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What is needed for trade in CITES-listed sea cucumber species?

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CITES and sea cucumber fisheries

1. Sea cucumbers that are harvested from the wild, processed and traded on international markets provide many coastal and island communities in the Pacific Islands region with significant income from sales (Conand and Byrne 1993; Purcell *et al.* 2017). For at least 40 years, growing demand from Asia has driven a large increase in price across all aspects of the value and market chain (Anderson *et al.* 2011). When coupled with high intensity artisanal fishing and ease for harvesting, the combination of biological characteristics, including susceptibility to density-dependent reproductive success (“depensatory effects”), and illegal fishing have made sea cucumbers especially vulnerable to over-exploitation.
2. In recognition of declines in several sea cucumber species, a proposal to list three teatfish species¹ on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was accepted at the 18th Conference of the Parties on the 25th August 2019 and implemented on 28th August 2020. In August 2022, CITES made public a proposal, submitted by the European Union, Seychelles and United States of America, to also include the genus *Thelenota* on Appendix II of CITES, which includes three species *Thelenota ananas*, *T. anax* and *T. rubralineata*. Excluding *T. rubralineata*, the four other species which include, two teatfish species (white and black) from the 18th CoP and two species in the current proposal (*Thelenota ananas* and *T. anax*) have high relevance to commercial sea cucumber fisheries in the Pacific Islands region.
3. The purpose of this Information Paper is to guide the collection of information and prioritise what is needed to support PICTs so that they can comply with both the scientific and management requirements of CITES. This will be accomplished by advancing SPC’s understanding of the technical and training needs of SPC members about making Non-Detriment Finding (NDF) and Legal Acquisition Finding (LAF).

Obligations of trade in species listed in the appendices of CITES

4. Two major obligations are needed so that a country (State of export) can export Appendix II listed marine species or their derivatives e.g., processed sea cucumber (bêche-de-mer) under CITES global trade regulations. The State of export must firstly determine, via the Management Authority (MA), that marine products were legally acquired, consistent with national laws of that country; this requirement is termed Legal Acquisition Finding (LAF). Secondly, the Scientific Authority (SA) of the State of export must advise the Management Authority (MA) via a Non-Detriment Finding (NDF) that “such export will not be detrimental to the survival of that species” in that country. Only when these two requirements are met can the MA of the State of export issue a CITES export permit for trade in Appendix II species. According to Article IV of the Convention, a SA is required to monitor exports and advise the MA if exports need to be limited to ensure such species are maintained throughout their range at a level consistent with their role in the ecosystems. The level that is required to meet these provisions depends on many factors including the productivity of the species. However, the level

¹ White teatfish (*Holothuria fuscogilva*) and black teatfish (*H. whitmaei* – Pacific Ocean species, and *H. nobilis* – Indian Ocean species)

consistent with their role in an ecosystem should be well above the level at which they would qualify for Appendix I (Appendix I effectively bans international trade except under exceptional circumstances²). Countries that are not party to CITES are also required to produce “comparable documentation” if they intend to export CITES-listed species to a CITES member country³. More detailed information can be found below and in Fernando *et al.* (2022).

5. Within the Pacific region, the following countries are party to CITES: Fiji, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu, Australia and New Zealand. In addition, CITES membership of France, the United States and the United Kingdom extend to their respective territories in the Pacific. The listing of the three teatfish sea cucumber species on Appendix II of CITES have required PICTs to adjust current legal and management frameworks to deal with the CITES export obligations i.e., an NDF⁴ made by the designated SA⁵ of the country for each species exported. As noted above, these NDFs must also be accompanied by an LAF⁶ made by the designated MA⁷ before a CITES export permit is issued (Rosser and Heywood 2002). To make an NDF, the SA must have the resources to undertake fisheries compliance, sea cucumber population assessments, monitoring of exports and evaluate the data collected to determine any declines on a species-by-species basis, which is not a trivial exercise. The NDF process can be complex, and enough data on each species must be collected so that NDFs are robust and meaningful.
6. All PICTs that are exporting CITES Appendix II listed species to countries that are party to CITES (e.g. China is a major importer, including via Hong Kong SAR) must comply with CITES global trade regulations. Countries that are party to CITES must also ensure that the original source (country or otherwise) of marine product derived from listed species has met **CITES provisions before extraction** from the sea takes place. When CITES listed species are imported into a CITES State party from another CITES State party, they must be accompanied by the required CITES certificates/permits that are issued by a designated MA registered with the CITES Secretariat. Exports to CITES parties from non-party States must be also have comparable documentation issued by a designated competent MA. A designated MA from the exporting State must be registered with the CITES Secretariat, even those from States not party to CITES. A designated MA makes an LAF and issues the CITES export permits. The SA makes an NDF and advises the MA of the outcome. The details of both the NDF and LAF are not required to be provided to the importing country or to CITES. It is required however that due process has happened and that the designated SA has made an NDF, and the MA has confirmed an LAF before a CITES export permit is issued. There is also process in CITES called Significant Trade Review where CITES Parties recognise that there is significant trade occurring and may initiate a review to determine if an NDF has been made (Mr. Glenn Sant *personal communication*; also see Fernando *et al.* 2022). This has occurred several times for specific species of giant clams in Oceania States/Territories in the past.⁸

² <https://cites.org/eng/disc/how.php>

³ <https://cites.org/eng/res/09/09-05R16.php>

⁴ <https://cites.org/eng/prog/ndf/index.php>

⁵ https://cites.org/sites/default/files/projects/NLP/Management_Authorities.pptx

⁶ https://cites.org/eng/imp/legal_acquisition_findings

⁷ https://cites.org/sites/default/files/projects/NLP/Scientific_Authorities.pptx

⁸ See Agenda item 10.2 Annexes 8a-g. <https://cites.org/eng/com/ac/22/index.shtml>

Implementation issues and challenges in sea cucumber science and management

7. The sea cucumber fishery is a multispecies fishery made up of those that have very different habitats, life-history and productivity characteristics. Each species is also exposed to varying levels of fishing pressure and respond differently to that pressure, so focusing already constrained science and management capacity on an individual species requires added resources. To make an NDF for exporting a CITES listed species, or derived products from that species, the scientific authority must scientifically verify that exports are limited so that the species is maintained throughout its range and at a level consistent with its role in the ecosystem. The limited capacity of many national fisheries agencies has thus impeded their ability to quickly develop and implement species-specific monitoring programs and management strategies to deal with the complexities of making NDFs.
8. In the last 30 years some sea cucumber fisheries appeared to be in uncontrolled decline so many countries utilised national fishing bans (“moratoria”) as a one-strategy-fits-all approach to managing their fishery. Even though dramatic fluctuations in export volumes were observed over this period, the strategy was generally successful at protecting some species from severe and irreversible overharvesting. More recently however, national fisheries management authorities have written proactive “temporal openings” into management plans or regulations (e.g. Papua New Guinea, Vanuatu, Tonga) rather than just using national closures as a reactive management mechanism when the fishery is in decline. These “temporal-opening” strategies, if short and coupled with other enforced management measures for example size limits and suitable total allowable catch, were slowly introduced across the Pacific with some success. Despite these improvements in fisheries management, there is a capacity shortfall when attempting to include these management strategies and the data from scientific monitoring programs into fulfilling what is required to make an NDF. A better understanding of what is required to inform the NDF process is thus needed, especially as PICT sea cucumber management approaches mature and begin to include relevant data to interpret the stock status of individual species (e.g., using length-based stock assessment methods and species-specific management strategies).
9. Recognising the persistent vulnerability of sea cucumbers to overharvesting, the need to adjust management approaches is now becoming increasingly urgent as national bans on high-value listed species and global trade restrictions become more common. Sea cucumber fishing is predominately artisanal and inclusive of men, women, children and the elderly, and these national and global restrictions come at the cost to the livelihoods of those artisanal fishing communities and families reliant on a well-managed fishery (e.g., Kinch *et al.* 2008a, b; Barclay *et al.* 2019). Closures and bans have led to an immediate loss of income for many coastal and island communities across the Pacific Islands region, as well as loss of revenue for governments and management agencies, which further impedes capacity to deal with issues across the sea cucumber market chain. Reactive closures that persist over the long-term also force the abandonment and loss of sustainable value-adding businesses such as community-based processing facilities.

Conclusion

10. Sea cucumbers make up just one of the many CITES groups of species PICTs are struggling to manage. Current processes to issue permits, record and report trade data and manage border clearances are difficult and require excessive human resources. Permits are often handwritten and logged using excel

spreadsheets. Illegal trade supported by transnational organised crime groups is also an issue in the Asia Pacific region so when trade bans or long-term closures are in place, fishing may continue and, for some highly profitable species and their derivatives (e.g., sea cucumbers, shark fins and sea horses), can become the focus of organised crime on the black market (Phelps-Bondaroff, *et al.* 2015; Herath *et al.* 2019; Bondaroff 2021; Conand *et al.* 2022).

11. There is mounting pressure for national fisheries agencies, that are usually the designated CITES SA, to be able to efficiently develop an NDF for each marine species listed so that exports of these species may continue legally. Staff with the technical expertise and skills, and the reporting systems that support them, are needed so that both scientific and management authorities can meet their monitoring and reporting obligations to CITES. To develop an NDF requires a well-resourced SA to determine population status via stock assessment, setting and policing sustainable export quotas, establish monitoring, recording and reporting of exports. SA's need significant financial support and resources to effectively make this happen.
12. The continuation of exports in a sustainable manner will ultimately provide livelihood benefits to coastal and island communities engaged in the sea cucumber fishery, as well as national revenue generation for PICTs. Information gathered through WP2 will allow SPC to detail the current capacity of member countries and territories to:
 - a. collect key scientific information related to making a NDF such as targeted population assessments and stock monitoring, evaluation and reporting of listed teatfish, including risk assessment for other sea cucumber species (e.g., those *Thelenota* species currently proposed),
 - b. implement fisheries management in areas that assist with making a NDF and
 - c. identify information gaps that can be used to inform fisheries management improvement programs
13. Such information will also allow SPC to assess the suitability of current electronic-data management systems developed by SPC's Coastal Fisheries and Aquaculture Programme (see WP5), and how these tools can be used by member countries and territories to help determine an NDF.

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