



# Ramsar Information Sheet

Published on 12 February 2018

## Fiji

### Qoliqoli Cokovata



Designation date	16 January 2018
Site number	2331
Coordinates	16°22'S 179°02'21"E
Area	134 900,00 ha

## Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

## 1 - Summary

### Summary

The Qoliqoli Cokovata (Cokovata fishing grounds) is located on the north coast of Vanua Levu, Fiji's second largest island. It is bounded on the northern seaward side by an extensive barrier reef system known as Cakaulevu or the Great Sea Reef (GSR).

At over 260 km in length, the GSR is the third longest continuous barrier reef system in the world, after the Great Barrier Reef and the New Caledonia Barrier Reef, although the Belize Barrier Reef in the Caribbean is roughly the same length, but less contiguous. The GSR system and the associated reefs, lagoons, seagrass-algal beds and mangroves sustain an exceptional level of marine biodiversity and endemism in the Fiji Islands marine ecoregion, and has been identified as one of the five marine priority conservation areas in Fiji (WWF South Pacific, 2003). The GSR system, like any significant Pacific Island reef system, supports key sources of food security, income and employment for local communities and groups as resource owners and users alike. It is also known that a substantial fish and marine stock is sourced from the GSR for markets in Viti Levu, hence its viability greatly contributes to Fiji's economy.

The Qoliqoli Cokovata is considered the "heart" of the entire GSR, thus is of global significance too. The inland boundary of the site follows the coastline and the 37 villages of 4 districts (Dreketi, Macuata, Sasa and Mali) residing on the adjacent land and associated islands collectively retain custodial ownership over the Qoliqoli Cokovata.

A comprehensive survey of the GSR in 2004, which focused much of its effort on Qoliqoli Cokovata showed that the GSR contains, at the very minimum:

- 74% of the known coral species;
- 55% of the known coral reef fishes (with a predicted actual value of 80 per cent);
- 44% of the endemic reef fishes;
- 40% of the known marine flora;
- 117 species of sponges;
- 31 species of coelenterates and
- 12 species of ascidian in the Fiji Islands marine ecoregion.

At least 12 aquatic species listed as globally threatened (VU, EN, CR) on the IUCN Red List have been recorded in the area. For the full list of species please see section 3.3.

As a result, the Qoliqoli Cokovata qualifies under criteria 1, 2, 3, 4, 7 and 8 out of the 9 Ramsar Site criteria.

## 2 - Data & location

### 2.1 - Formal data

#### 2.1.1 - Name and address of the compiler of this RIS

##### Compiler 1

Name	Apolosa Robaigau
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Phone	6793315533

##### Compiler 2

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Institution/agency	WWF - Pacific
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Phone	6793315533

#### 2.1.2 - Period of collection of data and information used to compile the RIS

From year	2011
To year	2017

#### 2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Qoliqoli Cokovata
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## 2.2 - Site location

### 2.2.1 - Defining the Site boundaries

#### b) Digital map/image

<1 file(s) uploaded>

Former maps	0
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#### Boundaries description

In total, the site encompasses fishing grounds for 37 villages in 4 districts of Macuata Province (Dreketi, Macuata, Sasa and Mali) along middle stretch of the north-western coastline of Vanua Levu. The proposed site boundary follows the coastline and includes three offshore islands, Mali, Kia and Macuata-i-wai.

### 2.2.2 - General location

a) In which large administrative region does the site lie?	Northern Division
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b) What is the nearest town or population centre?	Labasa
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### 2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries? Yes  No

b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party? Yes  No

2.2.4 - Area of the Site

Official area, in hectares (ha): 134900

Area, in hectares (ha) as calculated from GIS boundaries 134465.1

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Marine Ecoregions of the World (MEOW)	Fiji Islands Marine Ecoregion

Other biogeographic regionalisation scheme

The Great Sea Reef falls within the greater Indo-Pacific Biogeographic Realm. The GSR system is ranked as one of the five areas of global biological significance for conservation within the Fiji Island Marine Ecoregion due to the uniqueness and high level of endemism and diversity (WWF South Pacific, 2013). It is also the longest barrier reef system in Fiji and probably the third longest contiguous barrier reef systems in the world after the Great Barrier Reef and the New Caledonia Barrier Reef, both of which are designated UNESCO World heritage Sites.

### 3 - Why is the Site important?

#### 3.1 - Ramsar Criteria and their justification

- Criterion 1: Representative, rare or unique natural or near-natural wetland types

The GSR system, like any significant Pacific Island reef system, supports key sources of food security, income and employment for local communities and groups as resource owners and users alike.

The GSR system supports the core of Fiji's economy by generating:

- 80% of Fiji's off-shore fishing valued at FJD 260 million per annum;
- Inshore fisheries valued at FJD 80 million per annum;
- 70% of Fiji's tourism - one quarter of Fiji's GDP.

Other ecosystem services provided

Population dependent on the GSR system is estimated at 345,848 or 41.5% of Fiji's total population.

For the GSR system to continue to be a source of sustainable seafood and provide economic benefits, it needs to be a healthy productive reef system, and as such its long term sustainability must be guaranteed through properly coordinated and integrated management. The Qoliqoli Cokovata is considered to be the "heart" of the GSR and hence needs to be effectively managed so it continues to support livelihood of the local communities through sustainable harvesting of fish and other aquatic resources.

Other reasons

The Great Sea Reef (GSR), after comparison with the Belize Barrier Reef, is probably the third longest contiguous barrier reef system in the world spanning over 260 km in length. The Qoliqoli Cokovata, as one of the richest areas of the GSR, along with its associated lagoons, patch reefs, intertidal flats and mangrove ecosystem, is one of the most biodiverse coral reef systems in the world.

- Criterion 2 : Rare species and threatened ecological communities

- Criterion 3 : Biological diversity

A 12-day comprehensive expedition in 2004 in the waters of the GSR revealed a staggering array of life and biodiversity that indicated the importance of the GSR to the Fiji Islands marine ecoregion:

- 74% of the known coral species of Fiji;
- 55% of the known coral reef fishes in Fiji (with a predicted actual value of 80 per cent);
- A new to science species of damselfish, Pomacentrus sp., was also recorded;
- 44% of the endemic reef fishes in Fiji;
- 40% of the known in Fiji marine flora (when considering the three main algal groups, 50% of the Fiji's Chlorophyta is recorded from the GSR, 40% of the Phaeophyta and 35% of the Rhodophyta);
- 16 new species of flora from the GSR were found to be new additions to the Flora of Fiji archipelago. Two possible new species, Ceramium spp. and Crouania spp. were also recorded on the GSR.
- 117 species of sponges;
- 31 species of coelenterates and
- 12 species of ascidian.

Justification

These results are considered to be representative of Qoliqoli Cokovata.

- Criterion 4 : Support during critical life cycle stage or in adverse conditions

Criterion 7 : Significant and repre

Justification

The Great Sea Reef contains at least 44% (4 of 9) of the endemic reef fishes known to the Fiji Islands marine ecoregion. This result is considered to be representative of Qoliqoli Cokovata. See the species that qualify for this criterion in section 3.3.

In addition, the site supports populations of a number of commercially significant marine species such as a variety of finfish, mangrove crabs, mud crabs, prawns and mud lobster (*thalassina anomala*) and sea cucumber species including at least two globally threatened ones.

The GSR also support Fiji's tuna industry, a highly migratory species that traverses the Pacific ocean.

Criterion 8 : Fish spawning grounds, etc.

Justification

Nominated site has a network of a wide range of coral reef forms, associated seagrass beds and mangroves that support populations of a variety of marine species that are:

- critical to the livelihoods of the local communities and Fiji's economy;
- critical to maintaining biodiversity at the local, national and global levels.

See the species that qualify for this criterion in section 3.3.

Unusual distant offshore mangrove islands fringing reef habitats were found to be of surprisingly high diversity and productivity. These highly dynamic, tidally influenced systems are considered to be "keystone habitats" to maintaining the ecological integrity of the entire coastline.




### 3.2 - Plant species whose presence relates to the international importance of the site

<no data available>

### 3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence <sup>1)</sup>	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
<b>Fish, Mollusc and Crustacea</b>																		
CHORDATA/ ACTINOPTERYGII	<i>Bolbometopon muricatum</i>	Humphead parrotfish	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				VU ●●● ●●●	<input type="checkbox"/>	<input type="checkbox"/>		Commonly observed;
CHORDATA/ ELASMOBRANCHII	<i>Carcharhinus amblyrhynchoides</i>	Grey Reef Shark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				NT ●●● ●●●	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Chellinus undulatus</i>	Humphead Wrasse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				EN ●●● ●●●	<input type="checkbox"/>	<input type="checkbox"/>		Commonly observed;
CHORDATA/ ACTINOPTERYGII	<i>Ecsenius fijiensis</i>	Fiji Blenny	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				LC ●●● ●●●	<input type="checkbox"/>	<input type="checkbox"/>		Endemic to Fiji
CHORDATA/ ACTINOPTERYGII	<i>Epinephelus coioides</i>	Estuary Cod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				NT ●●● ●●●	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Epinephelus fuscoguttatus</i>	Brown-marbled Grouper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				NT ●●● ●●●	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Epinephelus lanceolatus</i>	Giant Grouper	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				VU ●●● ●●●	<input type="checkbox"/>	<input type="checkbox"/>		

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA/ ACTINOPTERYGII	<i>Epinephelus polyphekadion</i>	Camouflage Grouper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			NT 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Meiacanthus oualansensis</i>	Canary fangblenny	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			LC 	<input type="checkbox"/>	<input type="checkbox"/>		Endemic to Fiji
CHORDATA/ ELASMOBRANCHII	<i>Nebrius ferrugineus</i>	Tawny Nurse Shark	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			VU 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Plectropomus leopardus</i>	Leopard Coralgrouper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			NT 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Siganus uspi</i>	Bicolored foxface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			NT 	<input type="checkbox"/>	<input type="checkbox"/>		Endemic to Fiji
CHORDATA/ ELASMOBRANCHII	<i>Taeniura lymma</i>	Ribbontail stingray; Ribbontail stingray	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			NT 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ELASMOBRANCHII	<i>Triaenodon obesus</i>	White-tip reef shark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			NT 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ ACTINOPTERYGII	<i>Zoramia flebila</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>		Endemic to Fiji
<b>Others</b>																		
ECHINODERMATA / HOLOTHUROIDEA	<i>Actinopyga mauritiana</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			VU 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ MAMMALIA	<i>Balaenoptera acutorostrata</i>	Minke Whale; Common Minke Whale	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Commonly observed; Criterion 4: Migratory path
CHORDATA/ REPTILIA	<i>Caretta caretta</i>	Loggerhead Turtle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			VU 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Foraging and nesting site
CHORDATA/ REPTILIA	<i>Chelonia mydas</i>	Green Turtle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			EN 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Present in significant numbers; Criterion 4: Foraging and nesting site
CHORDATA/ REPTILIA	<i>Dermochelys coriacea</i>	Leatherback	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			VU 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Foraging and nesting site
CNIDARIA/ ANTHOZOA	<i>Echinomorpha nishihirai</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			NT 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ REPTILIA	<i>Eretmochelys imbricata</i>	Hawksbill Turtle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			CR 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Foraging and nesting site
ECHINODERMATA / HOLOTHUROIDEA	<i>Holothuria fuscogilva</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			VU 	<input type="checkbox"/>	<input type="checkbox"/>		
ECHINODERMATA / HOLOTHUROIDEA	<i>Holothuria scabra</i>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			EN 	<input type="checkbox"/>	<input type="checkbox"/>		
CHORDATA/ MAMMALIA	<i>Megaptera novaeangliae</i>	Humpback Whale	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			LC 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Criterion 4: Migratory path
CHORDATA/ MAMMALIA	<i>Physeter macrocephalus</i>	Sperm Whale	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			VU 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Commonly observed; Criterion 4: Migratory path

Phylum	Scientific name	Common name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
			2	4	6	9	3	5	7	8								
CHORDATA/ MAMMALIA	<i>Stenella longirostris</i> 	Spinner Dolphin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>	Appendix II of CITES	Present in significant numbers; Criterion 4: Resident	
CNIDARIA/ ANTHOZOA	<i>Turbinaria heronensis</i> 	disc coral	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			VU 	<input type="checkbox"/>	<input type="checkbox"/>			

1) Percentage of the total biogeographic population at the site

### 3.4 - Ecological communities whose presence relates to the international importance of the site

<no data available>



## 4 - What is the Site like? (Ecological character description)

### 4.1 - Ecological character

Within the Qoliqoli Cokovata, significant diversity and abundance of marine biota is found along the outer barrier reefs, channels, lagoons, patch reefs, mangrove islets and coastline, estuaries and fringing reefs. Unusual offshore mangrove islets were found to be of high biodiversity and productivity. These highly dynamic, tidally influenced systems are "keystone habitats" and nursery areas of crucial importance to maintaining the ecological integrity of the entire coastline.

There are more than seven mangrove islets within the Qoliqoli Cokovata in addition to the extensive mangrove forest fringing the coastline. Four community managed mangrove reserves have been established (total area of 740 ha) in the area. The mangrove islands are an important habitat, and spawning and nursery grounds for a very high percentage of finfish and invertebrate marine species. Mangrove related fisheries production is about 3,711 tonnes per year which was estimated at \$19.2 million FJD (WWF Pacific, the Economic Value of the Great Sea Reef Preliminary Findings, 2014, unpubl.).

Associated seagrass meadows are also found along the coast of the Qoliqoli Cokovata which are dominated by the *Halodule uninervis* and *Halophila ovalis*. There are also extensive areas of sub-tidal seagrass beds dominated by turtle grass (*Syringodium isoetifolium*). These meadows play an important role in buffering the coastline as well as acting as nursery and foraging site for many marine animals including the endangered green turtle.

The flora of the GSR is typical of that of the Indo-west Pacific mangroves; coastal littoral and marine flora, with the great majority of the species present having been recorded elsewhere from Fiji and from other Pacific Islands. The GSR flora represents at least 40% of the recorded Fiji marine algal flora (excluding Cyanophyta and Magnoliophyta).

When considering the three main algal groups, those represented on the GSR include at least:

- 50% of the Fijian Chlorophyta (green macro-algae),
- 40% of the Phaeophyta (brown algae) and
- 35% of the Rhodophyta (red algae).

Algal dominant communities are more common in fairly exposed places, both on reef flats and just below the surf break. Large crevices provide ideal habitat for a range of coralline algae which are critical to the stability of the main reefs. Sixteen species found from the GSR system were new additions to the algal flora of the Fiji Archipelago. Two species are possibly new to science:

- A *Ceramium* species which, based on the arrangement of the tetraspores, appears to be unique from those monographed in South and Skelton (2000);
- The other indeterminate new alga possibly belongs to the genus *Crouania*. Although *Crouania* has been recorded from Fiji, the species found in the GSR is considerably larger.

In the Great Sea Reef, 188 species of corals were recorded, representing 74% of Fiji's total listing of 254 species. Out of those, 43 new records of hard corals were documented for Fiji, with two new genera and three believed to be geographic range extensions, *Echinomorpha nishihirai* (Veron, 1990) and *Turbinaria heronensis* (Wells, 1958).

Also recorded were 117 species of sponges, 31 species of coelenterate and 12 species of ascidians. In addition, a range of globally threatened or near-threatened, endemic to Fiji or newly recorded to Fiji species were identified. See section 3.3.

### 4.2 - What wetland type(s) are in the site?

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
A: Permanent shallow marine waters		1		Representative
B: Marine subtidal aquatic beds (Underwater vegetation)		4		Representative
C: Coral reefs		2		Unique
F: Estuarine waters		0		Representative
G: Intertidal mud, sand or salt flats		0		Representative
I: Intertidal forested wetlands		0		Representative
J: Coastal brackish / saline lagoons		3		Representative

### 4.3 - Biological components

#### 4.3.1 - Plant species

Other noteworthy plant species

Scientific name	Common name	Position in range / endemism / other
<i>Bruguiera gymnorhiza</i>		dominant mangrove species
<i>Excoecaria agallocha</i>		associated mangrove plants
<i>Halodule uninervis</i>		dominant in intertidal seagrass beds
<i>Halophila ovalis</i>		dominant in intertidal seagrass beds
<i>Heritiera littoralis</i>		associated mangrove plants
<i>Lumnitzera littorea</i>		associated mangrove plants
<i>Rhizophora samoensis</i>		dominant mangrove species
<i>Rhizophora selala</i>		dominant mangrove species
<i>Rhizophora stylosa</i>		dominant mangrove species
<i>Syringodium isoetifolium</i>		dominant in subtidal seagrass meadow
<i>Xylocarpus granatum</i>		associated mangrove plants

Optional text box to provide further information

High percentage of Halimeda and Caulerpa species; Rhodophyta, Phaeophyta and Chlorophyta were the main algal groups; Phaeophyta had considerably lower diversity;

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CNIDARIA/ANTHOZOA	<i>Acropora aspera</i>					
CNIDARIA/ANTHOZOA	<i>Acropora carduus</i>					
CNIDARIA/ANTHOZOA	<i>Acropora cerealis</i>					
CNIDARIA/ANTHOZOA	<i>Acropora clathrata</i>					
CNIDARIA/ANTHOZOA	<i>Acropora cytherea</i>					
CNIDARIA/ANTHOZOA	<i>Acropora granulosa</i>					
CNIDARIA/ANTHOZOA	<i>Acropora humilis</i>					
CNIDARIA/ANTHOZOA	<i>Acropora hyacinthus</i>					
CNIDARIA/ANTHOZOA	<i>Acropora intermedia</i>					
CNIDARIA/ANTHOZOA	<i>Acropora loripes</i>					
CNIDARIA/ANTHOZOA	<i>Acropora nasuta</i>					
CNIDARIA/ANTHOZOA	<i>Acropora sarmentosa</i>					
CNIDARIA/ANTHOZOA	<i>Acropora speciosa</i>					
CNIDARIA/ANTHOZOA	<i>Acropora subglabra</i>					
CNIDARIA/ANTHOZOA	<i>Acropora valida</i>					
CNIDARIA/ANTHOZOA	<i>Astreopora gracilis</i>	starflower coral				
CNIDARIA/ANTHOZOA	<i>Astreopora listeri</i>	starflower coral				
CNIDARIA/ANTHOZOA	<i>Astreopora suggesta</i>	starflower coral				
CNIDARIA/ANTHOZOA	<i>Cantherellus jebbi</i>					
CHORDATA/ACTINOPTERYGII	<i>Chromis opercularis</i>	bar-cheeked chromis				rare
CHORDATA/ACTINOPTERYGII	<i>Chromis xanthurus</i>	Paletail chromis;Paletail chromis;Paletail chromis;Long-tail puller;Long-tail puller;Pale-tail puller;Pale-tail chromis;Pale-tail chromis				common
CNIDARIA/ANTHOZOA	<i>Cycloseris costulata</i>					
CNIDARIA/ANTHOZOA	<i>Cycloseris fragilis</i>					
CNIDARIA/ANTHOZOA	<i>Cycloseris vaughani</i>					
CNIDARIA/ANTHOZOA	<i>Cyphastrea serailia</i>	lesser knob coral				
CNIDARIA/ANTHOZOA	<i>Diploastrea heliopora</i>	double-star coral				
ECHINODERMATA/ECHINOIDEA	<i>Echinometra mathaei</i>	rock-boring urchin				
CNIDARIA/ANTHOZOA	<i>Echinophyllia aspera</i>					
CNIDARIA/ANTHOZOA	<i>Echinopora gemmacea</i>	hedgehog coral				
CNIDARIA/ANTHOZOA	<i>Favites abdita</i>	larger star coral				
CNIDARIA/ANTHOZOA	<i>Favites halicora</i>					
CNIDARIA/ANTHOZOA	<i>Galaxea astreata</i>	octopus coral				
CNIDARIA/ANTHOZOA	<i>Galaxea fascicularis</i>					
CNIDARIA/ANTHOZOA	<i>Goniastrea edwardsi</i>	lesser star coral				
CNIDARIA/ANTHOZOA	<i>Goniastrea retiformis</i>					
CNIDARIA/ANTHOZOA	<i>Goniopora lobata</i>	anemone coral				
ECHINODERMATA/HOLOTHUROIDEA	<i>Holothuria edulis</i>					common
CNIDARIA/ANTHOZOA	<i>Hydnophora rigida</i>	spine coral				

Phylum	Scientific name	Common name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/ACTINOPTERYGII	<i>Labroides dimidiatus</i>	Cleaner wrasses				common
CNIDARIA/ANTHOZOA	<i>Leptastrea pruinosa</i>	crust coral				
CNIDARIA/ANTHOZOA	<i>Merulina ampliata</i>	crispy crust coral				
CNIDARIA/ANTHOZOA	<i>Montipora foveolata</i>					
CNIDARIA/ANTHOZOA	<i>Montipora venosa</i>	pore coral				
CNIDARIA/ANTHOZOA	<i>Oxypora lacera</i>	porous lettuce coral				
CNIDARIA/ANTHOZOA	<i>Pachyseris rugosa</i>					
CNIDARIA/ANTHOZOA	<i>Pachyseris speciosa</i>	serpent coral				
CNIDARIA/ANTHOZOA	<i>Pavona maldivensis</i>	leaf coral				
CNIDARIA/ANTHOZOA	<i>Platygyra daedalea</i>	lesser valley coral				
CNIDARIA/ANTHOZOA	<i>Pterogyra sinuosa</i>	rounded bubblegum coral				
CNIDARIA/ANTHOZOA	<i>Pocillopora damicornis</i>					
CNIDARIA/ANTHOZOA	<i>Pocillopora grandis</i>					
CHORDATA/ACTINOPTERYGII	<i>Pomacentrus moluccensis</i>	lemon damsel				common
CNIDARIA/ANTHOZOA	<i>Porites annae</i>					
CNIDARIA/ANTHOZOA	<i>Porites lobata</i>	hump coral				
CNIDARIA/ANTHOZOA	<i>Psammocora contigua</i>					
ECHINODERMATA/HOLOTHUROIDEA	<i>Stichopus chloronotus</i>					
ARTHROPODA/MALACOSTRACA	<i>Thalassina anomala</i>	scorpion mud lobster				common
MOLLUSCA/BIVALVIA	<i>Tridacna maxima</i>	small giant clam				
MOLLUSCA/BIVALVIA	<i>Tridacna squamosa</i>	fluted giant clam				
CNIDARIA/ANTHOZOA	<i>Tubipora musica</i>	red organ pipe coral; organ-pipe coral				
CNIDARIA/ANTHOZOA	<i>Turbinaria peltata</i>					
CNIDARIA/ANTHOZOA	<i>Turbinaria stellulata</i>					

Optional text box to provide further information

Various species of the following six families: Labridae (Wrasses), Pomacentridae (Damselfish), Chaetodontidae (Butterflyfish), Pomacanthidae (Angelfish), Scaridae (Parrotfish) and Acanthuridae (Surgeonfish).

Various species of Acropora, Montipora, Echinophyllia, Oxypora, Porites dominate the reef system. Some of them are listed above.

Species of giant clams, various species of sea cucumbers, oysters, starfish, sea urchins, and crustaceans are found in varying degrees of abundance.

#### 4.4 - Physical components

##### 4.4.1 - Climate

Climatic region	Subregion
A: Tropical humid climate	Af: Tropical wet (No dry season)

##### 4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres)

a) Maximum elevation above sea level (in metres)

- Entire river basin
- Upper part of river basin
- Middle part of river basin
- Lower part of river basin
- More than one river basin
- Not in river basin
- Coastal

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

South Pacific Ocean

4.4.3 - Soil

Mineral

Organic

No available information

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes  No

4.4.4 - Water regime

Water permanence

Presence?
Usually permanent water present

Source of water that maintains character of the site

Presence?	Predominant water source
Marine water	<input type="checkbox"/>

Water destination

Presence?
Marine

Stability of water regime

Presence?
Water levels largely stable
Water levels fluctuating (including tidal)

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site

Significant accretion or deposition of sediments occurs on the site

Significant transportation of sediments occurs on or through the site

Sediment regime is highly variable, either seasonally or inter-annually

Sediment regime unknown

4.4.6 - Water pH

Acid (pH<5.5)

Circumneutral (pH: 5.5-7.4)

Alkaline (pH>7.4)

Unknown

4.4.7 - Water salinity

Fresh (<0.5 g/l)

Mixohaline (brackish)/Mixosaline (0.5-30 g/l)

Euhaline/Eusaline (30-40 g/l)

Hyperhaline/Hypersaline (>40 g/l)

Unknown

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic

Mesotrophic

Oligotrophic

Dystrophic

Unknown

<no data available>

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the i) broadly similar  ii) significantly different  site itself.

Surrounding area has greater urbanisation or development

Surrounding area has higher human population density

Surrounding area has more intensive agricultural use

Surrounding area has significantly different land cover or habitat types

Please describe other ways in which the surrounding area is different:

The nominated site is surrounded by commercial sugar cane farms. Labasa town is the only municipality located on the edge of the nominated site. Labasa town is the location of one of Fiji's four sugar mills and the main market for marine and agricultural products from the Qoliqoli Cokovata area.

## 4.5 - Ecosystem services

### 4.5.1 - Ecosystem services/benefits

#### Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	High

#### Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Erosion protection	Soil, sediment and nutrient retention	High
Climate regulation	Local climate regulation/buffering of change	Medium
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climatic processes	Medium
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	High

#### Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Water sports and activities	Low
Spiritual and inspirational	Spiritual and religious values	Medium
Spiritual and inspirational	Cultural heritage (historical and archaeological)	Medium
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	High
Scientific and educational	Long-term monitoring site	High

#### Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part	High

#### Other ecosystem service(s) not included above:

Qoliqoli Cokovata is the traditional fishing ground for 23 coastal communities and 14 inland villages in the district of Macuata, Dreketi, Sasa and Mali. Fishing forms a major portion of the subsistence and income generation activity for the coastal communities of Nakawaga, Nakalou, Korotubu and Naduri.

In general, fishing accounts for a significant portion of household income, as well as a significant use of people's time, especially alternative income sources are limited.

Anecdotal observation shows that groupers, emperors, snappers, jacks, parrotfish, crayfish, mud crabs, mud lobsters and beach-de-mer are the most targeted species for sale by the communities. These commercially targeted species are heavily dependent on the health of the coral reefs and mangroves.

Within the site: 4000 (2007)

Outside the site: 345,848 (2007)

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes  No  Unknown

Where economic studies or assessments of economic valuation have been undertaken at the site, it would be helpful to provide information on where the results of such studies may be located (e.g. website links, citation of published literature):

<http://macbio-pacific.info/wp-content/uploads/2016/09/MACBIO-Macuata-Report-14.09.2016.pdf>

WWF Pacific, the Economic Value of the Great Sea Reef Preliminary Findings, 2014, unpubl.

### 4.5.2 - Social and cultural values

- i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland

#### Description if applicable

The four districts directly associated with the Qoliqoli Cokovata have for centuries been closely linked with and dependent on the ecological integrity of the area and have developed intimate knowledge of the ecology, biodiversity, which is closely tied to their social, cultural and religious values. For centuries they have developed traditional rules and norms on the use and integrity of the site. Qoliqoli Cokovata currently have a Qoliqoli Cokovata Management Committee (QCMC) with a network of marine protected areas incorporating traditional and modern methods of management which can be continued to be used for the long term conservation and sustainable use of the site.

- ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland

- iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples

- iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland

#### Description if applicable

Some of the offshore islets such as Macuata-i-wai, Moka ni Vonu, Talailau mangrove islands which are located within the nominated site have significant cultural values and are sacred to the indigenous communities. The island of Macuata-i-wai is the burial site of the last cannibal chief of Fiji who was a descendant of Ritova, one of the chiefs that signed Fiji's deed of session to Great Britain. Macuata-i-wai also hosts the original site of the chiefly village of Macuata before relocating to mainland in the village of Naduri. Moka ni Vonu and Talailau mangrove islands are traditionally known to communities as their seafood basket. Protecting these sites and their associated ecosystem will add value to the sustainable use and management of the Qoliqoli Cokovata.

#### 4.6 - Ecological processes

<no data available>

## 5 - How is the Site managed? (Conservation and management)

### 5.1 - Land tenure and responsibilities (Managers)

#### 5.1.1 - Land tenure/ownership

##### Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

##### Other

Category	Within the Ramsar Site	In the surrounding area
Commoners/customary rights	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Provide further information on the land tenure / ownership regime (optional):

The government owns all the resources from the high water mark in the marine environment, however the four district of Sasa, Macuata, Dreketi and Mali own the fishing right of the nominated site. These four districts are also responsible for managing their marine resources as stipulated in the Fisheries Act (1942). These communities also have the right to manage their mangrove resources which fall under the Department of Lands. However, the Department of Lands has the jurisdiction to approve any proposed foreshore development including mangroves.

#### 5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:

Qoliqoli Cokovata Management Committee

Provide the name and title of the person or people with responsibility for the wetland:

Mr. Seru Moce – District Representative of Mali District

Postal address:

The Committee currently does not have a postal address. However they use the WWF-Pacific Postal address on the interim.

Qoliqoli Cokovata Management Committee  
C/-WWF-Pacific  
Private Mail Bag  
4 Ma'afu Street  
Suva  
Fiji

E-mail address:

wserumoce@yahoo.com

## 5.2 - Ecological character threats and responses (Management)

### 5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

#### Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Wood and pulp plantations	Medium impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Annual and perennial non-timber crops	Medium impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### Energy production and mining

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Mining and quarrying	Medium impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Shipping lanes		High impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Roads and railroads		High impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Fishing and harvesting aquatic resources	Medium impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Agricultural and forestry effluents	Medium impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Household sewage, urban waste water	Medium impact	High impact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Please describe any other threats (optional):

Within the Ramsar Site: Despite the relative intactness of the GSR and the high levels of biodiversity, emerging pressures are threatening the health and integrity of the reef systems. The GSR fringes coastal areas of many sugarcane farms, unsustainable shifting agricultural gardens and pine plantations which contributes to the siltation of rivers, streams and corals reefs of Qoliqoli Cokovata.

Chemical and waste water run-offs from Labasa Sugar Mill into the Qawa River and Labasa Municipality into the Labasa River, both of which empty directly into Qoliqoli Cokovata, adversely affect the site’s biodiversity.

With government’s current Look North Policy, there are plans to improve infrastructure to attract more investors to Macuata. These proposals, if implemented without necessary EIAs, will threaten the ecological integrity of Qoliqoli Cokovata, hence the GSR.

The proposed bauxite mining in Nabulu Estate in the District of Dreketi can greatly affect the proposed Ramsar Site in terms of siltation and chemical run-off.

Other threats identified to be affecting the proposed Ramsar Site includes:

- Over-fishing and poaching by illegal fishers;
- The use of small-mesh fishing nets (regulated three inch mesh size);
- Rotenone fish poisoning – an old fishing technique, which uses the root of a coastal plant ‘duva’ (derris malaccense);
- Use of SCUBA for beche-de-mer collection;
- Night SCUBA spear fishing;
- Siltation of near-shore environment caused by erosion and upland activities, especially near Malau timber factory;
- Dredging of sand for construction purposes at Mali Passage.

In the surrounding area:

- The extraction companies in the surrounding areas, i.e bauxite mining in Bua, the proposed Cirianiu gold mining in the district of Nodogo, Macuata pose threats to Qoliqoli Cokovata.
- Run-off from logging sites and commercial sugarcane farms were often observed to smother coral reefs in nearby areas during rainy periods.

### 5.2.2 - Legal conservation status

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Other non-statutory designation	Traditionally managed 'Tabu' areas		partly

### 5.2.3 - IUCN protected areas categories (2008)

- Ia Strict Nature Reserve
- Ib Wilderness Area: protected area managed mainly for wilderness protection
- II National Park: protected area managed mainly for ecosystem protection and recreation
- III Natural Monument: protected area managed mainly for conservation of specific natural features
- IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention
- V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation
- VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

### 5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Proposed

Species

Measures	Status
Threatened/rare species management programmes	Partially implemented

Human Activities



Measures	Status
Harvest controls/poaching enforcement	Partially implemented
Research	Partially implemented
Fisheries management/regulation	Partially implemented

Other:

The first Marine Protected Area (MPA) for the districts of Dreketi, Macuata, Sasa and Mali was declared in 2002, on Vatuka, a mangrove island with seagrass beds and coral reefs, off the coast of Nakalou village, with its management assumed by the village of Nakalou on behalf of the qoliqoli owners. In 2004, a further 9 MPAs were included by the community along with a Qoliqoli Cokovata Management Plan, developed through a participatory community marine resource use and management planning process. Following targeted research and through adaptive management, a total of 25 protected and managed areas comprising 18 MPAs (total area of 16,586 ha), 4 mangrove reserves (total area of 740 ha), 1 forest reserve (total area of 88.44 ha) and 1 freshwater managed areas (total area of 8.6 ha) and 3 turtle nesting sites (total area of 8.7 ha) were finally agreed to for long term protection in 2010. However, the network of MPAs and mangrove reserves of Qoliqoli Cokovata are not gazetted, therefore they have no legal status. However, under current Fisheries Act, the Marine Protected Areas and their management rules can be used as part of the fishing licensing conditions where fishermen with licenses to fish must comply with.

The Qoliqoli Cokovata Management Plan was first developed in 2009 together with the establishment of the Qoliqoli Cokovata Management Committee. This management plan was reviewed in 2010 and 2012 and a lot of challenges had been identified from the review that impedes on the effectiveness of its implementation. Based on these reviews recommendations were made to improve the implementation of the management plan:

1. Implementation of the management plan to be taken down to the District Development Committee;
2. Qoliqoli Cokovata Management Committee to become a decision and policy making body instead of implementation;
3. The Management Plan to be incorporated as part of the district development plans;
4. The capacity of the district development committee to be built to effectively implement the management plan and provide update to the Qoliqoli Cokovata Management Committee.

A Macuata Provincial Natural Resource Management Plan (2014 - 2018) has been developed and endorsed by the provincial council. This plan encompasses different activities for different thematic areas which include biodiversity, leadership and governance, capacity building, and sustainable financing and sustainable economic development.

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes  No

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes  No

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Animal species (please specify)	Implemented
Water quality	Proposed
Water regime monitoring	Implemented

WWF has been working on (since 2004):

1. Community Data Collection to determine fish length and sexual maturity to determine minimum size for fish catch and estimate fish stock abundance (for 20 species listed below):

*Siganus vermiculatus*  
*Bolbometopon muricatum*  
*Naso unicornis*  
*Caranx sexfasciatus*  
*Epinephelus polyphkaidon*  
*Epinephelus coioides*  
*Plectropomus laevis*  
*Plectropomus areolatus*  
*Kyphosus vaigiensis*  
*Lethrinus laticaudis*  
*Plectrorhynchus unicolor*  
*S. commerson*  
*Liza vaigiensis*  
*Valamugil engeli*  
*Scarus rivulatus*  
*Chlorurus microrhinos*  
*M. grandoculis*  
*Symphorus Nematophorus*  
*Lutjanus gibbus*  
*Cetoscarus ocellatus*

2. Community Fish Catch Data collection to determine baseline of annual catch;

3. Monitoring of all turtle species;

4. Socio-economic survey for Macuata, Sasa and Dreketi District (2016);

5. Surface water temperature monitoring with underwater temperature loggers (since 2014).

Department of Fisheries works:

1. Marine resource inventory for Qoliqoli Cokovata (ongoing);

2. Catch per unit effort for licensed fishermen (ongoing)

Proposed monitoring include:

1. Monitoring of sedimentation into the nominated site;

2. Marine biological survey (depending on funding availability).

## 6 - Additional material

### 6.1 - Additional reports and documents

#### 6.1.1 - Bibliographical references

Bolabola A, Veitayaki J, Tabunakawai K and Navuku S (2006) Socio Economic baseline Survey for Qoliqoli Cokovata Area, District of Mali, Dreketi, Sasa and Macuata Vanua Levu;

Jenkins A, Skykes H, Skelton P., Fiu M and Lovell Ed (2004) Fiji's Great Sea Reef, The first marine biodiversity survey of Cakaulevu and associated coastal habitats, WWF South Pacific, Suva;

IUCN, SPREP and GIZ (2016) Macuata Province Learning Site, MACBIO Introductory Field Visit to the Mali District, the Marine and Coastal Biodiversity Management in the Pacific Island Countries (MACBIO) project;

Navuku S, Tabunakawai K and Bolabola A (2010) Shifting perception on the impacts of MPA; a Macuata Qoliqoli Cokovata Case Study, WWF South Pacific, Suva;

Navuku S, Tabunakawai K and Bolabola A (2010) Trends and Influences in Coastal Fisheries: Exploring the Social and Economic aspects of Catch Per Unit in Qoliqoli Cokovata; Macuata Fiji, WWF South Pacific, Suva;

WWF South Pacific (2003) Setting Priorities for Marine Conservation in the Fiji Islands Marine Ecoregion, WWF South Pacific, Suva. Pg 24,28,40,41;

WWF Pacific (2014) the Economic Value of the Great Sea Reef Preliminary Findings (unpubl.).

#### 6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)

<no file available>

ii. a detailed Ecological Character Description (ECD) (in a national format)

<no file available>

iii. a description of the site in a national or regional wetland inventory

<no file available>

iv. relevant Article 3.2 reports

<no file available>

v. site management plan

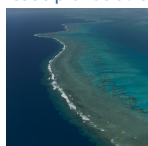
<1 file(s) uploaded>

vi. other published literature

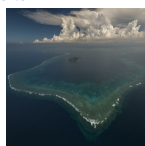
<5 file(s) uploaded>

#### 6.1.3 - Photograph(s) of the Site

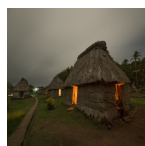
Please provide at least one photograph of the site:



Aerial - the Great Sea Reef from Nadogo, Northern Division. (© Jürgen Freund, www.juergenfreund.com 16-12-2013 )



Aerial - the Great Sea Reef surrounding Kia Island, Northern Division. (© Jürgen Freund, www.juergenfreund.com 16-12-2013 )



Night time shot of a traditional Fijian bure or homes made with thatched roofs and natural material walls. (© Jürgen Freund, www.juergenfreund.com 20-04-2013 )



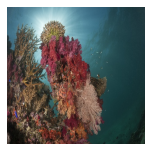
Ligau Village fishermen out at sea fishing. (© Jürgen Freund, www.juergenfreund.com 13-04-2013 )



Mta from Ligau Levu Village expertly handles a freshly caught live aggressive mudcrab from the mangroves. (© Jürgen Freund, www.juergenfreund.com 01-04-2013 )



Kataveqa Island where turtles nest and are protected. (© Jürgen Freund, www.juergenfreund.com 05-04-2013 )



Soft coral garden, a charming dive site of the Great Sea Reef's marine protected area. (© Jürgen Freund, www.juergenfreund.com 16-04-2013 )



Turtle monitors (Dau Ni Vonu) were once turtle hunters who are now using their skills to advocate for the protection of this iconic species (© Jürgen Freund, www.juergenfreund.com 01-12-2011 )



Snorkeler swims the coral reefs of the Great Sea Reefs. (© Jürgen Freund, www.juergenfreund.com 16-04-2013 )

#### 6.1.4 - Designation letter and related data

Designation letter

<1 file(s) uploaded>

Date of Designation