Telma

Comores

Biodiversity Action Plan

Telecom Comoros Holding

Performance Standard – 6
International Finance Corporation

December 17th 2021

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Summary

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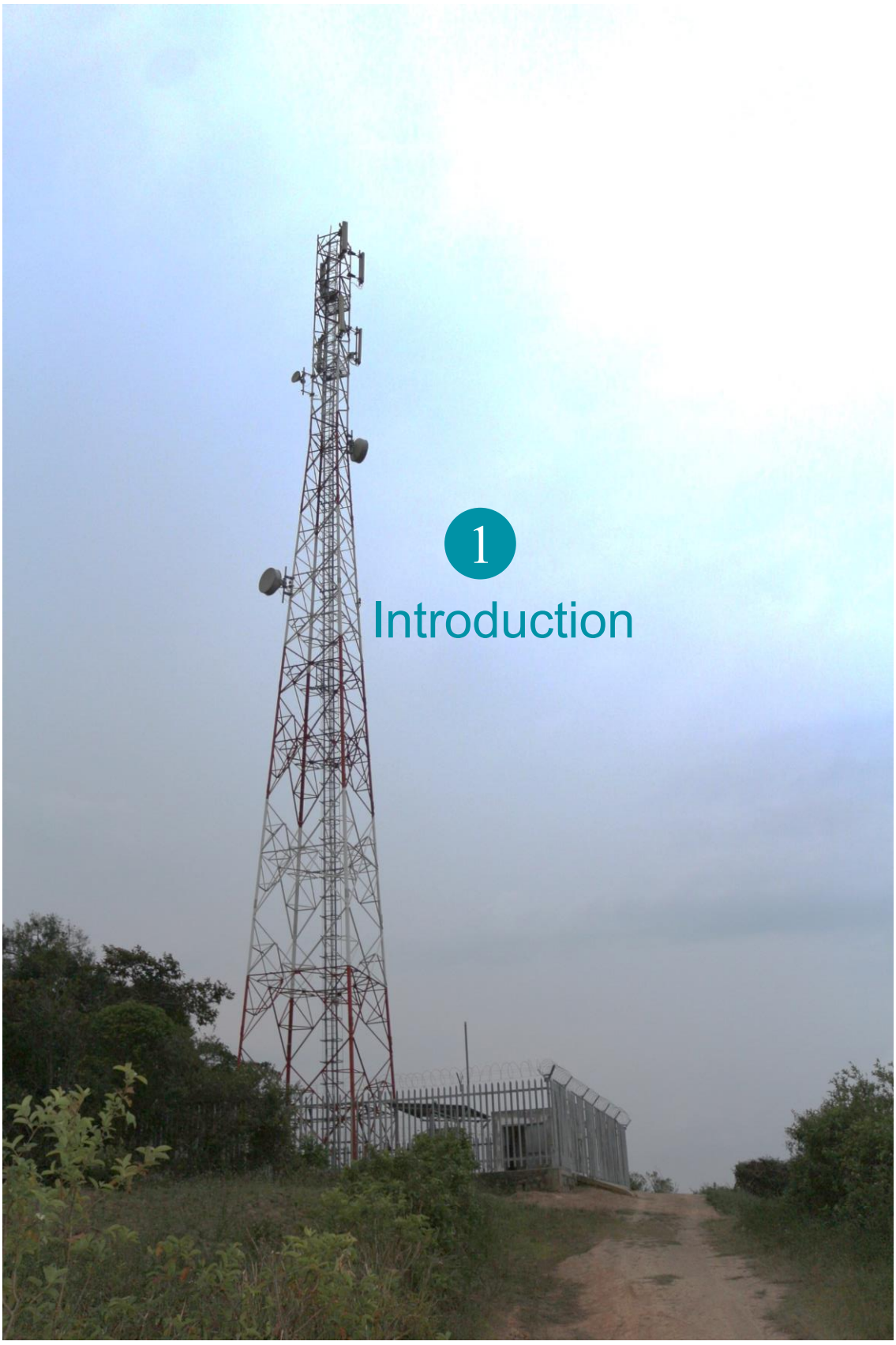


1 Introduction

1 Telco Project

1.1 Telco project

Telco SA (Telma) started its operations in the Union of Comoros in 2016 to provide nationwide mobile services to the population. Since then, Telma has installed 110 mobile telecommunication greenfield and rooftop sites, of which 108 are operational. The company **aims to install a total of 125 sites on the islands of Grande Comore, Moheli and Anjouan**. Out of the 119 sites, 66 are located on Grande Comore, 13 on Mohéli and 40 on Anjouan. The Telco project has a permit 15 years of exploitation as of 2015, with the option of a permit renewal.

Across the three islands, there are 3 Protected Areas: i) Parc National de Mohéli, ii) Parc National de Karthala, and iii) Parc National Mont Ntringui. Four Important Bird Areas (KBA/IBA) include: La Grille, Mount Karthala, Mwali highlands, Ndzuani highlands, all of which harbor globally threatened and restricted-range bird species. Three Ramsar sites are located across the islands: Lake Dziani Boundouni, Mount Karthala and Mount Ntringui. Finally, there are Alliance for Zero Extinction (AZE) sites which are Mount Karthala, Mwali highlands and Ndzuani highlands, which coincide with the IBAs.

The majority of the company's sites are located outside internationally recognized sites of conservation importance and protected areas, in modified habitat within urban areas or in degraded habitat where species composition and ecological functions have likely been lost. However, **a total of 16 sites (named 'priority sites') were found by Fairfields Consulting (2020) to be located within internationally recognized sites, including KBAs, Alliance for Zero Extinction sites and/or protected areas** across all three islands (Grande Comore, Moheli and Anjouan). Furthermore, the company does not hold the required environmental permits for the sites located in the national parks. Out of the 16 priority sites, 4 sites are located on Grande Comore (see Figure 1), 7 on Mohéli (see Figure 2) and 5 on Anjouan (see Figure 3).

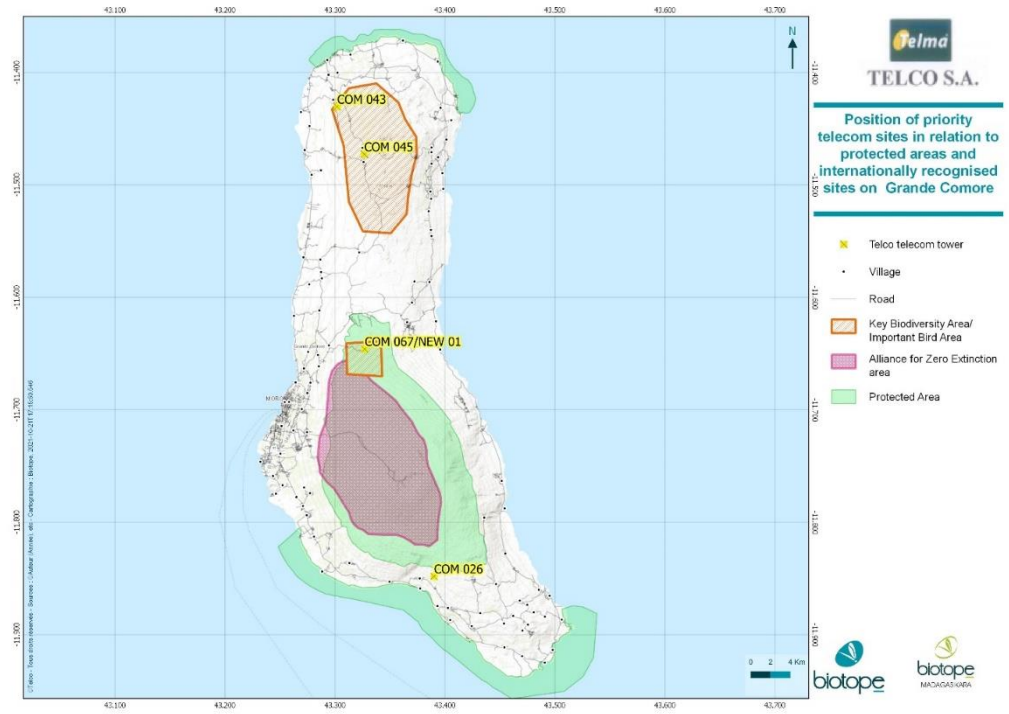


Figure 1. Telma's telecom sites located on Grande Comore in protected areas or internationally recognized sites

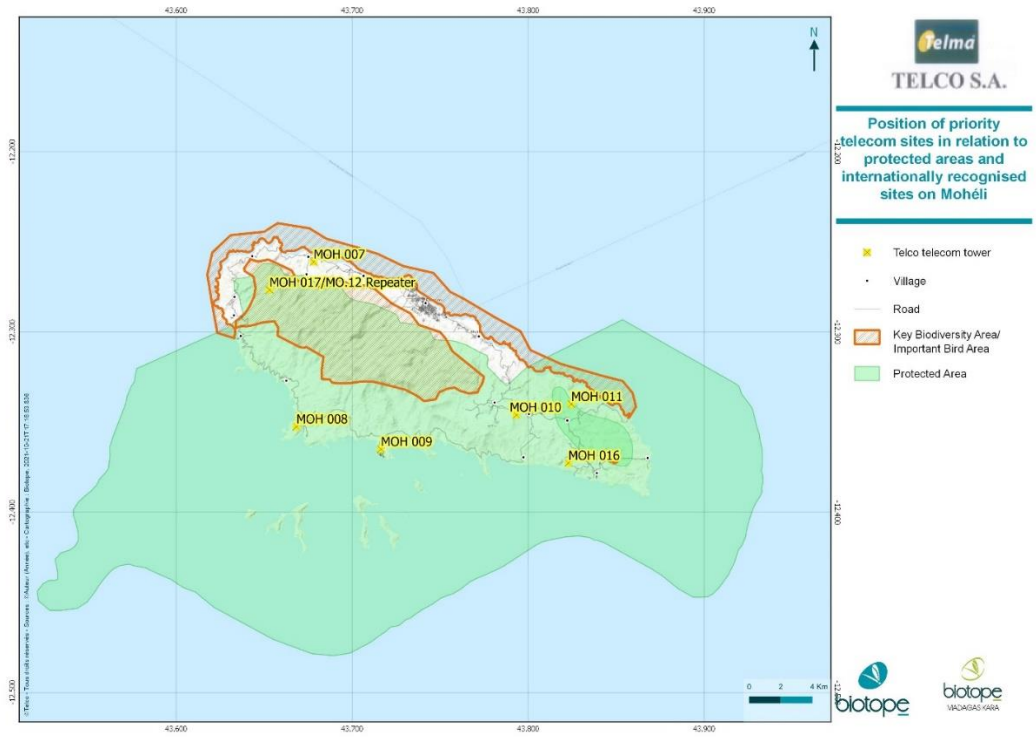


Figure 2. Telma's telecom sites located on Mohéli in protected areas or internationally recognized sites

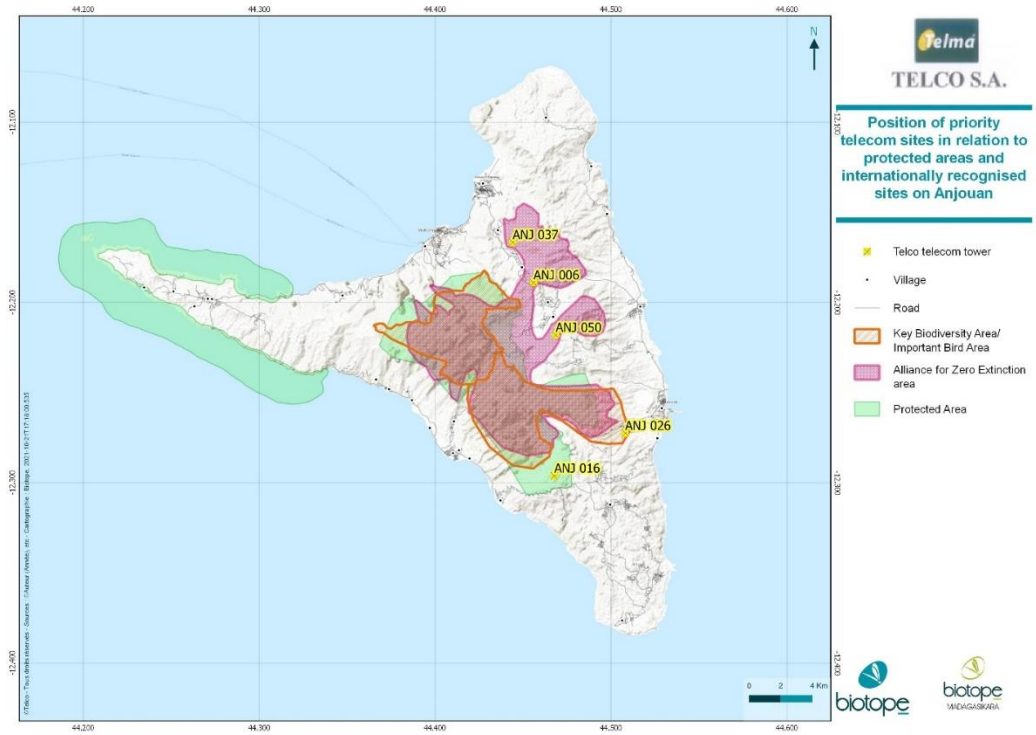


Figure 3. Telma's telecom sites located on Anjouan in protected areas or internationally recognized sites

1.2 Location of the project

1.2.1 Island of Mohéli

Nationally protected areas

Mohéli National Park is classified as **category VI by the IUCN** (protected area with sustainable use of natural resources). Created in 2001, the national park covers a total of 4,404 ha. It now covers **172 km² of terrestrial ecosystems and 472 km²** of marine ecosystems. The national park of Mohéli is managed through a participative co-management approach.

Internationally recognized sites

Mont Mlédjélé (Mwali highlands) is a **Key Biodiversity Area** covering a total of **6,606.58 ha** site including the central ridge and upper slopes of the island of Mohéli, occupying the interior of the western 2 thirds of the island above 500m (Fairfields Consulting, 2020). Located on the west and south-facing slopes of the central ridge of Mlédjélé, the evergreen humid forest of the Mont Mlédjélé is classified as globally important for bird conservation (CEPF, 2014). The area supports montane forest, rich in epiphytes and pteridophytes, with cloud-forest dominating the ridges. In less exposed sites, a more diverse, stratified forest with a 30-40m canopy is found. Dry evergreen forest survives only above Miringoni. Underplanted forests forms a mosaic with intact forest above 600m but dominates below this level. The main ecosystem service in forest is cutting of trees and associated conversion for agriculture. Non-timber forest products are also harvested.

Mwali highlands (Mont Mlédjélé), an Alliance for Zero Extinction site since 2018, is located at the northern part of Mohéli island. The AZE site covers an area of 6 606 ha (Alliance for Zero Extinction, 2021). The AZE site is triggered by *Hypsipetes moheliensis*, *Otus moheliensis* and *Treron griveaudi*.

Lake Dziani Boundouni Ramsar site is a crater lake located south-east part of Mohéli Island in the Djando region. Defined as a Ramsar site since 1995, the Lac Dziani Boundouni covers a total of **30 ha**. The intensification of agricultural practices in the area led to the destruction of the forest that covered the lake's watershed. The slope erosion and loss of water retention capacity of the soil reduced the lake supply (CEPF, 2014).

1.2.2 Island of Grande Comore

Nationally Protected Areas

The **Parc National du Karthala** covers an area of 130 km² (UNDP & WCMC, 2021). It consists of moist forest, heathland and the remining area mainly for the caldera at the top of the volcano.

The western and southern slopes are covered by a dense, humid forest. The other slopes are covered with a mix of evergreen moist forest, dry forest, montane bushland, and thicket with montane savanna. Some of these ecosystems are diverse and home to several endemic and/or threatened species, some of which have a distribution limited to Karthala.

Internationally recognized sites

The **Karthala Ramsar site** boundaries are slightly different than those outlined for the National Parc and the AZE site. No telecom sites are present in the Ramsar site (although site COM026 Kandzile is located 0,8 km from the Karthala National Parc and 3 km from the Karthala AZE site).

The **Karthala AZE site** does not include any telecom sites. This AZE site, of a surface area of 14 935 ha, is triggered by the presence of the species: *Dicrurus fuscipennis, Humblotia flavirostris* and *Otus pauliani*. All species are restricted to this mountain.

The Parc National du Karthala includes the **Hantsongoma Lake**, classified as a **Key Biodiversity Area (KBA) since 2014.** This is a small permanent lake located 950m above sea level at the northern foot of the Karthala. The Hantsongoma Lake covers an area of 946.4 ha and with dry and humid forests.

The **Massif de la Grille, a Key Biodiversity Area (KBA)** since 2001 is an extinct volcanic massif, dominating the northern part of Grande Comore of 8 779 ha. The altitude it covers (from 800 m to 1,087 m) includes nearly all of the area used by the restricted-range bird species present on the mountain. The habitat is mixed montane (evergreen) forest, all of which is underplanted apart from relict patches inside craters. The lowest parts of the site and its surroundings support cultivation including tree crops, secondary forest and grassland with bracken.

1.2.3 Island of Anjouan / Ndzuani

Nationally Protected Areas

The **Parc National Mont Ntringui** is a protected area of an area of 3,000 ha, **classified as Category II (National Parc) by the IUCN** (CEPF, 2014). The forest is characterized by its precipitous relief, sharp ridges, ravines, and sharply pointed summits. Permanent rivers along the slopes of Mount Ntringui are important for water supply, irrigation and as a source of water for livestock. The area is facing pressures from deforestation, agricultural and grazing land expansion, research on previous woods and introduction of exotic species (CEPF, 2014).

Internationally recognized sites

The **KBA Ndzuani highlands** overlaps with the national park but extends beyond its boundaries in different directions.

The **AZE Ndzuani highlands site**, of an area of 9 158 ha, overlaps with the Ndzuani highlands KBA site, triggered by the species *Otus capnodes*.

The **Forest de Moya** is a KBA site is now largely underplanted. This main forest-use is cutting of trees for timber, charcoal and conversion for agriculture.

1.3 Telco Project's characteristics

Telco Project's telecommunication towers were constructed between December 2016 and October 2019. The Telco project has 2 types of sites: i) rooftop installations and ii) free-standing towers. The free-standing towers comprise of an enclosed area, with a base station, tower mast (ranging from 30-60m), a guard house and latrine, and a combination of infrastructure for grid supplied power, generators and solar panels.

All base stations use modern electrical power systems which include a combination of grid supplied power, generators and solar power.

The telecommunication towers include the following elements in terms of footprint and associated infrastructure (see Appendix 1 for further details and exact measurements):

- The antennas;
- Latrines (the latrines are isolated on site);
- Guard houses[1] ;
- On site infrastractures: a concrete base on the telecommunication sites with equipment, generators, cables, and grounding for the equipment outside of the site;
- Other infrastructures such as lightning conductors and its connections, day marking and its branching and platform for climbers to work on.
- Access roads: constructed by Telco for 3 telecommunication sites in Grande Comore (COM026; COM045; COM067). The roads accessible by car are used by villagers and

[1] *The guard houses and latrines are used solely by guards of telecommunication sites and workers on a case-by-case basis.*

farmers. Road maintenance consists in mowing the sides and inside the road. The rocky nature of the soil helps in maintain the roads stable. For sites which are not accessible by car, all materials and equipment are transported by man over the distance not accessible by car.

A guard is always present on site for each telecommunication site. Two guards rotate and live onsite (there is a guard house and latrine for each site). Their shifts depend on the site. Telco is currently reviewing the organization of guards on site, and the need for a third guard.

1.3.1 Priority sites on Grande Comore

From the data provided by GEB Consulting and TELCO (geographic coordinates: E43°23'34.2"/ S11°50'58.2"S), the site **COM026 is not located within a protected area, nor an internationally recognized site.** The site is included in the list of priority sites as it has been included by the MIGA report as part of the Karthala National Parc (see p.46 of the MIGA report).

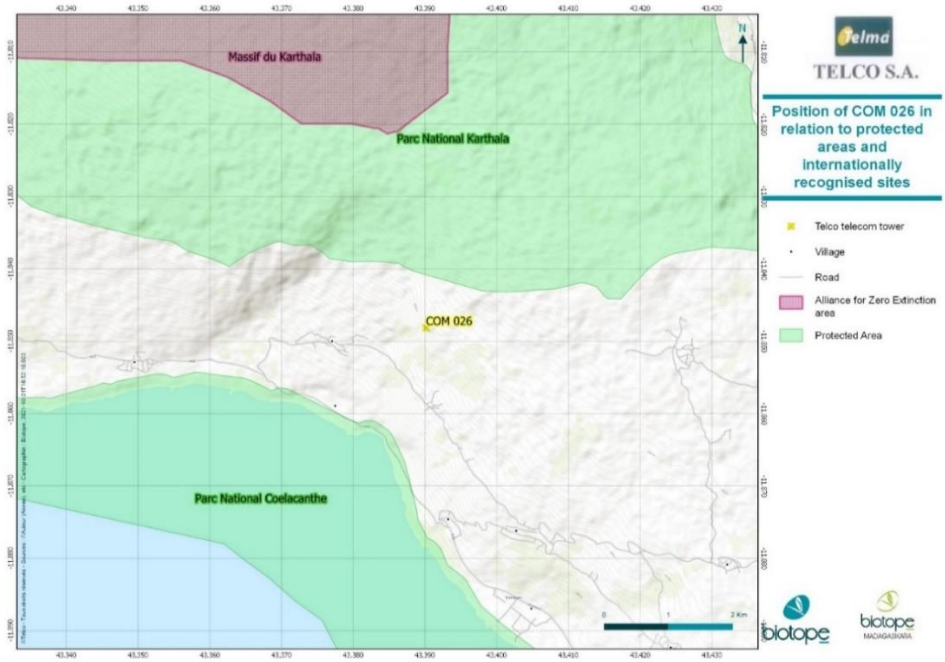


Figure 4. Position of the antenna COM026 – KANZILE on Grande Comore and zoning of protected areas and/or internationally recognized sites

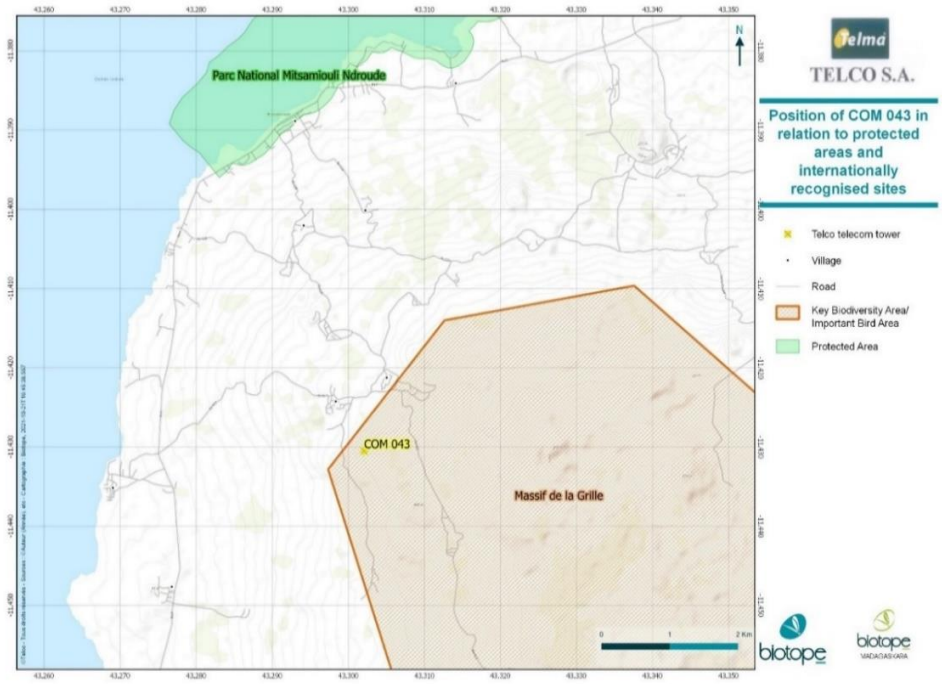


Figure 5. Position of the antenna COM043 – DOUNIANI on Grande Comore and zoning of protected areas and/or internationally recognized sites

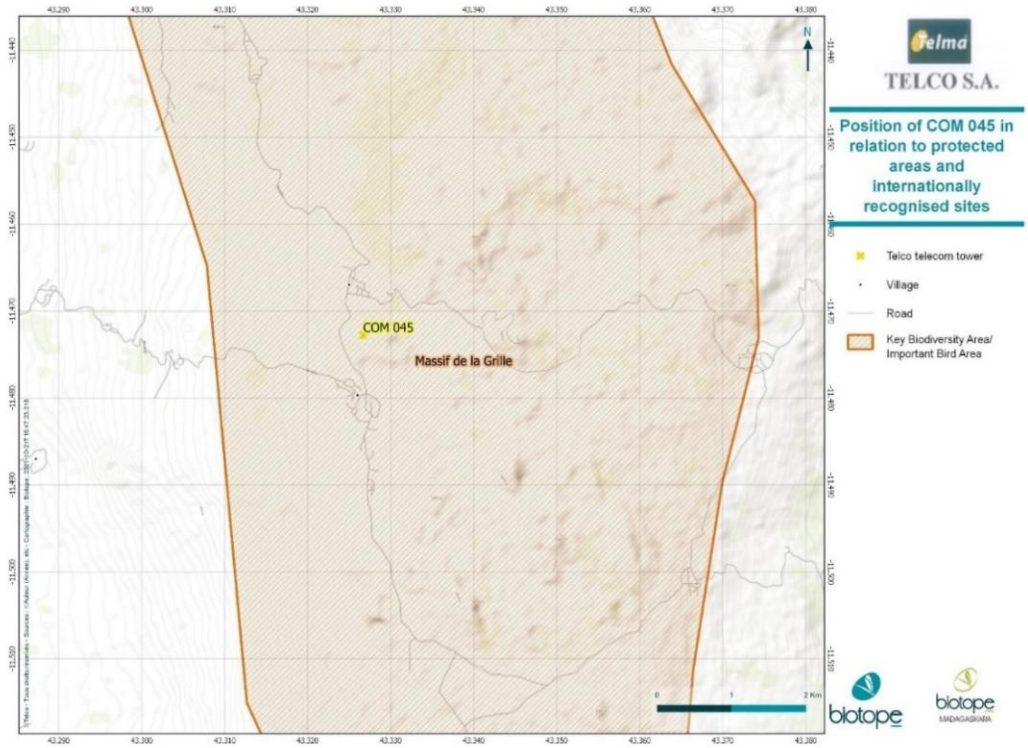


Figure 6. Position of the antenna COM045 – IVEMBENI on Grande Comore and zoning of protected areas and/or internationally recognized sites

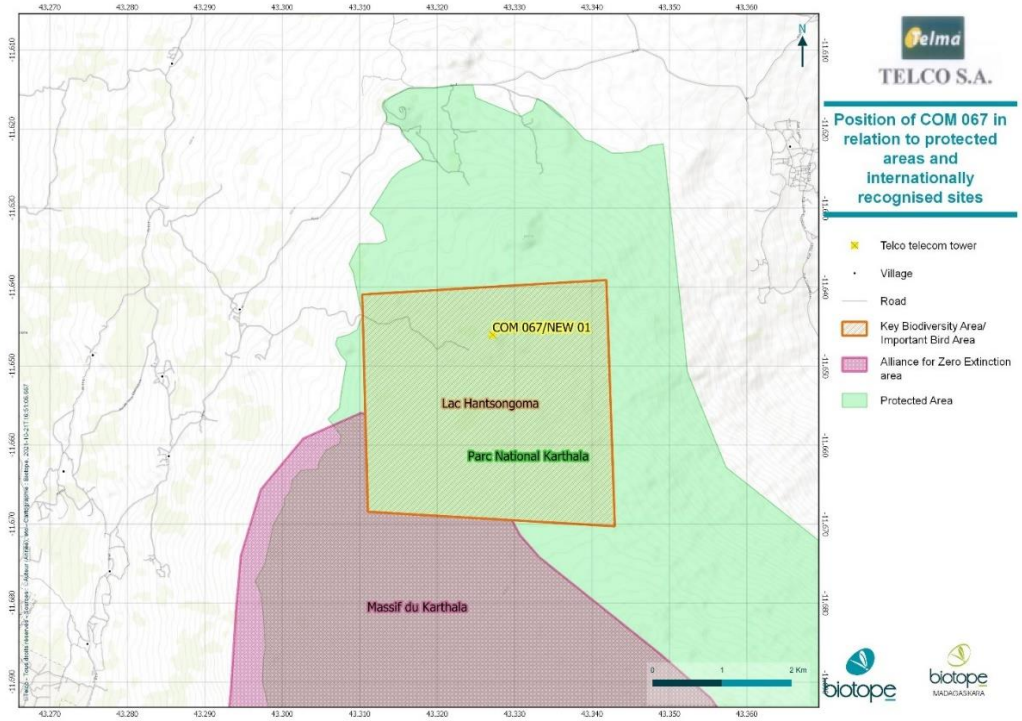


Figure 7. Position of the antenna COM067 – NEW01 on Grande Comore and zoning of protected areas and/or internationally recognized sites

1.3.2 Priority sites on Mohéli

From the data provided by GEB Consulting and Telco (geographic coordinates: E43°40'41.0"/ S12°15'40.2"), the site **MOH007 is not located within a protected area, nor an internationally recognized site.** MOH007 is located at 0,6 km from Mohéli's récifs coralliens KBA site, 0,9 km from Mohéli's National Park and 1,47 km from Mont Mlédjélé KBA site. The site is included in the list of priority sites as it has been included by the MIGA report as part of the Mwali Highlands (AZE) and part of the National Parc of Mohéli (see p.18 of the MIGA report).

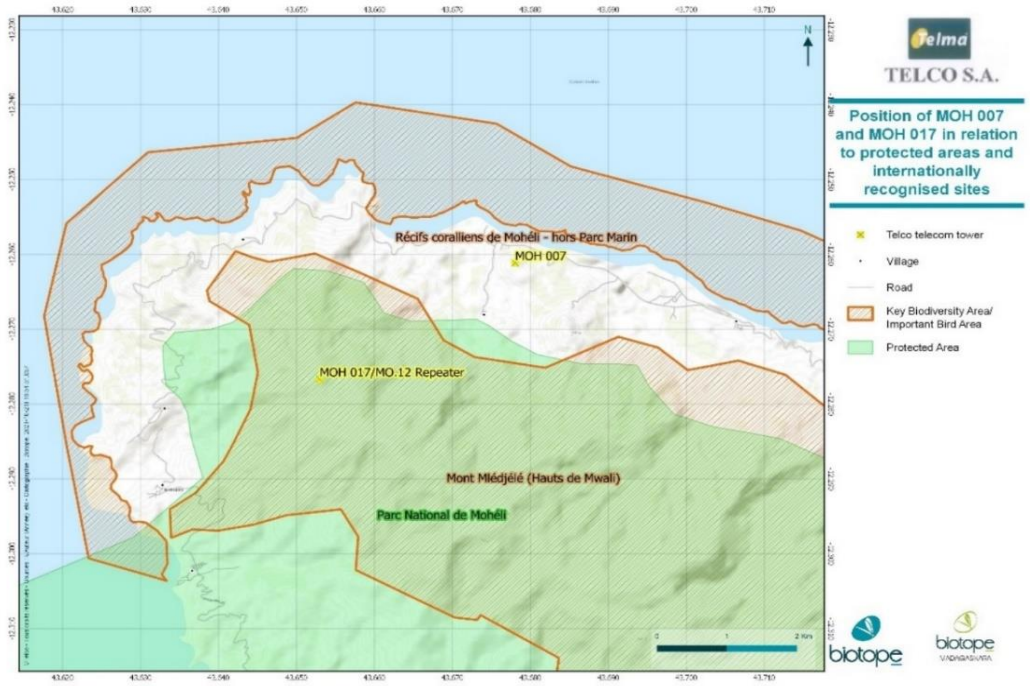


Figure 8. Position of the antenna MOH007 – MIRIGONI and MOH017-HAMBA on Mohéli and zoning of protected areas and/or internationally recognized sites

Figure 9. Position of the antenna MOH008 – NDRODRONI and MOH009 -NIOUMACHOUA on Mohéli and zoning of protected areas and/or internationally recognized sites

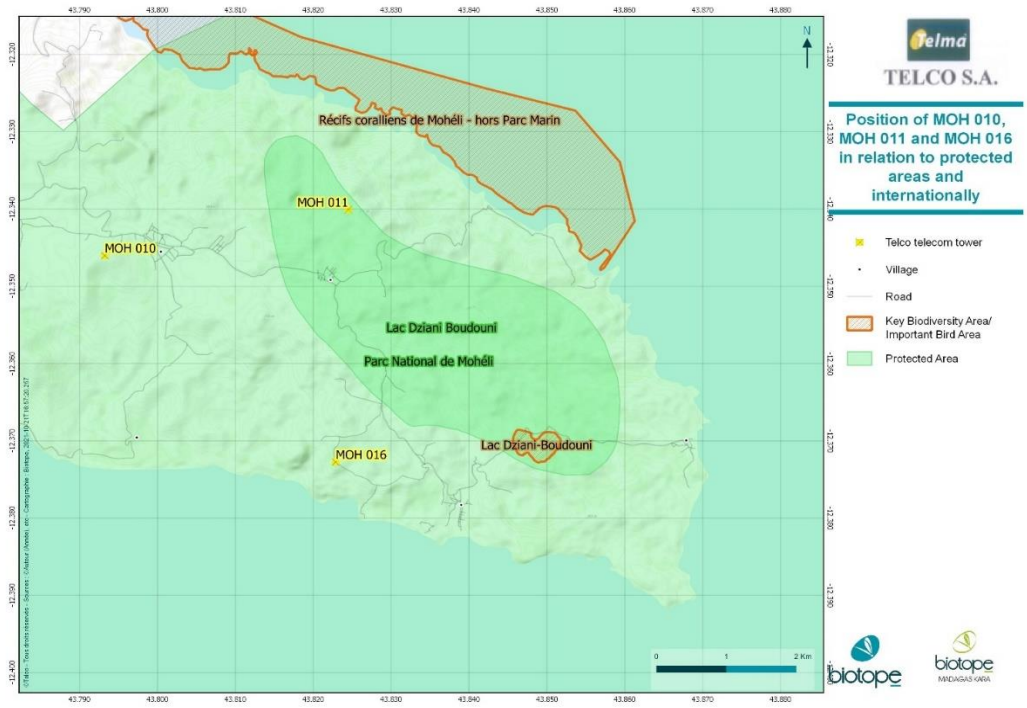


Figure 10. Position of the antenna MOH010 – WANANI, MOH011 – KANGANI and MOH016-HAMAVOUNA on Mohéli and zoning of protected areas and/or internationally recognized sites

1.3.3 Priority sites on Anjouan

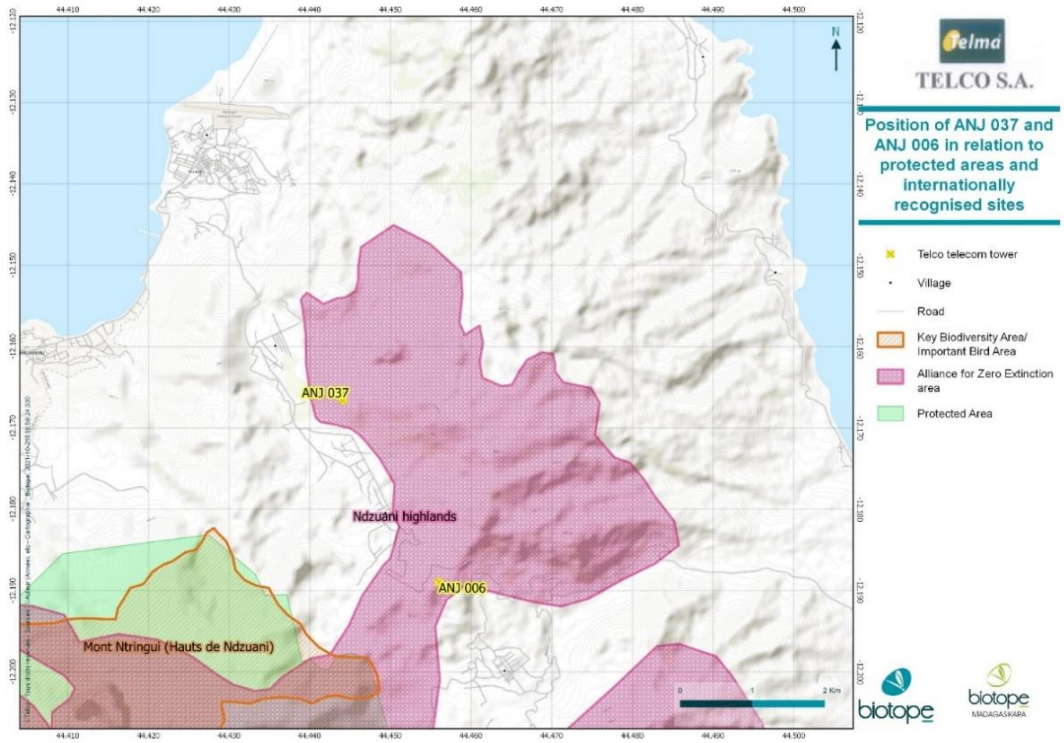


Figure 11. Position of the antenna ANJ006 – AN06 and ANJ037-KOKI on Anjouan and zoning of protected areas and/or internationally recognized sites

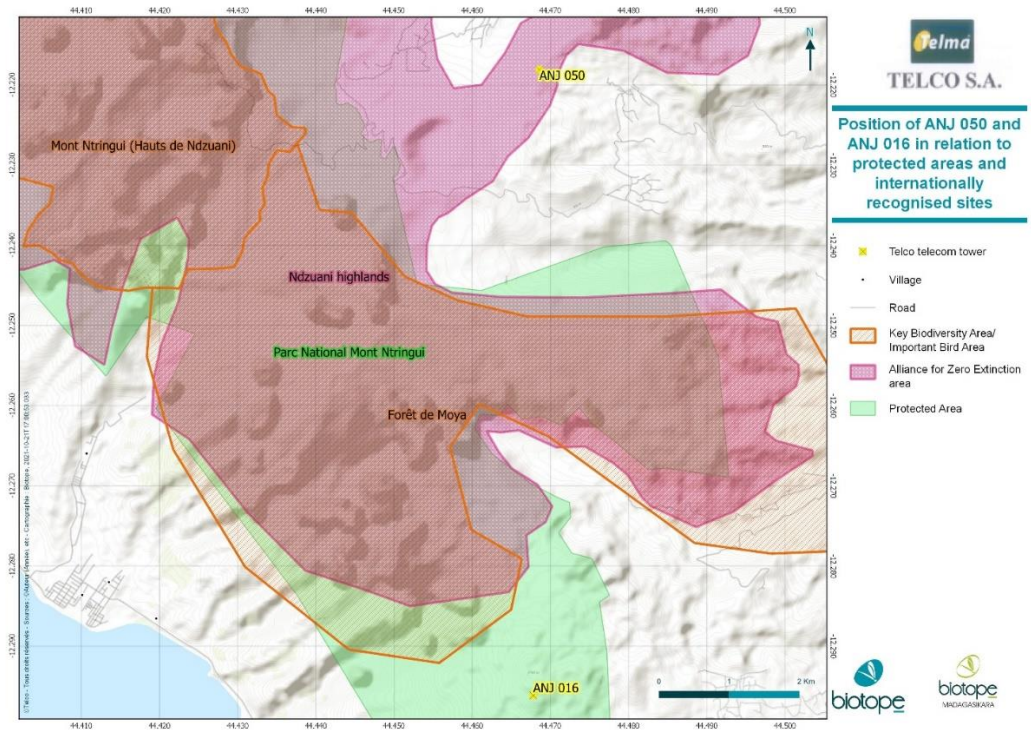


Figure 12. Position of the antenna ANJ016 and ANJ050-TSEMBEHOU on Anjouan and zoning of protected areas and/or internationally recognized sites

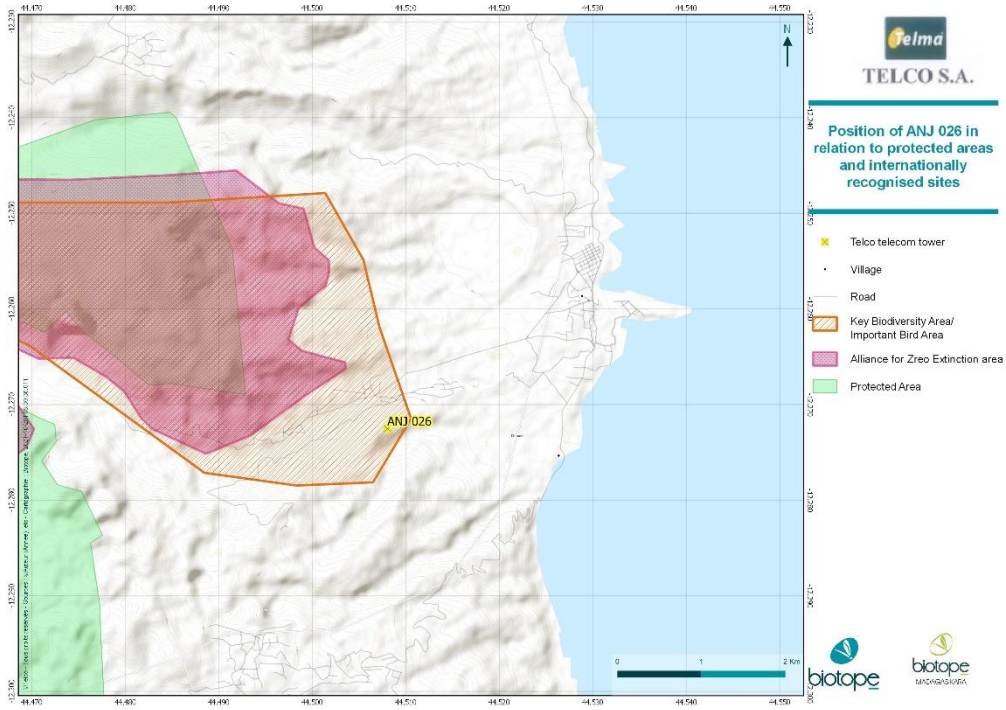


Figure 13 : Position of the antenna ANJ026 – NGANDZALE on Anjouan and zoning of protected areas and/or internationally recognized sites

Table 1. Synthesis of priority sites, access roads, zoning and status

Site code	Site name	Access road	Protected Area	KBA/IBA/AZE	Site status
Grande Comore					
COM026	KANZILE	Yes (built by Telco)	/	/	Existing
COM043	DOUNIANI	Yes	/	Massif de la Grille (KBA)	Existing
COM045	IVEMBENI	Yes (built by Telco)	/	Massif de la Grille (KBA)	Existing
COM067 / NEW01	NEW01	Yes (built by Telco)	Parc National de Karthala	Lac Hantsongoma (KBA)	Existing
Mohéli					
MOH007	MIRIGONI	No	/	/	Existing
MOH008	NDRODRONI	Yes	Parc National de Mohéli	/	Existing
MOH009	NIOUMACHOUA	Yes	Parc National de Mohéli	/	Existing
MOH010	WANANI	No	Parc National de Mohéli	/	Existing
MOH011	KANGANI	Yes	Parc National de Mohéli	/	Existing
MOH016	AMAVOUNA	No	Parc National de Mohéli	/	Existing
MOH017 / MO.12 Repeater	HAMBA	No	Parc National de Mohéli	Mwali Highlands (KBA/AZE)	**Dismantled**
Anjouan					
ANJ006	AN6	No	/	Ndzuani Highlands (KBA / AZE)	To dismantle
ANJ016	AN16	No	Parc National Mont Ntringui	/	Existing
ANJ026	NGANZALE	Yes	/	Moya Forest (KBA)	Existing
ANJ037	KOKI	No	/	Ndzuani Highlands (KBA / AZE)	To dismantle
ANJ050	TSEMBEHOU	No	/	Ndzuani Highlands (KBA / AZE)	To dismantle

1.4 Telco Project's phases

Out of the 16 priority sites identified by Fairfields Consulting in the MIGA report (2020), the IFC asked for the **dismantling of 4 sites located on AZE** (Alliance for Zero Extinction) sites, deemed of high biodiversity importance.

Out of the 4 sites to be dismantled (MOH017; ANJ006; ANJ037; ANJ050), 1 site, located on the island of Mohéli, has already been dismantled (MOH017). At the time, the site MOH017 was under construction, the access road was in place, but no telecommunication tower had been built. The other 3 sites to be dismantled, all located on the island of Anjouan, (ANJ006; ANJ037; ANJ050) are still operating (along with the 12 other priority sites).

Telco has identified **new functional replacement sites** on the island of Anjouan before dismantling the old ones to ensure continuity of service. These new sites will be defined according to the location of the Protected Areas (won't be in sites of biodiversity importance) and the coverage of their clientele. An environmental consulting firm carrying out the environmental and social impact assessments (as of September 2021) for all of Telco project's sites, including the 3 replacement sites.

The **operation phase will be of 15 years** from the start of the operations in 2015. At the end of the operating period, all telecommunication towers will be dismantled, and the sites will be restored.

2 Telco Project's commitments towards the IFC's Performance Standard PS6

The IFC's Performance Standards are related to the projects impacts on the environment, the social environment and health, and to the responsibility of the project owner of managing those impacts. These standards are nowadays widely recognized and used by financial institutions.

Specifically, **the Performance Standard 6** is focused on biodiversity impacts, and has main goals: (1) to protect and conserve biodiversity, and (2) to promote the sustainable management and use of natural resources through the adoption of practices that integrate conservation needs and development priorities.

To reach these goals, the PS6 is based on concepts of No Net Loss (NNL) and Net Gain (NG) for biodiversity. Projects aiming to comply to this standard must obtain measurable results on the field and produce in-kind offsets. As such, the 'losses' accountable to the projects impacts which are not mitigable, must be equal or inferior to the 'gains' brought by the offset measures. The principles and criteria behind the PS6 are specified by specific guidance notes.

The PS6 is based on a first classification of the impacted biodiversity and its habitats. The habitat is defined as a geographic unit encompassing a diversity of living organisms and their interactions with the nonliving environment. Based on this definition, the PS6 requires compensation for high biodiversity value habitats, a value based on "species, ecosystems and ecological process". Depending on whether habitats are considered natural or modified, critical or not for biodiversity, various levels of requirements are then applied.

The definition of a critical habitat is based on five criteria:

1. Globally or nationally Critically Endangered or Endangered species.
2. Restricted-range or endemic species.
3. Concentrations of migratory and congregatory species.
4. Highly threatened and unique ecosystems.
5. Key evolutionary processes.

If a project is susceptible to impact critical habitats, it is required to fulfil a few conditions to be eligible to funding. The project owner must produce a Biodiversity Action Plan (BAP) which includes measures to reach net gain of biodiversity for these critical habitats and their biodiversity.

Supported by an International Finance Corporation (IFC) loan approved in March 2018, **Telma has committed to complying with the IFC's Performance Standards for its projects in the Comoros islands**. At the time of IFC appraisal in 2017, 66 base stations had already been established. To comply with IFC standards, the company should have developed an Environmental and Social Management System (ESMS) in line with the Performance Standard 1 on the Assessment and Management of Environmental and Social Risks and Impacts, including the use of screening criteria to avoid sensitive sites and the completion of Environmental Impact Assessments (EIA) where sensitive sites could not be avoided. As the company hasn't carried out these assessments, it is working to implement a Corrective Action Plan. EIAs will be carried out retrospectively and for future sites where these are required by national law and the legal status of the sites located of in national parks which do not have the required environmental permits will be reviewed. An initial set of Environmental and Social Management System (ESMS)

procedures have been developed in 2019, although these do not include biodiversity components. The ESMS is regularly updated, and environmental measures included in this BAP will be integrated in the ESMS, as biodiversity components are currently not included in Telco's ESMS.

3 Main legislative framework in the Comoros islands

The main legislations pertaining to protected areas, protected species, forests and ESIAs in the Comoros are the following:

Table 2. Main environmental legislations in the Comoros islands

Text	Description
Law on Forest Management (No. 12/1001 AU, June 2012)	Considers PAs as classified forests under which they are subject to the provisions of this law.
Law on the Environment (No.94-018/AF, 1994, amended by Law No. 95-007 1995	Defines the types of protected areas (national parks or natural reserves), characterizes the content for PA designation decree, procedures and conditions for declassifying a PA
Presidential Decree No. 01-053/CE (2000)	For the creation of the Mohéli Marine Park. It is unclear whether the decree covers the extension of the park to terrestrial area. Mohéli Marine Park forbids any industrial or commercial activity with the limits of the park.
Decree No. 01-052 2001	Establishes the terms of reference of the Evaluation Committee for Environmental Impact Studies (CEEIE)
Order N01/32/MPE/CAB (2001)	Establishes the 'Stratégie Nationale et du Plan d'Action pour la Conservation de la Diversité Biologique'
Order N 01/031/MPE/CAB	Protection of animal and plant species, providing lists of fauna and flora species to be fully or partially protected. The text includes prohibitions including destruction of the habitats of these species.
Order No. 02/002 / MPE / CAB of 01/02/2002	Relating to the Mohéli marine park and specifying the delimitation of the park area.
Order No. 01/33 / MPE / CAB of 14/05/2001	Adopting the Action Plan for the Conservation of Marine Turtles in the Comoros.
Law No. 88-006 / PR	Establishing the legal regime for reforestation, reforestation and forest development of 1988, stipulates, among other things, that forest developments are intended to (i) safeguard the local environment, (ii) protect plantations agriculture, (ii) fight against erosion, (iii) provide firewood or construction wood or improve the living environment.
Law No. 12- 001 / AU of June 9, 2012	Relating to forest management in the Union of the Comoros, the purpose of which (Article 1.) is to establish the forestry regime applicable on the territory of the Union. It governs all forests under the domain of public persons as well as of the domain of individuals and constitutes a regime for the sustainable development and conservation of national forest resources ".
Ordinance No. 00 - 014 / CE of October 19, 2000	Amending certain provisions of the Framework Law on the Environment, provides for the creation of new funds for environmental management.

Text	Description
Decree No. 12- 141 / PR of July 12, 2012 promulgating Law No. 12- 001 / to of June 9, 2012	Relating to forest management which aims to establish the applicable forestry regime on the territory of the Union of the Comoros.
Law No. 07/011 / AU of August 29, 2007	Confers responsibility for the protection of aquatic species and ecosystems atthe administration in charge of fisheries and aquaculture, in collaboration with the environment administration (art. 56). This protection includes (art. 57) the creation of aquatic protected areas (reserves, marine parks and sanctuaries) and the ex-situ conservation (aquarium and gene banks).

4 Objectives of the Biodiversity Action Plan (BAP)

A desktop assessment was carried out in 2020 to identify whether sites are likely to be associated with Critical or Natural Habitats and to identify potential impacts on biodiversity values across these sites. The assessment identified numerous potentially critical habitat qualifying species across the three islands due to high levels of island endemicity and associated level of threat. The impacts are expected to be limited including in critical habitat qualifying values. These estimates will be confirmed as part of the Biodiversity Action Plan.

A Biodiversity Action Plan (BAP) is a self-supporting document that **includes all measures to avoid, reduce and rehabilitate impacts on biodiversity and ecosystem services** (on-site) as well as **offset measures** (off-site). The BAP also details responsibilities, timelines, budget, monitoring and evaluation requirements of the different measures outlined. The project's BAP is a living document that should include agreed-on timelines for regular review and update as new information arises, project implementation progresses and conservation context changes over time.

The plan will present the actions needed to achieve no net loss of biodiversity in natural habitats, and net gain of biodiversity in critical habitats, as well as additional measures needed to comply with requirements for projects located in protected or internationally recognized areas in line with the IFC's PS6. Additionally, the company will develop a zero-tolerance policy for possession of illegal and/or threatened wildlife and forest resources that will be applied to employees and contractors, as part of its ESMS.

The **temporal scope** of the project is considered for a correct implementation of the BAP's measures. The measures outlined in the document should follow the project schedule and will include the operation phase of the project and the dismantling of the antennas (first the 3 antennas to be dismantled, and all the antennas at the end of the project). The temporal scope of the operations phase for the Telco project is set to be a minimum of 15 years as of 2015 (permit approval). The dismantling phase of all telecommunication towers will follow.

The temporal scope of the project, and hence of its BAP, is a minimum of 9 years.

2 Methodological approach

1 Literature Review

A **desktop assessment** of the '*Desktop Assessment of Biodiversity Impacts associated with Telecom towers in the Comoros Islands*' (MIGA report) was produced in May 2020 by Fairfields Consulting, providing extensive information related to the project and its potential impacts on biodiversity, including numerous species on the three islands which are likely to trigger the designation of a 'critical habitat'.

An **extensive review of the literature** on biodiversity in the Comoros islands and on potential impacts of telecommunication towers on biodiversity was carried out to complement existing information provided by the assessment of the MIGA (see 9Bibliography).

2 Data compilation from consulting firm (fauna & flora)

The mission consisted in a desktop review, without field work, as information was retrieved from local consultants appointed to complete ESIAs (GEB Consulting) for existing and replacement antennas.

The inventories were carried out by GEB Consulting in September/October 2021 along with the inventories for the EIAs carried out for Telco. GEB Consulting consultants carried out inventories on flora, fauna and a description of the environment for each of the 16 priority sites identified by the MIGA Desktop Assessment.

The seasonality of the inventory is consistent with the criteria of Conservation International's 'Core standardized Methods for Rapid Biological Field Assessment' (Larsen, 2016). The months of September and October are favorable for an appropriate biological observation given the ecological conditions of animals, flora, and vegetation. A single inventory during the wet season is sufficient to determine the biological characteristics of a habitat and species and biological issues. Still, the inventories were carried out once in September/October 2021, which holds a bias in terms of seasonality as it may limit the inventory of certain taxa (especially for fauna species which could be migrating/hibernating during the period).

Data gathered through the inventories

The environmental teams gathered data related to:

- Flora species: woody plants, herbaceous plants (family, gender, species, status, populations, height, location relative to the tower were inventoried)
- Fauna species: mollusks, reptiles, mammals, birds, butterflies (family, gender, species, status, population numbers were inventoried)
- Habitats: location, land-use, types of habitats (natural, modified).

Methodology used for the inventories

GEB Consulting teams informed Biotope that they used the following methodology:

According to Gounot (1969), the Quadrant Centered Point or QCP method (Brower, 1990) is used to assess the ecological status of a target species and to calculate density without prior delineation of the sample, and to know the floristic composition of the environment. In other words, this method of Brower (1990) identifies the species associated with the target plant. The associated species mark the set of species that live in the same environment with the target species. This method gives a good ecological indication of the habitat of the target species.

The aim is to locate the 4 cardinal points and to draw quadrants following these points whose center was the target species to be studied thus the pylon.

The inventory method used for flora, QCP method, is not exactly consistent with the methods proposed by Conservation International's Core standardized methods for rapid biological assessment. Nonetheless, the right-of-way approach method allows for the determination of the richness and floristic composition of the sites.

In this study, the method used for plant biodiversity is adapted to the animal inventory. Considering the pylon as the center, an imaginary circle of 1 km diameter is defined. Depending on the environment, the slope and the site considered, the diameter can decrease to 50m.

Inventory of butterflies: The methodology used is inspired by that of Lewis (1998). The parameters taken into consideration are date, day, time, locality, vegetation, sun, canopy, wind, rain and weather.

Inventory of birds: Two methods were used to survey diurnal birds:

1. Counting point method: This method consists in staying on a point during 10 min and counting all the birds seen or heard in a 50 m radius.

2. Random search: The method consists in walking around without transecting while noting the species observed and/or heard. For any newly seen or heard species, the parameters mentioned above are noted (time, GPS coordinates, height of the bird from the ground).

Inventory of amphibians & reptiles: The inventories were based on the counting of species encountered in each point with the associated parameters (number of individuals, tracks, support, distance from the pylon ....)

Inventory of mammals:

1. Inventory of giant bats of the Comoros: The inventories were based on the count of species encountered in each point with the associated parameters (number of individuals, tracks, support, distance from the antenna, etc.)

2. Inventory of other mammal species (terrestrial & microbats): The inventory of these species was conducted using the random search method. This method consists of walking while noting the mammal species observed. For species that are difficult to observe, their tracks and signs were noted (footprint, nest, lodging…). For each species encountered, we note the name of the species; the geodetic coordinates of the place where the species is encountered. The number of individuals of the species is observed.

The method proposed in Conservation International's Core standardized methods for rapid biological assessment determines a trapping study that requires time to set up the capture devices. Alternative methods are suggested such as the use of a transect line. The approach of Lewis in 1998 (Endemic butterflies on Grande Comore: habitat preferences and conservation priorities) is very adaptable to the ecological conditions of the butterfly study. As for the other taxa (birds, amphibians, reptiles and mammals), the methods used are similar to the approaches proposed by CI's Core standardized methods for rapid biological assessment.

3 Stakeholder consultation

Given the short timeline for the job assignment, no stakeholder consultations were carried out. Specific stakeholder consultations will be carried out to study the possibilities of additional conservation actions.

4 Critical habitat screening

From the literature review and the data retrieved by local consultants for the 16 priority sites, a gap analysis was carried out regarding critical habitat determination, to be in line with the PS6 requirements. The analysis aimed to review the existing information and methodology used in the determination of critical habitats.

The **project's footprint** represents the zone directly impacted by the project: the tower mast, guard house, latrine and access road (if it exists).

The **area of influence** (AOI) includes the project footprint and an area of 1km diameter around the project footprint.

The **Ecologically Appropriate Area of Analysis (EAAA)** for the critical habitat assessment is presented in Table 7. It is important to note that those E3A are much larger than AOI and footprint.

5 Definition of biodiversity-related mitigation measures; offset activities and elaboration of an implementation plan

From the critical habitat screening carried out, on-site mitigation measures and offset activities will be developed for the operations phase and the dismantling of the antennas to achieve no net loss of natural habitats and net gains for critical habitat values, as required by the IFC's PS6.

In the context of the study, the IFC's PS6 sets out different impact mitigation guidelines, depending on the habitat type:

Table 3. Types of habitats and requirements outlined by the IFC's PS6

		Types of habitats	
IFC's PS6 outlines 3 types of habitats		Natural habitats	Modified habitats
Reaching the threshold of at least one criterion triggering critical habitats	Yes	Critical habitat ⇨ **NET GAIN**	Critical habitat ⇨ **NET GAIN**
	No	Natural habitat ⇨ **NO NET LOSS**	Modified habitat ⇨ No requirement

- **Non-"critical" modified habitats**: recommendations are to encourage the client to limit its environmental impacts and to implement mitigation measures.
- **Non-"critical" natural habitats**: IFC's PS6 requires that the project causes no net loss of biodiversity ("zero net loss").
- **Critical habitats:** strict mitigation and offset criteria must be met by IFC clients, and the project must generate a "net gain" for biodiversity that triggered the critical habitat designation.

For the offset activities selected, an implementation plan including key performance indicators to track progress and results for each activity will be developed. The implementation plan will also include estimates of a program budget and an outline of actions, timeframes, roles and responsibilities for each offset activity.

6 Methodology limitations

There are some limitations in the methodology carried out for the BAP. The two main types of limitations are the following:

Temporal scale of the BAP:

- The BAP is elaborated after the construction of the telecommunication towers. The BAP is therefore elaborated only for the operation phase and the dismantling of the towers, not considering impacts and measures to be carried out during the construction phase.

This limits the application of measures to avoid and reduce the impacts (the impacts during the construction of the antennas specifically).

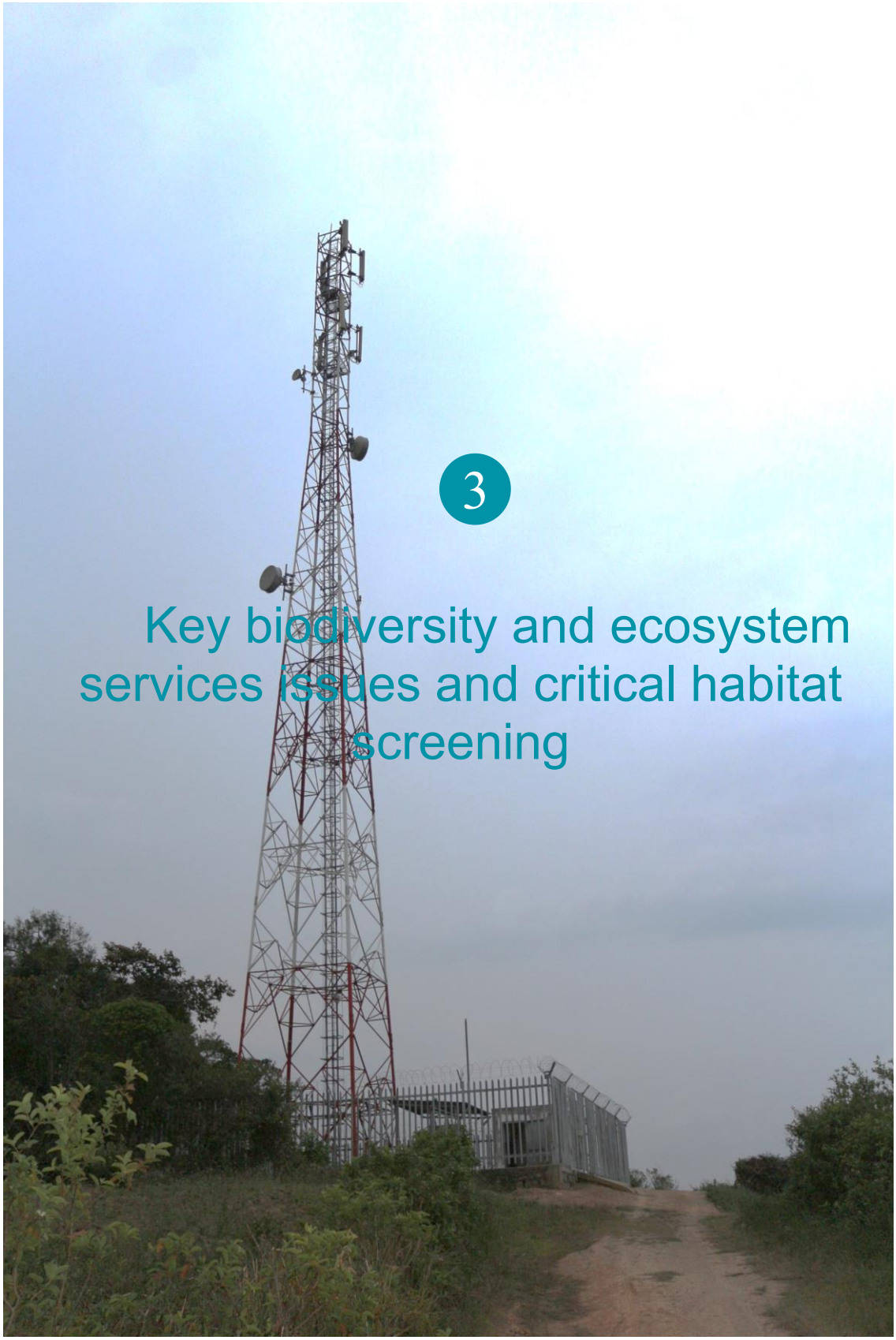
- No inventories were made on habitats, land use, species of conservation concern and ecosystems prior to the construction of the telecommunication towers. Still, satellite/aerial data were used to assess the impacts of the antennas.

Data limitations:

- Inventories on habitats, land use and species were not gathered by the team of consultants (Biotope experts), but through an external company hired by Telco (GEB Consulting). Biotope teams asked for specific information to be retrieved (see Appendix 1) prior to the inventories being carried out. Telco overlooked the work of GEB Consulting throughout their mission. Although exchanges were held between GEB Consulting and Biotope initially to frame the expectations.

- Data such as population size of threatened species (CR-EN-VU) at each telecommunication site is missing from the data gathered by GEB Consulting. This type of information is needed for the evaluation of criterion 1 of specific population size (See Thresholds Appendix 2), and it hence limited the critical habitat analysis.

- No Environmental and Social Impact Assessments were produced prior to the BAP, hence information relating to the key impacts of the project on habitats and species were mainly drawn from the MIGA report (Fairfields Consulting, 2020), the literature review and expert judgement.



3

Key biodiversity and ecosystem services issues and critical habitat screening

1 Key Biodiversity and ecosystem services issues

1.1 Habitats

The dominant natural habitat at elevation is mixed montane forest. Remnant semi-deciduous forests which were widespread at lower altitudes are currently rare. The population is strongly reliant on natural resources which results in the unsustainable forest and agricultural practices (slash and burn agriculture, cash crops, etc.).

Table 4 below presents further details regarding the location, the appearance of habitats for each priority site and their characterization according to the IFC's categories: modified habitat, natural habitat and critical habitat.

- **Modified habitats** are areas that may contain a large proportion of plant and/or animal species of non-native origin and/or where human activity has substantially modified an area's primary ecological functions and species composition
- **Natural habitats** are composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's ecological functions and species composition.
- **Critical habitats** are natural or modified environments with high biodiversity value including: i) habitat of significant importance to critically endangered and/or endangered species; ii) habitat of significant importance to endemic and/or restricted-range species; iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species, iv) highly threatened and/or unique ecosystems, and/or v) areas associated with key evolutionary processes (see Appendix 2 for further information).

The following analysis is carried out for the project's area of influence of each telecommunication site: the telecommunication site infrastructure in place with a 50m radius around the antenna.

The analysis of habitats was carried out using three different types of data: i) data from the MIGA report (Fairfields Consulting, 2020), ii) data from the inventories of GEB Consulting and iii satellite imagery data from Google Earth 2014, 2017, 2018, 2019, 2021 (see Figures 14-21).

Table 4. Description of the location and appearance of habitats for the 16 priority sites

Location	Appearance of the habitat (Fairfields Consulting 2020 and GEB Consulting)	Appearance of the habitat (FAO, 2020 land cover data)	Presence of natural habitats in the project's area of influence
COM026 – Kanzile			
/	• Wetland vegetation transformed into vegetable crops (tomatoes, manioc, banana, sugar cane, taros). • Rocky soil with tree vegetation (mainly *Weinmania comorensis, Mangifera indica, Cocos nucifera)* and shrub vegetation (mainly *Cycas thouarcii, Psidium cattleianum* and *Psidium guajava).*	Tree cover: closed, evergreen broadleaved	"**Degraded natural habitat**[2]" with native of plant species and primary ecological functions and species compositions which have not been fundamentally

[2] Degraded natural habitats are habitats with a degraded state of conservation. Although some native plants and animal species may be present, the habitat is not characterized as natural.

Location	Appearance of the habitat (Fairfields Consulting 2020 and GEB Consulting)	Appearance of the habitat (FAO, 2020 land cover data)	Presence of natural habitats in the project's area of influence
	• Degradation of humid forest is marked by the presence of forest remnants such as *Weinmannia comorensis, Polycias duplicata, Myrica dentulata* and *Cussonia spicata* (GEB Consulting)		altered by human activity *Potential outcome: lack of sufficient data for final validation*
COM043 – Douniani			
/	• Dry vegetation transformed into crop fields (manioc, banana, sweet potatoes) • Clay soil rich in herbaceous plants. • There is arborescent vegetation (mainly *Albizia lebbeck, Cocos nucifera* and *Gliricidia sepium)* and she shrubby vegetation (mainly *Gliricidia sepium, Rhus natalensis, Roicyssus revoilii* and *Woodfordia fruticose)*. Finally, there is herbaceous vegetation dominated by *Hyparrhenia hirta, Imperata cylindrica* and *Brachiaria nana*. • The degradation of the dry forest is marked by the presence of forest remnants such as *Searsia natalensis, Rhoicissus revoilii, Albizia lebbeck* and *Woodfordia fruticosa* (GEB Consulting)	Tree cover: closed, deciduous broadleaved	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin
COM045 - Ivembeni			
/	• Dry vegetation transformed into crop fields (manioc, banana, sweet potatoes, tomatoes, salad). Clay soil with very little tree vegetation except for a few individuals of *Gliricidia sepium, Leucaena leucocephala* and a single individual of *Ficus sycomorus*. • The herbaceous vegetation is dominated by *Pennisetum purpureum* which is a species cultivated for grazing and embocage. Other herbaceous species such as *Bidens pilosa, Vernonia cinera* and *Melinis* sp are identified in this area.	No data	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin
COM067 - NEW01			
/	• Wetland vegetation transformed into vegetable crops. • The soil is rich in herbaceous on the West flank rich in herbaceous and rich in arborescent and shrubby plants on the East flank. • The dominant shrubby plants on the eastern flank are *Weinmannia comorensis, Nuxia pseudodentata, Anthocleista grandiflora* and *Tambourissa leptophylla*. The shrubby plants are *Macaranga boiviniana, Psycotria msiruni* and *Dracaena* sp, *Nuxia pseudodentata*,	Tree cover: closed, deciduous broadleaved	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin

Location	Appearance of the habitat (Fairfields Consulting 2020 and GEB Consulting)	Appearance of the habitat (FAO, 2020 land cover data)	Presence of natural habitats in the project's area of influence
	• On the western flank, the arborescent plants are *Pinus* sp, *Eucalyptus globulus* and *Ficus sycomorus*. The shrubby plants are Psidium cattleianum, *Lantana camara* and *Bambusa* sp • Herbaceous plants are *Paspalim paniculatum, Imperata cylindrica, Rubus rosifolius*		
MOH007 - Miringoni			
The MOH007 site is located in Hamamouhousouni between the village of Miringoni 1 km to the southwest and the village of Barakani 600 m to the northwest. It is located on the outskirts of the controlled use area of the Mohéli National Park from the Northeast to the Southeast (GEB Consulting) Partially wooded hill 1.4 km to north of Miringoni (Fairfields Consulting, 2020)	• This site is surrounded by crop fields. Fauna and flora present are limited and not very diverse. Livestock farming is not much practiced around the site (GEB Consulting) • Still partially wooded NH but lots of degraded patches.	Tree cover: closed, evergreen broadleaved / deciduous broadleaved	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin
MOH008 - Ndrondroni			
The MOH008 site is limited to 800 m to the Northeast by the village of Ndrondroni, 500 m to the Northwest by Wallah II, 400m to the Southeast by Miremani and to the Southwest by the sea and mangroves of Mkongoi (GEB Consulting) Wooded hill 1.4 km to north of Miringoni (Fairfields Consulting, 2020)	• MOH008 is located in Mkongoi in a dry type low-lying forest, and surrounded by subsistence and cash crops. The fauna is dominated by endemic species, which is not the case for plant species. It should also be noted that this antenna is in the same site as that of Comoros Telecom, they are separated only about ten meters. • Natural habitat / modified (Fairfields Consulting, 2020)	Tree cover: closed, deciduous broadleaved	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin
MOH009 - Niomachoua			
The MOH009 pylon is surrounded by houses in a peripheral district of the city of Nioumachoua, named "JEJE". It is bounded to the north by the nioumachoua football field, to the south by the JEJE district, to the east by the Miramani district, and to the west by the chiconi mangrove (GEB Consulting) Wooded hill in urban area of Niamochoua (Fairfields Consulting, 2020)	• The flora of the site is characterized by a dry and poorly developed formation; the fauna is less diverse. In addition, the area has eroded and bare podzol soils (GEB Consulting) • Some vegetation (Fairfields Consulting, 2020)	Tree cover: open	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin
MOH010 Wanani			
The site is located in Cocorico Wanani, in the municipality of Djando. It is bounded to the north by the village of Siry-ziroudani, to the east by Wanani and to	• The antenna is located inside agricultural fields where subsistence crops are predominant. Breeding is practiced around the site. Agroforestry vegetation is characterized by a plant formation conditioned by a climate of	Tree cover: closed, evergreen broadleaved	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin

Location	Appearance of the habitat (Fairfields Consulting 2020 and GEB Consulting)	Appearance of the habitat (FAO, 2020 land cover data)	Presence of natural habitats in the project's area of influence
the west by an agroforest (GEB Consulting) Hill to west of sub-urban area near Wanani (Fairfields Consulting, 2020)	medium altitude and a plateau relief (GEB Consulting) • Modified/natural agroforestry (Fairfields Consulting, 2020)		
MOH011 Kangani			
It is located in Mouhouyoumadji between the village of kangani to the southwest, Mount Ngoudjouboeni to the north, the village of Hagnamoida to the east, and the national road to the south. Rural wooded hill 1.2 km to north of Kangani (Fairfields Consulting, 2020)	• The site is surrounded by fields of subsistence and cash crops. The most dominant culture is that of the clove tree. The forest is dominated by a dry semi-deciduous formation characterized by endemic and native vascular flora with a poorly diversified fauna. • Natural, lots of degraded patches (Fairfields Consulting, 2020)	Tree cover: closed evergreen broadleaved	"**Degraded natural habitat**" with native of plant species and primary ecological functions and species compositions which have not been fundamentally altered by human activity *Potential outcome: lack of sufficient data for final validation*
MOH016 Hamavouna			
Characterized by a dry semi-deciduous formation with a domination of padzas (eroded and bare lands), the MOH016 site is located in Mavadzani between the village of hamavouna to the south, Hagninguélé to the west, to the north the village of Nkangani (GEB Consulting) Rural partially wooded hill 1.9 km to west of Hamavouna (Fairfields Consulting, 2020)	• Towards the southeast, there is a presence of small lakes called "Wana zi Bundouni". In this site, fauna and flora are not very diverse. It should be noted that the MOH016 site is located on a bare slope 300 m away from the small lake. • Near a little wetland. Degraded natural (Fairfields Consulting, 2020)	Tree cover: closed evergreen broadleaved	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin
MOH017 Hamba			
It is located inside the forest, a humid forest of the evergreen type of mid-slope below the ridge. This site is limited from North to South, and from East to West by the Saint-Antoine Forest in the heart of the Mohéli National Park, in its no-take zone (GEB Consulting) Rural wooded hill 2 km south west of Ndrondroni (Fairfields Consulting, 2020)	• MOH017 is home to endemic, native fauna and flora species as well as some exotic species. Some endemic species observed are in the IUCN red list and deserve special attention in terms of conservation. The site is 2 km from the village of Hamba, with access to secondary road (GEB Consulting).	Tree cover: closed evergreen broadleaved	"**Degraded natural habitat**" with native of plant species and primary ecological functions and species compositions which have not been fundamentally altered by human activity *Potential outcome: lack of sufficient data for final validation*
ANJ006 Bazmini			
0.9 km southeast of Bazimini (Fairfields Consulting, 2020)	• Remnant of an ancient low-lying rainforest currently in crop fields (GEB Consulting) • Partially wooded hill (Fairfields Consulting, 2020)	Tree cover: closed evergreen broadleaved	"**Modified habitat**" as it contains a large proportion of plant species of non-native origin
ANJ016 Moya			

Location	Appearance of the habitat (Fairfields Consulting 2020 and GEB Consulting)	Appearance of the habitat (FAO, 2020 land cover data)	Presence of natural habitats in the project's area of influence
3 km east of Moya (Fairfields Consulting, 2020)	• Evergreen dense humid forest of medium altitude (degradation dates from 2 years). Cultivation of cassava and banana, clay soil on a hillside with a slope of over 80°. A tree vegetation based on clove and mango, an herbaceous vegetation based on *Panicum luridum* and *Axonopus compreus*. The age of a humid forest is marked by the vegetation surrounding the antenna of more than 300 m where *Cussonia spicata, Gastonia duplicata* and forest ferns are observed. The environment is threatened by the fragility of the clay soil and the landslide which is very frequent in Anjouan (GEB Consulting). • Largely natural hill (some degradation) (Fairfields Consulting, 2020)	Tree cover: closed evergreen broadleaved	"**Modified habitat**" because it contains a large proportion of plant species of non-native origin
ANJ026 Ngandzale			
/	• Dry vegetation transformed into fields. • A hill at 70° with herbaceous vegetation based on grasses in the East. To the west there is a banana and cassava crops up to 50 m radius where the village of UTSA is located. The existing tree vegetation is based on mango, clove and breadfruit trees. The herbaceous vegetation is marked by *Panicum luridum, Brachiaria nana, Sporobolus africanus* (GEB Consulting) • Partially cleared ridgeline, some wooded areas nearby (Fairfields Consulting, 2020)	Tree cover: open	"**Modified habitat**" because it contains a large proportion of plant species of non-native origin
ANJ037 Baziminidensif			
0.75 km to the north of Koki (lots of bare ground), near foraging areas (Fairfields Consulting, 2020)	• Humid vegetation transformed into a cash crop (Clove) (GEB Consulting). • Partially wooded slope (Fairfields Consulting, 2020)	Tree cover: closed evergreen broadleaved	"**Modified habitat**" because it contains a large proportion of plant species of non-native origin
ANJ050 Tsembehou			
1.25 km west of Koni Ngani (Fairfields Consulting, 2020)	• Remnant of an ancient low-lying rainforest currently in crop fields (clove) • Clay soil with arborescent vegetation based on *Syzygium aromaticum, Mangifera indica* and *Cocos nucifera*. Presence of herbaceous vegetation based on *Clidemia hirta, Hyparrhenia hirta, Elephanthopus scaber*. A cash crop based on vanilla and clove, a food crop based on cassava, banana and sweet potato. It is an area of cattle and goat breeding. (GEB Consulting) • Largely cleared slope, on a ridge close to forested slopes (Fairfields Consulting, 2020)	Tree cover: closed deciduous broadleaved	"**Modified habitat**" because it contains a large proportion of plant species of non-native origin

In conclusion, habitats of 3 sites have been identified as "*Degraded natural habitats*": COM026, MOH011 and MOH017. However, this result remains potential: lack of sufficient data for final validation.

Table 5. Synthesis of habitat types for each site

Sites	Natural/ Modified habitat	Site status
COM026	Degraded natural habitat *Not confirmed*	Existing
COM043	Modified habitat	Existing
COM045	Modified habitat	Existing
COM067	Modified habitat	Existing
MOH007	Modified habitat	Existing
MOH008	Modified habitat	Existing
MOH009	Modified habitat	Existing
MOH010	Modified habitat	Existing
MOH011	Degraded natural habitat *Not confirmed*	Existing
MOH016	Modified habitat	Existing
MOH017	Degraded natural habitat *Not confirmed*	Dismantled
ANJ006	Modified habitat	To dismantle
ANJ016	Modified habitat	Existing
ANJ026	Modified habitat	Existing
ANJ037	Modified habitat	To dismantle
ANJ050	Modified habitat	To dismantle

A simplified mapping of habitats for all sites is presented in Figure 14 to Figure 21. It presents the locations of each priority telecommunication site (see below). For each site, land-use surrounding the site is depicted for the years 2014 and 2017, 2018 or 2019 with satellite imagery (diachronic approach). Data from the FAO on land-use types (Land Cover Classification WaPOR 2.1[3]) for each site location is also presented for the year 2020. Data used was in raster format, which was then vectorized for classification.

[3] *https://wapor.apps.fao.org/home/WAPOR_2/1?theme=L1_LCC_A&dim=YEAR:%255B2020-01-01%252C2021-01-01*

Figure 14. Location of the antenna COM026 – KANZILE on Grande Comore and changes in land-use over time

Figure 15. Location of the antenna COM043 – DOUNIANI on Grande Comore and changes in land-use over time

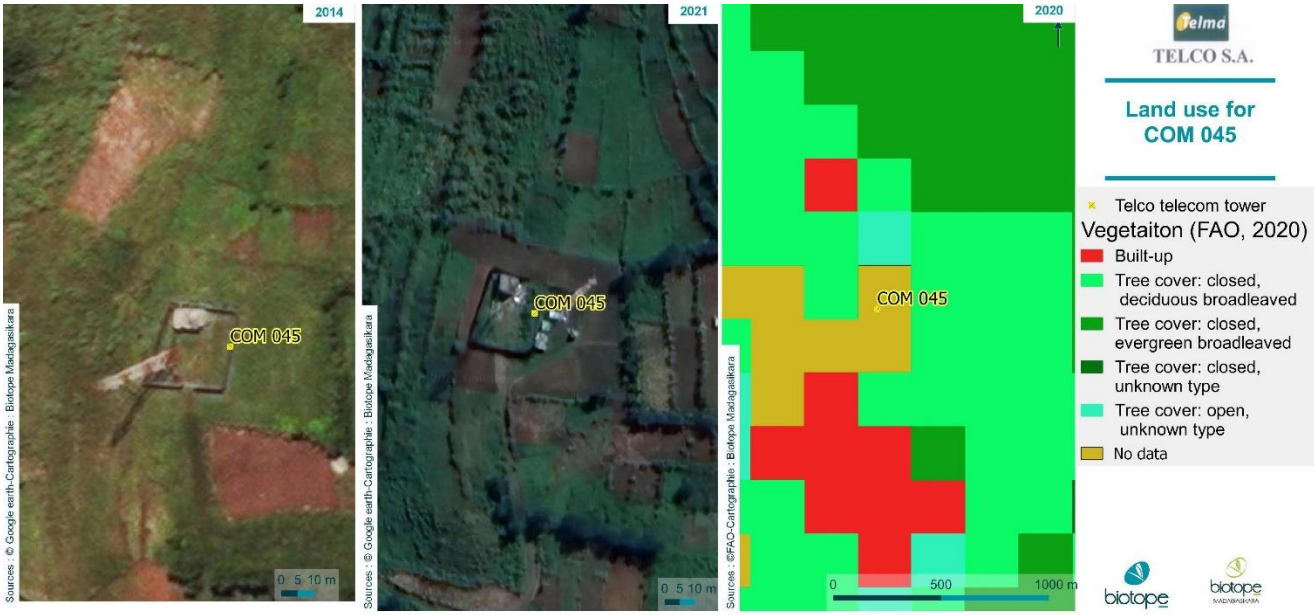


Figure 16. Location of the antenna COM045 – IVEMBENI on Grande Comore and changes in land-use over time

Figure 17. Location of the antenna COM067 – NEW01 on Grande Comore and changes in land-use over time

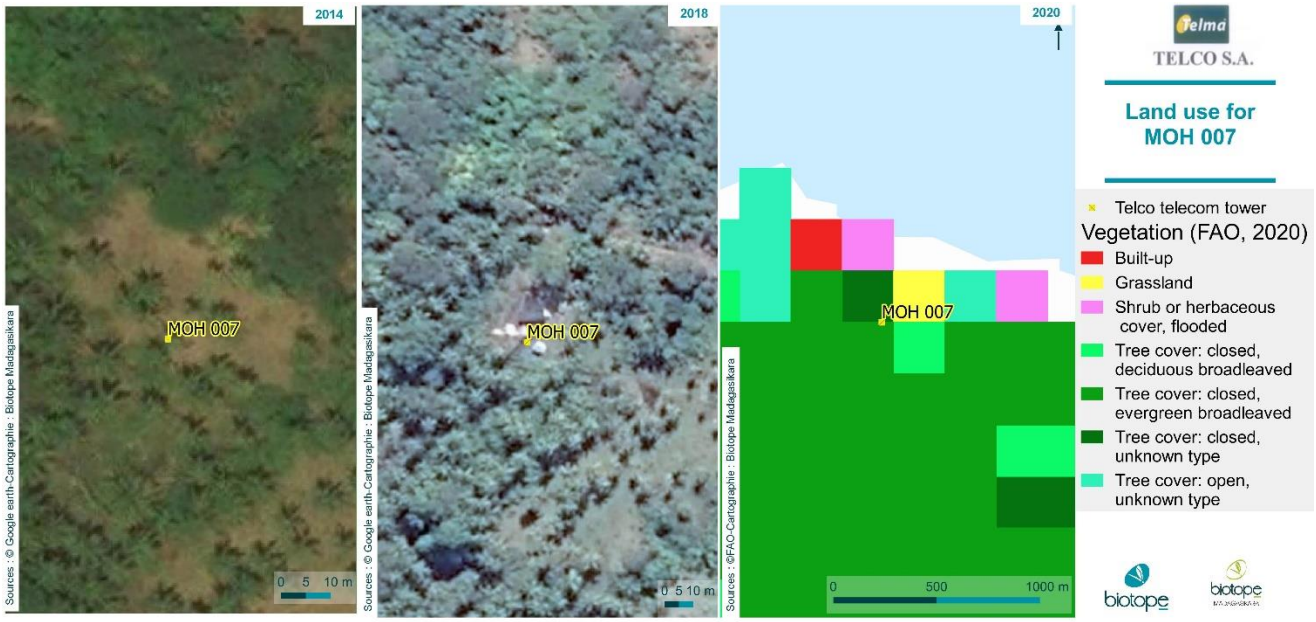


Figure 18. Location of the antenna MOH007 – MIRIGONI on Mohéli and changes in land-use over time

Figure 19. Location of the antenna MOH008 – NDRODRONI on Mohéli and changes in land-use over time

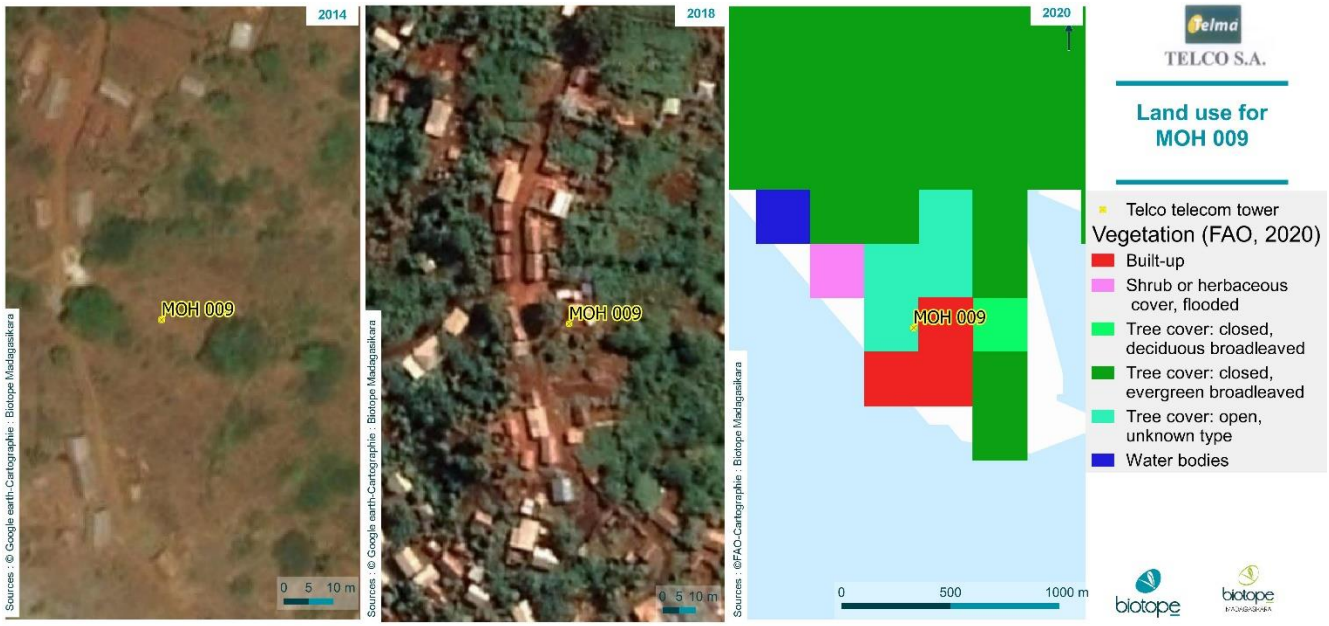


Figure 20. Location of the antenna MOH009 – NIOUMACHOUA on Mohéli and changes in land-use over time

Figure 21. Location of the antenna MOH010 – WANANI on Mohéli and changes in land-use over time

Figure 22. Location of the antenna MOH011 – KANGANI on Mohéli and changes in land-use over time

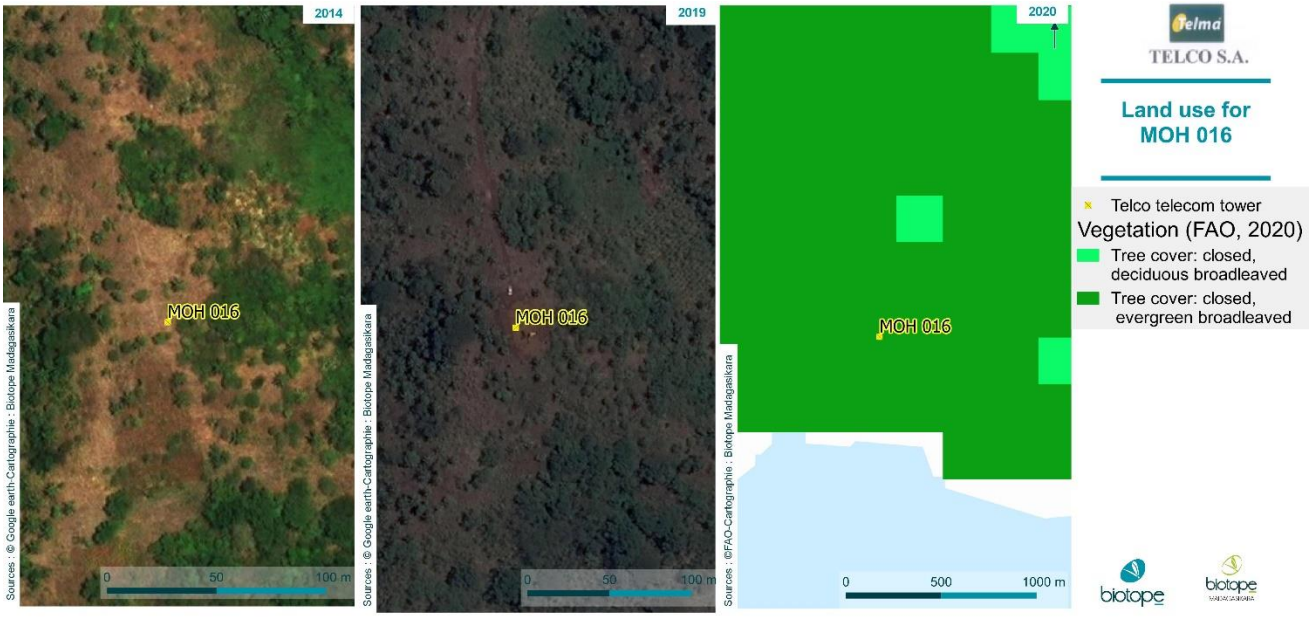


Figure 23. Location of the antenna MOH016 – HAMAVOUNA on Mohéli and changes in land-use over time

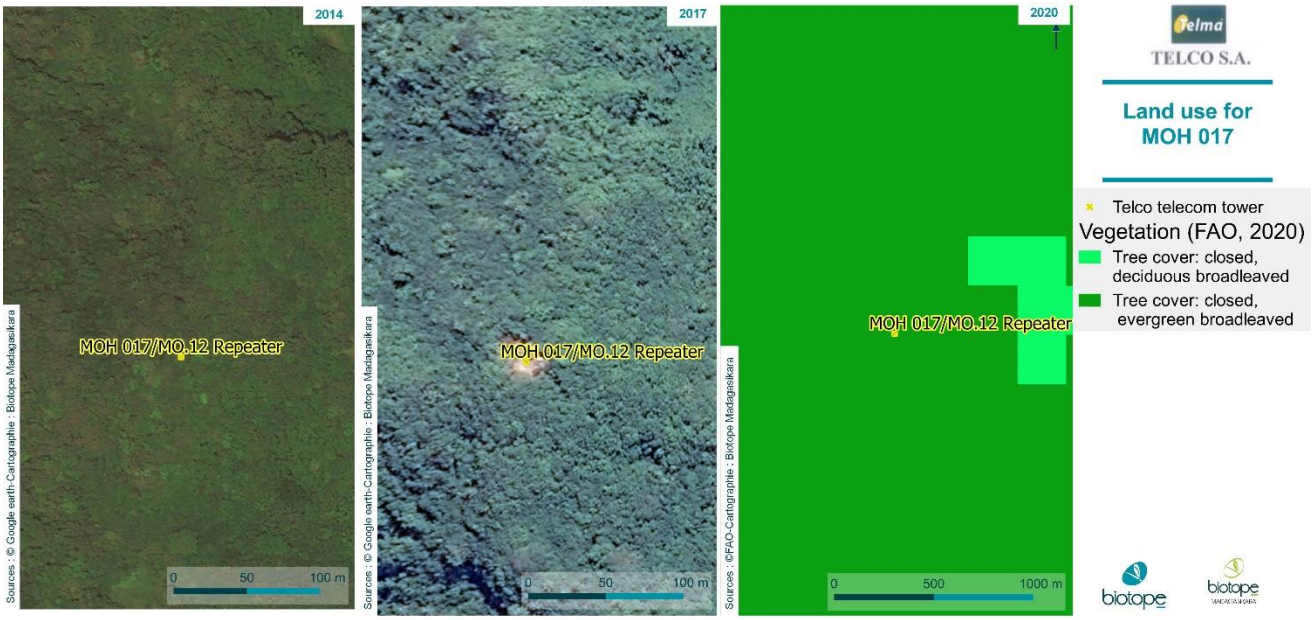


Figure 24. Location of the antenna MOH017 – HAMBA on Mohéli and changes in land-use over time

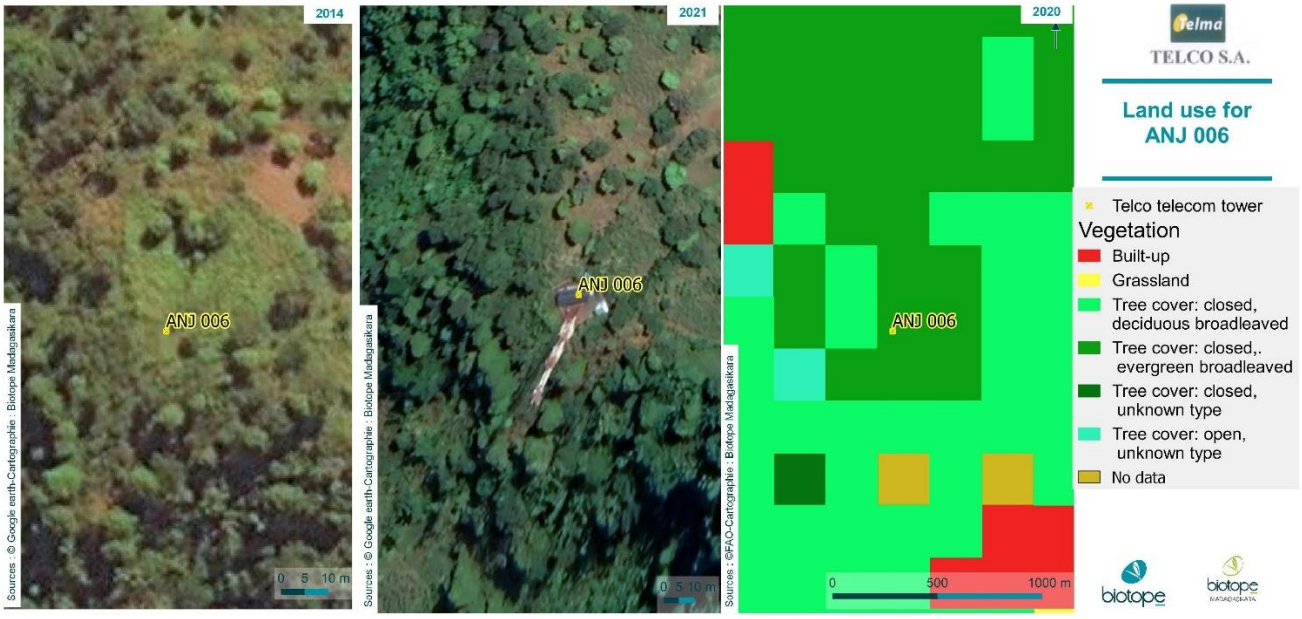


Figure 25. Location of the antenna ANJ006 – AN6 on Anjouan and changes in land-use over time

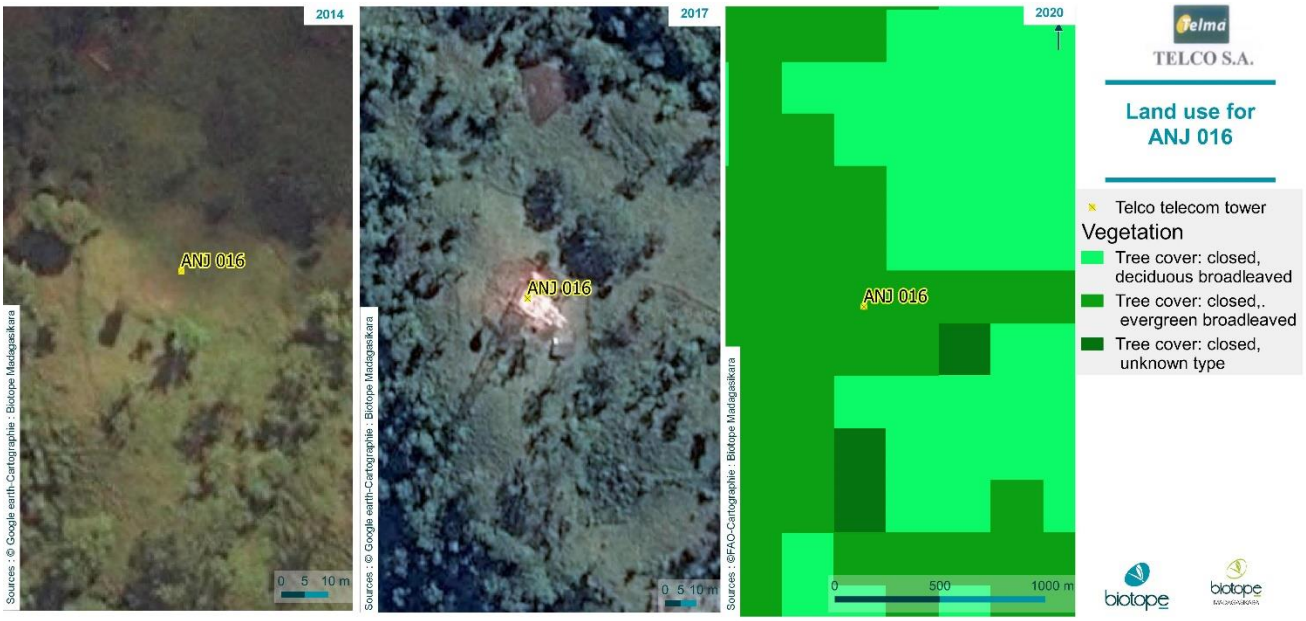


Figure 26. Location of the antenna ANJ016 – AN16 on Anjouan and changes in land-use over time

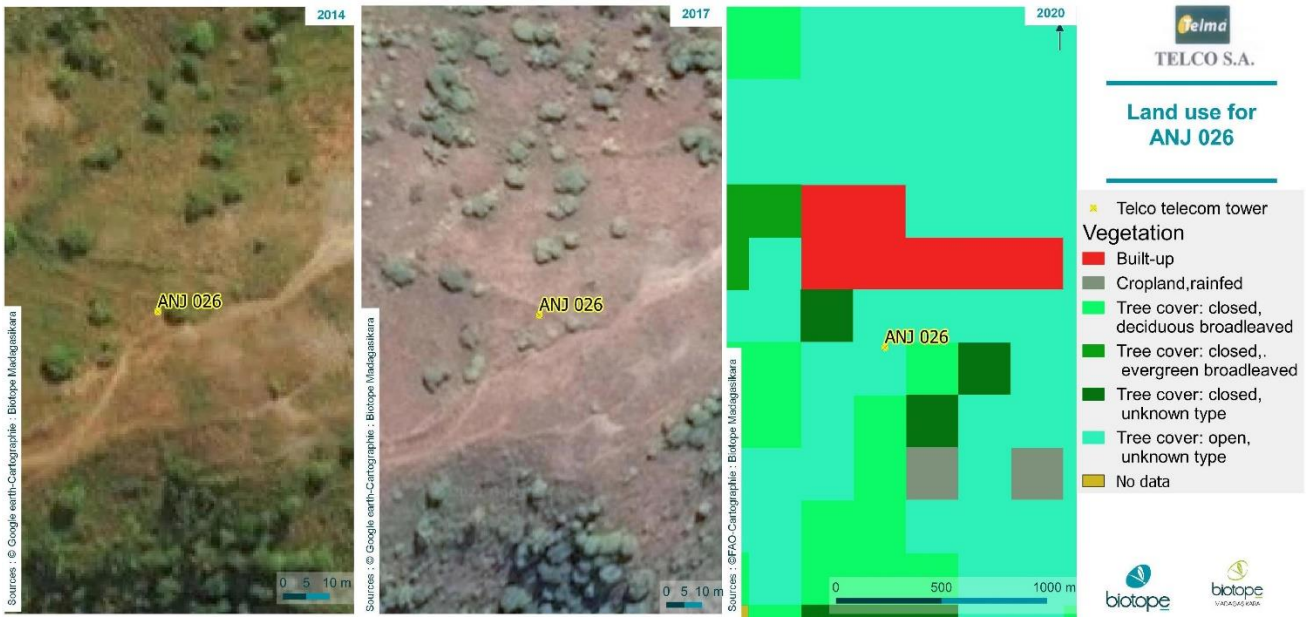


Figure 27. Location of the antenna ANJ026 – NGANDZALE on Anjouan and changes in land-use over time

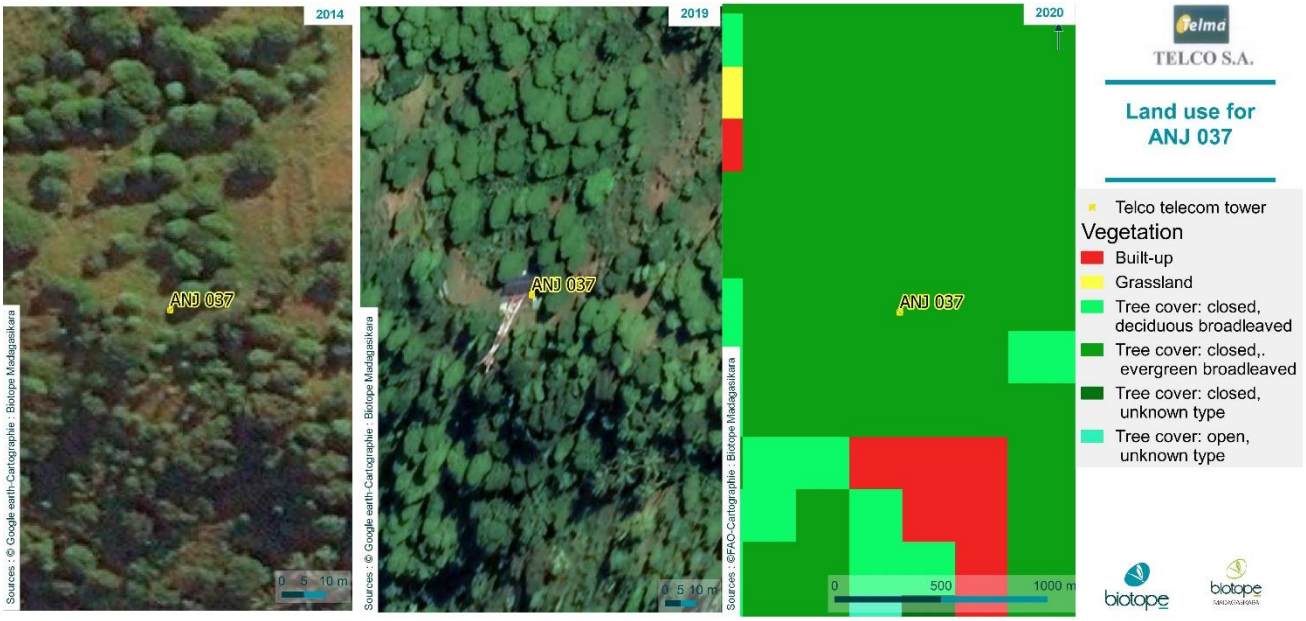


Figure 28. Location of the antenna ANJ037 – KOKI on Anjouan and changes in land-use over time

Figure 29. Location of the antenna ANJ050 – TSEMBEHOU on Anjouan and changes in land-use over time

1.2 Priority ecosystem services

1.2.1 Priority ecosystem services according to the IFC's PS6

The IFC's PS6 outlines 4 types of ecosystem services:

- **Provisioning ecosystem** services include, among others, (i) agricultural products, seafood and game, wild foods, and ethnobotanical plants; (ii) water for drinking,

irrigation, and industrial purposes; and (iii) forest areas, which provide the basis for many biopharmaceuticals, construction materials, and biomass for renewable energy.

- **Regulating ecosystem** services include, among others, (i) climate regulation and carbon storage and sequestration; (ii) waste decomposition and detoxification; (iii) purification of water and air; (iv) control of pests, disease, and pollination; and (v) natural hazard mitigation.
- **Cultural services** include, among others, (i) spiritual and sacred sites; (ii) recreational purposes such as sport, hunting, fishing, and ecotourism; and(iii) scientific exploration and education.
- **Supporting services** are the natural processes that maintain the other services, such as (i) nutrient capture and recycling, (ii) primary production, and (iii) pathways for genetic exchange.

In line with the IFC Performance Standard 6, ecosystem services have been classified into 2 categories:

- **Type I:** Provisioning, regulating, cultural and supporting ecosystem services, over which the client has direct management control or significant influence, and where impacts on such services may adversely affect communities
- **Type II**: Provisioning, regulating, cultural and supporting ecosystem services, over which the client has direct management control or significant influence, and on which the project directly depends for its operations.

Priority services are then identified for both types of ecosystem services. For **Type I ecosystem services**, these will be considered **priority services** under the following circumstance:

- Project operations are likely to result in a significant impact on the ecosystem services
- The impact will result in a direct impact on Affected communities 'livelihood, health, safety, and/or cultural heritage'
- The project has direct management control or significant influence over the service

For **Type II ecosystem services**, these will be considered **priority services** under the following circumstance:

- The project depends on the service for its primary operations
- The project has direct management control or significant influence over the service

1.2.2 Priority ecosystem services in the framework of the Telco project

It should be noted that no studies targeting ecosystem services have been conducted for the project's area of influence. However, an expert analysis was carried out on the ecosystem services of habitats and land uses in the project's area of influence. The analysis does not identify any priority ecosystem services (PS6) in the project area.

Table 6. List of ecosystem services identified in the framework of the Telco project

Ecosystem services		Forest habitats	Open and semi-open vegetation habitats		Agricultural habitats	Local population sensibility
		Natural	Natural	Modified	Modified	
		Dense humid forest of low altitude, dense humid evergreen forest of medium altitude	Savannah	Fallow	Crop fields	
	Agricultural production		Type I	Type I	Type I	Low

Ecosystem services		Forest habitats	Open and semi-open vegetation habitats		Agricultural habitats	Local population sensibility
		Natural	Natural	Modified	Modified	
		Dense humid forest of low altitude, dense humid evergreen forest of medium altitude	Savannah	Fallow	Crop fields	
PROVISIONING SERVICES	Timber	Type I				Insignificant (very small area)
	Fuel wood	Type I				Insignificant (very small area)
	Wild foods: picking and hunting	Type I				Insignificant
	Medicinal plants	Type I				Insignificant
	Genetic resources	Type I				Insignificant
REGULATING SERVICES	Purification of air	Type I				Insignificant
	Local climate regulation	Type I				Insignificant
	Regulation of erosion	Type I		Type I		Insignificant
	Pollination	Type I				Insignificant
CULTURAL SERVICES	Tourist excursions	Type I	Type I	Type I	Type I	Low
	Environmental education and awareness	Type I				Insignificant
	Research	Type I				Insignificant
SUPPORTING SERVICES	Primary production	Type I				Insignificant
	Refuge of biodiversity	Type I				Low

From the analysis carried out, most ecosystem services of habitats and land uses in the area were assessed insignificant. Three types of ecosystem services in the framework of the Telco project were assessed as “Low”: agricultural production, tourist excursions and a supporting service of refuge of biodiversity.

1.3 Species of conservation concern

According to the report from Fairfields Consulting ‘Desktop assessment of biodiversity impacts associated with Telecom towers in the Comoros Islands’ (Fairfields Consulting, 2020) and the survey work undertaken by GEB consulting teams (October 2021), **27 species of conservation concern** (PS6 assessment) are present or likely to be present on the project’s area of influence, at the scale of ecologically appropriate areas of analysis (E3A):

- 7 species of plants (Liliopsida, Magnoliopsida)
- 4 species of invertebrates,
- 2 species of reptiles,
- 15 species of birds,
- 4 species of mammals.

Further details for each of these species are presented in Table 7 (see below).

2 Critical Habitat screening

2.1 Delineating Ecologically Appropriate Areas of Analysis (EAAA) for critical habitats

A first step in defining critical habitats is to identify ecologically relevant area(s) of analysis overlapping areas likely to be impacted by the Project. The EAAA must overlap with the Project but should be defined primarily for ecological and conservation reasons. This considers the distribution of species and ecosystems and the ecological patterns and processes that support them, including landscape scale connectivity. Relatively broad landscape and seascape units might qualify as critical habitat. For some wide-ranging species, critical habitat may be informed by areas of aggregation, recruitment, or other specific habitat features of importance to the species. An EAAA may or may not have an actual boundary for its management (e.g., legally protected areas), but may also be defined by another ecologically relevant boundary (ex: watershed). The areas of analysis are defined in relation to the species present in influence of the project.

Given that the 16 telecommunication towers are distributed throughout each island, it is difficult to define an EAAA that is smaller than the island itself. Therefore, the **terrestrial EAAA for Grande Comore, Mwali and Anjouan are the conservation areas (PA, IBA, KBA, AZE) or the islands themselves**. However, as several species entire range is defined as the island, it is highly likely that although the islands might be broadly recognized as critical habitat for some species, many of the individual project sites have been very degraded or highly modified (urban). Where estimates of species' global population and/or local population are not available, surrogates of population size (for example, extent of occurrence, estimates of total area of known sites, estimates of area of occupied habitat) are used. As a whole, the species likely to trigger critical habitats are species living in or adapted to anthropized habitat ecological conditions. The species listed in Table 7 presents the relevant EAAAs for species assessed as Critical Habitat triggers according to the IFC's PS6.

As a reminder, the different areas of analysis are the following:

The **project's footprint** represents the zone directly impacted by the project: the tower mast, guard house, latrine and access road (if it exists).

The **area of influence** (AOI) includes the project footprint and an area of 1km diameter around the project footprint.

The **Ecologically Appropriate Area of Analysis (EAAA)** for the critical habitat assessment is presented in Table 7. It is important to note that those E3A are much larger than AOI and footprint.

2.2 Screening of species that could trigger critical habitats according to criteria C1, C2, C3

The objective of the critical habitat screening process is to consolidate the lists of species that can trigger the critical habitat determination according to the IFC's PS6 criteria.

The different sources of information below were considered for the screening process of the actual and/or potential presence of fauna and flora species:

- The fauna and flora species from the inventories provided by GEB
- Data related to key biodiversity zones (KBA, IBA, AZE) from the CEPF ecosystem profile

- Data from the MIGA report (Fairfields Consulting, 2020)
- CIITES data
- KBA database (IUCN)
- Red List of Threatened Species (IUCN)

Among the species of fauna and flora from the above-mentioned information sources, **27 species with a CR, EN, VU and NT IUCN threat status were considered as species of conservation concern.** These are presented in Table 7 below.

Table 7. Species of significant importance in the project area

Class	Family and scientific name	Sites	C1 – IUCN Status	C2 - Distribution (EOO-km2)	C3 - Migratory species	EAAA	Critical Habitat – Justification (threatened species, endemicity, distribution area, migratory species) according to the EAAA	Species habitat	Biological status and Probability of occurrence on area of influence (AOI)	Effective presence at the project's footprint (site)
Liliopsida	Arecaceae *Ravenea hildebrandtii*	COM026; COM043; COM045; COM067; MOH007; MOH008; MOH009; MOH017; ANJ016	**EN**	N/A	N/A	Archipelagos because found inside three islands	YES C1a - Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of archipelagos (>0.5% world population and/or >5 breeding pairs)	Humid forest at altitudes of 600-900 m	Habitat not present on area of influence and less likely to be observed	NO
Liliopsida	Arecaceae *Ravenea moorei*	COM026; COM067	**CR**	N/A	N/A	Grande Comore	YES C1a - Areas containing important concentrations of a nationally listed CR/ C2a - Endemic of Comoros (>0.5% world population and/or >5 breeding pairs)	Humid forest at altitudes of 600-900 m	Habitat not present on the project's area of influence and less likely to be observed	NO
Liliopsida	Orchidaceae *Jumellea anjouanensis*	COM026; COM043; COM045; COM067; MOH007; MOH017; ANJ006; ANJ016; ANJ026; ANJ037; ANJ050	**EN**	2 950,00	N/A	Archipelagos because found inside three islands	YES C1a -Areas containing important concentrations of a nationally or regionally listed EN/ C2a - Endemic of archipelagos- Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Humid forest	Habitat not present on the project's area of influence direct sunlight caused the death of the leaves (less likely to be observed)	NO
Magnoliopsida	Monimiaceae *Tambourissa leptophylla*	COM067; MOH007; MOH017	**EN**	29 982,00	N/A	Archipelagos because found inside two islands	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of Comoros - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Humid forest	**Observed**	YES
Arthropoda	Nymphalidae *Amauris comorana*	COM026; COM067	**EN**	N/A	N/A	Grande Comore	YES C1a - Protected species in Comoros, Category 1 fully protected species (>0.5% world population and/or > 5 breeding pairs)	Tropical forest	Not reliant directly on area of influence (Transit/Hunting) **Observed**	NO
Arthropoda	Papilionidae *Graphium levassori*	COM026; COM043; COM045; COM067	**EN**	N/A	N/A	Grande Comore	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of Grand Comore (>0.5% world population and/or >5 breeding pairs)	Forested areas and to be very local in its distribution	Not reliant directly on area of influence (Transit/Hunting) Likely to be observed	NO
Arthropoda	Papilionidae *Papilio aristophontes*	COM026; COM043; COM045; COM067; MOH007; MOH008; MOH009; MOH010; MOH016; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	**EN**	N/A	N/A	Archipelagos because found inside three islands	YES C1a -Areas containing important concentrations of a regionally listed EN/ C2a - Endemic of archipelagos (>0.5% world population and/or >5 breeding pairs)	Forested areas and to be very local in its distribution	Not reliant directly on area of influence (Transit/Hunting) Likely to be observed	NO
Arthropoda	Coenagrionidae *Pseudagrion pontogenes*	COM026; COM067	**VU**	1 522,00	N/A	Grande Comore	YES C2a - Endemic of Grand Comore - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Predatory insect linked to aquatic environments	Not reliant directly on area of influence (Transit) Likely to be observed	NO
Reptilia	Pseudoxyrhophiidae *Lycodryas sanctijohannis*	ANJ050	**NT**	2 000,00	No	Anjouan island	YES C2a - Endemic of Anjouan - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Humid forests, mangroves, and in degraded forests	Habitat not present on the project's area of influence Forest-dweller species, less likely to be observed (transit)	NO
Reptilia	Gekkonidae *Paroedura sanctijohannis*	COM026; COM043; COM045; COM067; MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ006; ANJ016; ANJ026; ANJ037; ANJ050	**EN**	2 026,00	N/A	Archipelagos because found in three islands	YES C1a -Areas containing important concentrations of a regionally listed EN/ C2a - Endemic of archipelagos - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest	Habitat not present on the project's area of influence Forest-dweller species	NO
Aves	Columbidae *Alectroenas sganzini*	COM026; COM045; ANJ016	**NT**	69,60	No	Archipelagos because found inside two islands	YES C2a - Endemic - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest	Habitat not present on the project's area of influence Forest-dweller species	NO
Aves	Ardeidae *Ardeola idae*	MOH011	**EN**	1 050 000,00	Yes	Mohéli island	YES C1a -Areas containing important concentrations of a regionally listed EN/species fully migrant (>0.5% world population and/or > 5 breeding pairs)	Freshwater wetlands, particularly shallow waterbodies fringed with vegetation and adjacent trees	Habitat not present on the project's area of influence Unlikely to be observed	NO
Aves	Campephagidae *Ceblepyris cucullatus*	MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ050	**VU**	3 400,00	No	Archipelagos because found in two islands	YES C2a - Endemic - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Subtropical or tropical dry forest and moist lowland forest	Habitat not present on the project's area of influence Forest-dweller species	NO

Class	Family and scientific name	Sites	C1 – IUCN Status	C2 - Distribution (EOO-km2)	C3 - Migratory species	EAAA	Critical Habitat – Justification (threatened species, endemicity, distribution area, migratory species) according to the EAAA	Species habitat	Biological status and Probability of occurrence on area of influence (AOI)	Effective presence at the project's footprint (site)
Aves	Accipitridae *Circus macrosceles*	MOH007; MOH017; ANJ006; ANJ016; ANJ026; ANJ037; ANJ050	**EN**	707 000,00	No	Archipelagos because found in two islands	YES C1a -Areas containing important concentrations of a regionally listed EN (>0.5% world population and/or > 5 breeding pairs)	Vegetation-fringed lakes, marshes, coastal wetlands, and rice-paddies	Habitat not present on the project's area of influence Wetland species (less likely to be observed on AOI)	NO
Aves	Columbidae *Columba polleni*	COM043; COM045; ANJ016	**NT**	15 600,00	No	Archipelagos because found in two islands	YES C2a - Endemic - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Primary and secondary montane forests, subtropical or tropical rainforests, not adapted to gardens	Habitat not present on the project's area of influence Forest-dweller species (less likely to be observed)	NO
Aves	Vangidae *Cyanolanius comorensis*	MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ050	**EN**	2 000,00	No	Archipelagos because found in two islands	YES C1a -Areas containing important concentrations of a regionally listed EN C2a - Endemic of archipelagos - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Tropical and subtropical dry or moist lowland forest, or mangrove forest, or tropical and subtropical moist montane forest;	Habitat not present on the project's area of influence, less likely to be observed	NO
Aves	Dicruridae *Dicrurus fuscipennis*	COM026; COM043; COM045; COM067	**EN**	510,00	No	Grande Comore	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of Grand Comore - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Tropical, sub-tropical forest around an active volcano;	Small population occupying a very small range Habitat not present on the project's area of influence, less likely to be observed	NO
Aves	Muscicapidae *Humblotia flavirostris*	COM026; COM067	**EN**	220,00	No	Grande Comore	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of archipelagos - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest	Population occupying a very small range Habitat not present on the project's area of influence, less likely to be observed	NO
Aves	Pycnonotidae *Hypsipetes moheliensis*	MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017	**EN**	340,00	No	Mohéli island	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of Mohéli - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest, clearings and degraded areas	**Observed**	YES
Aves	Pycnonotidae *Hypsipetes parvirostris*	COM043; COM045; MOH007; MOH008; MOH009; MOH011; MOH016	**VU**	1 300,00	No	Archipelagos because found in two islands	YES C2a - Endemic - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest, clearings and degraded areas	Not reliant directly on area of influence (Transit/Hunting) **Observed**	NO
Aves	Strigidae *Otus capnodes*	ANJ006; ANJ016; ANJ026; ANJ037; ANJ050	**EN**	350,00	No	Anjouan island	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of Anjouan - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest	Habitat not present on the project's area of influence Forest-dweller species (less likely to be observed)	NO
Aves	Strigidae *Otus moheliensis*	MOH007; MOH017	**EN**	250,00	No	Mohéli island	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of Mohéli - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest	Habitat not present on the project's area of influence Forest-dweller species (less likely to be observed)	NO
Aves	Strigidae *Otus pauliani*	COM026; COM043; COM045; COM067	**EN**	220,00	No	Grande Comore	YES C1a -Areas containing important concentrations of a nationally listed EN/ C2a - Endemic of Grand Comore - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Forest	Habitat not present on the project's area of influence Forest-dweller species (less likely to be observed)	NO
Aves	Columbidae *Treron griveaudi*	MOH007; MOH017; ANJ050	**EN**	80,00	No	Archipelagos because found in two islands	YES C1a -Areas containing important concentrations of a regionally listed EN/ C2a - Endemic of Archipelagos - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Humid forest	Habitat not present on the project's area of influence Forest-dweller species (less likely to be observed)	NO
Aves	Zosteropidae *Zosterops mouroniensis*	COM026; COM067	**VU**	80,00	No	Grande Comore	YES C2a - Endemic to Grand Comore - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Tropical, sub-tropical forest; agricultural pasture; cropland	Not reliant directly on area of influence (Transit/Hunting) Likely to be observed	NO
Mammalia	Pteropodidae *Pteropus livingstonii*	MOH007; MOH010; MOH011; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	**CR**	1 856,00	N/A	Archipelagos because found in three islands	YES C1a -Areas containing important concentrations of a regionally listed CR/ C2a - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)		Habitat not present on the project's area of influence Forest-dweller species (unlikely to be observed)	NO
Mammalia	Pteropodidae *Rousettus obliviosus*	COM026; COM043; COM045; COM067; MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	**VU**	9 085,00	No	Archipelagos because found in three islands	YES C2a - Restricted-range (≥10% of the global population size AND ≥10 reproductive units of a species)	Subtropical or tropical moist lowland forests, caves, plantations, and urban areas	Habitat not present on the project's area of influence Likely to be observed by transit	NO

The analysis according to the 3 critical habitat criteria (as shown in Table 7) enables to identify species that are likely to trigger a critical habitat. Table 7 specifies whether these species were observed during the inventories (GEB Investigation) or if they are likely to be observed from the literature review (last column). If the species meet at least one of the criteria below, they can trigger the determination of a critical habitat for the project area (see Appendix 2 for further details on the application of the 5 criteria):

- Species listed as EN or CR by the IUCN. These species could "trigger" the C1 criterion for critical habitat if they exceed certain quantitative thresholds, i.e., if the habitats in the project area are indeed important to these species.
- Endemic and IUCN listed VU or NT species: These species are specifically considered because of the high endemicity in the area.
- Species with a restricted range, i.e., an estimated area of occurrence (EOO) of less than 50,000 km² when this data is available on the IUCN website or suspected restricted distribution.
- Migratory species of which a significant proportion moves cyclically and predictably from one geographical area to another (for example migratory birds between temperate and tropical zones) or from one ecosystem to another (for example migratory fish).

Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species

After screening this first list of species with Criteria 1 to 3 of the PS6, some species that are known or likely to occur in the tower sites and that meet the criteria have been identified:

- CR-Flora /CR-Fauna (*Ravenea moorei*, *Pteropus livingstonii*)
- EN-Flora (*Ravenea hildebrandtii, Jumellea anjouanensis, Tambourissa leptophylla)*
- EN-Fauna *(Amauris comorana, Graphium levassori, Papilio aristophontes, Paroedura sanctijohannis, Ardeola idae, Circus macrosceles, Cyanolanius comorensis, Dicrurus fuscipennis, Humblotia flavirostris, Hypsipetes moheliensis, Otus capnodes, Otus moheliensis, Otus pauliani, Treron griveaudi*)

Criterion 2: Endemic or restricted-range species

Among the 27 threatened species of the archipelago's islands, the local endemic species are the following:

- In Anjouan: *Otus capnodes, Lycodryas sanctijohannis*
- In Moheli: *Hypsipetes moheliensis, Otus moheliensis, Treron griveaudi*
- In Grande Comore: *Ravenea moorei, Graphium levassori, Pseudagrion pontogenes, Amauris comorana, Dicrurus fuscipennis, Humblotia flavirostris, Otus pauliani, Zosterops mouroniensis*

Twenty-four (22) species have a limited distribution with an area of occurrence less than 50,000 km², including:

- 4 species of flora (*Jumellea anjouanensis, Ravenea hildebrandtii, Ravenea moorei, Tambourissa leptophylla*)
- 18 species of fauna (*Pseudagrion pontogenes, Lycodryas sanctijohannis, Paroedura sanctijohannis, Alectroenas sganzini, Ceblepyris cucullatus, Zosterops mouroniensis, Treron griveaudi, Otus pauliani, Humblotia flavirostris, Otus moheliensis, Hypsipetes*

moheliensis, Otus capnodes, Dicrurus fuscipennis, Hypsipetes parvirostris, Cyanolanius comorensis, Columba pollenii, Pteropus livingstonii, Rousettus obliviosus).

Criterion 3: Migratory or congregatory species

Ardeola idea is the only migratory species listed in Table 7 for the 16 priority telecommunication towers sites. This species is mainly found near freshwater wetlands, particularly shallow waterbodies fringed with vegetation and adjacent trees; those type of habitats are not present however on the project's area of influence.

In conclusion, through the **application of criteria 1-3, the first level of analysis outlined 27 species** identified by GEB Consulting and the MIGA investigation report **as species triggering critical habitat determination** for the telecommunication tower sites. **Only 2 species are found in the project's footprint: 1 species of flora (*Tambourissa leptophylla*) and 1 species of fauna (*Hypsipetes moheliensis*).**

Being EN-listed species and endemic to the Archipelagos with a restricted distribution, these two species are observed around area of influence of the project, and even in the project footprint. Their ecological habitat is generally formed by forest, but they can grow/survive in clearings.

For the other species triggering critical habitat triggers determination, they are not present directly on the project's area of influence because of their ecological requirements (forest dependent) and some are introduced in the archipelago.

- ***The critical habitat assessment is limited due to insufficient data for these species (ecological niche, quantitative data at level telecommunication tower sites for estimating population status, habitat, etc.).***

Table 8. List of species triggering critical habitat determination in the project's footprint

Class	Scientific name	C1 - IUCN Status	Sites of occurrence	C2 - Distribution (EOO-km2)	C3 - Migratory species	Presence in the project's footprint (site)
Magnoliopsida	*Tambouriss a leptophylla*	**EN**	COM067; MOH007; MOH017	29 982,00	N/A	Observed
Aves	*Hypsipetes moheliensis*	**EN**	MOH007; MOH00; MOH009; MOH010; MOH011; MOH016; MOH017	340,00	N/A	Observed

Among the species triggering the critical habitat, the other species are less likely to be observed in the area of influence (AOI). Nevertheless, according habtats, the behavior or biological status, some specie may be present in transit, feeding or hunting (see table below).

Table 9. List of species triggering critical habitat determination in the project's area of influence, transit/feeding/hunting

Class	Family / Scientific name	C1 - IUCN Status	Sites of occurrence	C2 - Distribution (EOO-km2)	C3 - Migratory species	Presence in the project's AOI
Arthropoda	Nymphalidae *Amauris comorana*	**EN**	COM026; COM067	N/A	N/A	Not reliant directly on area of influence (Transit/Hunting) **Observed**
Arthropoda	Papilionidae *Graphium levassori*	**EN**	COM026; COM043; COM045; COM067	N/A	N/A	Not reliant directly on area of influence (Transit/Hunting) Likely to be observed
Arthropoda	Papilionidae *Papilio aristophontes*	**EN**	COM026; COM043; COM045; COM067; MOH007; MOH008;	N/A	N/A	Not reliant directly on area of influence (Transit/Hunting)

Class	Family / Scientific name	C1 - IUCN Status	Sites of occurrence	C2 - Distribution (EOO-km2)	C3 - Migratory species	Presence in the project's AOI
			MOH009; MOH010; MOH016; MOH017; ANJ006; ANJ016; ANJ026; ANJ037			Likely to be observed
Arthropoda	Coenagrionidae *Pseudagrion pontogenes*	**VU**	COM026; COM067	1 522,00	N/A	Not reliant directly on area of influence (Transit) Likely to be observed
Aves	Pycnonotidae *Hypsipetes parvirostris*	**VU**	COM043; COM045; MOH007; MOH008; MOH009; MOH011; MOH016	1 300,00	No	Not reliant directly on area of influence (Transit/Hunting) **Observed**
Aves	Zosteropidae *Zosterops mouroniensis*	**VU**	COM026; COM067	80,00	No	Not reliant directly on area of influence (Transit/Hunting) Likely to be observed
Mammalia	Pteropodidae *Rousettus obliviosus*	**VU**	COM026; COM043; COM045; COM067; MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	9 085,00	No	Habitat not present on the project's area of influence Likely to be observed by transit

2.1 Screening of habitats that could trigger critical habitats according to criteria C4, C5

Criterion 4: Highly threatened and/or unique ecosystems

The thresholds for Criterion 4 are the following:

- Areas representing ≥ 5% of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN
- Other areas not yet assessed by IUCN but determined to be of high priority for conservation by regional or national systematic conservation planning

According to the PS6, **nationally and/or internationally recognized areas of high biodiversity value are potentially considered priorities for assessment of critical habitats.** Key Biodiversity Areas (KBAs) include RAMSAR sites, Areas of Importance for Bird Conservation (IBAs), Areas of Importance for Plants (IPAs), Alliance for Zero Extinction (AZE) areas [...], protected areas (PAs). Most of telecommunication tower sites are found inside these KBAs (14 out of the 16 priority sites studied).

No formal IUCN assessment (for example a Red List of Ecosystems), nor systematic methods by government bodies, academic institutions at the national/regional level have been performed for the Comoros islands. Three habitats have been identified as degraded natural. Still, according to expert opinion, the thresholds listed for Criterion 4 above are not met

Criterion 5: Key evolutionary processes

According to the PS6, forests and biological corridors, ecotones, landscape with spatial heterogeneity are examples of spatial features associated with evolutionary processes according to the IFC's PS6 guidance note. They provide for species migration, gene flow (inter- and intra-population genetic exchange) and refuge for wildlife.

The remnant of degraded natural habitats, such as mentioned above (for Criterion 4 analysis), which also contains viable assemblages of native plant and animal species and human activity has not essentially altered such areas, play the role of maintenance of faunistic and floristic species in the archipelagos. They constitute sites of demonstrated importance to climate change adaptation for some forest-dwellers species.

No numerical thresholds exist for Criterion 5. However, according to best available scientific information and expert opinion, no habitats in the project's area of influence are likely to trigger critical habitats along Criterion 5.

In conclusion, this **second level of analysis (application of criteria 4 and 5) did not identify any habitats as likely to trigger the determination of critical habitat** at the telecommunication tower sites.

2.2 Synthesis of critical habitats on the project area

According to the implementation of the different criteria and their respective thresholds as outlined by the IFC's PS6, the project area includes **4 types of habitats** (subtropical degraded forest, savannah, agricultural pasture, cropland), **not identified as critical habitats** (that deserve nevertheless specific attention throughout the project operations.

The analysis of critical habitat assessment highlighted a total of **27 species triggering critical habitats at the telecommunication tower sites, in line with the IFC's PS6** (see Table 8 for further details), with only 2 species including in the project's footprint:

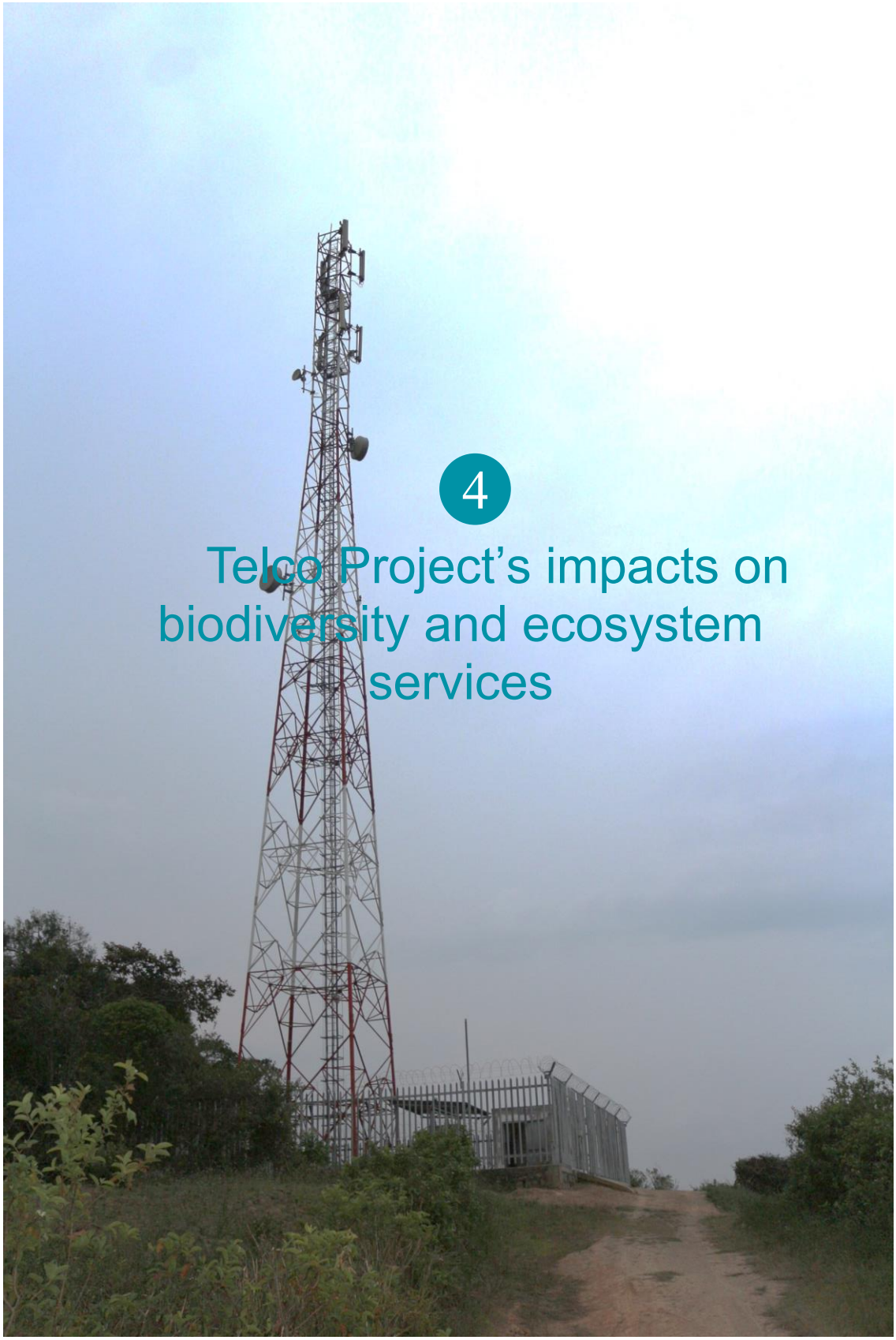
- 1 species of flora (*Tambourissa leptophylla*)
- 1 species of fauna (*Hypsipetes moheliensis*)

Achieving Net Gain outcomes in biodiversity is required for the 27 species triggering critical habitats. The assessment of impacts should identify whether offsets or additional conservation actions are required to achieve net gain in biodiversity.

For the 16 priority sites assessed, the critical habitat assessment showed that each site is home to at least 1 species triggering critical habitat determination. Only two species (*Tambourissa leptophylla and Hypsipetes moheliensis)* are located on the projects' footprints for some sites (see Table 9).

Table 9. Synthesis of the critical habitat assessment for each telecommunication site for species present in project's footprint

Sites	**Flora species present on the project footprint triggering criteria** 1-3	**Fauna species present on the project footprint triggering criteria 1-3**	**Site status**
COM067	*Tambourissa leptophylla*		Existing
MOH007	*Tambourissa leptophylla*	*Hypsipetes moheliensis*	Existing
MOH008	/	*Hypsipetes moheliensis*	Existing
MOH009	/	*Hypsipetes moheliensis*	Existing
MOH010	/	*Hypsipetes moheliensis*	Existing
MOH011	/	*Hypsipetes moheliensis*	Existing
MOH016	/	*Hypsipetes moheliensis*	Existing
MOH017	*Tambourissa leptophylla*	*Hypsipetes moheliensis*	Dismantled



4 Telco Project's impacts on biodiversity and ecosystem services

Telco's activities on the tower installation sites are two-folds: activities during the operation phase of the project and the dismantling of the antennas (first the 3 antennas to be dismantled in Anjouan, and all the antennas which will be dismantled at the end of the project). These activities are sources of negative impacts on the biological environment, including habitats, fauna and flora. The typology of these foreseeable impacts is described below.

1 Key impacts on habitats

During the **operation phase**, the main impacts on habitats are the following:

- Degradation of habitats during the maintenance of the antennas during the operation phase (use of access roads), although they are already modified by intensive anthropogenic activities (grazing, crop clearing, construction, etc.);
- Risk of pollution from diesel spills
- Risk of destruction of natural habitats (risk of fire) in the exploitation phase. There is a risk of fires onsite, as diesel fuel is stored onsite. Fires can also be started by surrounding communities through slash and burn agriculture.
- Risk of groundwater pollution due to the presence of latrines

During the **dismantling** of the 3 antennas on Anjouan, and of all the antennas at the project, the key impacts on habitats are the following:

- Destruction of natural or modified habitats (access right-of-way, platforms)
- Degradation of natural habitats

For these projects, habitats are modified or severely degraded, with impacts that do not concern natural habitats for the construction of the projects (antenna right-of-way and access).

Habitat loss associated with the construction of telecommunication towers and their access roads are likely to be relatively minor because of the small size of the base station. **Overall, the surface of a base station vary between 161 and 485 m^2, direct habitat loss is anticipated to total 0,405 ha for the 16 priority sites**. With this direct habitat loss, should also be included habitat loss due to access roads constructed.

2 Key impacts on species of conservation concern

The Telco project has various impacts on species of conservation concern, as listed in Table 9 depicting the key impacts of the project on biodiversity: destruction of habitat, disturbance and risk of proliferation of invasive exotic species. The key impacts are different in the operation phase and in the dismantling phase.

Table 10. Key impacts of the project on biodiversity

Destruction of habitat	Direct **habitat loss** is estimated to represent **0,405 ha** for all 16 priority sites Disturbance of species during the operation phase onsite: • The construction of roads in more rural areas (protected areas, KBAs, AZE) • Exacerbation of habitat loss, hunting, collection of wildlife due to increased access of the sites • Change in the ecological functionality for species' habitats during the operation phase onsite • Loss of hunting grounds for flying mammals
Disturbance of species	Disturbance of species during the operation phase onsite: • Permanent noise due to generators for sites that are not connected to the grid and can impact some species such as chiropterans. Noise is

	assumed to be at a relatively low level and localized (MIGA, 2020). Noise can interfere with bat roosting and foraging. • Light pollution due to the lighting on the tower Disturbance of species <u>during the dismantling:</u> • Temporary noise and vibration and during the dismantling of the 3 antennas
Risk of proliferation of invasive exotic species and diseases	Disturbance of species <u>during both the operation phase and the dismantling:</u> • Risk of introduction of new invasive exotic species due to human presence (transportation by vehicles) • Risk of transmission of diseases between wild fauna and domestic animals due to direct and indirect contact with forest species

The impact levels of the project on species of conservation concern were assessed on the one hand by expert judgement[4] through the assessment the state of the habitat, and on the other hand, by assessing the use of species of conservation concern by populations close to the telecommunication towers (Table 11).

Impacts assessed 'insignificant' imply that the impact of the telecommunication tower operation phase or dismantling on the species is negligible. Impact significance for each site is assessed by determining the intensity or magnitude of the impact on environmental aspects. An impact of 'insignificant' intensity implies that natural functions and/or processes are negligibly altered. An impact of 'low' intensity implies that natural functions and/or processes are slightly altered. Impacts of 'medium' intensity implies that natural functions and/or processes are notably altered. For 'high' intensity impacts, natural functions and/or processes are severely altered.

Table 11. Direct and indirect impacts on the 27 species of conservation concern associated with the operation and dismantling of the telecommunication towers

Sites of occurrence	Class	Species of conservation concern	Species triggering Critical Habitat found in the project's footprint(Y/N)	Description of impacts	Overall impact level
COM026; COM043; COM045; COM067; MOH008; MOH009; MOH017; ANJ016	**Plant**	*Ravenea hildebrandtii*	N	• Potential loss of individuals • Risk of proliferation of invasive species • Risk of introduction of new invasive exotic species	Low
COM026; COM067	**Plant**	*Ravenea moorei*	N	• Potential loss of individuals • Risk of proliferation of invasive species • Risk of introduction of new invasive exotic species	Low
COM026; COM043; COM045; COM067; MOH017; ANJ006; ANJ016; ANJ026; ANJ050	**Plant**	*Jumellea anjouanensis*	N	• Potential loss of individuals • Risk of proliferation of invasive species • Risk of introduction of new invasive exotic species	Low
COM067; MOH007; MOH017	**Plant**	*Tambourissa leptophylla*	Y	• Potential loss of individuals • Risk of proliferation of invasive species • Risk of introduction of new invasive exotic species	Low
COM026; COM067	**Arthropoda**	*Amauris comorana*	N	• Disturbance of species during the operation phase and during the dismantling of antennas as a result of the presence of guards onsite	Insignificant

[4] *Biotope's ecologist team*

Sites of occurrence	Class	Species of conservation concern	Species triggering Critical Habitat found in the project's footprint(Y/N)	Description of impacts	Overall impact level
COM026; COM043; COM045; COM067	**Arthropoda**	*Graphium levassori*	N	• Disturbance of species during the operation phase and during the dismantling of antennas as a result of the presence of guards onsite	Insignificant
All sites	**Arthropoda**	*Papilio aristophontes*	N	• Disturbance of species during the operation phase and during the dismantling of antennas as a result of the presence of guards onsite	Insignificant
COM026; COM067	**Arthropoda**	*Pseudagrion pontogenes*	N	• Disturbance of species during the operation phase and during the dismantling of antennas as a result of the presence of guards onsite	Insignificant
ANJ050	**Reptilia**	*Lycodryas sanctijohannis*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats	Low
All sites	**Reptilia**	*Paroedura sanctijohannis*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats	Low
COM026; COM045;	**Aves**	*Alectroenas sganzini*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
MOH011	**Aves**	*Ardeolaidae*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Insignificant
MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ050	**Aves**	*Ceblepyris cucullatus*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
MOH007; MOH017; ANJ006; ANJ016; ANJ026; ANJ037; ANJ050	**Aves**	*Circus macroscelles*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Risk of avian collisions • Disturbance of species	Low
COM043; ANJ016	**Aves**	*Columba polleni*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ050	**Aves**	*Cyanolanius comorensis*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
COM026; COM043; COM045; COM067;	**Aves**	*Dicrurus fuscipennis*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
COM026; COM067;	**Aves**	*Humblotia flavirostris*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low

Sites of occurrence	Class	Species of conservation concern	Species triggering Critical Habitat found in the project's footprint(Y/N)	Description of impacts	Overall impact level
MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017;	**Aves**	*Hypsipetes moheliensis*	Y	• Degradation of habitat through the change in the ecological functionality[5] for species' habitats • Disturbance of species	Low
COM043; COM045; MOH007; MOH008; MOH009; MOH011; MOH016;	**Aves**	*Hypsipetes parvirostris*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
ANJ006; ANJ016;	**Aves**	*Otus capnodes*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
MOH007; MOH017;	**Aves**	*Otus moheliensis*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
COM026; COM043; COM045; COM067	**Aves**	*Otus pauliani*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
MOH007; MOH017; ANJ050	**Aves**	*Treron griveaudi*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
COM026; COM067	**Aves**	*Zosterops mouroniensis*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Disturbance of species	Low
MOH010; MOH011; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	**Mammalia**	*Pteropus livingstonii*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Risk for hunting	Low
COM026; COM043; COM045; COM067; MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	**Mammalia**	*Rousettus obliviosus*	N	• Degradation of habitat through the change in the ecological functionality for species' habitats • Risk for hunting	Low

3 Key impacts on priority ecosystem services

Provisioning services is the main type of ecosystem service identified in the project's area of influence (agriculture). However, according to the IFC Performance Standard 6, this is not part of the biodiversity assessment, as this ecosystem service is directly associated with an anthropogenic activity.

According IFC Performance Standard 6, no impact has been identified for natural ecosystem services.

[5] *Ecological functionality: The set of ecological functions necessary for the permanence of an ecosystem or a habitat's components. Functionality can be inherent to the environment considered or dependent on external factors.*

4 Key impacts on protected areas

Protected areas in the Comoros Islands include national parks, KBAs and AZEs. At national parks, conservation actors promote the management of the protection and production of adaptive natural resources. This is one of the approaches implemented in order to ensure ecological and economic profitability and sustainability without jeopardizing the resources.

All confirmed AZE sites qualify as KBAs under KBA criterion A1 because they "hold a significant proportion of the global population size of a species facing a high risk of extinction, and so contribute to the global persistence of biodiversity at genetic and species levels" – specifically criterion 1, because they "regularly hold effectively the entire global population size of a CR or EN species."

AZE sites are those KBAs in most urgent need of conservation in order to prevent imminent global extinction.

No construction or landscape modification should be done in these areas. Antennas that have been planned or installed should be dismantled.

5 Synthesis of key impacts

The table below presents a synthesis of key impacts of each priority sites on habitats, species triggering critical habitats, ecosystem services and protected areas.

Table 12. Synthesis of each priority site's impacts on habitats, species, ecosystem services and protected areas

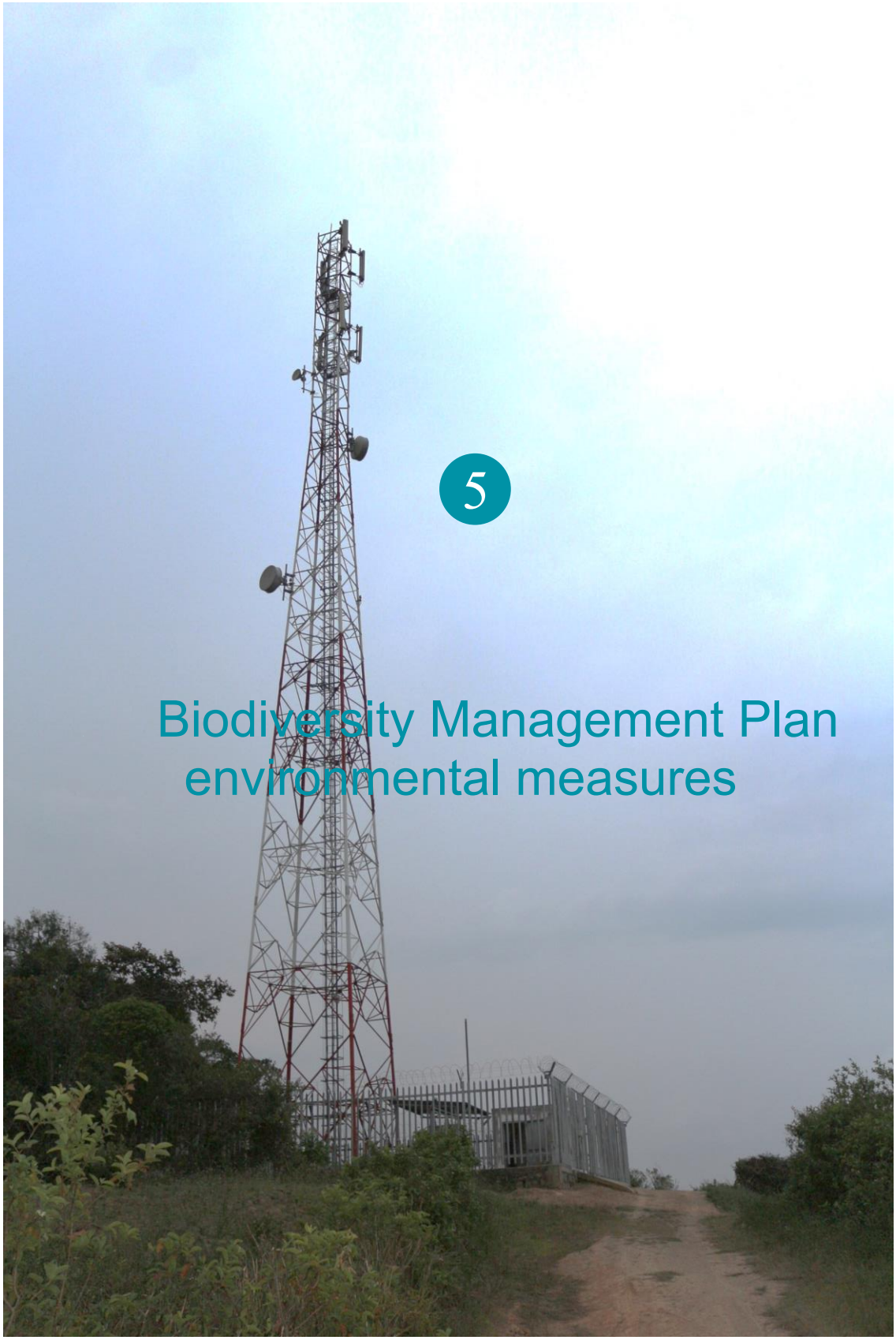
Sites	Critical habitats *Habitats values*	Species triggering critical habitats *(in the EAAA)*	Species triggering critical habitats that are present in the project footprint	Key impact habitats	Key impact species	Key impacts ES	Key impacts PA
COM026	Degraded natural habitat *To be confirmed*	*Ravenea hildebrandtii* *Ravenea moorei* *Jumellea anjouanensis* *Amauris comorana* *Graphium levassori* *Papilio aristophontes* *Pseudagrion pontogenes* *Paroedura sanctijohannis* *Alectroenas sganzini* *Dicrurus fuscipennis* *Humblotia flavirostris* *Otus pauliani* *Zosterops mouroniensis* *Rousettus obliviosus*	/	Direct **habitat loss** is estimated to represent **0,405 ha** for all 16 priority sites • Degradation of habitats during maintenance of the antennas during the operation phase • Risk of pollution from diesel spills • Risk of destruction of natural habitats (risk of fire) in the exploitation phase • Risk of groundwater pollution due to the presence of latrines • Destruction of natural or modified habitats (access right-of-way, platforms) during the dismantling phase • Degradation of natural habitats during the dismantling phase	• Potential loss of individuals • Risk of proliferation of invasive species • Risk of introduction of new invasive exotic species • Disturbance of species during the operation phase and during the dismantling of antennas • Change in the ecological functionality for species' habitats • Disturbance of species • Risk for hunting	/	/
COM043	Modified habitat	*Ravenea hildebrandtii* *Jumellea anjouanensis* *Graphium levassori* *Papilio aristophontes* *Paroedura sanctijohannis* *Columba polleni* *Dicrurus fuscipennis* *Hypsipetes parvirostris* *Otus pauliani* *Rousettus obliviosus*	/		*Same key impacts species for sites presented below in the table*	/	/

Sites	Critical habitats *Habitats values*	Species triggering critical habitats *(in the EAAA)*	Species triggering critical habitats that are present in the project footprint	Key impact habitats	Key impact species	Key impacts ES	Key impacts PA
COM045	Modified habitat	*Jumellea anjouanensis* *Graphium levassori* *Papilio aristophontes* *Paroedura sanctijohannis* *Alectroenas sganzini* *Dicrurus fuscipennis* *Otus pauliani* *Rousettus obliviosus*	/	*Same key impacts habitats for sites presented below in the table*		/	/
COM067	Modified habitat	*Jumellea anjouanensis* *Graphium levassori* *Papilio aristophontes* *Pseudagrion pontogenes* *Paroedura sanctijohannis* *Dicrurus fuscipennis* *Otus pauliani* *Zosterops mouroniensis* *Rousettus obliviosus* *Tambourissa leptophylla*	*Tambourissa leptophylla*			/	/
MOH007	Modified habitat	*Tambourissa leptophylla* *Papilio aristophontes* *Paroedura sanctijohannis* *Ceblepyris cucullatus* *Circus macrosceles* *Cyanolanius comorensis*	*Hypsipetes moheliensis* *Tambourissa leptophylla*			/	/

Sites	Critical habitats *Habitats values*	Species triggering critical habitats *(in the EAAA)*	Species triggering critical habitats that are present in the project footprint	Key impact habitats	Key impact species	Key impacts ES	Key impacts PA
		Hypsipetes parvirostris *Otus moheliensis* *Treron griveaudi* *Rousettus obliviosus*					
MOH008	Modified habitat	*Ravenea hildebrandtii* *Papilio aristophontes* *Paroedura sanctijohannis* *Ceblepyris cucullatus* *Cyanolanius comorensis* *Hypsipetes moheliensis* *Hypsipetes parvirostris* *Rousettus obliviosus*	*Hypsipetes moheliensis*			/	/
MOH009	Modified habitat	*Ravenea hildebrandtii* *Papilio aristophontes* *Paroedura sanctijohannis* *Ceblepyris cucullatus* *Cyanolanius comorensis* *Hypsipetes moheliensis* *Hypsipetes parvirostris* *Rousettus obliviosus*	*Hypsipetes moheliensis*			/	/
MOH010	Modified habitat	*Papilio aristophontes* *Paroedura sanctijohannis* *Ceblepyris cucullatus* *Cyanolanius comorensis* *Hypsipetes moheliensis* *Pteropus livingstonii*	*Hypsipetes moheliensis*			/	/

Sites	Critical habitats *Habitats values*	Species triggering critical habitats *(in the EAAA)*	Species triggering critical habitats that are present in the project footprint	Key impact habitats	Key impact species	Key impacts ES	Key impacts PA
		Rousettus obliviosus					
MOH011	Degraded natural habitat *To be confirmed*	*Papilio aristophontes* *Paroedura sanctijohannis* *Ardeola idae* *Ceblepyris cucullatus* *Cyanolanius comorensis* *Hypsipetes moheliensis* *Hypsipetes parvirostris* *Pteropus livingstonii* *Rousettus obliviosus*	*Hypsipetes moheliensis*			/	/
MOH016	Modified habitat	*Papilio aristophontes* *Paroedura sanctijohannis* *Ardeola idae* *Ceblepyris cucullatus* *Cyanolanius comorensis* *Hypsipetes moheliensis* *Hypsipetes parvirostris* *Pteropus livingstonii* *Rousettus obliviosus*	*Hypsipetes moheliensis*			/	/
MOH017	Degraded natural habitat *To be confirmed*	*Ravenea hildebrandtii* *Jumellea anjouanensis* *Papilio aristophontes* *Tambourissa leptophylla* *Paroedura sanctijohannis*	*Hypsipetes moheliensis* *Tambourissa leptophylla*			/	/

Sites	Critical habitats *Habitats values*	Species triggering critical habitats *(in the EAAA)*	Species triggering critical habitats that are present in the project footprint	Key impact habitats	Key impact species	Key impacts ES	Key impacts PA
		Ceblepyris cucullatus *Circus macrosceles* *Cyanolanius comorensis* *Hypsipetes moheliensis* *Otus moheliensis* *Treron griveaudi* *Rousettus obliviosus*					



5

Biodiversity Management Plan environmental measures

The Biodiversity Action Plan outlines **11 measures**, defined along the mitigation hierarchy:

- 7 minimization measures
- 1 rehabilitation measures
- 4 support and monitoring measure to ensure the BAP is carried out and evaluate the measures put in place

It should be highlighted that the BAP does **not include avoidance measures given that the construction of the antennas has already taken place** (2016 to 2019) at the time of the elaboration of the BAP (2021).

1 Minimization measures

A total of 7 minimization measures are outlined in the Table below. The measures to be implemented either during the operation phase or when dismantling target, the following impacts: environmental nuisances, invasive species, threatened wildlife and forest resources and waste management.

Table 13. Minimization measures

Code	Related impact	Measure (title)	Description	Biodiversity target	Ref. site / Island	Project (phase)	Operator
MIN1	Environmental nuisances	Management of accidents, pollution or nuisances during the operation of the antennas	Elaboration and implementation of prevention and implementation measures of accidental pollution (soil, water, fauna & flora): develop spill response plan, anti-pollution kit, adapted storage of equipment, cleaning, etc. during the operation phase	Fauna and flora	All sites	Operation	Telco/Operator
				Fauna and flora	All sites	Dismantling	Telco/Operator
MIN2	Specific management of noise pollution	Specific management of noise pollution	Avoidance of the use of sirens and horns	Fauna and flora	All sites	Operation	Telco/Operator
MIN3	Specific management of light pollution	Specific management of light pollution	Update the tower management/maintenance plan to include wildlife friendly operation of lighting to reduce the risk of impacts on nocturnal fauna (particularly insects, marine birds and chiropterans)	Fauna and flora	All sites	Operation	Telco/Operator
MIN4	Management of other environmental nuisances	Management of other environmental nuisances	Use of equipment that complies with current regulations, maintenance of equipment in good condition, respect of operating conditions	Fauna and flora	All sites	Operation	Telco/Operator Specialist partner: environmental expert (consultant, company)
MIN5	Invasive species	Prevention and control of invasive alien species during the operation phase	An IAS management plan is elaborated and incorporated into the tower management/maintenance plan. Prevention and control of IAS during the operation phase	Flora	All sites	Operation	Telco/Operator Specialist partner: ecologist expert (consultant, company)
		Prevention and control of IAS during the dismantling phase	An IAS management plan is elaborated and incorporated into the tower management/maintenance plan. Prevention and control of IAS during the dismantling phase	Flora	All sites	Dismantling	Telco/Operator Specialist partner: ecologist expert (consultant, company)

Code	Related impact	Measure (title)	Description	Biodiversity target	Ref. site / Island	Project (phase)	Operator
MIN6	Threatened wildlife and forest resources	Prevention of use/sampling of illegal and/or threatened fauna and flora	Elaboration and implementation of zero tolerance policy on the possession of wildlife and forest resources (see Annex 4)	Flora	All sites	Operation and dismantling	Telco/Operator Specialist partner: ecologist expert (consultant, company)
MIN7	Waste management	Waste management activities during the operation and dismantling phases	Protocol for cleaning, sorting and clearing of waste during the operation phase, adapted to the nature and toxicity of the waste, to avoid any pollution of the site	Fauna and flora	All sites	Operation	Telco/Operator
				Fauna and flora	All sites	Dismantling	Telco/Operator

2 Rehabilitation measures

A measure for the rehabilitation of the sites (antennas and access roads built by Telco) when antennas are dismantled is outlined in the table below.

Table 14. Rehabilitation measures

Code	Related impact	Measure (title)	Description	Biodiversity target	Ref site/ Island	Project	Operator
REM1	Natural habitat degradation	Rehabilitation and progressive replanting of project footprint (including access roads constructed by Telco if any) after dismantling	Rehabilitation of the sites following the operation of the antennas, to restore the natural vegetation with native species. This implies the removal of antennas, and associated infrastructure (guard houses and latrines) following the operation phase.	Fauna and flora	All sites	Post dismantling	Telco/Operator Specialist partner: ecologist expert (consultant, company)

3 Support and monitoring measures

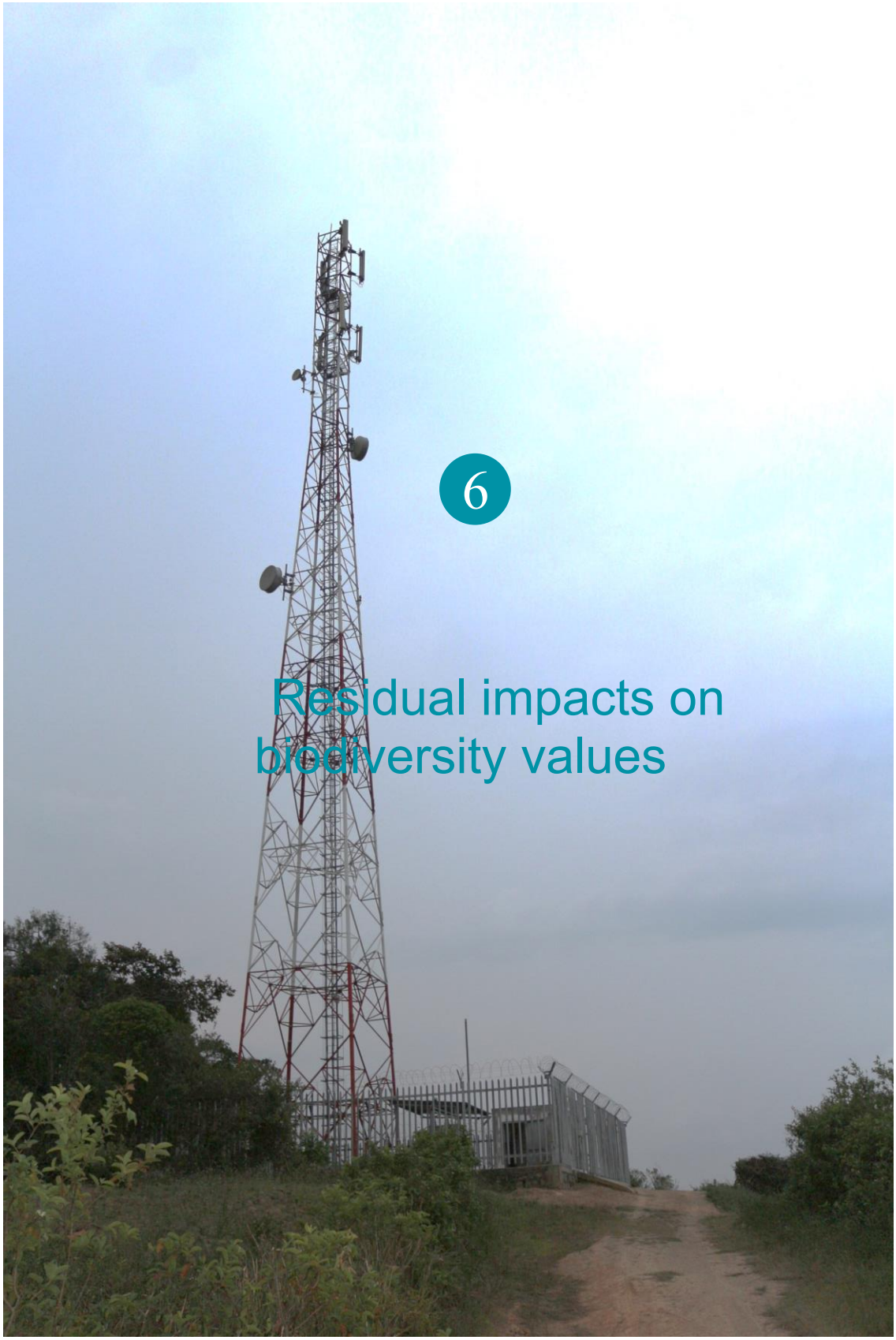
One support measure and three monitoring measures are outlined in Table 14 to ensure and evaluate the successful implementation of the measures outlined in the BAP.

Table 16. Support and monitoring measures

Code	Related impact	Measure (title)	Description	Biodiversity target	Ref. site / Island	Project	Operator
SUPPORT MEASURES							
SM1	Habitat and species degradation	Environmental coordination of the sites	Environmental coordination of the project is required during the operation phase and the dismantling of the telecommunication towers. An environmental coordinator with expertise in biodiversity will be hired by Telco (or through a partnership with an organization[6]) and ensure that the BAP measures are elaborated, put in place and monitored throughout the project's operation and dismantling phases. This measure must follow the company's larger internal policy on biodiversity issues	Fauna and flora	All sites	Operation and dismantling	Telco/ Operator
MONITORING MEASURES							
MM1	Ecological monitoring	Ecological monitoring of wildlife in sensitive natural areas (Area of Influence)	Ecological monitoring of priority animal species in sensitive natural areas	Fauna: priority species	All sites	Operation	Telco/Operator Specialist partner: ecologist expert

[6] *Potential partnerships could be established with organizations with biodiversity expertise*

Code	Related impact	Measure (title)	Description	Biodiversity target	Ref. site / Island	Project	Operator
MM2	of flora and fauna	Ecological monitoring of flora in sensitive natural areas (Area of Influence)	*Ecological monitoring of priority animal species in sensitive natural areas *Monitoring of invasive alien plant species in natural areas	Flora: priority species and invasive species			(consultant, company)



6

Residual impacts on biodiversity values

1 Detail and quantification of residual impacts

Once the minimization, rehabilitation, support and monitoring measures have been put in place, **no significant residual impacts on biodiversity have been identified for the 16 priority sites.** The table below shows the estimated residual impact by issue (habitats and species)

A set of impacts has been identified for these projects, targeting remarkable habitats and species, allowing to evaluate the residual losses.

The table below presents this assessment, including PAB measures, and defines residual impacts of Telco's telecommunication sites.

Table 17. Synthesis of residual impacts of the project

Habitat/ species	Species triggering critical habitat	Sites	AOI / Project Footprint	Type of impacts	BAP measures *(code)*	Residual impact	Objective set *(no net loss / net gain)*
Ravenea hildebrandtii	Y	COM026; COM043; COM045; COM067; MOH008; MOH009; MOH017; ANJ016	AOI (likely to be observed)	• Potential loss of individuals • Risk of proliferation of invasive species • Risk of introduction of new invasive exotic species **=> Low impact**	MIN1 MIN2 MIN3 MIN4 MIN5 MIN6 MIN7 REM1 SM1 MM2	Potential residual impact estimated not significant, given the low probability of loss of individuals	**NET GAIN**
Ravenea moorei	Y	COM026; COM067	AOI (likely to be observed)				
Jumellea anjouanensis	Y	COM026; COM043; COM045; COM067; MOH017 ANJ006; ANJ016; ANJ026 ANJ050	AOI (likely to be observed)				
Tambourissa leptophylla	Y	COM067; MOH007 MOH017	**Project footprint**				
Amauris comorana	Y	COM026; COM067	AOI: **observed** / transit, feeding…	Disturbance of species during the operation phase and during the dismantling of antennas **=> Low impact**			
Graphium levassori	Y	COM026; COM043; COM045; COM067	AOI (likely to be observed)				
Papilio aristophontes	Y	All sites	AOI (likely to be observed)				
Pseudagrion pontogenes	Y	COM026; COM067	AOI (likely to be observed)				
Lycodryas sanctijohannis	Y	ANJ050	AOI (likely to be observed)				

Paroedura sanctijohannis	Y	All sites	AOI (likely to be observed)	Change in the ecological functionality for species' habitats **=> Low impact**		
Alectroenas sganzini	Y	COM026; COM045	AOI (likely to be observed)	• Change in the ecological functionality for species' habitats • Disturbance of species **=> Low impact**		
Ardeola idae	Y	MOH011	AOI (likely to be observed)			
Ceblepyris cucullatus	Y	MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ050	AOI (likely to be observed)			
Circus macrosceles	Y	MOH007; MOH017; ANJ006; ANJ016; ANJ026; ANJ037; ANJ050	AOI (likely to be observed)			
Columba polleni	Y	COM043; ANJ016	AOI (likely to be observed)			
Cyanolanius comorensis	Y	MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ050	AOI (likely to be observed)			
Dicrurus fuscipennis	Y	COM026; COM043; COM045; COM067;	AOI (likely to be observed)			
Humblotia flavirostris	Y	COM026; COM067;	AOI (likely to be observed)			
Hypsipetes moheliensis	Y	COM043; MOH007; MOH008; MOH009 MOH010; MOH011 MOH016; MOH017	**Project footprint**		MIN1 MIN2 MIN3 MIN4 MIN6 MIN7	Potential residual impact estimated not significant, given the low probability of loss of individuals
Hypsipetes parvirostris	Y	COM043; COM045; MOH007; MOH008;	AOI: **observed** / transit, feeding…			

		MOH009; MOH011; MOH016;			REM1 SM1 MM1	caused by collision	
Otus capnodes	Y	ANJ006; ANJ016;	AOI (likely to be observed)				
Otus moheliensis	Y	MOH007; MOH017;	AOI (likely to be observed)				
Otus pauliani	Y	COM026; COM043; COM045; COM067	AOI (likely to be observed)				
Treron griveaudi	Y	MOH007; MOH017; ANJ050	AOI (likely to be observed)				
Zosterops mouroniensis	Y	COM026; COM067	AOI (likely to be observed)				
Pteropus livingstonii	Y	MOH010; MOH011; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	AOI (likely to be observed)	• Change in the ecological functionality for species' habitats • Risk for hunting **=> Low impact**			
Rousettus obliviosus	Y	COM026; COM043; COM045; COM067; MOH007; MOH008; MOH009; MOH010; MOH011; MOH016; MOH017; ANJ006; ANJ016; ANJ026; ANJ037	AOI (likely to be observed)				

The critical habitat assessment outlined **27 species as triggering critical habitats**, with 2 species (*Hypsipetes moheliensis* and *Tambourissa leptophylla*) found in the project's footprint. The telecommunication project in the 16 priority sites **have no significant residual impacts** once the mitigation measures have been carried out. According to the PS6 environmental assessment of the international standards, **the client is required to reach net gains in biodiversity outcomes for all 16 priority sites.**

2 Priority ecosystem services impacted

From the analysis on ecosystem services carried out (see paragraph 2.1), most ecosystem services of habitats and land uses in the area were assessed insignificant. Three types of ecosystem services in the framework of the Telco project were assessed as "Low": agricultural production, tourist excursions and a supporting service of refuge of biodiversity. No residual impacts on ecosystem services linked to biodiversity were identified.

7

Additional conservation actions strategy

1 Introduction

According to the IFC's Performance Standard 6 guidance note (GN90), **in areas of critical habitat, the client will be expected to demonstrate net gains in biodiversity values for which the critical habitat was designated**. In instances where a biodiversity offset is not part of the client's mitigation strategy (i.e., there are no significant residual impacts), **net gains may be obtained by supporting additional conservation opportunities to conserve the critical habitat values** in question. In these cases, qualitative evidence and expert opinion may be sufficient to validate a net gain. As there are **no significant residual impacts for the 16 sites, net gains must be obtained for these sites trough additional conservation actions**.

2 Additional conservation actions

Following the PS6 approach, a net gain in biodiversity is therefore expected. To achieve net gains, one possibility is to define additional opportunities to preserve the critical habitat values in question. In that case, the current BAP suggests the development of actions in addition to programs or projects of conservation and restoration of biodiversity.

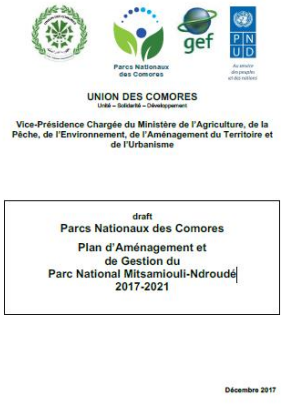
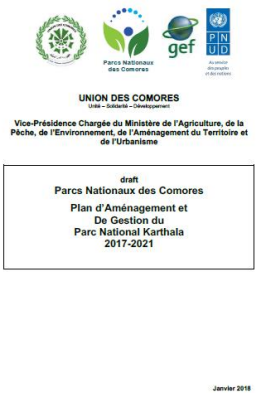
In relation to this project and the construction of these 16 antennas located in critical habitats, a right-of-way area of 0,405 ha has been identified. Thus, regarding this additional measure, different options are presented to the client and stakeholder for consideration. The following three types of additional measures are presented in this BAP:

- [Option 1] Planting actions in proportion to the right-of-way of the projects for each island,
- [Option 2] Participate in biodiversity restoration/conservation actions in the protected areas concerned by the telecommunication towers,
- [Option 3] Participate in the financing of priority actions for the conservation of threatened species.

The Tables below detail the **three potential additional conservation actions** (Option 1, 2 and 3) are presented for the client and relevant stakeholders to consider.

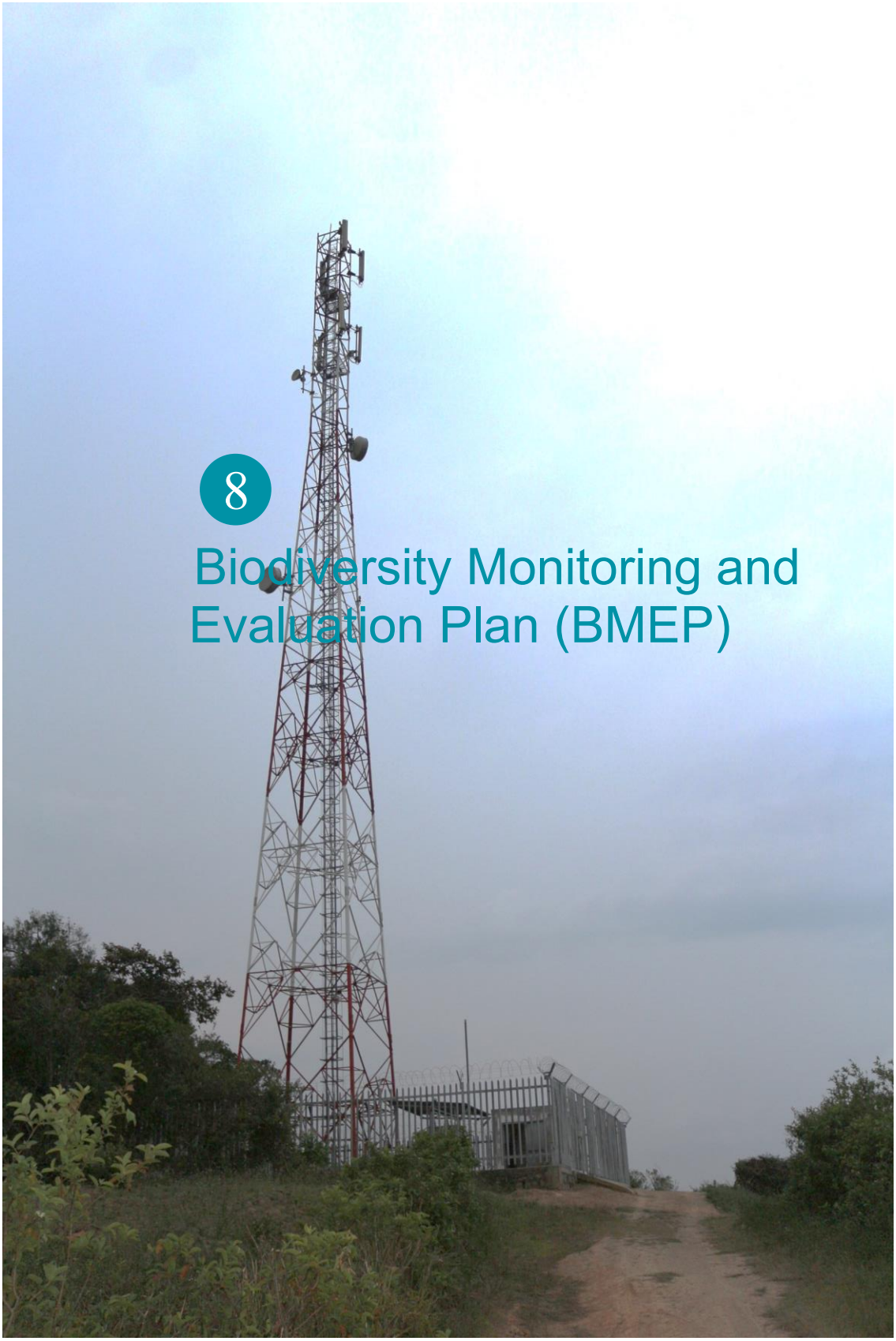
[Additional conservation action / Option 1] **Planting for ecological restoration of natural forest**	
Objective	Net gain in biodiversity
Critical habitats species	16 species identified in the project
Description of action	First, a consultation with relevant and competent stakeholders, such as protected areas, the State, NGOs, researchers, experts in biodiversity, donors (AFD, CEPF…) is required to define the most adapted conservation action. Following the consultation, the measure will be carried out following different steps: • [Year 1] Surveys and specific mapping of natural area • [Year 1] Identification and delimitation of the areas for this action (planting) • [Year 1+2] Definition of a management framework for all actions to be implemented • [Years 3+4] Preparation and planting of native species • [Years 4 to 10] Monitoring and maintenance of plantations For the selection of species to be planted, it is necessary to propose and plant natural species, living in similar ecosystems of the area. For these plantations, the choice of species to be planted will be defined by specialists. Before plantations, during the preparation, it will be possible to carry out clearing operations against invasive species (cf. management plan of the action).
Surface area	0,405 ha
Partners, stakeholders	Ministère de l'environnement (Direction Générale des Eaux et Forêts), Agence nationale des aires protégées des Comores, local communities (villages…), NGOs (Dahari in Anjouan…), other technical partners Financial partners: UNDP, AFD, CEPF
Location	In Grande Comore, Moheli, Anjouan *Sites to be defined, in projects footprints and/or area of influence of projects*
Cost	*In progress*
Timeline	Throughout 10 years, between 2022 and 2031, including plantations and maintenance

.

[Additional conservation action / Option 2] **Participate in biodiversity restoration/conservation actions in the protected areas concerned by the telecommunication towers**	
Objective	Net gain in biodiversity
Critical habitats species	16 species identified in the project
Description of action	First, a consultation with relevant and competent stakeholders, such as protected areas, the State, NGOs, researchers, experts in biodiversity, donors (AFD, CEPF…) is required to define the most adapted conservation action. Depending on the varying opportunities, it is also possible to propose an action for restoration/conservation in protected areas, in the areas of influence of the projects. Following the consultation with key stakeholders, the measure will be carried out following different steps: • [Year 1] Preliminary identification of potential actions for biodiversity • [Year 1] Working group with relevant stakeholders, and definition actions (location, type…) • [Year 2-10] Implementation of conservation/restoration actions for biodiversity in protected areas • [Year 2-10] Scientific and technical monitoring of the implementation of the action. It is necessary to rely on the management documents of protected areas (for example, a National Park). Among the actions suggested, different types are possible, such as: reforestation of degraded habitats, support for local committees (or NGOs…), etc.   The study of the opportunities should be carried out with competent stakeholders, which will enable the definition of the most adapted and coherent conservation actions.
Surface area	To be defined according to the actions retained in the protected areas

[Additional conservation action / Option 2] **Participate in biodiversity restoration/conservation actions in the protected areas concerned by the telecommunication towers**	
Partners, stakeholders	Ministère de l'environnement (Direction Générale des Eaux et Forêts), Agence nationale des aires protégées des Comores, Protected areas (Parc national de Mohéli, Parc national de Karthala, Parc National Mitsamiouli-Ndroudé…), local communities (villages…), NGOs (Dahari in Anjouan…), other technical partners. Financial partners: UNDP, AFD, CEPF, etc.
Location	In Grande Comore, Moheli, Anjouan *Actions and sites to be defined in the areas of influence of projects, or in protected area, in same ecological area*
Cost	*In progress*
Timeline	Throughout 10 years, between 2022 and 2031, including plantations and maintenance

[Additional conservation action / Option 3] **Participate in the financing of priority actions for the conservation of threatened species.**	
Objective	Net gain in biodiversity
Critical habitats species	16 species identified in the project
Description of action	First, a consultation with relevant and competent stakeholders, such as protected areas, the State, NGOs, researchers, experts in biodiversity, donors (AFD, CEPF…) is required to define the most adapted conservation action. Depending on the opportunities, it is also possible to propose an action for restoration/conservation in protected areas, in the areas of influence of the projects. Following a consultation with key stakeholders, this measure will be carried out following different steps: • [Year 1] Preliminary identification of potential actions for conservation/restoration threatened species, • [Year 1] Working group with relevant stakeholders, and definition actions (location, type…), • [Year 2-10] Implementation of conservation/restoration actions for threatened species, • [Year 2-10] Scientific and technical monitoring of the implementation of the action(s). It is necessary to rely on the framework documents for the conservation of threatened species (if these exist).
Surface area	To be defined according to the actions retained in the protected areas
Partners, stakeholders	Scientific partners: University of Comoros, Conservatoire botanique, research center … Ministère de l'environnement (Direction Générale des Eaux et Forêts), Agence nationale des aires protégées des Comores, Protected areas (Parc national de Mohéli, Parc national de Karthala, Parc National Mitsamiouli-Ndroudé…), local communities (villages…), NGOs (Dahari in Anjouan…), other technical partners… Other financial partners (if necessary): UNDP, AFD, CEPF…
Location	In Grande Comore, Moheli, Anjouan *Actions and sites to be defined in the areas of influence of projects, or in protected area, in same ecological area*
Cost	*In progress*
Timeline	Throughout 10 years, between 2022 and 2031, including plantations and maintenance



8 Biodiversity Monitoring and Evaluation Plan (BMEP)

1 Biodiversity Monitoring and Evaluation Plan (BMEP)

This Biodiversity Monitoring and Evaluation Plan (BMEP) applies to both the Biodiversity Management Plan (BMP) and Biodiversity Offset Management Plan (BOMP) for this project. The objective of the BMEP is to outline the requirements to track the progress of the implementation of the BMP and BOMP and enable adaptive management where gaps are identified.

As previously mentioned, mitigation approach shows that offset strategy is not necessary for this project. Therefore, BOMP is not declined, only BMEP is proposed for this Biodiversity Action Plan.

2 Monitoring and evaluation

Monitoring and evaluation measures are to be implemented for all the BAP-related mitigation actions. Table 18 below details the Biodiversity Monitoring and Evaluation measures to be carried out during the operational and dismantling phases.

Table 18. Outline of the Biodiversity Management Plan (BMP) monitoring and evaluation, to be applied during operation phase and dismantle phase

Indicator types: P = Pressure (from the Project activities) indicator; S = State (of targeted biodiversity) indicator; R = Response (by the Project mitigation actions) indicator.

BAP measure (code & title)	Indicator type	Indicator	Sites	Responsible	Source documentation	Frequency	Project (phase)	Objective
MINIMIZATION MEASURES								
MIN1 – Management of accidental pollution (soil, water, fauna & flora)	P	Air, Dust, Light and Noise Management Plan is elaborated	All sites	Telco/Operator	Air, Dust, Light and Noise Management Plan	Annual review	Operation and dismantling	/
	P	Spill response plan is elaborated	All sites	Telco/Operator	Spill response plan	Annual review	Operation and dismantling	/
	P	Number of accidents/pollutions observed during the operation phase	All sites	Telco/Operator	Follow-up report (operation phase)	Monthly	Operation	0 incident related to pollution observed
	P	Number of accidents/ pollution observed during the dismantling phase	All sites	Telco/Operator	Follow-up report (dismantling phase)	Monthly	Dismantling	0 incident related to pollution observed
MIN2 – Management of noise pollution	P	Application of the Air, Dust, Light and Noise Management Plan	All sites	Telco/Operator	Air, Dust, Light and Noise Management Plan	*(Duration of the project)*	Operation	0 use of sirens and horns

BAP measure (code & title)	Indicator type	Indicator	Sites	Responsible	Source documentation	Frequency	Project (phase)	Objective
MIN3 – Management of light pollution	S	Tower management/maintenance plan to include wildlife friendly operation of lighting is updated	All sites	Telco/Operator	Tower management/ maintenance plan	/	Operation	/
	S	Number of conformity controls of lightings following the Air, Dust, Light and Noise plan	All sites	Telco/Operator	Specification factsheet; Control register	4 controls/ year	Operation	100% of controls complying with the tower management/ maintenance plan
MIN4 - Management of other environmental nuisances	P	Purchase and regular maintenance of compliant equipment	All sites	Telco/Operator/specialist partner	Follow-up report (operation phase)	4 controls/ year	Operation	100% of equipment complying with standards
MIN5 - Prevention and control of invasive alien species	S	Elaboration of operational procedure in case of IAS occurrence (IAS list, eradication protocol, etc.)	All sites	Telco/Operator/specialist partner	Operational procedure for IAS	*(Start of the project)*	Operation and dismantling	0% of surfaces in the project area with IAS
	S	Number of IAS detected during the operation phase	All sites	Telco/Operator/specialist partner	Control factsheet	4 controls/ year	Operation	0% of surfaces with IAS in the project area with IAS
	S	Number of IAS detected during the dismantling phase	All sites	Telco/Operator/specialist partner	Control factsheet	Control during dismantling	Dismantling	0% of surfaces in the project area with IAS
MIN6 - Prevention of use/sampling of illegal and/or	S	Implementation of a zero tolerance policy against poaching and hunting for all Telco staff and contractors	All sites	Telco/Operator/specialist partner	Site regulations	/	Operation	1 validated regulation

BAP measure (code & title)	Indicator type	Indicator	Sites	Responsible	Source documentation	Frequency	Project (phase)	Objective
threatened fauna and flora	S	Number of incidents relating to poaching or hunting observed during the operation phase	All sites	Telco/Operator/specialist partner	Control register	4 controls/ year	Dismantling	0 incident relating to poaching or hunting observed
	S	Number of incidents relating to poaching or hunting observed during the dismantling phase	All sites	Telco/Operator/specialist partner	Control register	4 controls/ year	Operation	0 incident relating to poaching or hunting observed
MIN7 - Waste management actions	P	Waste management regulations are elaborated	All sites	Telco/Operator	Site regulations	/	Operation and dismantling	Validated waste management regulations
	P	Amount of waste on the project area	All sites	Telco/Operator	Follow-up report (operation phase)	Monthly	Operation	0 waste on the project area
	P	Amount of waste on the project area	All sites	Telco/Operator	Follow-up report (dismantling phase)	Monthly	Dismantling	0 waste on the project area
REHABILITATION MEASURES								
REM1 - Rehabilitation and progressive replanting of project footprint (including access roads constructed by Telco if any) after dismantling	S	% rehabilitated surfaces of project footprint	All sites	Telco/Operator/specialist partner	Rehabilitation follow-up report	After dismantling	Post-dismantling	100% of rehabilited surfaces after dismantling
	S	% of similarity with the original habitat or a control habitat in terms of species composition and structure	All sites	Telco/Operator/specialist partner	Restoration log	After dismantling	Post-dismantling	70% of similarity with the original/control habitat

BAP measure (code & title)	Indicator type	Indicator	Sites	Responsible	Source documentation	Frequency	Project (phase)	Objective
SUPPORT MEASURES								
SM1 - Environmental coordination of the sites	P	Ecologist hired for the environmental coordination of the sites	All sites	Telco/Operator	Annual report	Throughout the operation and dismantling phases	Operation and dismantling	100% respect of all indicators of BAP actions
MONITORING MEASURES								
MM1 - Ecological monitoring of wildlife in sensitive natural areas	S/M	Ecological monitoring	All sites	Expert/ Specialist partner	Survey reports	3x (y1+y4+y8)	Operation	100% of planned ecological monitoring done
MM2 - Ecological monitoring of flora in sensitive natural areas	S/M	Ecological monitoring	All sites	Expert/ Specialist partner	Survey reports	3x (y1+y4+y8)	Operation	100% of planned ecological monitoring done

3 Budget and timeline

The cost of the BAP and its timeline is presented in the table below.

Table 19. Budget and timeline of BAP measures to put in place

BAP measures *(code & title)*	Sites	Responsible	Project (phase)	Timeline
MIN1 - Management of accidental pollution (soil, water, fauna & flora)	All sites	Telco / Partner	Operation and dismantling	Elaboration: within 6 months following the BAP implementation Implementation: until the end of operations (9 years)
MIN2 – Management of noise pollution	All sites	Telco / Partner	Operation	During the projet, until the end of operations (9 years)
MIN3 - Management of light pollution	All sites	Telco / Partner	Operation	During the projet, until the end of operations (9 years)
MIN4 - Management of other environmental nuisances	All sites	Telco/Operator/specialist partner	Operation	Control of equipments: during the project, until the end of operations (9 years) / 4 controls per year
MIN5 - Prevention and control of invasive alien species	All sites	Telco/Operator/specialist partner	Dismantling	Elaboration: within 6 months following the BAP implementation Implementation: 4 control per year, during the project, until the end of operations (9 years)
MIN6 - Prevention of use/sampling of illegal and/or threatened fauna and flora	All sites	Telco/Operator/specialist partner	Operation	Implementation: during the project, until the end of operations (9 years)
MIN7 - Waste management	All sites	Telco/Operator	Operation	During the projet, until the end of operations (9 years)
REM1 - Rehabilitation and progressive replanting of project footprint (including access roads constructed by Telco if any) after dismantling	All sites	Telco/Operator/specialist partner	Post dismantling	After the dismantling of the antennas (2-3 years after)
SM1 - Environmental coordination of the sites	All sites	Telco/Operator	Operation and dismantling	During the projet, until the end of operations (9 years)

BAP measures *(code & title)*	Sites	Responsible	Project (phase)	Timeline
MM1 - Ecological monitoring of wildlife in sensitive natural areas	All sites	Local expert/ Specialist partner	Operation	3x (y1+y4+y8) *During the project, until the end of operations (9 years)*
MM2 - Ecological monitoring of flora in sensitive natural areas	All sites	Local expert/ Specialist partner	Operation	3x (y1+y4+y8) *During the project, until the end of operations (9 years)*

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Appendices

1 Appendix 1 – Project characteristics

SITE NAME	**KANZILE**	
Site code	COM026	
Island	**GRANDE COMORE**	
Geographic coordinates	E43°23'34.2"	S11°50'58.2"S

CATEGORIZATION (protected area/ internationally recognized site)	/
Protected Area	/
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,84 m) Latrine (1,36x 1,86 x 2,70 m)
Access	Accessible by car
Road developed by	TELCO
On-air date	**26/09/2019**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	4
Fuel supply frequency (months)	2
Generator tank capacity (L)	600
Average fuel stored on site (L)	250
Emptying frequency (months)	5
Mode of fuel delivery	Car
Distance from road to site (m)	/

SITE NAME	**DOUNIANI**	
Site code	COM043	
Island	**GRANDE COMORE**	
Geographic coordinates	E43°18'7.70"	S11°25'49.4"

CATEGORIZATION (protected area/ internationally recognized site)	KBA
Protected Area	/
KBA and/or IBA	Massif de la Grille

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,94 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,36 x 1,86 x 2,55 m)
Access	Accessible by car
Road developed by	/
On-air date	**07/12/2016**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	1200
Generator	
Generator power (KVA)	35

Operating time (hrs/day)	1,1
Fuel supply frequency (months)	2
Generator tank capacity (L)	2000
Average fuel stored on site (L)	426
Emptying frequency (months)	6
Mode of fuel delivery	Car
Distance from road to site (m)	/

SITE NAME	**IVEMBENI**	
Site code	COM045	
Island	**GRANDE COMORE**	
Geographic coordinates	E43°19'36.12"	S11°28'22.03"

CATEGORIZATION (protected area/ internationally recognized site)	KBA
Protected Area	/
KBA and/or IBA	Massif de la Grille

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,00 m)
Access	Accessible by car
Road developed by	TELCO
On-air site	**10/12/2016**
Site status	Existing site

Energy supply	Battery and back-up generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	4
Fuel supply frequency (months)	2
Generator tank capacity (L)	1500
Average fuel stored on site (L)	362
Emptying frequency (months)	2
Mode of fuel delivery	Car
Distance from road to site (m)	/

SITE NAME	**NEW01**	
Site code	COM067 / NEW01	
Island	**GRANDE COMORE**	
Geographic coordinates	E43°19'37.80"	S11°38'45.8"

CATEGORIZATION (protected area/ internationally recognized site)	KBA, Protected Area
Protected Area	Parc National de Karthala
KBA and/or IBA	Lac Hantsongoma

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 41,15 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,00 m)
Access	Accessible by car
Road developed by	TELCO
On-air status	**25/04/2017**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	

Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	1
Fuel supply frequency (months)	5
Generator tank capacity (L)	1500
Average fuel stored on site (L)	250
Emptying frequency (months)	12
Mode of fuel delivery	Car
Distance from road to site (m)	/

SITE NAME	**MIRIGONI**	
Site code	MOH007	
Island	**MOHELI**	
Geographic coordinates - Telco	E43°40'41.0"	S12°15'40.2"

CATEGORIZATION (protected area/ internationally recognized site)	/
Protected Area	/
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (hauteur: 29,65 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,00 m)
Access	Pedestrian access
Road developed by	/
On-air status	**20/05/2017**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	1200
Generator	
Generator power (KVA)	35
Operating time (hrs/day)	1,1
Fuel supply frequency (months)	2
Generator tank capacity (L)	2000
Average fuel stored on site (L)	282
Emptying frequency (months)	11
Mode of fuel delivery	Not accessible by car
Distance from road to site (m)	900

SITE NAME	**NDRODRONI_MOH.08**	
Site code	MOH008	
Island	**MOHELI**	
Geographic coordinates	E43°40'05.7"	S12°21'09.3"

CATEGORIZATION (protected area/ internationally recognized site)	Protected Area
Protected Area	Parc National de Mohéli
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,00 m)

Access	Accessible by car
Road developed by	/
On-air status	**17/05/2017**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	1200
Generator	
Generator power (KVA)	35
Operating time (hrs/day)	1,4
Fuel supply frequency (months)	2
Generator tank capacity (L)	2000
Average fuel stored on site (L)	291
Emptying frequency (months)	10
Mode of fuel delivery	Car
Distance from road to site (m)	/

SITE NAME	**NIOUMACHOUA**	
Site code	MOH009	
Island	**MOHELI**	
Geographic coordinates	E43° 42' 58,7''	S12° 21' 54,3''

CATEGORIZATION (protected area/ internationally recognized site)	Protected Area
Protected Area	Parc National de Mohéli
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,00 m)
Access	Accessible by car
Road developed by	/
On-air status	**26/05/2017**
Site status	Existing site

Energy supply	Commercial electricity by aerial cable on 9 m pole, battery and emergency generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	1
Fuel supply frequency (months)	3
Generator tank capacity (L)	1500
Average fuel stored on site (L)	450
Emptying frequency (months)	4
Mode of fuel delivery	No car access
Distance from road to site (m)	40

SITE NAME	**Wanani_MOH10**	
Site code	MOH010	
Island	**MOHELI**	
Geographic coordinates	E43°47'35.7"	S12°20'45.7"

CATEGORIZATION (protected area/ internationally recognized site)	Protected Area
Protected Area	Parc National de Mohéli
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,36 x 1,86 x 2,55 m)
Access	Pedestrian access
Road developed by	/
On-air status	**13/05/2019**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	1200
Generator	
Generator power (KVA)	35
Operating time (hrs/day)	1
Fuel supply frequency (months)	3
Generator tank capacity (L)	2000
Average fuel stored on site (L)	250
Emptying frequency (months)	12
Mode of fuel delivery	No car access
Distance from road to site (m)	600

SITE NAME	**KANGANI_MOH.011**	
Site code	MOH011	
Island	**MOHELI**	
Geographic coordinates	E43°49'28.2"	S12°20'24.3"

CATEGORIZATION (protected area/ internationally recognized site)	Protected Area
Protected Area	Parc National de Mohéli
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,00 m)
Access	Accessible by car
Road developed by	/
On-air status	**08/12/2016**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	1200
Generator	
Generator power (KVA)	35
Operating time (hrs/day)	1
Fuel supply frequency (months)	4
Generator tank capacity (L)	2000

Average fuel stored on site (L)	397	
Emptying frequency (months)	12	
Mode of fuel delivery	Car access	
Distance from road to site (m)	/	
SITE NAME	HAMAVOUNA	
Site code	MOH016	
Island	MOHELI	
Geographic coordinates	E43°49'22.4"	S12°22'21.9"

CATEGORIZATION (protected area/ internationally recognized site)	Protected Area
Protected Area	Parc National de Mohéli
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,75 m)
Access	Accessible by car
Road developed by	/
On-air status	**16/05/2017**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	1200
Generator	
Generator power (KVA)	35
Operating time (hrs/day)	1
Fuel supply frequency (months)	12
Generator tank capacity (L)	2000
Average fuel stored on site (L)	959
Emptying frequency (months)	12
Mode of fuel delivery	Car access
Distance from road to site (m)	/

SITE NAME	**HAMBA**	
Site code	MOH017 / MO.12 Repeater	
Island	MOHELI	
Geographic coordinates	43°39'10,7 E	12°16'36,2 S

CATEGORIZATION (protected area/ internationally recognized site)	Protected area
Protected Area	Parc National de Mohéli & Mwali Highlands AZE
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 41,15 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,75 m)
Access	Pedestrian access
Road developed by	/
Dismantling date	30/04/2021
Site status	**Dismantled**

SITE NAME	**AN6**	
Site code	ANJ006	
Island	**ANJOUAN**	
Geographic coordinates	E44°27'21.6"	S12°11'20.3"

CATEGORIZATION (protected area/ internationally recognized site)	AZE, KBA
Protected Area	/
KBA and/or IBA	Ndzuani Highlands

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 41,15 m) Guard house (2,50 x 2,50 x 2,75 m) Latrine (1,50 x 1,00 x 2,00 m)
Access	Pedestrian access
Road developed by	**/**
On-air date	**12/12/2016**
Site status	**To dismantle**

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	4,7
Fuel supply frequency (months)	2
Generator tank capacity (L)	1500
Average fuel stored on site (L)	310
Emptying frequency (months)	3
Mode of fuel delivery	No car access
Distance from road to site (m)	600

SITE NAME	**KOKI (Ex BAZIMINI DENSIF)**	
Site code	ANJ037	
Island	**ANJOUAN**	
Geographic coordinates	E44°26'38.80"	S12°09'59.90"

CATEGORIZATION (protected area/ internationally recognized site)	AZE, KBA
Protected Area	/
KBA and/or IBA	Nduani Highlands

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,84 m) Latrine (1,36 x 1,86 x 2,70 m)
Access	Pedestrian access
Road developed by	/
On-air date	**10/08/2018**
Site status	**To dismantle**

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	5,6
Fuel supply frequency (months)	2
Generator tank capacity (L)	600
Average fuel stored on site (L)	160
Emptying frequency (months)	2
Mode of fuel delivery	No car access
Distance from road to site (m)	700

SITE NAME	**AN16**	
Site code	ANJ016	
Island	**ANJOUAN**	
Geographic coordinates	E44°28'4.10"	S12°17'46.20"

CATEGORIZATION (protected area/ internationally recognized site)	Protected Area
Protected Area	Parc National Mont Ntringui
KBA and/or IBA	/

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 60,68 m) Guard house (2,50 x 2,50 x 2,75) m Latrine (1,50 x 1,00 x 2,00) m
Access	Pedestrian access
Road developed by	/
On-air date	**25/01/2017**
Site status	Existing site

Energy supply	Battery and back-up generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	1200
Generator	
Generator power (KVA)	35
Operating time (hrs/day)	7
Fuel supply frequency (months)	2
Generator tank capacity (L)	2000
Average fuel stored on site (L)	160
Emptying frequency (months)	2
Mode of fuel delivery	No car access
Distance from road to site (m)	900

SITE NAME	**TSEMBEHOU**	
Site code	ANJ050	
Island	**ANJOUAN**	
Geographic coordinates	E44°28'6.98"	S12°13'5.14"

CATEGORIZATION (protected area/ internationally recognized site)	AZE, KBA
Protected Area	/
KBA and/or IBA	Nduani Highlands

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,84 m) Latrine (1,36 x 1,86 x 2,70 m)
Access	Pedestrian access
Road developed by	/
On-air site	**15/10/2019**
Site status	**To dismantle**

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	1
Fuel supply frequency (months)	3
Generator tank capacity (L)	600
Average fuel stored on site (L)	150

Emptying frequency (months)	10
Mode of fuel delivery	No car access
Distance from road to site (m)	800

SITE NAME	**NGANDZALE**	
Site code	ANJ026	
Island	**ANJOUAN**	
Geographic coordinates	E 44°30'28.92''	S12°16'21.12''

CATEGORIZATION (protected area/ internationally recognized site)	KBA
Protected Area	/
KBA and/or IBA	Moya Forest

SHORT DESCRIPTION OF FOOTPRINT AND DEVELOPMENT WORK	Tower mast (height: 29,65 m) Guard house (2,50 x 2,50 x 2,84 m) Latrine (1,36 x 1,86 x 2,70 m)
Access	Accessible by car
Road developed by	/
On-air date	**18/03/2021**
Site status	Existing site

Energy supply	Photovoltaic with battery and backup generator
Battery	
Battery number	48
Battery voltage (Volt)	2
Battery capacity (AH)	600
Generator	
Generator power (KVA)	20
Operating time (hrs/day)	5,5
Fuel supply frequency (months)	2
Generator tank capacity (L)	600
Average fuel stored on site (L)	292
Emptying frequency (months)	2
Mode of fuel delivery	Car
Distance from road to site (m)	/

2 Appendix 2 - Data requested from Biotope for the inventories carried out by GEB Consulting

Biotope teams requested specific data from GEB Consulting for the elaboration of the BAP.
Data requested include:

- Flora species: woody plants, herbaceous plants (family, gender, species, status, populations, height, location relative to the tower were inventoried)
- Fauna species: molluscs, reptiles, amphibiens, mammals, birds, butterflies (family, gender, species, status, population numbers were inventoried)
- Habitats: location, land-use, types of habitats (natural, modified).
- For each site, photographs of habitats and species inventories

3 Appendix 3 – Critical Habitat Assessment Methodology

Table 20. Quantitative thresholds for criteria triggering critical habitats (from IFC's PS6 2019)

Criteria	Thresholds	Comments
Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species	Areas that support globally important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥ 5 reproductive unitsGN16 of a CR or EN species).	The inclusion of species in Criterion 1 that are listed nationally/regionally as CR or EN in countries that have adhered to IUCN guidance, GN15 shall be determined on a project-by-project basis in consultation with competent professionals.
	Areas that support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds in GN72(a).	
	As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.	
Criterion 2: Endemic or restricted-range species	Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species	For **terrestrial vertebrates** and plants, a restricted-range species is defined as those species that have an EOO less than 50,000 square kilometers (km2). For **marine systems**, restricted-range species are provisionally being considered those with an EOO of less than 100,000 km2. For **coastal, riverine, and other aquatic species** in habitats that do not exceed 200 km width at any point (for example, rivers), restricted range is defined as having a global range of less than or equal to 500 km linear geographic span (i.e., the distance between occupied locations furthest apart)
Criterion 3: Migratory or congregatory species	Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle	Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem). Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis
	Areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress	
Criterion 4: Highly threatened and/or unique ecosystems	Areas representing ≥5% of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN	Where formal IUCN assessments have not been performed, the client may use assessments using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally recognized NGOs).
	Other areas, not yet assessed by IUCN, but determined to be of high priority for conservation by regional or national systematic conservation planning	
Criterion 5: Key evolutionary processes	Landscapes with high spatial *heterogeneity* are a driving force in speciation, as species are naturally selected based on their ability to adapt and diversify.	The significance of structural attributes in a landscape that may influence evolutionary processes will be determined on a case-by-case basis, and the determination of critical habitat will be heavily reliant on scientific knowledge. In the

Criteria	Thresholds	Comments
	Environmental gradients, also known as *ecotones*, produce transitional habitat, which has been associated with the process of speciation and high species and genetic diversity. *Edaphic interfaces* are specific juxtapositions of soil types (for example, serpentine outcrops, limestone, and gypsum deposits), which have led to the formation of unique plant communities characterized by both rarity and endemism. *Connectivity* between habitats (for example, biological corridors) ensures species migration and gene flow, which is especially important in fragmented habitats and for the conservation of metapopulations. This also includes biological corridors across altitudinal and climatic gradients and from "crest to coast." Sites of demonstrated importance to *climate change adaptation* for either species or ecosystems are also included within this criterion	majority of cases, this criterion will apply in areas that have been previously investigated and that are already known or suspected to be associated with unique evolutionary processes. While systematic methods to measure and prioritize evolutionary processes in a landscape do exist, they are typically beyond a reasonable expectation of assessments conducted by the private sector.

On the basis of the criteria and thresholds presented above, the presence or absence of critical habitats within the project's area of influence is determined following the steps detailed below.

Potential Critical Habitats

- Screening for potential critical habitats qualifying species (according to criteria 1 to 3 of the IFC's PS6)
- Screening of ecosystems critical habitats qualifying ecosystems (according to criteria 4 and 5 of the IFC's PS6)

Assessment of Critical Habitats

- Delineation of an 'ecologically appropriate area of analysis' of EAAA for each species
- Assessment of the 'critical' character of the EAAA for the species conservation (thresholds or expert opinion)

Confirmed Critical Habitats

- Justification for each species or ecosystem triggering critical habitats
- Mapping of critical habitats and their key characteristics for species and ecosystems

4 Appendix 4 - Zero tolerance policy on the possession of wildlife and forest resources

Policy requirements

Telco will commit to the following zero tolerance policy on the possession of wildlife and forest resources for all operations:

All Telco staff and contractors are strictly prohibited from the possession, purchase, trade or collection of wildlife or forest resources that are legally protected under the Comorian Law, are CITES[7] listed, or classed as threatened by the IUCN Red List[8].

The purpose of the policy is to prohibit the collection of wildlife and forest resources by Telco staff and contractors.

Operation control

Telco shall implement the following actions in relation to the zero tolerance policy on the possession of wildlife and forest resources:

- All staff must be educated during induction training and on an annual basis regarding Telco's "no-poaching and no-hunting" policy;
- Telco must keep a register of staff's completion of the training and any refresher training attended;
- All staff work agreements and Code of Conduct must contain a clause that states that the staff member agrees to comply with Telco's "no-poaching and no hunting" policy;
- All Telco's properties are to have access control facilities at entrances;
- 24-hour vehicle inspections are to occur at the entrance of all of Telco's controlled properties to detect fauna and flora. Thorough, random vehicle inspections are also to occur on a regular basis. Evidence of such inspections should be recorded and available for review;
- Where flora or fauna are identified during inspections, these are to be confiscated and photographed. Wherever possible, the flora and fauna are to be returned to their point of origin;
- Undertake ongoing monitoring to control access to Telco's sites. Inspections are to occur at least on a six (6) monthly basis to identify any unauthorised access. Boundary inspections may consist of physical inspections or, if possible, aerial photographs/video taken from a drone;
- Posters and signage are to be developed and placed at Telco's controlled properties stating the policy, outlining the species prohibited from poaching/hunting; and
- Staff identified to have participated in the possession, purchase, trade or collection of wildlife or forest resources will be dismissed from employment and not re-employed at any later date.

Species targeted for inspections are outlines in Table 21. This list is based on species that were detected on site. There may be other species that may be considered threatened or listed on CITES that may occur on the sites. Inspections should identify ANY flora and fauna being

[7] CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

[8] Threatened species are considered to be listed as Critically Endangered, Endangered, Vulnerable, on the IUCN Red List of Threatened Species.

transported from the site and subsequent action taken as described above if they are detected being removed from the site. Inspections should include collection of supporting photographic evidence of any flora and fauna transported from the site.

Table 21. Species targeted for wildlife hunting/poaching inspections

Species Family	Scientific name	IUCN listing	CITES Listing
Flora			
FABACEAE	*Albizia lebbeck*	LC	
GENTIANACEAE	*Anthocleista grandiflora*		
APHLOIACEAE	*Aphloia theiformis*	LC	
ASTERACEAE	*Brachylaena ramiflora*	LC	
SAPOTACEAE	*Gambeya boiviniana*	LC	
LAURACEAE	*Cinnamomum zeylanicum*		
EBENACEAE	*Diospyros sp*		Appendix II
MALVACEAE	*Dombeya sp*		
ASPARAGACEAE	*Dracaena grandifolia*		
MYRTACEAE	*Eucalyptus sp*		
MYRTACEAE	*Eugenia comorensis*		
MORACEAE	*Ficus sp*		
MELIACEAEE	*Khaya comorensis*		
EUPHORBIACEAE	*Macaranga bailloniana*		
STILBACEAE	*Nuxia oppositifolia*	LC	
LOGANIACEAE	*Nuxia pseudodentata*		
LAURACEAE	*Ocotea comorensis*		
PIPERACEAE	*Peperomia sp*		
PIPERACEAE	*Piper capense*	LC	
MYRTACEAE	*Psidium cattleyanum*		
MYRSINACEAE	*Rapaena comorensis*		
MONIMIACEAE	*Tambourissa comorensis*		
CUNONIACEAE	*Weinmannia comorensis*		
CUNONIACEAE	*Weinmannia sp*		
CYATHEACEAE	*Cyathea hildebrandtii*		Appendix II
CYATHEACEAE	*Cyathea kirki*		Appendix II
CYATHEACEAE	*Cycas thouarsii*		Appendix II
CYATHEACEAE	*Cycas officinalis*		Appendix II
Aves			
PSITTACIDAE	*Agapornis canus*	LC	Appendix II
COLUMBIDAE	*Alectroenas sganzini*	NT	
ARDEIDAE	*Ardea humbloti*	EN	
ARDEIDAE	*Ardeola idae*	EN	
PHASIANIDAE	*Caturnix coturnix*		
ACCIPITRIDAE	*Circus maillardi*	EN	Appendix II

Species Family	Scientific name	IUCN listing	CITES Listing
COLUMBIDAE	*Columba polleni*	NT	
PSITTACIDAE	*Coracopsis nigra*	LC	Appendix II
PSITTACIDAE	*Coracopsis vasa*	LC	Appendix II
CORVIDAE	*Corvus albus*	LC	
VANGIDAE	*Cyanolanius comorensis*	EN	
DICRURIDAE	*Dicrurus fuscipennis*	EN	
DROMADIDAE	*Dromas ardeola*	LC	
FALCONIDAE	*Falco perrigrinus*		
PLOCEIDAE	*Foudia ementissima*		
MUSCICAPIDAE	*Humblotia flavirostris*	EN	
PYCNONOTIDAE	*Hypsipetes parviriostris*		
NECTARINIIDAE	*Nectarina comorensis*		
NECTARINIIDAE	*Nectarina humbloti*		
ACROCEPHALIDAE	*Nesillas brevicaudata*	LC	
ACROCEPHALIDAE	*Nesillas longicaudata*	LC	
ACROCEPHALIDAE	*Nesillas mariae*	EN	
NUMIDIDAE	*Numida meleagris*	LC	
STRIGIDAE	*Otus capnopes*		
STRIGIDAE	*Otus mohelensis*		
STRIGIDAE	*Otus pauliani*	EN	Appendix II
COLUMBIDAE	*Streptopelia capicola*	LC	
COLUMBIDAE	*Streptopelia picturata*	LC	
COLUMBIDAE	Treron griveaudi	EN	
TURDIDAE	*Turdus bewsheiri*		
COLUMBIDAE	*Turtur tympanistrus*		
ZOSTEROPIDAE	*Zosterops mouroniensis*	VU	
Reptiles			
SCINCIDAE	*Amphiglossus johannae*	LC	
CHAMAELEONIDAE	*Camaeleo cephalolepsis*		Appendix II
CHELONIIDAE	*Chelonia mydas*	LC	Appendix I
DERMOCHELYIDAE	*Dermochelys coriacea*	VU	Appendix I
CHELONIIDAE	*Eretmochelys imbricata*	CR	Appendix I
SCINCIDAE	*Mabuya comorensis*		
OPLURIDAE	*Oplurus cuvieri*	LC	
GEKKONIDAE	*Paroedura sanctijohanensis*		
GEKKONIDAE	*Phelsuma comorensis*	NT	Appendix II
GEKKONIDAE	Phelsuma v-nigra	LC	Appendix II
Insectes			
NYMPHALIDAE	*Amauris comorana*	EN	
NYMPHALIDAE	*Amauris nossima*	VU	

Species Family	Scientific name	IUCN listing	CITES Listing
NYMPHALIDAE	*Charaxes nicoti*		
LYCAENIDAE	*Eicochrysops damiri*		
PAPILIONIDAE	*Graphium levassori*	EN	
NYMPHALIDAE	*Hypolimas dibius*		
NYMPHALIDAE	*Neptis comorarum*		
PAPILIONIDAE	*Papilio aristophontes*	EN	
Mammal			
DUGONGIDAE	*Dugong dugon Dugong*	VU	
LEMURIDAE	*Lemur mongoz*	CR	Appendix I
MINIOPTERIDAE	*Miniopterus minor*	DD	
VESPERTILIONIDAE	*Myotis goudoti*	LC	
PTEROPODIDAE	*Pteropus livingstonii*	CR	Appendix II
PTEROPODIDAE	*Pteropus seychellensis*	LC	Appendix II
PTEROPODIDAE	*Roussetus obliviosus*		
MOLOSSIDAE	*Tadarila pumida*		