



<b>SUBMITTED BY COUNTRY or ORGANIZATION:</b>	<b>Pacific Plant Protection Organisation</b>
<b>SUBMISSION NUMBER</b>	2023-023

## Submission form for topics for Standards and Implementation

### 1. General information

<b>Title of Proposal</b>	ISPM 46 <i>Commodity-Based Standards for Phytosanitary Measures</i> , Annex on the International Movement of fresh taro ( <i>Colocasia esculenta</i> ) corm for consumption
<b>Proposed Material</b>	<input checked="" type="checkbox"/> <b>Standard</b> / <input type="checkbox"/> <b>Implementation resource</b>
<b>Submission supported by:</b> (Country or Organization)	Australia Australia American Samoa Cook Islands Federated States of Micronesia Fiji Guam Kiribati Marshall Islands Nauru New Zealand Niue Papua New Guinea <b>Palau</b> <b>Samoa</b> <b>Solomon Islands</b> <b>Tokelau</b> <b>Tonga</b> <b>Tuvalu</b> <b>Vanuatu</b> <b>French Polynesia</b> <b>New Caledonia</b> <b>Wallis and Futuna</b>
<b>Contact Person:</b> (Contact information of an individual able to clarify issues relating to this submission):	<b>Name:</b> Visoni Timote <b>Position and organization:</b> Executive Secretary, Pacific Plant Protection Organisation (PPPO), Pacific Secretariat (SPC) <b>E-mail:</b> visonit@spc.int

## 2. Summary of proposal

**Summary of justification for the proposal** (provide an outline of the problem needing resolution in sufficient detail, **250 words max**)

In 2023 the Commission on Phytosanitary Measures (CPM) adopted ISPM 46 *Commodity-based standards for phytosanitary measures* in response to the important need of contracting parties for support with harmonisation and facilitation of safe trade. In particular, ISPM 46 was developed to be a resource to support developing countries or countries with limited capacity to undertake pest risk analysis (PRA) with a basis of minimum standards to assist in the importation of specific commodities.

Taro (*Colocasia esculenta*) is a natural fit for development as an annex to ISPM 46 due to its global significance as a staple food crop across Africa, the Caribbean, Asia, parts of North and South America and the Pacific. Additionally, many countries in the regions where taro is widely traded are in the World Bank low-middle income categories and so may have limited resources available to conduct thorough pest risk analyses. These regions too are often vulnerable to natural and other humanitarian crises and taro, as a staple, can be offered as food aid within these regions (e.g within the Pacific). Thus, development of a taro annex for ISPM 46 will be widely beneficial and aligns well with the primary intent of ISPM 46 – to support all countries to be in a position to effectively minimise the plant health risks posed by trade.

**Expected outcome of standard/implementation resource** (value of development of proposed material, 2 lines max)

This proposed annex to ISPM 46 will provide an important resource on the key associated pests of taro corm and effective measures to mitigate the risk of those pests through trade. Such a resource will support countries involved in or seeking to trade fresh taro corms to confidently trade in the knowledge that their import conditions are sound, based in science, and effective without being trade restrictive.

**Contribution to filling gaps in the Framework for Standards and Implementation:** (2 lines max)

C1 of the IPPC Framework for Standards and Implementation lists ‘*Commodity-specific standards with harmonized phytosanitary measures have facilitated and accelerated trade negotiations and simplified safe trade in plant products*’ as a key result area. ISPM 46 was adopted in 2023 to begin to address this outcome but as yet only one commodity-specific annex has been drafted. This proposal would contribute another commodity-specific annex with wide reaching benefit across a number of FAO regions.

## 3. Type of proposed material:

### **3.1 Standard** (check only one option)

**New ISPM or component to an existing ISPM:**

- ☐ ISPM
- ☐ Supplement to ISPM:
- ☒ Annex to ISPM:
- ☐ Appendix to ISPM:
- ☐ Glossary term (subject)

**Revision/Amendment of standard:**

- ☐ ISPM
- ☐ Supplement to ISPM
- ☐ Annex to ISPM
- ☐ Appendix to ISPM
- ☐ Glossary term (subject)

Convention articles, ISPMs or CPM recommendations to be addressed by the proposed implementation resource

☐ Convention articles

☒ ISPM 46

☐ CPM Recommendation

## 4 LITERATURE REVIEW<sup>1</sup>

Taro is cultivated worldwide in tropical and subtropical regions across Africa, China, the Pacific, the Caribbean, parts of Central and South America, as well as some areas of the United States (Ferduas et al. 2023). The word taro is used to describe a variety of edible tubers in the Araceae family, however, *Colocasia esculenta* is the most widely planted and is traded internationally (Ferduas et al. 2023). *Colocasia esculenta* is commonly referred to as ‘true taro’ and is the type referred to in this proposal. There are two primary varieties of *Colocasia esculenta* grown; *Colocasia esculenta* var. *esculenta* (large corm taro) and *Colocasia esculenta* var. *antiquorum* (small corm taro). Due to the morphology of small corm taro, being that it has many hair-like roots and is much easier to propagate from tuber, some countries may consider *Colocasia esculenta* var. *antiquorum* less suitable for import for human consumption due to the reduced ability to manage redirection from intended use.

Nigeria, Ethiopia, China, Cameroon, Ghana and Papua New Guinea are the largest producers of taro worldwide (FAOSTAT 2023). The table below demonstrates total taro production by region (FAOSTAT 2023).

Table 1. World taro production in recent years by region.

Year	Area Harvested (Ha)				Total Yield (Tons)			
	Africa	Asia	Oceania	Americas	Africa	Asia	Oceania	Americas
2000	1,250,204	128,872	44,361	7622	8,233,653.65	1,930,699.73	318,752.90	78,815.08
2005	1,383,172	127,935	55,659	8915	9,849,310.49	1,914,001.54	413,899.85	82,994.87
2010	1,194,840	132,284	52,462	4883	7,754,061.42	2,079,541.37	402,544.38	55,662.43
2015	1,575,862	147,251	48,310	7836	8,632,488.23	2,366,643.69	416,184.77	133,346.23
2021	1,590,820	148,515	48,048	6320	9,525,695.56	2,395,189.79	410,496.50	64,866.65

Source: FAOSTAT 2023 [14].

The FAO has long recognised the importance of taro to food security (Onwueme 1999) as the most significant root vegetable crop by mass with majority of global taro supply produced in developing countries (Singh et al. 2012). Additionally, in many parts of the world taro has considerable socio-cultural significance. Taro is often considered a food of status, it is important in gift-giving, fulfillment of social obligations, traditional ceremonies and for medicinal purposes (Alexandra et al. 2020). More recently, exports of taro have become an income source and a way to bring money into the country. This is particularly important for taro producing countries that may not have access to many other export options. Exported taro primarily comes in the form of the fresh corm, though processed options such as frozen taro or taro chips are increasingly available. The export of taro is increasingly

<sup>1</sup> As agreed by CPM-7 (2012) and CPM-11 (2016).

becoming a mechanism through which countries and communities can pursue additional diversified income and improve livelihoods.

The outbreak of a number of serious taro pests and diseases has demonstrated the critical importance of measures to prevent further geographical spread of taro pests. As an example, taro leaf blight which wiped out taro production in Samoa in 1993 and has since spread to countries such as Cameroon, Ghana and Nigeria resulting in devastating effects on food security and rural livelihoods (Singh et al. 2012). Cultural or agronomic practices have limited impact on diseases such as this. Further, though chemical options are available for some other serious pests like the taro beetle, access and proper use of chemicals by farmers in many remote areas where taro is relied upon can be limited. With limited ability for agronomic management or key pests, preventing the spread of taro pests to new areas is critical.

Alexandra et al. (2020). The tale of taro leaf blight: a global effort to safeguard the genetic diversity of taro in the pacific. Food Security volume 12, pages1005–1016.

FAOSTAT. FAO Statistical Database. Available online: <https://www.fao.org/faostat/en/#data/QCL> (accessed on 20 June 2023).

Ferduas Md et al. (2023). Taro Roots: An Underexploited Root Crop. Nutrients 15(15):3337.

Onwueme, I (1999) Taro cultivation in Asia and the Pacific. Food and Agriculture Organisation of the United Nations Regional Office for Asia and the Pacific. Bangkok, Thailand. <http://www.bionica.info/biblioteca/Onwueme1999TaroCultivation.pdf>

Singh D, Jackson D, Hunter D, Fullerton R, Lebot V, Tailor M, Josef T, Okpul T, Tyson J. 2012. Taro Leaf Blight-A threat to food security. Open access Agriculture 2012, 2, 182-203.

## 5 CRITERIA FOR JUSTIFICATION AND PRIORITIZATION OF PROPOSED TOPICS<sup>2</sup>:

**5.1 Core criteria (information must be provided by submitter. It is expected that all submissions meet the following core criteria)**

	Core Criteria	Information provided by Submitter
1	Contribution to the purpose of the IPPC as described in article I.1.	Through this proposed annex, the purpose outlined in article I.1 ‘...securing common and effective action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control...’ will be achieved. This proposed annex will assist contracting parties to prevent the introduction and spread of plant pests via this pathway by ensuring a common understanding of the key pests associated with trade of fresh taro and effective ways to mitigate against them. This shared understanding will provide an opportunity for harmonized legislative, technical and administrative measures among contracting parties to allow for safer

<sup>2</sup> As agreed by CPM-13 (2018)

	Core Criteria	Information provided by Submitter
		and more considered trade of fresh taro and prevent unintentional plant pest introductions.
2	Linkage to IPPC Strategic Objectives (SOs) and Organizational results demonstrated.	<p>This proposal links to key result areas for standard setting and; facilitating safe trade, development and economic growth. That is,</p> <p>SS1: Prioritized commodities and pathways are covered by commodity- or pathway-specific ISPMs.</p> <p>SS2: NPPOs base their phytosanitary systems and import requirements on adopted ISPMs.</p> <p>C1: Commodity-specific standards with harmonized phytosanitary measures have facilitated and accelerated trade negotiations and simplified safe trade in plant products.</p>
3	Feasibility of implementation at the global level (consider ease of implementation, technical complexity, capacity of NPPO(s) to implement, relevance for more than one region).	ISPM 46 was unanimously adopted by the CPM in 2023, demonstrating the appetite and acceptance of this method for improving harmonization of trade. Annexes to ISPM 46 will provide a suite of minimum standards to meet, ensuring that all contracting parties are able to participate in safe, science-based trading regardless of their in-house capacity for PRA. Individual contracting parties will maintain the flexibility to select which measures are feasible and appropriate for their specific context.
4	Clear identification of the problems that need to be resolved through the development of the standard or implementation resource.	Commodity standards are identified in the IPPC strategic framework as a way to advance trade facilitation and harmonize pest risk management options for major pests. Not all contracting parties have the resources available to undertake pest risk analyses on all traded commodities. Development of this proposed annex will support countries by providing a number of options to mitigate pest risk through trade even when individual taro PRAs are not possible.
5	Availability of, or possibility to collect, information in support of the proposed standard or implementation resource (e.g. scientific, historical, technical information, experience).	There is ample information and published research relating to the plant health risks associated with fresh taro corms. This information is widely available online and through a dedicated global network of taro experts. If this annex is selected for development, further information could be supplied by the regional plant protection organisations, particularly the PPPO, CAHFSA and IAPSC.

## 5.2 Supporting criteria (information may be provided by submitter, as appropriate):

Supporting criteria:	Information provided by submitter
<p><b>Supporting criteria (Practical)</b></p> <p>1) Is there a regional standard and/or implementation resource on the same topic already available and used by NPPOs, RPPOs or international organizations.</p>	<p>(1) There is no existing regional standard or implementation resource available to countries to assist with the importation of fresh taro.</p> <p>(2) Expertise on taro pests, diseases and import conditions are available across a number of regions</p>

Annex on the International Movement of fresh taro (*Colocasia esculenta*) corm for consumption

Supporting criteria:	Information provided by submitter
2) Availability of expertise needed to develop the proposed standard and/or implementation resource.	globally, including the Pacific, Africa, Asia and the Caribbean.
<b><u>Supporting criteria (Economic)</u></b> 1) Estimated value of the plants protected. 2) Estimated value of trade including new trade opportunities affected by the proposed standard and/or implementation resource (e.g. volume of trade, value of trade, the percentage of Gross Domestic Product of this trade) if appropriate.	(1) The value of the protection of cultivated taro cannot be captured in trade value figures. The comparatively low populations or land areas of many taro exporting countries distorts the picture of the value of the crop to these countries. For many of these countries, though small, they rely on taro as a staple subsistence food and also being among their only exports. (2) Global taro production is currently sitting around 12.3 million tons. Global value of imports was US\$181,258 thousand in 2021, marking a 21% increase from the previous year. The current projection is that the demand for exported taro will continue to increase.
<b><u>Supporting criteria (Environmental)</u></b> 1) Utility to reduce the potential negative environmental consequences of certain phytosanitary measures, for example reduction in global emissions for the protection of the ozone layer. 2) Utility in the management of non-indigenous species which are pests of plants (such as some invasive alien species). 3) Contribution to the protection of the environment, through the protection of wild flora, and their habitats and ecosystems, and of agricultural biodiversity.	(1) The measures required to effectively mitigate the pest risk of fresh taro do not include chemicals or fumigation. Export of taro is therefore much safer for the environment than a range of other food exports. (2) Countries importing taro with no ability to perform PRA may rely on import conditions of other neighbouring countries or may import without prior risk analysis and therefore rely on generic visual inspection of goods at the border. While this is often the only way to operate for countries without adequate resources to undertake taro PRA, it is a risk to plant health globally. (3) In addition to the commercially traded taro varieties, there are a wide variety of closely related wild varieties/species. These wild varieties are a key component of natural landscapes throughout a number of regions across the globe and are also relied upon by indigenous peoples and rural communities as an important food source. The introduction of pests and diseases of taro ( <i>Colocasia esculenta</i> ) is likely to have some impact on the wild varieties and closely related species also. In addition to being a staple food crop, taro is also important across the globe for many cultural ceremonies and obligations. The safeguarding of taro is therefore not only vital for food security but also for cultural life and traditions.

Supporting criteria:	Information provided by submitter
<p><b>Supporting criteria (Strategic)</b></p> <ol style="list-style-type: none"> <li>1) Extent of support for the proposed standard and/or implementation resource (e.g. one or more NPPOs or RPPOs have requested it, or one or more RPPOs have adopted a standard on the same topic).</li> <li>2) Frequency with which the issue to be addressed, as identified in the submission emerges as a source of trade disruption (e.g. disputes or need for repeated bilateral discussions, number of times per year trade is disrupted).</li> <li>3) Relevance and utility to developing countries.</li> <li>4) Coverage (application to a wide range of countries/pests/commodities).</li> <li>5) Complements other standards and/or implementation resources (e.g. potential for the standard to be used as part of a systems approach for one pest, complement treatments for other pests).</li> <li>6) Conceptual standard and/or implementation resource to address fundamental concepts (e.g. treatment efficacy, inspection methodology).</li> <li>7) Urgent need for the standard and/or implementation resource.</li> </ol>	<p>(1) During the 2022 Technical Consultation among Regional Plant Protection Organizations (TC-RPPOs) in Rome, the group discussed which commodity standard annexes should be proposed during the 2023 Call for Topics. The meeting agreed that the development of a taro annex would be an important annex to develop with broad relevance across regions and potential for utilisation by a large number of countries. The PPPO therefore agreed to lead drafting of a taro annex submission with support from CAFSA and IAPSC. (2) Due to the increasing demand for taro exports, the number of countries involved in taro production and the fact that many taro producing countries are developing countries, utilisation of this proposed annex is expected to be significant. (3) See comments above. Taro is a significant staple crop in a large number of developing countries (50+) and taro is increasingly being relied on by countries as a way to bring foreign money into the country to boost livelihoods. (4) Taro is grown and traded across all tropical and subtropical regions of the world. (5) The proposed annex will compliment recently adopted ISPM 46, other commodity-specific annexes and the suite of other ISPMs required for proper implementation of measures. (6) Provide foundational considerations for the import of fresh taro corms. (7) Increasing demand for taro in growing expatriate communities and reliance on domestic production and imports for food security highlights the need for this annex.</p>

## 6 FINANCIAL/IN-KIND RESOURCES

Commitment for financial/in-kind resources to support the development of the proposed standards or implementation resource (non-obligatory).

Upon selection of this annex for development by the Standards Committee, the PPPO and its member countries will consider financial and/or in-kind contribution to this annex.