

**3rd Meeting of Signatories of the Memorandum of Understanding Concerning
Conservation Measures for Marine Turtles of the Atlantic Coast of Africa**

Saly, Senegal, 4-5 September 2023

CMS/Atlantic-Turtle-MOU/MOS3/Doc.4

ANALYSIS OF NATIONAL REPORTS

Overview

National Reports were compiled to evaluate the implementation of activities for the conservation and management of sea turtles in each State and to develop a guiding framework of priorities and actions for Signatory States, Range States, and for the CMS Secretariat.

The analysis was conducted using reports received both from government and other stakeholders working long-term in a country. Of the 25 Signatory and Range States in the region, National Reports were received from the governments of 10 countries by the deadline of 18 August 2023: Cameroon, Côte d'Ivoire, Ghana, Guinea Bissau, Liberia, Mauritania, Morocco, Nigeria, Senegal, and Sierra Leone. These were supplemented by National Reports submitted from stakeholders from 18 countries (listed at the end of this analysis): Angola, Benin, Cameroon, Cabo Verde, Côte d'Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea, Liberia, Morocco, Nigeria, Portugal (Azores; Madeira), Republic of Congo, Sao Tomé and Príncipe, Sierra Leone, Spain (Canary Islands), and Togo. For the purpose of this report in some instances Portugal-Azores and Portugal-Madeira are considered two separate data points. Therefore, in total 21 countries and 22 data points have been evaluated.

National Reports were not received from the Democratic Republic of Congo (Kinshasa), the Gambia, Namibia, and South Africa, and are therefore not included in this analysis.

Analysis

For countries where responses differed between reports received from government representatives and long-established project stakeholders (Cameroon, Côte d'Ivoire, Ghana, Liberia, Morocco, Nigeria, and Sierra Leone), one of the following criteria were applied:

- where possible, the difference was clarified with the stakeholder or with the input of an additional stakeholder
- if one respondent did not provide information, information was included from the other respondent
- the more conservative response was selected
- if one response was « unsure » or « none » and the other response was either low, medium, or high, then « low » was selected
- for question #6 the Focal Point's response was selected

Please note: Although references/expert opinion were requested for all responses, they have not been provided consistently. Nevertheless, all responses received were used for the analyses.

Summary of Key Results

Extensive progress has been made in the region since MOS2 in March 2008. Almost all the countries in the region have well-established sea turtle programs and the few that don't have small groups implementing some activities. Nesting beach monitoring programs are widespread; while four countries report 100% monitoring of their nesting beaches, on average 33% of the nesting beaches are currently being monitored in the countries. In-water population and habitat monitoring projects are fewer. The majority of countries have bycatch monitoring projects in artisanal and/or industrial fisheries, but bycatch reduction projects are fewer.

The largest nesting aggregations of loggerheads, green turtles, and hawksbills in the region are increasing, however the largest leatherback and olive ridley nesting populations have a decreasing trend. All threats are present at different levels of intensity in the different countries. The most commonly reported medium-high threat is incidental capture in artisanal fisheries followed by coastal degradation, meat consumption, illegal exploitation of nesting females, marine debris, and coastal erosion. Less is known about the impact of industrial fisheries. The factor most commonly reported to encourage illegal take is ease of access to the turtle resource followed by low penalties against illegal take, lack of patrolling and enforcement, and source of easy income.

Law enforcement is ranked as the most medium-high threat reduction activity needed, but implementation needs to be more extensive.

In fisheries, the most extensive method (at varying levels of intensity) implemented to reduce bycatch is safe handling of incidentally caught turtles followed by vessel monitoring system, and then onboard observer programs, inspections, law enforcement, and informative media, and training programs. Medium-high education awareness programs and stakeholder engagement address communities that interact with sea turtles, scientists, NGOs, local/fishing communities, women's groups and enforcement personnel; however important groups of people such as the fishing industry and judicial personnel need to be incorporated much more extensively. Indigenous peoples and local communities benefitting from the presence of sea turtles and sea turtle projects through education, skill development, ecotourism as well as financially.

The effects of climate change are being investigated in most countries, but need to be prioritized in the region.

The top five capacity building needs in the region are bycatch monitoring and reduction and in-water monitoring of populations and habitats followed by greater research.

Overall, sea turtle conservation and management efforts are very effective in 5 countries, partially effective in 13 countries, ineffective in 2 countries, and with one country reporting that nothing is being done. Deep sea fishing

The majority of Signatory and Range States (17 Countries) believe that the Memorandum is a useful framework for sea turtle conservation and management in their country. Four countries are unsure.

Recommendation for future analyses is that National Reports would greatly benefit from consultations between focal points and projects to synthesize existing information to avoid heterogeneity in understanding and knowledge.

1. BACKGROUND

1.1 Species, # Of Nests/Year, & Trend

Signatory State	Loggerhead (<i>Caretta caretta</i>)			Green (<i>Chelonia mydas</i>)			Leatherback (<i>Dermochelys coriacea</i>)			Hawksbill (<i>Eretmochelys imbricata</i>)			Olive ridley (<i>Lepidochelys olivacea</i>)			Kemp's ridley (<i>Lepidochelys kempii</i>)		
	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend
Angola	Nesting	1-10 nests	Unknown	Nesting	101-500 nests	Stable	Nesting	101-500 nests	Decreasing	Occurs only in-water	Unknown		Nesting	10,001-100,000 nests	Decreasing	No sighting	Unknown	Unknown
Benin	No sighting	Unknown	Unknown	Nesting	1-10 nests	Stable	Nesting	11-100 nests	Increasing	Occurs only in-water		Unknown	Nesting	101-500 nests	Increasing	No sighting	Unknown	Unknown
Cabo Verde	Nesting	More than 100,000 nests	Increasing	Nesting	1-10 nests	Increasing	Occurs only in-water		Unknown	Nesting	1-10 nests	Unknown	Nesting	1-10 nests	Increasing	No sighting	Unknown	Unknown
Cameroon	No sighting	Unknown	Unknown	Nesting	101-500 nests	Unknown	Nesting	11-100 nests	Unknown	Occurs only in-water		Unknown	Nesting	101-500 nests	Unknown	No sighting	Unknown	Unknown
Congo	No sighting	Unknown	Unknown	Nesting	1-10 nests	Increasing	Nesting	1,001-5,000 nests	Unknown	Occurs only in-water		Decreasing	Nesting	1,001-5,000 nests	Stable	No sighting	Unknown	Unknown
Côte D'Ivoire	Occurs only in-water		Unknown	Nesting	101-500 nests	Increasing	Nesting	101-500 nests	Decreasing	Occurs only in-water		Unknown	Nesting	1,001-5,000 nests	Increasing	No sighting	Unknown	Unknown
Equatorial Guinea	Occurs only in-water		Unknown	Nesting	1,001-5,000 nests	Unknown	Nesting	1,001-5,000 nests	Unknown	Occurs only in-water		Unknown	Nesting	101-500 nests	Unknown	No sighting	Unknown	Unknown
Gabon	Occurs only in-water		Unknown	Nesting	101-500 nests	Unknown	Nesting	10,001-100,000 nests	Decreasing	Nesting	11-100 nests	Unknown	Nesting	5,001-10,000 nests	Increasing	No sighting	Unknown	Unknown
Ghana	Nesting	Unknown	Unknown	Nesting	101-500 nests	Decreasing	Nesting	101-500 nests	Decreasing	Occurs only in-water		Unknown	Nesting	1,001-5,000 nests	Decreasing	No sighting	Unknown	Unknown
Guinea	No sighting	Unknown	Unknown	Nesting	11-100 nests	Unknown	Occurs only in-water		Unknown	Nesting	11-100 nests	Unknown	Nesting	11-100 nests	Unknown	No sighting	Unknown	Unknown
Guinea Bissau	Occurs only in-water		Unknown	Nesting	10,001-100,000 nests	Increasing	Nesting	Unknown	Unknown	Nesting	1-10 nests	Stable	Nesting	11-100 nests	Stable	No sighting	Unknown	Unknown

Signatory State	Loggerhead (<i>Caretta caretta</i>)			Green (<i>Chelonia mydas</i>)			Leatherback (<i>Dermochelys coriacea</i>)			Hawksbill (<i>Eretmochelys imbricata</i>)			Olive ridley (<i>Lepidochelys olivacea</i>)			Kemp's ridley (<i>Lepidochelys kempii</i>)		
	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend	Presence	# of nests/yr	Trend
Liberia	Nesting	1-10 nests	Unknown	Nesting	101-500 nests	Unknown	Nesting	101-500 nests	Unknown	Nesting	101-500 nests	Unknown	Nesting	101-500 nests	Unknown	No sighting	Unknown	Unknown
Mauritania	Nesting	1-10 nests	Unknown	Nesting	101-500 nests	Unknown	Occurs only in-water		Unknown	Nesting	1-10 nests	Unknown	Occurs only in-water		Unknown	No sighting	Unknown	Unknown
Morocco	Occurs only in-water		Stable?	Occurs only in-water		Stable?	Occurs only in-water		Decreasing?	No sighting	Unknown	Unknown	No sighting	Unknown	Unknown	No sighting	Unknown	Unknown
Nigeria	No sighting	Unknown	Unknown	Nesting	101-500 nests	Decreasing	Nesting	101-500 nests	Decreasing	Nesting	Unknown	Unknown	Nesting	1,001-5,000 nests	Decreasing	No sighting	Unknown	Unknown
Portugal--Azores	Occurs only in-water		Stable	Occurs only in-water		Unknown	Occurs only in-water		Unknown	Occurs only in-water		Unknown	Occurs only in-water		Unknown	Occurs only in-water		Unknown
Portugal--Madeira	Occurs only in-water		Increasing	Occurs only in-water		Unknown	Occurs only in-water		Unknown	Occurs only in-water		Unknown	Occurs only in-water		Unknown	Occurs only in-water		Unknown
São Tomé & Príncipe	Occurs only in-water		Unknown	Nesting	1,001-5,000 nests	Increasing	Nesting	11-100 nests	Decreasing	Nesting	101-500 nests	Increasing	Nesting	501-1000 nests	Increasing	No sighting	Unknown	Unknown
Senegal	Occurs only in-water		Decreasing	Nesting	101-500 nests	Decreasing	Occurs only in-water		Decreasing	Occurs only in-water		Unknown	Nesting	1-10 nests	Decreasing	Occurs only in-water		Unknown
Sierra Leone	Nesting	11-100 nests	Decreasing	Nesting	11-100 nests	Decreasing	Nesting	11-100 nests	Decreasing	Nesting	11-100 nests	Decreasing	Nesting	11-100 nests	Decreasing	No sighting	Unknown	Unknown
Spain--Canary Islands	Occurs only in-water		Stable	Occurs only in-water		Stable	Occurs only in-water		Stable	Occurs only in-water		Unknown	Occurs only in-water		Unknown	Occurs only in-water		Unknown
Togo	Occurs only in-water		Decreasing	Nesting	1-10 nests	Decreasing	Nesting	1-10 nests	Stable	Occurs only in-water		Decreasing	Nesting	101-500 nests	Stable	No sighting	Unknown	Unknown

Loggerhead Turtles

Loggerheads have very restricted nesting in the region with the largest population concentrated in Cabo Verde, which is increasing. Additionally the in-water populations in Portugal-Azores and Portugal-Madeira are also reported to be stable and increasing, respectively, and may comprise of individuals from the Cabo Verde population. The only other country to report some significant nesting is Sierra Leone (11-100 nests/year; decreasing population) followed by Angola, Liberia, and Mauritania with 1-10 nests/year. Elsewhere in the region loggerheads are reported from the waters of several countries.

Green Turtles

Nesting by green turtles is reported by all countries except Morocco, Portugal (Azores & Madeira), and Spain (Canary Islands) where it occurs only in-water. Guinea Bissau hosts the largest nesting population (10,001- 100,000 nests/year), which is reported to be increasing. The next significant nesting populations (1,001-5,000 nests) are in São Tomé & Príncipe (increasing trend) and Equatorial Guinea (unknown trend). The population trend varies among the other countries from unknown to stable/increasing/decreasing.

Leatherback Turtles

Gabon hosts the largest nesting population in the region (10,001-100,000 nests/year) with a decreasing trend. Elsewhere in the region the population trend is primarily decreasing or unknown, with increasing and stable nesting trends reported only in small nesting populations in Benin (11-100 nests/year) and Togo (1-10 nests/year), respectively. Canary Islands report a stable trend for their in-water population.

Hawksbill Turtles

The largest nesting populations (101-500 nests/year) are reported from Liberia and São Tomé & Príncipe, with an increasing trend in São Tomé & Príncipe. Elsewhere the population trend is primarily unknown or decreasing both on the nesting beaches and in-water. Only Guinea Bissau reports a small stable population (1-10 nests/year) in the region.

Olive Ridley Turtles

Nesting is widespread in the region. The largest nesting population is reported from Angola (10,001-100,000 nests/year) which is decreasing, followed by Gabon (5,0001-10,000 nests/year) which is increasing. Big nesting populations (1,001-5000 nests/year) also persist in Congo, Côte D'Ivoire, Ghana, and Nigeria.

Kemp's Ridley Turtles

No nesting is reported in the region, but in-water occurrence is reported from Senegal, Portugal, and Spain.

Note: If nothing was selected, then it was classified as « no sighting » with « unknown » number of nests/year and trend.

1.2—1.6 Overview of Each Country

Signatory State	Length of coastline	Percentage of nesting beaches	Percentage of nesting beaches currently monitored regularly	In-water projects to monitor habitats	In-water projects to monitor sea turtle populations	Bycatch monitoring projects	Bycatch reduction projects
Angola	1650 km	72%	6.30%	no	no	no	no
Benin	125 km	85%	60%	no	no	yes	no
Cabo Verde	1020 km	21%	82%	yes	yes	yes	yes
Cameroon	402-494 km	?	?	yes	yes	yes	yes
Congo	170 km	85%	100%	yes	yes	yes	yes
Côte D'Ivoire	515-560 km	70%	14%	no	no	yes	yes
Equatorial Guinea	300 km	60%	20%	no	no	yes	no
Gabon-AF	800 km	80%	8.50%	yes	yes	yes	yes
Ghana	550 km	90%	<10%	no	no	yes	no
Guinea-JF	300 km	Unknown	60%	no	no	yes	no
Guinea Bissau	280 km	Unknown	30 beaches	yes	yes	no	no
Liberia	570-579 km	73%%	7%	no	no	yes	no
Mauritania	754 km	20%	100%	yes	yes	yes	yes
Morocco	3500 km	0	0	no	no	yes	yes
Nigeria	853 km	50%	0%	no	no	no	no
Portugal--Azores	943 km	0	n/a	yes	yes	yes	yes
Portugal--Madeira	193+ km	none	n/a	yes	yes	yes	no
Sao Tome & Principe	209 km	18%	100%	yes	yes	yes	no
Senegal	700 km	33%	less than 50%	yes	yes	yes	yes
Sierra leone	402-506 km	30%	46%	yes	no	yes	no
Spain--Canary Islands							
Togo	50 km	100%	100%	yes	yes	yes	yes

Four countries report that 100% of their nesting beaches are currently regularly monitored: Congo, Mauritania, São Tomé & Príncipe, and Togo. For all other countries percentage of nesting beaches currently monitored varies between 0% (Nigeria) to 82%(Cabo Verde) with an average of approximately 33% of existing nesting beaches monitored (n= 11 countries). No nesting occurs in Morocco, Portugal, and Spain.

Regarding in-water and bycatch work:

- In-water projects to monitor habitats reported from 11 countries
- In-water projects to monitor sea turtle populations reported from 10 countries
- Bycatch monitoring projects reported from 17 countries
- Bycatch reduction projects are fewer and reported from 10 countries

1.7—1.10: Laws & agreements, Protected Areas, Government Agencies, NGOs, and other institutions for sea turtle conservation

All countries report existing laws and agreements, government agencies, and NGOs and institutions for sea turtle conservation. However, Protected Areas/sanctuaries/temporary exclusion zones do not exist in Ghana, Liberia, and Nigeria.

2. THREATS

2.1 Intensity of Threats Currently to Sea Turtles at the Nesting Beach and/or in the Water

All threats are present at different levels of intensity in the different countries:

- Incidental capture in artisanal fisheries (18 countries)
- Coastal degradation (16 countries)
- Meat consumption, illegal exploitation of nesting females, marine debris, and coastal erosion (15 countries each)
- Egg consumption (14 countries)
- Artificial lighting (12 countries)
- Illegal intentional harvest, incidental capture in industrial fisheries, degradation of in-water habitats, sand mining, and predation by domestic/feral animals (10countries each)
- Unregulated tourism (8 countries)
- Traditional medicine, IUU fishing, Industrial effluents, and vehicles on the beach (7 countries)
- Increasing sand temperatures (6 countries)
- Use for fat and oil consumption (5 countries)
- International trade (4 countries)
- Inshore oil pollution (4 countries)
- Use of carapace and traditional ceremony (3 countries)
- Boat strikes (2 countries)
- Use of scutes for ornaments (1 country)

Cabo Verde reports a low threat from retention of turtles in captivity for exhibition or as pets, and Côte D'Ivoire reports predation by crabs.

2.2 Artisanal Fisheries: Intensity of Threats

The artisanal fisheries evaluated are beach seines, driftnets, longlines, purse seines, set gill nets, stownets, and trawlers.

Driftnets, set gill nets, and trawlers are most commonly reported to have an impact on green turtles, leatherbacks, hawksbills, and olive ridleys with stownets having the least impact possibly because they may not be very commonly used in the region.

The countries where artisanal fisheries have low impact or are not applicable are Cabo Verde and Morocco. However, handline & hook was reported in Cabo Verde as a medium threat to loggerheads, green turtles, leatherbacks, hawksbills, and olive ridleys. The only country to report a high impact of all the artisanal fisheries is Côte D'Ivoire.

Senegal listed "fixed nets" as an additional fishery whose impact is unknown. Equatorial Guinea reported medium impact of targeted turtle-hunting wide mesh nets on green turtles, hawksbills, and olive ridleys. In Portugal-Madeira artisanal fisheries are not applicable.

However, the impact of one or more of these artisanal fisheries is unknown in almost every country.

2.3 Industrial fisheries: Intensity of threats

The industrial fisheries evaluated are bottom trawls (including shrimp trawls), purse seines, driftnets, pelagic trawls, and longlines. Far less is known about the impact of industrial fisheries in the region.

The following countries reported that the impact of all industrial fisheries in their country is unknown: Angola, Benin, Equatorial Guinea, Ghana, Guinea, São Tomé & Príncipe, and Togo. Portugal-Madeira and Nigeria reported that industrial fisheries are not applicable to them. Morocco reported low to no impact.

Primarily high impact of these fisheries (4 out of the 5 fisheries) is reported by: Congo and Côte D'Ivoire. Primarily medium impact (4 out of the 5 fisheries) is reported by: Senegal.

From among the countries that reported low to high impact, loggerheads, green turtles, leatherbacks, hawksbills, and olive ridleys are most commonly reported by bottom trawls (including shrimp trawls) followed by driftnets, longlines, pelagic trawls, and purse seines.

2.4 Factors encouraging illegal take of sea turtles

The factor most commonly reported to encourage illegal take is ease of access to the turtle resource (15 countries) followed by low penalties against illegal take (13 countries), lack of patrolling and enforcement (12 countries), and source of easy income (11 countries). Relatively high revenue from sale of sea turtle products is the next most commonly reported (8 countries), followed by lack of affordable alternatives (4 countries) and culturally acceptable alternatives (3 countries). Low cost of land near nesting beaches was only a factor in Côte D'Ivoire.

Additional factors reported are lack of compensation for damaged nets by sea turtles in Ghana, poverty in Congo, and coveting of meat and eggs for their medicinal and nutritional value in Mauritania.

Portugal-Madeira reports that none of these factors applied to them.

3. THREAT REDUCTION ACTIVITIES

3.1 Need for Threat Reduction Activities and their Implementation

Activity	Need (Medium-High)	Implementation				
		Moderate + Extensive	Low	None	Unknown	No response
Law enforcement	19	11	7			1
Monitoring eggs and nesting females (day time)	18	11	5	1		1
Monitoring nesting females (night patrols)	17	9	7	1		
Regular removal of debris/ beach clean ups	17	8	7		1	1
In-situ nest protection from predators/ high sand temperatures	14	5	7	1		1
Nest relocation (hatcheries, other sections of beach)	14	7	4	2		1
Coastal protection from development/sand mining/pollution	14	8	5	1		
Predator control	12	5	3	3		1
Beach restoration	10	3	4	3		
Light pollution reduction	11	3	5	3		
Vehicle access restrictions	9	3	3	3		

Law enforcement is ranked as the most medium-high threat reduction activity (19 countries) that needs to be implemented, but implementation is at a moderate to high level in 11 of the countries.

Monitoring of females/eggs during the day (n=18 countries) and night (17 countries) is implemented moderately-extensively in 11 and 9 countries, respectively. Removal of debris/beach clean ups (n=17 countries) follows with implementation at a moderate level in 8 of the countries.

The lowest medium-high threat reduction activity required in the region is vehicle access restrictions (9 countries) with implementation in only 3 of the countries.

Senegal identified training and awareness-raising activities for local stakeholders as a need that is being moderately implemented.

3.2 Methods Being Used Currently to Address Bycatch of Sea Turtles and Level of Implementation

The most extensive method (at Low, Moderate, and High levels in artisanal and/or industrial fisheries) being implemented to address bycatch is safe handling of incidentally caught turtles (14 countries), followed by vessel monitoring system (13 countries), and then onboard observer programs, inspections, law enforcement, and informative media (12 countries each), and training programs (11 countries). All other activities occur in less than 10 countries with devices that allow sea turtles to avoid nets and measures to avoid turtles in purse seine fisheries being the least widely implemented (3 countries each).

In Morocco, all commercial vessels have to declare observations of vulnerable species including sea turtles, and São Tomé & Príncipe have programs to support fishermen with materials to fix fishing gear if sea turtles are released alive in gillnet, driftnet, longline and purse seine fisheries.

Cabo Verde and Guinea Bissau are the only countries not implementing any of the measures listed. Angola and Equatorial Guinea did not provide any information.

3.3 Efforts currently to recover degraded marine turtle habitats

Coral reefs: 4 countries indicated they have efforts to recover coral reefs (Côte D'Ivoire, Liberia, Mauritania, Morocco) whereas 9 countries do not, Ghana is unsure, and this is not applicable to 6 countries.

Seagrass: 5 countries indicated they have efforts to recover seagrass beds (Cabo Verde, Côte D'Ivoire, Liberia, Mauritania, , Sierra Leone) whereas 9 countries do not, 2 are unsure (Ghana, Senegal), and this is not applicable to 5 countries.

Recovery of mangroves is cited by Côte D'Ivoire, beach clean-ups by Nigeria, and it is unclear for which other habitats Mauritania has recovery efforts.

3.4 Touristic Activities

3.4.1 Extent of Touristic Activities

Touristic activities are reported by 15 countries whereas 6 countries indicated they do not have these activities (Guinea, Mauritania, Morocco, Nigeria, Portugal-Azores, Sierra Leone) and Liberia is unsure.

In the 14 countries that have touristic activities:

- Nesting turtle observations: in 12 countries, but not in Portugal-Madeira and Spain-Canary Islands.
- Hatchling releases: in 11 countries, but not in Congo, Portugal-Madeira, and Spain-Canary Islands.
- In Portugal-Madeira, whale watching includes pelagic turtle watching.

3.4.2 Standard and Government-Certified Protocols to Ensure that Touristic Activities do not Harm Turtles and/or Hatchlings

Only 10 countries have any standard and government-certified protocols to ensure that touristic activities do not harm turtles and/or hatchlings. Eight countries (Benin, Congo, Ghana, Guinea, Nigeria, Sierra Leone, Togo) do not and three are unsure (Liberia, Mauritania, Senegal).

In the 10 countries that have any standard and government-certified protocols that have been implemented, the protocols are considered effective in 7 countries. In Spain-Canary Islands they are not considered effective. Cameroon and Equatorial Guinea are unsure about the effectiveness of these protocols.

3.5 Education/Awareness Programs Currently in Place

Medium-high education awareness programs in place include:

- Communities that interact with sea turtles, scientists, and NGOs (15 countries each)
- Local/fishing communities, scientists, and enforcement personnel (14 countries each)
- Policy makers, media and students (12 countries)are the next most targeted group
- Teachers (11 countries)
- Women's groups, tourists, and the military/navy/police (10 countries each)
- Fishing industry (7 countries)
- Indigenous groups (6 countries)
- Judicial personnel (2 countries)

3.6 Involvement of Indigenous Peoples and Local Communities

Traditional knowledge (including beliefs, taboos, etc.) is being incorporated into conservation efforts in 17 countries, but not in Portugal-Madeira and Togo. Portugal-Azores is unsure, and it is not applicable to Spain-Canary Islands.

Indigenous peoples and local communities participate in conservation and management planning/decision making in 16 countries, but not in Cameroon, Nigeria, and Portugal-Madeira. Portugal-Azores is unsure, and it is not applicable to Spain-Canary Islands.

Indigenous peoples and local communities benefitting from the presence of sea turtles and sea turtle projects in 18 countries, but not in Togo. Senegal is unsure, and it is not applicable to Spain-Canary Islands.

In countries where indigenous peoples and local communities are benefitting from the presence of sea turtles and sea turtle projects, the greatest benefits are:

- Education (19 countries)
- Financially and skill development (17 countries)
- Ecotourism (15 countries)
- Community infrastructure development (14 countries)
- Alternative livelihoods (13 countries)

Other benefits are derived from the whale watching industry in Portugal-Madeira, and from turtle tagging for experimental fisheries work in Mauritania.

3.7 Climate Change

The effects of climate change are being investigated in 15 countries. Climate change studies are not underway in Benin and Togo. Liberia and Congo are unsure if any climate change impacts are being evaluated.

The climate change work being undertaken includes/has included:

- the West African Coastal Area Management Program (WACA) that aims to help countries harmonize their management of infrastructure and natural resources in order to increase their resilience to climate change in general, and to coastal erosion and flooding: Côte D'Ivoire
- unspecified projects: Cameroon
- Sand temperature evaluation: Gabon
- determination of the impact of temperature on sex ration and fitness of sea turtles: Ghana
- unspecified student project: Guinea
- unspecified project: Guinea
- unspecified project: Mauritania
- very general unspecified work: Morocco
- use of different modelling approaches (dispersal models and statistical models) to make predictions about the distribution of oceanic-juvenile loggerheads under climate change scenarios: Portugal-Azores
- meteorological work: Portugal-Madeira
- unspecified student projects at the institute of Marine Biology and Oceanography and at the University of Sierra Leone: Sierra Leone
- monitoring of oceanographic parameters: Spain-Canary Islands

4. STAKEHOLDER PARTICIPATION

Local stakeholders most engaged in activities (medium-high) to conserve sea turtles include:

- communities that interact with the turtles, local/fishing communities, and enforcement personnel (15 countries each)
- scientists, and NGOs (14 countries each)
- women's groups (13 countries)
- media (12 countries)
- students (11 countries)
- teachers (10 countries)
- tourists and military/navy/police (9 countries)
- Fishing industry and indigenous groups (6 countries)
- Judicial personnel (3 countries)

5. CAPACITY-BUILDING NEEDS

TRAINING REQUEST	# OF COUNTRIES	COMMENTS
Bycatch monitoring	19	Togo: To motivate ecoguards.
Bycatch reduction	18	Togo: For coastal fisheries control Portugal-Madeira: Experimental fishing project is needed.
In-water habitat monitoring	16	Togo: To reduce by in coastal fishery nets.
In-water sea turtle population monitoring	16	Togo: To reduce by in coastal fishery nets.
Research	16	Portugal-Madeira: Large collaborative satellite tagging would be needed again. Togo: Some subjects need to be documented. Mass strandings of dead turtles on beaches. We also need to understand certain ecological parameters, in particular the significant presence of individuals of different green turtle age classes.
Training of law enforcement personnel	15	Togo: To enable ecoguards and monitoring coordinators to better implement the monitoring protocol. Portugal-Madeira: This year a new project started
Habitat restoration	15	Togo: It would be difficult, but if there are resources, it would be a very good thing. The coast is badly affected by coastal erosion.
Socio-economic studies	14	
Ecotourism	14	Portugal-Madeira: Experimental fishing project is needed. Togo: To enhance the value of the sea turtle conservation program.
National database	13	
Data management	13	Togo: Data need to be managed.
Community engagement/empowerment	12	Togo: Awareness in among coastal fisheries communities. Senegal: Community empowerment. Portugal-Madeira: This year a new project started this.
Light pollution control	11	
Grant writing	10	Togo: This is a weak point in the sea turtle monitoring network. There is a need for capacity building.
In-situ nest protection/predator control	10	Togo: To reduce nest collection by local communities

TRAINING REQUEST	# OF COUNTRIES	COMMENTS
Hatcheries	10	Togo: To refresh 3 hatcheries that are in bad condition. Senegal: Nest relocation due to threats of inundation and trampling.
Nesting beach monitoring	9	Cameroon: Primarily for the local people, NGOs, and relevant Ministries. Togo: For ecoguards to better organize themselves. Liberia: There is a serious need to survey the coastline to identify other nesting hotspots and in-water.
Other	0	Côte D'Ivoire: Establishment of MPAs. Benin: Strengthening sea turtle rescue, rehabilitation and education centers in coastal towns.

6. ABIDJAN MARINE TURTLE MOU

6.1 Current Sea Turtle Conservation and Management Efforts are described as follows:

Very effective	5 countries	Cabo Verde, Congo, Gabon, Guinea, São Tomé & Príncipe
Partially effective	13 countries	Angola, Benin, Côte D'Ivoire, Equatorial Guinea, Ghana, Guinea Bissau, Liberia, Mauritania, Morocco, Portugal, Spain-Canary Islands, Senegal, Sierra Leone
Ineffective	2 countries	Cameroon, Nigeria
Nothing is done	1 country	Togo

6.2 Do you believe that the « Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa » is a useful framework for conservation and management in your country?

The majority of Signatory and Range States (17 Countries) believe that the Memorandum is a useful framework for sea turtle conservation and management in their country. Four countries are unsure.