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MEMORANDUM OF UNDERSTANDING ON THE CONSERVATION AND MANAGEMENT OF MARINE TURTLES AND THEIR HABITATS OF THE INDIAN OCEAN AND SOUTH-EAST ASIA

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SINGLE SPECIES ACTION PLAN FOR THE HAWKSBILL TURTLE (*Eretmochelys imbricata*) IN SOUTH-EAST ASIA AND THE WESTERN PACIFIC OCEAN REGION

(*as adopted by Range States at the Plenary Meeting on 2 June 2022, CMS Parties through Resolution 14.11 on 17 February 2024 and Signatory States of the IOSEA Marine Turtle MOU at MOS9 on 25 June 2024*)

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BACKGROUND

Hawksbill turtles (*Eretmochelys imbricata*) are found throughout the tropical and subtropical oceans of the world. Globally, hawksbill turtles are considered Critically Endangered under the IUCN Red List of Endangered Species. Like other marine turtle species, hawksbills turtles are of great cultural significance to many Indigenous Peoples and Local Communities (IPLCs). This Plan recognizes the traditional rights that IPLCs have to hawksbills, and the need to include traditional ecological knowledge in the sustainable management and conservation of the species.

CMS Parties first discussed the need for a Single Species Action Plan (SSAP) for hawksbill turtles in South-East Asia and the adjacent western Pacific at COP12 in 2017. Growing concern specifically about the status of hawksbill turtle populations in these regions communicated by experts and substantiated by findings of relevant reviews (e.g. IOSEA 2014) and other investigations (e.g. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 2016) led to the adoption of Decision 12.17 b), in which this plan was envisaged to cover trade, use and other threats. The CMS mandate was presented to Signatory States of the IOSEA Marine Turtle MOU in 2019, and a corresponding activity to cooperate with CMS in the joint development of a draft SSAP was agreed, bearing in mind that the SSAP would cover part of the MOU range, and extend much further eastward.

CMS Parties expressed the clear guidance that the SSAP should focus only on actions specifically needed for hawksbill turtles, rather than try to cover recommendations that would address the needs of marine turtle species and other threats such as coastal development and climate change more broadly (and covered by Decision 13.70 a) and b)). Accordingly, further analysis of existing and new publications (for example, refer CITES Secretariat 2019; Gomez and Krishnasamy 2019; Ingram et al. 2021; Kitade et al. 2021; Miller et al. 2019) and consideration of expert opinion led to the more restricted focus for the SSAP on just trade and use, as foreseen in Decision 13.70 c) (2020).

This SSAP seeks to integrate the actions necessary to address trade and use at both the domestic and the international level. To achieve this, existing policies and mandates were reviewed and collated (see CMS/IOSEA/Hawksbill-SSAP/Inf.5) and the most urgent high priority actions identified and included in this SSAP, to assist governments in implementing their commitments in a cohesive way. Accordingly, both the Secretariat for the Pacific Regional Environment Programme (SPREP) and the CITES Secretariat were consulted and engaged in the development of this SSAP.

Noting that the scope of this Action Plan is focused on the South-East Asia and Western Pacific region (refer section 3.2 for a list of countries included), reports have identified that hawksbill populations in other regions are also threatened by use and trade. The actions contained within this SSAP may be relevant for implementation and uptake in other regions, including through other mechanisms such as the Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC). The scope of this SSAP focuses on the South-East Asia and Western Pacific region because it was considered that the threats to hawksbill turtles from unsustainable use and trade required focus, and many countries required additional support, capacity building and resources to tackle the issue.

This integration of mandates and actions addressing both the domestic and international level is especially important given the migratory nature of hawksbill turtles which in many cases exist in multiple stocks and at multiple life-history stages within countries. This creates complex linkages between community and commercial use, something that can best be addressed through consolidation and prioritization of actions addressing use and trade at all levels.

Development of this SSAP

This SSAP was drafted by the CMS Secretariat in collaboration with the CMS partner organization WWF. It was shared with the Advisory Committee and the Illegal Trade Working Group of the IOSEA Marine Turtle MOU, the Scientific Council of CMS and all Range States for written comments. A revised draft was put before three sub-regional meetings of the Range States for their more detailed comments (10-12 May 2022). A consolidated draft incorporating these further comments was presented in advance of the Range State plenary meeting (31 May - 2 June 2022) for final changes and adoption by that meeting. The plan, as adopted by the Range States, was also adopted by the 14th Meeting of the Conference of the Parties to CMS and the 9th Meeting of Signatory States to the IOSEA Marine Turtle MOU.

1. BIOLOGICAL ASSESSMENT

1.1. Taxonomy

Common names:
English – Hawksbill
French – Tortue imbriquée
Spanish – Tortuga de carey

CLASS: REPTILIA
ORDER: TESTUDINES
FAMILY: CHELONIIDAE
SPECIES: Eretmochelys imbricata (Linnaeus, 1766)

There is one extant species for the genus and there are no valid subspecies currently recognized.

1.2. Global Distribution

Hawksbill turtles have a circumglobal distribution in the world's tropical oceans, and to a lesser degree in subtropical waters in of the Atlantic, Indian, and Pacific Oceans (Mortimer and Donnelly 2008). They are believed to inhabit coastal waters of at least 100 countries (Groombridge and Luxmoore 1989). In the Atlantic and Eastern Pacific Ocean, there are breeding aggregations in Antigua and Barbuda, Barbados, Costa Rica, Ecuador, El Salvador, Guadeloupe, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, and US Virgin Islands (Gaos et al. 2010; SWOT Report 2008). In the Indian Ocean and South-East Asia region (IOSEA), there are breeding aggregations in 32 countries (Hamann et al. 2022). In the Western Pacific Ocean, there are breeding aggregations in Australia, Papua New Guinea, Solomon Islands, Palau, Republic of the Marshall Islands, Samoa, American Samoa, Vanuatu, Fiji, French Polynesia, and Tonga (Madden Hof et al. 2022). For more information, please refer to the Hawksbill Assessments for IOSEA (Hamann et al. 2022) and Western Pacific Ocean region (Madden Hof et al. 2022).

1.3. Distribution in South-East Asia and the Western Pacific

There are currently six regional management units (RMUs) for hawksbill turtles in the region covered by this Action Plan (Wallace et al. 2010a). These are, 1. North-East Indian, 2. *West Pacific/South-East Asia, 3. West Central Pacific, 4. South-East Indian, 5. South-West Pacific and 6. *South Central Pacific (Figure 1). Those marked by with an asterix (*) were scored as putative (i.e., were based on nesting records but lacking other biological or genetic evidence) and may require modification as data become available.

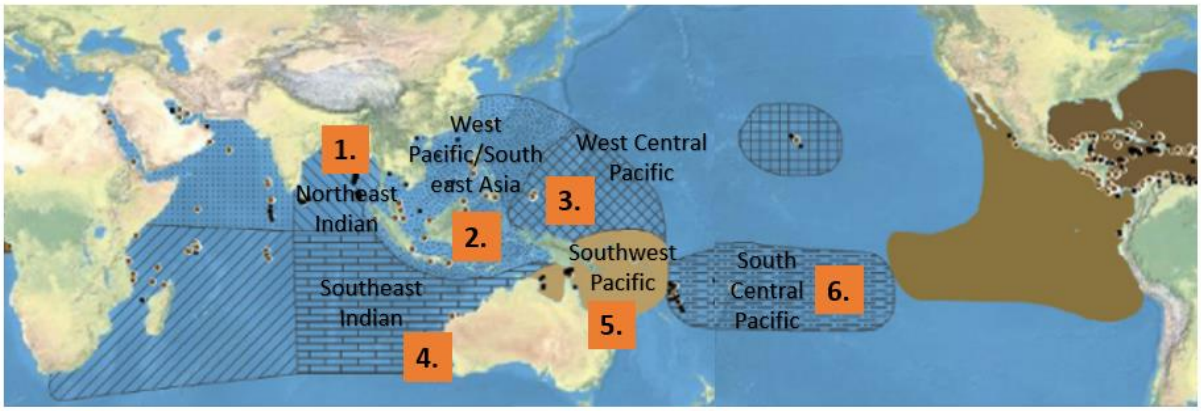

Figure 1. RMUs in the South-East Asia region. (Adapted from Wallace et al 2010a).

These RMUs are currently under review at a global scale. Within these RMUs, there are at least seven currently identified distinct populations/management units (MU, or genetic stocks) of hawksbill turtles that nest within the Action Plan region. In the West Pacific/South-East Asia RMU there are three: Sulu Sea (Malaysia), western Peninsula (Malaysia), Gulf of Thailand (Kho Kram) (postulated MU), where in the South-East Indian RMU, only the East Indian Ocean MU has been identified (FitzSimmons and Limpus 2014; Vargus et al. 2016). The majority of hawksbill RMUs in the western Pacific have not yet been assessed for genetic population structure, except for the South-West Pacific RMU of which it has three: North Queensland, North-East Arnhem Land, and the Solomon Islands genetic stocks (Vargus et al. 2016). Efforts to collect and analyze genetic samples are underway in a number of countries (see Madden Hof et al. 2022; refer World-Wide Fund for Nature ShellBank program and the Asia-Pacific Marine Turtle Genetic Working Group).

1.4. Migration Patterns

Hawksbill turtles are highly migratory and have been observed to travel vast distances between foraging and nesting sites, although nesting females can also migrate short distances and may often be more sedentary that other sea turtle species (Parker et al. 2009; Gaos et al. 2012a). In the western Pacific, migratory connectivity for hawksbill turtles is poorly understood overall. Nevertheless, satellite telemetry and tag recoveries have revealed the Coral Sea as a key foraging area for hawksbill turtles in the western Pacific (Limpus 2008; Pilcher 2021; Madden Hof et al. In Prep A). Hawksbills have been reported foraging throughout the Coral Sea after post-nesting migrations from the Conflict Islands in Papua New Guinea (CICI 2018; Madden Hof et al. In Prep B), the Arnavons in Solomon Islands (Hamilton et al. 2015), Vanuatu (Miller et al. 1998), and various sites in the Great Barrier Reef (Miller et al. 1998). Linkages of similar distances are demonstrated between American Samoa and the Cook Islands (Tagarino et al. 2008), as well as Guam and Pohnpei in the Federated States of Micronesia (Gaos et al. 2020). There have been numerous tracking and foraging area studies undertaken on populations in Australia (indicating, for example, that hawksbills nesting in Western Australia tend to remain in Australian jurisdiction; Fossette et al. 2021). However, hawksbill migration elsewhere in South-East Asia has not been extensively studied. Fifteen hawksbill turtles from Malaysia's Melaka nesting beaches (one island and two mainland sites) were satellite tracked between 2006-2013. Nearly all of these tracked turtles migrated southwards along the Malaysian coastline towards Singapore or the Riau Islands (Pilcher et al. 2019). Flipper tag recoveries and satellite studies in the Turtle Islands, Malaysia revealed hawksbill migration into the southern Philippines, along the east coast of Kalimantan in Indonesia and retention in Sabah's waters (Joseph 2017; Pilcher et al. 2019). There have also been tracking studies of a few individuals undertaken in Singapore and Timor Leste, but data remains unpublished. Further research on the spatial distribution, habitat utilization, and genetic relationships of hawksbill populations across the South-East Asia and western Pacific region is needed.

1.5. Population Productivity and Trend

The only index nesting sites for hawksbills in the western Pacific Ocean are the Arnavon Islands (Solomon Islands) and Namena Lala Island (Fiji), while the South-East Asia region has index nesting beaches in Australia, Indonesia, Malaysia (Peninsular and Sabah), Singapore, and Thailand (for a full list of index beaches in the South-East Asia region, see Hamann et al. (2022)). Given the lack of long-term mark-recapture studies, there are few recent peer-reviewed publications assessing annual trends in hawksbill nesting abundance available for most of the region covered by the Action Plan, except for the western Pacific countries of the Solomon Islands (increasing), north-east Australia (decreasing), and for South-East Asia countries, the Turtle Islands Heritage Protected area (Sulu Sea; probably decreasing).

The most recent region-wide assessment of trends (2008) estimates Pacific Ocean hawksbill populations to be at least 75% lower than historical levels (with an estimated 4,800 nesting females remaining in 2008) and in the Indian Ocean, estimates to be at least 92% lower than historical levels (with an estimated 2,100 nesting females remaining) in 2008 (Mortimer and Donnelly 2008). This assessment reported hawksbill populations in many countries were depleted and/or declining in both the western Pacific Ocean (e.g., most of Micronesia, American Samoa, Palau among others) and South-East Asia (e.g., India, Chagos Islands, Maldives, Myanmar, Viet Nam, Philippines, Malaysia among others).

Only two populations have more recently been reported to be likely stable, one in Thailand (although it is increasing from a highly depleted baseline), with the other population stable or increasing in Western Australia (Hamann et al. 2022).

Within its remit, SPREP is currently (2022) undertaking an extinction risk assessment which may further inform decision makes of trends in annual nesting patterns for hawksbill population in the western Pacific Ocean region. In the absence of recent quantified nesting census figures, and a lack of data on the stability of foraging area populations, the reported estimated trends and likely trajectory for hawksbill populations across the entire Action Plan region is of significant concern. Yet, addressing priority and other threats alongside habitat protection, can result in recovery as seen in some hawksbill populations in the western Indian Ocean (e.g., Seychelles and Chagos Archipelago; refer Mortimer 2011; 2017; 2020).

2. THREATS FROM ANTHROPOGENIC SOURCES

Current knowledge on threats to hawksbills in the South-East Asia and western Pacific Ocean regions has been recently synthesized by Hamann et al. (2022) and Madden Hof et al. (2022), respectively. While hawksbill populations are affected by an array of additional threats (e.g., marine debris, climate change and coastal development), the issues most relevant to use and trade are extracted from those reviews and presented here. These are categorized and described as: tortoiseshell trade; human use of turtles and eggs; and fisheries bycatch, targeted catch and illegal, unreported and unregulated (IUU) fisheries – acknowledging the overlap and interlinking of these threats.

The need to address threats for hawksbills in the region is supported by Wallace et al. (2011), who found that hawksbill turtles had the largest proportion of RMUs (7 out of 13 globally) assigned to the High Risk-High Threats category compared to other marine turtle species and are therefore most at risk of extinction. When grouping those seven RMUs by ocean basin, four occur in areas encompassed by this SSAP: North-East Indian Ocean, West Pacific Ocean, South Central Pacific and West Central Pacific (Wallace et al. 2011). Whilst the spatial boundaries of these RMUs are currently being reviewed, these findings and the need to address use and trade threats to hawksbill turtles were supported by IOSEA (2014) and CITES Secretariat (2019) assessments, alongside other more recent publications (e.g., Kitade et al. (2021) and Ingram et al. (2021)).

Under IUCN's Marine Turtle Specialist Group conservation assessment region categorization, Australasia, South Asia, and West Indian regions were also considered where marine turtle RMUs were at High Risk-High Threats (Work et al. 2021).

2.1. Tortoiseshell Trade

Large-scale commercial trade in tortoiseshell products occurred across the Indian Ocean for around 2,000 years, with considerable expansion since the 18th century and far into the 20th century (Mortimer and Donnelly 2008). From 1950 to 1986, for example, Japan imported around 1.3 million large-sized hawksbill turtles and 310,598 kg (8,394 per year) of raw

hawksbill shell (bekko) from countries in the IOSEA region (Groombridge and Luxmoore 1989).

Despite a global ban by CITES on the international commercial trade in hawksbill turtles, their parts and derivatives since 1977 (and a reservation lifted by Japan in 1992), an active illegal trade network (concentrated in South-East Asia) has created a renewed demand for turtles and turtle products (Gomez and Krishnasamy 2019). Miller et al. (2019) observed that trade in hawksbill shell was underestimated (originally 1.4 million to 9 million over a 150-year period) and that the current trade likely overlaps with the observed extent of modern-day IUU fishing activities, which may involve participation by small-scale fisheries (see Riskas et al. 2018; Vuto et al. 2019). Indeed, vessels from China and Viet Nam have been apprehended in the Philippines, Malaysia, Indonesia, and Australia for illegally taking, trading, or storing hawksbill turtles (IOSEA 2014; Miller et al. 2019). Another study found that marine turtles (including hawksbill turtles) were illegally trafficked internationally from Indonesia, Malaysia, and the Philippines (Gomez and Krishnasamy 2019). Further, from January 2015 to July 2019, at least 2,354 whole turtles, both alive and dead, were seized in 163 law enforcement incidents, and over 91,000 eggs were seized (of which over 75,000 were seized just in Malaysia), together with close to 3,000 shells and 1.7 tonnes of turtle meat (Gomez and Krishnasamy 2019) (species unknown). Viet Nam was also implicated in this study for its role in international trafficking as source, transit, and destination country. The most recent hawksbill turtle trade assessment in Japan revealed that there are still significant attempts to add illegally sourced hawksbill raw scutes (and tortoiseshell) into the domestic supply chain (Kitade et al. 2021). Between 2000 and 2019, Japanese customs reported 564kg of hawksbill tortoiseshell seized in 71 incidents, representing some 530 hawksbill turtles (with over half seized between 2015 and 2019 alone) (Kitade et al. 2021).

The continuing trade in hawksbill turtle shell and tortoiseshell products poses a serious threat to the recovery of hawksbill populations in the South-East Asia and western Pacific Ocean (Hamman et al. 2022; IOSEA 2014; Madden Hof et al. 2022). Recently in the Solomon Islands, Vuto et al. (2019) reported the local sale of hawksbill shell in 3 of the 10 communities surveyed, with evidence of sales to overseas buyers in Honiara. In the past, levels of export of tortoiseshell from the Solomon Islands were among the ten highest globally (Groombridge and Luxmoore 1989), and while these may have decreased, export may still be occurring. In Papua New Guinea, Kinch and Burgess (2009) noted that the trade in hawksbill turtles was ongoing in coastal towns, mainly in the form of tortoiseshell items for domestic buyers, and potentially targeting international tourists even though export is illegal. Also in Papua New Guinea, Opu (2018) found that turtle harvest was concentrated in Manus, Milne Bay, and Western Provinces. Media reports and anecdotal reports from government stakeholders suggest the tortoiseshell trade is still active in Palau despite a 2018 ban (Reklani 2021). While attempts are made to estimate trade and the resultant mortalities of hawksbills, the reports of illegal trade in hawksbill shells occurring in multiple western Pacific Ocean countries warrant further study.

2.2. Human Use of Turtles and Eggs

Hawksbill turtles have a high degree of cultural significance in many countries across the South-East Asia and western Pacific Ocean regions and are a traditional food with eggs and meat consumed, and shells used in customary practice and in trade (Frazier 1980; Groombridge and Luxmoore 1989; Pilcher 2021; Ingram et al. 2022). Papua New Guinea, Australia, and the Solomon Islands were ranked in the top five for legal marine turtle take (all species) globally (Humber et al. 2014). Despite their global critically endangered status (and varied conservation status between countries), hawksbill turtles in many countries are treated as an untapped (unregulated) fishery resource and are entangled in the transition from a subsistence to cash (trade) economy (Opu 2018). But as natural assets, it is the loss of hawksbill turtles and the habitats on which they depend that will result in the loss of basic

goods and services (e.g., food and raw materials, pest and competitor control, nutrient cycling, ecotourism, existence value) underpinning many communities in the region (refer Hoegh-Guldberg et al. 2016; Brander et al. 2021). A loss of hawksbill turtles also means a loss of cultural and customary practices.

The use and trade of hawksbill turtles and eggs continues in the South-East Asia region (IOSEA 2014; Gomez and Krishnasamy 2019). While the take and trade of hawksbill turtles, eggs, and various products are prohibited throughout much of the South-East Asia region, depleted hawksbill populations are nonetheless threatened by the ongoing illegal trade that involves several nations (Hamann et al. 2022; Ingram et al. 2022). To investigate this issue, the CITES Secretariat with support from the CMS Secretariat commissioned a study on the legal and illegal international marine turtle trade, with case studies in Madagascar, Mozambique, Malaysia, and Viet Nam (CITES 2019). Other studies have examined the illegal capture and commercial use of turtles in varying locations within the IOSEA region (see IOSEA 2014; Riskas et al. 2018; Gomez and Krishnasamy 2019; Miller et al. 2019; Williams et al. 2019). A synthesis of the complementary findings of these studies are reported in Hamann et al. (2022), with the following highlighting its key points:

1) There are major knowledge gaps regarding the species used (meat and eggs), the sociocultural and economic drivers underpinning illegal use and trade, and the types of use and motivations occurring in each country and/or South-East Asia sub-region.
2) IUU fishing is likely to have significant impacts on hawksbill turtle populations in the South-East Asia region due to its involvement in illegal turtle fisheries and links to wildlife trafficking operations.
3) Seizure records show that trade occurs between South-East Asia countries.
4) The trade is more likely to be deliberate than opportunistic, with organized trade networks supplying domestic and international markets (e.g., Malaysia, Viet Nam, Indonesia, China). Amid increased scrutiny of the turtle trade (largely driven underground), online platforms are being used to sell turtle products, including hawksbill shell (e.g., Indonesia, Malaysia).
5) There is a lack of enforcement of existing domestic legislation, as well as weak monitoring, control and surveillance of coastal fisheries that are abetting the illegal capture and trade, both domestic and international, of hawksbills.

In the western Pacific, hawksbill turtles and their eggs are harvested in every RMU, despite laws banning these practices in many countries (Wallace et al. 2010). Data is generally sparse on legal and illegal turtle and egg harvests, as documentation of these is inconsistent or unrecorded. Further, monitoring turtle harvest over vast distances between atolls and islands is logistically challenging. There are nevertheless a small but growing number of studies documenting use and trade of hawksbill turtles, eggs, and products, including several recent studies that estimate quantities taken.

Maison et al. (2010) indicate that there have been uncontrolled, long-term harvests of eggs and females in the Federated States of Micronesia that are likely to have had an impact on current population numbers. In the Republic of the Marshall Islands, turtles (primarily greens, but also hawksbills) have historically been a food source and played an important cultural role. Egg collecting and harvest of turtles while they are onshore is prohibited at all times, but current levels of illegal exploitation are unknown (Maison et al. 2010). In Palau, hawksbill turtles are taken to support a tradition of gift exchanges of *toluk* (Pilcher, pers. obs.), despite traditional closures and a current moratorium banning the take of turtles or eggs while onshore (Maison et al. 2010). In the Cook Islands, turtles are occasionally killed and eaten at Tongareva, Rakahanga, Manihiki, and Palmerston, and probably at other atolls, but the true level of direct take remains unclear for the Cook Islands (White 2012). There are no estimates or reports of adult or egg harvests for Kiribati, Nauru, Niue, the Pitcairn Islands, Tokelau, Tuvalu, or Wallis and Futuna.

In Papua New Guinea, Opu (2018) found that the highest catches of turtles (all species) occurred in Manus, Milne Bay, and Western Provinces. These catch numbers were likely to underestimate the true degree of turtle harvest in Papua New Guinea, given the limitations of the survey method and that many landed turtles were likely used for personal consumption or in the barter trade.

Acknowledging an increasing hawksbill population at the Arnavons (Hamilton et al. 2015), Vuto et al. (2019) provides a recent update on turtle harvests in the Solomon Islands. Modelled data (based on coastal community location, footprint of fisheries and existing average catch rates in localities not typical of turtle harvesting) estimated that 9,473 turtles were harvested each year by mostly (92%) free divers (95% CI: 5,063 to 22,423), with hawksbill turtles accounting for 2,435 turtles (26%) of the estimated total harvest. Juvenile turtles comprised 1,860 (76%) of estimated hawksbill captures, the remaining were adult-sized turtles (equating to 575; >75cm in carapace length, sex unknown, but likely caught near nesting localities). Hawksbill turtles were most commonly used for subsistence purposes (82%) and were most likely to be consumed by the family of the fisher that captured the turtles. However, the shells of 88% of hawksbill turtles harvested were sold to local buyers, who then on-sold to Asian buyers in Honiara. Hawksbill turtle products were far more likely to be illegally sold (32%) than green turtle products (12%) because of the domestic and international market for tortoiseshell.

In Vanuatu, there is a strong programme of local turtle monitors that aid in protecting turtles and convincing local communities to participate in turtle conservation efforts (Hickey and Petro 2005). It is estimated that turtle harvest in the past may have been in the region of 1,500 turtles per year, although they suggest that much of this harvest has since ceased (Hickey and Petro 2005). However, a recent survey found that people still catch turtles intentionally to eat and sell (Shaw, unpublished data). While this survey sample is not representative of the island chain as a whole, it does indicate that updated estimates of take and trade are needed.

A recent study found that the use of marine turtles for aquatic wild meat is likely to be far more widespread in terms of frequency and species than reported, especially amongst Indigenous People and Local Communities (IPLCs) (Ingram et al. 2022). The full extent of any legal or illegal harvest in the South-East Asia and western Pacific Ocean region is difficult to estimate because many uses by IPLC are not reported. Estimating levels of domestic take and trade is urgently needed to understand whether take and trade are having an effect on the population (Gomez and Krishnasamy 2019; Hamann et al. 2022; Ingram et al. 2022; Madden Hof et al. 2022).

Collaborative efforts to understand the socio-cultural drivers and annual levels of hawksbill turtle harvest and trade are underway. In collaboration with relevant governments, the World Wide Fund for Nature (WWF) and SPREP are supporting the delivery of a sociocultural survey in Papua New Guinea, Fiji, and Tonga. The project is part of WWF's broader Marine Turtle Use and Trade Initiative (MTUTI), which will collect and synthesize data on turtle use, trade, and genetics to advocate for targeted policy action to recover Asia-Pacific hawksbill turtle populations.

Whilst marine turtles provide many economic benefits, these values are not well documented. In 2004, Troëng and Drews undertook a global assessment of the direct consumptive use (food and materials), non-consumptive use (ecotourism), and non-use (existence and bequest) values of marine turtles. Since then, there have been a number of studies on the economic value of the ecosystem services provided by marine turtles (refer literature review by Brander et al. 2021), but these mainly focused on cultural, recreation, tourism or use for food. Very few studies have used economic methods to estimate the value of ecosystem services (provisioning, regulating, cultural) provided by marine turtles in monetary terms. Brander et al. (2021) estimated the value of provisioning (harvest) services to be US$800 per

year and non-use (existence and bequest) values of over US$45 billion per year in the Asia-Pacific region. The report concluded that there are significant opportunities to deliver massive economic benefit by capturing the public's support for investment in turtle conservation and management, whereby governments could work with other stakeholders to develop innovative financing mechanisms that can tap into this willingness to pay. The report also suggested governments could work collaboratively to develop initiatives to ensure that coastal communities earn more from conserving marine turtles than from harvesting them.

2.3. Bycatch and IUU Fishing

Incidental capture (bycatch) in commercial and small-scale fisheries is globally recognized as a major threat to marine turtle populations (Alverson et al. 1994; Lewison et al. 2004; Bourjea et al. 2008). In the IOSEA region, legal fisheries are considered to be a key threat to marine turtles despite the absence of quantitative data (Bourjea et al. 2008; Williams et al. 2019). Many governments of Signatory States of the IOSEA Marine Turtle MOU and regional fisheries management organizations (RFMOs) have implemented bycatch reduction and/or observer programmes to address the issue and understand impacts. However, the effectiveness of these mitigation measures is rarely evaluated, and bycatch records are typically examined at the level of individual fisheries, making cumulative impacts hard to discern (Riskas et al. 2016). In their review of bycatch literature in the IOSEA region, Hamann et al. (2022) indicate that bycatch of hawksbill turtles from longline and purse seine fisheries (both pelagic fisheries) is very low, while bycatch from gillnets and coastal artisanal fisheries are likely to have the highest impact on turtle populations due to their nearshore habitat preferences.

In the western Pacific Ocean region, commercial fisheries are dominated by longline and purse seine fisheries for tuna and tuna-like species. Monitoring of these fisheries in high seas areas is the responsibility of the Western and Central Pacific Fisheries Commission (WCPFC), an RFMO. Peatman et al. (2018a) estimated that hawksbill turtles accounted for 16% of turtle bycatch in purse seine fisheries in the WCPFC area from 2003 to 2017, with a mean of 36 hawksbills per year (range 15-75). Hawksbill bycatch is recorded in longline fisheries, with a mean of 1,126 individuals (range 534-1,598) caught per year in WCPFC longline fleets (Peatman et al. 2018b). Yet because not all bycatch incidences result in mortalities, and observer coverage is not sufficiently uniform nor normally distributed across the fishery (Peatman et al. 2018b), these figures should be used as indicative of the magnitude of the threat, not the precise quantities. Also, given the predominantly nearshore habitats of hawksbill turtles (Gaos et al. 2012b), and the deep-water operations of longline fleets, interaction rates with hawksbills are not high compared to other marine turtle species. This is supported by data in Peatman et al. (2018a), where hawksbills account for only 4.9% of all interactions.

Small scale fisheries are responsible for substantial levels of sea turtle bycatch and targeted catch in a number of regions (refer Sabah, Malaysia study site in Moore et al. 2010). They largely operate and overlap more acutely with hawksbill habitat in nearshore or coastal waters using a variety of gears, including gill, set and drift nets, trawls, seines, longlines, traps, and others (Lewison 2013). Research has shown that small-scale fisheries can have high levels of turtle bycatch that directly cause population declines (Lewison and Crowder 2007; Peckham et al. 2007; Alfaro-Shigueto et al. 2011). In the South-East Asia region, small-scale fisheries are ubiquitous and likely constitute the majority of the fisheries workforce (Teh and Sumaila 2013). However, robust data for hawksbill turtle bycatch in these fisheries is largely unavailable. There is only one published example of a small-scale fisheries bycatch assessment in Malaysia (Pilcher et al. 2009), in which an estimated 988 hawksbill turtles were taken in small-scale fisheries in a single year (extracted from data in Pilcher et al 2009).

In the western Pacific Ocean region, small-scale fisheries are widespread, often operating in remote areas and at levels that have not been quantified. Although a study commissioned by the CITES Secretariat (2022) surmised that bycatch and active targeting of marine turtles in small-scale fisheries is unlikely to contribute to the international trade of hawksbills, Vuto et al. (2019) provided evidence to the contrary from the Solomon Islands. Vuto et al. (2019) reported that hawksbill turtle products are far more likely to be sold illegally than green turtle products, and that the shells of 88% of hawksbill turtles harvested were sold to local buyers, who then on-sold to Asian buyers in Honiara. Because hawksbill turtles inhabit coral reef habitats and shallow coastal waters, they are highly vulnerable to bycatch, targeted catch, and mortality in the small-scale fisheries occurring in almost every country in the western Pacific Ocean region. As poachers have been documented encroaching on the national waters of the Coral Triangle and western Pacific countries (Lam et al. 2011), and amid growing evidence of the role of small-scale fisheries in facilitating the turtle trade (IOSEA 2014), a better understanding of hawksbill interactions with small-scale fisheries (bycatch and targeted catch) across the broader western Pacific region and beyond is urgently needed.

IUU fishing is a pervasive issue for fisheries management in every ocean basin (Agnew et al. 2009). Vessels engaged in IUU fishing are far less likely to comply with conservation mandates intended to reduce bycatch and mortality of non-target, vulnerable species, including marine turtles (MRAG 2005). In countries where intentional turtle take (or retention of turtle bycatch) by fishers is prohibited, if it occurs it would be considered illegal and could be categorized as IUU fishing. Illegal take of hawksbill turtles by coastal fisheries has been recorded throughout South-East Asia (i.e., Indonesia, Malaysia, Philippines, and Viet Nam) (IOSEA 2014) and the western Pacific Ocean (i.e., CNMI, Fiji, Guam, Palau, Solomon Islands, and Vanuatu) (see country summaries in Work et al. 2020). However, more information regarding take levels and size classes is needed to inform risk assessments and potential avenues for implementing effective mitigation measures.

The connection between IUU fishing and marine turtle use and trade is only recently being investigated. A report recently commissioned by the CITES Secretariat indicates that IUU fisheries are likely the main source of hawksbill turtles for international trade (CITES Secretariat 2022). Similarly, Riskas et al. (2018) found that IUU fishing poses a threat to marine turtle populations in the South-East Asia region, and that in certain regions IUU fishing is associated with poor fisheries management and wildlife trafficking. Lam et al. (2011) and IOSEA (2014) note the involvement of small-scale fishing vessels in the trafficking of hawksbill turtles and products in East and South-East Asia, while Miller et al. (2019) note that current patterns of IUU fishing may mirror historical illegal trade routes of hawksbill turtles. However, since IUU fisheries are by definition cryptic and difficult to study directly (Christensen 2016), their role in the contemporary scale of trade in hawksbill turtles remains unclear.

There is little documented information on hawksbill turtle interactions with illegal commercial fisheries in the western Pacific Ocean. IUU fishing incidence is estimated to be lower in the western Pacific than in many other seafood-sourcing regions globally and has decreased in the Pacific Islands region relative to a 2016 assessment of data from 2010-2015 (MRAG Asia Pacific 2021). This is attributable to the concerted and ongoing cooperative efforts by Pacific countries and partner organizations (e.g., the Pacific Islands Forum Fisheries Agency, the Pacific Community, or the Western and Central Pacific Fisheries Commission) to increase the monitoring, control and surveillance of fleets operating in the region.

2.4. Threat Prioritization

Given the already refined scope of this SSAP of use and trade as mandated by CMS COP13, the threat prioritization process to determine the relative impact of threats normally undertaken in other SSAPs was not considered necessary in this case..

In doing so, we recognize that threat levels of bycatch and take will differ as a result of the geographical range and specific life history traits of each hawksbill population including those that are shared (connected) among countries in the Indian, South-East Asian, and western Pacific Ocean regions. As a result, hawksbill turtle range states within the scope of this plan are encouraged to consider the impact of use and trade in the context of not only their local situation (nationally) but also regionally and internationally. As such, the prioritized activities listed below in section 4 are considered appropriate at national, regional, and international scales.

For more information on other threats to hawksbill turtle populations in the area covered by this SSAP, please refer to the Hawksbill Assessments for IOSEA (Hamann et al. 2022) and Western Pacific Ocean region (Madden Hof et al. 2022).

3. POLICIES AND LEGISLATION RELEVANT FOR MANAGEMENT

3.1. International Conservation and Legal Status of the Species

IUCN Status (Red List)	CMS	CITES
Critically Endangered A2bd: A) Population reduction in the following: 2. An observed, estimated, inferred or suspected population size reduction of 80% over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying): b) an index of abundance appropriate for the taxon d) actual or potential levels of exploitation	Appendix I and II App. I lists migratory species that have been assessed as being in danger of extinction throughout all or a significant portion of their range. Parties that are a Range State to these species shall endeavour to strictly protect them by: - prohibiting the taking of such species, with very restricted scope for exceptions; - conserving and where appropriate restoring their habitats; - preventing, removing or mitigating obstacles to their migration and controlling other factors that might endanger them. App. II lists migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international co-operation that could be achieved by an international agreement. Migratory species may be listed both in Appendix I and Appendix II.	Appendix I Lists species currently threatened with extinction from international trade. CITES prohibits international trade in wild-taken specimens of these species except when the importing country certifies that the import is for primarily non-commercial purposes.

3.2. Regional and International Legally and Non-legally Binding Instruments and Relevant Bodies

Tick **mark (✓) indicates adoption, ratification, or membership. For more detail, please refer to** CMS/IOSEA/Hawksbill-SSAP/Inf.5.

Signatories and Parties within the range of the SSAP	CITES	CBD	CMS	UNCLOS	RFMOs	PSMA	Ramsar Convention	IOSEA Marine Turtle MOU	MOU ASEAN Sea Turtle Conservation and Protection	CTI-CFF	London Declaration (IWT)	SSME Regional Action Plan	SPREP	IAC
American Samoa (USA)	✓			✓	✓	✓	✓	✓			✓		✓	✓
Australia	✓	✓	✓	✓	✓	✓	✓	✓			✓		✓	
Brunei Darussalam	✓			✓					✓					
Cambodia	✓	✓				✓	✓	✓			✓			
China	✓	✓		✓	✓		✓				✓		✓	
Cook Islands		✓	✓	✓	✓	✓							✓	
Federated States of Micronesia		✓		✓	✓								✓	
Fiji	✓	✓	✓	✓	✓	✓	✓						✓	
French Polynesia (France)	✓	✓	✓	✓	✓	✓	✓				✓		✓	
Guam (USA)	✓				✓	✓	✓	✓			✓		✓	✓
Hawaii (USA)	✓				✓	✓	✓	✓			✓			✓
Hong Kong (China)	✓	✓		✓			✓							
Indonesia	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓		
Japan	✓	✓		✓	✓	✓	✓				✓			

Signatories and Parties within the range of the SSAP	CITES	CBD	CMS	UNCLOS	RFMOs	PSMA	Ramsar Convention	IOSEA Marine Turtle MOU	MOU ASEAN Sea Turtle Conservation and Protection	CTI-CFF	London Declaration (IWT)	SSME Regional Action Plan	SPREP	IAC
Kiribati		✓		✓	✓		✓						✓	
Lao People's Democratic Republic	✓	✓		✓			✓		✓		✓			
Malaysia	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓		
Marshall Islands		✓		✓	✓		✓						✓	
Myanmar	✓	✓		✓		✓	✓	✓	✓		✓			
Nauru		✓		✓	✓								✓	
New Caledonia (France)	✓	✓	✓	✓	✓	✓	✓				✓		✓	
New Zealand	✓	✓	✓	✓	✓	✓	✓				✓		✓	
Niue		✓		✓	✓		✓						✓	
Northern Marianas (USA)	✓					✓	✓	✓			✓		✓	✓
Palau	✓	✓	✓	✓	✓	✓	✓						✓	
Papua New Guinea	✓	✓		✓	✓		✓	✓		✓			✓	
Philippines	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Republic of Korea	✓	✓			✓	✓	✓							
Samoa	✓	✓	✓	✓	✓		✓						✓	

Signatories and Parties within the range of the SSAP	CITES	CBD	CMS	UNCLOS	RFMOs	PSMA	Ramsar Convention	IOSEA Marine Turtle MOU	MOU ASEAN Sea Turtle Conservation and Protection	CTI-CFF	London Declaration (IWT)	SSME Regional Action Plan	SPREP	IAC
Singapore	✓	✓		✓					✓		✓			
Solomon Islands	✓	✓		✓	✓					✓			✓	
Taiwan (China)				✓	✓									
Thailand	✓	✓		✓		✓	✓	✓	✓		✓			
Timor-Leste		✓		✓						✓				
Tokelau				✓			✓						✓	
Tonga	✓	✓		✓	✓	✓							✓	
Tuvalu		✓		✓	✓								✓	
United States of America	✓				✓	✓	✓	✓			✓		✓	✓
Vanuatu	✓	✓		✓	✓	✓	✓						✓	
Viet Nam	✓	✓		✓		✓	✓	✓	✓		✓			
Wallis and Futuna (France)	✓	✓	✓	✓	✓	✓	✓						✓	

3.3. National Legislation Relevant to the Species

There are varying levels of national and state laws, legislative frameworks, and policies afforded to hawksbill turtles throughout the South-East Asia and western Pacific region.

Upon reviewing the relevant national legislation of 38 States within the scope of this Action Plan, the following issues were identified:

First, the majority of national legislation reviewed does not have conservation and protection provisions designated for the hawksbill turtle. Rather, the species is included in broader conservation and protection regimes intended for "marine resources", "living aquatic species" or "fish" which may narrow down to "reptiles" and, on occasion, "turtles". As a result, legal provisions are not tailored to the specific circumstances of the hawksbill turtle.

Second, there is a lack of designation of the hawksbill turtle as a "protected" species or further conservation status designation (e.g., "endangered") in national legislation. In some cases, this is because legislation does not provide provisions for protection or conservation status designation, or because hawksbill populations assessments have not yet been undertaken to allow such designation. To that end, the national legislation of many States does not reflect either the International Union for the Conservation of Nature (IUCN) "critically endangered" global Red List status of the hawksbill turtle or the status of the population occurring within a country's jurisdiction, potentially undermining the urgency with which the hawksbill turtle needs to be protected.

Third, there are instances where national laws on the protection of the hawksbill turtle bifurcate. Where there are such official designations for the "protected" or "endangered" status of the hawksbill turtle which give the species enhanced protection, a number of States also recognize the customary rights of the local communities, including take and subsistence. There are a few nations with total bans on all forms of take, use and trade in place. In other cases, there are laws that specify size or catch limits (i.e., domestic quotas), use traditional use permit systems or rely on management plans to manage harvest levels. As such, national legislation protecting both the hawksbill turtle and the customary rights of local communities is an important issue that requires a delicate balance.

Fourth, the wide range of penalties prescribed across the reviewed States' national laws helps highlight a difference in deterrence. The variety of penalties based on, among others, the offender being a natural or a legal person, the fine being a maximum fixed amount or the market value of the species or any part thereof, or the violation being a recurring offence gives rise to differing levels of deterrence, making certain States' national legislation inconducive to achieving the long-term protection of the hawksbill turtle.

Lastly, different types of legislation across different jurisdictions (e.g., from national to state/provincial to local laws) are used by States to protect and/or manage hawksbill turtles. For example, wildlife laws to designate "protected" status and govern use and trade; fisheries laws to regulate fishing and hunting activities/quotas; protected area laws to conserve and manage habitat. Combined, these laws offer strengthened conservation, management and protection to the hawksbill turtle. Yet there are many States that only use one form of legislation. In some cases, different laws are used across jurisdictions that are conflicting, which can be problematic when managing a highly migratory species that travels between countries and is afforded different levels of protection across its range.

Details are provided in *Annex 1: Overview of relevant national legislation by country relevant to the Hawksbill Turtle* (available at https://www.cms.int/en/document/single-species-action-plan-hawksbill-turtle-south-east-asia-western-pacific), which is kept separate to allow updates as and when required.

4. FRAMEWORK FOR ACTION

4.1. Goal

To address unsustainable use and trade of hawksbill turtles in the South-East Asia and Western Pacific Ocean region and build resilience in the populations

4.2. Objectives, Actions and Results

The objectives, results and corresponding actions to address the threats associated with take, use and trade of hawksbill turtles are set out in the tables below.

There are **23 actions in this SSAP**. These were consolidated based on CMS/IOSEA/Hawksbill-SSAP/Inf.5 Policy Review as Background to the Development of a Single Species Action Plan for Hawksbill Turtles in South-East Asia and the Adjacent Western Pacific and all of which are already embedded within at least one existing policy frameworks and/or mandate for delivery amongst various countries or range states. The links between the SSAP actions and these policies or mandates are listed in the table. A description of '*Ways of potential delivery*' has also been added to each action to assist with implementation.

Actions are prioritized as essential (red), high (orange), medium (yellow). No low priority was assigned given the urgency of addressing these threats. **Timescales** are also attached to each Action based on its prioritization and urgency of delivery, using the following scale:

- Immediate: to be initiated with a view to completion within the next year
- Short: to be completed within 3 years
- Medium: to be completed within the next 5 years
- Ongoing: currently being implemented and should continue

A top seven action list has been prioritized as immediate or urgently required to be delivered within the next year. Some actions have associated funding or resources already committed.

Thirteen actions are prioritized for delivery within the next three years and three within the next five years. Given concern over the known declines and in many cases the unknown trajectory of many populations, as well as the gaps in our knowledge of hawksbill turtles in these regions, utmost urgency is required. As such, potential delivery mechanisms and partners have also been indicated to guide collaborations and support for delivery.

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
Objective 1: Review and where necessary improve legislation, policy, compliance and enforcement of hawksbill turtle take, use and trade in at least half of SSAP countries in South-East Asia and the Adjacent Western Pacific by 2025.						
1.1 Legislative reviews and, if necessary, reforms are made in each country that result in greater protection from unsustainable use and trade of hawksbill turtles.	1.1.1 Conduct a review of protective legislation and identify problematic inconsistencies between countries	• *Contribute and participate in WWF's marine turtle legislative and baseline status review* • *Undertake as part of National and Regional Plans of Action for marine turtles*	I/R	Immediate	CMS, IOSEA MOU, SPREP, IAC	1, 3, 4, 5, 7
	1.1.2 Enact new laws on hawksbill turtle conservation related to use and trade, seeking to remove any problematic inconsistencies (including between countries) within national legislation, and alter legislation to fully implement international commitments related to hawksbills, where necessary and appropriate	• *Prioritize as a result of 1.1.1* • *CMS Parties can ask for support from the CMS Secretariat*	R/N	Short	National Governments	1, 3, 5, 8
	1.1.3 Relevant authorities commit to building capacity and undertaking training to improve the implementation and enforcement of national regulations and regional/international treaties, instruments or initiatives that apply to the unsustainable take and use of hawksbill turtles	• *Identify and articulate resource needs and raise funds to increase human and material resources, build field-level capacity at national and regional levels, including for enforcement* • *Seek to participate in existing training sessions and programs provided by IGOs, NGOs and others (e.g., CITES local enforcement training, CTOC training)*	R/N	Short-Ongoing	NGOs, IGOs, Financial Institutions, National Governments, SPREP, CTI-CFF, CITES	1, 2, 3, 5, 6

[1] **Level**: (R) Regional; (N) National; (I) International

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
	1.1.4 Improve law enforcement activities, surveillance, compliance and response (detection, confiscation, monitoring and reporting) as necessary where hawksbill turtles are exploited in coastal areas and at transaction points, both where take is legal and where illegal activities occur.	• *Prioritize as a result of 1.1.1* • *Participate in WWF's ShellBank* • *Implement findings and outputs of National Assessments, Rapid Reference Guides and/or undertake self-assessment (e.g., ICCWC) for other countries* • *Seek to participate in existing training sessions and programs provided by NGOs and others (e.g., CTOC training), or seek/provide funding for new*	N/R	Immediate - Short	National Governments, CTI-CFF, INTERPOL, ASEANAPOL, local community groups	1, 2, 3, 5
	1.1.5 Address any shortcomings in the criminal justice process with regard to illegal activities involving hawksbill turtles.	• *Build awareness in prosecution services of the seriousness of wildlife crime as an organized crime and improve capacity, including through the preparation of manuals to guide the prosecution of wildlife crimes (e.g., Rapid Reference Guides), and guidelines on evidential handling and forensic analysis*	N/R	Immediate - Short	National Governments, UNODC	2

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
1.2 Conservation actions and targeted management plans are developed that address unsustainable use and trade of hawksbill turtles, where appropriate reflected in newly-enacted legislation, and are enforced	1.2.1 Update, complete and implement Marine Turtle National Plans of Action (CTI-CFF or equivalent management plans), community-led traditional use agreements, and in consultation with other range states, CTI-CFF Regional Plan of Action (RPOA) and SPREP's Regional Marine Turtle Action Plan 2023-2028, ensuring that they address relevant recommendations in CITES information document CoP18 Inf. 18and related Decisions 18.211-18.213 (and any relevant new Decisions or Resolutions), and: ● Surveillance and enforcement of trade in hawksbill meat and parts; ● Legislative reform for incidental bycatch in all fisheries (including small-scale community fisheries) and practical modifications of fishing gear; ● Traditional management and regulation of domestic quotas, if any, and any user rights relating to habitat critical for hawksbill turtles ● Identification, based on satellite tracking, tag recovery and genetic	• *Make an assessment of gaps and seek support from CITES Secretariat to deliver CITES Turtle Decisions (as per Turtle Decision 18.210 - 18.217)* • *Engage relevant researchers and NGOs to assist, and where needed, seek funding support to develop and/or finalize CTI-CFF NPOA or other national management plan/strategy* • *Participate WWF's Turtle Use Project* • *Contribute to existing SPREP processes to finalize and endorse work plan* • *Commit to working with CTI-CFF to develop RPOA*	R/N	Immediate	CTI-CFF, SPREP, CMS, IOSEA MOU, IAC, National Governments, local community groups	1, 2, 3, 4, 5, 7, 9, 10

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
	data, of a network of hawksbill habitat and migratory protection sites and of habitats requiring greater protection.					
	1.2.2 Where domestic harvest of specimens of hawksbill turtles, including eggs, is legal, ensure any domestic harvest quotas are established based on robust science-based methods and the principles of sustainability, including accounting for existing use in other States that share hawksbill turtle stock(s)	• *Prioritize as part of 1.2.1 and 1.1.1* • *Participate in WWF's Turtle Use Project*	N/R	Short	National Governments, local community groups	2, 3

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
Objective 2: Increase action and improve accountability to further monitor and report on hawksbill take, use and trade nationally and cooperate regionally to exchange data, share intelligence and strengthen collaborations						
2.1 Accountability and action in detecting and monitoring is enhanced, improving the control and reporting of illegal trade and fishery/vessel activity	2.1.1 In a standardized manner, collect illegal wildlife trade data and using all available technologies ascertain key trade routes, methods, volumes, and trade 'hot-spots' that can be used for monitoring trade in hawksbill turtles; and submit comprehensive and accurate information on illegal trade in marine turtles in national annual illegal trade reports to the CITES Secretariat and other relevant bodies (e.g., CTI-CFF, TRAFFIC WiTIS database).	• *Prioritize as part of 1.1.1* • *Participate in WWF's ShellBank* • *Respond to CITES Turtle Decision notifications and submit annual illegal trade reports.* • *Seek guidance on a 'standardized' approach and/or methodology to collect consistent and comparative trade data within and between countries relevant to the question at hand (for example, TRAFFIC market survey methodology, WWF's socio-cultural use and trade survey methodology, or following CITES/CMS trade questionnaires).* • *Seek guidance of available technologies and facilitate the development and dissemination of new technologies.*	N	Ongoing - Short	CITES, CTI-CFF, National Governments, NGOs, Universities and Research Institutes	1, 2, 3, 5
	2.1.2 Increase action where necessary to tackle the illicit financial flows associated with hawksbill turtle trafficking and related corruption, including increasing use of financial investigation techniques and public/private collaboration to identify criminals and their networks	• *Approach UNODC, Wildlife Justice Commission or similar to assist with in-country or regional assessment* • *Partner with ACAMS* • *Work with the private sector to seek support and delivery*	N	Immediate - Short	National Governments, UNODC	11

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
	2.1.3 Improve accountability for the practices (e.g., handling, release, record keeping) undertaken by all vessels and improve the associated monitoring and control at landing sites	• *Submit comprehensive and accurate national annual illegal trade reports to the CITES Secretariat and other relevant bodies (e.g., CTI-CFF, TRAFFIC's WiTIS database etc.)* • *Ratify the Agreement on Port State Measures (PSMA or Port State Measures Agreement) to prevent, deter and eliminate illegal, unreported and unregulated fishing.*	N	Short	National Governments, FAO (via Port State Measures Agreement), RFMOs	3, 5
	2.1.4 Continue and/or establish national and regional bycatch mitigation programmes for industrial and artisanal fisheries (also community/small-scale fisheries), particularly where additional management is required, to enhance their use (including gear modifications, TEDs) and reduce bycatch.	• *Prioritize as part of 1.2.1 and 1.1.1*	N/R	Short	National Governments	2, 4
	2.1.5 Continue and/or establish national and regional observer programmes to assess and quantify fishery impact/overlap to hawksbill turtle populations, stocks and distribution, and prioritize areas, stocks, fisheries for additional management.	• *Work with the private sector to seek support and delivery*	N/R	Medium	National Governments	2, 4

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
2.2 Improved collaboration, cooperation and intelligence sharing to all relevant policy fora (local, national, regional and international) and between all South-East Asia and Western Pacific Ocean countries results in better coordinated efforts to address unsustainable take and trade of hawksbill turtles	2.2.1 Increase intra- and interregional collaboration and exchange of actionable intelligence between source, transit, and destination countries to address the illegal take and trade of hawksbill turtles, and coordinate efforts to identify and address fishing interactions with hawksbill turtles in the high seas.	• *Submit comprehensive and accurate national annual illegal trade reports to the CITES Secretariat and other relevant bodies (e.g., CMS National Reports, IOSEA Marine Turtle MOU National Reports, CTI-CFF, TRAFFIC's WiTIS database etc.)* • *Ratify the Agreement on Port State Measures (PSMA or Port State Measures Agreement) to prevent, deter and eliminate illegal, unreported and unregulated fishing.*	N/R	Short	National Governments, CITES, ICCWC, INTERPOL, ASEANAPOL, UNODC, RFMOs and other Regional Fishery Bodies, CTI-CFF	1, 2, 3, 5, 11, 12, 13, 14, 15
	2.2.2 Strengthen internal, bilateral, and international cooperation in enforcement by collaborating with IGOs and NGOs to ensure the issue of marine turtle trade is raised where necessary on the agendas of relevant multilateral agreements and fora, and meetings of other relevant organizations	• *Increase cooperation between fisheries and environment ministries*	R	Ongoing - Immediate	National Governments, IGOs incl. CITES, CMS, IOSEA MOU, NGOs, INTERPOL, UNTOC, FAO, RFMOs	1, 2, 3, 5

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
2.3 Research and evaluation undertaken enables baselines and scale of impact of take, use and trade to be determined	2.3.1 Enhance research to further capture the scale and impact that national and international artisanal, semi-industrial and industrial fisheries, including illegal, unreported, and unregulated fishing, have on hawksbill turtle populations and their linkage to illegal trade including through the use of on-board observer data, fishing community surveys, and other methods where appropriate	• *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies*	N	Immediate - Ongoing	NGOs, National Governments, World Bank, Universities and Research Institutes	1, 2, 3, 5
	2.3.2 Evaluate social, cultural, and economic values of hawksbill turtles, both intrinsically and in terms of their use and trade, and investigate the drivers that underpin the use and trade of hawksbill turtles and products	• *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies* • *Participate in WWF's Turtle Use Project*	N/R/I	Short	NGOs, National Governments, Universities and Research Institutes	1, 2, 5

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
	2.3.3 Continue and/or collect genetic samples of hawksbill turtles using standardized methods and conduct reliable analysis to determine the population of origin (e.g., nesting), geographic boundaries of stocks (e.g., foraging) and the genetic diversity between and within stocks. Compile and map data to support, for example, research, investigations and prosecutions, and policy decisions nationally and internationally.	• *Align with the activities identified as part of 1.2.1 and 1.1.1* • *Participate in WWF's ShellBank* • *Participate in the Asia Pacific Marine Turtle Genetic Working Group* • *Incorporate research questions into national research strategies*	N	Ongoing - Immediate	National Governments, Universities and Research Institutes	1, 2, 3, 5
	2.3.4 Research and establish a baseline for the conservation status and distribution of hawksbill turtles in the different countries/regions and where gaps exist, further study hawksbill genetic identity, life history, population trends, habitat needs, migration routes, and other biological and ecological aspects, as necessary	• *Seek support, financial and technical assistance from Universities, Research Institutes, IOSEA Marine Turtle MOU Advisory Committee, IGOs, NGOs or local community groups* • *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies* • *Contribute to the Coral Triangle Atlas, SPREPs TREDs database, CMS TurtleNet, and other databases as appropriate* • *Participate in WWF's Turtle Use Project and ShellBank* • *Participate in the Asia-Pacific Marine Turtle*	N/R	Ongoing - Immediate	National Governments, Universities and Research Institutes, IGOs, NGOs, local community groups	1, 2, 3, 5

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
		Genetic Working Group • *Contribute and participate in WWF's marine turtle legislative and baseline status review*				
2.4 Established best practice standards and protocols are used to guide and deliver on-ground monitoring and management of hawksbill turtles	2.4.1 Review existing research methods and monitoring protocols to ensure standard best practice monitoring guidelines and monitoring systems are used for hawksbill turtles, publish and provide training where required, and apply to existing or newly established index nesting and foraging sites to ensure monitoring of populations is carried out as precisely and accurately as possible so information can be shared amongst range states to improve knowledge of the status, distribution, numbers (trend) and state of health (refer Activity 2.3.3.and 2.3.4).	• *Seek support, financial and technical assistance from Universities, Research Institutes, IOSEA Marine Turtle MOU, IGOs, NGOs or local community groups* • *Contribute to the IUCN Marine Turtle Specialist Group (SSC) and SPREP's sea turtle monitoring guideline updates* • *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies*	I/N	Short - Medium	National Governments, CMS, IOSEA MOU, Universities and Research Institutes, IGOs, NGOs, local community groups	1, 2, 4, 5, 9, 10

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
	2.4.2 Define and identify habitat critical for hawksbill turtle stocks at different life history stages with a particular focus on the trans-boundary nature of life-cycle stage requirements, migratory patterns, and related protection strategies and adequately protect critical areas including through but not limited to marine protected areas (refer Activity 3.1.3).	• *Seek support, financial and technical assistance from Universities, Research Institutes, IGO, NGOs or local community groups* • *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies*	R/N	Short	National Governments, IGOs, CTI-CFF, NGOs, Universities and Research Institutes	2, 9
Objective 3: Further research and evaluate the level of impact trade and fishery activity have on hawksbill populations and deliver on-ground implementation projects by 2027						
3.1 Awareness, education and sustainable alternatives reduce poaching, overexploitation and trade in hawksbill turtles	3.1.1 Work with local communities, including youth and women, turtle consumers, religious leaders as appropriate, in taking further steps to understand use and trade, including with a view to reducing unsustainable practices, and to raise community and political awareness, information sharing and education on such matters as: ● the conservation status of hawksbill turtles, ● possible health issues involved in consumption, ● the illegal trade including online,	• *Seek support, financial and technical assistance from Universities, Research Institutes, IGO, NGOs or local community groups* • *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies* • *Seek economist expertise on how to capture the publics willingness to pay for marine turtle conservation (e.g., WWF's Asia-Pacific Marine Turtle Economic valuations (and in-country reports))* • *Participate in WWF's Turtle Use Project*	N	Short	NGOs, National Governments, local community groups, health sector, economists	1, 2, 3, 4, 5

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
	• existing regulations and the importance of promoting the conservation of the species through compliance with policy, and • formulation of effective economic incentives (supported by financial or technical assistance) to reduce poaching (refer Activity 3.1.3)					
	3.1.2 Building on Activity 2.3.2, examine motivations for both legal and illegal harvest and use of hawksbill turtles and their eggs, and where such use exceeds sustainable limits, assess the sustainability of, recommend and implement alternative livelihood options for communities which depend on marine turtles, include subsistence users in decision making, and seek financial and technical support to address this item (also refer Activity 1.2.2 on domestic trade)	• *Seek support, financial and technical assistance and advice from Universities, Research Institutes, IGO, NGOs or local community groups* • *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies* • *Participate in WWF's Turtle Use Project*	N	Short	National Governments, NGOs, local community groups	1, 2, 3

Result	Actions	Ways of Potential Delivery	Level[1]	Priority & Timescale	Suggested Partners	Related Mandates
	3.1.3 To reduce poaching and the exploitation of hawksbill turtle products, establish economically and environmentally effective direct incentive (i.e., economic) schemes (e.g., employment/payment) to deter illegal poaching, or establish effective indirect incentives (developing and fostering alternative sustainable livelihoods such as eco-tourism, use religious edicts to curb turtle consumption) for turtle users (also refer Activity 3.1.1)	• *Seek support, financial and technical assistance from Universities, Research Institutes, IGO, NGOs or local community groups* • *Coordinate research activities among partners* • *Align with the activities identified as part of 1.2.1 and in review of 1.1.1* • *Incorporate research questions into national research strategies* • *Seek economist expertise on how to capture the publics willingness to pay for marine turtle conservation (e.g., WWF's Asia-Pacific Marine Turtle Economic valuations (and in-country reports))* • *Participate in WWF's Turtle Use Project*	N/R	Medium	National Governments, CMS, IOSEA MOU, NGOs, local community groups, donor organizations	1, 2, 5, 11

Related Mandates:

(1) IOSEA Marine Turtle MOU Conservation and Management Plan 2009
(2) IOSEA Marine Turtle MOU Work Programme 2020-2024
(3) CITES CoP18 Turtle Decisions 2019
(4) Sulu Sulawesi Marine Turtles Action Plan 2011
(5) Pacific Islands Regional Marine Species Programme 2022-2026
(6) Tools of the International Consortium on Combating Wildlife Crime (ICCWC)
(7) Inter-American Convention Hawksbill Conservation Resolution 2017
(8) MOU ASEAN Sea Turtle Conservation and Protection
(9) CTI-CFF Regional Plan of Action 2012
(10) Ramsar Convention Resolution XIII.24
(11) London Declaration 2018
(12) UNTOC
(13) UN Convention Against Corruption
(14) PSMA
(15) UNCLOS

Abbreviations

ACAMS	Association of Certified Anti-Money Laundering Specialists
ASEAN	Association of Southeast Asian Nations
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
COP	Conference of the Parties
CTI-CFF	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
CTOC	Program on Countering Transnational Organized Crime
IAC	Inter-American Convention for the Protection and Conservation of Sea Turtles
ICCWC	International Consortium on Combating Wildlife Crime
IOSEA MOU/IOSEA Marine Turtle MOU	Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia
IPLCs	Indigenous Peoples and Local Communities
IUU	illegal, unreported and unregulated (IUU) fisheries
London Declaration (IWT)	London Conference on the Illegal Wildlife Trade (October 2018)
MOU ASEAN Sea Turtle Conservation and Protection	Memorandum of Understanding on ASEAN Sea Turtle Conservation and Protection
MUs	distinct populations/management units (or genetic stocks)
NPOA	National Plan of Action
PSMA	Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
Ramsar Convention	Convention on Wetlands of International Importance especially as Waterfowl Habitat
RFMOs	Regional Fisheries Management Organizations (relevant for this SSAP: • CCSBT: Commission for the Conservation of Southern Bluefin Tuna • IOTC: Indian Ocean Tuna Commission • NPFC: North Pacific Fisheries Commission • SIOFA: Contracting Parties of Southern Indian Ocean Fisheries Agreement (SIOFA) • SPRFMO: South Pacific Fisheries Management Organisation • WCPFC: Western and Central Pacific Ocean Commission)
RMUs	Regional Management Units
RPOA	Regional Plan of Action
SPREP	Secretariat for the Pacific Regional Environment Programme
SSAP	Single Species Action Plan
SSME Regional Action Plan	Sulu Sulawesi Marine Ecoregion Regional Action Plan
UNCLOS	United Nations Convention on the Law of the Sea
UNODC	United Nations Office on Drugs and Crime
WiTIS database	TRAFFIC Wildlife Trade Information System
WWF	World-Wide Fund for Nature

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ANNEX 1

OVERVIEW OF RELEVANT NATIONAL LEGISLATION BY COUNTRY

Available at https://www.cms.int/en/document/single-species-action-plan-hawksbill-turtle-south-east-asia-western-pacific (kept separate to allow updates as and when required).