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Title:	What science is needed for trade in CITES-listed sea cucumber species?
Author(s):	George Shedrawi, Ariella D'Andrea, Sebastien Gislard, Franck Magron, Ian Bertram, Glenn Sant and Andrew Halford

Summary:

This working paper seeks to build an understanding of the current capacity of scientific authorities across Pacific Island countries and territories (PICTs) to deal with trade regulations and obligations for exporting sea cucumber species listed in Appendix II of the Convention on International Trade of Endangered Species of Wild Flora and Fauna (CITES).

Since 2019, two high value commercial sea cucumber species found in the Pacific, *Holothuria whitmaei* (black teatfish) and *Holothuria fuscogilva* (white teatfish)¹ were listed on Appendix II of CITES. In August 2022, CITES made public a proposal submitted by the European Union, Seychelles and United States of America, to list the genus *Thelenota* on Appendix II². Four sea cucumber species of high relevance to commercial sea cucumber fisheries in the Pacific Islands region are impacted, the two teatfish species (white and black) already listed, and two species in the current proposal (*Thelenota ananas* and *T. anax*).

It is unclear how each PICT has dealt with managing international exports of the two listed *Holothuria* species under the rules and regulations applicable to under CITES. Additionally, it is unclear how SPC member PICTs will deal with the scientific requirements of exporting *Thelenota* species should their listing in Appendix II occur at the 19th Conference of the Parties of CITES (COP19) in November 2022.

The purpose of this technical session is to gather information to prioritise what is needed to support PICTs to enable compliance with both the scientific and management requirements of CITES. Understanding the technical and training needs of SPC members about making a Non-Detriment Finding (NDF) and Legal Acquisition Finding (LAF) are required. This session will allow SPC to detail the current capacity of member countries to: 1. collect key scientific information related to making an NDF of listed teatfish; 2. implement fisheries management in areas that assist with making an

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

² <https://cites.org/eng/cop/19/amendment-proposals>

NDF; and 3. identify information gaps and implement fisheries management improvement programmes so that NDFs can be made.

Recommendations and Outcomes:

We invite member PICTs to provide information on, and discuss, the current management and scientific programmes that can inform the efficient and accurate development of NDFs and LAFs, by:

1. completing the online survey of sea cucumber fisheries science and management in PICTs (see Appendix 1);
2. sharing experiences, progress, and priority needs to (i) formulate, and (ii) implement national sea cucumber data collection programmes; and
3. identifying key implementation issues, challenges and actions to be raised at HOF15.

Members are also invited to ask questions about the LAF and NDF processes and how these relate to their own scientific and fisheries management needs.

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. Growing demand from Asia has driven a large increase in prices across all aspects of the value and market chain, and when coupled with high intensity artisanal fishing, the combination of biological characteristics 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 species³ 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 of August 2019 and implemented on the 28th of 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, 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.

Obligations related to trade in species listed in the appendices of CITES

3. 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 (beche-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 ecosystem. The level that is required to meet these provisions depends on many factors including the productivity of the species. However, the level 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 circumstances⁴). 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 country⁵. More detailed background information can be found in Information Paper 5 (*IP5: What is needed for trade in CITES-listed sea cucumber species?*).
4. 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 NDF⁶ made by the designated SA⁷ of the country for each species exported. As noted above,

³ White teatfish (*Holothuria fuscogilva*) and black teatfish (*H. whitmaei* – Pacific Ocean species, and *H. nobilis* – Indian Ocean species).

⁴ <https://cites.org/eng/disc/how.php>

⁵ <https://cites.org/eng/res/09/09-05R16.php>

⁶ <https://cites.org/eng/prog/ndf/index.php>

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

these NDFs must also be accompanied by an LAF⁸ made by the designated MA⁹ before a CITES export permit is issued. 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 the status 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.

Sea cucumber science, management and CITES in PICTs

5. All PICTs that are exporting CITES Appendix II listed species to countries that are party to CITES (e.g. China is a major importer of bêche-de-mer, 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 the listed species has met CITES provisions *before* extraction from the sea takes place. When a CITES listed species is 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 State parties from non-party States must also have comparable documentation issued by a designated competent MA. A designated MA 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. Providing the details of both the NDF and LAF to the importing country or to CITES is optional. It is however required 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. This has occurred several times for specific species of giant clams in Oceania States/Territories in the past¹⁰

Implementation issues and challenges

6. 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 focussing 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.
7. PICT sea cucumber management approaches and scientific monitoring programmes have matured in recent years and begun 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). There is however a capacity shortfall when attempting to include scientific data and management strategies into fulfilling what is required to make an NDF.
8. 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 prevalent. There is mounting pressure for national fisheries agencies (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 and sustainably. Staff with the technical expertise and skills, and the reporting systems that support them, are needed so that

⁸ https://cites.org/eng/imp/legal_acquisition_findings

⁹ https://cites.org/sites/default/files/projects/NLP/Scientific_Authorities.pptx

¹⁰ See Agenda item 10.2 Annexes 8a-g. <https://cites.org/eng/com/ac/22/index.shtml>

scientific and management authorities can meet the obligations for exporting an Appendix II-listed species.

9. Developing an NDF to meet these obligations requires a well-resourced SA so that they may determine population status via stock assessment, set sustainable export quotas, establish monitoring, recording and reporting of exports, match export data with those volumes recorded via CITES records and undertake MCS&E. SA's need significant financial support and resources to effectively make this happen.

Breakout group guidance

We invite member PICTs to provide information on the current management and scientific programmes that can inform the efficient and accurate development of NDFs and LAFs, by:

1. **Completing** the online survey of sea cucumber fisheries science and management in PICTs (see Appendix 1);
2. **Sharing** your experience in formulating and implementing a national sea cucumber data collection programme in your country/territory?
3. **Identifying** priority needs and key implementation challenges that can be transmitted to HoF15 for consideration and action, including:
 - a. **Governance and legislation needs** - developing and promoting national level policies, regulations and plans for sustainable sea cucumber fisheries management.
 - b. **Science and management needs** - improving fisheries science and ensuring effectiveness of management programmes, including MCS&E and compliance infrastructure at the national level.

Do you have any questions about the LAF and NDF processes and how these relate to your own scientific and fisheries management needs?

Appendix I – Survey of sea cucumber fisheries science and management in Pacific Island countries and territories

No	Question	Answer Options
1	Which SPC member country or territory are you representing?	<ul style="list-style-type: none"> a. American Samoa b. Australia c. Cook Islands d. (list)
2	Is your country/territory currently exporting sea cucumber (bêche-de-mer)?	<ul style="list-style-type: none"> a. Yes b. No
3	If the sea cucumber fishery is currently open, when was the fishery opened? (month/year)	
4	Does your country/territory currently have an officially approved and gazetted sea cucumber management plan or specific sea cucumber regulations?	<ul style="list-style-type: none"> a. Yes b. No
5	Is the sea cucumber fishery regulated under any of these or other legal instruments? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Fisheries or marine resources Act b. Fisheries regulations or public notices c. No d. Other (comment)
6	What management strategies are currently used to control sea cucumber harvesting? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Size limits b. Total allowable catch c. Spatial closures d. Closed or open seasons e. Other (please specify) f. None of the above
7	Are sea cucumber management strategies currently enforced?	<ul style="list-style-type: none"> a. Yes b. No
8	To what extent are the sea cucumber management strategies enforced effectively?	<ul style="list-style-type: none"> a. Very effectively b. Somewhat effectively c. Not effectively
9	Why are sea cucumber management strategies not enforced at all or not enforced effectively? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Financial limitations b. Technical limitations c. Legislation does not support enforcement d. Other (please specify)
10	Which of the following are legal requirements for traders to report on species being exported? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Length b. Weight c. Volume/quantity d. Type of species e. Other (please specify) f. None
11	Why is a reporting legal requirement for exporters not in place?	
12	Which of the following are issues in the reports provided by traders on species being exported? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Some species are misidentified b. Some species are under-reported c. Some species' lengths are inaccurately reported d. Some species' weights are inaccurately reported e. None of the above

		f. Other (please specify)
13	Has the Scientific Authority developed a non-detriment finding (NDF) for the two teatfish species listed on Appendix II of CITES – <i>Holothuria whitmaei</i> (black teatfish) and <i>Holothuria fuscogilva</i> (white teatfish)?	<ul style="list-style-type: none"> a. Yes, only for <i>Holothuria whitmaei</i> (black teatfish) b. Yes, only for <i>Holothuria fuscogilva</i> (white teatfish) c. Yes, for both <i>Holothuria whitmaei</i> (black teatfish) and <i>Holothuria fuscogilva</i> (white teatfish) d. No
14	What kind of support or assistance is needed to draft an NDF for sea cucumber species? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Financial resources b. Technical skills c. Unsure d. Other (please specify)
15	What is the stage of development of the NDF of <i>Holothuria whitmaei</i> (black teatfish) and <i>Holothuria fuscogilva</i> (white teatfish)?	<ul style="list-style-type: none"> a. Planned b. Draft c. Finalised and not approved d. Finalised and approved
16	Does the Scientific Authority have plans to update an existing NDF or begin the process of developing a new NDF for sea cucumber species?	<ul style="list-style-type: none"> a. Yes, update the existing one b. Yes, create a new one c. No d. Unsure
17	Do you currently collect data on the sea cucumber fishery for stock assessments?	<ul style="list-style-type: none"> a. Yes b. No c. Unsure
18	How do you collect data on the sea cucumber fishery? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Fishery dependent survey data from Landings/Creel b. Fishery dependent survey data from Processors c. Fishery independent surveys to collect relevant stock assessment data on listed species (e.g., length, abundance, densities, species distribution) d. Other (please specify)
19	For which of the following do you currently collect data for species-specific stock assessment? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Teatfish b. Prickly redfish c. Amberfish habitats d. None of the above e. Unsure
20	Why is data for the above-mentioned species not being collected?	
21	What are the limitations to carrying out species-specific surveys for NDFs? <i>You can select more than one option</i>	<ul style="list-style-type: none"> a. Financial b. Technical c. No limitations d. Other (please specify)
22	Would an online tool that guides you to populate a NDF and assist you in the decision-making process be helpful (e.g. an eNDF for sea cucumbers)?	<ul style="list-style-type: none"> a. Yes b. No c. Unsure
23	What features would be relevant to include in the online tool above mentioned?	<ul style="list-style-type: none"> a. Interactive interface b. Risk matrix

		<ul style="list-style-type: none"> c. Guidance on interpreting management strategies that can be used to help make an NDF d. Risk profile using a point system from risk assessment (matrix) that are based on management strategies, population status, species productivity and compliance e. NDF section guides f. Other (please specify)
24	Does the designated management authority of your country make Legal Acquisition Findings (LAFs) for CITES appendix II listed species?	<ul style="list-style-type: none"> a. Yes b. No c. Unsure
25	In your country, why doesn't the designated management authority make LAFs for CITES appendix II listed species?	