

POLICY GUIDELINES FOR REGIONAL CONSERVATION AND MANAGEMENT OF TROPICAL ANGUILLID EELS RESOURCES IN SOUTHEAST ASIA

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1. BACKGROUND

Eel resources are mainly utilized as direct human consumption not only in Europe but also in East and Southeast Asia. European eels have become regulated species by CITES for international trade since 2009 due to resource decline and potential extinction. Recently, large consumption of the Japonica eel species in East Asia has led to the rapidly decreasing amount of glass eels. On the other hand, the demand for tropical anguillid eels in Southeast Asia which has been increasing significantly over the years, not only for domestic consumption but also for export to China, Korea, Taiwan, and Japan among others, could lead to the decline of the resource.

The development of this document took into consideration the Policy Recommendations on Conservation and Management of Catadromous Eel Resources and Aquaculture in Southeast Asia adopted by the Seventeenth Meeting of the Fisheries Consultative Group of the ASEAN-SEAFDEC Strategic Partnership (FCG/ASSP) in December 2014, and the Twenty-third Meeting of the ASEAN Sectoral Working Group on Fisheries (ASWGFi) in June 2015. Moreover, attention was also paid on the recommendation of the CITES Animal Committee Meeting in 2018 on the need to strengthen the management of tropical anguillid eels to ensure their sustainable utilization.

In this connection, the need to strengthen the management for eel species worldwide has been recognized making it also necessary for the Southeast Asian region to take appropriate management measures for eel resources and their sustainable utilization. Considering that resources management measures for tropical anguillid eels have not yet been in place in the ASEAN member countries where the fisheries of tropical anguillid eel exist, and in order to develop and implement regional management measures for tropical anguillid eels, the necessary information on the tropical anguillid eel species, such as catch data, distribution areas, aquaculture production, and export data among others, should be compiled.

2. OBJECTIVE OF THE POLICY GUIDELINES

This Policy Guidelines is intended to propose a way of formulating and implementing effective regional management measures, as well as recommend the actions that should be taken, for the sustainable utilization of tropical anguillid eels in the Southeast Asian region.

3. PROBLEM ANALYSIS FOR CONSERVATION AND MANAGEMENT OF TROPICAL ANGUILLID EELS

In order to establish effective and sound conservation and management of tropical anguillid eel resources in the ASEAN region, the ASEAN Member States and SEAFDEC should address several issues that were identified during the Regional Meeting on Enhancing Sustainable Utilization and Management Scheme of Tropical Anguillid Eel Resources in Southeast Asia organized in October 2018, as shown below.

1) Inadequate statistical data on eel resource utilization such as catch data, as well as a systematic data collection scheme

Harmonized data on catch, species, life stages, fishing gear, and fishing effort (*e.g.* duration of fishing operation, number of fishing gears, number of fishers) are necessary for understanding the current status of glass and elver/yellow eel fisheries, and for carrying out stock assessment. Moreover, biological data such as length, weight, age of elver/yellow eels, are also important for stock assessment. However, more

often than not, such biological and fisheries data on tropical anguillid eels are inadequate. Consolidators and/or fishers play an important role in compiling the relevant eel fishery data. The eels caught by local fishers are often collected by eel consolidators who in turn sell the eel catch to consumers or traders, as the case may be. Therefore, an effective registration and licensing system for eel consolidators is necessary in order that the consolidators will be obliged to collect the abovementioned data.

2) Limited information on eel farming such as number of eel aquaculture farmers, eel culture production, and quantity of glass eels purchased and used by farmers

Data on aquaculture, such as the number of eel aquaculture farmers, eel culture production, and quantity of glass or elver eels purchased and used as inputs by farmers, are necessary to understand the current status of aquaculture and validate catch and international trade data. However, such information is insufficient for the tropical anguillid eels. It is therefore necessary that a data collection system for eel aquaculture activities should be established.

3) Geographic range of information on tropical anguillid eel species is insufficient

Information on natural habitat, spawning ground, and migration routes are fundamental for conservation and management of the eel stocks. However, spatial and temporal patterns of distribution of each tropical anguillid eel species are not well understood. Therefore, the geographic range of the tropical anguillid eel species in the region, should be examined based on the description of fishing areas, reproductive biology, and migration patterns.

4) Limited stock assessment studies on tropical anguillid eels

The status and trends of eel stocks are essential for stock management. However, such information is very limited for the tropical anguillid eels. Therefore, stock assessment, *e.g.* using CPUE analysis as an abundance index, should be conducted for tropical anguillid eels.

5) Limited effective conservation and management measures for tropical anguillid eels

Development of conservation and management measures for tropical anguillid eels should also be established for each country in the future, taking into consideration the results of the abovementioned stock assessment studies.

6) Mixed statistics on international trade of tropical anguillid eels

Considering that the existing trade data on anguillid eel species under the UN Comtrade Database include other eel species like swamp eel and snake eel, among others, there is a need to disaggregate such data in order to improve and confirm the appropriate trade data reporting system for individual eel species.

4. RECOMMENDED CONSERVATION AND MANAGEMENT POLICY GUIDELINES

The recommended actions to be taken by the ASEAN Member Countries for sustainable regional conservation and management of tropical anguillid eels include the following:

Issues	Recommended Actions
<p>1) Inadequate statistical data on eel resource utilization such as catch data, as well as a systematic data collection scheme</p>	<p>Establish catch data collection system for tropical anguillid eels</p> <ul style="list-style-type: none"> • Development and implementation of appropriate registration and reporting system for eel consolidators and fishers • Requiring eel consolidators and fishers to report their catch data and related information (<i>e.g.</i> fishing effort data, fishing area) to respective countries' competent

	<p>authorities</p> <ul style="list-style-type: none"> • Development of a standard fisheries data collection system for tropical anguillid eels
<p>2) Limited information on eel aquaculture such as number of eel aquaculture farmers, eel culture production and quantity of glass eel/elver/yellow eels purchased and used by farmers</p>	<p>Establish data collection system for eel aquaculture</p> <ul style="list-style-type: none"> • Development and implementation of appropriate registration scheme including licensing and reporting system for eel farmers • Requiring eel farmers to report their production, buyers, target destination of the products, amount of glass/elver/ yellow eels purchased, and other relevant information to respective countries' competent authorities
<p>3) Geographic range information on tropical anguillid eel species is limited</p>	<p>Determine the geographic range of tropical anguillid eel species</p> <ul style="list-style-type: none"> • Compilation of information on geographic range for each tropical anguillid eel species • Conduct of studies to correctly identify the eel species, describe the stock structure and examine migratory routes and spawning areas
<p>4) Limited stock assessment studies on tropical anguillid eels</p>	<p>Conduct stock assessment study on tropical anguillid eel</p> <ul style="list-style-type: none"> • Establishment of appropriate level of exploitation and indicators for managing eel stocks
<p>5) Limited effective conservation and management measures for tropical anguillid eels</p>	<p>Introduce and implement conservation and management measures for tropical anguillid eels</p> <ul style="list-style-type: none"> • Development of conservation and management measures (<i>e.g.</i> regulations for eel collection, management of nursery areas, closed fishing season and/or areas for eel fisheries, setting of upper limit on glass eel inputs for farms, trade regulations, etc.) taking into account results of stock assessment studies
<p>6) Mixed statistics on international trade of tropical anguillid eels</p>	<p>Improve the international trade statistical data reports</p> <ul style="list-style-type: none"> • Harmonization of trade data collection, coding and reporting to segregate tropical anguillid eel from other eel species