



COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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MONITORING THE IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF AQUATIC GENETIC RESOURCES FOR FOOD AND AGRICULTURE

The Commission on Genetic Resources for Food and Agriculture, at its last Session, took note of draft indicators proposed for monitoring the implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture (Global Plan of Action). It recommended further consultations, including of the Committee on Fisheries Advisory Working Group on Aquatic Genetic Resources and Technologies (COFI Advisory Working Group), and of the National Focal Points for AqGR, and proposed testing by National Focal Points to address difficulties, inconsistencies and ambiguities, with a view to providing the revised indicators and timeline to the next sessions of the Working Group and the Commission, for their consideration.¹

In response to the Commission's recommendation, a dual monitoring system based on *resource indicators* and *process indicators* was developed: the *resource indicators* are based on data collected in AquaGRIS while the *process indicators* are based on data collected through a standalone process indicator questionnaire. The *resource indicators* are generally quantitative and identify the status of conservation, sustainable use and development of aquatic genetic resources for food and agriculture (AqGR) at national, regional and global levels. The *process indicators* are more subjective and relate to national, regional and global processes and activities concerning the management of AqGR.

During the intersessional period, the proposed indicators were reviewed and revised to align the resource indicators fully with the data generated by the final version of AquaGRIS and to align them with the questions in the process indicator questionnaire that was also developed during this period. The revised indicators were circulated to National Focal Points for AqGR and members of the COFI Advisory Working Group for review and the feedback received was further incorporated into the updated indicators which was presented to the Fifth Session of the Intergovernmental Technical Working Group on Aquatic Genetic Resources (Working Group) for its review.

Following its review of the indicators the Working Group recommended the addition or adaptation of questions in AquaGRIS to: (i) enable creation of indicators to quantify germplasm stored in *ex situ*

¹ CGRFA-19/23/Report. Paragraph 119.

gene banks for species, farmed types and genetic stocks; and (ii) develop a resource indicator to quantify the extent of characterization of genetic resources. The capacity to generate related indicators has now been incorporated into the monitoring system.

This document contains, in the table below, the proposed *resource* and *process indicators*, as revised following input from the Working Group. The process indicator questionnaire on which the process indicators are based is presented in Annex 1. The Working Group in the light of feedback received from 28 National Focal Points and members of the COFI Advisory Working Group. The Working Group indicated that the process indicator questionnaire should be distributed for completion by National Focal Points every five years.²

² CGRFA-20/25/6.1, paragraph 27.

PROPOSED INDICATORS OF THE IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF AQUATIC GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Priority Area/Strategic Priority	Long-term goal/ Strategic Priority goal	Indicator ³	Type of indicator	Means of quantification or verification ⁴	Notes
Priority Area 1: Inventory, characterization and monitoring	<i>Information on AqGR made accessible for and usable by Members and stakeholders via a detailed institutionalized and sustainably resourced global information system utilizing standardized terminology</i>	P1.H1 Extent of recording of AqGR in AquaGRIS	Resource	Quantification of number of national accessions (numbers of species, primary and secondary farmed types recorded) in AquaGRIS	This information will be available and continually updated in real-time on the AquaGRIS dissemination interface
SP 1.3: Maintain and/or develop, promote and institutionalize national, regional and global standardized information systems for the collection, validation and monitoring of, and reporting on, AqGR below the level of species (i.e. genetic diversity of farmed types and stocks)	<i>Long-term funding secured for the development and maintenance of an appropriate information system for AqGR</i>	P1.SP3.P1 Extent of development of national registries of AqGR	Process	Number of AqGR registries, developed using information systems, including AquaGRIS, reported by countries	The process indicator questionnaire includes a six-point scale question on the existence and extent of development of a registry

³ The coding of indicators is as follows: P# refers to the relevant priority area of the Global Plan of Action; H refers to headline indicator; SP# refers to the strategic priority number within each priority area; and P# and R# refers to the number of the process or resource indicator within each strategic priority.

⁴ Quantification can take several forms: data can be presented as absolute numbers and/or as proportions (mainly for resource indicators) or as subjective assessments (mainly for process indicators).

Priority Area 2: Conservation and sustainable use	<i>AqGR, including native and non-native species, their farmed types and wild relatives, are conserved and sustainably used for the benefit of aquaculture, culture-based fisheries, commercial and recreational fisheries, and sustainable ecosystems</i>	P2.H1 Extent of national conservation programmes ⁵	Resource	Number of conservation programmes reported by countries in AquaGRIS and number of species covered by such programmes	AquaGRIS collects data by country on species conservation programmes
		P2.H2 a & b Extent of species with genetic management applied	Process	Extent of species farmed types (a) and wild stocks (b) for which genetic management is implemented.	The process indicator questionnaire includes questions on the extent of genetic management of farmed types and wild stocks, each on a four-point scale
SP 2.1: Identify wild relatives of AqGR most at risk (e.g. through an AqGR information system) and ensure that they are managed sustainably and that appropriate conservation measures are implemented where necessary, nationally and regionally	<i>Wild relative genetic resources conserved as reservoirs of genetic diversity and local/global extinction of wild relative species prevented</i>	P2.SP1.R1 Extent of wild stocks for which threat status is being monitored	Resource	Number of species for which countries record the threat status using the IUCN Red List classifications recorded in AquaGRIS	AquaGRIS questionnaire includes a question on whether a species is recorded in a national red list
		P2.SP1.P1 Extent of species with monitoring of the stock status of wild stocks	Process	Extent of species for which countries report that the stock status of wild stocks is monitored	The process indicator questionnaire includes a question on the extent of monitoring of the stock status (i.e. relative abundance) of the species in the wild on a four-point scale
		P2.SP1.P2 Extent of species with monitoring of the genetic status of wild stocks	Process	Extent of species for which monitoring of the genetic status of wild stocks occurs	The process indicator questionnaire includes a question on the extent of monitoring of the genetic status of species/genetic stocks in the wild on a four-point scale
		P2.SP1.R1 a & b Extent of wild stocks subject to conservation measures and the types of measures applied	Resource	Number and proportion of wild genetic stocks subject to one or more conservation measures and the type of measure (i.e. <i>in situ</i> , <i>ex situ in vivo</i> and/or <i>ex situ in vitro</i>)	AquaGRIS questionnaire has a question on whether identified genetic stocks are subject to any conservation measures and if so what type of measures are being applied (3 types are noted, <i>ex situ in</i>

⁵ A conservation programme is any initiative designed to support the conservation of genetic resources *in situ* or *ex situ*.

				conservation) recorded in AquaGRIS	<i>vitro, ex situ in vivo and in situ</i> conservation)
		P2.SP1.R2 Extent of local extinctions of wild stocks of cultured species	Resource	Number of national extinctions of wild stocks of cultured species recorded in AquaGRIS	AquaGRIS questionnaire identifies species that occurred in the wild and have become extinct
		P2.SP1.R3 Extent of species listed in IUCN's extinction-risk categories	Resource	Proportions of species that are listed under national Red Lists that are classified as Near Threatened, Vulnerable, Endangered and Critically Endangered as recorded in AquaGRIS	AquaGRIS questionnaire identifies red listed species which occur in the wild and the classified IUCN category
		P2.SP1.R6 Average and frequency distribution of effective population size of wild stocks	Resource	Average and frequency distribution of effective population sizes identified for wild genetic stocks recorded in AquaGRIS	AquaGRIS questionnaire has a question on estimated effective population size for genetic stocks. This indicator can also be relevant to the GBF
SP 2.2: Anticipate the current and future impacts of environmental change, including climate change, on AqGR and respond accordingly	<i>Impacts of environmental change on AqGR and wild relatives effectively monitored, and conservation and mitigation measures implemented</i>	These questions will be covered in a separate questionnaire on climate change being developed by the Commission to be incorporated at a later date	Process	This indicator (or indicators) will be derived from a separate process being carried out across all sectors, by the Commission.	National questionnaire prepared by the Commission
SP 2.3: Actively incorporate <i>in situ</i> conservation of AqGR in the development of fisheries management and ecosystem-based management plans, particularly for threatened species	<i>Proportion of fisheries management plans (including wild stock enhancement programmes) and aquatic protected area management plans that acknowledge their role in managing and, where appropriate, conserving AqGR for wild relative species increased, including</i>	P2.SP3.P1 Extent to which the assessment and monitoring of wild stocks (including fisheries management plans, aquatic protected areas and ecosystem-based management plans) specifically target management and conservation of AqGR	Process	Extent of assessment and monitoring of wild stocks for management and conservation reported by countries	The process indicator questionnaire includes a question on the extent of monitoring and assessment across all species on a four-point scale

	<i>as a resource for aquaculture</i>				
SP 2.4: Promote <i>ex situ</i> conservation for AqGR, including wild relatives and threatened species	<i>Threatened and important AqGR conserved in ex situ gene banks in support of aquaculture development and in situ conservation</i>	P2.SP4.R1a & b Extent of <i>ex situ</i> conservation for threatened wild stocks (a) and important farmed types (b) AqGR and type of <i>ex situ</i> conservation	Resource	Number and proportion of AqGR farmed types conserved in <i>ex situ</i> gene banks and type of <i>ex situ</i> conservation measure (<i>ex situ in vivo</i> and/or <i>ex situ in vitro</i> conservation). Note: wild stocks are covered by indicator P2.SP1.R1	AquaGRIS questionnaire has a question on whether identified wild stocks and farmed types are subject to any <i>ex situ</i> conservation measures
		P2.SP4.R2 Extent of developed farmed types (i.e. strains or varieties) lost	Resource	Number of strains or varieties that are no longer cultured or are extinct	AquaGRIS questionnaire records the status of previously produced strains and varieties
SP 2.5: Improve sustainable use of domesticated farmed types through improved management of genetic diversity	<i>Productivity improved through retention of genetic diversity and genetic integrity of species and farmed types in seed supply systems</i>	P2.SP5.R1 a & b Ratio of native to non-native species (a) and farmed types (b)	Resource	Number and proportion of production attributed to native/non-native species and farmed types cultured recorded in AquaGRIS	AquaGRIS questionnaire includes questions on whether a species is native or non-native and whether farmed types are introduced. Production data are available for species and many farmed types
		P2.SP5.R2 a & b Extent of primary farmed types under genetic management	Resource	Number and proportion of primary farmed types under some form of genetic management recorded in AquaGRIS	AquaGRIS questionnaire includes a question on whether farmed type is under genetic management
		P2.SP5.R3 Average effective population size of farmed types	Resource	Average and frequency distribution of effective population size for strains, varieties and captive propagated farmed types recorded in AquaGRIS	AquaGRIS questionnaire has a question on estimated effective population size for developed farmed types. Guidance will be provided on estimation methods. This indicator can also be relevant to the GBF

		P2.SP5.P1 Extent of species with monitoring of genetic status	Process	Extent of monitoring of genetic status of farmed types of species	The process indicator questionnaire has a question on the extent of monitoring of the genetic status of farmed types of major cultured species on a four-point scale
SP 2.6: Safely manage and control the use and exchange of AqGR, taking into account national and international instruments, as applicable	<i>Farmed types safely exchanged and used</i>	P2.SP6.R1 Extent of non-native species posing a risk of harm	Resource	Number and proportion of all cultured non-native species recorded in AquaGRIS as presenting risk of harm	AquaGRIS questionnaire has a question on whether non-native species have created harm or have potential to cause harm to indigenous biodiversity
		P2.SP6.R2 Extent of species introductions for which a risk assessment was conducted	Resource	Number and proportion of introduced species for which a risk assessment was conducted prior to introduction recorded in AquaGRIS	AquaGRIS questionnaire has a question on whether a risk assessment was conducted prior to the introduction of a non-native species
		P2.SP6.R3a&b Extent of farmed type exchanges (a) introduced – and (b) exported – b)	Resource	Number and proportion of farmed types introduced (a) and exported (b) recorded in AquaGRIS	AquaGRIS questionnaire has questions for primary and secondary farmed types on whether they have been exchanged with other countries (introduced from or exported to)
		P2.SP6.P1 Extent of risk management plans considering the exchange of AqGR	Process	Country reporting on the extent of risk assessment being applied prior to introduction of AqGR	The process indicator questionnaire has a question on the existence and implementation of policies for risk assessments for introduction of aquaculture species on a four-point scale

		P2.SP6.P2 Extent of mitigation of invasive AqGR	Process	Number of countries reporting mitigation activities and number of species to which activities are applied	The process indicator questionnaire has a binary choice yes/no question on the presence of mitigation measures to control invasive species introduced for aquaculture
Priority Area 3: Development of AqGR for aquaculture	<i>Increased adoption of demand-driven genetic improvement programmes enhancing the efficiency and sustainability of aquaculture production and delivering benefits to consumers, broader society and the environment</i>	P3.H1 Extent of availability of developed farmed types in countries	Resource	Number of strains, varieties and captive propagated farmed types under improvement recorded in AquaGRIS	AquaGRIS questionnaire has questions on the numbers and types of primary farmed types available in a country
		P3.H2 Extent of aquaculture production coming from improved farmed types, reported separately for primary and secondary farmed types	Resource	Proportion of production coming from strains/varieties /captive propagated farmed types under improvement recorded in AquaGRIS	AquaGRIS records information on the estimated proportion of national production made up by the farmed types entered into AquaGRIS
SP 3.1: Promote greater adoption of well-managed, long-term, selective breeding programmes as a core genetic improvement technology with a focus on major aquaculture species	<i>Enabling environment created for accelerating the adoption of well-managed breeding programmes leading to a doubling of the contribution of improved farmed types to aquaculture production in the next ten years</i>	P3.SP1.R1 Extent of farmed types developed using selective breeding	Resource	Number of selectively bred farmed types recorded in AquaGRIS	AquaGRIS questionnaire includes a question on primary farmed types developed using selective breeding
		P3.SP1.R2 Extent of ongoing farmed type development using selective breeding	Resource	Number of primary farmed types recorded in AquaGRIS in which selective breeding is ongoing	AquaGRIS questionnaire includes a question on whether selective breeding is currently occurring for developed farmed types
		P3.SP1.R3 Extent of public and private sector resourcing of breeding programmes	Resource	Number of selectively bred farmed types recorded in AquaGRIS	AquaGRIS includes a question on whether selective breeding programmes for development of

				resourced by public and/or private sectors	primary farmed types are managed and/or resourced by the public and/or private sector
SP 3.2: Establish national and/or regional development strategies and programmes for species and farmed types, responsive to market and societal needs, to unlock the full potential of AqGR	<i>Countries and intergovernmental organizations develop and implement strategies for the development of key AqGR based on understanding of risks and benefits of different approaches</i>	P3.SP2.P1 Extent of national and regional strategies including development of AqGR	Process	Number of countries reporting national and/or regional strategies incorporating development of AqGR for aquaculture	The process indicator questionnaire includes a question on whether countries have or are developing national and/or regional strategies on a three-point scale
SP 3.3: Raise capacity of stakeholders in aquaculture to develop improved farmed types	<i>Human resources are no longer a limitation to the appropriate implementation of genetic improvement and the adoption of improved farmed types in aquaculture. Capacity development programmes ensure long-term availability of capacity, including succession planning</i>	P3.SP3.P1 Extent of stakeholder capacity in aquaculture genetic management and improvement	Process	Level of national capacity for genetic management and improvement in aquaculture	The process indicator questionnaire includes a question on the relative adequacy (on a four-point scale) of human resource capacity to support genetic management and breeding programmes in aquaculture
		P3.SP3.P1 Extent of uptake of FAO e-learning course on genetic management and improvement	Process	Number of people completing FAO training on genetic management and improvement.	FAO collects data on the individual completions of its online e-learning training programme
Priority Area 4: Policies, institutions and capacity building	<i>Capacity to support sustainable and efficient implementation of AqGR policy that takes into consideration environmental and economic dimensions enhanced through dedicated institutions</i>	P4.H1 Extent of countries that have a designated dedicated authority for development and implementation of AqGR related policy or strategy	Process	Number of countries reporting the existence and level of development of designated authorities dedicated to implementation of policy/strategy on AqGR	The process indicator questionnaire has a question to identify the status of development (on a five-point scale) of dedicated national authorities
SP 4.1: Develop or revise, implement and monitor strategies and policies for the	<i>Dedicated policies or national strategies addressing the conservation, sustainable use and</i>	P4.SP1.P1 Extent of countries with national policies or strategies relating to	Process	Number of countries reporting the existence of relevant national policies or strategies	The process indicator questionnaire has a pair of questions on a three-point scale on whether countries have relevant national policies and

conservation, sustainable use and development of AqGR in cooperation with relevant stakeholders	<i>development of AqGR are implemented and implementation is monitored</i>	conservation, sustainable use and development for AqGR			strategies and whether they cover conservation, sustainable use and development of AqGR
SP 4.2: Improve global, regional and national exchange of information and network activities on AqGR and raise awareness of the importance of AqGR among relevant stakeholders, including of the roles that Indigenous Peoples and local communities, youth and women, play in the conservation, sustainable use and development of AqGR	<i>Stakeholders and public better informed about aquaculture, the important role that the management of genetic resources plays in securing the future availability of sustainably produced aquatic food, and the opportunities and risks associated with genetic improvement of AqGR</i>	P4.SP2.P1 Extent of countries/regions with networks on AqGR	Process	Number of countries reporting on national and regional networks promoting awareness raising of the importance of AqGR among relevant stakeholders	The process indicator questionnaire has a pair of binary yes/no questions on the existence of national and regional networks
SP 4.3: Support the responsible introduction, exchange and use of AqGR, including through appropriate risk assessments, adequate policies and their effective implementation	<i>Responsible use of AqGR incorporated into national legislation</i>	P4.SP3.P1 Extent of countries with national legislation covering the management of AqGR	Process	Number of countries reporting the existence of relevant national legislation	The process indicator questionnaire has a binary yes/no question on the existence of legislation and a follow up question on whether the legislation covers conservation, sustainable use and development in aquaculture.
SP 4.4: Implement existing international agreements and instruments relevant to the conservation, sustainable use and development of AqGR	<i>International and regional agreements fully implemented in relation to AqGR, taking into account the specific needs of the sector</i>	P4.SP4.P1 Extent of integration of international and regional agreements/instruments into national policies and/or strategies	Process	Countries reporting incorporation of key agreements (incorporation can be quantified for each agreement)	The process indicator questionnaire includes a question to identify specific international instruments and agreements that have been incorporated into national policies and strategies

<p>SP 4.5: Establish or strengthen national institutions, including National Focal Points, for planning, implementing and monitoring AqGR measures, for aquaculture and fishery sector development</p>	<p><i>National institutions, including NFPs, established or strengthened</i></p>	<p>P4.SP5.P1 Extent of countries with national institutions/National Focal Points for AqGR</p>	<p>Process</p>	<p>Number of countries having National Focal Points for AqGR and number of countries having institutions with recognized responsibility for the management of AqGR.</p>	<p>FAO records countries with officially nominated National Focal Points and the process indicator questionnaire has a question on the institutional monitoring</p>
<p>SP 4.6: Establish or strengthen national and regional institutions for characterization, inventory, and monitoring of trends and associated risks, as well as for education and research on AqGR, and establish intersectoral coordination of their management, including economic valuation, characterization and genetic improvement</p>	<p><i>Institutions for education and research established or strengthened and intersectoral coordination enhanced</i></p>	<p>P4.SP6.P1a&b Extent of countries/regions with institutional capacity for characterization, inventory and monitoring of AqGR, intersectoral coordination, education and research</p>	<p>Process</p>	<p>Extent of national and regional institutional capacity per country/region</p>	<p>The process indicator questionnaire asks countries (a) to identify the number of institutions actively supporting research and education and (b) to rate the adequacy of this institutional capacity on a four-point scale</p>
<p>SP 4.7: Facilitate access to and the fair and equitable sharing of benefits arising from the use of AqGR</p>	<p><i>Adequate policies and measures developed or adapted and implemented, reflecting the distinctive features of AqGR and associated traditional knowledge and the special role of AqGR and traditional knowledge associated with them for food security</i></p>	<p>P4.SP7.P1 Existence of legislative, administrative or policy measures on access and benefit-sharing, developed in consultation with (i) stakeholders using AqGR and associated traditional knowledge for research and development and (ii) Indigenous Peoples and local communities</p>	<p>Process</p>	<p>Extent of national measures on access and benefit sharing and whether such measures were developed in consultation with relevant stakeholders and Indigenous Peoples and local communities</p>	<p>The process indicator questionnaire has a question on the existence of legislative, administrative or policy measures on access and benefit-sharing on a five-point scale with follow-up binary yes/no questions on whether there was consultation with stakeholders and with Indigenous Peoples and local communities</p>



ANNEX 1

PROCESS INDICATOR QUESTIONNAIRE FOR MONITORING THE IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF AQUATIC GENETIC RESOURCES FOR FOOD AND AGRICULTURE

The following lists questions that can be used to generate process indicators of the status of implementation of some elements of the Global Plan of Action. It is intended that this questionnaire will be distributed to National Focal Points every 5 years. The questions are listed by priority area of the Global Plan of Action and the numbers provided correspond to the number of the associated process indicator.

Priority Area 1: Inventory, characterization and monitoring

Long term goal

Information on AqGR made accessible for and usable by Members and stakeholders via a detailed, institutionalized and sustainably resourced global information system utilizing standardized terminology.

Process indicator P1.SP3.P1. Extent of development of national registries of AqGR

1. Does your country have a national registry of its AqGR?
 - A. Yes, it has a full registry of all cultured species
 - B. Yes, it has a partial registry of cultured species
 - C. A national registry is under development
 - D. No, but development of a national registry is planned and resources have been identified
 - E. No, but development of a national registry is planned and resources are being sought
 - F. No, no registry exists or is planned

Follow up questions

If the answer is A-E

- 1a If your country has, or is planning to create a national registry of AqGR, has this been developed or will this be developed, using FAO's global information system AquaGRIS?
 - A. Yes
 - B. No

If your answer is B (No) and the registry is created using an information system other than AquaGRIS, please provide further details including the types of information recorded, the main

purpose of the registry, whether the data are validated and by whom or what agency, and who can access the information in the registry.

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Priority Area 2: Conservation and sustainable use of aquatic genetic resources

Long-term goal

Aquatic genetic resources (AqGR), including native and non-native species, their farmed types and wild relatives, are conserved and sustainably used for the benefit of aquaculture, culture-based fisheries, commercial and recreational fisheries, and sustainable ecosystems.

Process indicator P2.H2. Extent of species with genetic management applied

2. Is genetic management (i.e. management of genetic diversity) considered in the seed supply systems for cultured species in your country (H2a)?

- Yes, management of genetic diversity is considered in the seed supply systems of **most** cultured species
- Yes, management of genetic diversity is considered in seed supply systems of **some** cultured species
- Management of genetic diversity is considered in seed supply systems for **just one or two** species
- No, there is **no consideration** of management of genetic diversity in seed supply systems for any cultured species.

2.1 Please list the species, in your country, for which management of genetic diversity is considered within seed supply systems for aquaculture.

Species	Details on the genetic management plan (s)

3 **Is genetic management (i.e. management of genetic diversity) considered in the management of wild stocks of cultured species in your country (H2b)?**

- Yes, management of genetic diversity is considered in the management of **most** species
- Yes, management of genetic diversity is considered in the management of **some** species
- Management of genetic diversity is considered in the management of **one or two** species
- No, there is **no consideration** of management of genetic diversity in wild stocks of species

3.1 Please list the cultured species in your country, for which management of genetic diversity is considered for wild stocks.

Species/genetic stocks	Details on the stock management programme (s)

Process indicator P2.SP1.P1. Extent of species with monitoring of the stock status⁶ of the wild stocks.

4 Does your country conduct regular monitoring of the stock status of wild stocks of aquaculture species?

- Yes, monitoring of stock status is carried out for **most** species
- Yes, monitoring of stock status is carried out for **some** species
- Monitoring of stock status is carried out for **one or two** species
- No, there is **no monitoring** of stock status of species

4.1 Please list the species for which monitoring of the status of wild stocks is carried out.

Species/genetic stocks	Native or non-native	Type of monitoring

Process indicator P2.SP1.P2 Extent of species with monitoring of the genetic status of wild stocks

5 Does your country conduct regular monitoring of **the genetic status** of wild stocks of aquaculture species?

- Yes, monitoring of genetic diversity is used in the management of **most** species

⁶ Stock status here refers to abundance and fishery stock status where stocks are fished, it does not refer to genetic status.

- Yes, monitoring of genetic diversity is used in the management of **some** species
- Monitoring of genetic diversity is used in the management of **one or two** species
- No, there is **no monitoring** of genetic diversity in wild stocks of species

5.1 Please list the species for which monitoring of the genetic status of wild stocks is carried out.

Species/genetic stocks	Native or non-native	Type of monitoring carried out

Process indicator P2.SP3.P1. Extent that monitoring and assessment of wild stocks of AqGR (including fisheries management plans, aquatic protected areas, and ecosystem-based management plans) specifically target management and conservation of AqGR.

6. What proportion of monitoring, assessment, and management plans for wild stocks of AqGR explicitly consider or target management and conservation of AqGR.
- **Most** plans consider management and conservation of AqGR
 - **Some** plans consider management and conservation of AqGR
 - **One or two** plans consider management and conservation of AqGR
 - Plans do **not consider** management or conservation of AqGR

Process indicators P2.SP5.P1 Extent of species with monitoring of genetic status

7. Does your country conduct regular monitoring of **the genetic status** of farmed types of aquaculture species?
- Yes, monitoring of genetic diversity is used in the management of farmed types of **most** species
 - Yes, monitoring of genetic diversity is used in the management of farmed types of **some** species
 - Monitoring of genetic diversity is used in the management of farmed types for **one or two** species
 - No, there is **no monitoring** of genetic diversity in farmed types of any species

7.1 Please list the species for which monitoring of the genetic status of farmed types is carried out.

Species/farmed types	Native or non-native	Type of monitoring

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Process indicator P2.SP6.P1 Extent of risk management plans taking into account the exchange of AqGR

8. Does your country have a policy and system to ensure risk assessments are conducted prior to the introduction of new species for aquaculture?

- Yes, a policy is in place and it is strictly enforced **for all introductions**
- Yes, a policy is in place but monitoring and enforcement **is not complete**
- Yes, a policy is in place but it **is not enforced**
- There is **no policy** requiring risk assessments of introductions to be implemented

8.1 Please estimate the proportion of proposed introductions of new species into your country in the past five years that have been subjected to risk assessment.

Xxx %

8.2 If a species has already been introduced into your country, are risk assessments still applied to subsequent introductions of the same species?

- Yes
- Sometimes
- No

Process indicator P2.SP6.P2 Extent of mitigation of invasive AqGR

9. Does your country specifically identify some non-native species as “invasive”?

- Yes
- No

9.1. Does your country apply mitigation measures against alien invasive species that were originally introduced for aquaculture?

- Yes
- No

9.2 If yes, please list the invasive species against which mitigation measures are applied and briefly describe the mitigation measures.

Invasive species	Mitigation measure	Reference

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Priority Area 3: Development of aquatic genetic resources for aquaculture

Long-term goal

Increased adoption of demand-driven genetic improvement programmes enhancing the efficiency and sustainability of aquaculture production and delivering benefits to consumers, broader society and the environment.

Process indicator P3.SP2.P1. The extent of national and regional strategies including development of aquatic genetic resources.

10. Does your country have a national strategy that includes the sustainable development (i.e. genetic improvement) of aquatic genetic resources in aquaculture?

- Yes
- No but a strategy is under development
- No

10.1 Does your country participate in any regional strategy for the sustainable development of any AqGR in aquaculture?

If yes, please describe briefly the regional strategies in which your country participates.

Species	Countries/region involved	Brief description of the strategy

Process indicator P3.SP3.P1. Extent of stakeholder capacity in aquaculture genetic management and improvement.

11. Does your country have adequate human resource capacity to support the development of well managed breeding programmes for key aquaculture species?

- Yes, there is **adequate capacity** in the country
- The country has **some capacity** but it is not sufficient to meet the needs of current and planned breeding programmes
- The country has very **limited capacity** to support breeding programmes
- The country has **no such capacity**

11.1 Have aquaculture stakeholders completed FAO's e-learning training in Aquaculture Breeding and Genetics?⁷

- Yes (please provide the number of trainees completing the course - available from FAO website).
- No

Process indicator P3.SP3.P2 Extent of tertiary training in aquaculture genetic management and improvement.

12. Please list the institutions in your country that provide graduate and/or post-graduate training in conservation, sustainable use and development of AqGR?

Institution	Graduate	Post-graduate

12.1 Please estimate the approximate number of graduates in the related courses from the above listed institutions per annum?

Graduate

- >500 students
- 250-500
- 100-250
- 50-100
- <50

Post-graduate

- >500 students
- 250-500
- 100-250
- 50-100
- 25-50
- <25

Priority Area 4: Policies, Institutions and Capacity Building

Long term goal:

Capacity to support sustainable and efficient implementation of AqGR policy that takes into consideration environmental and economic dimensions enhanced through dedicated institutions.

Process indicator P4.H1. Extent of countries that have a designated dedicated authority for the implementation of the aquatic genetic resources related policy or strategy.

⁷ Link to training programme to be added here.

13. Does your country have a designated dedicated authority for the implementation of policies and strategies on the management of AqGR?

- Yes, **since before the adoption** of the Global Plan of Action
- Yes, an authority was established **after the adoption** of the Global Plan of Action
- No, but **action** for its allocation/establishment **has been taken**
- No, but **action is planned**
- **No**

13.1 Please provide further details. If more than one authority is involved in different aspects of AqGR policy and management please indicate the relevant authorities in the table below?

Designated authority	Aspect of AqGR management covered by Authority				
	Collection of data and monitoring	Conservation on AqGR	Sustainable use and development of AqGR	Policy development and implementation	Seed supply monitoring and certification

Process indicator P4.SP1.P1. Extent of countries with national policies or strategy relating to conservation, sustainable use and development for aquatic genetic resources

14. Does your country have national policies that explicitly reference aquatic genetic resources for food and agriculture?

- Yes
- No

If yes, please briefly summarise the policies that reference AqGR.

14.1 Does your country have a national strategy that covers the conservation, sustainable use and development of aquatic genetic resources for food and agriculture?

- Yes
- No

If yes, please briefly summarise the legislation that references AqGR.

Process indicator P4.SP2.P1. Extent of countries/regions with networks on AqGR.

15. Does your country have a national network to support and enhance communication among stakeholders in AqGR?

- Yes
- No

If yes, please briefly describe the network or networks.

15.1 Is your country a member of regional or global network supporting and enhance communication on AqGR?

- Yes
- No

If yes, please briefly describe the networks of which the country is a participant.

Process indicator P4.SP3.P1. Extent of countries with national legislations covering the management of aquatic genetic resources.

16. Does your country have national legislation that explicitly references AqGR?

- Yes
- No

If yes, please briefly summarise the strategy or strategies covering AqGR?

16.1 Does your country have legislations that include the conservation, sustainable use and development of aquatic genetic resources in aquaculture?

- Yes, since **before the adoption** of the GPA
- Yes, legislations put in place or updated **after the adoption** of the GPA
- No, but **action is planned** and **funding identified**
- No, but **action is planned** and **funding is sought**
- **No**

Please provide further details.

Process indicator P4.SP4.P1. Extent of integration of international and regional agreements/instruments into national policies and/or strategies on AqGR

17. Please list the international and regional agreements and instruments that your country integrated into national strategies, policies and legislations?

International instrument/agreement ratified or joined by country.	Main national policies, strategy or legislation into which instrument is integrated
Convention on Biological Diversity	
Nagoya protocol	
Cartegena protocol	
Global Plan of Action for AqGR	
IUCN	
CITES	
Others (please provide details)	

Process indicator P4.SP5.P1. Extent of countries with national institutions including NFPs, established or strengthened.

18. Does your country have a designated authority institution with responsibility for monitoring the status of AqGR?

- Yes, **there is a responsible authority**/institution.
- No, but **action for its allocation/establishment** of responsibility **has been taken**
- No, **but action is planned**
- **No**

18.1 Does your country have a current FAO National Focal Point for AqGR?

- Yes
- No

Process indicator P4.SP6.P1 Extent of countries/regions with institutions for characterization, inventory and monitoring of AqGR, intersectoral coordination, education and research

19. Has your country clearly identified institutions with responsibility for education and research related to conservation, sustainable use and development of AqGR?

- Yes, specific institutions have been identified and **their roles identified**, agreed and/or coordinated
- Yes, we have institutions that play a role in education and research on AqGR but specific **roles have not been identified**, agreed or coordinated
- Yes, we have institutions that play a role but their **capacity and roles are unknown**

- We **do not have adequate institutional capacity** for education and research on AqGR
- There is **no national capacity** for education and research on AqGR

Process indicator P4.SP7.P1 Existence of legislative, administrative or policy measures on access and benefit-sharing, developed in consultation with (i) stakeholders using AqGR and associated traditional knowledge for research and development and (ii) Indigenous Peoples and local communities

20. Does your country have legislative, administrative or policy measures on access and benefit-sharing of AqGR?

- a. Yes, policy, administrative and legislative measures for ABS of AqGR is **fully developed**
- b. Policy, administrative and legislative measures for ABS of AqGR exists but are **not fully developed**
- c. Policy, administrative and legislative measures for ABS of AqGR is **under development**
- d. There are **no policy, administrative or legislative measures** governing ABS of AqGR **but they planned**
- e. There are **no policy, administrative or legislative measures** and **no plans** for their development have been made

Please provide further details on related existing measures.

20.1. Existing policy, administrative and legislative measures were developed in consultation with relevant stakeholders?

- Yes
- No

Please provide further details on related existing measures.

20.2 Traditional knowledge was considered in the development of existing policy, and administrative and legislative measures were developed in consultation with relevant stakeholders?

- Yes
- No

Please provide further details on related existing measures.

20.3 Existing policy, administrative and legislative measures were developed in consultation with indigenous people and local communities?

- Yes
- No

Please provide further details on related existing measures.

ON THE IMPLEMENTATION AND FINANCING OF THE GLOBAL PLAN OF ACTION FOR AQUATIC GENETIC RESOURCES

21. Has your country taken action towards the implementation of the Global Plan of Action?

- Yes,
- Not yet but action is planned
- No

Priority Area	Actions taken
Inventory, characterization and monitoring	
Conservation and sustainable use of AqGR	
Development of AqGR for aquaculture	
Policies, institutions, capacity building	

22. Finally, is there any funding applied to the implementation of the Global Plan of Action on aquatic genetic resources in your country?

- Yes, **international and national funding has been secured** to support implementation
- Yes, **international funding has been secured** to support implementation
- Yes, **national funding has been applied to** support implementation
- **No funding** is yet secured for implementation, but it is planned
- No funding is available or planned