

TRAFFIC
the wildlife trade monitoring network

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A RAPID ASSESSMENT OF THE
**ARTISANAL
SHARK TRADE**
IN THE REPUBLIC OF THE CONGO

Constant Momballa Mbun

TRAFFIC REPORT

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LEAD AUTHOR

Constant Momballa Mbun

PROJECT SUPERVISOR

Camilla Floros

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Marcus Cornthwaite



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LIST OF ABBREVIATIONS

AU	African Union
CAPAP	Pointe-Noire Artisanal Fishery Support Centre (Centre d'Appui à la Pêche Artisanale de Pointe-Noire)
CBO	Community Based Organisation
CDNP	Conkouati-Douli National Park
CECAF	Fishery Committee for the Eastern Central Atlantic
CFAF	franc de la Communauté financière africaine BEAC, (African Financial Community Franc BEAC)
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora (La Convention sur le commerce international des espèces de faune et de flore sauvages menacées d'extinction)
CMS	Convention on the Conservation of Migratory Species of Wild Animals (Convention sur la conservation des espèces migratrices appartenant à la faune sauvage)
COFI	Committee on Fisheries (Comité des Pêches)
COMIFAC	Central African Forest Commission
COPACE	Comité des Pêches pour l'Atlantique Centre-Est
DDPAPN/K (DDPAPN-K)	Departmental Director (Directorate) for Fisheries and Aquaculture for Pointe-Noire and Kouilou
DFAP	Director/Department of Wildlife and Protected Areas
DGPA	General Director (Directorate) of Fisheries and Aquaculture
EEZ	Exclusive Economic Zone
ENACT	Enhancing Africa's Response to Combating Transnational Organized Crime program
FAO	Food and Agriculture Organization of the United Nations
INN	Illicite, Non déclarée et Non réglementée
IPOA-Sharks	International Plan of Action for Conservation and Management of Sharks
ISS	Institute for Security Studies
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unreported and Unregulated
LATF	Lusaka Agreement Task Force
MAEP	Ministry of Agriculture, Livestock and Fisheries
MEF	Ministry of Forestry Economy
MPMC	Ministry of Maritime and Continental Fisheries
mt	metric tonne
n.d.	Not dated (for references)
nm	nautical mile
NPOA-Sharks	National Plan of Action for the Conservation and Management of Sharks
PAN-Requins	Plan d'Action National pour la Conservation et la Gestion des Requins
PECHVAL	Projet d'Etude pour l'amélioration de la chaîne de valeurs des produits halieutiques (Fisheries value chain improvement Study Project)
SAR	Shark Assessment Report
SDG	UN Sustainable Development Goals
Sharks MOU	Memorandum of Understanding on the Conservation of Migratory Sharks
TPA	Transfrontier Protected Area
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature

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OVERVIEW OF FINDINGS

SHARK FISHING IN THE CONGO

95% of the Congo's total reported shark catch in 2017 (**1,766,589 kg**) consisted of artisanal fishery

this represented **32%** of the total artisanal fish catch for that year

All the meat is **traded locally** to supply part of the domestic demand for fish while all the fins are exported

SPECIES AND CONSERVATION STATUS

The Republic of the Congo was the **fourth largest catcher of hammerheads** globally between 2007 and 2017, equivalent to

10,054 mt

42 species of sharks and rays are landed, many of which are considered **threatened by the IUCN Red List**

15 of these are in **CITES Appendix II**

CARRYING CAPACITY AND QUOTAS

The Congo's Exclusive Economic Zone's carrying capacity is estimated at **30 industrial vessels ...**

This is far below the active fleet of more than:

110 + 700
INDUSTRIAL VESSELS **ARTISANAL BOATS**

including

240 motorised
"Popo"
boats

450 motorised/
non-motorised
"Vili" boats

ADDITIONAL CHALLENGES AND THREATS

Petroleum platforms constitute a major constraint to artisanal fishing by **reducing the artisanal fishing zone by**

2 THIRDS

The Congo has ratified CITES and other international conventions and regional instruments relevant to shark conservation and management.

However, the country still needs to align its national legislation to meet its commitment under these instruments.

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

International measures to protect sharks threatened by overexploitation are impaired by limited capacities of important shark catching countries to ensure sustainable and legal shark fishing and trade. The Republic of the Congo was the fourth largest catcher of hammerheads globally between 2000 and 2017, and has a thriving artisanal fishing sector landing at least 15 sharks and rays species listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As such it has been identified by a United Nation's Food and Agricultural Organization (FAO) study on CITES shark listings as a priority country where improved legislative and management capacities will have the greatest positive influence on the sustainable use of shark and ray products. In this study we aimed to assess rapidly the artisanal shark fishery in the Congo¹ to understand the trade, and to examine legislative, administrative, and operational measures for sustainable and legal shark fishing and trade.

Thirty randomly selected consenting fishers and fish processors were interviewed in March and April 2019 in Songolo, which is the main artisanal fishery landing site (CAPAP), market and village in Pointe-Noire. Additional information was gathered from secondary sources and non-structured interviews between March and November 2019 with key informants and stakeholder institutions in Brazzaville and Pointe-Noire.

The Congo is a Party to CITES and the Convention on the Conservation of Migratory Species of Wild Animals (CMS), a member of the FAO Committee on Fisheries (COFI) and signatory to the CMS Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOU)². The Congo has also publicly committed to implement the AU-led African Strategy on Combating Illegal Exploitation and Illegal Trade in Wild Fauna and Flora in Africa. These bodies have all taken decisions for the conservation and management of sharks, but the national legislation of the Congo has no corresponding provisions. Sharks are only mentioned in the national legislation regulating maritime fishing for economic harvest, fish supply for food and state revenue collection through a demand-based quota system. The National Plan of Action for the Conservation and Management of Sharks (NPOA-Sharks) envisaged in early 2000 has never been developed.

The official statistics on fishery categories and fishing types in line with the quota system lack data on illegal fishing and fish stocks, thereby being inadequate to monitor against overcapacity, overfishing, and illegal, unreported and unregulated (IUU) fishing, and the threat of overexploitation with dire effects on the fish resources and the local economy. Annual surveys by the FAO's Fishery Committee for the Eastern Central Atlantic (CECAF) and a recent catch data collection initiative by the Wildlife Conservation Society (WCS) partially filled this gap but need to be complemented and extended over a longer period.

Directed artisanal shark fishing by migrant fishers using "Popo" boats (large motorised boats) has been an important fishery in Pointe-Noire since the early 1980s, driven by extensive demand from East and South East Asia for fins. It is also driven by local demand for processed shark meat, which reduces any incentive for the wasteful practice of on-board shark finning. Of the 1,868,701 kg of shark catch reported in 2017, 95% (1,766,589 kg) was by artisanal fisheries, representing 32% of the total artisanal fish catch. The meat is processed and sold in the local markets for domestic consumption. There are no records of fin exports in the national fisheries or customs data, even though Hong Kong Special Administrative Region is a major importer which recorded total imports of 131,594 kg of dried shark fins from the Congo between 2005 and 2019. Although the artisanal shark fishery targets adults due to the higher value of their fins and meat for processing, substantial quantities of juvenile hammerheads and rays are landed suggesting that the authorised nets are not adapted to all the shark species.

The active fleet of more than 110 industrial vessels and under 700 artisanal boats (240 motorised "Popo" boats and 450 motorised/non-motorised "Vili" boats) far exceeds the Congo's Exclusive Economic Zone's (EEZ) carrying capacity estimated at 30 industrial vessels (Maloueki 2005). In fact, more Congolese artisanal fishers claim to be turning towards shark fishing because of increased scarcity of other stocks overfished by industrial fisheries. Besides overexploitation, artisanal fishers consider industrial Chinese trawlers as their biggest threat, which illegally operate in artisanal fishing zones and destroy their gear as well as carrying out wider IUU fishing in the entire EEZ. This threat is recognised by the Departmental Directorate of Fisheries and Aquaculture for Pointe-Noire/Kouilou (DDPAPN/K) in its 2017 fishing records and other studies of the Congo's EEZ. The huge number of petroleum platforms is also a major constraint to artisanal fisheries reducing the artisanal fishing zone by two thirds and polluting the coastal waters.

¹ Throughout this report "the Congo" refers to "the Republic of the Congo" unless indicated otherwise.

² FAO COFI developed the International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) to encourage states that contribute to shark fishing mortality on a species or stock to participate in its management. It is non-binding but all concerned states are encouraged to implement it voluntarily through the NPOA-Sharks process (FAO 1999).

An assessment of the environmental, social and economic importance of sharks and the threats to the resources and to artisanal fisheries in general underline the urgency for the development, implementation, and monitoring of an NPOA-Sharks for the Congo as earlier proposed by the government and recommended by its partners for a more viable and sustainable fishery.

It is therefore recommended that the Congolese government, in collaboration with its partner organisations, should develop a concerted approach to shark management that reconciles the triple interests of (1) protein supply and food security; (2) revenue creation and local livelihood improvement;

and (3) biodiversity conservation and protection of marine ecosystems, all in line with the 14th Sustainable Development Goal (SDG14) on the conservation and sustainable use of ocean-based resources through international law.

The recommendations aim at effectively developing an NPOA-Sharks in line with the IPOA-Sharks prescriptions and ensuring that the reviewed wildlife code aligns the national interests with the ratified international instruments, notably CITES and CMS and other strategies, such as the African Strategy on Combating Illegal Exploitation and Illegal Trade in Wild Fauna and Flora in Africa (African Union 2015).

RÉSUMÉ

Les mesures internationales visant à protéger les requins menacés par la surexploitation sont entravées par les capacités limitées des principaux pays de capture de requins à assurer une pêche et un commerce durables et légaux. La République du Congo, apparaît comme le quatrième plus grand pays de pêche de requins-marteaux halicornes entre 2000 et 2017 avec un secteur de pêche artisanal florissant comptant au moins 15 espèces de requins et raies inscrites à la Convention sur le commerce international des espèces de faune et de flore sauvages menacées d'extinction (CITES). Le pays a été identifié comme prioritaire par une étude de l'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO) sur l'inscription de requins par la CITES, où l'amélioration du cadre légal et réglementaire de gestion aura une influence positive sur l'utilisation durable des produits dérivés de requins et de raies. Cette étude vise à évaluer rapidement la pêche artisanale des requins au Congo³ afin de mieux comprendre le commerce, et d'examiner les mesures législatives, administratives et opérationnelles favorables à une pêche et un commerce durables et légaux de requins.

Trente pêcheurs et transformateurs de poissons consentants, sélectionnés de façon aléatoire, ont été interrogés en mars et en avril 2019 à Songolo, site principal de débarquement (CAPAP), du marché et du village de la pêche artisanale à Pointe-Noire. Des informations supplémentaires ont été recueillies à Brazzaville et à Pointe-Noire entre mars et novembre 2019, auprès des sources secondaires et à travers des entretiens non structurés avec des personnes ressources et institutions parties prenantes.

Le Congo est Partie à la CITES et à la Convention sur la conservation des espèces migratrices appartenant à la faune sauvage (CMS), est membre du Comité des Pêches (COFI) de la FAO, et signataire du Mémorandum d'Entente sur la Conservation des Requins Migrateurs (MdE Requins) de la CMS⁴. Le Congo s'est également engagé publiquement à mettre en œuvre la Stratégie Africaine sur la lutte contre l'Exploitation Illégale et le Commerce Illicite de la Faune et de la Flore Sauvages en Afrique pilotée par l'Union Africaine. Ces structures ont pris des décisions en matière de conservation et de gestion des requins, mais la loi nationale n'a pas encore domestiqué cet arsenal en mettant en place des dispositions juridiques correspondantes. Les requins ne sont mentionnés que dans la loi nationale régissant la pêche maritime aux fins de productivité économique, d'approvisionnement en poisson pour l'alimentation, et de collecte des recettes de l'État par le biais d'un système de quotas basé sur la demande. Le Plan d'Action National pour la conservation et la gestion des requins (PAN-requins) envisagé au début des années 2000 n'a jamais été élaboré.

Les statistiques officielles sur les catégories de pêche et les types de pêche conformes au système de quotas ne contiennent pas de données sur la pêche illégale et les stocks de poissons, ce qui ne permet pas de surveiller la surpêche et la pêche Illicite, Non déclarée et Non réglementée (INN), la surcapacité et la menace de surexploitation qui ont des effets néfastes sur les ressources halieutiques et l'économie locale. Les enquêtes annuelles menées par le Comité des Pêches pour l'Atlantique Centre-Est (COPACE) de la FAO et une récente initiative de collecte de données sur les captures par la WCS comblent partiellement cette lacune, mais nécessitent d'être complétées et étendues sur une plus longue période.

La pêche artisanale ciblée aux requins par les pêcheurs migrants à l'aide des bateaux « Popo » (grands bateaux

³ Tout au long de ce rapport, « le Congo » fait référence à « la République du Congo », sauf indication contraire.

⁴ Le COFI FAO a développé le Plan d'Actions International pour la Conservation et la Gestion des requins (PAI-requins) pour encourager les États qui contribuent à la mortalité par pêche au requin sur une espèce ou un stock à participer à sa gestion. Il n'est pas contraignant, mais tous les États concernés sont encouragés à le mettre volontairement en œuvre dans le cadre du processus du PAN-requins (FAO 1999).

motorisés), représente une proportion importante de prises à Pointe-Noire depuis le début des années 1980, stimulée par la demande croissante de l'Asie de l'Est et du Sud-Est pour les ailerons. Elle est également motivée par la demande locale de viande de requins transformée, ce qui réduit toute incitation à la pratique inhumaine et destructrice de l'enlèvement des ailerons de requins à bord. Sur les 1 868 701 kgs de prises de requins recensées en 2017, 95% (1 766 589 kgs) provenaient de la pêche artisanale, soit 32% du total des prises artisanales de poissons. La viande est transformée et vendue sur le marché local et intérieur, tandis que les ailerons sont transformés et très probablement envoyés à la région administrative spéciale de Hong Kong, qui a enregistré des importations totales de 131 594 kgs d'ailerons de requins du Congo entre 2005 et 2019. Bien que la pêche artisanale des requins cible les adultes en raison de la valeur plus élevée de leurs ailerons et de leur viande pour la transformation, des quantités considérables de requins-marteaux et de raies juvéniles sont débarquées, ce qui suggère que les filets autorisés ne sont pas adaptés à toutes les espèces de requins.

La flotte active constituée de plus de 110 navires industriels et de moins de 700 bateaux artisanaux (240 bateaux motorisés « Popo » et 450 bateaux motorisés / non motorisés « Vili ») dépasse largement la capacité de charge de la Zone Exclusive Economique (ZEE) du Congo estimée à 30 navires industriels (Maloueki 2005). En fait, de plus en plus de pêcheurs artisanaux congolais prétendent vouloir se tourner vers la pêche au requin en raison de la raréfaction d'autres stocks surexploités par les pêcheries industrielles. Outre la surexploitation, les pêcheurs artisanaux considèrent les chalutiers industriels chinois comme étant leur plus grande menace. Ceux-ci opèrent illégalement dans les zones de pêche artisanale et se faisant, détruisent leurs engins en entreprenant également une pêche INN plus étendue dans

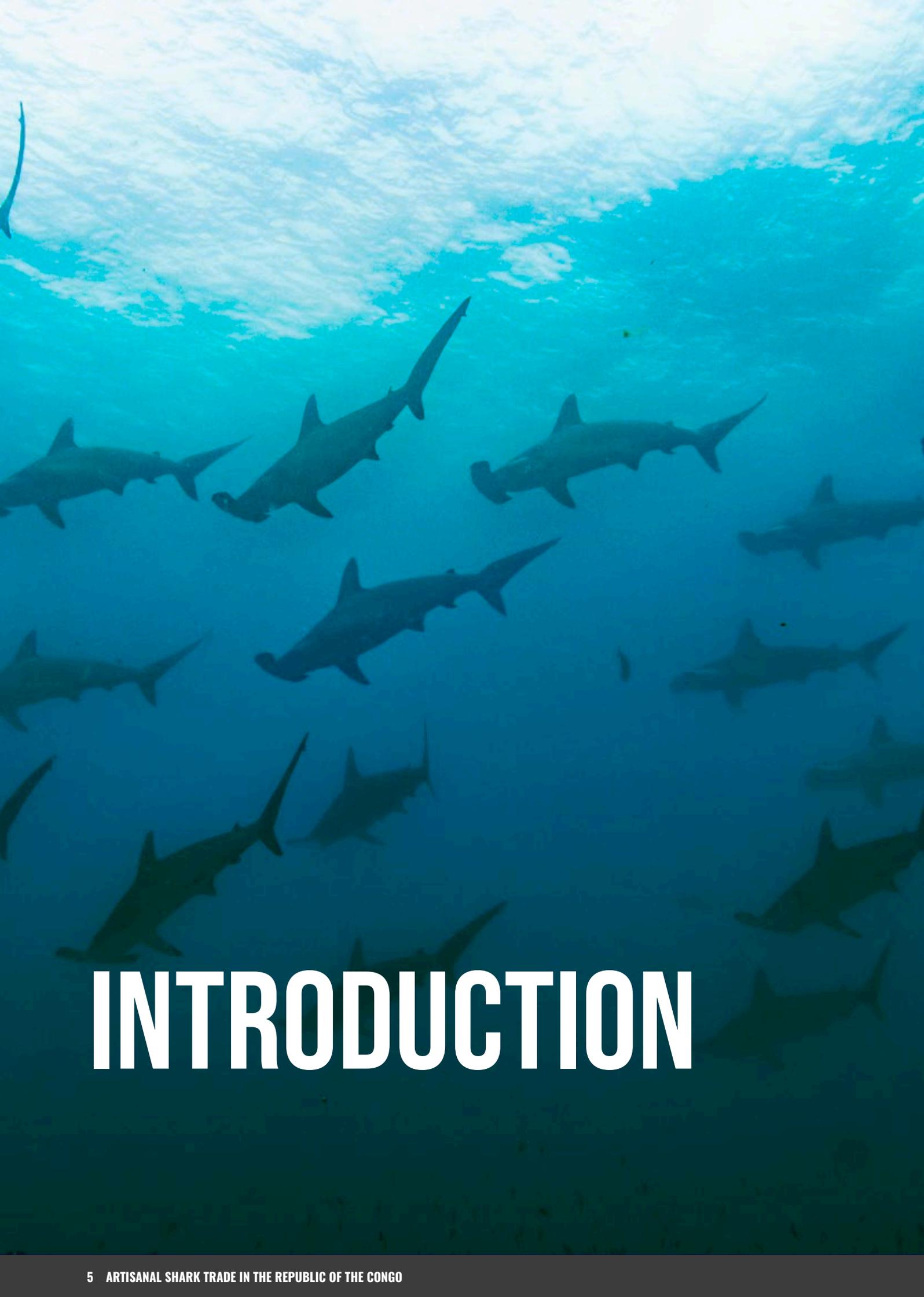
toute la ZEE. C'est une menace reconnue par la Direction Départementale des Pêches et de l'Aquaculture de Pointe-Noire/Kouilou (DDPAPN/K) dans son rapport de pêche 2017 et par d'autres études sur la ZEE du Congo. Le nombre impressionnant de plates-formes pétrolières qui réduit la zone de pêche artisanale de deux tiers, et pollue les eaux côtières, représente également une contrainte majeure pour la pêche artisanale.

Une évaluation de l'importance environnementale, sociale, et économique des requins et des menaces pesant sur la ressource et la pêche artisanale en général, souligne l'urgence pour le Congo d'élaborer, mettre en œuvre et suivre un PAN-requin, tel que proposé précédemment par le gouvernement et recommandé par ses partenaires pour asseoir une pêche plus viable et durable.

Il est donc recommandé au gouvernement congolais de développer, en collaboration avec ses organisations partenaires, une approche concertée de la gestion des requins qui concilie un triple intérêt, conforme au 14ème Objectif de Développement Durable (ODD14) sur la conservation et l'utilisation durable des ressources océaniques par le biais des législations internationales, à savoir (1) l'approvisionnement en protéines et la sécurité alimentaire; (2) la création de revenus et l'amélioration des moyens locaux de subsistance; et (3) la conservation de la biodiversité et la protection des écosystèmes marins.

Les recommandations visent à développer efficacement un PAN-requins et à garantir que le code de la faune révisé aligne les intérêts nationaux sur les instruments internationaux ratifiés, notamment la CITES et la CMS ainsi que d'autres stratégies comme la Stratégie Africaine sur la lutte contre l'Exploitation Illégale et le Commerce Illicite de la Faune et de la Flore Sauvages en Afrique (African Union 2015).





INTRODUCTION

INTRODUCTION

Sharks⁵ are a diverse group of fish (about 1,200 known species) that have survived more than 400 million years of evolution across all marine ecosystems. Many shark species live as predators at the top of the food chain, with their abundance often low compared to organisms at lower trophic levels (Dulvy *et al.*, 2017).

Many are migratory and have life histories that are characterised by late sexual maturity, slow growth, and low reproductive rates. The combination of these biological and ecological characteristics makes sharks particularly vulnerable to overexploitation and presents an array of challenges to fisheries management and conservation. Sharks are directly targeted in some fisheries, are a secondary catch in fisheries targeting other species or form part of the catch in generalised multi-species fisheries. Many shark species have been overexploited because their fins are highly sought after for shark fin soup. Clarke *et al.* (2006) estimated that up to 73 million individual sharks are killed globally each year. Less than 10 years later Worm *et al.* (2013) factored in discards from shark finning⁶ and artisanal fisheries, giving a conservative estimate for the period 2000–2010 of 100 million sharks per year, equivalent to 1.44 million metric tonnes (mt). These figures are consistent with estimates for the period 2007–2017 of about 600,000 mt yearly by the top 20 shark catchers alone (Okes & Sant 2019).

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has provided protection for some sharks from overexploitation driven by international trade demand by listing 48 shark and ray species in Appendices I and II between 2003 and 2019 (CITES 2014, 2018; CITES Secretariat 2019; van Vliet & Mbazza 2011). However, two studies focused on implementation of the CITES provisions raise concerns about the shark management and conservation capacities of many countries, and offer specific recommendations for improved implementation of their commitments with regards to CITES listings and shark fisheries management (Mundy-Taylor & Crook 2013; Vasconcellos *et al.*, 2018).

The 2018 assessment identifies the Congo as one of the 50 priority countries with important governance and capacity needs to implement CITES shark listings and describes which actions will have the greatest positive influence on sustainable use of shark and ray products both nationally and globally (Vasconcellos *et al.*, 2018). These include revision of the national wildlife legislation in conformity with ratified international conventions, ratification and implementation of other relevant conventions, building capacity to implement the CITES shark listings, and initiating broader artisanal fisheries management actions through the design and implementation of a National Plan of Action for the Conservation and Management of Sharks (NPOA-Sharks).

⁵ Throughout this report, unless otherwise specified, the term “sharks” refers to all species of sharks, skates, rays and chimaeras (Class Chondrichthyes).

⁶ “Shark finning” is defined as the onboard removal of a shark’s fins and the discarding of the body at sea. (Clarke *et al.*, 2006).

**100
MILLION**

sharks were estimated to be killed each year between 2000–2010, up from an estimate of **73 million per year** in 2006

**600,000
METRIC TONNES**

of sharks were caught per year by the world’s top 20 catchers alone between 2007–2017.

The indigenous population along the Congolese coastline in Pointe-Noire has traditionally fished and consumed small quantities of sharks as incidental catches in near shore small pelagic fishing (Maloueki 2005). However, since the early 1980s, artisanal migrant fishers increasingly targeted sharks for commercial purposes to take advantage of demand from East and Southeast Asia for fins and the local demand for salted fish of which sharks are a preferred species group (Maloueki 2005; Nguingiri 1995). Targeted artisanal shark fishing stopped in 2001 when it was prohibited by the government, but soon resumed after the government lifted the ban with the aim of carrying out a shark inventory using catch data (B.C. Atsango, *pers. comm.*, 27th March 2019).

The fishery has continued unabated in a context of increased pressure on other fishing stocks by both industrial fishing vessels and increased professional artisanal fishing efforts (Belhabib *et al.*, 2018; Polidoro *et al.*, 2017). According to the Food and Agriculture Organization of the United Nations' (FAO) FishStats database, between 2000 and 2017, the Congo harvested 23,073 mt of sharks and rays recorded as 10,054 mt of requiem sharks *nei*, 8,687 mt of hammerhead sharks *nei* and 4,332 mt of rays, stingrays and mantas *nei*.⁷ These amount to the fourth largest hammerhead *nei* catch (10.4%) and fifth largest requiem sharks *nei* catch (1.8%) globally over this period (FAO FishStatJ 2020).

Records of shark and ray catches, landed in Pointe-Noire from July 2018 to July 2019, report average daily catches of 100–400 individuals belonging to 42 shark and ray species (Wildlife Conservation Society & Departmental Directorate of Fisheries and Aquaculture for Pointe-Noire/Kouilou n.d.). These include a total of 15 species protected from unregulated international trade under CITES Appendix II as of November 2019, up from four in 2014 (CITES 2014, 2018; CITES Secretariat 2019). It also includes many shark species that are assessed as threatened (that is, Vulnerable, Endangered or Critically Endangered) on the IUCN Red List of Endangered Species. The meat is traded in the Pointe-Noire artisanal fish market to supply part of the domestic demand for fish which is met by both domestic production and imports.⁸

It is commonly acknowledged at the Pointe-Noire artisanal fish market that all the fins are exported to China, although they are most likely going to Hong Kong Special Administrative Region (hereafter "Hong Kong"), which recorded total imports of 131,594 kg of shark fins from the Congo between 2005



Since the early 1980s, artisanal migrant fishers increasingly targeted sharks for commercial purposes to take advantage of demand from East and Southeast Asia for fins.

It is commonly acknowledged at the Pointe-Noire artisanal fish market that all the fins are exported to China, although they are most likely going to Hong Kong SAR.

and 2019 (Hong Kong Census and Statistics Department n.d.). However, the CITES trade database contains no records of trade in any shark or ray products from the Congo. And none of these species is included in the corresponding class of wildlife whose exploitation is regulated by national legislation. This suggests that fins from CITES-listed species are probably being exported without the required CITES permits.

The Congo has ratified CITES and other international conventions relevant to shark conservation and management, notably the Convention on the Conservation of Migratory Species of Wild Animals (CMS) and the Lusaka Agreement on Co-Operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, referred to as the Lusaka Agreement. The Congo further publicly committed to implement the African Union (AU)-led African Strategy on Combating Illegal Exploitation and Illegal Trade

⁷ *nei* stands for Not Enough Information. It is used in databases to indicate where information available does not permit a more specific entry. For instance, the FAO database records species level data for the three different species of hammerheads, but for countries that do not provide this level of detail it has a fourth entry called hammerhead *nei*.

⁸ The Republic of the Congo has a relatively large estimated annual per capita consumption of 26.5 kg of fish, compared to 9.8 kg per capita for Africa and under 20 kg per capita globally (FAO.ORG n.d.-b).

in Wild Fauna and Flora in Africa which includes several references to IUU fisheries and sharks (African Union 2015). This continent-wide spanning strategy encourages members to adhere to, ratify, domesticate, and effectively implement international agreements related to sustainable management, conservation, and enforcement. However, the country still needs to align its national legislation to meet its commitments under these agreements. These legislative shortcomings are compounded by inadequate baseline information on shark and ray populations in Congolese waters, the lack of accurate catch and trade records, insufficient information on the impact of fisheries on shark populations, industrial-artisanal fishing conflicts, and the absence of a management plan.

This situation raises concerns about the status of shark stocks in Congolese waters and the sustainability of shark fishing and associated trading operations, the legality

of the shark fin trade and the capacity of the country to monitor and regulate fishing activities that affect the shark fishery. In effect, the Congolese fisheries department, non-governmental organisations, artisanal fishing associations, fishmongers and fishermen have raised concerns that unsustainable shark fishing and unauthorised export of fins from CITES-listed species are a threat to both the resource and the small-scale artisanal fishing industry, which prompted this study.

The objective of this study was to assess shark fishing in the Congo focussing on the artisanal sector, to determine what species and products are traded, to identify the main stakeholders, drivers and challenges in the trade, and to examine the legislative, administrative and operational measures in place for sustainable and legal shark fishing and trade.

METHODS

STUDY AREA

The Republic of the Congo (Figure 1) is situated in the Gulf of Guinea and has a relatively short coastline of about 169 km (91 nm). The country has a population of about 5,300,000 with the majority (70%) living in urban areas. Brazzaville is the political capital and largest city with about 1,300,000 inhabitants. Pointe-Noire, the economic capital and second largest city with a population of about 700,000, is a deep seaport, maritime fishing town and centre of the country's petroleum industry with many offshore petroleum drilling and filling platforms (Maloueki 2005; Worldometer n.d.). Pointe-Noire is the centre for maritime fishing where almost all the catches are landed (Ministry of Agriculture Livestock and Fisheries 2019).



FIGURE 1
Map of the Republic of the Congo, showing Pointe-Noire on the Atlantic ocean coast

DATA COLLECTION AND ANALYSIS

The data were collected during three missions to Brazzaville and Pointe-Noire between March and November 2019. Data were collected using both a structured questionnaire for artisanal fishermen in Pointe-Noire (Annex 1) and open-ended interview guidelines for fishery administrations and organisations. The structured questionnaire was used to gather information on the shark fishery and trade as perceived by artisanal fishermen. It sought to identify the category of persons who catch sharks, to gather information on the evolution of shark catch and trade, methods for catching sharks, processing and trading shark products, and the identification of factors considered favourable and unfavourable to shark fishing and trade in Pointe-Noire. A lead researcher and three officials from the Departmental Directorate of Fisheries and Aquaculture for Pointe-Noire and Kouilou (DDPAPN/K) interviewed 30 randomly selected artisanal fishery actors in Songolo, specifically at the Pointe-Noire Artisanal Fishery Support Centre (CAPAP) and at the adjacent fishing village, where most of the artisanal fishermen live. The interviews were all conducted in French between March and April 2019.

For information on the evolution of shark fisheries, legislation, regulatory and management mechanisms, and of the factors that drive or influence the sector, secondary sources were consulted and other resource persons and stakeholder institutions were interviewed using non-structured flexible interview topics. Information was collected in both Brazzaville and Pointe-Noire in March, April, September, and November 2019. Interviews were conducted with representatives from the Ministry of Agriculture, Livestock and Fisheries (MAEP), the General Directorate of Fisheries and Aquaculture (DGPA), the DDPAPN/K, the Departmental Directorate of Customs and Indirect Taxes for Kouilou, wild fauna focal point in the CITES Management Authority (MA) in the Ministry of Forestry Economy (DFAP), international NGOs (WCS, World Wide Fund for Nature (WWF)) as well as two national NGOs (RENATURA and Association la Bouée Couronne (ABC)), and independent researchers.

The assessment was also informed by supplementary data from relevant literature, studies and databases.



RESULTS AND DISCUSSION



THE SHARK FISHING SECTOR IN THE REPUBLIC OF THE CONGO LEGISLATIVE AND INSTITUTIONAL FRAMEWORKS

The Republic of the Congo has ratified a number of international and regional agreements that include provisions on the exploitation and trade in marine resources, and which have taken specific decisions for the conservation and management of sharks.

Notably, the Congo ratified CITES on 31st January 1983, became party to the Lusaka Agreement⁹ on 14th May 1997, signed the CMS on 1st January 2000, is a member of the FAO Committee on Fisheries (COFI), and publicly committed to the AU-led African Strategy on Combating Illegal Exploitation and Illegal Trade in Wild Fauna and Flora in Africa (African Union 2015).¹⁰ The Congo has also taken national measures to legislate, regulate and manage the exploitation and trade in marine resources in line with the UN Millennium Development Goals, the 14th UN Sustainable Development Goal (SDG14) and the ratified international/regional conventions. A list of the national legal instruments and the scope of the different international conventions can be found in Annex 2.

None of the national legal and regulatory instruments enforces any specific measures defined by the international conventions to regulate shark fishing. The national

legislation protecting endangered species of wild fauna and flora in line with CITES principles mentions no species of the Elasmobranchii subclass (sharks, rays, skates and sawfishes) and fishes in general. The only national legislation that mentions sharks is the Law No. 2-2000 of 1st February 2000 organising Maritime Fisheries, which regulates the fishing and aquaculture industry for economic development and food security. The law includes conservation only in terms of post-capture preservation of fish products for safe human consumption rather than the preservation and sustainability of biological resources and wildlife populations.

The Minister of Sustainable Development, Forestry Economy and Environment issued a notice in 2001 banning shark fishing in Congolese waters to protect them from excessive capture (Mikangou 2001). The brief ban was lifted following 14 months of negotiations between artisanal shark fishers' associations and the Ministry of Maritime and Continental Fisheries (MPMC) (Le Programme pour des moyens d'existence durables dans la pêche 2003). The ban was also lifted to enable the MPMC to carry out an inventory towards producing an NPOA-Sharks, as recommended by the FAO.¹¹ In line with her commitment to the New Partnership for Africa's Development (NEPAD) 2063 agenda, the Congo,

⁹ The Lusaka Agreement helps its Member States to carry out investigations on violations of national laws pertaining to illegal trade in wild fauna and flora and thereby to comply with enforcement related provisions of CITES through two operational institutions, namely the Lusaka Agreement Task Force (LATF) and National Bureaux.

¹⁰ FAO COFI developed the International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) to encourage states that contribute to shark fishing mortality on a species or stock to participate in its management. It is non-binding but all concerned states are encouraged voluntarily to implement it through the NPOA-Sharks process (FAO 1999).

¹¹ MAEP officials explained that this shark study was never carried out due to lack of resources. However, FAO carried out some surveys between 2004 and 2006 of the fish resources of the Eastern Gulf of Guinea including the Congo which assessed the state of their pelagic and demersal fish stocks (Krakstad *et al.*, 2007).

in its National Mid-term Investment Plan, envisaged the production of the NPOA-Sharks among other actions to support enforcement of the maritime fisheries code and implementing her fisheries resources management strategies (Gouvernement de la République du Congo 2007).

The various bills governing wildlife management and conservation in the Congo are currently being reviewed and wildlife conservation stakeholders in the country are optimistic that the national legal framework will improve with the proposed draft bills. The DFAP, as focal point for reviewing the wildlife conservation bills, is closely working with WCS and consulting the MAEP to make sure that the bills provide better coverage of marine habitats and fish species.

The Congo's institutional arrangements for implementing CITES creates a practical weakness with regards to marine wildlife. The Ministry of Forestry Economy (MEF) oversees the implementation of CITES, tracking the exploitation and trade of all wild species excluding fishing for food. This, therefore, excludes marine fishes of concern managed by MAEP through the General Directorate of Fisheries and Aquaculture (DGPA) which supervises all fisheries policies, operations and initiatives. That is why MAEP officials consider that just consulting them in the ongoing regulatory review is insufficient and hope that they would be given more consideration in the legislation and regulation of all marine fish species especially with regards to CITES implementation. The opportunity to improve on inter-ministerial synergy seems present as the current departmental and central fisheries administrations express their support, in principle, for any initiative that can objectively improve on the sustainable management of the fishing stocks beyond revenue collection and maximum harvest. Furthermore, a 2013 recommendation for the Republic of the Congo to issue legal texts on the implementation of CITES, which

should formally appoint the Management and Scientific Authorities and define their missions and prerogatives, is still relevant today (CITES 2020; Ononino *et al.*, 2013).

Under the CMS, the Congo signed the Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOU) in 2010 and produced a national report on shark population status and conservation in 2012 (Maloueki 2012). The report notes that the government's long-standing intention to develop an NPOA-Sharks to check the overexploitation of sharks by artisanal fisheries has never been implemented, and proposes the development of a shark management and conservation plan.

Through its commitment to the AU-led African Strategy on Combating Illegal Exploitation and Illegal Trade in Wild Fauna and Flora in Africa, the Congo has a continent-wide framework for co-ordinated response and action with specific references to IUU fishing and sharks (African Union 2015; TRAFFIC 2015).

The National Bureau to implement the Lusaka Agreement in the Congo is collaborating with the Lusaka Agreement Task Force (LATF) to build the capacity of national directors and co-operatively enforce laws to curb transboundary wildlife crime¹². Although the Lusaka Agreement is open to all 55 AU Member States, only seven have joined it since its conception in 1992. Furthermore, its focus has been on law enforcement and tracking of cases concerning terrestrial wildlife with practically no marine engagement. However, its multi-sectoral and transboundary collaborative approach offers a potentially relevant platform and lessons for protecting marine species since the enforcement of ratified agreements on sustainable management and protection of marine life generally requires regional and international co-operation.

FISHERIES MANAGEMENT

The Law No. 2-2000 of 1st February 2000 organising maritime fisheries and its decree on industrial fisheries regulate fishing through quotas. The demand-based quota is granted by the DDPAPN/K at the beginning of the calendar year as part of the annual fishing licence per vessel. The licence is subject to a tax based on the nationality of the vessel, the type of fishing, the quota requested, the species and other parameters. The law and its decree on artisanal fisheries also authorise commercial artisanal fishery per boat subject to a tax based on the average annual catch for the boat type and the means of propulsion. However, in practice, the Popo boats (large motorised boats)¹³ are levied taxes using the industrial quota system by type of fishing, namely, pelagic fishing, demersal fishing and shark fishing (Ministry of Agriculture Livestock and Fisheries 2019).

¹² They have organised many training sessions, a recent example is the workshop on combating wildlife and forest crime in the Central African Region in Brazzaville on 1st August 2019, bringing together donor, NGOs, government wildlife and law enforcement agencies and international programmes such as ENACT, COMIFAC and ISS.

¹³ Refer to the section on Fishing vessels and gear for more information on "Popo" boats.



There is a high risk of IUU fishing since the authorities have limited ability and resources to control maritime fishing effectively.

The artisanal fishing community limits the number of fishing expeditions by organising themselves into batches of boats allowed to fish during different months of the year.

Maritime fishing is open all year round in the Republic of the Congo. The quotas authorise both artisanal and industrial vessels to fish all year round within their individual quotas. They can extend their quotas within the year if they meet all the criteria and pay the appropriate tax, and if the total catch stays within the overall precautionary catch level for the year.

The law further regulates maritime fishing by prescribing gear requirements for the different types of fisheries, and zoning the exclusive economic zone (EEZ), excluding industrial vessels from operating within 6 nm of coastal waters. However, there is a high risk of illegal, unregulated and unreported (IUU) fishing since the authorities have limited ability and resources to control maritime fishing effectively, such as through tracking, patrols and boarding to enforce existing legislation.

Shark stocks are therefore susceptible to overexploitation due to the permanently open seas, demand-based quotas and IUU fishing. This is compounded by the lack of adequate

historical and scientific data on available shark stocks, population viability, and shark fishing and trade trends. There is also no species management plan or system to assess the impact of the fisheries in Pointe-Noire on the viability of the shark species and the sector.

The artisanal fishing community limits the number of fishing expeditions by organising themselves into batches of boats allowed to fish during different months of the year. This is a voluntary restriction on fishing since the government authorises each quota holder to fish throughout the year.

Other management and enforcement initiatives relevant to the artisanal fishing sector include:

- ✓ **the Satellite Observation Centre which aims to use GPS technologies to monitor both industrial and artisanal vessels at sea** and assist in preventing and responding to violations associated with fishing outside of prescribed areas. The centre is being revived and it is hoped that this will greatly improve surveillance and control, especially to enforce compliance of fishing zones and tracking of IUU fishing and under-reported catches.
- ✓ **the progressive implementation of the Obangame Express, a maritime security initiative to improve regional co-operation and the collective capacity of 20 Gulf of Guinea and West African nations** to counter sea-based illicit activity (United States Africa Command n.d.). Like the Lusaka Agreement and numerous other initiatives, this offers a platform with lessons of a regional initiative that could inform any relevant regional marine fisheries collaboration.
- ✓ **the construction of the CAPAP facility by the Fisheries Value Chain Improvement Study Project (PECHVAL) under Japan-Congolese bilateral development co-operation** (Ministry of Agriculture Livestock and Fisheries 2019). CAPAP has been operational since June 2018 and offers a platform with fish landing and handling facilities open to all artisanal fishermen, fishmongers, and processors in Pointe-Noire. It also facilitates monitoring and data collection for more informed fisheries management.

The Conkouati-Douli National Park (CDNP), which extends into the ocean along 60 km of the 169 km coastline of the Congo, protects 505,000 ha of both terrestrial and marine ecosystems. Monitoring and enforcement in the marine ecosystem focus on wildlife protected by national law (WCS 2016). These include permanent surveillance against the harvesting of marine turtle eggs, and the fishing of marine turtles and all cetacean species protected by the law. There is no specific measure protecting sharks apart from the exclusion of commercial fishing within the protected area and of industrial vessels in the zones reserved for artisanal

fisheries. The CDNP is part of the 3.6 million ha large Mayombe Forest Transfrontier Protected Area (TPA), a Transfrontier Conservation Area (TFCA) that straddles protected areas in Angola, DRC, the Congo, and Gabon. The MOU signed by the four States provides for sustainable co-management and conservation of shared natural resources to foster socioeconomic development and regional integration for the benefit of the people living within and around the Mayombe Forest TPA (Southern African Development Community n.d.). It offers an opportunity for enhanced regional co-operation against the unsustainable and illegal exploitation of marine resources.

TRADE MONITORING AND REGULATION

MAEP, through the DGPA, regulates and monitors all fisheries activities. It monitors the capture, import and export of fish products, and generates statistics that serve as the official records of fish production and trade. In line with its policy focus on food production and revenue collection for government, the data cover the quantity of fish products landed, processed, imported, and exported. The official data, collected daily and reported annually, provide information on the quantity of fish per quota type, per fishery and per vessel for industrial fisheries. Industrial vessels are obliged by law to report their catch while for artisanal fisheries, the information is estimated from daily data collected from a subset of boats at the main fish landing sites. These data do not include estimates of illegal trade nor biodiversity management information such as species, age, sex, and size.

G. Ngassiki, DDPAPN/K, explained that the main current initiative in the country run by WCS is focused on gathering information relevant to shark conservation and has been gathering data on landed shark and ray species, mass and quantity at the CAPAP facility at the Songolo beach in Pointe-Noire since July 2018 (*pers. comm.*, 28th March

2019). Emilie Fairet, WCS Country Program Coordinator for the Congo, indicated that they hope the data will inform their potential support to the government's implementation of CITES processes for sharks and rays (*pers. comm.*, 26th March 2019). However, there is a need for more long-term data and on other aspects of shark biology, catch and trade. Fortunately, a lot of information can be gathered from the landings where the market is legal and open.

Another initiative that collects information relevant to marine resource conservation and management is the EAF-Nansen Programme in collaboration with the FAO Fishery Committee for the Eastern Central Atlantic (CECAF) (FAO 2019). Though not specific to sharks, the programme collects data and information on marine resources, habitats, environment and pollution in the surveyed countries and generates knowledge that can help support the member countries in managing their fisheries more effectively at regional and national levels, such as recommending precautionary catch levels. The Congo is one of the CECAF member countries in the current 2017–2022 survey programme (EAF-Nansen Programme n.d.).

ORGANISATION AND EVOLUTION OF ARTISANAL SHARK FISHING AND TRADE IN THE CONGO

FISHING STAKEHOLDERS

The artisanal fishing sector is made up of four communities according to nationalities of origin, namely Congolese, Beninese, Senegalese and Ghanaian. The Congolese fishing communities consider themselves the true indigenous fishing communities with a traditional cultural attachment to the sea, fishing entitlements and responsibilities over the resources. This distinguishes them from the immigrant fishing communities who are allegedly more economically driven with a stronger sense of socioeconomic responsibility and cultural attachment to their countries of origin than to the Congolese waters and its resources (Jul-larsen 1994; Tati 2013). For instance, B.C. Atsango, Director General of Fisheries and Aquaculture explained that prior to 2001, the Beninese fishers perceived and exploited the rising demand for shark fins as a business opportunity for shark fishing

while the Congolese perception was of over-harvest and shark butchery. This provoked widespread outcry from the local populations prompting the government briefly to ban shark fishing in Pointe-Noire in 2001 (*pers. comm.*, 27th March 2019).

Alongside these nationality-based communities, the artisanal fishing sector is also organised into five community-based fishing associations, six activity-based co-operatives and one socio-professional organisation. There is also one industrial fishing shipowners syndicate whose activities directly affect the artisanal fishing sector. Leaders and officers of the community-based organisations (CBOs) complain that the relatively large industrial fleet the Congo harbours is overexploiting and depleting fish resources,

obliging artisanal fisheries to make more efforts in terms of distances covered and number of days per fishing expedition or to switch to targeted shark fishing. However, Belhabib *et al.* (2018) indicate that fishing efforts by artisanal fishing in the Congo have also greatly increased over time suggesting that both sectors increasingly compete for the same fish resources, and that the impact of increased artisanal fishing on fish stocks and ecosystems cannot be overlooked.

The CBOs, made up of, and working closely with, actors of the artisanal fisheries and shark value chains, are running initiatives where the fishermen are actively involved in

tracking and reporting illegal industrial fishers. This makes them a potential actor for any community-based or inclusive surveillance mechanism and shark management initiative requiring stakeholder buy-in and involvement.

Finally, there are also two active marine biodiversity conservation NGOs (WCS and RENATURA). These NGOs have a long history in marine conservation in the Congo, with WCS having specific experience in shark conservation from the “Gabon Bleu” marine conservation initiative introduced by the Head of State of Gabon.

FISHING VESSELS AND GEAR



According to the 2017 and 2018 annual fishing records from the DDPAPN/K, there are 111 active industrial boats owned by eight companies in the Congo. The industrial fishing companies targeting sharks use trawling vessels while the artisanal fishermen use Ghanaian-type boats known as “Popo boats” or “Popo”. The boats range from 9–14 m in length and 1.5–2.5 m in width and are all propelled with a 25–40 HP outboard engine. They use drift gillnets for pelagic sharks and bottom set gillnets for demersal sharks. The gillnets measure 100–450 m long by 15–25 m deep and have a mesh size ranging from 100–240 mm stretched¹⁴ (FAO.ORG n.d.-a; Girard *et al.*, 2014). These boats are generally owned by Beninese settlers from the Popo tribe. They are manned by crews of 4 to 8 fishermen. There are

about 240 active Popo boats fishing in the Congo, many of which are targeting demersal sharks (FAO 2019).

Artisanal fishing is also carried out by indigenous fishermen who use traditional Congolese canoes known as Vili boats. The boats are much smaller measuring 6–11 m long by 0.7–0.9 m wide with an average crew of three fishermen (Maloueki 2012). The boats are either motor or paddle-propelled and fish mainly Bonga (*Ethmalosa fimbriata*) and “sardines” (*Sardinella* spp. juveniles and anchovy (Engraulidae)). There are approximately 450 Vili type canoes which use gillnets for Bonga and “plateau” nets for *Sardinella* juveniles and anchovy (FAO 2019).

¹⁴ This conforms to the Congolese legislation which requires a minimum stretched mesh size of 100 mm.

SIZE AND TREND OF SHARK FISH TRADE

Records from the DDPAPN/K indicate that 1,868,701 kg of sharks were landed in 2017 by the artisanal and industrial fisheries (Figure 2). Of these, 95% (1,766,589 kg) came from artisanal fisheries, representing 32% of the total fish catch by the artisanal fisheries estimated at 5,639,632 kg. The shark catch by industrial fisheries represented less than 1% of the total industrial fish catch of 54,544,778 kg. In 2018, the landed sharks and tuna (Scombridae) by artisanal fisheries dropped drastically to 165,138 kg accounting for less than 45% of the sharks landed by both artisanal and industrial fishers and representing 7.3% of the total fish catch by artisanal fisheries estimated at 2,274,182 kg. Meanwhile, the shark catch by industrial fisheries almost doubled from 102,112 kg in 2017 to 199,910 kg in 2018. This is also less than 1% of the total catch of 56,785,976 kg reported by the industrial fisheries in 2018.

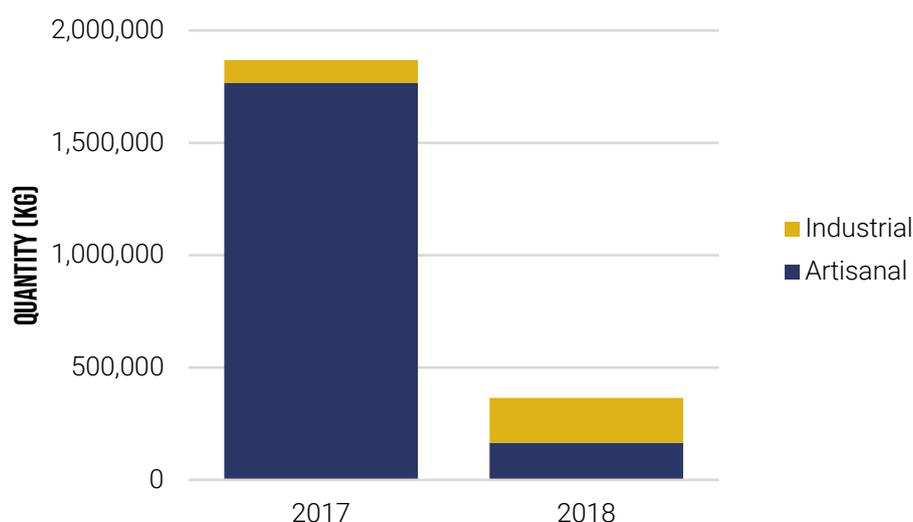


FIGURE 2

Shark fished by artisanal and industrial fisheries in 2017 and 2018

(Note: 2018 includes sharks and tuna for artisanal fishery)

Source: DDPAPN/K Annual Reports

Although these data are indicative of the drop in the shark catch from 2017 to 2018, they however measure different fishery types. In 2017, the records lump sharks into two categories estimating the quantity by weight (1) of all sharks by artisanal fisheries and (2) of all sharks by industrial fisheries. For 2018, it gives a similar category for industrial fisheries but lumped sharks and tunas for artisanal fisheries to reflect the quota-based fish types authorised for that year.

The records for these two years show zero export of sharks from the Congo.

The records (Figure 3) show that sharks are fished throughout the year but give no relevant biodiversity management information such as species, age and sex because it is focused on quota control and revenue collection. The drop in the 2018 records could be due to implementation of the quota system during which fishers were obliged to acquire quotas before fishing.

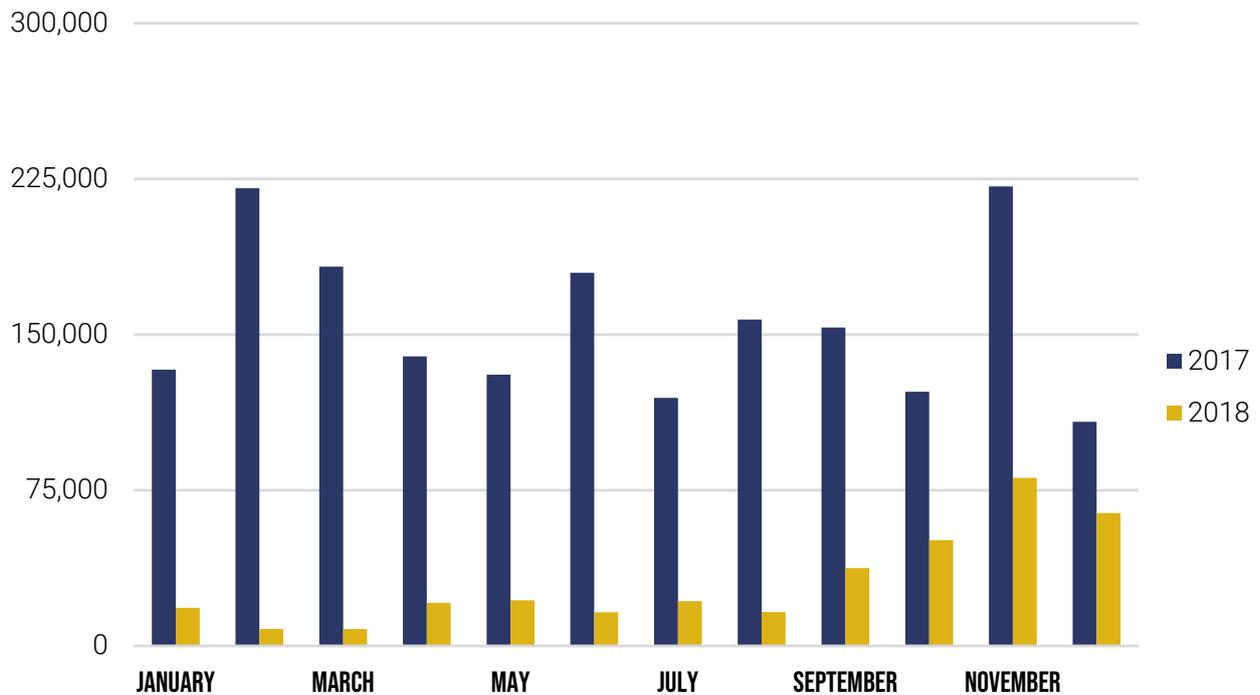


FIGURE 3
Monthly quantity (in kg) of shark fished in Pointe-Noire in 2017 and 2018
Source: DDPAPN/K Annual Reports

B. Dissondet, Branch Coordinator for the WCS Office in Pointe-Noire, confirms from data being collected since July 2018 that targeted shark fishing is carried out throughout the year (*pers. comm.*, 29th March 2019). Forty-two species (23 sharks and 19 rays) have been identified including 15 CITES Appendix II-listed species (eight rays and seven sharks), and considered threatened (that is, Vulnerable, Endangered or Critically Endangered) by the IUCN Red List of Endangered Species (Table 1).

TABLE 1
CITES Appendix II listed shark and ray species caught in the Congo by artisanal fisheries between 31st July 2018 to 31st July 2019
Source: Compiled by the author from WCS/DDPAPN-K presentation for the list and from CITES and IUCN websites for the respective assessment information.

SPECIES/SCIENTIFIC NAME	COMMON NAME	CITES-LISTED	IUCN RED LIST STATUS
SHARK			
Mako Shark			
<i>Isurus oxyrinchus</i>	Shortfin Mako Shark	2019	Endangered
Silky shark			
<i>Carcharhinus falciformis</i>	Silky Shark	2017	Vulnerable
Hammerheads			
<i>Sphyrna lewini</i>	Scalloped Hammerhead	2014	Critically Endangered
<i>Sphyrna mokarran</i>	Great Hammerhead Shark	2014	Critically Endangered
<i>Sphyrna zygaena</i>	Smooth Hammerhead Shark	2014	Vulnerable
Thresher sharks			
<i>Alopias superciliosus</i>	Bigeye Thresher Shark	2017	Vulnerable
<i>Alopias vulpinus</i>	Common Thresher Shark	2017	Vulnerable
RAY			
Guitarfish			
<i>Glaucostegus cemiculus</i>	Blackchin Guitarfish	2019	Critically Endangered
Wedgefish			

<i>Rhynchobatus luebberti</i>	African Wedgefish	2019	Critically Endangered
Manta Rays			
<i>Mobula birostris</i>	Giant Manta Ray	2014	Vulnerable
Devil Rays			
<i>Mobula mobular</i>	Devil Fish (Giant Devilray)	2017	Endangered
<i>Mobula tarapacana</i>	Chilean Devil Ray	2017	Endangered
<i>Mobula japonica</i>	Spinetail Mobula	2017	Endangered
<i>Mobula rochebrunei</i>	Lesser Guinean Devil Ray	2017	Endangered
<i>Mobula thurstoni</i>	Smoothtail Mobula	2017	Endangered

RESPONDENTS' PERCEPTION OF SHARK FISHING AND TRADE IN POINTE-NOIRE

BACKGROUND OF THE FISHING STAKEHOLDERS

Artisanal fishing is carried out exclusively by men who are fishing patrons (boat owners), or fishermen. However, women participate as boat owners or fishing sponsors without physically going out to sea. Both men and women are involved in shark product trade, but processing is carried out mainly by women. Of the 30 respondents interviewed, only two were female. The age of the respondents ranged between 26 and 55 years, with the majority ranging from 46–55 years (38%) closely followed by 36–45 years (34%). Only two (7%) of the respondents were between 26 and 35 years old. This is a relatively aged sample compared to the national median age of 19.2 years (Worldometer n.d.).



ARTISANAL FISHING ARCHETYPE:

MALE
 46–55 YEARS (38%)
 36–45 YEARS (34%)
 26–35 YEARS (7%)

SHARK FISHING HABITS AND TECHNIQUES

The majority (83%) of the respondents are involved in artisanal shark fishing or trade at the CAPAP and along Songolo beach. Most (67%) of the respondents indicated good business as the main reason for fishing and trading in sharks, while cultural practice was cited as the second most significant (20%) reason.

The artisanal fishers indicated that they target sharks throughout the year with shark catches peaking between March to May. Most fishers (96%) target sharks beyond the 6 nm regulatory limit for artisanal fisheries, going as far as

45 nm into the EEZ. A few fishers indicated that they also fish near coral reefs (13%)¹⁵ and mangroves (9%). Shark fishing expeditions vary from one to seven days, with catches ranging from five to more than 20 adult sharks per boat per expedition. The typical crew size is between six and eight fishers (13%) per Popo boat and three for the Vili boat. Artisanal fishers targeting sharks use Popo boats (90%) while Vili boats (40%) are only involved in incidental shark catches. The respondents use sardinella-baited gillnets and hooks for shark fishing.

¹⁵ This suggests that this is not near shore fishing, as studies have revealed that there are no coral reefs along the Eastern and Central Atlantic coastline due to upwellings, heavy rainfalls and high volumes of fresh water entering from rivers (Polidoro *et al.*, 2017).

FISHING PRODUCTS

All the sharks are landed and delivered whole to fishmongers on the shore. The fishmongers then remove the fins which are sold to specialised fin dealers and the meat is sold to shark meat processors. All the fishers indicate that they catch sharks for both sale and for personal consumption of the meat. Thirty-six percent of the fishers interviewed stated that they also catch sharks for the fin trade.

All 29 persons who responded to the question on the shark products they use indicated that they consumed shark meat regularly and had been doing so since childhood. Half of the

respondents (52%) indicated that they also consumed shark fins while less than a fifth (17%) indicated that they also use the shark liver oil. In follow-up discussions, respondents said the fins are eaten as part of the shark meat and not as a separate product. This is usually for juvenile sharks which are culturally preferred by the Viliis and whose fins are not systematically removed as for the bigger sharks. This generally concerns the subsistence use of incidental shark catches by the traditional Vili boat-based artisanal fishery which does not target sharks.



SHARK MARKET IN POINTE-NOIRE

From the early 1980s, sharks have been landed and traded all along the Pointe-Noire coast at five small-scale fisheries landing sites (Metcalfe *et al.*, 2017). This changed in 2018 when the CAPAP went operational with facilities to concentrate all landings from small-scale fisheries in Pointe-Noire at Songolo. The fishers described about 13 species of sharks, with hammerheads (19%), Tiger Sharks *Galeocerdo cuvier* (17%) and Shortfin Mako Sharks *Isurus oxyrinchus* (13%) being the most commonly landed species

(Figure 4). However, this differs from the records from the WCS/DDPAPN-K monitoring initiative which indicates that Scalloped Hammerhead *Sphyrna lewini*, Blacktip Shark *Carcharhinus limbatus* and Spinner Shark *Carcharhinus brevipinna* are the three most frequently landed sharks. They also show these three species to be the most landed sharks by weight but in a different order: the hammerhead is the most landed by number, but third by weight because of the many juveniles.

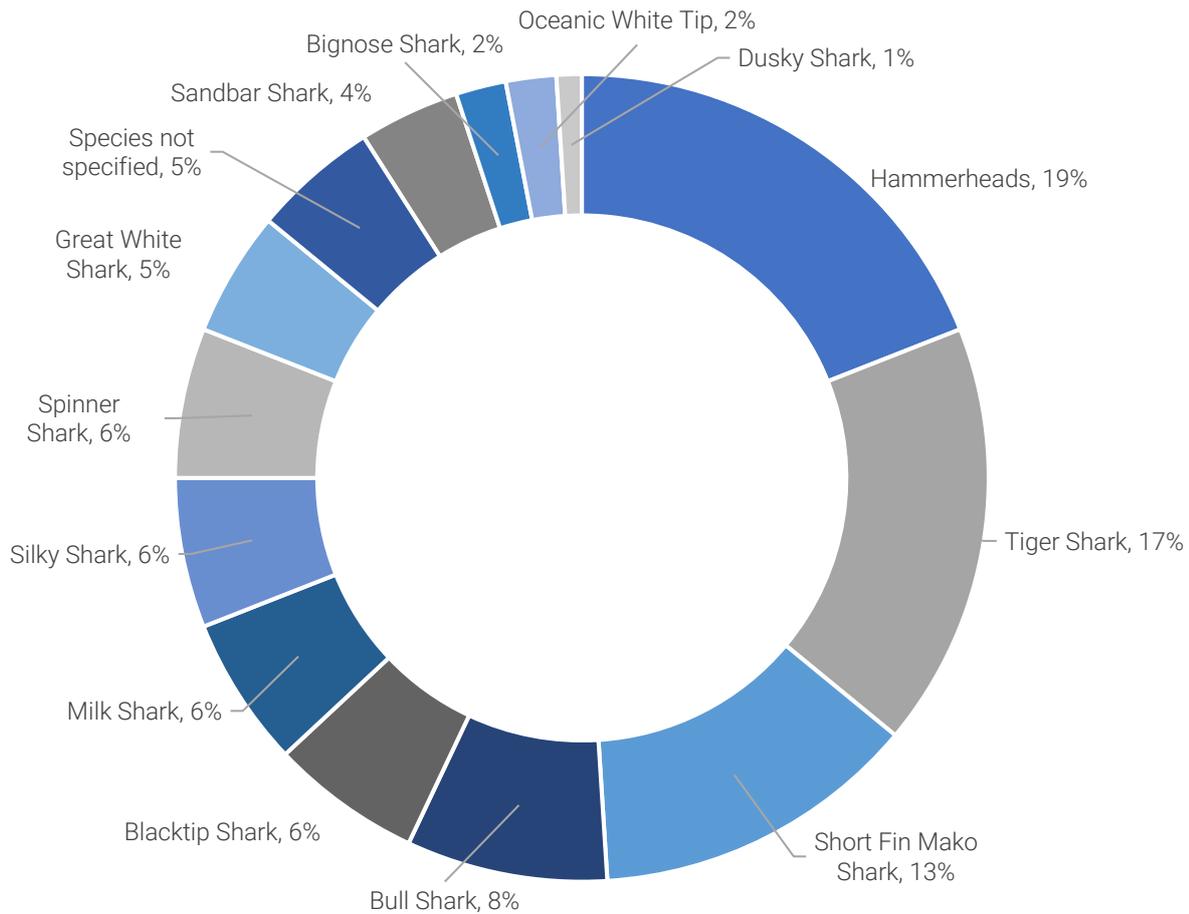


FIGURE 4
Different shark species landed by respondents.

Fishermen sell the whole sharks to wholesale fishmongers at variable prices which are determined based on their appreciation of the length and weight of the sharks. The fishmonger then sells the meat to shark meat processors and the fins, measured in kilogrammes, to two types of middlemen (independent middlemen working for a profit or agents representing a circle of about eight buyers/fin exporters) (Figure 5). The middlemen get a commission from the sale of the shark which depends on whether they are agents using the fin buyers' money or independent middlemen buying with their own money.

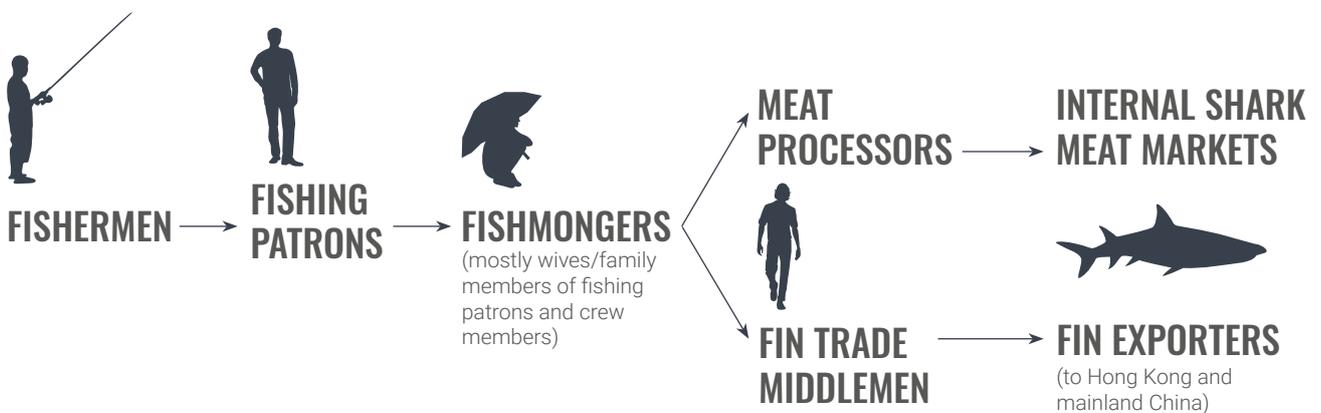


FIGURE 5
Shark Trade Chain at the Songolo Landing, Pointe-Noire

During the surveys, estimated daily landings of 400 to 1,000 adult sharks were observed. Demand for shark meat and fins apparently exceeds the supply at the Songolo landing site at the current market prices since all the sharks landed are sold by the end of each day. While only 36% of the respondents declared that they target sharks for their fins, it is generally alleged by multiple stakeholders and observers that shark fishing is encouraged by a local fin oligopsony which finances fishing expeditions targeting all species of sharks found in Congolese waters. The fishery targets adult sharks which have more market value both from their larger fins and for processing into salted fish (Maloueki 2005; Nguinguiri 1995). However, substantial quantities of juvenile sharks are also landed. In addition, the strong local demand for shark meat driven by cultural preferences for smoked/salted fish and affordability results in an efficient consumption of landed sharks thereby removing the incentives for on-board shark finning and wasting of the carcasses in the ocean.

Since 2015, the fins sell for approximately CFAF5,000/kg (USD8.56)¹⁶ between the wholesale fishmongers and the local fin trade middlemen. Smaller fins sell for CFAF4,000/kg (USD6.85) while the larger fins reach CFAF6,000/kg (USD10.27) irrespective of species. Fishers indicated that the fins sold at higher prices reaching CFAF25,000/kg (USD42.78) in 2000 in response to increased demand from East and South East Asia. In fact, Nguinguiri (1995) indicates that shark fins were the only fish products whose price systematically doubled to CFAF16,000/kg (USD27.38) after the 1994 CFAF Francs devaluation, being a fully exported

product. This was a strong incentive for the increased targeted shark fishing reported in the late 1990s.

The fishmongers sell a Spinner Shark (with fins) of around 100kg at CFAF40,000 (USD68.45) to CFAF45,000 (USD77.01), two Spinner Sharks (with fins) of around 75 kg each at CFAF75,000 (USD128.35) and CFAF80,000 (USD136.90) for the two, and a Tiger Shark of about 100 kg at CFAF35,000 (USD59.89). A 50 kg crate of juvenile hammerheads sells for about CFAF35,000 (USD59.89).

The fishing patrons indicate that it costs between CFAF300,000 (USD513.38) (bottom set gillnet fishing) and CFAF400,000 (USD684.51) (drift gillnet fishing) per shark fishing expedition. Most of the respondents (63%) indicated that successful expeditions yield profits of more than CFAF50,000 (USD85.56) each from the meat trade. The majority (89%) of the respondents who targeted shark for their fins similarly said they make profits of more than CFAF50,000 (USD85.56) per expedition from the fin trade.

The longstanding demand for fins openly sold at the Songolo fish market apparently promotes targeted shark fishing without directly benefitting the Congolese economy or the fishermen given that there is no trace in the government records of trade in or revenues from the fin trade. The values of the fins are not considered when the fishermen sell their catch to the fishmongers. This could explain why only 36% of the fishers indicated that they target sharks for their fins.

SHARK FISHING SEASON

The respondents indicated that they each fish sharks between two to eight months per year during different but overlapping periods. However, when taken together the fishing spreads throughout the year, with March to June most cited as the months for most abundant catches. This is contrary to reports that the season for shark abundance is from July to September (Maloueki 2012). Although just four

respondents indicated that a permanently open season with no biological rest period is a threat to the fish stocks, most respondents indicated that the Ministry of Fisheries should impose a biological rest period for shark fishing. However, they did not indicate which aspect of the sharks' biological cycles or which particular species should be concerned by such a measure.

STATUS OF SHARK POPULATIONS

The majority (70%) of respondents feel that the shark population in Congolese waters is stable over time while 23% believe that the population has increased since 2016 and 2017. Only 7% believe that the shark population is declining (Figure 6). These assertions are based on their fishing effort and quantity of sharks caught over the years.

¹⁶ The CFAF has a fixed exchange rate to the Euro: 100 CFAF = 0.152449 Euro. For all CFAF/USD conversions in this report, unless otherwise stated, we use the interbank exchange rate on oanda.com for Saturday, 30th March 2019 which is at 0.00171.

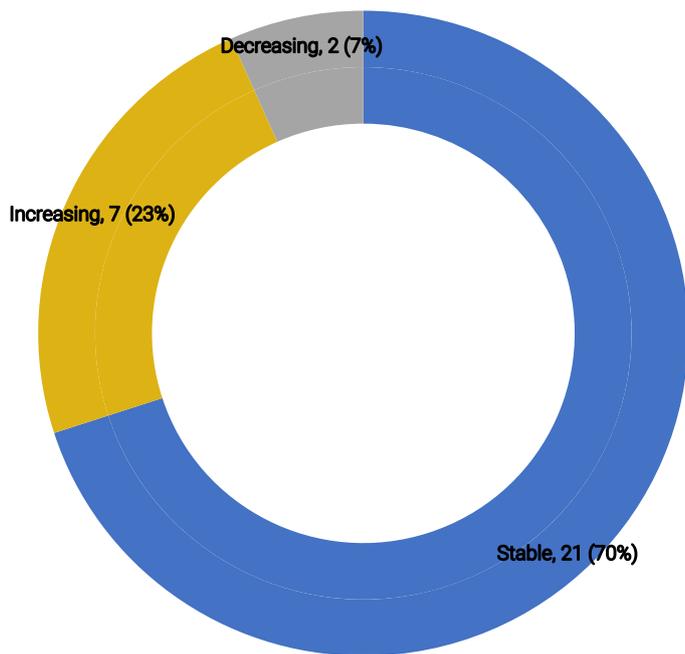


FIGURE 6
Status of shark populations in Congolese waters as perceived by fishermen

The respondents' perception that the shark populations are mostly stable or increasing is contrary to the global situation where many shark populations are threatened by overexploitation. This could mean that the fishery is freely benefitting from shark conservation measures in contiguous waters such as Gabon's EEZ, thereby highlighting the need for effective regional and international co-operation in shark management.



THREATS TO THE SHARK POPULATION

Respondents perceive some activities as threats to the current shark population (Table 2). The most common threats (14%) perceived are fishing of juveniles and excessive trawling, followed by oil pollution at sea and destruction of the seabed by trawlers (11% each). However, apart from

fishing of juveniles and lack of a biological rest period which specifically refers to sharks, all the other threats refer to the fish stock in general. One respondent even mentioned an increasing shark population as a threat to the other fish stocks.

TABLE 2
Perception of threats to shark populations

THREAT MENTIONED	NO	%
Fishing of juveniles	6	14%
Excessive trawling	6	14%
Oil pollution at sea	5	11%
Destruction of seabed by trawling	5	11%
Industrial fish processing meal	4	9%
Lack of biological rest period	4	9%
Non-compliant fishing gears	4	9%
Marine seismic operations	3	7%
Overfishing	2	5%
Industrial fishing in breeding areas	2	5%
Destruction of mangroves	1	2%
Increasing shark population	1	2%
Strong ocean currents carry stocks away	1	2%



Juvenile hammerheads in a crate used for smaller size fish species

It is difficult to appraise the status of shark populations objectively and the impact of these perceived threats without a proper shark stock study. However, observations at Songolo beach provide anecdotal evidence to the threats from oil pollution and juvenile catches.

There is a consistent landing of juvenile sharks at Songolo beach, which is a potential threat to species with low reproductive rates (Photo 1). This suggests that the authorised fishing gear, which is intended to allow for sustainable shark fishing through the requirement for mesh sizes large enough to allow juveniles to escape, does not appear to account for the shape of all shark species that are caught in the artisanal fishery. This could explain why the juvenile sharks landed are almost exclusively hammerheads and rays. This also explains why hammerheads are recorded as the most landed species measured by number of individuals but are lower by weight than both Spinner and Blacktip sharks.

The sustainable carrying capacity for the Congo's EEZ is estimated at 30 industrial fishery vessels (Maloueki 2005). The large fleet of more than 110 industrial vessels, of which more than

65% are Chinese trawlers, is therefore excessive.¹⁷ A 2015 study argues that the government may have authorised this unsustainable industrial fleet size including 70 vessels from China based on official statistics, which under-reported the total catches thereby giving the impression that the Congo's EEZ was being fished below its capacity (Belhabib & Pauly 2015). Some surveys indicate that many fish stocks in the Congolese waters are declining from

overexploitation, suggesting that this could be due not only to industrial vessels but also to motorised artisanal fishing fleets (Belhabib *et al.* 2018; FAO 2019; Polidoro *et al.* 2017). From the fishers' perception, these threats do not seem to affect shark populations (Figure 6). This is realistic as sharks represent a minor fraction (less than 1% annually) of industrial catches in the official statistics provided by the DDPAPN/K for 2017 and 2018.

PROBLEMS AFFECTING THE ARTISANAL SHARK FISHERY

The most frequent (52%) problems cited by the respondents are caused by Chinese trawlers, namely, excessive fishing (25%), illegal fishing in artisanal zones (15%) and destruction of fishing gear (12%). This is followed by generalised overfishing (10%), oil pollution (10%) and conflicts with excessive Gabonese and Angolan marine patrols at the EEZ borders with the Congo (10%).¹⁸ In 8% of the responses, the problems

were attributed to the government through lack of support (4%) and high quota taxes for shark fishing (4%). They also indicated high risks from encounters with pirates and serious accidents at sea, including drowning amongst other problems faced by the fishery. Table 3 lists the problems and the frequency mentioned.

TABLE 3
Problems facing artisanal shark fisheries

MENTIONED PROBLEMS	NO	%
Excessive Fishing by Chinese trawlers	13	25%
Illegal fishing in artisanal zones by trawlers	8	15%
Destruction of fishing gear by Chinese trawlers	6	12%
Pollution by petroleum platforms	5	10%
Overfishing	5	10%
Conflicts with excessive Gabonese and Angolan patrols at EEZ borders	5	10%
Use of non-compliant gears	3	6%
Lack of support structures	2	4%
High taxes for shark fishing by the administration	2	4%
Encounters with pirates at borders of the EEZ with Gabon and Angola	2	4%
Fatal accidents (case of drowning)	1	2%
Increasing shark population	1	2%
Strong ocean currents carry stocks away	1	2%

Artisanal fishers expressed frustration at the current situation where they feel boxed in by the large industrial fleet and the numerous marine oilfields from which they are legally excluded. There are anecdotes of artisanal fishing boats trespassing into the oilfields, over which they claim unfair exclusion. In fact, Maloueki (2005) estimates that the large portion of the Congo's EEZ restricted to numerous petroleum platforms has reduced fishing areas in the coastal waters by two-thirds. Furthermore, Belhabib and Pauly (2015) describe unregulated and unsustainable industrial fisheries as the most significant threat to artisanal fisheries in Congo's

coastal waters, increasing from the year 2000 when Chinese trawlers began fishing in the Congo. Metcalfe *et al.* (2017) confirm the problem of industrial fisheries illegally trawling within the artisanal fishing zone, and suggest that while its impact is acute for fishers with the non-motorised Vili boats, it is not as severe for those with the larger motorised Popo boats undertaking semi-industrial fishing expeditions further offshore. In its 2017 records, the DDPAPN/K recognises the illegal fishing by industrial vessels in the artisanal zone, recommending sanctions on the fishing quotas of such vessels in proportion to the quantity of juveniles landed.

¹⁷ Although the records at DDPAPN/K do not specify the types of vessels, a 2011 bill organising industrial fishing in the Congo covers two types of vessels: trawlers and seiners. An exhaustive study of fisheries catch notes three types of industrial vessels, namely, shrimp trawlers, other demersal trawlers and small-pelagic purse-seiners (Belhabib & Pauly 2015).

¹⁸ Fishers argue that their boats and gears are abusively seized by Gabonese patrols in the Congo's EEZ around the borders, but they cannot defend themselves for lack of contrary geo-positioning evidence. However, Congolese fishers used to fish freely in both Gabon's and Angola's EEZs before these countries declared their territorial waters and prohibited fishing by Congolese vessels (Belhabib & Pauly 2015).

CONCLUSIONS



CONCLUSIONS

This assessment observes that artisanal shark fishing and the associated trade is an important economic activity in Pointe-Noire carried out mainly by settled West African communities. It is fuelled by the demand for shark fins in East and Southeast Asia through a local oligopsony of fin traders and a network of middlemen. The drive for shark fishing is also reinforced by the competition for other fish stocks by a relatively large fleet of industrial trawlers which makes shark fishing a practical alternative for small-scale Congolese fishermen who traditionally take small quantities of sharks and rays for subsistence. Processed shark meat is an affordable alternative fish supply for the country, which has one of the highest per capita fish consumption rates amongst Sub-Saharan African countries. As a result of the domestic demand for shark meat, there are no reports or indications of on-board shark finning by artisanal fisheries in the Congo.

The legislative and regulatory frameworks are however not implementing sustainable shark management and resource conservation measures. This fishery sector is open year-round with the catch restricted only by the ability of the small-scale and industrial fishermen to pay the quota-based taxes levied by the fishery administration. The management and regulatory mechanisms in place are therefore tied to the efficient implementation and control of the quota system to generate revenue for the state and legally provide enough fish protein for the local and national populations.

Government, INGOs, NGOs and research stakeholders agree that the lack of reliable statistics and databases is arguably the biggest challenge to shark management in

the Congo. The official data on shark landings, aggregated as per the quotas, is not appropriate for observing trends or assessing and understanding the conservation status, population viability and vulnerability to overexploitation. Taking management decisions that are appropriate for the biological and ecological characteristics of the relevant species becomes subjective under such circumstances with no guarantee that they are the appropriate measures, especially for sharks that have been commercially exploited for many years now.

Illegal fishing by industrial trawlers in zones reserved for artisanal fisheries builds a conflictual and unhealthy relationship between the two fisheries and highlights the need for improved enforcement of the fishing laws that prohibits industrial fishing within 6 nm from the coastline. IUU fishing and under-reported catches, combined with increasing pressures from an excessive industrial fleet and sustained harvest of sharks, including juveniles, is reason for concern. The combination of these risk factors in a context of inadequate species fisheries monitoring and insufficient enforcement capacities by government authorities, calls for precautionary management of the shark populations in the Congo that IUCN and CITES have listed as threatened by overexploitation and trade.

The ongoing legislative review and multi-stakeholder management processes in the country offer a good opportunity for improved management of shark resources. The importance of sharks in the conservation of marine ecosystems and as a source of animal protein to Congolese communities is undeniable. Faced with threats from IUU fishing, overexploitation and inappropriate decisions due to lack of relevant statistics, underline the urgency for the development of an NPOA-Sharks for the Congo as earlier proposed by the government and recommended by its partners for a more viable and sustainable fishery.

ONBOARD FINNING

As a result of the domestic demand for shark meat, there are no reports or indications of on-board shark finning by artisanal fisheries.



SHARK FISHING

is fuelled by the demand for shark fins in East and Southeast Asia through a local oligopsony of fin traders and a network of middlemen.



LEGISLATION

Legislative and regulatory frameworks are not implementing sustainable shark management and resource conservation measures.



TRAWLERS

The drive for shark fishing is also reinforced by the competition for other fish stocks by a relatively large fleet of industrial trawlers



DATA DEFICIT

the lack of reliable statistics and databases is arguably the biggest challenge to shark management in the Congo



ILLEGAL FISHING

Illegal fishing by industrial trawlers in zones reserved for artisanal fisheries builds a conflictual and unhealthy relationship between the two fisheries



RECOMMENDATIONS

RECOMMENDATIONS

The central recommendation from this study is for the Congolese authorities to develop a concerted approach to shark management that reconciles the triple interests of (1) protein supply and food security; (2) revenue creation and local livelihood improvement; and (3) biodiversity conservation and protection of marine ecosystems. These are aptly captured in Sustainable Development Goal 14 (SDG14), which aims to enhance conservation and sustainable use of ocean-based resources through international law.

Specifically, the study leads us to the following complementary recommendations for the various stakeholders and their agencies.

GOVERNMENT OF THE REPUBLIC OF THE CONGO

MAEP

The MAEP should **lead the process towards developing, implementing, and monitoring an NPOA-Sharks which has been a longstanding objective for the government.** Furthermore, a previous study by the FAO on the implementation of CITES shark and ray listings identifies the Congo as one of the priority countries for which an NPOA can have the biggest impact on shark management and conservation. The first step towards implementing this recommendation is for MAEP to produce a Shark Assessment Report (SAR) for the country as referred to in the International Plan of Action for Conservation and Management of Sharks (IPOA-Sharks). The SAR which is the first step in the NPOA-Sharks will guide what should be adopted in the plan.

The MAEP should also use the opportunities offered by existing programmes and mechanisms to improve the monitoring, control and surveillance of both industrial and artisanal maritime fisheries, focusing to check against IUU fishing, detrimental fishing practices, over capacity and overfishing. Such opportunities are offered by the PECHVAL Project and CAPAP, the FAO/CECAF's Survey programmes; the Obangame Express regional maritime security programme, the ongoing collaboration with the Merchant Navy, the Satellite Observation Centre, and CBO's fisher-based monitoring against IUU fishing.

MEF

The MEF should, within the framework of the ongoing wildlife code review process, ensure that:

- ✓ **the MAEP actively participates in the process and appropriates aspects of the law on protection of marine wildlife** and ecosystems to reconcile better the apparently conflicting objectives of fish protein supply and conservation of marine ecosystems and fish species;
- ✓ **the national laws, action plans, management mechanisms and regulatory instruments are better aligned to relevant international conventions and instruments** such as CITES, CMS, IPOA-Sharks and the AU Wildlife Strategy and facilitate a co-ordinated implementation by multisectoral agencies;
- ✓ **the legal text on the implementation of CITES should formally designate the MEF as the CITES Management Authority** and the MAEP as the CITES Scientific Authority for marine species, and define their missions and attributes, is issued.

PARTNER INSTITUTIONS SUPPORTING CONGO'S COMMITMENTS TOWARDS MULTILATERAL ENVIRONMENTAL AGREEMENTS AND SUBSIDIARY BODIES OF UN AGENCIES

(CITES, CMS, CMS-MOU, FAO-COFI) SUCH AS NGOS (E.G. TRAFFIC, WCS) AND THE DONOR COMMUNITY

Mandated managerial institutions within the Government of the Republic of the Congo and Congo's partner organisations should align their interventions to support the NPOA-Sharks development and wildlife code review processes with expertise, capacity and knowledge in their respective domains. Each partner should always ensure that their interventions are well co-ordinated to avoid duplication of efforts, ensure efficient use of resources and build synergies. The relevant areas where inputs from partner institutions are needed and where support from NGOs and the donor community would be beneficial are the ones related to Congo's commitments within the field of multilateral environmental agreements (CITES, CMS and its CMS-MOU on Sharks) and subsidiary bodies of UN agencies such as FAO-COFI. They would include to:

A. FOR THE NPOA-SHARKS DEVELOPMENT PROCESS:

Assist with the production of a SAR as prescribed by the FAO IPOA-Sharks;

Co-ordinate/organise different specialised studies required to understand better the sector and provide technical assistance to support the government to develop, implement and monitor its NPOA-Sharks which, as prescribed by the IPOA-Sharks, should aim to:

- ✓ Ensure that shark catches **from directed and non-directed fisheries are sustainable;**
- ✓ **Assess threats to shark populations, determine and protect critical habitats and implement harvesting strategies** consistent with the principles of biological sustainability and rational long-term economic use;
- ✓ Identify and provide special attention, in particular to **vulnerable or threatened shark stocks;**
- ✓ Improve and develop **frameworks for establishing and co-ordinating effective consultation** involving all stakeholders in research, management and educational initiatives within and between States;
- ✓ **Minimise unutilised incidental catches of sharks;**
- ✓ Contribute to the **protection of biodiversity and ecosystem structure and function;**
- ✓ **Minimise waste and discards from shark catches** in accordance with article 7.2.2.(g) of the Code of Conduct for Responsible Fisheries;
- ✓ **Encourage full use of dead sharks;**
- ✓ Facilitate **improved species-specific catch and landings data** and monitoring of shark catches;
- ✓ Facilitate the **identification and reporting of species-specific biological and trade data.**" (FAO 1999).

B. FOR THE WILDLIFE CODE REVIEW PROCESS AND IMPLEMENTATION OF CITES SHARK LISTINGS:

Assist with the ongoing review process of the wildlife code.

Support the implementation of the CITES shark and ray listings addressing specific challenges in species identification; data collection and management; legislation review; making non-detriment findings and legal acquisition findings; monitoring and reporting; and supporting collaboration between multiple national agencies.

Provide technical assistance and information to support the government to align its legislation under review (wildlife code, implementation decrees) to the ratified conventions, especially CITES and CMS.

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ANNEXES

ANNEX 1 QUESTIONNAIRE – RAPID ASSESSMENT OF SHARK TRADE IN THE CONGO

(English translation. Original in French)

Date:

The purpose of this study is to assess the trade in shark (Use Y for Yes and N for No)

1. Fisher's name (optional):

2. Age: _____ years
Age group (*in case respondents is unwilling to give exact age*):
i. 18-25, ii. 26-35, iii. 36-45, iv. 46-55, v. 55+
3. Where did you grow up?
4. Customary/Ethnic group
5. For how long have you been in PNR?
6. In which quarter do you live? _____ Which district?

7. Level of education:
i. Primary, ii. Secondary school, iii. High school, iv. HND, v. University, vi. Postgraduate
8. Married/in couple:
9. Children:
10. What is your profession (what do you do for a living)?
11. Fishery category:

12. Fishing site:

13. Landing site:

14. Could you describe your main activity to me?
15. What do you fish the most?
 Could explain why to me?
 Could you say if it is the same species you target the most?
 If there is a difference between the two, find out why
 Ask if this is the case for fellow fishermen
16. Do you also fish sharks?
17. Can you explain to me how you fish sharks?
 Find out the purpose for targeting sharks, and the gear and techniques used
18. Can you explain to me why you target sharks?
 Define targeting (fish with the intent and equipment required to catch sharks)
 Find out economic reasons (good bargain), social reasons (reputation as a good fisherman),
 traditional reasons (cultural practice, etc.)

19. What type of fishing boat do you use?

Local name

What is the boat made of

Means of propulsion (paddle, engine, sail, others)

20. Do you own the boat? _____

21. Do you have other boats? _____ How many in total? _____

22. What other fishing equipment do you have? List and describe them (material, quantity, characteristics eg mesh...)

23. How many people work for you? _____

24. How many people work with you as fellow fishermen? _____

25. Do you have non-fishing partners? _____? How many? _____

26. Q What are their contribution to your activity? _____

27. What are their professions and main activities? _____

28. What is the most important source of your family income?

29. What proportion of your income is from fishing? _____

Explain proportion using 10,000 Frs. If you earn 10,000 Frs at the end of the month how much comes from fishing? _____ And how much comes from shark fishing?

30. How many other people in your immediate family are fishermen?

31. Do they also fish for sharks??

32. Where do you fish?

Reefs

Open water

Mangroves

Seagrass beds

Others _____

33. What type of fishing gear do you use?

Fish net _____

Hand line

Fishing spear

Line

trawling net

Beach seines

Others _____

34. Are you aware of the practice of cutting and selling fins separately by the fishermen of Pointe-Noire?

Yes

No

Not sure

35. Are you aware of the practice of cutting off fins and releasing sharks into the sea by the fishermen of Pointe-Noire?

Yes

No

Not sure

36. How many sharks do you catch per outing? Give a range?

1-5

5-10

10-15

15-20

37. At what age did you start shark fishing?

10-15 _____

15-30 _____

30-40 _____

above 40 _____

38. What species or type of sharks do you catch? List them in order of abundance

1. _____

2. _____

3. _____

4. _____

5. _____

39. What do you and other fishermen do with shark whose fins are cut off in the open sea?

Kept on board

Killed and thrown into the sea

Thrown life into the sea

Others _____

40. What do you do with the sharks catch?

Family consumption

Sale of the meat

Sale of the fins

Others _____

41. Since when have you been eating sharks?

42. Which shark product do you prefer to eat?

Meat

Fins

Liver oil

Others _____

43. To whom do you sell shark meat?

Pointe-Noire inhabitants

Congolese

Chinese

Others _____

44. Who do you sell shark fins to?

Pointe-Noire inhabitants

Congolese

Chinese

Others _____

45. Where do you sell the sharks
- Market _____
 - Restaurants _____
 - Hotels _____
 - Others _____
46. How much do you sell a big shark?
- Shark meat: _____
- Kilogramme of fins: _____
47. How much can you earn per day from selling shark meat?
- At least 10 000 Frs
 - 10 000 – <25 000 Frs
 - 25 000 – <50 000 Frs
 - 50 000 Frs +
48. How much can you earn per day from selling shark fins?
- At least 10 000 Frs
 - 10 000 – <25 000 Frs
 - 25 000 – <50 000 Frs
 - 50 000 Frs +
49. How do you note the change of your shark catches?
- Increasing
 - Stable
 - Decreasing
50. Can you describe to me the signs of this change in terms of:
- Different species of sharks caught:
- _____
- Size/age of sharks caught:
- _____
- Distance covered to fish:
- _____
- Time required to fish:
- _____
- Fishing materials used:
- _____
51. What you can do to improve the declining shark population?
52. What does the Fisheries Authority need to do to improve on the declining shark population?
53. Who else should intervene (local NGOs, International NGOs, Populations...)?
54. And what should they do to improve on the declining shark population?
55. Can you explain the unwritten rules that fishermen observe among themselves in shark fishing?
56. During which months do you catch sharks?
- | | | | | | |
|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> Jan | <input type="checkbox"/> Feb | <input type="checkbox"/> Mar | <input type="checkbox"/> Apr | <input type="checkbox"/> May | <input type="checkbox"/> Jun |
| <input type="checkbox"/> Jul | <input type="checkbox"/> Aug | <input type="checkbox"/> Sep | <input type="checkbox"/> Oct | <input type="checkbox"/> Nov | <input type="checkbox"/> Dec |
57. During which period do you catch the most sharks (mark as PO) and zero shark (mark as PE)?
- | | | | | | |
|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> Jan | <input type="checkbox"/> Feb | <input type="checkbox"/> Mar | <input type="checkbox"/> Apr | <input type="checkbox"/> May | <input type="checkbox"/> Jun |
| <input type="checkbox"/> Jul | <input type="checkbox"/> Aug | <input type="checkbox"/> Sep | <input type="checkbox"/> Oct | <input type="checkbox"/> Nov | <input type="checkbox"/> Dec |

58. What do you consider to be the greatest threats to your fishing activity?

1

2

3

4

5

59. What do you consider to be the greatest threats to the fish populations?

1

2

3

4

5

60. What are your sources of information on fish populations? (e.g. DDP, NGOs, social networks, print media, radio, television, fishermen's associations, bar, church...)

*** end of the interview ***

61. Is there anything else you would like to talk about?

Thank you for your availability.

ANNEX 2 INVENTORY OF SHARK MANAGEMENT AND CONSERVATION LEGISLATION IN THE CONGO

INTERNATIONAL CONVENTIONS

The Republic of the Congo has ratified and signed international and regional conventions and agreements concerning marine and coastal environments, conservation of nature and natural resources and biological diversity. Some of the most important of these texts include:

- International Convention for the Prevention of Pollution from Ships (particularly by oil)
- Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region (Abidjan Convention)
- Convention on Wetlands of International Importance especially as Waterfowl habitat (Ramsar Convention)
- The United Nations Convention on the Law of the Sea (UNCLOS);
- The African Convention on the Conservation of Nature and Natural Resources
- The Convention on Biological Diversity (CBD)
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- The Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention)
- Protocol concerning Co-operation in combating Pollution in cases of Emergency
- The 2030 Sustainable Development Agenda and the Sustainable Development Goals, particularly SDG14 on the sustainable utilisation of marine resources.
- Cooperation Agreement between the Congo and Angola on fishing cooperation
- Protocol of Cooperation between the Congo and Gabon on maritime fishing

The list of all conventions, treaties and agreements relevant to maritime fisheries that the Republic of the Congo has ratified is available on the ECOLEX environmental law information system at <https://www.ecolex.org/>

The Republic of the Congo is also member in international, regional, and bilateral fisheries bodies and arrangements relevant to maritime resources.

- Committee of Fisheries of the UN Food and Agricultural Organization (COFI/FAO). COFI encourages its members to contribute to the management of fisheries through voluntary instruments such as the Code of Conduct for Responsible Fisheries, IPOA-Sharks and IPOA-IUU. The Republic of Congo is signatory to IPOA-Sharks.
- Fishing Committee for Eastern Central Atlantic (CECAF). A regional advisory body that promotes the sustainable utilisation of the living marine resources in the Eastern Central Atlantic by the proper management of the fisheries and fishing operations.
- The Memorandum of Understanding concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa signed under the CMS,

- The Memorandum of Understanding on the Conservation of Migratory Sharks (MOU-Sharks) signed under the CMS. The MOU sharks requires specific measures for the conservation and management of all migratory sharks found in waters under member countries' jurisdiction,
- International Whaling Commission signed under the International Convention for the Regulation of Whaling
- Ministerial Conference on Fisheries Cooperation Among African States Bordering the Atlantic (COMHAFAT-ATLAFCO)
- Regional Commission of Fisheries of Gulf of Guinea (COREP)
- International Commission for the Congo-Oubangui-Sangha Basin (CICOS);
- the Economic Commission for Livestock, Meat and Fisheries Resources (CEBEVIRHA).

NATIONAL LEGISLATIVE AND REGULATORY FRAMEWORKS

The legal and legislative framework for maritime fishing in the Republic of the Congo is based on the Law N° 2-2000 of 1st February 2000, organising Maritime Fishing in the Republic of the Congo.

The Republic of the Congo has also taken national measures to legislate, regulate and manage the exploitation and trade in marine resources including sharks and rays in line with the 14th UN Sustainable Development Goal (SDG14) and the ratified international/regional conventions. These include:

- Law No. 3-2010 of 14 June 2010 on the organisation of coastal fishing and aquaculture
- Law N° 37-2008 of 28 November 2008 on wildlife and protected areas in the Republic of the Congo;
- Law N° 2-2000 of 1st February 2000, organising Maritime Fishing in the Republic of the Congo (found wanting and being renewed with a draft code on maritime fishing and aquaculture available since 2018);
- Decree No. 2012-175 of 12 March 2012 on the restructuring and operation of the Fisheries Development Fund
- Decree No. 2012-174 of 12 March 2012 on the status of observer on board a fishing vessel
- Decree No. 2012-173 of 12 March 2012 establishing the composition and operation of the Consultative Committee on Fishing and Aquaculture
- Decree No. 2011-320 laying down the conditions for the purchase or charter of fishing vessels in waters under The Congolese jurisdiction
- Decree No. 2011-319 of 26 April 2011 establishing the procedures for the conduct of technical visits to fishing vessels in waters under The Congolese jurisdiction
- Decree No. 2011-318 of 26 April 2011 laying down the procedures for the creation of marine culture establishments
- Decree No. 2011-317 of 26 April 2011 laying down the conditions for the pursuit of professional small-scale marine fishing
- Decree No. 2009-33 of 6 February 2009 laying down provisions on the mesh-size of nets and maritime fishing gear
- Decree No. 2005-517 of 26 October 2005 on the establishment, powers, and organisation of the microbiological and chemical analysis laboratories for fishery products

- Decree N° 2003-180 of 08 August 2003 organising the Ministry of Agriculture, Wildlife and Fisheries and attributing the management and development of maritime fisheries to the General Directorate of Fisheries and Aquaculture (DGPA)
- Decree N° 2003-178 of 08 August 2003 establishing and organising the General Directorate of Fisheries and Aquaculture (DGPA),
- Decree No. 94-345 of 1 August 1994 instituting and regulating the Fisheries Management Fund (FAH)
- Order N° 6075/MDDEFE of 09/04/2011 determining the fully and partially protected animal species in the Republic of the Congo. (lapsed since 2016, being renewed).
- Order No. 2660/MPA-CAB of 1 March 2011, incorporating the fishing and aquaculture industries into the remit of the Ministry of Fisheries and Aquaculture
- Order No. 9102/MPA-CAB of 17 November 2010 defining the artisanal and modern means of continental fishing.
- Order No. 5060/MPA/MDMM of 5 July 2010 relating to the installation of positioning, distress, and safety systems on board fishing vessels.
- Order No. 3640 of 29 September 2000 relating to the application of the sanitary self-inspection procedure for fishery products.
- Order No. 3638 of September 29, 2000 relating to the quality of the waters used in the processing of fishery products, the manufacture of ice and the control of these waters on board fishing vessels and in onshore establishments;
- Order No. 3634 of 29 September 2000 setting the health inspection procedures for fishery products and the means of production, processing of fish, molluscs and crustaceans;
- The CITES implementation guide for the Republic of the Congo.

The panoply of the Congolese national legislation on fisheries and aquaculture is available on the FAOLEX database at <http://www.fao.org/faolex/The-Congo-Fisheries-Legal-Framework>

The Law N° 2-2000 of 1st February 2000 has been found inadequate to meet the country's commitment under ratified conventions and agreement and its vision for the sustainable use of marine resources in line with SDG14. It is therefore being renewed with a new draft code governing fishing and aquaculture validated since April 2018 by the National Forum on Agriculture, Livestock and Fisheries but still to be enacted into law.

It is hoped that the new legislative and legal framework will permit an improved rational use of the maritime and continental fishery resources of the Congo and their development which will allow the fishing sector to harness its sustainable potential for the socioeconomic development of the country. This is to contribute to the implementation of the 2018–2022 national development plan and in line with the 2030 sustainable development agenda.

INSTITUTIONAL AND MANAGEMENT ARRANGEMENTS

Decree N° 2003-180 of 8th August 2003 organising the Ministry of Agriculture, Wildlife and Fisheries attributes the management and development of maritime fisheries to the General Directorate of Fisheries and Aquaculture (DGPA) as provided by Decree N° 2003-178 of 8th August 2003. This organ supervises all fisheries policies, operations, and initiatives being carried out in the Republic of the Congo through the central and departmental directorates. For maritime fisheries, the main agencies are the Directorate for Maritime Fisheries and the Directorate for Quality Control and Fisheries Product Valorisation both of the DGPA, and the Departmental Directorate for Fisheries and Aquaculture for Pointe-Noire and Kouilou.

The Congo works extensively with FAO and its subsidiary bodies on fisheries and aquaculture management and development. It also works with other agencies of the UN System, notably the United Nations Development Programme (UNDP), the World Food Programme (WFP), and the United Nations Industrial Development Organization (UNIDO). Other development partners involved in the fisheries and aquaculture sector include the World Bank (WB), the African Development Bank (AfDB), European Union (EU), French Development Agency (AFD), Japanese International Cooperation Agency (JICA).

TRAFFIC is a leading non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

FOR FURTHER INFORMATION CONTACT:

TRAFFIC
Global Office
David Attenborough Building
Pembroke Street
Cambridge CB2 3QZ
UK

+44 (0)1223 277427
traffic@traffic.org
traffic.org

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