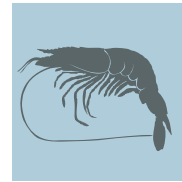
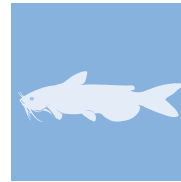
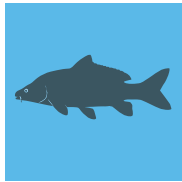
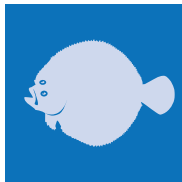




Food and Agriculture
Organization of the
United Nations

COUNTRY REPORTS
Malaysia



Country Report Supporting the Preparation of the
First Report on *The State of the World's Aquatic
Genetic Resources for Food and Agriculture*

This Country Report has been submitted by the national authorities as a contribution to the Food and Agriculture Organization of the United Nations (FAO) publication, *The State of the World's Aquatic Genetic Resources for Food and Agriculture*. The information in this Country Report has not been verified by FAO, and its content is entirely the responsibility of the entity preparing the Country Report, and does not necessarily represent the views of FAO, or its Members. The designations employed and the presentation of material do not imply the expression of any opinion whatsoever on the part of FAO concerning legal or development status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.



Food and Agriculture
Organization of the
United Nations

COMMISSION ON
GENETIC RESOURCES
FOR FOOD AND
AGRICULTURE

**Questionnaire for the Preparation of
Country Reports for *the First State of
the World's Aquatic Genetic Resources
for Food and Agriculture***

COMMISSION ON
GENETIC RESOURCES
FOR FOOD AND
AGRICULTURE



INSTRUCTIONS FOR COMPLETING THE DYNAMIC GUIDELINES

How do I complete the dynamic guidelines?

1. You will require Adobe Reader to open the dynamic guidelines. Adobe Reader can be downloaded free of charge from: <http://get.adobe.com/uk/reader/otherversions/>. Use Adobe Reader Version 10 or higher.
2. Open the dynamic guidelines and save it (save as a pdf) on your hard drive.
3. Please rename it <name of your country>.pdf.
4. You may forward the dynamic guidelines to stakeholders you would like to involve or inform by e-mail. You may also print and/or save the dynamic guidelines.
5. It is advisable to prepare textual responses (including any formatting such as bullet points) first in a separate document and then to copy and paste them into the form. Please use font Arial 10. Acronyms and abbreviations should be avoided if possible. If included, they must be introduced (i.e. written out in full) the first time they are used. Note that the text boxes are expandable. Once text has been entered, the box will automatically enlarge to make its content fully visible when you click outside its border. To delete a row you have added, click on the "X" on the far right of the table
6. When you have finished completing the dynamic guidelines, click the "Submit form" button at the end of the form and send the completed dynamic guidelines to Devin.Bartely@fao.org; Matthias.Halwart@fao.org; and ruth.garciagomez@fao.org.
7. This should automatically attach the document to an email that you can then send. Otherwise, please attach the completed dynamic guidelines manually to an e-mail and send it to Devin.Bartely@fao.org; Matthias.Halwart@fao.org; and ruth.garciagomez@fao.org.
8. A letter confirming official endorsement by relevant authorities should also be attached to the email.
9. You will receive a confirmation that the submission was successful.

Where can I get further assistance?

If you have any questions regarding the dynamic guidelines, please contact Devin.Bartely@fao.org; Matthias.Halwart@fao.org; ruth.garciagomez@fao.org

Several websites provide useful information on aquatic species that can be consulted for proper species names and for information on aquatic genetic resources: [AlgaeBase](http://www.algaebase.org), [Aquamaps](http://www.aquamaps.org), [Barcode of Life](http://www.barcodeoflife.org), [Census of Marine Life](http://www.censusofmarinelife.org), [FishBase](http://www.fishbase.org), [Frozen Ark](http://www.frozenark.org), [GenBank](http://www.genbank.org), [Global Biodiversity Information Facility](http://www.gbif.org), [International Union for Conservation of Nature](http://www.iucn.org), [National Institutes of Health Database on Genomes and Bioinformatics](http://www.nih.gov), [Ornamental Fish International](http://www.sealifebase.org), [SealifeBase](http://www.sealifebase.org), [Sea Around Us](http://www.searoundsus.org), and [World Register of Marine Species](http://www.marinespecies.org).

How, by whom and by when must the completed dynamic guidelines be submitted?

Once officially endorsed by the relevant authorities, the completed dynamic guidelines should be submitted (click the "Submit form" button on the header banner) by the National Focal Point. **Completed dynamic guidelines should be sent by December 31st 2015.**

www.algaebase.org
www.aquamaps.org
www.barcodeoflife.org
www.coml.org
www.fishbase.org
www.frozenark.org
www.genbank.org
www.gbif.org
www.iucn.org
<http://discover.nci.nih.gov/>
www.ornamental-fish-int.org
www.sealifebase.org
www.searoundsus.org
www.marinespecies.org

I. INTRODUCTION

At its Thirteenth Regular Session, the Commission noted that the preparation of a country-driven *State of the World's Aquatic Genetic Resources for Food and Agriculture* would provide countries with opportunities for assessing the status of their aquatic genetic resources for food and agriculture and enhancing the contributions of aquatic genetic resources to food security and rural development. Additionally the process of producing Country Reports will assist countries in determining their needs and priorities for the conservation and sustainable use of aquatic genetic resources for food and agriculture, and will help raise awareness among policy-makers.

II. COUNTRY REPORTS

As with the other sectors, *The State of the World's Aquatic Genetic Resources for Food and Agriculture (SoWAqGR)* will be compiled from Country Reports. It is recognized that guidance is necessary in order to assist countries in completing those reports under a common framework. The Country Reports will become official government documents submitted to FAO.

The following questionnaire is the suggested format for the preparation and submission of Country Reports. The questionnaire has been prepared by FAO to assist in the preparation of Country Reports contributing to the SoWAqGR Report. It has been designed to assist countries to undertake a strategic assessment of their aquatic genetic resources for food and agriculture.

The scope of the first State of the World's Aquatic Genetic Resources for Food and Agriculture, and therefore the emphasis in the Country Reports, is farmed aquatic species and their wild relatives within national jurisdiction.

Country Reports should:

- become powerful tools for improving the conservation, sustainable use and development of aquatic genetic resources for food and agriculture, at national and regional levels;
- identify threats to aquatic genetic resources, gaps in information about aquatic genetic resources and needs for the strengthening of national capacity to manage aquatic genetic resources effectively;
- inform the development of national policies, legislation, research and development, education, training and extension concerning the conservation, sustainable use and development of aquatic genetic resources for food and agriculture;
- contribute to raising public awareness about the importance of aquatic genetic resources for food and agriculture;
- complement other national reporting activities on the conservation, sustainable use and development of aquatic genetic resources.

Timeline and process

In line with the overall process, as established by the Commission, the Director-General of FAO sent a Circular State Letter on 19 April 2012 to countries requesting them to identify National Focal Points for the preparation of Country Reports by 31 December, 2015.

The following steps are recommended in preparing the Country Report, using a participatory approach:

- Each participating country should appoint a National Focal Point for the coordination of the preparation of the Country Report who will also act as focal point to FAO. National Focal Points should be communicated to the Secretary, Commission on Genetic Resources for Food and Agriculture (cgrfa@fao.org) immediately.
- Countries are encouraged to establish a national committee to oversee the preparation of the Country Report. The national committee should consist of as many representative stakeholders as practical (representing government, industry, research and civil society).
- The national committee should meet frequently to review progress and consult widely with key stakeholders.

- The National Focal Point should coordinate the preparation of the first draft of the Country Report, which should be reviewed by the national committee. The National Focal Point should facilitate a consultative process for broader stakeholder review.
- Following the stakeholder review, the National Focal Point should coordinate the finalization of the Country Report, submit it to the government for official endorsement and transmit it to FAO in one of the Organization's official languages (Arabic, Chinese, English, French, Russian and Spanish) by 31 December 2015.
- The Country Report will be an official government report.
- If countries are unable to submit final Country Reports by the set deadline, preliminary reports of findings should be provided to FAO to contribute to the identification of global priorities for inclusion in the SoWAqGR Report.

**QUESTIONNAIRE FOR PREPARATION OF COUNTRY REPORTS FOR
THE STATE OF THE WORLD'S AQUATIC GENETIC RESOURCES FOR FOOD
AND AGRICULTURE**

Country report supporting the preparation of
The State of the World's Aquatic Genetic Resources for Food and Agriculture

Country	Malaysia
Prepared By	Department of Fisheries Malaysia Fisheries Research Institute, DoF Malaysia
Date	Dec 21, 2015

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I. EXECUTIVE SUMMARY

The Country Report should contain an executive summary of 2-3 pages highlighting the main findings of the analysis and providing an overview of key issues, constraints and existing capacity to address the issues and challenges. The executive summary should indicate trends and driving forces and present an overview of the proposed strategic directions for future actions aimed at the national, regional and global levels.

Please include the Executive Summary here.

This report presents an overview of the status of the aquatic genetic resources (AqGR) in Malaysia, presented in eight chapters.

II. INTRODUCTION

The main objective of the Introduction is to present an overview that will allow a person who is unfamiliar with the country to appreciate the context for the Country Report. The Introduction should present a broad overview and present background information from your country on farmed aquatic species, their wild relatives and culture based fisheries. Detailed information should be provided in the main body of the Country Report. Countries may wish to consider developing their Introductions after completing the main body of their Country Reports.

Please write the overview here

Malaysia is located between 2° and 7° north of the equator and longitudes 100° and 119° east. This South-east Asian sovereign nation covers an area of about 329,758 square kilometres, consisting of Peninsular Malaysia, and the states of Sabah and Sarawak as well as the Federal Territory of Labuan in the north-western coastal area of Borneo Island. Peninsular Malaysia comprises the states of Johor, Kedah, Kelantan, Melaka, Negeri Sembilan, Pahang, Pulau Pinang, Perak, Perlis, Selangor and Terengganu, and the Federal Territories of Kuala Lumpur and Putrajaya. Pahang is the largest state in Peninsular Malaysia with an area of 35 965 square kilometres. The two regions (Peninsular Malaysia and the Borneo states) are separated by about 531.1 kilometres of the South China Sea. Peninsular Malaysia, covering 131 598 square kilometres, has its frontiers with Thailand in the north and Singapore in the south, while Sabah with an area of 73 711 square kilometres and Sarawak of about 124 449 square kilometres border the territory of Indonesia's Kalimantan province

III. MAIN BODY OF THE COUNTRY REPORT

Aquaculture, culture-based fisheries and capture fisheries, have differing importance among countries. The structure of chapters in each Country Report will reflect those differences. Countries which do not have a well-developed aquaculture sector but where wild relatives of farmed aquatic species are located, should report on these resources. Countries should decide how to prioritize the coverage of their Country Reports depending on their aquatic genetic resources.

Chapter 1: The Use and Exchange of Aquatic Genetic Resources of Farmed Aquatic Species and their Wild Relatives within National Jurisdiction

The main objective of Chapter 1 is to provide annotated inventories of aquatic genetic resources (AqGR) of farmed aquatic species and their wild relatives.

Farmed aquatic species

1. Over the last 10 years, has production been: *Please mark appropriate box.*

- Increasing
- Stable
- Decreasing
- Stopped
- Still in Research and Development
- Fluctuating
- Not known

2. What is the expected trend over the next 10 years? *Please mark appropriate box.*

- Increasing
- Stable
- Decreasing
- Stopped
- Still in Research and Development
- Fluctuating
- Not known

3. Is the identification and naming of farmed species, subspecies, hybrids, crossbreeds, strains, triploids, other distinct types accurate and up- to-date? *Please mark appropriate box.*

- Yes
- No
- Mostly Yes
- Mostly No

Please include any explanation or additional information here.

Naming of farmed species, subspecies, hybrids, crossbreeds, strains, triploids, other distinct types are sometimes not accurate and up-to-date, for example hybrids of African catfish could not be well distinguished with local catfish.

4. To what extent are genetic data for farmed aquatic organisms

a) Available? *Please mark appropriate box.*

- Not at all
- To a minor extent
- To some extent
- To a great extent

b) Used in management? *Please mark appropriate box.*

- Not at all
- To a minor extent
- To some extent
- To a great extent

Please add any explanation here.

A comprehensive research on the genetic population of some of the fish species such as giant freshwater prawn, sea bass, Tor sp., Anadara granosa, Crassostrea sp. and Probabus julleni have been studied and reported, however the information gathered has not been fully used in management except for freshwater prawn.

5. To what extent are the aquatic organisms farmed in your country sourced as wild seed or from wild brood stock?

Please mark appropriate box.

- Not at all
- To a minor extent
- To some extent
- To a great extent

Please add any explanation here.

<ul style="list-style-type: none"> • Except for marine shrimp, all other species are sourced from wild. • No broodstock development program for other species was established. • Very small percentage of farmer's participation in active breeding • Detailed breeding plans are not public documents
--

6. What proportions (%) of breeding programmes and efforts for the genetic improvement of farmed aquatic species in your country are being managed by the public sector (government research, universities etc.), the private sector, and public-private partnerships?

• Percent managed by public sector. **Please Enter Percentage Here**

• Percent managed by private sector. **Please Enter Percentage Here**

• Percent managed by private /public partnership. **Please Enter Percentage Here**

Total

Please add any explanation here.

<p>Example of private /public partnership: GIFT tilapia (WorldFish, Centre and Department of Fisheries) and marine shrimp</p>

7. To what extent do genetically improved aquatic organisms, including hybrids, crossbreeds, strains, triploids and other distinct types contribute to national aquaculture production in terms of volume ?

Please mark appropriate box.

- Not at all
- To a minor extent
- To some extent
- To a great extent

8. Please list most significant examples where genetic improvement contributed to increased production and indicate whether they were developed by public, private or public/private partnerships.

Add Row

Species	Type of genetic improvement <i>mark all that apply</i>	Developed By <i>mark all that apply</i>	
	<input type="checkbox"/> Traditional selective breeding	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input checked="" type="checkbox"/> Hybrids <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-left: 20px;">Specify parental species in the box below</div>	<input checked="" type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Epinephelus spp	<input type="checkbox"/> Triploids and other polyploids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input type="checkbox"/> Mono-sex production	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Other	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input checked="" type="checkbox"/> Traditional selective breeding	<input type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Hybrids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Lates calcarifer	<input type="checkbox"/> Triploids and other polyploids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input type="checkbox"/> Mono-sex production	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Other	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	

	<input checked="" type="checkbox"/> Traditional selective breeding		<input type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Hybrids		<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Lutjanus spp	<input type="checkbox"/> Triploids and other polyploids		<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input type="checkbox"/> Mono-sex production		<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Other		<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input checked="" type="checkbox"/> Traditional selective breeding		<input checked="" type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input checked="" type="checkbox"/> Hybrids	Specify parental species in the box below	<input checked="" type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Oreochromis (=Tilapia) spp	<input type="checkbox"/> Triploids and other polyploids		<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input checked="" type="checkbox"/> Mono-sex production		<input checked="" type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Other		<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	

	<input type="checkbox"/> Traditional selective breeding	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Hybrids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Clarias spp	<input type="checkbox"/> Triploids and other polyploids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input type="checkbox"/> Mono-sex production	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input checked="" type="checkbox"/> Traditional selective breeding	<input checked="" type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Hybrids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Penaeus monodon	<input type="checkbox"/> Triploids and other polyploids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input type="checkbox"/> Mono-sex production	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Other	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	

	<input checked="" type="checkbox"/> Traditional selective breeding	<input type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Hybrids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Macrobrachium rosenbergii	<input type="checkbox"/> Triploids and other polyploids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input type="checkbox"/> Mono-sex production	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Other	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Traditional selective breeding	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Hybrids	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
Crassostrea iredalei	<input checked="" type="checkbox"/> Triploids and other polyploids	<input type="checkbox"/> Private Sector <input checked="" type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	X
	<input type="checkbox"/> Mono-sex production	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	
	<input type="checkbox"/> Other	<input type="checkbox"/> Private Sector <input type="checkbox"/> Public Sector <input type="checkbox"/> Private/Public partnership	

9. Please fill in table 1.1

Table 1.1 Aquatic genetic resources (AqGR) of farmed aquatic species in your country

<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">Add Row</div>							
Farmed species	Genetic type	Availability of genetic data	Trends in production	Future trends in production	Genetic improvement	Future genetic improvement	Comments
List species (scientific names), strains and varieties as scientific names (put in brackets the most widely used national common name or names) and indicate whether native or introduced	<i>Indicate all genetic types that apply to the species</i>	Are genetic data available for farmed populations? If yes, give summary details in comments	Over the last 10 years, production has been (mark one)	Expected trend over the next 10 years is that production will (mark one)	Which genetic technologies are currently being used on the species (mark all that apply)	mark all that apply	For example important traits improved, how data are used in management or name of breed, source of information, etc.
<input checked="" type="radio"/> Native <input type="radio"/> Introduced Chanos chanos	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Species: Indian threadfish	X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Species: Golden trevally	X

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Pomadasys spp	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input checked="" type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)	English name: Grunter Other: Domestication	X
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Lutjanus johnii	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input checked="" type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input checked="" type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)	Other: Domestication	X
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input checked="" type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication	X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input checked="" type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input checked="" type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		X

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Plectropomus spp	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input checked="" type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input checked="" type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)	English name: Blacktip grouper	X
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Epinephelus fuscoguttatus	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input checked="" type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input checked="" type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
<i>Epinephelus lanceolatus</i>	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input checked="" type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input checked="" type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input type="radio"/> Increasing	<input type="radio"/> Increasing	<input checked="" type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
<i>Cromileptes altivelis</i>	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input checked="" type="radio"/> Stable	<input checked="" type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input checked="" type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	English name: Red snapper Other: Domestication	<input checked="" type="checkbox"/> X
Lutjanus erythropterus								
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication	<input checked="" type="checkbox"/> X
Caranx sexfasciatus								

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication	X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input checked="" type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input checked="" type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		X

Eleutheronema tetradactylum

Lates calcarifer

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input type="checkbox"/> Wild Type <input checked="" type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		
Lutjanus argentimaculatus								X
<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input type="checkbox"/> Wild Type <input checked="" type="checkbox"/> Selective bred type <input checked="" type="checkbox"/> Hybrids <input checked="" type="checkbox"/> Cross breeds <input checked="" type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="checkbox"/> Selective breeding <input checked="" type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input checked="" type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input checked="" type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Red tilapia	X
Oreochromis (=Tilapia) spp								

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input checked="" type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Penaeus monodon	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input checked="" type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input checked="" type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input checked="" type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Penaeus vannamei	<input checked="" type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input checked="" type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input checked="" type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Panulirus inflatus	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input checked="" type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Crassostrea iredalei	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input checked="" type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input checked="" type="checkbox"/> Hybridization		
	<input checked="" type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input checked="" type="checkbox"/> Polyploids							

Panulirus inflatus
Other: Domestication

X

X

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication	X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication English name: Mud crab	X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication	X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type <input type="checkbox"/> Selective bred type <input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input checked="" type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	Other: Domestication	X

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input checked="" type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Holothuria scabra	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Hemibagrus nemurus	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced								
Chitala ornata	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding	Notopterus chitala English name: Feather back	
	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		X
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input checked="" type="radio"/> Not known	<input checked="" type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced							Other: Domestication	
Channa striata	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		X
	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input checked="" type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input checked="" type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		
Scortum barcoo	<input type="checkbox"/> Selective bred type							X
	<input type="checkbox"/> Hybrids							
	<input type="checkbox"/> Cross breeds							
	<input type="checkbox"/> Strains							
	<input type="checkbox"/> Varieties							
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input type="radio"/> Not known	<input type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Selective breeding <input type="checkbox"/> Hybridization <input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		
Leptobarbus hoeveni	<input type="checkbox"/> Selective bred type							X
	<input type="checkbox"/> Hybrids							
	<input type="checkbox"/> Cross breeds						Also introduced from Thailand (Leptobarbus rubripinna)	
	<input type="checkbox"/> Strains							
	<input type="checkbox"/> Varieties							
	<input type="checkbox"/> Polyploids							

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Hypophthalmichthys nobilis	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input checked="" type="radio"/> Not known	<input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input checked="" type="radio"/> Not known	<input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	English name: Bighead carp	X
<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Ctenopharyngodon idellus	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids <input type="checkbox"/> Cross breeds <input type="checkbox"/> Strains <input type="checkbox"/> Varieties <input type="checkbox"/> Polyploids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input checked="" type="radio"/> Not known	<input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Stopped <input checked="" type="radio"/> Not known	<input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Polyploidy (chromosome set manipulation) <input type="checkbox"/> Monosex <input type="checkbox"/> Marker assisted selection <input type="checkbox"/> Other (specify in comment)		X

<input checked="" type="radio"/> Native <input type="radio"/> Introduced								
Tor tambroides	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input checked="" type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input checked="" type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced								
Clarias batrachus	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input checked="" type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Hypsibarbus spp	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Oxyeleotris marmorata	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	Other: Domestication	X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input checked="" type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Cyprinus carpio	<input checked="" type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input type="radio"/> Increasing	<input type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Cirrhinus mrigala	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input checked="" type="radio"/> Not known	<input checked="" type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input type="radio"/> Increasing	<input type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Colossoma macropomum	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input checked="" type="radio"/> Not known	<input checked="" type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Pangasius hypophthalmus	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Pangasius nasutus	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids						Pangasius nasutus	X
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Anabas testudineus	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input checked="" type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids						Also introduced from Thailand	X

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Labeo rohita	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input checked="" type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Hampala macrolepidota	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input checked="" type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	English name: Carp	X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Trichogaster pectoralis	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input checked="" type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Wallago spp	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input checked="" type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Osteochilus hasselti	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input checked="" type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input checked="" type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input checked="" type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
Oreochromis (=Tilapia) spp	<input checked="" type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input checked="" type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		X
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input checked="" type="radio"/> Native <input type="radio"/> Introduced								
Channa micropeltes	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
	<input type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							
<input checked="" type="radio"/> Native <input type="radio"/> Introduced								
Macrobrachium rosenbergii	<input checked="" type="checkbox"/> Wild Type	<input checked="" type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input checked="" type="checkbox"/> Selective breeding	<input checked="" type="checkbox"/> Selective breeding		
	<input checked="" type="checkbox"/> Selective bred type	<input type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

<input type="radio"/> Native <input checked="" type="radio"/> Introduced	<input checked="" type="checkbox"/> Wild Type	<input type="radio"/> Yes	<input checked="" type="radio"/> Increasing	<input checked="" type="radio"/> Increasing	<input type="checkbox"/> Selective breeding	<input type="checkbox"/> Selective breeding		
Cherax quadricarinatus	<input type="checkbox"/> Selective bred type	<input checked="" type="radio"/> No	<input type="radio"/> Stable	<input type="radio"/> Stable	<input type="checkbox"/> Hybridization	<input type="checkbox"/> Hybridization		
	<input type="checkbox"/> Hybrids	<input type="radio"/> Not Known	<input type="radio"/> Fluctuating	<input type="radio"/> Fluctuating	<input type="checkbox"/> Polyploidy (chromosome set manipulation)	<input type="checkbox"/> Polyploidy (chromosome set manipulation)		
	<input type="checkbox"/> Cross breeds		<input type="radio"/> Decreasing	<input type="radio"/> Decreasing	<input type="checkbox"/> Monosex	<input type="checkbox"/> Monosex		
	<input type="checkbox"/> Strains		<input type="radio"/> Stopped	<input type="radio"/> Stopped	<input type="checkbox"/> Marker assisted selection	<input type="checkbox"/> Marker assisted selection		
	<input type="checkbox"/> Varieties		<input type="radio"/> Not known	<input type="radio"/> Not known	<input type="checkbox"/> Other (specify in comment)	<input type="checkbox"/> Other (specify in comment)		
	<input type="checkbox"/> Polyploids							

10. Which aquatic species in your country are thought to have potential for domestication and future use in aquaculture?

Add Row

Species <i>Type and select a species</i>	Is the species native to your country?	Comments <i>For example main sources of information</i>	
Epinephelus spp	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<p>- Epinephelus coioides are found naturally in East coast of Peninsular Malaysia during the monsoon season (Nov – March).</p> <p>- High demand and high market value.</p> <p>- Extensive studies on grouper have been carried out.</p> <p>- Genetic data available</p> <p>Main source of information</p> <p>i. Subramaniam, K. 1999. grouper aquaculture development in Malaysia. www.enaca.org/grouper/research/hatchery/1999.</p> <p>ii. Ali, H. M. (1996). A review of grouper (Epinephelus suillus) fry production research in Malaysia. In C. L. Marte, G. F. Qunitio, & A. C. Emata (Eds.), Proceedings of the Seminar-Workshop on Breeding and Seed Production of Cultured Finfishes in the Philippines, Tigbauan, Iloilo, Philippines, 4-5 May 1993 (pp. 140-149). Tigbauan, Iloilo, Philippines: SEAFDEC Aquaculture Department.</p> <p>iii. Leong Tak Seng. Grouper culture. Tropical Mariculture, 1998, Pages 423-448</p>	X
Lates calcarifer	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<p>- R & D on breeding of Lates calcarifer has started since 1980's.</p> <p>- High demand for lower and middle income group</p> <p>- Easy to domesticate</p> <p>Source of information</p> <p>a. Domestication of Asian sea bass using cage nets has been established by the Fisheries Department in Malaysia since 1970s (Awang, 1986)</p> <p>b. Hussein Mat Ali. (1987). Sea bass (lates calcarifer) cage culture research in Malaysia. Canberra : Australian Centre for International Agricultural Research.</p> <p>c. Ali Awang (1987). Status of sea bass (lates calcarifer) culture in Malaysia. Canberra : Australian Centre for International Agricultural Research.</p>	X

Lutjanus spp	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	R & D on breeding of Lutjanus argentimaculatus, L. erythropterus and L. johnii these species has started in Malaysia. - High demand - High market value Source of information a. Liang, et al. (1988). Aquaculture development in Malaysia. In: J.V. Juario & L.V. Benitez (Eds.) Perspectives in Aquaculture Development in Southeast Asia and Japan: Contributions of the SEAFDEC Aquaculture Department. Proceedings of the Seminar on Aquaculture Development in Southeast Asia, 8-12 September 1987, Iloilo City, Philippines. (pp. 73-90). b. Roslina et al. (2000). Genetic variability in the John's snapper Lutjanus johnii in Peninsular Malaysia as revealed by random amplified polymorphic DNA (RAPD) fingerprinting. Malaysian Fisheries Journal 1(2): 109-118.	X
Macrobrachium rosenbergii	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	R & D on breeding of these species has started in Malaysia started way back in 1950s. Source of information a. Ling, S.W. (1969). The general biology and development of Macrobrachium rosenbergii (de Man). FAO Fish. Rept. 3(57): 589–606.	X
Tor tambroides	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	R & D on breeding of these species have been started in Malaysia. Source of information: Tan E.S.P. (1980). Some aspects of the biology of Malaysian riverine cyprinids. Aquaculture. 20(3): 281-289. a Yuzine et al. (2007). Phylogenetic relationships among three mahseers of the subtribe Tores (Cyprinidae) in Malaysia. In S.S.Siraj, A. Christianus, C.K. Ng, S.S.D.Silva Eds.:Masheer: The Biology, Culture and Conservation. Pg. 203-216. Malaysian Fisheries Society, Kuala Lumpur. Esa, Y. E., Siraj, b. Esa et al. (2008). Mitochondrial DNA diversity of Tor tambroides Valenciennes (Cyprinidae) from five natural populations in Malaysia. Zoological Science 47: 360-363.	X

Leptobarbus hoeveni	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<p>R & D on breeding of these species have been started in Malaysia.</p> <p>Source of information: Tan E.S.P. (1980). Some aspects of the biology of Malaysian riverine cyprinids. Aquaculture. 20(3): 281-289.</p>	X
Pangasius hypophthalmus	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<p>R & D on breeding of these species have been started in Malaysia.</p>	X
Hemibagrus nemurus	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<p>R & D on breeding of these species have been started in Malaysia.</p>	X

Hypsibarbus spp	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	R & D on breeding of these species have been started in Malaysia.	X
Puntius spp	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	R & D on breeding of these species have been started in Malaysia.	X
Scortum barcoo	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	R & D on breeding of these species have been started in Malaysia.	X

Oreochromis (=Tilapia) spp	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	
		<p>Source of information</p> <p>a. Bhasu et al. (2004). The genetic structure of Oreochromis spp. (Tilapia) populations in Malaysia as revealed by microsatellite DNA analysis. <i>Biochemical Genetics</i> 42: 217-230.</p> <p>b. Bhasu et al. (2005). Polymorphic microsatellite markers for characterizing seven stocks of Oreochromis niloticus and one of O. mossambicus (Tilapia) in Malaysia. <i>Malaysian Fisheries Journal</i> 5: 74-84</p>

11. Please list the aquatic genetic resources of farmed aquatic species your country has transferred or exchanged with other countries over the past 10 years.

Add Row					
Species	Genetic alteration of exchanged material Mark all that apply	Details of transfer or exchange	Type of genetic material exchanged Mark all that apply	Country or countries involved with exchange Hold CTRL button to select more than one country	Comments <i>Please add main purpose or objective of the exchange and main sources of information</i>
Macrobrachium rosenbergii	<input checked="" type="checkbox"/> No deliberate genetic alteration <input type="checkbox"/> Traditional selective breeding <input type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other	<input type="checkbox"/> Import <input checked="" type="checkbox"/> Export	<input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Bhutan Bolivia (Plurinational State of) Bosnia and Herzegovina Brazil Brunei Darussalam Bulgaria Burkina Faso Burundi Cabo Verde Cambodia Cameroon Canada Central African Republic Chad Chile China Colombia	Research and production purposes
Oreochromis (=Tilapia) spp	<input type="checkbox"/> No deliberate genetic alteration <input checked="" type="checkbox"/> Traditional selective breeding <input checked="" type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other	<input type="checkbox"/> Import <input checked="" type="checkbox"/> Export	<input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input type="checkbox"/> Living specimens <input type="checkbox"/> Other	Slovakia Slovenia Solomon Islands Somalia South Africa South Sudan Spain Sri Lanka Sudan Suriname Swaziland Sweden Switzerland Syrian Arab Republic Tajikistan Thailand Timor-Leste	Solely on research purposes

Epinephelus spp	<input type="checkbox"/> No deliberate genetic alteration <input checked="" type="checkbox"/> Traditional selective breeding <input type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Slovakia Slovenia Solomon Islands Somalia South Africa South Sudan Spain Sri Lanka Sudan Suriname Swaziland Sweden Switzerland Syrian Arab Republic Tajikistan Thailand Timor-Leste	Import from Taiwan Research and production purposes	<input checked="" type="checkbox"/>
Lates calcarifer	<input type="checkbox"/> No deliberate genetic alteration <input checked="" type="checkbox"/> Traditional selective breeding <input type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Slovakia Slovenia Solomon Islands Somalia South Africa South Sudan Spain Sri Lanka Sudan Suriname Swaziland Sweden Switzerland Syrian Arab Republic Tajikistan Thailand Timor-Leste	Production	<input checked="" type="checkbox"/>
Eleutheronema tetradactylum	<input type="checkbox"/> No deliberate genetic alteration <input checked="" type="checkbox"/> Traditional selective breeding <input type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other	<input type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus Belgium	Production	<input checked="" type="checkbox"/>

<p>Caranx spp</p>	<p>No deliberate <input type="checkbox"/> genetic alteration Traditional selective breeding <input checked="" type="checkbox"/> Traditional selective breeding <input type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other</p>	<p><input checked="" type="checkbox"/> Import <input type="checkbox"/> Export</p>	<p><input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other</p>	<p>Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus Belgium</p>	<p>Import from Taiwan Production</p>	<p>X</p>
<p>Lutjanus johnii</p>	<p>No deliberate <input type="checkbox"/> genetic alteration Traditional selective breeding <input checked="" type="checkbox"/> Traditional selective breeding <input type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other</p>	<p><input checked="" type="checkbox"/> Import <input type="checkbox"/> Export</p>	<p><input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other</p>	<p>Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus Belgium</p>	<p>Import from Taiwan Production</p>	<p>X</p>
<p>Lutjanus spp</p>	<p>No deliberate <input type="checkbox"/> genetic alteration Traditional selective breeding <input type="checkbox"/> Traditional selective breeding <input checked="" type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other</p>	<p><input checked="" type="checkbox"/> Import <input type="checkbox"/> Export</p>	<p><input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other</p>	<p>Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus Belgium</p>	<p>Import from Taiwan Lutjanus erythropterus Production</p>	<p>X</p>

<p>Penaeus monodon</p>	<p>No deliberate <input type="checkbox"/> genetic alteration Traditional selective breeding <input type="checkbox"/> <input type="checkbox"/> Hybrids <input type="checkbox"/> Triploids and other polyploids <input type="checkbox"/> Mono-sex production <input type="checkbox"/> Other</p>	<p><input checked="" type="checkbox"/> Import <input type="checkbox"/> Export</p>	<p><input checked="" type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input checked="" type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input type="checkbox"/> Living specimens <input type="checkbox"/> Other</p>	<p>Thailand Timor-Leste Togo Tokelau (Associate Me Tonga Trinidad and Tobago Tunisia Turkey Turkmenistan Tuvalu Uganda Ukraine United Arab Emirates United Kingdom United Republic of Ta United States of Ame Uruguay</p>	<p>Production</p>	<p>X</p>
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Wild relatives of farmed aquatic species

12. Please list any wild relatives of aquatic species present in your country that are farmed in another country (but not in your country) and indicate their uses.

This question refers to aquatic genetic resources that are present in the wild in your country and that are being farmed elsewhere (but not farmed in your country), indicating any uses these resources may have in your country.

Add Row

Species	Use <i>(mark all that apply)</i>	Comments	
	<input type="checkbox"/> Capture fisheries		
	<input type="checkbox"/> Recreational fishery		
	<input type="checkbox"/> Aquaria		
	<input type="checkbox"/> Biological control		
	<input type="checkbox"/> Research and development		X
	<input type="checkbox"/> Other (specify in comments)		

13. Please list the aquatic genetic resources of wild relatives of farmed aquatic species your country has transferred or exchanged with other countries over the past 10 years.

Add Row

This question refers to wild aquatic genetic resources collected from the wild, not from farming facilities as in question 11.

Species	Details of transfer or exchange <i>mark all that apply</i>	Type of genetic material exchanged	Country Hold CTRL button to select more than one country	Comments <i>main sources of information, if the transfer was legal or not</i>	
Epinephelus spp	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Gambia Georgia Germany Ghana Greece Grenada Guatemala Guinea Guinea-Bissau Guyana Haiti Hungary Iceland India Indonesia Iran (Islamic Republic of)	Also imported from Taiwan	X
Lates calcarifer	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Gambia Georgia Germany Ghana Greece Grenada Guatemala Guinea Guinea-Bissau Guyana Haiti Hungary Iceland India Indonesia Iran (Islamic Republic of)	Legal transfer	X
Lutjanus spp	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus	Imported from Taiwan	X

<p>Eleutheronema tetradactylum</p>	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus</p>	<p>Imported from Taiwan</p>	<p>X</p>
<p>Caranx spp</p>	<input type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus</p>	<p>Imported from Taiwan</p>	<p>X</p>
<p>Lutjanus johnii</p>	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus</p>	<p>Imported from Taiwan</p>	<p>X</p>
<p>Lutjanus spp</p>	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus</p>	<p>Imported from Taiwan Species: Lutjanus erythropterus</p>	<p>X</p>

Oreochromis (=Tilapia) spp	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Netherlands New Zealand Nicaragua Niger Nigeria Niue Norway Oman Pakistan Palau Panama Papua New Guinea Paraguay Peru Philippines Poland	Also imported from Taiwan	X
Clarias spp	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Timor-Leste Togo Tokelau (Associate Memb Tonga Trinidad and Tobago Tunisia Turkey Turkmenistan Tuvalu Uganda Ukraine United Arab Emirates United Kingdom United Republic of Tanzar United States of America Uruuav		X
Pangasius spp	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Tunisia Turkey Turkmenistan Tuvalu Uganda Ukraine United Arab Emirates United Kingdom United Republic of Tanzar United States of America Uruguay Uzbekistan Vanuatu Venezuela (Bolivarian Rep Viet Nam Yemen		X
Tor tambroides	<input type="checkbox"/> Import <input checked="" type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	Central African Republic Chad Chile China Colombia Comoros Cook Islands Costa Rica Côte d'Ivoire Croatia Cuba Cyprus Czech Republic Republic of Korea Democratic Republic of th Denmark		X

<p>Penaeus monodon</p>	<input checked="" type="checkbox"/> Import <input checked="" type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Malawi Malaysia Maldives Mali Malta Marshall Islands Mauritania Mauritius Mexico Micronesia (Federated Sta Monaco Mongolia Montenegro Morocco Mozambique Mvanmar</p>		<p>X</p>
<p>Macrobrachium rosenbergii</p>	<input checked="" type="checkbox"/> Import <input checked="" type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Timor-Leste Togo Tokelau (Associate Memb Tonga Trinidad and Tobago Tunisia Turkey Turkmenistan Tuvalu Uganda Ukraine United Arab Emirates United Kingdom United Republic of Tanzar United States of America Uruuav</p>	<p>USA (Hawaii)</p>	<p>X</p>
<p>Pangas catfish</p>	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Slovenia Solomon Islands Somalia South Africa South Sudan Spain Sri Lanka Sudan Suriname Swaziland Sweden Switzerland Syrian Arab Republic Tajikistan Thailand Timor-Leste</p>		<p>X</p>
<p>Probarbus jullieni</p>	<input checked="" type="checkbox"/> Import <input type="checkbox"/> Export	<input type="checkbox"/> Tissues <input type="checkbox"/> Gametes <input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens <input type="checkbox"/> Other	<p>Slovenia Solomon Islands Somalia South Africa South Sudan Spain Sri Lanka Sudan Suriname Swaziland Sweden Switzerland Syrian Arab Republic Tajikistan Thailand Timor-Leste</p>		<p>X</p>

14. Please fill in table 1.2

Table 1.2 Aquatic genetic resources of wild relatives of farmed aquatic species in your country.

Add Row											
Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
For each row, list the species as scientific names (put in brackets the most widely used national common For each species, include the named stocks and name of other management units if known)	Is the species (mark as appropriate) :	Is this species targeted by capture fisheries?	Are there any management measures in place?	Are genetic data available for the fishery?	Are genetic data used in management?	Over the last 10 years, catches have been:	Expected trend over the next 10 years.	Indicate the ecosystem where the fishery is located (mark all that apply)	The habitat or range is	What are likely reasons for changes? (mark all that apply)	
Epinephelus spp	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Lates calcarifer	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X
Lutjanus spp	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Eleutheronema tetradactylum	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X
Caranx spp	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Lutjanus johnii	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X
Lutjanus spp	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input checked="" type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Oreochromis (=Tilapia) spp	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input checked="" type="checkbox"/> Introduced <input type="checkbox"/> Native	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input checked="" type="checkbox"/> Lake <input checked="" type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input type="radio"/> Not known	<input checked="" type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input type="checkbox"/> Not known	X
Clarias batrachus	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input checked="" type="checkbox"/> Other (specify) <div style="border: 1px solid black; padding: 2px;">Paddy field</div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input checked="" type="radio"/> Decreasing <input type="radio"/> Not known	<input checked="" type="checkbox"/> Habitat <input type="checkbox"/> Climate <input checked="" type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Clarias gariepinus	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input checked="" type="checkbox"/> Introduced <input type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input checked="" type="checkbox"/> Lake <input checked="" type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input type="radio"/> Not known	<input checked="" type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input type="checkbox"/> Not known	X
Clarias macrocephalus	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input checked="" type="checkbox"/> Other (specify) <div style="border: 1px solid black; padding: 2px;">Paddy field</div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Pangasius spp	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input checked="" type="radio"/> Decreasing <input type="radio"/> Not known	<input checked="" type="checkbox"/> Habitat <input checked="" type="checkbox"/> Climate <input checked="" type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input type="checkbox"/> Not known	X
Pangasius hypophthalmus	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input checked="" type="checkbox"/> Introduced <input type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input checked="" type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input type="radio"/> Not known	<input checked="" type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Tor tambroides	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X
Penaeus monodon	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input checked="" type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X

Target species, stocks or other management units	Characteristics of species	Capture fisheries	Management measures	Availability of genetic data	Use of genetic data in management	Trends in catches	Future trends in catches	Ecosystem(s) where the fishery is located	Changes in ranges and habitats	Reasons for change in abundance of species	
Macrobrachium rosenbergii	<input type="checkbox"/> Straddling <input type="checkbox"/> Transboundary <input type="checkbox"/> Introduced <input checked="" type="checkbox"/> Native	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Not Known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input checked="" type="radio"/> Decreasing <input type="radio"/> Depleted <input type="radio"/> Not known	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Fluctuating <input type="radio"/> Decreasing <input type="radio"/> Depleted <input checked="" type="radio"/> Not known	<input type="checkbox"/> Intertidal <input type="checkbox"/> Coastal in EEZ <input type="checkbox"/> High seas <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input checked="" type="checkbox"/> River <input type="checkbox"/> Swamp <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="radio"/> Increasing <input type="radio"/> Stable <input type="radio"/> Decreasing <input checked="" type="radio"/> Not known	<input type="checkbox"/> Habitat <input type="checkbox"/> Climate <input type="checkbox"/> Invasive species <input type="checkbox"/> Pollution <input type="checkbox"/> Rehabilitation of habitat <input type="checkbox"/> Others <input checked="" type="checkbox"/> Not known	X

Chapter 2: Drivers and Trends in Aquaculture: Consequences for Aquatic Genetic Resources within National Jurisdiction

The main objective of Chapter 2 is to review the main drivers and trends that are shaping aquaculture and their consequences for aquatic genetic resources.

15. Please indicate the ways the aquatic genetic resources (AqGR) of **farmed aquatic species** have been impacted by the following drivers. Please give examples of positive and negative impacts for specific drivers.

This question refers to drivers impacting farmed aquatic genetic resources, not about impacts on the entire aquaculture sector. Drivers should be seen from a national perspective.

Driver impacting aquaculture	Effect on AqGR <i>Mark appropriate box</i>	Comments <i>List examples or other relevant information</i>
Human population increase	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	Due to the high demand for farmed fish, intensive breeding of farmed aquatic species through cross breeding and hybridization to increase production is practiced which may resulted in narrowing the genetic base of the species.
Increased wealth and demand for fish	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	Increase demand for fish product and healthy animal protein causes awareness among fish farmers of responsible aquaculture practice. • Systematic brood stocks management of farmed aquatic species is implemented which help in preserving the genetic resources of farmed aquatic species.
Governance (ability of government, industry and the public to work together in managing resources)	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	Implementation of management policies and guidelines for farmed aquatic resources. • Create awareness campaign for public and private sector. • More cooperation between government, industry and the public
Climate change	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<ul style="list-style-type: none"> • Effect on fish physiology & breeding • Increase pathogen transmission and outbreak of diseases.
Competition for resources, especially freshwater	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<ul style="list-style-type: none"> • Creating new technology for in-door culture • Encourage the development of more efficient and environmental friendly technology

Driver impacting aquaculture	Effect on AqGR <i>Mark appropriate box</i>	Comments <i>List examples or other relevant information</i>
Changes in values and ethics of consumers	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<ul style="list-style-type: none"> • Move towards quality production • Awareness on high nutritive value of white meat • Healthier choice of meet
Other Add other drivers as necessary	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	
Add Row	Remove Row	

16. Please indicate the ways the aquatic genetic resources of **wild relatives of farmed aquatic species** in nature have been impacted by the following drivers. Please give examples of positive and negative impacts for specific drivers.

This question refers to drivers impacting wild aquatic genetic resources of farmed species, not about impacts on the entire aquaculture sector. Drivers should be seen from a national perspective.

Driver impacting aquaculture	Effect on AqGR <i>Mark appropriate box</i>	Comments <i>List examples or other relevant information</i>
Human population increase	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<ul style="list-style-type: none"> • Excessive exploitation of wild stock (overfishing) due to high demand • Decrease in fish population cause by pollution • Depletion of wild stock
Increased wealth and demand for fish	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<ul style="list-style-type: none"> • High demand for wild fish • Enhancement of sanctuary, strict conservation measures and well-planned management policy to increase fish population
Governance (ability of government, industry and the public to work together in managing resources)	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<ul style="list-style-type: none"> • Introduce closed-season • Increase awareness on importance of conservation • More sanctuaries and MPA identified and gazetted, implementation of community based fisheries management
Climate change	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<p>Positive:</p> <ul style="list-style-type: none"> • Increases brackishwater and marine farming areas • Migratory species available in new habitat • Probability of producing more resilient fish (adaptability) <p>Negative:</p> <ul style="list-style-type: none"> • Changes in fish physiology (eg. sex ratio of fish) results in decrease in breeding
Competition for resources, especially freshwater	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<p>Positive:</p> <ul style="list-style-type: none"> • Enhance awareness for setting up management program, • Designating mangroves as fish nursery grounds <p>Negative:</p> <ul style="list-style-type: none"> • Reduce of habitat due to competition of land for urbanization

Driver impacting aquaculture	Effect on AqGR <i>Mark appropriate box</i>	Comments <i>List examples or other relevant information</i>
Changes in values and ethics of consumers	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	<ul style="list-style-type: none"> • Increase in awareness on conservation of natural resources and endangered species • Reducing demands on unsustainable fish species (high carbon footprint, carnivorous fish)
Other Add other drivers as necessary	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	
Add Row	Remove Row	

17. What countermeasures might be taken to reduce adverse impacts on the aquatic genetic resources that sustain current aquaculture and/or provide for its future development?

Describe countermeasures

- Register critical breeds, and propose specific measures for their conservation
- The dissemination of breed information and developing networks between dedicated farmers/government/private.
- Good breeding program
- Establishment of effective (in situ and ex situ) conservation program such as establishment of gene bank, sanctuary and protected area.
- Survey and increase public awareness for the importance of conserving farm animal genetic diversity, thus enabling agriculture to meet present and future economic, biological and scientific needs.
- The dissemination of knowledge and information to specific user groups and the general public.
- Promoting sustainable aquaculture
- Imposing strict fishing and fish gear regulations

Biotechnologies

18. To what extent have the following biotechnologies been used in your country for the genetic improvement of farmed aquatic organisms.

Biotechnology	Extent of use	Comments <i>main sources of information, important species for which the biotechnology is applied</i>
Selective breeding	<input type="radio"/> Not at all <input type="radio"/> To a minor extent <input checked="" type="radio"/> To some extent <input type="radio"/> To a great extent	DOF annual report, fisheries seminar, FRI's strategic plan 2020. - Tilapia - Freshwater prawn - Marine shrimp (P. monodon, P. vannamei) - Seabass
Hybridization	<input type="radio"/> Not at all <input type="radio"/> To a minor extent <input type="radio"/> To some extent <input type="radio"/> To a great extent	- Tilapia - Grouper - Catfish - Oyster
Polyploidy (chromosome set manipulation)	<input type="radio"/> Not at all <input checked="" type="radio"/> To a minor extent <input type="radio"/> To some extent <input type="radio"/> To a great extent	- Oyster
Monosex production	<input type="radio"/> Not at all <input type="radio"/> To a minor extent <input checked="" type="radio"/> To some extent <input type="radio"/> To a great extent	- Tilapia - Freshwater prawn
Marker assisted selection	<input checked="" type="radio"/> Not at all <input type="radio"/> To a minor extent <input type="radio"/> To some extent <input type="radio"/> To a great extent	
Gynogenesis/androgenesis	<input checked="" type="radio"/> Not at all <input type="radio"/> To a minor extent <input type="radio"/> To some extent <input type="radio"/> To a great extent	
Other Continue adding row as necessary		
crossbreeding	<input type="radio"/> Not at all <input type="radio"/> To a minor extent <input checked="" type="radio"/> To some extent <input type="radio"/> To a great extent	- Tilapia - Seabass - Grouper - Tor sp - Freshwater prawn - Snapper - Sea cucumber
Add Row	Remove Row	
Other Continue adding row as necessary		
Tissue culture	<input type="radio"/> Not at all <input type="radio"/> To a minor extent <input checked="" type="radio"/> To some extent <input type="radio"/> To a great extent	- Aquatic plants
Add Row	Remove Row	

19. Please indicate the ways aquatic genetic resources of the wild relatives of farmed aquatic species have been impacted by drivers that are changing aquatic ecosystems. Please give countermeasures that might be taken to reduce adverse consequences for the aquatic genetic resources that sustain capture fisheries on wild relatives of farmed species.

Drivers that are changing aquatic ecosystems	Effect on AqGR <i>mark appropriate box</i>	Countermeasures and effects
Habitat loss and degradation	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input checked="" type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	a. Establishment of fish sanctuaries b. Establishment of marine parks c. Implementation of community based management
Pollution of waters	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	a. Toughen up on the regulation of agricultural effluent. (Examples, Environmental Quality Act 1974; Protection of Wildlife, Act 1972; Malaysian Maritime Enforcement Agency (MMEA) Act, 2004, EIA Guidelines for Fishing Harbours and/or Land Based Aquaculture Projects 1995). b. Integrated farming and excreta/wastewater-fed aquaculture IMTA system c. Enforcement
Increased frequency of extreme climatic events and long-term climate change	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input checked="" type="radio"/> Unknown	a. Natural selection within wild populations, so that waters becomes populated with more tolerant survivors. b. Monitor the extents to which farmed fish cope with changed aquatic environments c. Re-evaluation, sustainable use and conservation of what can be called eco-friendly fish
Establishment of invasive species	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	a. Tighten regulation for import/export of invasive species (eg. Customs Act 1967 (amended in 1988)). b. Establishment of risk assessment and importation of alien species national committee. c. Restriction of movement of invasive species in accordance with the Cartagena Protocol on Bio-safety d. Promote effective management policies and practices to reduce the impact of invasive alien species at the regional and international levels
Introductions of parasites and pathogens	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input checked="" type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	a. Establishment national committee on risk assessment and importation of alien species b. Strict quarantine act c. Promote the involvement of local community to create awareness on the importance of introduction of new disease

Drivers that are changing aquatic ecosystems	Effect on AqGR <i>mark appropriate box</i>	Countermeasures and effects
Impacts of purposeful stocking and escapes from aquaculture	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	a. Regulation and control of purposeful stocking b. To quantify the frequency of escapes from aquaculture and their prevalence in wild habitat c. Code of Conduct for Responsible Aquaculture
Capture fisheries	<input type="radio"/> Strongly positive <input type="radio"/> Positive <input checked="" type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	a. Strengthen Responsible Fishing and Fishing Gear Act b. Implement close season c. Identify marine fish refugia d. Establish restricted areas (marine park) e. Implement Community/Ecosystem Based Fisheries Management eg. DoF Sabah has just implemented EAFM for tuna and prawns f. Implement Code of Conduct for Responsible Fisheries g. Increase restocking efforts
Other	<input type="radio"/> Strongly positive	
Continue listing other drivers	<input type="radio"/> Positive	
	<input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect <input type="radio"/> Unknown	
Add Row	Remove Row	

Chapter 3: *In Situ* Conservation of Aquatic Genetic Resources of Farmed Aquatic Species and their wild Relatives within National Jurisdiction

The main objective of Chapter 3 is to review the current status and future prospects for the *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives within national jurisdiction for food and agriculture.

The specific objectives are as follows:

- To review the current and likely future contributions to *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives by those who use them in responsible and well managed capture fisheries, aquaculture, and culture-based fisheries.
- To identify and describe any existing and planned aquatic protected areas that are contributing, or will contribute, to *in situ* conservation of aquatic genetic resources of wild relatives of farmed aquatic species.
- To identify and describe any major existing and planned efforts for the *in situ* conservation of threatened or endangered aquatic genetic resources (farmed and wild).
- To review needs and priorities for the future development of *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives.

Overview of the current status and future prospects for the *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives

20. To what extent are responsible and well managed aquaculture and culture-based fisheries contributing to *in situ* conservation of the aquatic genetic resources of farmed aquatic species and their wild relatives.

Please mark appropriate box.

- To a great extent
 To a limited extent
 Not at all
 Not applicable

Please include any additional information

- Aquatic sanctuaries including both marine and inland protected areas would not only help conserve biodiversity but also rejuvenate fish stock
- Captive breeding programme for inland species (eg. freshwater prawn and fish) are principle tool to compensate for declining fish population, supplement and enhance wild fisheries resources
- It is essential to prevent unlimited exploitation of untapped germplasm resources and put in place a strategy for sustainable utilization of resources.

21. To what extent are existing facilities contributing to *in situ* conservation of aquatic genetic resources of wild relatives of farmed aquatic species?

Please mark appropriate box.

- To a great extent
 To a limited extent
 Not at all
 Not applicable

Please include any additional information

- a. Introduction of Tagal/Tagang system (a community based management system by the East Malaysian. It is a simple but effective traditional approach to good stewardship of the river.
 b. Conservation of mangrove/wetland areas as a breeding ground for fish
 c. Establishment of Marine park allow for the natural regeneration of aquatic life where such life has been depleted
 d. Capture fisheries zoning
 f. Fisheries Act 1985

22. Please provide *examples* of current or planned activities for the *in situ* conservation of endangered or threatened farmed species and their wild relatives with demonstrated or potential importance for aquaculture, culture-based fisheries, and capture fisheries.

Please describe examples

- Tagal/Tagang system in Sabah and Sarawak Rivers (Community-Based Fisheries Management).
 - Ecology, biology and genetics of selected freshwater fishes-Temoleh [*Probarbus jullieni*], patin [*Pangasius nasutu*], kelah [*Tor sp.*]. The project covers four areas of Sungai Pahang- Pekan (Paloh Hinai), Maran (Lubok Paku), Temerloh (Kuala Mai) and Jerantut (UluTembeling); and three areas in Perak, Malaysia – Temenggor Dam, Kenering Dam and Sungai Rui (tributary of the main Sungai Perak).
 - Conservation and management of freshwater fishes. The study covers four areas of Sungai Pahang - Pekan (Paloh Hinai), Maran (Lubok Paku), Temerloh and Jerantut. In 2007, introduction of closing season (from February to April each year) and conservation zones (12.4 km) at the identified spawning ground of endangered *Probarbus jullieni* at Pahang River.
 - Freshwater fish sanctuary in Sg Chiling, Selangor, Lubok Tenor, Sungai Tahan, Taman Negara, Sungai Relau, Merapoh, Sungai Petang and Tasik Kenyir, Terengganu.
 - Restocking programme of Giant Freshwater Prawn (*Macrobrachium rosenbergii*) fries at Sungai Timun and its tributary Sungai Rembau, Negeri Sembilan and in Sabah (Sungai Petagas).
 - Giant Freshwater Prawn sanctuary program in Kuala Muda River, Kedah
 - “State fish” initiative, eg. Pahang as Patin (*Pangasius sp.*) state. The idea is that conservation of this species will be research and reviewed as a matter of priority in this state.
 - CITES implementation
 - Marine Park protected areas
- Fish inventorisation

23. Please rank (from 1 to 10) the importance of the following objectives for *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives in your country.

Objectives of <i>in situ</i> conservation	Rank 1=Very Important 10=No importance
Preservation of aquatic genetic diversity	<input type="text" value="1"/>
Maintain good strains for aquaculture production	<input type="text" value="1"/>
Meet consumer and market demands	<input type="text" value="1"/>
To help adapt to impacts of climate change	<input type="text" value="1"/>
Future breed improvement in aquaculture	<input type="text" value="1"/>
<i>Please continue listing any other objectives as needed</i>	<input type="text"/>
<div style="display: flex; justify-content: space-around;"> Add Row Remove Row </div>	

Review of the *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives through their use in responsible and well managed aquaculture and culture-based fisheries

24. Is the *in situ* conservation of aquatic genetic resources included in the policy as an objective in the management of aquaculture and/or culture-based fisheries in your country?

Please mark appropriate box

- Yes
 Not yet, but planned to be included
 No
 Unknown

If yes, please give examples

Yes, to some extent.

Examples:

Community participation in conservation and management of selected freshwater fishes.

Fish sanctuaries

Protected areas

25. To what extent are collectors of wild seed and brood stock for aquaculture and culture-based fisheries contributing to the conservation of aquatic genetic resources by maintaining habitats and/or limiting the quantities collected?

Please mark appropriate box

- To a great extent
 To a limited extent
 Not at all
 Not applicable

Please include any additional details

Although there is a regulation on collecting the specific seed size of cockles and imposing close season for grouper seeds collection, the implementation by collectors of wild seed and brood stock for aquaculture is not 100% successful.

Review of the *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives through their use in responsible and well managed capture fisheries

26. Is the conservation of aquatic genetic resources of wild relatives of farmed aquatic species included as an objective in the management of any capture fisheries in your country?

Please mark appropriate box

If yes, please give examples

- Yes
 Not yet, but under development
 No
 Unknown

- Marine Protected Areas
 - Conservation of mangrove
 - Ruling on bigger than 38 mm mesh size fishing net
 - Conservation and culture of cockles (Regulations 1964)
 - Close season for the catching of Grouper fries (Regulations 1996).
 - JTED (Juvenile and Trash Excluder Device) - to minimize the capture of juveniles
 - MAED (Malaysian Acetes Efficiency Device) - to minimize the capture of juveniles

Review of the *in situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives through the establishment and management of aquatic protected areas

27. Please list any aquatic protected areas in your country that are contributing to the *in situ* conservation of aquatic genetic resources of wild relatives of farmed aquatic species and an assessment of effectiveness

Add Row

Aquatic protected area	Effectiveness of conserving Aquatic Genetic Resources	Comments <i>provide any additional information</i>	
Marine Protected Areas • Peninsular Malaysia: 42 islands [Kedah 4; Terengganu 13; Pahang 9, Johor 13; Labuan 3] • Sarawak: 3 • Sabah: 5 Total: 50	<input type="radio"/> Very effective <input checked="" type="radio"/> Somewhat effective <input type="radio"/> Not effective <input type="radio"/> Unknown	- Marine Parks Order of 1994 of the Fisheries Act - The National Park and Reserve Ordinance Sabah Parks Enactment, 1984 (amended 2002). - Approx. 1.5% of the marine area are protected as MPAs	X
Tagal System in Sabah [252 villages in 13 districts encompassing more than 100 rivers]	<input checked="" type="radio"/> Very effective <input type="radio"/> Somewhat effective <input type="radio"/> Not effective <input type="radio"/> Unknown	Community Based Fisheries Management	X

Aquatic protected area	Effectiveness of conserving Aquatic Genetic Resources	Comments <i>provide any additional information</i>	
Sungai Chiling Fish Sanctuary, Kuala Kubu Baru, Selangor, Malaysia	<input checked="" type="radio"/> Very effective <input type="radio"/> Somewhat effective <input type="radio"/> Not effective <input type="radio"/> Unknown	Community Based Fisheries Management	X
Kelah (Tor sp.) sanctuary in: • Lubuk Tenor, Sungai Tahan, Taman Negara, Pahang, Malaysia • Sungai Relau, Merapoh, Pahang, Malaysia • Sungai Petang in TasikKenyir, Terengganu, Malaysia	<input checked="" type="radio"/> Very effective <input type="radio"/> Somewhat effective <input type="radio"/> Not effective <input type="radio"/> Unknown	Community Based Fisheries Management	X
Clearwater Sanctuary, Ipoh, Perak, Malaysia	<input checked="" type="radio"/> Very effective <input type="radio"/> Somewhat effective <input type="radio"/> Not effective <input type="radio"/> Unknown	Over 350 acres lakes, occupied by Striated Snakehead (Haruan), the Malaysian Tin Foil Barb (Lampam Jawa), Pacu, Giant Gorami (Kalui), Rohu and other rare species like the Temoleh (Probarbus jullieni)	X

Chapter 4: *Ex Situ* Conservation of Aquatic Genetic Resources of Farmed Aquatic Species and their Wild Relatives within National Jurisdiction

The main objective of Chapter 4 is to review the current status and future prospects for the *ex situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives.

The specific objectives are:

- To review existing *ex situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives in aquaculture facilities, culture collections and gene banks, research facilities, zoos and aquaria;
- To review the contributions that various stakeholders are making to the *ex situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives;
- To review needs and priorities for the future development of *ex situ* conservation of aquatic genetic resources of farmed aquatic species and their wild relatives, including any that are threatened or endangered.

Review of existing and planned collections of live breeding individuals of aquatic genetic resources of farmed aquatic species and their wild relatives

28. Please list your country's existing collections of live breeding aquatic organisms that can be considered as contributing to the *ex situ* conservation of aquatic genetic resources. This includes not only collections of species farmed directly for human use, but also collections of live feed organisms (e.g., bacterial flocs, yeasts, microalgae, rotifers and brine shrimp (*Artemia*)).

Add Row				
Species (include information on subspecies or strain in comments if available)	Type of use <i>Please mark all that apply</i>	Is the species (or subspecies) threatened or endangered for example in the IUCN Red List, CITES Appendices or national lists? <i>Please mark appropriate box</i>	Comments <i>Please list any additional information</i>	
Probarbus jullieni	<input checked="" type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown	IUCN Red List of Threatened Species. Version 2014.	X
Brachionus plicatilis	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at Fisheries Research Institute (FRI) Tg. Demong, Terengganu	X
Rhodomonas	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRIs (Batu Maung, Pulau Sayak, Tg. Demong, Santubong)	X

Species (include information on subspecies or strain in comments if available)	Type of use <i>Please mark all that apply</i>	Is the species (or subspecies) threatened or endangered for example in the IUCN Red List, CITES Appendices or national lists? <i>Please mark appropriate box</i>	Comments <i>Please list any additional information</i>	
Chaetoceros sp.	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	- Maintained at FRIs (Batu Maung, Pulau Sayak, Tg. Demong, Santubong) - Borneo Marine Research Institute, Universiti Malaysia Sabah	X
Isochrysis galbana	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	- Maintained at FRIs (Batu Maung , Santubong and Tg. Demong) - Borneo Marine Research Institute, Universiti Malaysia Sabah	X
Moina sp.	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRI Glami Lemi, Negeri Sembilan	X
Diaphanosoma	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRIs (Tg. Demong, Santubong) Borneo Marine Research Institute, Universiti Malaysia Sabah	X
Dunaliella sp.	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRIs (Tg. Demong, Santubong) Borneo Marine Research Institute, Universiti Malaysia Sabah	X
Chlorella	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRIs (Batu Maung, Pulau Sayak, Tg. Demong, Santubong)	X

Species (include information on subspecies or strain in comments if available)	Type of use <i>Please mark all that apply</i>	Is the species (or subspecies) threatened or endangered for example in the IUCN Red List, CITES Appendices or national lists? <i>Please mark appropriate box</i>	Comments <i>Please list any additional information</i>	
Pavlova sp.	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRIs (Batu Maung, Pulau Sayak, Tg. Demong, Santubong)	X
Tetraselmis sp.	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRIs (Batu Maung, Pulau Sayak, Tg. Demong, Santubong)	X
Daphnia magna	<input type="checkbox"/> Direct human consumption <input checked="" type="checkbox"/> Live feed organism <input type="checkbox"/> Other	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Maintained at FRI Glami Lemi, Negeri Sembilan	X

Review of existing *ex situ* conservation activities of aquatic genetic resources of farmed aquatic species and their wild relatives *in vitro*.

29. Please list your country's *in vitro* collections and gene banks of the gametes, embryos, tissues, spores and other quiescent forms of farmed aquatic species and their wild relatives, using cryopreservation or other methods of long-term storage. Describe the major examples, identifying the facilities in which the collections are held. Include examples of any such genetic material from your country that is being kept in *in vitro* collections outside your country on behalf of beneficiaries in your country.

Add Row					
Species (include information on subspecies or strain if available in comments)	Users and managers <i>List all that apply</i>	Type of <i>ex-situ</i> conservation collection <i>in vitro</i> <i>mark all that apply</i>	Facilities where collection is located <i>mark all that apply</i>	Comments <i>list all breeds, subspecies of the species and any additional information</i>	
Indigenous freshwater fish species	Researchers Students Breeders	<input type="checkbox"/> In vitro collection of gametes <input type="checkbox"/> In vitro collection of embryos <input type="checkbox"/> In vitro collection of tissues <input type="checkbox"/> Spores <input checked="" type="checkbox"/> Other	<input type="checkbox"/> Aquaculture facilities <input checked="" type="checkbox"/> Research facilities <input checked="" type="checkbox"/> Universities <input type="checkbox"/> Zoos and aquaria <input type="checkbox"/> Other	<ul style="list-style-type: none"> • Established species specific semen cryopreservation protocols for 7 species: - Tor sp. (Kelah) - Probarbus jullieni (Temoleh), - Pangasius hypophthalmus, (Patin buah) - Hysibarbus wetmorei, (Kerai) - Leptobarbus hoeveni, (Jelawat) - Puntius gonionotus (Lampam jawa) - Clarias batrachus, (Keli bunga) - Clarias gariepinus (Keli Afrika) 	X
Indigenous freshwater fish species	Researchers Students Breeders	<input type="checkbox"/> In vitro collection of gametes <input type="checkbox"/> In vitro collection of embryos <input checked="" type="checkbox"/> In vitro collection of tissues <input type="checkbox"/> Spores <input type="checkbox"/> Other	<input type="checkbox"/> Aquaculture facilities <input checked="" type="checkbox"/> Research facilities <input type="checkbox"/> Universities <input type="checkbox"/> Zoos and aquaria <input type="checkbox"/> Other	Frozen semen collection for Tor sp., Probarbus jullieni, Pangasius hypophthalmus and Hysibarbus wetmorei Indigenous species (app. 1000 samples, 73 species)	X
Marine fish	Researchers Students	<input type="checkbox"/> In vitro collection of gametes <input type="checkbox"/> In vitro collection of embryos <input checked="" type="checkbox"/> In vitro collection of tissues <input type="checkbox"/> Spores <input type="checkbox"/> Other	<input type="checkbox"/> Aquaculture facilities <input checked="" type="checkbox"/> Research facilities <input type="checkbox"/> Universities <input type="checkbox"/> Zoos and aquaria <input type="checkbox"/> Other	Borneo Marine Research Institute	X

30. Please rank (from 1 – 10) the importance of the following objectives for ex situ conservation of aquatic genetic resources of farmed aquatic species and their wild relatives in your country

Objectives of <i>ex situ</i> conservation	Rank 1=Very Important 10=No importance
Preservation of aquatic genetic diversity	<input type="text" value="1"/>
Maintain good strains for aquaculture production	<input type="text" value="1"/>
Meet consumer and market demands	<input type="text" value="1"/>
To help adapt to impacts of climate change	<input type="text" value="7"/>
Future breed improvement in aquaculture	<input type="text" value="1"/>
Other <i>Continue adding row as necessary</i>	
National heritage	<input type="text" value="1"/>
Add Row	Remove Row

Chapter 5: Stakeholders with Interests in Aquatic Genetic Resources of Farmed Aquatic Species and their Wild Relatives within National Jurisdiction

The main objective of Chapter 5 is to provide an overview of the perspectives and needs of the principal stakeholders who have interests in aquatic genetic resources of farmed aquatic species and their wild relatives for food and agriculture. Stakeholder groups can be identified from existing institutional knowledge, from sectoral and sub-sectoral consultations conducted during the country reporting process and where necessary from expert opinions. Gender issues pertaining to the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives should be considered, as well as the perspectives and needs of indigenous peoples and local communities.

The specific objectives are:

- To describe the different principal stakeholder groups with interests in aquatic genetic resources of farmed aquatic species and their wild relatives To identify the type(s) of aquatic genetic resources of farmed aquatic species and their wild relatives in which each stakeholder group has interests and why.
- To describe the roles of stakeholder groups and the actions they are taking for the conservation, sustainable use and development of the aquatic genetic resources in which they have interests.
- To describe the further actions that stakeholder groups would like to see taken for the conservation, sustainable use and development of aquatic genetic resources in which they have interests, and the constraints that are hindering those actions, including lack of capacity and perceived threats.

Overview of the principal stakeholder groups who have interests in aquatic genetic resources of farmed aquatic species and their wild relatives

31. Please indicate the principal stakeholder groups who have interests in aquatic genetic resources of farmed aquatic species and their wild relatives including, *inter alia*: fish farmers; fishers in capture fisheries; persons involved in stocking and harvesting in culture-based fisheries; persons employed in postharvest chains; government officials; staff and members of aquaculture associations; managers of aquatic protected areas and others working for the conservation of aquatic ecosystems; researchers; and civil society.

Stakeholders	Role of stakeholder in regards og AqGR <i>mark all that apply</i>	Genetic resource of main interest <i>mark all that apply</i>	Comments <i>Please provide any information or explanation of stakeholders' role</i>
Fish Farmers	<input type="checkbox"/> Conservation <input checked="" type="checkbox"/> Production <input checked="" type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Breeding <input type="checkbox"/> Research <input checked="" type="checkbox"/> Marketing <input type="checkbox"/> Processing <input type="checkbox"/> Advocacy <input type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	
Fishers	<input type="checkbox"/> Conservation <input checked="" type="checkbox"/> Production <input type="checkbox"/> Feed manufacturing <input type="checkbox"/> Breeding <input type="checkbox"/> Research <input type="checkbox"/> Marketing <input type="checkbox"/> Processing <input type="checkbox"/> Advocacy <input type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	

Stakeholders	Role of stakeholder in regards og AqGR <i>mark all that apply</i>	Genetic resource of main interest <i>mark all that apply</i>	Comments <i>Please provide any information or explanation of stakeholders' role</i>
Fish hatchery people	<input type="checkbox"/> Conservation <input checked="" type="checkbox"/> Production <input type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Breeding <input type="checkbox"/> Research <input type="checkbox"/> Marketing <input type="checkbox"/> Processing <input type="checkbox"/> Advocacy <input type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	
People involved in marketing	<input type="checkbox"/> Conservation <input checked="" type="checkbox"/> Production <input type="checkbox"/> Feed manufacturing <input type="checkbox"/> Breeding <input type="checkbox"/> Research <input checked="" type="checkbox"/> Marketing <input checked="" type="checkbox"/> Processing <input type="checkbox"/> Advocacy <input type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	
Government resource managers	<input checked="" type="checkbox"/> Conservation <input checked="" type="checkbox"/> Production <input checked="" type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Breeding <input checked="" type="checkbox"/> Research <input type="checkbox"/> Marketing <input type="checkbox"/> Processing <input checked="" type="checkbox"/> Advocacy <input checked="" type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	

Stakeholders	Role of stakeholder in regards og AqGR <i>mark all that apply</i>	Genetic resource of main interest <i>mark all that apply</i>	Comments <i>Please provide any information or explanation of stakeholders' role</i>
Fishing or aquaculture associations	<input type="checkbox"/> Conservation <input checked="" type="checkbox"/> Production <input checked="" type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Breeding <input type="checkbox"/> Research <input checked="" type="checkbox"/> Marketing <input checked="" type="checkbox"/> Processing <input type="checkbox"/> Advocacy <input type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	
Aquatic protected area managers	<input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Production <input type="checkbox"/> Feed manufacturing <input type="checkbox"/> Breeding <input checked="" type="checkbox"/> Research <input type="checkbox"/> Marketing <input type="checkbox"/> Processing <input checked="" type="checkbox"/> Advocacy <input checked="" type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	
Policy Makers	<input checked="" type="checkbox"/> Conservation <input checked="" type="checkbox"/> Production <input checked="" type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Breeding <input checked="" type="checkbox"/> Research <input checked="" type="checkbox"/> Marketing <input checked="" type="checkbox"/> Processing <input checked="" type="checkbox"/> Advocacy <input checked="" type="checkbox"/> Outreach/Extension <input type="checkbox"/> Other (specify) <input type="text"/>	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	

Stakeholders	Role of stakeholder in regards og AqGR <i>mark all that apply</i>	Genetic resource of main interest <i>mark all that apply</i>	Comments <i>Please provide any information or explanation of stakeholders' role</i>
Non-Governmental Organizations	<input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Marketing <input checked="" type="checkbox"/> Production <input type="checkbox"/> Processing <input type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Advocacy <input checked="" type="checkbox"/> Breeding <input checked="" type="checkbox"/> Outreach/Extension <input checked="" type="checkbox"/> Research <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input checked="" type="checkbox"/> Other	Other: tissue and genebank
Intergovernmental Organizations	<input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Marketing <input checked="" type="checkbox"/> Production <input type="checkbox"/> Processing <input type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Advocacy <input checked="" type="checkbox"/> Breeding <input checked="" type="checkbox"/> Outreach/Extension <input checked="" type="checkbox"/> Research <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	
Donors	<input checked="" type="checkbox"/> Conservation <input checked="" type="checkbox"/> Marketing <input checked="" type="checkbox"/> Production <input checked="" type="checkbox"/> Processing <input type="checkbox"/> Feed manufacturing <input checked="" type="checkbox"/> Advocacy <input checked="" type="checkbox"/> Breeding <input checked="" type="checkbox"/> Outreach/Extension <input checked="" type="checkbox"/> Research <input type="checkbox"/> Other (specify) <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	

Stakeholders	Role of stakeholder in regards og AqGR <i>mark all that apply</i>	Genetic resource of main interest <i>mark all that apply</i>	Comments <i>Please provide any information or explanation of stakeholders' role</i>														
Consumers	<table border="0"><tr><td><input type="checkbox"/> Conservation</td><td><input checked="" type="checkbox"/> Marketing</td></tr><tr><td><input checked="" type="checkbox"/> Production</td><td><input type="checkbox"/> Processing</td></tr><tr><td><input type="checkbox"/> Feed manufacturing</td><td><input type="checkbox"/> Advocacy</td></tr><tr><td><input type="checkbox"/> Breeding</td><td><input type="checkbox"/> Outreach/Extension</td></tr><tr><td><input type="checkbox"/> Research</td><td><input type="checkbox"/> Other (specify)</td></tr></table> <div style="border: 1px solid black; height: 60px; width: 100%;"></div>	<input type="checkbox"/> Conservation	<input checked="" type="checkbox"/> Marketing	<input checked="" type="checkbox"/> Production	<input type="checkbox"/> Processing	<input type="checkbox"/> Feed manufacturing	<input type="checkbox"/> Advocacy	<input type="checkbox"/> Breeding	<input type="checkbox"/> Outreach/Extension	<input type="checkbox"/> Research	<input type="checkbox"/> Other (specify)	<table border="0"><tr><td><input type="checkbox"/> DNA</td></tr><tr><td><input checked="" type="checkbox"/> Stock, breed or variety</td></tr><tr><td><input checked="" type="checkbox"/> Species</td></tr><tr><td><input type="checkbox"/> Other</td></tr></table>	<input type="checkbox"/> DNA	<input checked="" type="checkbox"/> Stock, breed or variety	<input checked="" type="checkbox"/> Species	<input type="checkbox"/> Other	
<input type="checkbox"/> Conservation	<input checked="" type="checkbox"/> Marketing																
<input checked="" type="checkbox"/> Production	<input type="checkbox"/> Processing																
<input type="checkbox"/> Feed manufacturing	<input type="checkbox"/> Advocacy																
<input type="checkbox"/> Breeding	<input type="checkbox"/> Outreach/Extension																
<input type="checkbox"/> Research	<input type="checkbox"/> Other (specify)																
<input type="checkbox"/> DNA																	
<input checked="" type="checkbox"/> Stock, breed or variety																	
<input checked="" type="checkbox"/> Species																	
<input type="checkbox"/> Other																	

a) Please indicate the most important role of women in regards to AqGR

R&D in fisheries and aquaculture management

b) Please indicate the most important role of indigenous and local communities in regards to AqGR

Community-based conservation

Chapter 6: National Policies and Legislation for Aquatic Genetic Resources of Farmed Aquatic Species and their Wild Relatives within National Jurisdiction

The main objective of Chapter 6 is to review the status and adequacy of national policies and legislation concerning aquatic genetic resources of farmed aquatic species and their wild relatives including access and benefit sharing.

The specific objectives are as follows:

- To describe the existing national policy and legal framework for the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives.
- To review current national policies and instruments for access to aquatic genetic resources of farmed aquatic species and their wild relatives and the fair and equitable sharing of benefits arising from their utilization.
- To identify any significant gaps in policies and legislation concerning aquatic genetic resources of farmed aquatic species and their wild relatives..

Review of national policies and legislation for Aquatic Genetic Resources of farmed aquatic species and their wild relatives within national jurisdiction

32. Please list national legislation, policies and/or mechanisms that address aquatic genetic resources of farmed species and their wild relatives (see question 47 regarding international agreements).

Add Row

National legislation, policy and/or mechanism	Date established	Scope <i>Select all that apply</i>	Comments <i>Please provide any additional information for example whether it has been effective or not; and main sources of information</i>	
Fisheries Act, 1985	May 30, 1985	<input type="checkbox"/> Genes or molecules only <input checked="" type="checkbox"/> Aquaculture <input checked="" type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input checked="" type="checkbox"/> Importation <input checked="" type="checkbox"/> Trade and commerce <input checked="" type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other		X
Customs Act, 1967 (amended in 1988).	May 30, 1967	<input type="checkbox"/> Genes or molecules only <input type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input checked="" type="checkbox"/> Importation <input checked="" type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other		X

National legislation, policy and/or mechanism	Date established	Scope <i>Select all that apply</i>	Comments <i>Please provide any additional information for example whether it has been effective or not; and main sources of information</i>	
Sabah Biodiversity Enactment, 2000	Dec 29, 2000	<input checked="" type="checkbox"/> Genes or molecules only <input type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input checked="" type="checkbox"/> Importation <input checked="" type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other		X
National Policy on Biological Diversity (1998)	Jan 1, 1998	<input checked="" type="checkbox"/> Genes or molecules only <input checked="" type="checkbox"/> Aquaculture <input checked="" type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input checked="" type="checkbox"/> Importation <input checked="" type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other	<p>The policy contains long-term direction, strategies and action plans for the conservation and sustainable utilisation of biodiversity, thus providing an overarching framework to streamline policies, strategies and action plans in respective sectors. It provides direction and strategies to all government agencies, including the State Governments, on the conservation and management of biological diversity in the country.</p> <p>The document consists of the following:</p> <ul style="list-style-type: none"> • Policy which enunciates vision and policy statements and lists the Principles on which conservation and sustainable utilization of the nation's biological diversity are based. <p>Objectives of the nation with respect to biological diversity and provides the Rationale for conservation and sustainable utilization.</p> <ul style="list-style-type: none"> • Strategies and action plans for effective management of biological diversity 	X

National legislation, policy and/or mechanism	Date established	Scope <i>Select all that apply</i>	Comments <i>Please provide any additional information for example whether it has been effective or not; and main sources of information</i>	
National Policy on Environment (2002)	Oct 2, 2002	<input type="checkbox"/> Genes or molecules only <input type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input type="checkbox"/> Importation <input type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other	<p>The key strategy of the policy that is relevant to biodiversity is Strategy 2. Effective Management of Natural Resources and the Environment. Among others, this strategy states the following:</p> <ul style="list-style-type: none"> - National inventory and audit of environment and natural resources will be maintained and regularly updated, with particular emphasis on depletion and renewability, to serve as a guide to policy formulation and decision making. Appropriate environmental monitoring systems shall be established to facilitate the evaluation of programmes and projects. - Natural resources areas, particularly those containing biologically rich habitats and ecosystems will be established and maintained as zones for the conservation and protection of indigenous flora and fauna and genetic resources. - The nation's forests and their resources will be managed sustainably to ensure continued and sustainable economic benefits and compatibility with environmental stability, ecological balance and social stability of communities inhabiting such areas. - Seas, coastal zones, lakes, rivers, mangroves and other wetlands, islands, seagrass and coral reefs shall be managed in an environmentally sound manner; including the prevention of ecologically unsustainable harvesting of living marine and aqua. 	X

National legislation, policy and/or mechanism	Date established	Scope <i>Select all that apply</i>	Comments <i>Please provide any additional information for example whether it has been effective or not; and main sources of information</i>	
National Physical Plan	Nov 20, 2009	<input type="checkbox"/> Genes or molecules only <input type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input type="checkbox"/> Importation <input type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other	<p>The NPP was passed in 2005. It contributes towards the conservation of the Country's biodiversity through its fourth objective to secure spatial and environmental quality and diversity for a high quality of life. This objective is supported by two environmentally sound principles:</p> <ul style="list-style-type: none"> • Protect national heritage areas and locations, under which greater resolve are dedicated from all quarters to conserve, among others, the natural resources and manage it in a sustainable manner in particular for areas of natural beauty and ecological richness such as pristine forests, hills and wetlands, and habitats for the Malaysian fauna and flora. • Avoid disrupting ecological stability, by promoting incorporation of guidelines on development on environmentally sensitive into the NPP, at the same time discourages coastal land reclamation for certain purposes, encourages careful monitoring of developments within water catchment areas and other environmentally sensitive areas, including application of the concept of Integrated River Basin Management. <p>In terms of conserving biodiversity, the NPP articulated the following policies:-</p> <ul style="list-style-type: none"> • NPP 18: Environmentally Sensitive Areas (ESA) shall be integrated in the planning and management of land use and natural resources to ensure sustainable development. • NPP 19: A Central Forest Spine shall be established to form the backbone of the Environmentally Sensitive Area network. • NPP 20: Sensitive coastal ecosystems shall be protected and used in a sustainable manner. • NPP 22: All surface and ground water resources are strategic assets to be safeguarded and used optimally. 	X

National legislation, policy and/or mechanism	Date established	Scope <i>Select all that apply</i>	Comments <i>Please provide any additional information for example whether it has been effective or not; and main sources of information</i>	
National Agricultural Policy, 2006	Jun 1, 2006	<input type="checkbox"/> Genes or molecules only <input checked="" type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input type="checkbox"/> Importation <input type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other	<p>The Third National Agricultural Policy sets the strategic directions for agricultural development to the year 2010. These focus on new approaches to increase productivity and competitiveness, deepen linkages with other sectors, venture into new frontier areas as well as conserve and utilise natural resources on a sustainable basis. One of the policy's objectives is to conserve and utilise natural resources on a sustainable basis. One of the thrusts of this policy states that: Sustainable management and utilization of resources will be the guiding principle in pursuing agricultural and forestry development. Rules, regulations and incentives will be strengthened to encourage environment-friendly agricultural and forestry practices and to minimize the negative impact of these activities on the environment.</p>	X
National Biotechnology Policy, 2006	Apr 1, 2006	<input type="checkbox"/> Genes or molecules only <input checked="" type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input checked="" type="checkbox"/> Importation <input checked="" type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other	<p>The formulation of the National Biotechnology Policy provides a framework for the Government, in partnership with key stakeholders, to harness the benefits of biotechnology development that is in accordance with established social and ethical norms. One of its main objectives is to create greater values from agriculture and natural resources utilising unique biodiversity and natural environment.</p>	X

National legislation, policy and/or mechanism	Date established	Scope <i>Select all that apply</i>	Comments <i>Please provide any additional information for example whether it has been effective or not; and main sources of information</i>	
National Action Plan for the Management of Coral Reefs in Malaysia, 2008	Jan 1, 2006	<input type="checkbox"/> Genes or molecules only <input type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input type="checkbox"/> Importation <input type="checkbox"/> Trade and commerce <input checked="" type="checkbox"/> Access and benefit sharing <input checked="" type="checkbox"/> Other	<p>The National Action Plan for the Management of Coral Reefs in Malaysia was formulated by the Department of Marine Park Malaysia to guide efforts in the management of marine parks and at the same time conserve and protect marine biodiversity. The action plan was formulated through consultation and participation of all stakeholders. It provides a regional overview, consented future directions and guidelines to those utilizing marine parks, stakeholders, agencies and organisations for their planning and decision making. The plan includes strategies on:</p> <ol style="list-style-type: none"> 1. Conservation 2. Resource management 3. Education, communication, consultation and commitment 4. Research and monitoring 5. Integrated planning 6. Capacity building 7. Recognition of local communities and stakeholder interests 8. Management processes and 9. Legislation 	X

National legislation, policy and/or mechanism	Date established	Scope <i>Select all that apply</i>	Comments <i>Please provide any additional information for example whether it has been effective or not; and main sources of information</i>	
Action Plan for the Conservation and Sustainable Use of Fishery Resource Biological Diversity of Malaysia (2006)	Jan 1, 2006	<input type="checkbox"/> Genes or molecules only <input checked="" type="checkbox"/> Aquaculture <input checked="" type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input checked="" type="checkbox"/> Intellectual property protection <input checked="" type="checkbox"/> Importation <input checked="" type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other	<p>This document was prepared by the Department of Fisheries Technical Committee on Biodiversity. The Action Plan for the Conservation and Sustainable Use of Fishery Resource Biological Diversity of Malaysia consists of 62 actions that are grouped into nine strategies as follows:</p> <ol style="list-style-type: none"> 1. Effective Fishery Resource Conservation and Management 2. Reduce Loss of Biological Diversity 3. Strengthen Research on Fishery Resource Biological Diversity 4. Improve Capacity Building 5. Enhance Information Dissemination and Networking 6. Control and Management of Fish Trade 7. Control and Management of Invasive Alien Species 8. Regulation in Biosafety Management 9. Control and Management of Biopiracy 	X
Sarawak Biodiversity Centre Ordinance 1997 and (Amendment) Ordinance 2003	Dec 4, 1997	<input type="checkbox"/> Genes or molecules only <input type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input type="checkbox"/> Importation <input type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other		X
Sarawak Biodiversity Regulations 2004	Jun 10, 2004	<input type="checkbox"/> Genes or molecules only <input type="checkbox"/> Aquaculture <input type="checkbox"/> Capture fisheries <input checked="" type="checkbox"/> Conservation <input type="checkbox"/> Intellectual property protection <input type="checkbox"/> Importation <input type="checkbox"/> Trade and commerce <input type="checkbox"/> Access and benefit sharing <input type="checkbox"/> Other		X

Review of the current status and gaps in national policies and legislation for the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives

33. Please list any gaps in the coverage or constraints in implementing national legislation, policies and/or mechanisms in regard to aquatic genetic resources.

- a. Inconsistent enforcement
- b. Inadequate awareness and knowledge among the fishers
- c. Lack of data with regard to aquatic genetic resources
- d. Insufficient manpower.
- e. Lack of informed decision-making
- f. Lack of public and stakeholder engagement
- g. Inadequate political will/political commitments

34. Please indicate any national aquatic genetic resources of farmed aquatic species and their wild relatives for which your country restricts access.

Type of genetic resource (can be species name, DNA, gametes or other descriptor)	Comments <i>Please, provide verifiable main sources of information, effectiveness of the restriction, description of type of restriction and for whom does the restriction apply</i>
DNA	
Stock, breed or variety	
Species	Fisheries Regulation (Prohibition of Import,etc. of Fish) 1990 restrict access of the fish below into the country Genus 1.Serrasalmus/Serrasalmo/Pygocentrus/Catoprian 2. Pygopristis 3. Colosomma/Piaractus 4. Mylossoma 5. Mylopus/Myleus 6. Pristobrycon 7. Myletes Fisheries Regulation (Prohibition of Import,etc.of Fish) (Amendment) 2011 1. Salmo 2. Onchoryncus 3. Cichla 4. Esox 5. Cichlasoma 6. Acipencer 7. Arapaima 8. Lepisosteus 9. Cherax destructor
Other	
Continue adding row as necessary	
Add Row	Remove Row

35. Over the past 10 years, indicate the actions your country has taken to maintain or enhance access to aquatic genetic resources of farmed aquatic species and their wild relatives located outside your country; for example, by establishing germplasm acquisition agreements or material transfer agreements.

Add Row

Action taken to enhance access to aquatic genetic resources outside your country	Type of genetic resource <i>Mark all that apply</i>	Comment <i>for example other types of genetic resources</i>	
MOU between specific donor/exporting countries/ collaborators and Malaysia	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Genes <input type="checkbox"/> Gametes <input checked="" type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens	Histopathology block	X
Approval letter by Director General of Fisheries Malaysia	<input checked="" type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input checked="" type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input type="checkbox"/> Living specimens	importation of fish tissues/DNA for Proficiency Testing (PT) & research activities	X
Establish a National Committee on Invasive Alien Species (IAS) to address the problem of invasive alien species in comprehensive manner. The committee consists of representatives from various agencies: DOF,DVS,DOA,FRIM,MAQIS etc. A National Action Plan (NAP) has been prepared & action shall be taken by all agencies involved.	<input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens		X
DOF has established an Import Risk Analysis (IRA) Committee to manage the importation of new species of live fish.	<input type="checkbox"/> DNA <input type="checkbox"/> Genes <input type="checkbox"/> Gametes <input type="checkbox"/> Tissues <input type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens		X

Action taken to enhance access to aquatic genetic resources outside your country	Type of genetic resource <i>Mark all that apply</i>	Comment <i>for example other types of genetic resources</i>	
Department of Biosafety owned the Biosafety Act (2007) and has established a procedure to control the introduction or use of Genetic Modified Organism (GMO) and Living Modified Organism (LMO) in Malaysia.	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Genes <input checked="" type="checkbox"/> Gametes <input checked="" type="checkbox"/> Tissues <input checked="" type="checkbox"/> Embryos <input checked="" type="checkbox"/> Living specimens		<div style="border: 1px solid black; text-align: center;">X</div>

36. Please indicate any obstacles your country has encountered when trying to access aquatic genetic resources of farmed aquatic species and their wild relatives outside of your country (including access for research purposes).

Obstacles to accessing aquatic genetic resources	Please describe type of genetic resource <i>mark all that apply</i>	Comments <i>please include additional information as needed</i>
Intellectual property protection	<input type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	Stipulated in the Material Transfer Agreement (MTA)
National laws of your country	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	Sabah Biodiversity Enactment 2000 Sabah Biological Resources and Benefit Sharing Bill Sarawak Biodiversity Centre Ordinance of 1997, and amendment of 2003. Sarawak Biodiversity Regulation 2004
National laws of donor country	<input checked="" type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	MTA
International laws or protocols	<input type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	<ul style="list-style-type: none"> - Different export protocols were imposed by different countries - Aquatic animal health certificate - Quarantine facilities - Must not be an alien, ETP species
Too expensive	<input type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input type="checkbox"/> Species <input type="checkbox"/> Other	
Material transfer agreements required	<input checked="" type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input checked="" type="checkbox"/> Other	<ul style="list-style-type: none"> -Not all countries requires MTA for items transfer. - some of the countries requires to establish MOU between country of origin and importing countries
Knowledge gaps	<input type="checkbox"/> DNA <input checked="" type="checkbox"/> Stock, breed or variety <input checked="" type="checkbox"/> Species <input type="checkbox"/> Other	Importers/Breeders usually will import fish without checking the regulations.
Public perception	<input type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input type="checkbox"/> Species <input type="checkbox"/> Other	

Obstacles to accessing aquatic genetic resources	Please describe type of genetic resource <i>mark all that apply</i>	Comments <i>please include additional information as needed</i>
Other	<input type="checkbox"/> DNA <input type="checkbox"/> Stock, breed or variety <input type="checkbox"/> Species <input type="checkbox"/> Other	
Continue adding row as necessary		
Add Row		

Chapter 7: Research, Education, Training and Extension on Aquatic Genetic Resources within National Jurisdiction: Coordination, Networking and Information

The main objective of Chapter 7 is to review the status and adequacy of national research, education, training and extension, coordination and networking arrangements and information systems that support the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives for food and agriculture.

The specific objectives are:

- To describe the current status, future plans, gaps, needs and priorities for research, training, extension and education on the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives
- To describe existing or planned national networks for the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives.
- To describe existing or planned information systems for the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives.

Research

37. Does your national research programme support the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives? If yes, give details of current and/or planned research; if no, explain the main reasons why not in box below.

Please mark appropriate box

- Yes
 No
 Unknown

Please provide details

Under the Department of Fisheries, Strategic Plan for Fisheries Research 2014-2015, studies regarding the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives have been proposed including

- Development of domesticated, genetically improved and disease-free tiger shrimp (*Penaeus monodon*) broodstock
- Development of domesticated, genetically improved and disease-free tiger grouper (*Epinephelus fuscoguttatus*) broodstock
- Development of domesticated, genetically improved and disease-free seabass (*Lates calcarifer*) broodstock
- Development of domesticated, genetically improved and disease-free Malaysian giant prawn (*Macrobrachium rosenbergii*) broodstock
- Development of domesticated, genetically improved and disease-free red tilapia broodstock
- Programme on cryopreservation of native freshwater fish
- Development of breeding technology of high value fish: *Tor* sp., *Pangasius nasutus*, *Hypisibarbus wetmorei*, *Oxyleotris marmoratus* and *Scortumbarcoo*
- Refugia of threadfin in Kuala Sepetang, Perak, Malaysia
- Resource assessment, public stocking and biological conservation of inland fisheries
- Assessment of impact of closed area and season for specific fishing area

38. Please list main institutions, organizations, corporations and other entities in your country that are engaged in field and/or laboratory research related to the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives.

Add Row

Main institutions, organizations, corporations and other entities	Area of research <i>Mark all that apply</i>	Comments <i>Please provide any additional information</i>	
Fisheries Research Institute, Department of Fisheries Malaysia	<input checked="" type="checkbox"/> Genetic resource management <input checked="" type="checkbox"/> Basic knowledge on aquatic genetic resources Characterization and <input checked="" type="checkbox"/> monitoring of aquatic genetic resources <input checked="" type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input checked="" type="checkbox"/> Conservation of aquatic genetic resources <input checked="" type="checkbox"/> Communication on aquatic genetic resources <input checked="" type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	Carried out research in broodstock development of <i>Ephinephelus</i> sp., <i>Lates calcarifer</i> , <i>M. rosenbergii</i> , Cryopreservation, ex-situ live fish, re-stocking, sanctuary programs	X
University of Malaya, Kuala Lumpur	<input type="checkbox"/> Genetic resource management <input checked="" type="checkbox"/> Basic knowledge on aquatic genetic resources Characterization and <input checked="" type="checkbox"/> monitoring of aquatic genetic resources <input type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input type="checkbox"/> Conservation of aquatic genetic resources <input checked="" type="checkbox"/> Communication on aquatic genetic resources <input type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	<ul style="list-style-type: none"> • Breeding and Conservation of Fresh Water Fish • Quantifying nursery value of mangroves for fisheries: A multi-criteria approach study on the biology, ecology and management of commercially-important fish species in mangrove estuaries and related coastal waters of Malaysia 	X

Main institutions, organizations, corporations and other entities	Area of research <i>Mark all that apply</i>	Comments <i>Please provide any additional information</i>	
Universiti Putra Malaysia, Serdang	<input type="checkbox"/> Genetic resource management <input checked="" type="checkbox"/> Basic knowledge on aquatic genetic resources Characterization and <input type="checkbox"/> monitoring of aquatic genetic resources <input type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input type="checkbox"/> Conservation of aquatic genetic resources <input checked="" type="checkbox"/> Communication on aquatic genetic resources <input checked="" type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	<ul style="list-style-type: none"> • Development of Breeding Protocol, larval Rearing and Culture Techniques of Endangered Temoleh, Probarbus jullieni (Sauvage) • Mitochondrial DNA diversity of Tor tambroides Valenciennes (Cyprinidae) from five natural populations in Malaysia • Phylogenetic Analysis of Hampala Fishes (Subfamily Cyprininae) in Malaysia Inferred from Partial mitochondrial Cytochrome b DNA Sequences • Genetic characterization of the two colour-type of Kelah (Tor sp.) • The Influence of Alien Fish Species on Native Fish Community Structure in Malaysian Waters • Distribution and conservation of endangered Temoleh, Probarbus jullieni (Sauvage, 1880). 	X
Universiti Sains Malaysia	<input type="checkbox"/> Genetic resource management <input checked="" type="checkbox"/> Basic knowledge on aquatic genetic resources Characterization and <input checked="" type="checkbox"/> monitoring of aquatic genetic resources <input type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input checked="" type="checkbox"/> Conservation of aquatic genetic resources <input checked="" type="checkbox"/> Communication on aquatic genetic resources <input type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	<ul style="list-style-type: none"> • Genome-wide Genetic Marker Discovery and Genotyping of Malaysian Mahseer (Tor sp.) using Next Generation Sequencing • Molecular studies of kelah Tor spp. Diversity in Taman Negara • Selective breeding and cryopreservation approaches for genetic improvement and stock conservation Of the Haruan, Channa striata aquaculture • Genetic variation of the Malaysian oyster with special emphasis on the black scar oyster • DNA Barcoding and Genomics– Ensuring Sustainable Fisheries in Malaysia • Application of molecular biotechnology to breeding and management of sea bass, (Lates calcarifier). Utilization of molecular marker towards sustainable management of wild and cultured sea bass using microsatellite DNA. 	X

Main institutions, organizations, corporations and other entities	Area of research <i>Mark all that apply</i>	Comments <i>Please provide any additional information</i>	
Universiti Malaysia Terengganu	<input type="checkbox"/> Genetic resource management <input checked="" type="checkbox"/> Basic knowledge on aquatic genetic resources Characterization and <input checked="" type="checkbox"/> monitoring of aquatic genetic resources <input checked="" type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input type="checkbox"/> Conservation of aquatic genetic resources <input checked="" type="checkbox"/> Communication on aquatic genetic resources <input type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	<ul style="list-style-type: none"> • Development of Breeding Technology for the Production of the Banana Shrimp, <i>Fenneropenaeus merguensis</i> Monosex postlarvae (PL). • Development of Mud Spiny Lobster, <i>Panulirus polyphagus</i> breeding technique • Production of All Male Post Larvae Giant Freshwater Prawn, <i>Macrobrachium rosenbergii</i> (de Man) Using Testosterone Undecanoate Hormone • The Role of Prostaglandins in Breeding Capacity of Giant Freshwater Prawn, <i>Macrobrachium rosenbergii</i> Females in Captivity 	X
Universiti Malaysia Sabah	<input type="checkbox"/> Genetic resource management <input type="checkbox"/> Basic knowledge on aquatic genetic resources Characterization and <input type="checkbox"/> monitoring of aquatic genetic resources <input type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input type="checkbox"/> Conservation of aquatic genetic resources <input type="checkbox"/> Communication on aquatic genetic resources <input type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	<ul style="list-style-type: none"> • Brood stock management, egg collection, fertilization, hybridization, larvae rearing, and juvenile culture and grow-out of Grouper (<i>Epinephelus</i> spp.), Catfish (<i>Clarias gariepinus</i>) • Utilization of molecular markers for cultured fish disease management 	X

Main institutions, organizations, corporations and other entities	Area of research <i>Mark all that apply</i>	Comments <i>Please provide any additional information</i>	
Malaysian Genome Institute (MGI)	<input type="checkbox"/> Genetic resource management <input type="checkbox"/> Basic knowledge on aquatic genetic resources <input checked="" type="checkbox"/> Characterization and monitoring of aquatic genetic resources <input type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input type="checkbox"/> Conservation of aquatic genetic resources <input checked="" type="checkbox"/> Communication on aquatic genetic resources <input type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other		X
WorldFish Centre, Penang, Malaysia	<input checked="" type="checkbox"/> Genetic resource management <input type="checkbox"/> Basic knowledge on aquatic genetic resources <input type="checkbox"/> Characterization and monitoring of aquatic genetic resources <input checked="" type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input type="checkbox"/> Conservation of aquatic genetic resources <input checked="" type="checkbox"/> Communication on aquatic genetic resources <input checked="" type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	Extensive research on the GIFT Tilapia brood stock development	X

Main institutions, organizations, corporations and other entities	Area of research <i>Mark all that apply</i>	Comments <i>Please provide any additional information</i>	
Jabatan Pertanian Sarawak	<input checked="" type="checkbox"/> Genetic resource management <input type="checkbox"/> Basic knowledge on aquatic genetic resources <input type="checkbox"/> Characterization and monitoring of aquatic genetic resources <input type="checkbox"/> Genetic improvement <input type="checkbox"/> Economic valuation of aquatic genetic resources <input checked="" type="checkbox"/> Conservation of aquatic genetic resources <input type="checkbox"/> Communication on aquatic genetic resources <input type="checkbox"/> Access and distribution of aquatic genetic resources <input type="checkbox"/> Other	<p>- Development of Breeding Technology for the Production of the local fish species (Tenualosa sp. and Tor sp.)</p> <p>- Cryopreservation of selected local species for conservation purposes</p> <p>- Production of Giant Freshwater Prawn, <i>Macrobrachium rosenbergii</i> (de Man)</p>	X

39. What capacity strengthening is needed to improve national research in support of the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives?

Please rank the following in regard to capacity strengthening.

Capacities	Rank 1=Very Important 10=No importance
Improve basic knowledge on aquatic genetic resources	1
Improve capacities for characterization and monitoring of aquatic genetic resources	4
Improve capacities for genetic improvement	3
Improve capacities for genetic resource management	1
Improve capacities for economic valuation of aquatic genetic resources	1
Improve capacities for conservation of aquatic genetic resources	1
Improve communication on aquatic genetic resources	3
Improve access to and distribution of aquatic genetic resources	1
Add other rows as appropriate and rank	
<div style="border: 1px solid black; height: 75px; width: 100%;"></div>	<div style="border: 1px solid black; height: 75px; width: 100%;"></div>
Add Row	Remove Row

Please describe any other capacity building needs in regards to aquatic genetic resources

For 3rd bullet: to compensate benefit for both wild and farmed species

Education, training and extension

40. Please indicate the extent that education, training and extension in your country covers the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives? List the main institutions involved and the types of courses offered.

Add Row

Institution	Thematic Area	Type of courses mark all that apply	Comments	
Public and Private Universities	Genetic resource management	<input checked="" type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Post-graduate <input checked="" type="checkbox"/> Training <input type="checkbox"/> Extension		
	Characterization and monitoring of aquatic genetic resources	<input checked="" type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Post-graduate <input checked="" type="checkbox"/> Training <input type="checkbox"/> Extension		
	Genetic improvement	<input type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Post-graduate <input checked="" type="checkbox"/> Training <input type="checkbox"/> Extension		X
	Economic valuation of aquatic genetic resources	<input type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Post-graduate <input type="checkbox"/> Training <input type="checkbox"/> Extension		
	Conservation of aquatic genetic resources	<input checked="" type="checkbox"/> Undergraduate <input checked="" type="checkbox"/> Post-graduate <input checked="" type="checkbox"/> Training <input type="checkbox"/> Extension		

Department of Fisheries Malaysia (DoF)	Genetic resource management	<input type="checkbox"/> Undergraduate <input type="checkbox"/> Post-graduate <input type="checkbox"/> Training <input type="checkbox"/> Extension	DoF does offer a general aquaculture diploma program. However the syllabus does not cover so much on the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives specifically. DoF does extension services for its farmer which sometimes include genetic resource management	X
	Characterization and monitoring of aquatic genetic resources	<input type="checkbox"/> Undergraduate <input type="checkbox"/> Post-graduate <input type="checkbox"/> Training <input type="checkbox"/> Extension		
	Genetic improvement	<input type="checkbox"/> Undergraduate <input type="checkbox"/> Post-graduate <input type="checkbox"/> Training <input checked="" type="checkbox"/> Extension		
	Economic valuation of aquatic genetic resources	<input type="checkbox"/> Undergraduate <input type="checkbox"/> Post-graduate <input type="checkbox"/> Training <input type="checkbox"/> Extension		
	Conservation of aquatic genetic resources	<input type="checkbox"/> Undergraduate <input type="checkbox"/> Post-graduate <input type="checkbox"/> Training <input checked="" type="checkbox"/> Extension	DoF does extension services for its farmer which sometimes include topic on conservation of aquatic genetic resources	

Coordination and networking

41. Please list any mechanisms within your country responsible for coordinating the aquaculture, culture-based fisheries and capture fisheries subsectors with the other sectors that use watersheds and coastal ecosystems and have impacts on aquatic genetic resources of wild relatives of farmed aquatic species (e.g., agriculture, forestry, mining, tourism, waste management and water resources).

If no mechanism exists check here:

Add Row	
Name of mechanism	Description of how mechanism operates
Department of Environment guidelines	Buffer zone Treatment ponds Environmental Impact Assessment
Sulu-Celebes Sea Sustainable Fisheries Management Project	The Sulu-Celebes Sea (SCS) is a Large Marine Ecosystem in the tropical seas of Asia bounded by three countries – Indonesia, Malaysia and the Philippines. The goal of the Project is to have economically and ecologically sustainable marine fisheries in the SCS, for the benefit of communities who are dependent on these resources for livelihood and for the global community who benefit in the conservation of highly diverse marine ecosystems and its ecosystems services.
Sarawak Reef Balls Project: The Protection Of Marine Habitat	The Sarawak Reef Ball Working Group (SRBWG) consists of Sarawak Forestry Corporation; Department of Marine Fisheries Department Malaysia, Sarawak; Marine Police; Ministry of Environment and Public Health; Sarawak Ministry of Urban Development and Tourism; Sarawak Ministry of Social Development and Urbanization, Sarawak Tourism Board; Sarawak Natural Resources and Environmental Board; Sarawak Museum Department; Sarawak Turtles' Board; Institute of Marine Fisheries, Sarawak; and University Malaysia Sarawak. SRBWG started this project to deter illegal trawling. eg; provide secure and environmentally-friendly anchorages for buoys, provide eco-tourism dive sites, create new colonies of coral growth and enrich marine resources.
The Malaysian Quarantine and Inspection Services (MAQIS)	Controls 52 entry points all over the country for monitoring the risks of alien species in fisheries and agriculture. In addition to MAQIS, DWNP and other enforcement agencies area also involved in the control of invasive alien species.
National Action Plan for Prevention, Containment, Eradication and Control of Invasive Alien Species	The members of this working group consist of agencies working with agriculture, fisheries, veterinary services, environment, irrigation and drainage, wildlife, forestry, public health, medical, research, maritime, transportation, aviation, customs, research institutions and also universities. This working group is headed by the Director General of the Department of Agriculture Malaysia and the Director of Crop Protection and Plant Quarantine Division was elected as the secretariat.

42. Please indicate how capacity strengthening can be improved in intersectoral coordination in support of the conservation, sustainable use and development of aquatic genetic resources.

Please rank the following in regards to capacity strengthening.

Capacities	Rank 1=Very Important 10=No importance
Increase awareness in institutions	<input type="text" value="1"/>
Increase technical capacities of institutions	<input type="text" value="1"/>
Increase information sharing between institutions	<input type="text" value="5"/>
Add other rows as appropriate and rank <div style="border: 1px solid black; height: 75px; width: 100%;"></div> <div style="display: flex; justify-content: space-between; padding: 2px;"> Add Row Remove Row </div>	<input type="text"/>

Please specify in box below

Information sharing is restricted to type of information particularly R&D and IP's

43. Please list any national networks in your country or any international networks your country belongs to that support the conservation, sustainable use and development of aquatic genetic resources.

Add Row

Network	Objectives of the network <i>Please mark all that apply</i> to your country	Comments	
Bay of Bengal Large Marine Ecosystem, BOBLME	<input type="checkbox"/> Improve basic knowledge on aquatic genetic resources <input type="checkbox"/> Improve capacities for characterization and monitoring of aquatic genetic resources <input checked="" type="checkbox"/> Improve capacities for genetic improvement <input type="checkbox"/> Improve capacities for economic valuation of aquatic genetic resources <input checked="" type="checkbox"/> Improve capacities for conservation of aquatic genetic resources <input checked="" type="checkbox"/> Improve communication on aquatic genetic resources <input type="checkbox"/> Improve access to and distribution of aquatic genetic resources	One of the activities under BOBLME component project is on management of marine protected areas and fish refugia for sustainable fish management and biodiversity conservation objectives	X
The Southeast Asian Fisheries Development Centre (SEAFDEC)	<input type="checkbox"/> Improve basic knowledge on aquatic genetic resources <input type="checkbox"/> Improve capacities for characterization and monitoring of aquatic genetic resources <input type="checkbox"/> Improve capacities for genetic improvement <input type="checkbox"/> Improve capacities for economic valuation of aquatic genetic resources <input checked="" type="checkbox"/> Improve capacities for conservation of aquatic genetic resources <input checked="" type="checkbox"/> Improve communication on aquatic genetic resources <input type="checkbox"/> Improve access to and distribution of aquatic genetic resources	One of SEAFDEC R&D thematic area is using quality seeds in aquaculture. The research activities entail the use of conventional methods of stock improvement such as domestication, brood stock management, strain evaluation and selective breeding or genetic improvement of traditional and emerging freshwater and marine species. The purpose of the genetic intervention is to enhance traits such as growth rate, survival, disease/stress tolerance that ultimately lead to the production of good quality seed stock.	X

Network	Objectives of the network <i>Please mark all that apply</i> to your country	Comments	
Network of Aquaculture Centres in Asia Pacific (NACA)	<input type="checkbox"/> Improve basic knowledge on aquatic genetic resources <input type="checkbox"/> Improve capacities for characterization and monitoring of aquatic genetic resources <input type="checkbox"/> Improve capacities for genetic improvement <input checked="" type="checkbox"/> Improve capacities for economic valuation of aquatic genetic resources <input checked="" type="checkbox"/> Improve capacities for conservation of aquatic genetic resources <input type="checkbox"/> Improve communication on aquatic genetic resources <input checked="" type="checkbox"/> Improve access to and distribution of aquatic genetic resources	Among the core activities of NACA is genetics and biodiversity.	X
WorldFish	<input type="checkbox"/> Improve basic knowledge on aquatic genetic resources <input type="checkbox"/> Improve capacities for characterization and monitoring of aquatic genetic resources <input checked="" type="checkbox"/> Improve capacities for genetic improvement <input checked="" type="checkbox"/> Improve capacities for economic valuation of aquatic genetic resources <input type="checkbox"/> Improve capacities for conservation of aquatic genetic resources <input type="checkbox"/> Improve communication on aquatic genetic resources <input checked="" type="checkbox"/> Improve access to and distribution of aquatic genetic resources	<ul style="list-style-type: none"> • Developed GIFT Tilapia broodstock program Dissemination of the improved strain	X

Network	Objectives of the network <i>Please mark all that apply to your country</i>	Comments	
Malaysian Nature Society	<input type="checkbox"/> Improve basic knowledge on aquatic genetic resources <input type="checkbox"/> Improve capacities for characterization and monitoring of aquatic genetic resources <input type="checkbox"/> Improve capacities for genetic improvement <input type="checkbox"/> Improve capacities for economic valuation of aquatic genetic resources <input checked="" type="checkbox"/> Improve capacities for conservation of aquatic genetic resources <input checked="" type="checkbox"/> Improve communication on aquatic genetic resources <input type="checkbox"/> Improve access to and distribution of aquatic genetic resources	MNS has pioneered conservation in Malaysia and has been the main force behind the protection of many key habitats as well as national, marine and state parks in Malaysia	X

Information systems

44. Please list any information systems existing in your country for receiving, managing and communicating information about the conservation, sustainable use and development of aquatic genetic resources of farmed aquatic species and their wild relatives.

Add Row

Name of information system	Type of information stored <i>mark all that apply</i>	Main stakeholders <i>mark all that apply</i>	
NCBI, genbank	<input checked="" type="checkbox"/> DNA sequence <input type="checkbox"/> Genes and genotype <input type="checkbox"/> Breeds, strains or stocks <input checked="" type="checkbox"/> Species names <input type="checkbox"/> Production figures <input checked="" type="checkbox"/> Distribution <input checked="" type="checkbox"/> Level of endangerment <input type="checkbox"/> Other	<input type="checkbox"/> Fish farmers <input type="checkbox"/> Fishers in capture fisheries <input type="checkbox"/> Fish hatchery people <input type="checkbox"/> People involved in marketing <input checked="" type="checkbox"/> Government resource managers <input type="checkbox"/> Fishing or aquaculture associations <input type="checkbox"/> Aquatic protected area managers <input checked="" type="checkbox"/> University and academic people <input checked="" type="checkbox"/> Non-Governmental Organizations <input type="checkbox"/> Intergovernmental Organizations <input type="checkbox"/> Policy makers <input type="checkbox"/> Donors <input type="checkbox"/> Consumers <input type="checkbox"/> Politicians <p>Please list other stakeholders as necessary</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>	X

Name of information system	Type of information stored <i>mark all that apply</i>	Main stakeholders <i>mark all that apply</i>	
FishBASE	<input type="checkbox"/> DNA sequence <input type="checkbox"/> Genes and genotype <input type="checkbox"/> Breeds, strains or stocks <input checked="" type="checkbox"/> Species names <input type="checkbox"/> Production figures <input checked="" type="checkbox"/> Distribution <input checked="" type="checkbox"/> Level of endangerment <input type="checkbox"/> Other	<input type="checkbox"/> Fish farmers <input type="checkbox"/> Fishers in capture fisheries <input type="checkbox"/> Fish hatchery people <input type="checkbox"/> People involved in marketing <input checked="" type="checkbox"/> Government resource managers <input checked="" type="checkbox"/> Fishing or aquaculture associations <input checked="" type="checkbox"/> Aquatic protected area managers <input checked="" type="checkbox"/> University and academic people <input type="checkbox"/> Non-Governmental Organizations <input type="checkbox"/> Intergovernmental Organizations <input checked="" type="checkbox"/> Policy makers <input type="checkbox"/> Donors <input checked="" type="checkbox"/> Consumers <input type="checkbox"/> Politicians <p>Please list other stakeholders as necessary</p> <div style="border: 1px solid black; height: 76px; width: 240px;"></div>	X

Name of information system	Type of information stored <i>mark all that apply</i>	Main stakeholders <i>mark all that apply</i>	
Fisheries Annual Statistic	<input type="checkbox"/> DNA sequence <input type="checkbox"/> Genes and genotype <input type="checkbox"/> Breeds, strains or stocks <input checked="" type="checkbox"/> Species names <input checked="" type="checkbox"/> Production figures <input type="checkbox"/> Distribution <input type="checkbox"/> Level of endangerment <input type="checkbox"/> Other	<input type="checkbox"/> Fish farmers <input type="checkbox"/> Fishers in capture fisheries <input type="checkbox"/> Fish hatchery people <input type="checkbox"/> People involved in marketing <input checked="" type="checkbox"/> Government resource managers <input checked="" type="checkbox"/> Fishing or aquaculture associations <input type="checkbox"/> Aquatic protected area managers <input checked="" type="checkbox"/> University and academic people <input checked="" type="checkbox"/> Non-Governmental Organizations <input type="checkbox"/> Intergovernmental Organizations <input checked="" type="checkbox"/> Policy makers <input type="checkbox"/> Donors <input type="checkbox"/> Consumers <input type="checkbox"/> Politicians <p>Please list other stakeholders as necessary</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> People involved in processing </div>	X

Name of information system	Type of information stored <i>mark all that apply</i>	Main stakeholders <i>mark all that apply</i>	
IUCN Red list species	<input type="checkbox"/> DNA sequence <input type="checkbox"/> Genes and genotype <input type="checkbox"/> Breeds, strains or stocks <input checked="" type="checkbox"/> Species names <input type="checkbox"/> Production figures <input checked="" type="checkbox"/> Distribution <input checked="" type="checkbox"/> Level of endangerment <input type="checkbox"/> Other	<input type="checkbox"/> Fish farmers <input type="checkbox"/> Fishers in capture fisheries <input type="checkbox"/> Fish hatchery people <input type="checkbox"/> People involved in marketing <input checked="" type="checkbox"/> Government resource managers <input type="checkbox"/> Fishing or aquaculture associations <input checked="" type="checkbox"/> Aquatic protected area managers <input checked="" type="checkbox"/> University and academic people <input type="checkbox"/> Non-Governmental Organizations <input type="checkbox"/> Intergovernmental Organizations <input type="checkbox"/> Policy makers <input type="checkbox"/> Donors <input type="checkbox"/> Consumers <input type="checkbox"/> Politicians <p>Please list other stakeholders as necessary</p> <div style="border: 1px solid black; height: 60px; width: 100%;"></div>	X

45. What capacity strengthening is needed to improve national information systems to support the conservation, sustainable use and development of aquatic genetic resources?

Please describe what capacities need to be strengthened

- Improve information technology and database management
- Improve basic knowledge on aquatic genetic resources
- Improve capacities for characterization and monitoring of aquatic genetic resources
- Improve capacities for genetic improvement
- Improve capacities for economic valuation of aquatic genetic resources
- Improve capacities for conservation of aquatic genetic resources
- Improve communication on aquatic genetic resources
- Improve access to and distribution of aquatic genetic resources

Please describe any other capacity building needs in regards to information systems for aquatic genetic resources

Chapter 8: International Collaboration on Aquatic Genetic Resources of Farmed Aquatic Species and Their Wild Relatives

The main objective of Chapter 8 is to review the mechanisms and instruments through which your country participates in international collaborations on aquatic genetic resources of farmed aquatic species and their wild relatives.

The specific objectives are:

- To identify your country's current participation in bilateral, sub-regional, regional, other international and global forms of collaboration on aquatic genetic resources. List national memberships, status as a Party and other forms of affiliation in agreements, conventions, treaties, international organizations, international networks and international programmes.
- To identify any other forms of international collaboration on aquatic genetic resources.
- To review the benefits from existing forms of international collaboration on aquatic genetic resources.
- To identify needs and priorities for future international collaboration on aquatic genetic resources

International collaboration includes bilateral arrangements and the sharing of particular waters and stocks of wild relatives of farmed aquatic species.

International, regional or sub-regional agreements, conventions and treaties concerning aquatic genetic resources of farmed aquatic species and their wild relatives

46. Please list the international, regional or sub-regional agreements your country subscribes to that cover aquatic genetic resources of farmed species and their wild relatives, such as the Nagoya Protocol² the Convention on Biological Diversity and the Cartagena Protocol and how they have impacted aquatic genetic resources and stakeholders in your country. Examples could include:

² <http://www.cbd.int/abs/nagoya-protocol/signatories/>

- Establishment and management of shared or networked aquatic protected areas as far as wild relatives of farmed aquatic species are concerned
- Aquaculture and culture-based fisheries in transboundary or shared water bodies
- Sharing aquatic genetic material and related information
- Fishing rights, seasons and quotas as far as wild relatives of farmed aquatic species are concerned
- Conservation and sustainable use of shared water bodies and watercourses as far as wild relatives of farmed aquatic species are concerned
- Quarantine procedures for aquatic organisms and for control and notification of aquatic diseases

Add Row

International, Regional, bilateral or Sub-Regional agreement	Year your country ratified or subscribed to the agreement	Impact on aquatic genetic resources	Impact on stakeholders	Comments
Convention On Biological Diversity	24 June 1994	<input checked="" type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	<input checked="" type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	

X

International, Regional, bilateral or Sub-Regional agreement	Year your country ratified or subscribed to the agreement	Impact on aquatic genetic resources	Impact on stakeholders	Comments	
Nagoya Protocol	12 Oct 2014	<input checked="" type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	<input checked="" type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect		X
Cartagena Protocol	29 Jan 2000	<input checked="" type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	<input checked="" type="radio"/> Strongly positive <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect		X
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	18 Jan 1978	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect		X
The United Nations Convention on the Law of the Sea (UNCLOS)	14 Oct 1996	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	Provide basis for establishing and implementing the agreement	X
RAMSAR		<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect	<input type="radio"/> Strongly positive <input checked="" type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Strongly negative <input type="radio"/> No effect		X

47. Please list the priority needs regarding collaboration on conservation and sustainable use of aquatic genetic resources of farmed aquatic species and their wild relatives. Are they being addressed, i.e. are there any critical gaps?

Collaboration is needed in order to ...	Rank 1=Very Important 10=No importance	To what extent are the needs being met	Comments <i>For example any critical gaps</i>
Improve information technology and database management	1	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	Human resource development
Improve basic knowledge on aquatic genetic resources	3	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	Human resource development
Improve capacities for characterization and monitoring of aquatic genetic resources	1	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	Human resource development
Improve capacities for genetic improvement	1	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	Human resource development
Improve capacities for economic valuation of aquatic genetic resources	1	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	Human resource development
Improve capacities for conservation of aquatic genetic resources	1	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	Human resource development
Improve communication on aquatic genetic resources	5	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	

Collaboration is needed in order to ...	Rank 1=Very Important 10=No importance	To what extent are the needs being met	Comments <i>For example any critical gaps</i>
To improve access to and distribution of aquatic genetic resources	5	<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	Different access procedures and legislation
Other		<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	
Continue adding row as necessary		<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	
		<input type="radio"/> To a great extent <input type="radio"/> To some extent <input type="radio"/> None <input type="radio"/> Unknown	
Add Row	Remove Row		

48. Please describe the types of collaboration that have been most beneficial for your country, and why?

Collaboration with WorlFish Centre on GIFT Tilapia broodstock development and R&D in related field.

49. Is there a need for your country to expand its collaboration concerning the conservation, sustainable use and development of aquatic genetic resources? If yes, give details, including any requirements for capacity strengthening in box below

Yes

No

If yes, please give details

Yes, there is a great need to collaborate with other on the conservation, sustainable use and development of aquatic genetic resources but with proper agreement especially on IP's.

50. Describe important roles that your country performs within its region (and/or sub-region) and globally in terms of being a keeper, user and sharer of aquatic genetic resources.

Malaysia has played an important role as a keeper and sharer of aquatic genetic resources specifically regarding GIFT Tilapia and Freshwater prawn, *Macrobrachium rosenbergii*.
• Inland with Norway

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