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OF WILD FAUNA AND FLORA

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A REPORT ON ILLEGAL TAKE OF AND TRADE IN MARINE TURTLES

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# A report on illegal take of and trade in marine turtles

Prepared by the Secretariat of the CMS / IOSEA Marine Turtle Memorandum of Understanding and the Secretariat pro tempore of the Inter-American Convention for the Protection and Conservation of Sea Turtles, November 2015

1. Marine turtles have been listed under CITES since 1975, and Appendix I since 1985. Despite their listing under Appendix I, illegal trade in marine turtles and their derivatives continues and is largely under-reported even by Signatory States to the IOSEA Marine Turtle MoU.
2. A major review prepared for IOSEA SS7<sup>1</sup> showed that all species of marine turtles are at risk from the impacts of illegal take and trade, but the full extent of these activities are still largely unknown and unquantified. This paper summarises the main findings relevant to CITES. While the paper's geographic scope and content is limited to the respective areas of application of the IOSEA Marine Turtle MoU and Inter-American Convention, the phenomenon of illegal take and trade of marine turtles is not restricted to these regions.
3. Although the data are generally deficient and unevenly available, certain hotspots have been identified within the IOSEA Marine Turtle MoU region. These involve two types of poaching activity. The available information suggests that intensive turtle poaching at sea appears to be conducted mainly by Chinese and Vietnamese operations concentrated on resource-rich waters of Indonesia, Malaysia and Philippines. Local poaching that targets both nesting and migrating turtles affects many other countries within the IOSEA Marine Turtle MoU<sup>2</sup>.
4. As regards the region covered by the Inter-American Convention, IAC Resolution COP1/2002/R-3<sup>3</sup> and CITES Decision 14.86 conclude inter alia that there is a need for increased compliance with existing regulations protecting hawksbill turtles, including illegal trade of hawksbill products within and between countries. A 2014 Secretariat report<sup>4</sup> noted that no recent assessment has been conducted to determine the severity of this threat and that further investigation and assessment were needed to quantify illegal intentional take (and distinguish between directed and opportunistic take) and to identify conservation actions. The ongoing threat of international trade in hawksbill products is congruous with the need for improving compliance with existing instruments, particularly CITES, under which hawksbills are an Appendix I-listed species.
5. The present paper notes the distinction between legal and illegal take and trade of wild fauna. Many countries have legislation which permits or acknowledges the right of its traditional inhabitants to customary use of animals, including marine turtles and their derivatives. The purpose of the paper is not to explore this, but to outline the extent to which we currently understand the scale of illegal take and trade of marine turtles, and to highlight the gaps in knowledge that suggest a larger problem.

## BACKGROUND

6. Illegal take of marine turtles can assume various forms, from poaching of animals and eggs on nesting beaches to live animals at sea.<sup>5</sup> Typically, green (*Chelonia mydas*) and leatherback (*Dermochelys coriacea*) turtles are caught for their meat, and hawksbill (*Eretmochelys imbricata*) turtles for their carapace, which is used in craftwork. Eggs of loggerhead (*Caretta caretta*) and olive ridley (*Lepidochelys olivacea*) turtles are considered a delicacy in many parts of the region and are collected for local consumption, as well as international trade.<sup>6</sup>
7. Drivers of the illegal take and trade in marine turtles and derivatives appear to fall into two categories: socio-economic (i.e. relatively high prices commanded by turtle meat; basic nutritional needs in the absence of affordable alternatives; poverty relief; and demand for luxury goods); and cultural (i.e. long-standing traditional beliefs; specific taste preferences). Inadequate legislation and/or weak enforcement of existing regulations facilitate illegal take and trade.

### *Coral Triangle Region*

8. The Coral Triangle region<sup>7</sup> of South-east Asia has been identified as a hotspot for marine turtle poaching, as evidenced by numerous seizures at sea, often involving hundreds of dead animals in a single operation<sup>8</sup>. The illegal catch of green and hawksbill turtles in the Coral Triangle area (especially in Indonesian, Malaysian and Philippine waters)<sup>9</sup> appears to be perpetrated mainly by Chinese<sup>10</sup> and Vietnamese<sup>11</sup> turtle fisheries<sup>12</sup> operations. It is highly probable that the seizures effected to date, represent only a small fraction of the illegal take.

## *Western Indian Ocean*

9. In the Western Indian Ocean (especially Kenya<sup>13</sup>, Madagascar and Mozambique<sup>14</sup>) illegal catch seems mostly to be undertaken by local fishers. In Southwest Madagascar, in particular, the direct take of marine turtles is well documented notwithstanding national decrees prohibiting exploitation. One study conducted in 2010 estimated the annual catch in 12 coastal villages to be between 10,000 and 16,000 turtles.<sup>15</sup> At sea poaching activities<sup>16</sup> appear to be on the increase in other areas of the country.<sup>17</sup> At sea, killing by both incidental catch and direct poaching of turtles, on a localised scale, is reportedly encountered in many other countries.<sup>18</sup>

10. Illegal markets for marine turtles are reported to have existed in 2004 in Kenya<sup>19</sup> and the Seychelles.<sup>20</sup> Little is known about trade in other countries in the region, but commercial activities based on marine turtle exploitation were recently reported in Madagascar and Mozambique.<sup>21</sup> Whether any of the take of marine turtles in Madagascar or elsewhere in the Western Indian Ocean is driven by international demand may be worthy of further investigation.

## *Trade markets in East / South-east Asia*

11. Throughout the IOSEA Marine Turtle MoU region, markets for marine turtles appear to differ considerably in terms of demand, prices, trade volumes and the nature of goods in trade.<sup>22</sup> The main regional trade route for whole turtles and their derivatives seems to originate in Indonesia, Malaysia and the Philippines.<sup>23</sup> Trade appears mainly directed towards East Asia.<sup>24</sup> Availability of turtle meat, whole specimens and medicine in mainland China,<sup>25</sup> and *bekko* (traditional crafts made of, or including, turtle scute) in Japan and Taiwan, Province of China, may be an indicator that demand remains persistent in these countries.<sup>26</sup>

12. Chinese turtle poachers (mainly from Hainan province) are reported to have turned to Malaysian waters for their supply of whole animals.<sup>27</sup> Green and hawksbill turtles caught by fishers in Philippine waters also appear to be traded directly with Chinese buyers in the South China and Sulu Sea, in order to evade enforcement controls.<sup>28</sup> Following the contraction of a large-scale wholesale export market in Viet Nam – as a result of a domestic ban enacted in 2002 – much of the Vietnamese turtle catch was subsequently reported to be traded directly at sea in exchange for commodities brought on vessels from Hainan.<sup>29</sup> Numerous seizures in Viet Nam<sup>30</sup>, including of hawksbill turtles, seem to suggest that Indonesia and Malaysia could still be a source of raw scutes used in *bekko* manufacture.<sup>31</sup>

13. Historically, Bali has been described as one of the world's largest markets for green turtles, mostly supplied by other parts of Indonesia (notably South-East Sulawesi and Java), and intended to serve mainly national markets, but also to satisfy international demand.<sup>32</sup> Though annual volumes of turtles traded, formerly estimated in the tens of thousands<sup>33</sup>, appear to have declined markedly in recent years, domestic trade to supply restaurants in Bali continued to thrive in 2012.<sup>34</sup> As of 2013, it was reported that the local trade in green turtles had apparently reverted to traffic of live animals, rather than of cut meat, which had been disguised to try to avoid detection by law enforcement authorities.<sup>35</sup> Given the historical significance of Bali, there is a need to reassess the current situation.

14. Information available on trade in turtle eggs in the Southeast Asia (SEA+) sub-region suggests that it may be contained within countries of the Coral Triangle, especially Indonesia (East and West Kalimantan) and Malaysia (Sabah, Sarawak and Terengganu), among which exchanges appear intense. In recent years large volumes of eggs have been reported for sale in cities of Kalimantan, supplied by various Indonesian islands and elsewhere<sup>36</sup>. Individual seizures of eggs numbering in the thousands have also been reported over the past five years<sup>37</sup>.

15. In Malaysian Borneo eggs were reportedly sold openly without controls in Sabah and Sarawak, even though both states prohibit egg collection<sup>38</sup>; and a number of seizures in recent years hint at some of the smuggling patterns. In Peninsular Malaysia, Terengganu is reported to have been a major centre for the egg trade historically, supplied in part by eggs imported from neighbouring countries and from other Malaysian states where egg collection is illegal – attracting buyers from as far away as Indonesia.<sup>39</sup>

16. Important egg collection activities have also been documented in many other countries, including Bangladesh, India, Kenya, Mozambique, Philippines, Sri Lanka and United Republic of Tanzania. More research is needed to assess whether eggs in these markets are traded internationally. Further investigations would be needed to assess the levels of turtle and egg take in the Northern Indian Ocean and North-Western Indian Ocean sub-regions, where only limited information is currently available. There are reports of hawksbill

and green turtle eggs being collected and some traditional trade occurring in the North-Western Indian Ocean and the Islamic Republic of Iran.<sup>40</sup>

### *Enforcement in the IOSEA region*

17. Of the IOSEA Marine Turtle MoU countries reporting on their implementation of the MoU, 31 have enacted legislation to prohibit the direct take and domestic trade in, marine turtles and their derivatives; notwithstanding some still legislate the right of traditional inhabitants to take marine turtles for subsistence purposes. A number of countries have increased fines or tightened prohibitions in recent years.<sup>41</sup> In some others, however, existing fines seem inadequate to act as a deterrent for illegal activities. The lack of harmonisation of legislation across different states/provinces can induce illegal domestic trade; and existing legislation may be poorly enforced.<sup>42</sup>

18. Enforcement challenges are numerous, particularly in remote areas and/or where people are dependent on meat or eggs for subsistence.<sup>43</sup> Stricter enforcement measures, when successfully implemented, may have unforeseen consequences, as demonstrated in Viet Nam where illegal trade apparently shifted away from known market places. In the SEA+ region, seizures seem relatively well documented through existing enforcement networks and the media, although they presumably represent only a fraction of the actual illegal trade.<sup>44</sup> There are indications that law enforcement actions are often not followed up by prosecutions or convictions of the offenders.

19. On the other hand, there are signs in some countries that targeted legislative and management measures, accompanied by enhanced cooperation among government agencies and between federal/state authorities, are having positive results. For example, in Indonesia, a federal request for provinces to support marine turtle conservation was followed by increased law enforcement operations responsible for the seizure of about 10,000 turtle eggs on their way to eastern Borneo between June 2012 and June 2013. The Philippines has created new enforcement entities at national and provincial levels, and has procured new vessels with the aim of strengthening enforcement action across the country<sup>45</sup>. In the Seychelles it is reported that protected areas where all hunting is prohibited have proven to be more effective than 'selective' regulations.<sup>46</sup> Training activities focussing on law enforcement officers and awareness campaigns aimed at curbing demand have been undertaken in a number of countries.<sup>47</sup> The potential usefulness of wildlife crime report hotlines, such as the ASEAN-WEN Crime Report Hotline, at both national and regional level remains to be explored.<sup>48</sup>

20. Although a need to enhance and harmonise national legislation has been identified in certain countries, notably Malaysia and Japan, the need to improve enforcement of *existing* legislation is even more acute – particularly in Indonesia, Kenya, Madagascar, Malaysia, United Republic of Tanzania, Viet Nam and China, and possibly many more countries where significant trade is known to occur. This also implies strengthening bilateral and international cooperation in enforcement, through existing networks or possibly new trans-national partnerships between countries that are linked by illegal exports and imports. Challenges and opportunities for improving enforcement include identifying and articulating actual resource needs, increasing human and material resources, building field-level capacity at national and regional levels, and addressing weaknesses identified in the judicial process in some countries. The Philippines has accorded special attention to the latter in recent years<sup>49</sup>.

21. Other mitigation options that have been documented in IOSEA Marine Turtle MoU Signatory States include direct incentives targeting local stakeholders, such as employment/payment incentive schemes that aim to deter illegal trade.<sup>50</sup> However, analyses of their long-term effectiveness are generally absent. The limited extent of these schemes may be explained by the ephemeral presence of turtles, as well as the high financial cost, requirement of staff time and practical shortcomings.<sup>51</sup> Indirect incentives, in the form of alternative livelihoods for turtle users – many based on ecotourism or sustainable resource use – are also practiced across the region.<sup>52</sup> The performance of these so-called “conservation by distraction” approaches merits further review. Other measures to try to curb illegal turtle consumption and trade include the use of religious edicts in Indonesia, Islamic Republic of Iran and Malaysia.<sup>53</sup>

22. Apart from activities undertaken at national level, a number of bilateral or multilateral initiatives have shown promise in recent years. They include training and enforcement workshops among countries of the Coral Triangle region, a bilateral agreement between Indonesia and the U.S. state of California focussing on leatherback turtle conservation<sup>54</sup>, and Japanese funding for marine turtle-related programmes in South-East Asia.<sup>55</sup>

23. Wider international cooperation in combating illegal wildlife trade falls under the ambit of various intergovernmental organisations and networks, including INTERPOL, the World Customs Organization, the International Consortium on Combating Wildlife Crime (ICWC), the Indian Ocean Forum on Maritime Crime (IOFMC), the ASEAN-Wildlife Enforcement Network (ASEAN-WEN), the South Asia Wildlife Enforcement Network (SAWEN), and the Lusaka Agreement Task Force, among others. ASEAN-WEN for example, has been particularly active in recent years in organising training workshops for enforcement authorities.<sup>56</sup> Nongovernmental organisations such as TRAFFIC, WWF, ProFauna Indonesia and the Freeland Foundation, among others, have also played prominent roles drawing attention to marine turtle trade issues, lobbying governments on perceived legislative and implementation lapses, as well as strengthening enforcement capacity.<sup>57</sup>

#### *Inter-American Convention (IAC) region*

24. Exploitation of hawksbill turtle shell saw vast quantities exported to Japan until the early 1990s<sup>58</sup>, primarily from countries in the Caribbean Sea and Central America.<sup>59</sup> Recent assessments and surveys at the regional level have demonstrated the continuing illegal international trade of products and byproducts of several species, including hawksbill, green, loggerhead, and olive ridley. These products include eggs, meat, preserved specimens, cosmetics, and jewellery.<sup>60, 60, 61, 62</sup>

25. Illegal trade among signatory nations of CITES continues to be a common practice, and many products are sold in public places, especially to international tourists. CAFTA-DR (Central American Dominican Republic Free Trade Agreement) prepared a Factual Record Report<sup>63</sup> that highlighted very significant international trade in marine turtle products resulting from visitors to the Dominican Republic returning to their home countries. The Report concluded among other things that there was a need to improve the enforcement of both national legislation and international cooperation.<sup>64, 64</sup>

26. Information summarized in the 2014 IAC report<sup>6</sup> indicates that the Caribbean hawksbill is recognized as a shared population migrating between sites and regions, which means that capture for trade may be affecting the conservation and recovery across multiple sites and beaches in the Western Atlantic and Caribbean Sea. Other studies show that species such as *L. olivacea*, *C. mydas*, *D. coriacea* and *C. caretta* also share critical habitats in different regions of the continent. To this extent, the illegal harvesting and trade of products and byproducts of these species will undermine populations shared by several countries in the IAC region.<sup>65,66,67,68,69,70,71,72,73,74,75</sup>

27. Despite the ban on international trade of marine turtles under CITES, domestic trade and illegal international trafficking continue to exert pressure, particularly on hawksbill turtles in the IAC region. In Central America, Mexico, South America and the Caribbean, illegal domestic exploitation and international trade of sea turtle products remains a significant problem.<sup>60,62,63,64</sup> This creates a need for cooperative regional efforts, provision of better information to tourists, and more efficient implementation of national legal frameworks as recommended by the IUCN.<sup>76</sup>

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- <sup>1</sup>IOSEA Secretariat. 2014. Illegal Take and Trade of Marine Turtles in the IOSEA Region. MT-IOSEA/SS.7/Doc. 10.1.
- <sup>2</sup>Local poaching targeting both nesting and migrating turtles appears to concern not only Southeast Asian countries (especially Indonesia, Papua New Guinea, Philippines, Myanmar and Thailand) but also Western Indian Ocean countries such as Comoros, France (Mayotte), Madagascar, Kenya, Mozambique and United Republic of Tanzania.
- <sup>3</sup><http://www.iacseaturtle.org/eng-docs/resolucionesCOP1CIT/COP1-2002-R3-ENG.pdf> and <http://www.iacseaturtle.org/eng-docs/resolucionesCOP3CT/COP3-2006-R1-Hawksbill-Res.pdf>
- <sup>4</sup>Campbell C. L.C. 2014. Conservation Status of Hawksbill Turtles in the Wider Caribbean, Western Atlantic and Eastern Pacific Regions. Inter-American Convention for the Protection and Conservation of Sea Turtles. IAC Secretariat Pro Tempore, Virginia, USA. <http://www.iacseaturtle.org/eng-docs/publicaciones/Conservacion-Carey-ing.pdf>
- <sup>5</sup>The study considered only intentional illegal take, leaving aside: (1) marine turtles legally slaughtered; (2) traditional/cultural take for personal consumption, not commonly integrated in illegal trade networks; and (3) unintentional killing of turtles during fishing operations, except in cases where it is clear that incidental catches end up in trade networks. See IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 05; Poonian, C. & Whitty, T. Unpublished. Socio-economic Drivers of Sea Turtle Interactions with Artisanal Fisheries in the Western Indian Ocean Islands. C3. <http://c-3.org.uk/fisheries-bycatch-a-major-threat-to-sea-turtles/>; Frontier-Madagascar. 2003. Artisanal and traditional turtle resource utilisation in South-West Madagascar. Frontier-Madagascar Environmental Research Report 2. Society for Environmental Exploration, UK and the Institute of Marine Sciences, University of Toliara, Madagascar. <http://www.frontier-publications.co.uk/reports/Madagascar/Marine/Anakao2003/FMER2turtleresutilisation%282005%29.pdf>.
- <sup>6</sup>See for example, WWF. 2005a. Turtle Islands: resources and livelihoods under threat. A case study on the Philippines. <http://www.wwf.org.ph/downloads/TurtleIslands.pdf>. WWF. 2009 Survey of Marine Turtle Egg Consumption and Trade in Malaysia. [http://awsassets.wwf.org.my/downloads/survey\\_of\\_marine\\_turtle\\_egg\\_consumption\\_and\\_trade\\_in\\_malays.pdf](http://awsassets.wwf.org.my/downloads/survey_of_marine_turtle_egg_consumption_and_trade_in_malays.pdf).
- <sup>7</sup>The Coral Triangle region includes the marine waters of Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands and Timor-Leste.
- <sup>8</sup>See IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. Table 1 for details.
- <sup>9</sup>Pilcher, N., Chan, E.H. and Hiew, K. 2009. Battling the direct poaching of sea turtles in South-East Asia. Workshop on regional cooperation to address poaching of sea turtles, Kuala Terengganu, Malaysia, June 2009; Chan, E. H. & Shepherd, C. R. 2002. Marine Turtles: The Scenario in South-East Asia. *Tropical Coasts*. 9 (2), 38 -43; Chan, E.H., N. Pilcher and K. Hiew. 2009. Report of the Workshop on Regional Cooperation to Address Direct Capture of Sea Turtles 1-3 June 2009, Kuala Terengganu. Penerbit UMT, Universiti Malaysia Terengganu;
- <sup>10</sup>Lam, T., Xu Ling, Takahashi, S., and Burgess, E.A. 2011. Market Forces: An Examination of Marine Turtle Trade in China and Japan. TRAFFIC East Asia, Hong Kong. [http://awsassets.panda.org/downloads/traffic\\_marketforces\\_examination\\_marineturtle\\_trade\\_china\\_japan.pdf](http://awsassets.panda.org/downloads/traffic_marketforces_examination_marineturtle_trade_china_japan.pdf)
- <sup>11</sup>Stiles, D. 2008. An assessment of the marine turtle products trade in Viet Nam TRAFFIC South-East Asia, Petaling Jaya, Selangor, Malaysia. [http://assets.panda.org/downloads/traffic\\_species\\_reptiles23.pdf](http://assets.panda.org/downloads/traffic_species_reptiles23.pdf); MoFI (Ministry of Fisheries). 2003. Conservation Status Report. Marine Turtles and their Habitats in Viet Nam. Government of Viet Nam and IUCN, Ha Noi.
- <sup>12</sup>More information on the details of these fisheries in Table 1 and Table 2 of the IOSEA Illegal Take and Trade Paper, see IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 7-8.
- <sup>13</sup>In Kenya, it was reported in 2005 that more than 40% of the marine turtle products consumed locally were sourced by fishermen. See Nzuki, S. 2005. KESCOM study exposes rampant turtle trade. p 7-9. In: Humphrey, S.L., Wilson, A. (Eds.), *Marine turtle update: Recent news from the WWF Africa and Madagascar marine turtle programme*. [http://awsassets.panda.org/downloads/marineturtleupdate\\_nov05.pdf](http://awsassets.panda.org/downloads/marineturtleupdate_nov05.pdf)
- <sup>14</sup>Along the coast of Mozambique, marine turtle killing near fishing camps was still thought to be of serious concern as of 2012. See Louro, C M M, E J S Videira, M A M Pereira & R Fernandes. 2012. Monitoring, tagging and conservation of marine turtles in Mozambique: annual report 2011/12. Maputo. CTV/AICM. [http://www.ioseaturtles.org/UserFiles/File/RELATORIO\\_TM\\_1112\\_%20ENG.pdf](http://www.ioseaturtles.org/UserFiles/File/RELATORIO_TM_1112_%20ENG.pdf); Williams, J. 2013. Moz Turtles: Searching for practical solutions to sea turtle poaching in Mozambique. *African Diver Magazine*, issue 26. <http://www.africandiver.com/~adiver/index.php/component/phocadownload/category/2-african-diver-magazine-dnld?download=242:issue-26-moz-turtles>.
- <sup>15</sup>See Blue Ventures. 2010. Using community members to assess artisanal fisheries: the marine turtle fishery in Madagascar, Sept. 2010. <http://onlinelibrary.wiley.com/doi/10.1111/j.1469-1795.2010.00413.x/abstract>.
- <sup>16</sup>Activities refer to poaching at sea using modern methods such as threaded lances, fishing guns, fishing nets, and poisoning. See Muttenter F. 2007. 'Different kinds of people of the sea': écologie, mobilité et ethnicité chez les Vezo de Madagascar. *Etude de gouvernance locale des tortues marines aux îles Barren, Maintirano*. [http://www.ruig-gian.org/ressources/DESAT\\_social\\_intermed\\_RUIG%20nvelle%20version%20070626.pdf](http://www.ruig-gian.org/ressources/DESAT_social_intermed_RUIG%20nvelle%20version%20070626.pdf); Gough, C., Thomas, T., Humber, F., Harris, A., Cripps, G. & Peabody, S. 2009. *Vezo fishing: An introduction to the methods used by fishers in Andavadoaka, South-West Madagascar*. Blue Ventures Conservation. London. <http://blueventures.org/images/downloads/research/bv-research-report-2009-fishing-methods.pdf>.
- <sup>17</sup>This increase is evident in Northern Madagascar due to a study conducted in 2012. This study found that widespread, at sea, turtle poaching was on the rise between February and November, with 180-300 turtles illegally caught in the region. See Rakotondrazafy A. M. N. A., & Andrianasolo R. M.. 2012. *Evaluation préliminaire de la filière tortue marine dans la baie de Moramba, les zones de Marovasa Be et d'Anjajavy*. Cétamada, 2012. Over the period 2007-2010 it was estimated that 40% of green and hawksbill turtle's captured at sea by local fishers off northern Madagascar villages had been

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consumed or sold, see Poonian & Whitty. Socioeconomic Drivers of Sea Turtle Interactions with Artisanal Fisheries in the Western Indian Ocean Islands.

- <sup>18</sup>Bangladesh, Comoros, Eritrea, France, Indonesia, Islamic Republic of Iran, Maldives, Mauritius, Myanmar, Oman, Pakistan, Papua New Guinea, Philippines, Seychelles, Sri Lanka, Tanzania, Thailand and the United Arab Emirates. See IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 9-10 for details on information of each country listed.
- <sup>19</sup>It was estimated in 2004 that 10% to 50% of the females coming to nest on Kenyan beaches every year ended up poached to enter underground markets. See Nzuki, S. 2005. KESCOM study exposes rampant turtle trade.
- <sup>20</sup>Mortimer, J.A. 2004. Seychelles Marine Ecosystem Management Project (SEYMEMP) - Turtle component: Final report - Appendices 1 to 11. 1-159 p. [http://www.ioseaturtles.org/bibliography\\_search\\_detail.php?id=423](http://www.ioseaturtles.org/bibliography_search_detail.php?id=423)
- <sup>21</sup>Williams. 2012. Searching for Practical Solutions to Sea Turtle Poaching in Mozambique. The Rufford Foundation project Final report. [http://webcache.googleusercontent.com/search?q=cache:40QmITn09qAJ:www.rufford.org/rsg/projects/jessica\\_williams+&cd=6&hl=en&ct=clnk&gl=th&client=firefox-a](http://webcache.googleusercontent.com/search?q=cache:40QmITn09qAJ:www.rufford.org/rsg/projects/jessica_williams+&cd=6&hl=en&ct=clnk&gl=th&client=firefox-a)
- <sup>22</sup>Lam et al. 2011. TRAFFIC East Asia, Hong Kong.
- <sup>23</sup>Ibid; IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 12.
- <sup>24</sup>Ibid.
- <sup>25</sup>The number of seizures in the region has been increasing, with 2007 and 2008 recording the highest number of apprehensions. The open sale of marine turtle products indicates the demand for marine turtles in China, and seizure records are evidence of the heavy exploitation that is occurring to meet this demand. See Lam et al. 2011. TRAFFIC East Asia, Hong Kong.
- <sup>26</sup>The volume of this trade is difficult to estimate due to the nature of the goods traded. However, surveys conducted in 2004 among traders and artisans across Japan found that levels of bekkō stocks and sales were not diminishing. See JWCS (Japanese Wildlife Conservation Society) 2004. Summary Report of Migration to Illegal Market: Japanese Market of Hawksbill Turtle shell in a State of No Control. Report prepared for the Japanese Wildlife Conservation Society, Tokyo, Japan; Kinch, J., Burgess, E.A. 2009. An assessment of the trade in hawksbill turtles in Papua New Guinea. TRAFFIC Bulletin. 22(2):62-72. <http://www.indiaenvironmentportal.org.in/files/Hawksbill.pdf>. Lam, T., Xu Ling, Takahashi, S., and Burgess, E.A. 2011. Market Forces: An Examination of Marine Turtle Trade in China and Japan. TRAFFIC East Asia, Hong Kong. [http://awsassets.panda.org/downloads/traffic\\_marketforces\\_examination\\_marineturtle\\_trade\\_china\\_japan.pdf](http://awsassets.panda.org/downloads/traffic_marketforces_examination_marineturtle_trade_china_japan.pdf)
- <sup>27</sup>Lam, T., Xu Ling, Takahashi, S., and Burgess, E.A. 2011. Market Forces: An Examination of Marine Turtle Trade in China and Japan. TRAFFIC East Asia, Hong Kong. [http://awsassets.panda.org/downloads/traffic\\_marketforces\\_examination\\_marineturtle\\_trade\\_china\\_japan.pdf](http://awsassets.panda.org/downloads/traffic_marketforces_examination_marineturtle_trade_china_japan.pdf)
- <sup>28</sup>It was reported in 2012 that Half Moon Shoal in the South China and Sulu seas served as a "buying station" for Chinese stationed there to purchase turtles, mostly caught by Filipino fishermen around the "turtle corridor" of Balabac Strait. Recent trade activity between nationals of these two countries in a disputed area (Spratly Islands) where enforcement is sporadic. In the past, Philippine trade with East Asian countries was already evidenced by the seizure of 126 whole green and hawksbill (in 4 seizures) from 2000 to 2008. More recently, several aerial shipments were seized, such as 90.5 kg of green and hawksbill turtle scutes in Palawan in January 2012 and 161 whole hawksbill and green turtles in Manila in May 2011. See IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. 07, p 13; Lam et al. 2011. TRAFFIC East Asia, Hong Kong; Inquirer. 2014. Philippines: Int'l gang seen in turtle poaching. <http://newsinfo.inquirer.net/601169/intl-gang-seen-in-turtle-poaching>; ASEAN-WEN January-March 2012. ASEAN-WEN Actions Update. <http://www.asean-wen.org/index.php/reports-publications/file/19-2012-q1-asean-wen-action-update-january-march>.
- <sup>29</sup>Pilcher et al. 2009. Workshop on regional cooperation to address poaching of sea turtles; IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 07.
- <sup>30</sup>For more information see Table 7: Numerous recent seizures in Viet Nam, mostly of whole turtles, and anecdotal cases from Thailand and the United States in IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 14.
- <sup>31</sup>For more information see Table 2: Vietnamese marine turtle fishery operations in Philippines and Malaysian waters in IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 08.
- <sup>32</sup>Troëng S, Drews C. 2004. Money talks: Economic aspects of marine turtle use and conservation. WWF-International, Gland, Switzerland. [http://assets.panda.org/downloads/moneytalkstroengdrews2004\\_1.pdf](http://assets.panda.org/downloads/moneytalkstroengdrews2004_1.pdf)
- <sup>33</sup>Animal Conservation for Life. 2001. Final Report: KSBK's Investigation on turtle trade in Bali. June 2001. Humane Society International (HSI) and Animal Conservation for Life (KSBK), Indonesia.
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- <sup>44</sup>ASEAN-WEN.2014. <http://www.asean-wen.org/index.php/reports-publications>. Additionally see Table 8: Breakdown of seizures conducted from 2008 to 2013 in the SEA+ sub-region, compiles this information in IOSEA Secretariat. 2014. MT-IOSEA/SS.7/Doc. 10.1. p 24.
- <sup>45</sup>J.de Leon, Philippines Biodiversity Management Bureau, 2 Nov. 2015, pers.comm. The Philippines has considerably improved its enforcement of existing legislation. The Province of Palawan, where most of marine turtles are illegally harvested, has created the Provincial Environmental Task Force. At the national level, the DENR has instituted the Philippine Operations Group on Ivory and Illegal Wildlife Trade. The DENR has also created an Environmental Enforcement Division in all its 16 regional offices throughout the country to strengthen enforcement. The Bureau of Fisheries and Aquatic Resources has its Fisheries Law Enforcement Quick Response Team and has purchased 100 units of vessels/speed boats for border patrol, surveillance and enforcement purposes.
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