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SPC-HOF Guidelines for the Introduction and Translocation of Aquatic Organisms for Aquaculture and Culture-Based Fisheries

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Background and Introduction

1. Non-native species of plants and animals have been introduced to the Pacific islands ever since the ancestors of the Pacific islanders first entered these waters many hundreds, or thousands, of years ago. In recent times, especially since the 1950s, there have been additional introductions, both intentional and accidental, of both terrestrial and aquatic species. The last two decades has been a period of introductions of both marine and freshwater species triggered by the development of both fisheries and aquaculture projects (Eldredge 1994).
2. A recent literature search by one of the authors has found that of the 100 species recently introduced to the Pacific (excluding Hawaii) 51 percent were aquaculture related and 21 percent were for culture based fisheries purposes. Species that were introduced or transferred around the Pacific included giant clams, green snail, penaeid prawn, trochus, tilapia and macrobrachium shrimp.
3. The potentially adverse impacts of such introductions stem from not only the species that are intentionally introduced but also unintended 'hitch-hikers'. These include both macro-organisms (e.g. snails, worms, larvae) and micro-organisms (parasites, bacteria and viruses).
4. The impacts of introduced organisms may be severe. Native species and the ecosystem as a whole can be affected. Rural livelihoods, food security, poverty alleviation and public health may be at risk. Significant economic losses in international trade can occur. Hence the importance of developing and implementing safeguards against these sorts of impacts is clear.
5. In the majority of cases the ecological impact from introductions has been either benign or is unknown. There have been exceptions, however. The Mossambicus tilapia (*Oreochromis mossambicus*) from Africa was widely introduced in Pacific island countries in the 1950s for mosquito control and/or as a candidate for fish farming. It never fulfilled these purposes and is generally regarded as a pest and competitor with native fauna. The Japanese pond snail (*Viviparus japonicus*) was accidentally introduced to Fiji Islands as larvae in the host water of imported grass carp (family *Cyprinidae*). This gastropod is now the dominant benthic fauna of prawn and fish ponds and has severely reduced productivity.

6. There is a strong link between the increased emergence of virulent diseases with the movement of aquatic species. Fortunately the region has so far not been greatly affected by their insidious impacts. The white spot syndrome virus in penaeid prawns and akoya virus in pearl oysters are two pathogens that are a severe risk to the region.

7. Representatives to the Heads of Fisheries should be aware that there are regional organisations that can provide assistance in aquaculture and culture fisheries. These organisations include:

- a) SPC, a regional focal point for aquaculture and coastal fisheries;
- b) FAO, which provides advice on matters of global policy;
- c) SPC Regional Animal Health Service and the SPC Plant Protection Service, for technical advice on import risk analysis, quarantine and disease management of aquatic animals and plants;
- d) SPREP, a regional focal point of biodiversity and invasive species;
- e) The WorldFish Center and USP, which can assist with research in the above fields.

8. There are relevant policies which address aquatic organisms and their movements. Examples include the FAO Code of Conduct for Responsible Fisheries, The Nairobi Declaration, AFFA Australia Aquaplan and FAO-NACA Asia Regional Technical Guidelines.

9. SPC fisheries meetings have in the past made various recommendations in support of the harmonisation and use of best principles regarding aquatic animal movements. The present guidelines add to the resolutions arising from those previous meetings, which include the following:

- a) “Noting the potential problems associated with the introduction and transfer of exotic marine species, the meeting recommended that Pacific Island countries adopt the following interim guidelines”...(six guidelines were listed in reference to giant clams, trochus and other molluscs). *Recommendation 7. Seventeenth Regional Technical Meeting on Fisheries (RTMF). Noumea. 1985.*
- b) “Noting the disease risk posed by increasing transfer of exotic aquatic species into the Pacific Islands, the meeting noted also the *Interim Guidelines and Principles for Regional Aquatic Animal Quarantine* detailed in Annex 2 of the Working Paper 11 towards the development and harmonization of aquatic animal quarantine mechanisms in the region and **recommended** that the Secretariat monitor progress in the development of Pacific Island quarantine mechanisms to enable the *Interim Guidelines* to be reviewed at the next Regional Technical Meeting on Fisheries”. *Recommendation 14. Twenty fifth Regional Technical Meeting on Fisheries (RTMF). Noumea. 1994.*

- c) “The Meeting directed that the Marine Resources Division seek resources to provide practical assistance to member fisheries and quarantine authorities to set up, or build capacity in, aquatic quarantine capabilities and regulation of marine species introductions. This capacity should also be built into any future SPC Aquaculture Section or Programme”. *Recommendation 9. First Heads of Fisheries (HoF) meeting. Noumea. 1999.*

Why is an intervention needed?

10. This intervention is a proactive step accorded by the opportunity posed by the Heads of Fisheries forum. It is an updated resolution which incorporates previous recommendations agreed to in past fisheries meetings, i.e. RTMF 17 (1985), RTMF 25 (1994) and HoF1 (1999).

11. The timeliness will enable the Heads of Fisheries to voice their concerns at impending regional forums, including the Animal World Health Organisation (OIE) regional meeting in Noumea, November 2003 and the Pacific Islands Regional Ocean Policy Forum in Suva, February 2004.

12. The urgency of this resolution can be highlighted by some of the following considerations:

- a) The relative ease with which aquatic species can be moved within the region by airfreight links;
- b) The lack of awareness and capacity of the customs/quarantine agencies in terms of the quarantine issues for aquatic organisms;
- c) A casual attitude observed (in some cases) by fisheries officers regarding the movement of aquatic species;
- d) The inherent responsibility of recipient countries to adopt minimum standards before assistance related to aquatic species can be expected from donors or development agencies;
- e) Recent trade agreements such as those imposed by the WTO which require countries to abide by stringent phyto-sanitary and quarantine protocols.
- f) National work programs often do not follow a logical hierarchal process, i.e., policy - risk analysis - introduction - quarantine - monitoring. SPC often finds itself working from both ends of the “wick”.

Purpose and planned outputs of this session

13. This session is intended to raise awareness of the regional concern regarding aquatic species introduction and translocation. Delegates are encouraged to voice their national perspective of the issue.

14. The deliberations of this session will provide guidance for regional agencies providing assistance, in particular SPC, on what is the minimum level of threshold which countries will bear responsibility for aquatic species introduction and movements.

15. The product of this session will be regional acknowledgment of the core principles of responsibility for the introduction and translocation of aquatic species.

16. These core principles are non-binding and voluntary. They will be accepted as contingent guidelines that may be amended from time to time.

17. In the absence of national policy on aquatic transfers, PICTs may adopt these principles as their voluntary code of conduct.

Recommendation

18. Representatives to Heads of Fisheries are requested to support in principle the “SPC-HoF Principles for Aquatic Organisms Introduction and Translocation for Aquaculture and Culture-Based Fisheries, 2003”

References

AFFA. 1999. AQUAPLAN. Australia’s National Strategic Plan for Aquatic Animal Health 1998-2003. Commonwealth of Australia, 34 p. (<http://www.affa.gov.au/nat-offices/aquatic/aquaplan.pdf>)

Eldredge, L.G. (1994). Perspectives in Aquatic exotic species management in the Pacific Islands. Volume 1. Introduction of Commercially Significant Aquatic Organisms to the Pacific Islands. Secretariat of the Pacific Community. Noumea. (<http://www.spc.org.nc/coastfish/Reports/IFRP/Introd/Eldredge.pdf>)

FAO. 1995. Code of Conduct for Responsible Fisheries. Food and Agriculture Organization of the United Nations, Rome. 41 p. (<http://www.fao.org/fi/>)

The Nairobi Declaration. (<http://www.cta.int/pubs/nairobi/declaration.pdf>)

Organisations

AFFA. Agriculture, Fisheries and Forestry – Australia

FAO. Food and Agriculture Organization of the United Nations

NACA. Network of Aquaculture Centres in Asia-Pacific

NFA. National Fisheries Agency, Papua New Guinea

OIE. Office International des Épizooties

SPC. Secretariat of the Pacific Community

SPREP. South Pacific Regional Environment Program

USP. University of the South Pacific

WorldFish Centre

SPC-HOF PRINCIPLES FOR AQUATIC ORGANISMS INTRODUCTION AND TRANSLOCATION
FOR AQUACULTURE AND CULTURE-BASED FISHERIES, 2003

Guiding Principles

Purpose, benefits and risks

1. The introduction and movement of aquatic organisms should have a clear economic, social, or environmental benefit.
2. It should also be shown why similar benefits cannot be attained by utilizing indigenous or local strain of species. The use of an indigenous species is preferable to introducing a new species.
3. Introduction and movements of aquatic organisms may lead to new and emerging pests, pathogens and diseases. Therefore, such activities may pose risks to the importing country. Risk arises from both the intended transfer species and also from pathogens, parasites and symbionts associated with this species.

Risk assessment

4. Proposals for introduction and movements must be assessed from a holistic perspective, taking into account a full review of the potential hazards and an assessment of the options for mitigation.
5. The impacts to existing aquaculture operations and culture fisheries and the habitat to which the movement will be made should be considered. In addition the risks to natural ecosystem, rural livelihoods, food security, public health and trade should be taken into account.
6. When there is considerable uncertainty about the biology of the proposed species or the possible risks associated with the translocation, the Precautionary Approach should be adopted.
7. The first movement (introduction) of a new species into a new area will require special considerations in light of the risk of introducing new pests, parasites, pathogens and genetic material.

Notification and engagement of stakeholders

8. Formulation of policy and legislation concerning introduction and movements should seek to engage all stakeholders in a participatory process. In addition, governments should establish advisory groups with links to independent and scientifically competent expert bodies.

9. Translocations into regions that are shared zone between two PICTs should be approved by relevant authorities in both countries or territories concerned. Under such circumstances the proponent country should inform its neighbour of the intended translocation.

Quarantine and release strategies

10. When introducing a new organism attention should be focused on the prevention of the spread of diseases and pests that might accompany the import through the implementation of an effective quarantine measure.

11. Quarantine measures should be based on scientific principles and be practical, cost-effective and easy to implement by utilising readily available facilities. Individual countries may need to adopt, modify or vary guidelines to suit their own particular situations and resources.

12. Movements of aquatic organisms should be conducted within the provisions given in existing relevant national and international agreements and instruments such as the United Nations FAO fisheries code of conduct and convention for biological diversity.

13. All introductions must be treated as open water stocking even if made to aquaria or closed water bodies (dams or ponds). The possibility of the species establishment into the natural environments should not be disregarded.

Roles and responsibilities, capacity building and awareness raising

14. National governments have a key responsibility to manage the risks arising from the introduction and movement of aquatic organisms. This includes the responsibility to reject applications for introductions when the risks of the introduced species itself are deemed unacceptably high; and to terminate an introduction if the specimens are found to be carriers of unwanted organisms.

15. The varying capacity, special circumstances and requirements of developing countries to implement quarantine programs should be taken into account by development agencies and donor institutions.

16. Collaboration among the governments, public institutions, and the private sector, including all stakeholders, is important to achieve the full purpose of effective management of aquatic organisms transfers.

17. Policy makers, enforcement agencies, stakeholders and the general public need to be made aware of issues related to, and the need for, policy on the introduction and movement of aquatic species and this should be high on national agendas.