Make a distinction between each zone if necessary and mention any decentralized authority.

All landowners, land users and stakeholders in Chimanimani shall subscribe to jointly agreed rules and regulations of the BR. In case of disputes arising from overlapping competence, the CBR Management shall cause a process of dialogue, guided by the Objectives of the BR.

17.1.5 Indicate the main land tenure (ownership) for each zone.

Table 25: Land Tenure according to Zones

Zone	Size of zone	Habitat type	Land-use
Core Zones	27,010 ha	Upland and lowland forests and two watersheds	
National Park	17,110	Upland grassland with groves of upland forest vegetation	National Parks protected area, Tourism
Eland Sanctuary	1,800 ha	Upland grassland and shrubs with pockets of forest	National Parks protected area, Tourism
Bvumbura	4,500 ha (estimate)	Grassland and forest watershed	Proposed protected area under Communal Areas Act and the Traditional Leaders Act, sustainable livestock management & eco-cultural tourism
Gwindingwe	3,600 ha (estimate)	Grassland and forest watershed, which is the origin of 5 major rivers	Proposed protected area under Communal Areas Act and the Traditional Leaders Act, sustainable livestock management & eco-cultural tourism
Buffer Zones	52,052 ha	All types of habitats found in the district	smallholder agriculture and livestock management, and conservation oriented forestry plantations
Transition Areas	265,952 ha	All types of habitats found in the district	smallholder agriculture, commercial agriculture, eco-friendly mining and forestry plantations

17.1.6 Is there a single manager/coordinator of the biosphere reserve or are several people in charge of managing it? If one manager/coordinator, who designates and employs him/her (national authorities, environmental administrative agency, local authorities)?

The BR is managed by a management team, instituted by the CBR Board. There are six members of this team, with the following functions:

- CEO
- Secretariat
- Finance
- Communications & Publicity
- Technical Monitoring
- Education & Training

17.1.7 Are there consultative advisory or decision-making bodies (e.g., scientific council, general assembly of inhabitants of the reserve) for each zone or for the whole biosphere reserve?

o If yes, describe their composition, role and competence, and the frequency of their meetings.

There is an Advisory Hub at national/international level, with experts and stakeholders from UNESCO-ROSA and the MAN national committee, the Ministry of Environment, Research Institutions and international conservation partners. This Hub advises the CBR Board & Management Team according to specific areas of expertise. The Hub meets at virtual conferences at least 4 times per year.

The inhabitants of the biosphere reserve are represented through buffer zone committees and transitional area committees. Issues related to the BR are also integrated into planning and implementation of district development plans, ward development committees, village development committees and other civil society structures.

BR themes are shared on a quarterly basis through an established Chimanimani Climate Change & Watershed Management Dialogue Platform.

17.1.8 Has a coordination structure been established specifically for the biosphere reserve?

o If yes, describe in detail its functioning, composition and the relative proportion of each group in this structure, its role and competence.

A Trust, with multi-stakeholder CBR Board oversees the functioning of the BR according to laid down objectives and regulations. The Board is chaired by CRDC and the Secretariat is with a local NGO. Chiefs, buffer zone community reps, private sector representatives, Government agencies and civil society are included in the Board.

The day-to-day management and coordination of activities in 4 core zones, 5 buffer zones and 8 transitional areas (see Figure 13, page 26) is carried out by a Management Team, led by a Chief Executive Officer. Committees established in buffer zones and transitional areas oversee decentralised activities within their specific areas.

o Is this coordination structure autonomous or is it under the authority of local or central government, or of the manager/coordinator of the biosphere reserve?

The Chimanimani Biosphere Reserve Trust is an autonomous legal entity. However, through the composition of its Board and its process of constitution, it is linked to Chimanimani Rural District Council as the responsible local government authority in the district. This is in line with climate resilience research recommendations to strengthen local institutions.

17.1.9 How is the management/coordination adapted to the local situation?

Coordination and management are built on local stakeholders and communities, who understand the local situation best.

17.1.10 Is there a procedure for evaluating and monitoring the effectiveness of the management?

Outcomes of strategies and actions will be monitored according to milestones and indicators developed in a participatory process. External expertise will be sought to evaluate the programme at intervals of three years.

17.2 Conflicts within the biosphere reserve:

In Chimanimani, experience with transformation of different types of conflict has been accumulated over almost two decades. At community level, there are Ward Peace Teams that assist rural communities to build constructive relationships together. Training and mediation are offered by NGOs (like Chikuwa Ecological Land Use Community Trust) that have specialised in non-violent

conflict transformation. In the past, the multi-stakeholder CC&WSM Dialogue Platform referred to above has helped to overcome conflicts that caused obstacles to inclusive development.

17.2.1 Describe any important conflicts regarding the access or the use of natural resources in the area considered (and precise period if accurate). If the biosphere reserve has contributed to preventing or resolving some of these conflicts, explain what has been resolved or prevented, and how this was achieved for each zone.

Negative effects of illegal small scale gold panning on the environment within National Parks and other areas have received national attention, especially between 2012 and 2020. Recently, this has been reduced due to a combination of civil society advocacy, community concerns over contamination of water, and lastly decisive intervention by Government agencies.

There were also conflicts within the timber industry, with their employees and surrounding communities, which had led to widespread wildfires, land occupation and illegal logging. There are examples of conflict reduction through collaboration of Chief Saurombe with Border Timbers limited, leading to win-win solutions. Neighbouring rural beekeepers who were allowed to keep their hives in forest plantations would in turn take on fire monitoring. Similar examples are reported concerning the collaboration between Allied Timbers and the Chikukwa community between 2013 and 2017.

At community level, conflicts about access to water for irrigation and household purposes was not uncommon. A major such issue in the Hanganı resettlement area under Chief Chikukwa, threatening to erupt into violent conflict, was resolved through a mediation process by the local Ward Peace Team.

17.2.2 If there are any conflicts in competence among the different administrative authorities in the management of the biosphere reserve, describe these.

Areas under the jurisdiction of the Department of National Parks & Wildlife have been governed according to legal provisions, including statutory instruments, which govern operations in those areas. While ZimParks authority to govern those areas has not been questioned, the lack of effectiveness to deal with illegal gold panning (up to 2020) has been criticised by conservation NGOs and the tourism industry.

CRDC has no effective control over mining regulations or allocation of claims within the district, as these issues are decided by provincial or central Government. This has led to some conflict potential in the past. According to a Cyclone Idai related research study of 2020, there has been some inconsistency between certain aspects of national legislation, some disarray of competencies between different agencies and occasional conflicts between traditional leaders and elected councillors.

Conflict-sensitive management of the BR has to build on participatory planning, implementation and monitoring involving rural communities. The administrative structure of the BR described above is likely to foster dialogue and lead to a reduction of conflict in the district.

17.2.3 Explain the means used to resolve these conflicts, and their effectiveness.

In Chimanimani, experience with transformation of different types of conflict has been accumulated over almost two decades. At community level, there are Ward Peace Teams that assist rural communities to build constructive relationships together. Training and mediation are offered by NGOs (like Chikuwa Ecological Land Use Community Trust) that have specialised in non-violent conflict transformation. In the past, the multi-stakeholder CC&WSM Dialogue Platform referred to above has helped to overcome conflicts that caused obstacles to inclusive development. This has also promoted transparency and accountability.

17.3 Representation, participation and consultation of local communities:

17.3.1 At what stages in the existence of a biosphere reserve have local people been involved: design of the biosphere reserve, drawing up of the management/cooperation plan, implementation of the plan, day to day management of the biosphere reserve? Give some specific examples.

The Biosphere Reserve brings together needs, aspirations and visions of diverse actors in a concept that addresses economic resilience, biodiversity conservation and socio-cultural sustainability in an integrated way. It builds on at least two decades of community processes in the whole district. Multi-stakeholder initiatives brought about the first district policy on climate change response and watershed management in 2017. Community based Climate Change Action Groups have worked in five critical watershed areas since 2016, many of which are areas now earmarked for core zone protection or buffer zones. Many of the strategies and actions proposed for the CBR originated in Participatory Action Research carried out by Practical Action, TSURO Trust, SAFIRE and other organisations as from 2015.

In June 2021, a workshop of about 50 local stakeholders set the tune for the nomination of the Chimanimani BR. After that, interviews were carried out in nine different areas of the district. The findings provided the basis for formulating community visions about the location of different zones, according to criteria. Social network groups were established to gather information from key informants and expert consultants were contracted to provide for specialised input.

Results of the above process were fed back to Chimanimani stakeholders in early August 2021 and a draft nomination file was amended after that. This included a district position concerning the location of core zones, buffer zones and transitional areas. It also included an agreed administrative structure as presented above.

17.3.2 Describe how the local people (including women and indigenous communities) have been, and/or are represented in the planning and management of the biosphere reserve (e.g., assembly of representatives, consultative groups).

Indigenous communities represent the vast majority of actors involved in the planning and management of the BR. Community action groups are generally gender balanced (e.g., Climate Change Action groups). Female farmers represent the majority in some farmer associations (i.e., the TSURO dzeChimanimani Association in 188 villages)

17.3.3 Describe the specific situation of young people in the proposed biosphere reserve (e.g., potential impacts of the biosphere reserve on youth, consideration of their interests and needs,

incentives to encourage them to participate actively in the governance system of the biosphere reserve).

All buffer zone and transitional area committees have at least two youth representatives (1 female, 1 male). Many NGOs have laid down youth empowerment policies, The Ministry of Youth assists in on-the-ground implementation of BR activities.

17.3.4 What form does this representation take (e.g., companies, associations, environmental associations, trade unions)?

BR buffer zone committees, BR transitional area committees, farmer associations, and youth clubs encourage youth participation and the identification and addressing of their interests and needs.

17.3.5 Are there procedures for integrating the representative body of local communities (e.g., financial, election of representatives, traditional authorities)?

The procedures for integrating representatives from local communities include:

- Traditional Chiefs are part of the CBR Board, Headmen and Village Heads are part of the BR buffer zone and transitional area committees.
- Democratically elected councillors of 23 wards make up Chimanimani Rural District Council, which chairs the CBR Board.

17.3.6 How long-lived are consultation mechanisms (permanent assembly, consultation on specific projects)? Make a complete description of this consultation. What are the roles of involved stakeholders compared to the role of the biosphere reserve?

Activities and projects are monitored at quarterly multi-stakeholder dialogue platforms. The BR Management Team prepares Annual Reports to stakeholders and partners. Social Media BR groups allow for permanent transparency and input.

17.3.7 What consultation mechanisms have been used, and who has been involved? Are they for specific purposes or long-term? What impacts have they had on decision-making processes (decisional, consultative or merely to inform the population)?

The BR has built on seven years of community consultation, which resulted in legislated CRDC policies. Development planning of NGOs has been informed by continuous community needs assessments and problem identification. Local Government has facilitated community-based formulation of Disaster Risk Reduction and Development Plans in all 23 wards. These findings have fed into CBR planning and decision-making processes in 2021.

17.3.8 Do women participate in community organizations and decision-making processes? Are their interests and needs given equal consideration? What incentives or programmes are in place to encourage their representation and participation (e.g.: was(were) a “gender impact assessment(s)” carried out)?

Gender impact assessments were carried out in relation to a number of interlinked development projects within the district, but not in direct reference to the proposed Biosphere Reserve. Women

represent the majority of the population in Chimanimani. In fact, more than 40 % of households are female headed. Female headed households typically rely on agricultural produce from small fields. This is reflected in the representation of women in farmer associations. In semi-urban situations women often vend vegetables or small groceries by the roadside.

The Chimanimani Biosphere Reserve will benefit women, and especially female headed households, as direct beneficiaries of community projects in the buffer zones. Their participation in the management of these areas, which are important for the whole community, will strengthen their role in rural society.

In the existing Climate Change Action Groups, female participation is very high. Half of the associated CCAG facilitators are female. They also play an important role at district dialogues. Organisations operating within the Chimanimani Biosphere Reserve will subscribe to specified internal policies safeguarding women, including detailed principles and procedures concerning sexual harassment.

17.4. The management/cooperation plan/policy:

17.4.1 Is there a management/cooperation plan/policy for the biosphere reserve as a whole?

The management plan will be developed through a participatory process during the second half of 2021.

17.4.2 Which actors are involved in preparing the management/cooperation plan? How are they involved?

The multi-stakeholder CBR Board will drive an inclusive process to formulate the management plan.

17.4.3 Do local authorities formally adopt the management/cooperation plan? Are local authorities making reference to it in other policies and/or plans? If so, please provide details.

The CBR Board and Trust are constituted through decision by a Full Council meeting of CRDC according to Its CCR&WSM policy.

17.4.4 What is the duration of the management/cooperation plan? How often is it revised or renegotiated?

The initial Management Plan will cover 5 years (2022-2026).

17.4.5 Describe the contents of the management/cooperation plan. Does it consist of detailed measures or detailed guidelines? Give some examples of measures or guidelines advocated by the plan? (Enclose a copy).

TO BE DEVELOPED AFTER THE SUCCESSFUL NOMINATION

17.4.6 Indicate how this management/cooperation addresses the objectives of the proposed biosphere reserve (as described in section 13.1).

TO BE DEVELOPED AFTER THE SUCCESSFUL NOMINATION

17.4.7 Is the plan binding? Is it based on a consensus?

TO BE DEVELOPED AFTER THE SUCCESSFUL NOMINATION

17.4.8 Which authorities are in charge of the implementation of the plan, especially in the buffer zone(s) and the transition area(s)? Please provide evidence of the role of these authorities.

TO BE DEVELOPED AFTER THE SUCCESSFUL NOMINATION

17.4.9 Which factors impede or help its implementation (e.g.: reluctance of local people, conflicts between different levels of decision-making).

TO BE DEVELOPED AFTER THE SUCCESSFUL NOMINATION

17.4.10 Is the biosphere reserve integrated in regional/national strategies? Vice versa, how are the local/municipal plans integrated in the planning of the biosphere reserve?

TO BE DEVELOPED AFTER THE SUCCESSFUL NOMINATION

17.4.11 Indicate the main source of the funding and the estimated yearly budget.

17.5 Conclusions:

17.5.1 In your opinion, what will ensure that both the functioning of the biosphere reserve and the structures in place will be satisfactory? Explain why and how, especially regarding the fulfilment of the three functions of biosphere reserves (conservation, development, logistic) and the participation of local communities.

The process leading towards the nomination of the Chimanimani Biosphere Reserve has been truly participatory. This can be said of the intensive preparation and planning phase between June and September 2021, but also a capacity building process had been taking root in Chimanimani prior to the nomination process since 2015 in terms of collaboration, joint resilience building and scientific support. The Chimanimani Biosphere governance model builds on a balanced approach to sharing power and responsibility between state and local government institutions, private sector, civil society and rural communities.

The level of community ownership of sustainable development initiatives is very high in Chimanimani. This is reflected in examples of excellent ecological land use practise which have inspired rural communities all over Zimbabwe and at a regional level. It also shows in embedded community structures, of traditional leadership, village development committees and civil society associations that are skilled in leading community owned processes and have done so for 20 - 30 years.

Conservation of biodiversity and watershed ecosystems is not a new idea to Chimanimani, and it is not divorced from the livelihood needs and socio-economic systems in the district. When these sustainable approaches to conservation and development are combined with learning, awareness creation, research and appropriate socio-cultural information strategies, there is a high potential for positive outcomes of the actions planned in the proposed Chimanimani Biosphere Reserve.

18. SPECIAL DESIGNATIONS:

[Special designations recognize the importance of particular sites in carrying out the functions important in a biosphere reserve, such as conservation, monitoring, experimental research, and environmental education. These designations can help strengthen these functions where they exist or provide opportunities for developing them. Special designations may apply to an entire proposed biosphere reserve or to a site included within. They are therefore complementary and reinforcing of the designation as a biosphere reserve. Check each designation that applies to the proposed biosphere reserve and indicate its name]

Name:

- UNESCO World Heritage Site
- RAMSAR Wetland Convention Site
- Other international/regional conservation conventions/directives (specify)
- Long term monitoring site (specify)
- Long Term Ecological Research (LTER site)
- Other (specify)

19. SUPPORTING DOCUMENTS (to be submitted with nomination form):

(1) Location and zonation map with coordinates

[Provide the biosphere reserve's standard geographical coordinates (all projected under WGS 84).

Provide a map on a topographic layer of the precise location and delimitation of the three zones of the biosphere reserve (Map(s) shall be provided in both paper and electronic copies). Shapefiles (also in WGS 84 projection system) used to produce the map must also be attached to the electronic copy of the form. If applicable, also provide a link to access this map on the internet (e.g., Google map, website).]

(2) Vegetation map or land cover map

[A vegetation map or land cover map showing the principal habitats and land cover types of the proposed biosphere reserve should be provided, if available].

(3) List of legal documents (if possible with English, French or Spanish synthesis of its contents and a translation of its most relevant provisions)

[List the principal legal documents authorizing the establishment and governing use and management of the proposed biosphere reserve and any administrative area(s) they contain. Provide a copy of these documents.

(4) List of land use and management/cooperation plans

[List existing land use and management/cooperation plans (with dates and reference numbers) for the administrative area(s) included within the proposed biosphere reserve. Provide a copy of these documents. It is recommended to produce English, French or Spanish synthesis of its contents and a translation of its most relevant provisions]

(5) Species list (to be annexed)

[Provide a list of important species occurring within the proposed biosphere reserve, including common names, wherever possible.]

(6) List of main bibliographic references (to be annexed)

[Provide a list of the main publications and articles of relevance to the proposed biosphere reserve over the past 5-10 years].

(7) Original Endorsement letters according to paragraph 5**(8) Further supporting documents.****20. ADDRESSES:****20.1 Contact address of the proposed biosphere reserve:**

[Government agency, organization, or other entity (entities) to serve as the main contact and to whom all correspondence within the World Network of Biosphere Reserves should be addressed.]

Name: _____

Street or P.O. Box: _____

City with postal code: _____

Country: _____

Telephone: _____

E-mail: _____

Web site: _____

20.2. Administering entity of the core area(s):

Name: _____

Street or P.O. Box: _____

City with postal code: _____

Country: _____

Telephone: _____

E-mail: _____

Web site: _____

20.3. Administering entity of the buffer zone(s):

Name: _____

Street or P.O. Box: _____

City with postal code: _____

Country: _____

Telephone: _____

E-mail: _____

Web site: _____

20.4. Administering entity of the transition area(s):

Name: _____

Street or P.O. Box: _____

City with postal code: _____

Country: _____

Telephone: _____

E-mail: _____

Web site: _____

Annex I to the Biosphere Reserve Nomination Form, January 2013

MABnet Directory of Biosphere Reserves

Biosphere Reserve Description²¹

Administrative details

Country:

Name of BR:

Year designated: *(to be completed by MAB Secretariat)*

Administrative authorities: (17.1.3)

Name Contact: (20.1)

Contact address: *(Including phone number, postal and email addresses)* (20.1)

Related links: *(web sites)*

Social networks: (16.4.3)

Description

General description: *(Site characteristics in 11.1; human population in 10)*

Approximately 25 lines

Major ecosystem type: (14.1)

Major habitats & land cover types: (11.6)

Bioclimatic zone (11.5)

Location (latitude & longitude): (6.1)

Total Area (ha): (7)

Core area(s): (7)

Buffer zone(s): (7)

Transition area(s) : (7)

Different existing zonation: (7.4)

Altitudinal range (metres above sea level): (11.2)

Zonation map(s): (6.2)

²¹ To be posted on the MABnet once the nomination has been approved. The numbers refer to the relevant sections of the nomination form.

Main objectives of the biosphere reserve

Brief description (13.1)

Approximately 5 lines

Research

Brief description (16.1.1)

Approximately 5 lines

Monitoring

Brief description (16.1.1)

Approximately 5 lines

Specific variables (fill in the table below and tick the relevant parameters)

Abiotic		Biodiversity	
Abiotic factors		Afforestation/Reforestation	
Acidic deposition/Atmospheric factors		Algae	
Air quality		Alien and/or invasive species	
Air temperature		Amphibians	
Climate, climatology		Arid and semi-arid systems	
Contaminants		Autecology	
Drought		Beach/soft bottom systems	
Erosion		Benthos	
Geology		Biodiversity aspects	
Geomorphology		Biogeography	
Geophysics		Biology	
Glaciology		Biotechnology	
Global change		Birds	
Groundwater		Boreal forest systems	
Habitat issues		Breeding	
Heavy metals		Coastal/marine systems	
Hydrology		Community studies	
Indicators		Conservation	
Meteorology		Coral reefs	
Modelling		Degraded areas	
Monitoring/methodologies		Desertification	
Nutrients		Dune systems	
Physical oceanography		Ecology	
Pollution, pollutants		Ecosystem assessment	
Siltation/sedimentation		Ecosystem functioning/structure	
Soil		Ecosystem services	
Speleology		Ecotones	
Topography		Endemic species	
Toxicology		Ethology	
UV radiation		Evapotranspiration	
		Evolutionary studies/Palaeoecology	
		Fauna	
		Fires/fire ecology	
		Fishes	
		Flora	
		Forest systems	
		Freshwater systems	
		Fungi	
		Genetic resources	
		Genetically modified organisms	
		Home gardens	
		Indicators	
		Invertebrates	
		Island systems/studies	
		Lagoon systems	
		Lichens	

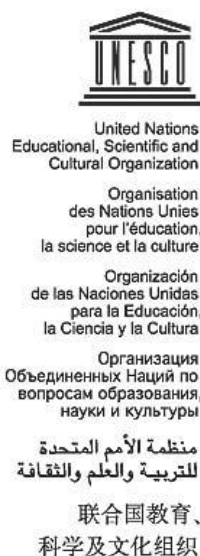
		Mammals	
		Mangrove systems	
		Mediterranean type systems	
		Microorganisms	
		Migrating populations	
		Modelling	
		Monitoring/methodologies	
		Mountain and highland systems	
		Natural and other resources	
		Natural medicinal products	
		Perturbations and resilience	
		Pests/Diseases	
		Phenology	
		Phytosociology/Succession	
		Plankton	
		Plants	
		Polar systems	
		Pollination	
		Population genetics/dynamics	
		Productivity	
		Rare/Endangered species	
		Reptiles	
		Restoration/Rehabilitation	
		Species (re) introduction	
		Species inventorying	
		Sub-tropical and temperate rainforest systems	
		Taxonomy	
		Temperate forest systems	
		Temperate grassland systems	
		Tropical dry forest systems	
		Tropical grassland and savannah systems	
		Tropical humid forest systems	
		Tundra systems	
		Vegetation studies	
		Volcanic/Geothermal systems	
		Wetland systems	
		Wildlife	

Socio-economic		Integrated monitoring	
Agriculture/Other production systems		Biogeochemical studies	
Agroforestry		Carrying capacity	
Anthropological studies		Climate change	
Aquaculture		Conflict analysis/resolution	
Archaeology		Ecosystem approach	
Bioprospecting		Education and public awareness	
Capacity building		Environmental changes	
Cottage (home-based) industry		Geographic Information System (GIS)	
Cultural aspects		Impact and risk studies	
Demography		Indicators	
Economic studies		Indicators of environmental quality	
Economically important species		Infrastructure development	
Energy production systems		Institutional and legal aspects	
Ethnology/traditional practices/knowledge		Integrated studies	
Firewood cutting		Interdisciplinary studies	
Fishery		Land tenure	
Forestry		Land use/Land cover	
Human health		Landscape inventorying/monitoring	
Human migration		Management issues	
Hunting		Mapping	
Indicators		Modelling	
Indicators of sustainability		Monitoring/methodologies	
Indigenous people's issues		Planning and zoning measures	
Industry		Policy issues	
Livelihood measures		Remote sensing	
Livestock and related impacts		Rural systems	
Local participation		Sustainable development/use	
Micro-credits		Transboundary issues/measures	
Mining		Urban systems	
Modelling		Watershed studies/monitoring	
Monitoring/methodologies			
Natural hazards			
Non-timber forest products			
Pastoralism			
People-Nature relations			
Poverty			
Quality economies/marketing			
Recreation			
Resource use			
Role of women			
Sacred sites			
Small business initiatives			
Social/Socio-economic aspects			
Stakeholders' interests			
Tourism			
Transports			

Annex II to the Biosphere Reserve Nomination Form, January 2013
Promotion and Communication Materials
For the Proposed Biosphere Reserve

Provide some promotional material regarding the proposed site, notably high-quality photos, and/or short videos on the site so as to allow the Secretariat to prepare appropriate files for press events. To this end, a selection of photographs in high resolution (300 dpi), with photo credits and captions and video footage (rushes), without any comments or sub-titles, of professional quality – DV CAM or BETA only, will be needed.

In addition, return a signed copy of the following Agreement on Non-Exclusive Rights. A maximum of ten (10) minutes on each biosphere reserve will then be assembled in the audio-visual section of UNESCO and the final product, called a B-roll, will be sent to the press.



UNESCO Photo Library
Bureau of Public Information

Photothèque de l'UNESCO
Bureau de l'Information du Public

AGREEMENT GRANTING NON-EXCLUSIVE RIGHTS

Reference:

1.
 - a) I the undersigned, copyright-holder of the above-mentioned photo(s) hereby grant to UNESCO free of charge the non-exclusive right to exploit, publish, reproduce, diffuse, communicate to the public in any form and on any support, including digital, all or part of the photograph(s) and to licence these rights to third parties on the basis of the rights herein vested in UNESCO
 - b) These rights are granted to UNESCO for the legal term of copyright throughout the world.
 - c) The name of the photographer will be cited alongside UNESCO's whenever his/her work is used in any form.

2. I certify that:
 - a) I am the sole copyright holder of the photo(s) and am the owner of the rights granted by virtue of this agreement and other rights conferred to me by national legislation and pertinent international conventions on copyright and that I have full rights to enter into this agreement.
 - b) The photo(s) is/are in no way whatever a violation or an infringement of any existing copyright or licence, and contain(s) nothing obscene, libellous or defamatory.

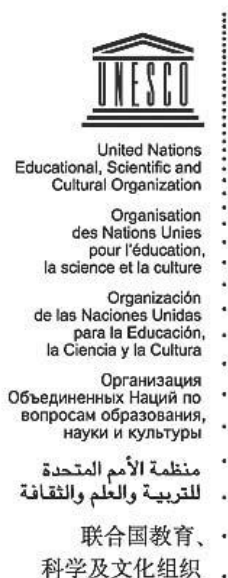
Name and Address :

Date :

Signature :

(sign, return to UNESCO two copies of the Agreement and retain the original for yourself)

Mailing address: 7 Place Fontenoy, 75352 Paris 07 SP, Direct Telephone: 00331 – 45681687
 Direct Fax: 00331 – 45685655; e-mail: photobank@unesco.org; m.ravassard@unesco.org



UNESCO Photo Library
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Bureau de l'Information du Public

AGREEMENT GRANTING NON-EXCLUSIVE RIGHTS

Reference:

1.
 - a) I the undersigned, copyright-holder of the above-mentioned video(s) hereby grant to UNESCO free of charge the non-exclusive right to exploit, publish, reproduce, diffuse, communicate to the public in any form and on any support, including digital, all or part of the video(s) and to licence these rights to third parties on the basis of the rights herein vested in UNESCO
 - b) These rights are granted to UNESCO for the legal term of copyright throughout the world.
 - c) The name of the author/copyright holder will be cited alongside UNESCO's whenever his/her work is used in any form.

2. I certify that:
 - a) I am the sole copyright holder of the video(s) and am the owner of the rights granted by virtue of this agreement and other rights conferred to me by national legislation and pertinent international conventions on copyright and that I have full rights to enter into this agreement.
 - b) The video(s) is/are in no way whatever a violation or an infringement of any existing copyright or licence, and contain(s) nothing obscene, libellous or defamatory.

Name and Address :

Date :

Signature :

(sign, return to UNESCO two copies of the Agreement and retain the original for yourself)

Mailing address: 7 Place Fontenoy, 75352 Paris 07 SP, Direct Telephone: 00331 – 45681687
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Annex III:

Species of conservation interest occurring within the Chimanimani National Park/Chimanimani mountains (CNP), the Haroni Botanical Reserve and lower Rusitu valley (HR) and Chirinda Forest (CF).

Common Name	Latin Name (Conservation Status)	Location and Notes
Mammals		
East African little collared fruit bat	<i>Myonycteris relicta</i> (VU)	HR - Only record in Zimbabwe is from Haroni-Rusitu, otherwise from Kenya and Tanzania
Selinda rat	<i>Aethomys silindensis</i>	CF - Rare in Zimbabwe known only from Chirinda Forest and Stapleford Forest
Rudd's mouse	<i>Uranomys ruddi</i>	CF - One of two known localities in Zimbabwe
Tree civet	<i>Nandinia binotata</i>	CNP, HR, CF - Within Zimbabwe confined to forests of eastern highlands
Red squirrel	<i>Paraxerus palliates</i>	CNP, HR, CF - Chirinda population possibly a separate species or subspecies
Dark footed forest shrew	<i>Mysorex cafer</i>	HR, CF - Confined to forest habitat in the eastern highlands, 2008 described as a new species <i>Mysorex meesteri</i> confined to Zimbabwe and adjacent portion of Mozambique
Four-toed elephant shrew	<i>Petrodomus tetradactylus swynnertoni</i>	CNP, HR, CF - Type specimen is from Chirinda Forest
Temnick's ground pangolin	<i>Smutsia temminckii</i> (VU)	Known to occur within Chimanimani District
Grant's bushbaby	<i>Galago granti</i>	CNP, HR, restricted to Chimanimani, outlier population of predominantly coastal species
Birds		
Chirinda Apalis	<i>Apalis chirindensis</i>	CNP, HR, CF
Steppe Eagle	<i>Aquila nipalensis</i> (EN)	Chimanimani District
Tawny Eagle	<i>Aquila rapax</i> (VU)	Chimanimani District
Egyptian Vulture	<i>Neophron percnopterus</i> (VU)	HR
Stripe-cheeked Greenbul	<i>Arizelocichla milanjensis</i>	CNP, HR, CF
Pale Batis	<i>Batis soror</i>	CNP, HR
Barratt's Warbler	<i>Bradypterus barratti</i>	CNP, HR
Southern Ground-Hornbill	<i>Bucorvus leadbeateri</i> (VU)	Chimanimani District
Wattled Crane	<i>Bugeranus carunculatus</i> (VU)	Chimanimani District
Fasciated Snake-Eagle	<i>Circaetus fasciolatus</i> (NT)	CNP, HR
Yellow-bellied Waxbill	<i>Coccygia quartinia</i>	CNP, HR, CF
Red-faced Crimsonwing	<i>Cryptospiza reichenovii</i>	CNP
White-tailed Crested-Flycatcher	<i>Elminia albonotata</i>	CNP, HR, CF
Montane Blue Swallow	<i>Hirundo atrocaerulea</i> (VU)	CNP
Bronze Sunbird	<i>Nectarinia kilimensis</i>	CNP
Roberts's Warbler	<i>Oreophilais robertsi</i>	CNP
Yellow-throated Woodland-Warbler	<i>Phylloscopus ruficapilla</i>	CNP, HR, CF
White-starred Robin	<i>Pogonocichla stellate</i>	HR, CF
Gurney's Sugarbird	<i>Promerops gurneyi</i> (NT)	CNP
Scarce Swift	<i>Schoutedenapus myoptilus</i>	CNP
Crowned Eagle	<i>Stephanoaetus coronatus</i> (NT)	CNP, HR, CF
Four-colored Bushshrike	<i>Telophorus viridis</i>	CNP, HR
Bateleur	<i>Terathopius ecaudatus</i> (EN)	HR
Striped Flufftail	<i>Sarothrura affinis</i>	CNP
Taita Falcon	<i>Falco fasciinucha</i> (VU)	CNP, HR
Grey Cuckooshrike	<i>Cebilepyris caesius</i>	CNP, HR, CF
Olive Bush-shrike	<i>Chlorophoneus olivaceus</i>	CNP, HR, CF
Orange Ground-thrush	<i>Geokichla gurneyi</i>	CNP, HR
Chestnut-fronted Helmetshrike	<i>Prionops scopifrons</i>	HR

Common Name	Latin Name (Conservation Status)	Location and Notes
Woodwards' Batis	<i>Batis fratrum</i>	HR
Black-bellied Starling	<i>Notopholia corusca</i>	HR
Plain-backed Sunbird	<i>Anthreptes reichenowi</i> (NT)	HR
Lesser Seedcracker	<i>Pyrenestes minor</i> (VU)	HR
Swynnerton's Robin	<i>Swynnertonia swynnertoni</i> (VU)	CF
Reptiles		
Chimanimani flat lizard	<i>Platysaurus ocellatus</i>	CNP- Endemic to Chimanimani mountains
Mozambique agama	<i>Agama mossambica</i>	HR - Restricted range in Zimbabwe
Boulenger's skink	<i>Trachylepis boulengeri</i>	HR - Restricted range in Zimbabwe
Mozambique Girdled-lizard	<i>Smaug mossambicus</i>	HR – Only recorded from Gorongosa Mountain and Chimanimani Mountains
Swynnerton's Worm-lizard	<i>Chirindia swynnertoni</i>	CF - type specimen, restricted range in Zimbabwe
East African Egg-eater	<i>Dasypeltis medici</i>	HR – restricted range in Zimbabwe
Dwarf Wolf-snake	<i>Lycophidion nanum</i>	HR – restricted range in Zimbabwe
Marshall's dwarf chameleon	<i>Rhampholeon marshalli marshallii</i>	CF – type specimen
Amphibians		
Cave squeaker	<i>Arthroleptis troglodytes</i> (CR)	CNP-Endemic to Chimanimani mountains
Guibe's Grass-frog	<i>Ptychadena guibeii</i>	HR – restricted range in Zimbabwe
Argus Reed-frog	<i>Hyperolius argus</i>	HR – restricted range in Zimbabwe
Broadley's Tree-frog	<i>Leptopelis broadleyi</i>	HR – restricted range in Zimbabwe
Brown-backed Tree-frog	<i>Leptopelis flavomaculatus</i>	HR – restricted range in Zimbabwe
Chirinda forest toad	<i>Stephopaedes anotis</i>	CF – Type specimen, also known from Dombe forest in Mozambique
Chirinda cricket-frog	<i>Arthroleptis xendactyloides</i>	CF – type specimen, also occurs in CNP
Chimanimani stream-frog	<i>Strongylopus grayii rhodesianus</i> (VU)	CF – type specimen, also known from Gorongosa Mountain, Mozambique
Swynnerton's marbled reed-frog	<i>Hyperolius mamoratus swynnertoni</i>	CF – type specimen, confined to eastern highlands of Zimbabwe and adjacent portion of Mozambique
Grindley's pygmy toad	<i>Bufo fenoulheti grindleyi</i>	CNP – restricted range in Zimbabwe
Fornasini's spiny reed-frog	<i>Afrixalus fornasini</i>	HR – restricted range in Zimbabwe
Tinker reed-frog	<i>Hyperolius tuberilinguis</i>	HR – restricted range in Zimbabwe
Fish		
Green-headed Tilapia	<i>Oreochromis macrochir</i> (VU)	CNP
Mozambique Tilapia	<i>Oreochromis mossambicus</i> (VU)	CNP, HR
Butterflies		
Spotless Policeman	<i>Coeliades libeon</i>	HR, CF
Johnston's Skipper	<i>Gorgyra johnstoni</i>	HR
Eastern Sylph	<i>Metisella orientalis orientalis</i>	HR, CF
Silky Dart	<i>Semalea pulvina</i>	HR, CF
White-banded Swallowtail	<i>Papilio echerioides chirindanus</i>	HR, CF
Emperor Swallowtail	<i>Papilio ophidicephalus chirinda</i>	HR, CF
Marsh Grass Yellow	<i>Eurema hapale</i>	HR
Common Grass Yellow	<i>Eurema hecabe solifera f. senegalensis</i>	HR
Albatross White	<i>Appias sabina phoebe</i>	HR, CF
False Dotted Border	<i>Belenois thysa thysa</i>	HR
Yule's Dotted Border	<i>Mylothris yulei yulei</i>	HR, CF
Elegant Acraea	<i>Acraea (Acraea) egina areca</i>	HR
East-coast Acraea	<i>Acraea (Acraea) satis</i>	HR, CF
Yellow-banded Acraea	<i>Acraea (Actinote) cabira</i>	HR, CF
Dusky Acraea	<i>Acraea (Actinote) esebria esebria</i>	HR, CF
Dusky-veined Acraea	<i>Acraea (Actinote) igola</i>	HR, CF
Johnston's Acraea	<i>Acraea (Actinote) johnstoni johnstoni</i>	HR, CF
Scarce Tree-top Acraea	<i>Acraea (Actinote) pentapolis epidica</i>	HR
Bush Brown	<i>Bicyclus campina campina Chirinda</i>	HR
Banded Evening Brown	<i>Gnophodes betsimensis diversa</i>	HR, CF
Forest Leopard	<i>Phalanta eurytis eurytis</i>	HR

Common Name	Latin Name (Conservation Status)	Location and Notes
Deceptive Diadem	<i>Hypolimnas deceptor deceptor</i>	HR
Forest Glade Nymph	<i>Aterica galene theophane</i>	HR, CF
Eastern Palm Forester	<i>Bebearia orientis orientis</i>	HR
African Map Butterfly	<i>Cyrestis camillus sublineata</i>	HR, CF
Gold-banded Forester	<i>Euphaedra neophron neophron</i>	HR, CF
Orange Forester (Fig Eater)	<i>Euphaedra orientalis</i>	HR
African Map Butterfly	<i>Cyrestis camillus sublineata</i>	HR
Mottled Green	<i>Euriphene (Euryphura) achlys</i>	HR
Scalloped Sailer	<i>Neptidopsis ophione</i>	HR, CF
Streaked Sailer	<i>Neptis goochii</i>	HR, CF
Lilac Tree Nymph	<i>Sallya amulia rosa</i>	HR, CF
Natal Tree Nymph	<i>Sallya natalensis</i>	HR, CF
Mountain Pearl Charaxes	<i>Charaxes acuminatus vumba</i>	HR
Giant Charaxes	<i>Charaxes castor flavifasciatus</i>	HR
Blue Spotted Charaxes	<i>Charaxes cithaeron cithaeron</i>	HR
Savannah Charaxes	<i>Charaxes etesipe tavetensis</i>	HR
Black-Bordered Charaxes	<i>Charaxes pollux gazanus</i>	HR, CF
Flame Bordered Charaxes	<i>Charaxes protoclea azota</i>	HR, CF
Violet Spotted Charaxes	<i>Charaxes violetta melloni</i>	HR, CF
Forest King Charaxes	<i>Charaxes xiphares vumbui</i>	HR, CF
Forest Queen	<i>Euxanthe wakefieldi</i>	HR, CF
Barnes's Buff	<i>Baliochila barnesi</i>	HR
White Mimic	<i>Ornipholidotos peucetia peucetia</i>	HR, CF
Spotted Buff	<i>Pentila tropicalis tropicalis</i>	HR
Swynnerton's Buff	<i>Pentila swynnertoni</i>	CF
Two-dotted Buff	<i>Teriomima puellaris</i>	HR
Rainforest Scarlet	<i>Axiocerses punicea</i>	HR
Black & Orange Playboy	<i>Deudorix (Virachola) dariaves</i>	HR, CF
Orange Playboy	<i>Deudorix (Virachola) dinomenes</i>	HR, CF
Coffee Playboy	<i>Deudorix (Virachola) lorisona coffea</i>	HR
Buxton's Hairstreak	<i>Hypolycaena buxtoni buxtoni</i>	HR, CF
Teare's Hairstreak	<i>Hypolycaena tearei</i>	HR, CF
Poulton's Sapphire	<i>Iolais (Pseudiolais) poultoni</i>	HR
Bramble False Hairstreak	<i>Lipaphnaeus aderna spindasoides</i>	HR, CF
Kersten's Hairtail	<i>Anthene kersteni</i>	HR, CF
Sheppard's Hairtail	<i>Anthene sheppardi</i>	HR, CF
Ginger Blue	<i>Oboronia bueronica</i>	HR, CF
Mount Selinda Acraea Mimic	<i>Mimacraea neokoton</i>	CF, endemic to Chirinda Forest
Odonata		
Chimanimani bluet	<i>Africallagma cuneistigma</i> (CR)	CNP – Species of damselfly endemic to CNP
Rock Threadtail	<i>Elatoneura lapidaria</i> (CR)	CNP – Species of damselfly endemic to CNP
??	<i>Eleathemis quadrigutta</i>	HR - only known from Haroni river

Annex IV:

List of Chimanimani endemic and near-endemic plant species, with indication of which part it is endemic to and Red List conservation assessment. Source: adapted and updated from Annex 2 in Timberlake *et al.* (2016b) and Wursten *et al.* (2017). Nomenclature is not fully compatible with that used in Annex 3.

Endemism: E = endemic, confined solely to Chimanimani Mts

E-low = endemic to lowland areas (\pm 600 m)

NE = near-endemic, i.e. not confined to Chimanimani Mts but also found in immediately adjacent areas

UMK = Umkondo sandstone endemic (non-Chimanimani Mts)

Taxon	Endemism	IUCN assessment	Rarity
GYMNOSPERMS			
Zamiaceae			
<i>Encephalartos chimanimaniensis</i> <i>R.A.Dyer & I.Verd.</i>	UMK	EN B1ab(i,ii,iv,v) +2ab(i,ii,iv,v), C1	R
MONOCOTYLEDONS			
Asparagaceae			
<i>Asparagus chimanimaniensis</i> <i>Sebsebe</i>	E	LC	
<i>Chlorophytum pygmaeum</i> (<i>Weim.</i>) <i>Kativu</i> subsp. <i>rhodesianum</i> (<i>Rendle</i>) <i>Kativu</i>	NE		
<i>Eriospermum mackeenii</i> <i>Hook.f.</i> subsp. <i>phippisii</i> (<i>Wild</i>) <i>P.C.Perry</i>	E		
<i>Sansevieria pedicellata</i> <i>la Croix</i>	E		
Asphodelaceae			
<i>Aloe ballii</i> <i>Reynolds</i> var. <i>ballii</i>	E-low	VU D2	
<i>Aloe ballii</i> <i>Reynolds</i> var. <i>makurupiniensis</i> <i>A.Ellert</i>	E-low	VU D2	
<i>Aloe hazeliana</i> <i>Reynolds</i> var. <i>hazeliana</i>	E	LC	
<i>Aloe hazeliana</i> <i>Reynolds</i> var. <i>howmanii</i> (<i>Reynolds</i>) <i>S.Carter</i>	E	LC	
<i>Aloe munchii</i> <i>Christian</i>	E	LC	
<i>Aloe musapana</i> <i>Reynolds</i>	NE	VU D2	
<i>Aloe plowesii</i> <i>Reynolds</i>	E	VU D2	
<i>Aloe wildii</i> (<i>Reynolds</i>) <i>Reynolds</i>	E	LC	
Eriocaulaceae			
<i>Mesanthemum africanum</i> <i>Moldenke</i>	E	LC	
Iridaceae			
<i>Gladiolus juncifolius</i> <i>Goldblatt</i>	E		

<i>Hesperantha ballii Wild</i>	E	LC	
Orchidaceae			
<i>Angraecum chimanimaniense G.Will.</i>	E	EN	R
<i>Disa chimanimaniensis (H.P.Linder) H.P.Linder</i>	E		
<i>Oligophyton drummondii H.P.Linder & G.Will.</i>	E		
<i>Schizochilus calcaratus P.J.Cribb & la Croix</i>	E		
<i>Schizochilus lepidus Summerh.</i>	NE		
Poaceae			
<i>Danthoniopsis chimanimaniensis (J.B.Phipps) Clayton</i>	E	EN B1ab(iii)+2ab(iii)	
<i>Eragrostis desolata Launert</i>	E	LC	
Restionaceae			
<i>Platycaulos (Restio) quartziticola (H.P.Linder) H.P.Linder & C.R.Hardy</i>	E	LC	
Velloziaceae			
<i>Xerophyta argentea (Wild) L.B.Smith & Ayensu</i>	E	LC	
Xyridaceae			
<i>Xyris asterotricha Lock</i>	E	VU D2	
<i>Xyris</i> sp. ?nov.	E		
DICOTYLEDONS			
Apiaceae			
<i>Centella obtriangularis Cannon</i>	E	VU D2	
Apocynaceae			
<i>Asclepias graminifolia (Wild) Goyder</i>	E	LC	
<i>Aspidoglossum glabellum Kupicha</i>	NE		
<i>Ceropegia</i> sp. nov. near <i>C. linearis</i>	E		
<i>Raphionacme chimanimaniana Venter & R.L.Verh.</i>	E	EN B2ab(iii)	R
Asteraceae			
<i>Anisopappus paucidentatus Wild</i>	E	LC	
<i>Aster chimanimaniensis Lippert</i>	E	DD	
<i>Gutenbergia westii (Wild) Wild & G.V.Pope</i>	NE	VU B1ab(iii)+2ab(iii)	R
<i>Helichrysum africanum (S.Moore) Wild</i>	E	LC	
<i>Helichrysum maestum Wild</i>	E		
<i>Helichrysum moorei Staner (= H. spenceranum Wild)</i>	E	LC	
<i>Helichrysum rhodellum Wild</i>	NE		
<i>Lopholaena</i> sp. nov.	E		
<i>Senecio aetfatensis B.Nord.</i>	E	LC	
<i>Vernonia muelleri Wild</i> subsp. <i>muelleri</i>	E-low		
<i>Vernonia nepetifolia Wild</i>	E		
Balsaminaceae			
<i>Impatiens salpinx Schulze & Launert</i>	E	VU D2	

Campanulaceae			
<i>Lobelia cobaltica S.Moore</i>	E	LC	
Caryophyllaceae			
<i>Dianthus chimanimaniensis S.S.Hooper</i>	E	VU D2	
Crassulaceae			
<i>Kalanchoe velutina Britten</i> subsp. <i>chimanimaniensis (R.Fern.) R.Fern.</i>	E		
Ebenaceae			
<i>Diospyros</i> sp. 2 of FZ	NE		
Ericaceae			
<i>Erica lanceolifera S.Moore</i>	NE	VU B1ab(iii)+2ab(iii)	R
<i>Erica pleiotricha S.Moore</i> var. <i>blaerioides (Wild) R.Ross</i>	NE	NT	
<i>Erica pleiotricha S.Moore</i> var. <i>pleiotricha</i>	NE	VU D2	
<i>Erica wildii Brenan</i>	E	LC	
Euphorbiaceae			
<i>Euphorbia rugosiflora L.C.Leach</i>	E	EN D	R
Gesneriaceae			
<i>Streptocarpus acicularis I.Darbysh. & Massingue</i>	E-low	CR B2ab(iii)	R
<i>Streptocarpus grandis N.E.Br.</i> subsp. <i>septentrionalis Hilliard & B.L.Burt</i>	NE		
<i>Streptocarpus michelmorei B.L.Burt</i>	NE		
<i>Streptocarpus montis-bingae Hilliard & B.L.Burt</i>	E	DD	
<i>Streptocarpus</i> sp. nov. near <i>S. grandis</i>	E		
Lamiaceae			
<i>Aeollanthus viscosus Ryding</i>	E	LC	
<i>Plectranthus caudatus S.Moore</i>	NE	VU D2	
<i>Syncolostemon flabellifolius (S.Moore) A.J.Paton</i>	E	LC	
<i>Syncolostemon oritrephes (Wild) D.F.Otieno</i>	E	VU D2	
<i>Syncolostemon ornatus (S.Moore) D.F.Otieno</i>	NE	VU B1ab(iii)+2ab(iii)	R
<i>Syncolostemon</i> sp. nov. near <i>S. teucrifolius</i>	E		
Leguminosae: Papilionoideae			
<i>Aeschynomene aphylla Wild</i>	E	VU D2	
<i>Aeschynomene chimanimaniensis Verdc.</i>	E	LC	
<i>Aeschynomene gazensis Baker f.</i>	UMK	EN B1ab(iii)+B2ab(iii)	R
<i>Aeschynomene grandistipulata Harms</i>	E	LC	
<i>Crotalaria phyllicoides Wild</i>	E	LC	
<i>Indigofera chimanimaniensis Schrire</i>	UMK	EN B2ab(iii)	R
<i>Indigofera</i> sp. nov. near <i>I. chimanimaniensis</i>	E		
<i>Kotschya</i> sp. A of FZ	UMK		

<i>Pearsonia mesopontica Polhill</i>	NE	LC	
<i>Rhynchosia chimanimaniensis Verdc.</i>	NE	EN B1ab(iii)+B2ab(iii)	R
<i>Rhynchosia stipata Meikle</i>	E	LC	
<i>Tephrosia chimanimaniana Brummitt</i>	NE	LC	
<i>Tephrosia longipes Meisn. var. drummondii (Brummitt) Brummitt</i>	NE		
<i>Tephrosia longipes Meisn. var. swynnertonii (Baker f.) Brummitt</i>	UMK		
<i>Tephrosia praecana Brummitt</i>	UMK	VU B1ab(iii)+2ab(iii)	R
Linderniaceae			
Crepidiorhopalon near <i>C. whytei</i> (= <i>Lindernia flava</i>)	E-low		
Melastomataceae			
<i>Dissotis pulchra A. & R. Fern.</i>	E	VU D2	
<i>Dissotis swynnertonii (Baker f.) A. & R. Fern.</i>	E	VU D2	
Moraceae			
<i>Ficus muelleriana C.C. Berg</i>	E-low	EN B1ab(iii)+2ab(iii)	R
Myricaceae			
<i>Morella chimanimaniana Verdc. & Polhill</i>	E		
Oleaceae			
<i>Olea chimanimani Kupicha</i>	E	LC	R
Orobanchaceae			
<i>Buchnera chimanimaniensis Philcox</i>	NE	LC	
<i>Buchnera subglabra Philcox</i>	E	VU D2	
Passifloraceae			
<i>Basananthe parvifolia (Baker f.) W.J. de Wilde</i>	UMK		
Penaeaceae			
<i>Olinia chimanimani T. Shah & I. Darbysh.</i>	E	EN	R
Peraceae			
<i>Clutia punctata Wild</i>	E	LC	
<i>Clutia sessilifolia Radcl.-Sm.</i>	E	LC	
Phyllanthaceae			
<i>Phyllanthus bernierianus Müll. Arg. var. glaber Radcl.-Sm.</i>	E		
Proteaceae			
<i>Leucospermum saxosum S. Moore</i>	(NE)		
<i>Protea enervis Wild</i>	E	VU D2	
Rubiaceae			
<i>Empogona jenniferiae Cheek, sp. nov.</i>	E	EN	R
<i>Oldenlandia cana Bremek.</i>	E	LC	
<i>Otiophora inyangana N.E.Br. subsp. parvifolia</i>	E		

<i>(Verdc.) Puff</i>			
<i>Otiophora lanceolata Verdc.</i>	E-low	VU B1ab(iii)+2ab(iii)	R
<i>Rytigynia</i> sp. D of FZ	E		
<i>Sericanthe</i> sp. B (Chimanimani taxon) of FZ	NE		
Rutaceae			
<i>Vepris drummondii Mendonça</i>	E?-low	VU B1ab(iii)+2ab(iii)	R
Santalaceae			
<i>Thesium bundiense Hilliard</i>	E	DD	
<i>Thesium chimanimaniense Brenan</i>	E	LC	
<i>Thesium dolichomeres Brenan</i>	E	LC	
<i>Thesium pygmeum Hilliard</i>	E	LC	
Sapotaceae			
<i>Synsepalum chimanimani S.Rokni & I.Darbysh.</i>	E-low	EN B1ab(iii)+2ab(iii)	R
Scrophulariaceae			
<i>Selago anatrachota Hilliard</i>	E	LC	
Thymelaeaceae			
<i>Struthiola montana B.Peterson</i>	E	DD	

Annex V:

A. Archaeological and historical sites in Chimanimani BR

SITE NUMBER	GRID REF	SITE NAME	PERIOD
1932:DB:01	VP-85-23	Martin Forest Res.	IA
1932:DB:02	VP-77-39	TaabaNchuFarm	MSA
1932:DB:03	VP-97-26	The Corner	RP
1932:DB:04	VP-93-18	Martin Forest Res.	RP
1932:DB:05	VP-95-22	Martin Forest Res.	RP
1932:DB:06	VP-966-249	Martin Forest	RP
1932:DB:07	VP-973-258	Martin Forest	RP/ IA
1932:DB:08	UP-959-255	Martin Forest	RP
1932:DB:09	VP-974-257	Martin Forest	RP
1932:DB:10	VP-958-253	Martin Forest	IA
1932:DB:11	VP-967-265	Martin Forest	RP
1932:DB:12	VP-950-223	Martin Forest	RP
1932:DB:13	VP-77-42	Black Mountain Inn	IA
1932:DB:14	VP-9535-2635	Martin Forest	RP
1932:DB:15	VP-80-43	SteynsStroom A	LIA
1932:DB:16	VP-838-195	Binda	LIA
1932:DB:17	VP-849-221	DunhuRamapunha	LIA
1932:DB:18	VP-835-205	Hangani	LIA
1932:DB:19	VP-833-203	MawonekeBurial	Hist
1932:DB:20	VP-839-199	Binda	LIA
1932:DB:21	VP-839-198	Binda	LIA/Modern
1932:DB:22	VP-838-197	Binda	LIA
1932:DB:23	VP-837-197	Binda	LIA
1932:DB:24	VP-826-194	Chapanga	LIA
1932:DB:25	VP-820-193	Chapanga	LIA
1932:DB:26	VP-817-192	Chapanga	LIA
1932:DB:27	VP-815-195	Shitwa	LIA
1932:DB:28	VP-814-196	Shitwa Hill	LIA
1932:DB:29	VP-811-198	Shitwa Hill	LIA
1932:DB:30	VP-813-189	Chapanga	LIA
1932:DB:31	VP-812-185	Chapanga	LIA
1932:DB:32	VP-814-184	Chapanga	LIA
1932:DB:33	VP-816-182	Chapanga	LIA
1932:DB:34	VP-821-177	Chapanga	LIA
1932:DB:35	VP-820-184	Chapanga	LIA
1932:DB:36	VP-818-186	Chapanga	LIA
1932:DB:37	VP-821-188	Chapanga	LIA
1932:DB:38	VP-834-189	Chapanga	LIA
1932:DB:39	VP-837-192	Binda	LIA
1932:DB:40	VP-837-193	Binda	LIA
1932:DB:41	VP-838-194	Binda	LIA
1932:DB:42	VP-813-169	WelgegundEstate	LIA
1932:DB:43	VP-811-173	WelgegundEstate	LIA
1932:DB:44	VP-811-171	WelgegundEstate	LIA
1932:DB:45	VP-8105-1725	WelgegundEstate	LIA
1932:DB:46	VP-8105-1705	WelgegundEstate	LIA
1932:DB:47	VP-823-173	WelgegundEstate	LIA

1932:DB:48	VP-809-175	WelgegundEstate	LIA
1932:DB:49	VP-808-180	WelgeundEstate	LIA
1932:DB:50	VP-809-179	WelgegundEstate	LIA
1932:DB:51	VP-814-181	WelgegundEstate	LIA
1932:DB:52	VP-815-182	WelgegundEstate	LIA
1932:DB:53	VP-817-174	WelgegundEstate	LIA
1932:DB:54	VP-816-174	Welgegund	LIA
1932:DB:55	VP-816-173	WelgegundEstate	LIA
1932:DB:56	VP-815-175	WelgegundEstate	LIA
1932:DB:57	VP-815-176	WelgegundEstate	LIA
1932:DB:58	VP-811-177	WelgegundEstate	LIA
1932:DB:59	VP-796-165	WelgegundEstate	LIA
1932:DB:60	VP-800-178	WelgegundEstate	LIA
1932:DB:61	VP-8005-181	WelgegundEstate	LIA
1932:DB:62	VP-801-181	WelgegundEstate	LIA
1932:DB:63	VP-843-203	Weltevreden	Colonial
1932:DC:01	VP-598-085	Makwe	Fossils
1932:DC:02	VN-545-888	MutemaRuins	LIA
1932:DC:03	VP-525-132	Muwusha	LIA
1932:DC:04	VN-55-89	Chibwe	LSA/ IA
1932:DC:05	VN-64-92	Rookwood	LIA
1932:DC:06	VN-70-96	Misty Hill	Engravings
1932:DD:01	VP-74-14	RiverhillFarm	SA
1932:DD:02	VP-87-12	Nyamzuri	LIA
1932:DD:03	VP-87-11	The Trek Memorial	HIST
1932:DD:04	VN-76-90	Heathfield	IA
1932:DD:05	VP-988-137	Outward Bound Sch.	SA/ IA
1932:DD:06	VP-979-150	Outward Bound Sch.	RP/SA/IA
1932:DD:07	VP-980-147	Outward Bound Sch.	LIA
1932:DD:08	VN-77-93	MarangiFarm	SA
1932:DD:09	VN-81-89	Albany Farm	ESA
1932:DD:10	VN-76-93	NyakambaSpruit	LSA
1932:DD:11	VP-83-11	Everglades Farm	IA
1932:DD:12	VP-982-143	Outward	RP
1932:DD:13	VP-85-23	Masapa Gap	RP
1932:DD:14	VP-979-152	Outward Bound Sch.	RP
1932:DD:15	VP-979-151	Outward Bound Sch.	RP
1932:DD:16	VP-984-144	Outward Bound Sch.	RP
1932:DD:17	VP-984-143	Outward Bound Sch.	RP
1932:DD:18	VP-985-144	Outward Bound Sch.	RP
1932:DD:19	VP-985-145	Outward Bound Sch.	RP
1932:DD:20	VP-988-147	Outward Bound Sch.	RP
1932:DD:21	VP-988-138	Outward Bound Sch.	RP
1932:DD:22	VP-988-139	Outward Bound Sch.	RP
1932:DD:23	VP-842-120	MelsetterFalls	HIST
1932:DD:24	VP-854-154	Sawerombi	Colonial
1932:DD:25	VP-849-155	Sawerombi	Modern
1932:DD:26	VP-801-139	Sawerombi	LIA
1932:DD:27	VP-805-124	Sawerombi	LIA
1932:DD:28	VP-804-126	Sawerombi	LIA
1932:DD:29	VP-795-138	Sawerombi	LIA

1932:DD:30	VP-793-144	Sawerombi	Colonial
1932:DD:31	VP-793-162	Welgegund	LIA
1932:DD:32	VP-833-162	NyashomaFalls	LIA
KEY IA Iron Age MSA Middle Stone Age RP Rock Painting LIA Late Iron Age HIS Historical Site SA Stone Age ESA Early Stone Age			

B: Intangible Cultural Heritage sites/sacred places in Chimanimani.

Name of the site	Type of site	Location	Notes
Manaseni Pool	Sacred pool	Chief Chikukwa area	The pool is used for canal irrigation.
Matsoro Pool	Sacred pool	Chief Chikukwa area	Pool is believed to have mermaids.
Chinyukacha Munyanyazi	Spring	Chief Chikukwa area, Nyanyadzi River source.	The source of Nyanyadzi River is regarded as sacred, and rituals are periodically conducted there.
DzivaraTsangu	Sacred pool	Chief Chikukwa Chimanimani gap on Musapa River	The pool is used by the Chikukwa people to appease spirits to solve calamities in the society especially army worm pestilence.
Chitanda Spring	Sacred spring	Chief Chikukwa area	The springs was affected by some a minor landslide caused by the cyclone.
Mateenjiya Spring	Spring	Chief Chikukwa area	
Makuwa Sacred Mountain	Burial place	Chief Chikukwa area	
Mukombiwani	Shrine	Chief Chikukwa area	
Musapa River Bridge Pool	Sacred pool	Chief Chikukwa area	
Padongo	Spiritual place	Chief Muusha under Headman Dzingire	The place is used to appease spirits.
Nyamupeta Waterfall	Sacred Place	Chief Muusha Ward 25 under Headman Dzingire	Damaged by the cyclone.
Mudziira Pool	Sacred pool	Chief Muusha's area Ward 25	
Pera Falls	Sacred pool	At the boundary of Headman Ndiadzo and Chief Ndimas area	The pool was said to be inhabited by mermaids. The place is being used by traditional leaders to appease spirits. The falls at the site was once earmarked for use for the generation of electricity.

Nyamwazha and Nditore Forests	Sacred Forests	Chief Muusha area	Nyamwazha forest is of importance to both Chiefs Muusha and Mutema as their first place of settlement in the District.
Nyamukwava Forest	Sacred Forest	Vimba area under Chief Ngorima.	The sacred forest was destroyed completely by the cyclone.
Chitishi ancient tunnel	Ancient tunnel (NINGA)	Headman Dzingire's area under Chief Muusha	A landslide covered the area completely.
Machongwe Forest	Sacred Forest	Chinyai Village. Chief Muusha's area.	
Nyachituri Forest	Sacred Forest	Chief Muusha's area	The sacred forest where Chiefs Ngorima and Muusha conducted rituals.
Nyabamba Forest	Sacred Forest	Manzou Village, Chief Muusha's area	Forest swept away by cyclone
Manyukwa a Mhakwe	Sacred spring	Chief Muusha's area	
Derera Sacred Forest	Sacred Forest	Tilbury Estate near Chisengu Sawmill. Ngorima	Has ancestral graves

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