



COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 4 of the Provisional Agenda

INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON AQUATIC GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Fourth Session

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DRAFT INDICATORS 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

At the initiative of the Commission on Genetic Resources for Food and Agriculture,¹ the Council, at its 168th Session in December 2021, adopted the Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture (Global Plan of Action).² According to the Global Plan of Action, “[m]onitoring the implementation of the Global Plan of Action is crucial and efforts will be made to establish adequate indicators for this purpose.”³

This document proposes indicators for measuring progress in relation to all four priority areas of the Global Plan of Action. The proposed indicators fall into two different categories: resource indicators measuring the status of AqGR at national, regional and global level, as reflected in the data contained in AquaGRIS; and process indicators that relate to national, regional and global processes concerning the management of AqGR. More information on the development and proposed use of the indicators, including the timeline for monitoring and reporting, is provided in the document *Monitoring the implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture*.⁴

¹ CGRFA-18/21 Report, paragraph 58.

² CL 168/REP, paragraph 38a.

³ FAO. 2022. Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture. Commission on Genetic Resources for Food and Agriculture. Rome. <https://doi.org/10.4060/cb9905en>

⁴ CGRFA/WG-AqGR-4/23/4/Rev.1

TABLE OF INDICATORS INCLUDING HEADLINE (H) INDICATORS, RESOURCE INDICATORS AND PROCESS INDICATORS

Priority Area/Strategic Priority	Long term goal/ strategic priority goal	Indicator	Type of indicator	Means of verification	Data source
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 an information system	Resource	Quantification of number of national accessions (species, primary and secondary farmed types)	AquaGRIS
SP 1.1: 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.SP1.P1 Extent of development of national registries of AqGR	Process	Number of AqGR registries reported by countries	National questionnaire
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	Process	Number of conservation programmes reported by countries and number of species covered by such programmes	National questionnaire
		P2.H2 Extent of species with genetic management plans applied	Process	Number of species and farmed types for which genetic management plans are implemented within seed supply systems	National questionnaire
SP 2.1: Identify wild relatives of AqGR most at risk (e.g. through an	<i>Wild relative genetic resources conserved as reservoirs of genetic</i>	P2.SP1.P1 Extent of wild stocks being monitored	Process	Number of species for which countries report that the threat status is being monitored in the wild	National questionnaire

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AqGR information system) and ensure that they are managed sustainably and that appropriate conservation measures are implemented where necessary, nationally and regionally	<i>diversity and local/global extinction of wild relative species prevented</i>	P2.SP1.P2 Extent of species with monitoring of the genetic status of wild stocks	Process	Number of species for which monitoring of genetic status occurs	National questionnaire
		P2.SP1.R1 Number and proportion of wild stocks subject to conservation measures	Resource	Number and proportion of wild stocks subject to conservation	AquaGRIS
		P2.SP1.R2 Extent of local extinctions of wild stocks of cultured species	Resource	Number of national extinctions of cultured species recorded	AquaGRIS and IUCN
		P2.SP1.R3 Extent of cultured species listed by IUCN's at risk categories	Resource	Proportions of species listed under national Red Lists classified as Near Threatened, Vulnerable, Endangered and Critically Endangered	AquaGRIS and IUCN
		P2.SP1.R4 Average effective population size of farmed types	Resource	Average effective population size for strains, varieties and captive propagated farmed types	AquaGRIS
		P2.SP1.R5 Extent of farmed types and wild stocks subject to <i>ex situ</i> conservation measures	Resource	Number and proportion of wild stocks and primary farmed types subject to <i>ex situ</i> conservation measures	AquaGRIS
		P2.SP1.R6 Extent of farmed types and wild stocks subject to <i>in situ</i> conservation measures	Resource	Number and proportion of wild stocks and primary farmed types subject to <i>in situ</i> conservation measures	AquaGRIS
		P2.SP1.R7 Average effective population size of wild stocks	Resource	Average effective population size for wild stocks	AquaGRIS
SP 2.2: Anticipate the current and future impacts of environmental change, including climate change, on AqGR and respond accordingly	Impacts of environmental change on AqGR and wild relatives effectively monitored, and conservation and mitigation measures implemented	These questions will be covered in the Climate Change questionnaire	Process		National questionnaire

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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 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 as a resource for aquaculture</i>	P2.SP3.P1 extent of consultation on <i>in situ</i> conservation on AqGR in the preparation and/or review of fisheries management and ecosystem-based management plans	Process	Number of countries reporting involvement of experts on <i>in situ</i> conservation of AqGR in development/review of fisheries management and ecosystem-based management plans	National questionnaire
		P2.SP3.P2 Extent of consideration of threatened AqGR in fisheries management and ecosystem-based management plans	Process	Number of countries reporting plans that support <i>in situ</i> conservation of threatened AqGR	National questionnaire
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.R1 Extent of <i>ex situ</i> conservation for AqGR	Resource	Number and proportion of AqGR (wild stocks and farmed types) conserved in <i>ex situ</i> in gene banks	AquaGRIS
		P2.SP4.R2 Extent of developed farmed types (i.e. strains or varieties) lost	Resource	Number of strains or varieties of farmed types which are no longer cultured	AquaGRIS
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 Proportion of native and non-native species and farmed types	Resource	Number and proportion of native / non-native species and farmed types cultured	AquaGRIS
		P2.SP5.R2 Extent of primary farmed types under active genetic management	Resource	Number and proportion of primary farmed types under some form of active genetic management	AquaGRIS
		P2.SP5.P1 Extent of species with monitoring of genetic status	Process	Number of species and farmed types for which monitoring of genetic status is implemented within seed supply systems	National questionnaire
SP 2.6: Safely manage and control the use and exchange of AqGR, taking into account	<i>Farmed types safely exchanged and used</i>	P2.SP6.R1 Proportion of native and non-native species and farmed types exchanged	Resource	Number and proportion of native and non-native species and farmed types exchanged by countries	AquaGRIS

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national and international instruments, as applicable		P2.SP6.P1 Extent of risk management plans taking into account the exchange of AqGR	Process	Number of countries reporting risk assessment against introduction of potentially invasive AqGR	National questionnaire
		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	National questionnaire
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	AquaGRIS
		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 and from secondary farmed types	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	AquaGRIS
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	National questionnaire

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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	Number of people completing FAO training. on genetic management and improvement.	National questionnaire
			Process	Number of graduate and post-graduate training programmes incorporating aspects on AqGR management and improvement,	National questionnaire
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 the implementation of AqGR related policy or strategy	Process	Number of countries reporting the existence of designated authorities dedicated to implementation of policy/strategy on AqGR	National questionnaire
SP 4.1: Develop or revise, implement and monitor strategies and policies for the conservation, sustainable use and development of AqGR in cooperation with relevant stakeholders	<i>Dedicated policies or national strategies addressing the conservation, sustainable use and development of AqGR are implemented and implementation is monitored</i>	P4.SP1.P1 Extent of countries with national policies or strategies relating to conservation, sustainable use and development for AqGR	Process	Number of countries reporting the existence of national policies or strategies	National questionnaire
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	<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 / regional networks reporting on awareness raising of the importance of AqGR and AqGR stakeholders	National questionnaire

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local communities, youth and women, play in the conservation, sustainable use and development of AqGR					
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 legislations covering management of AqGR	Process	Number of countries reporting the existence of national legislation	National questionnaire
		P4.SP3.P2 Extent of countries with risk management procedures for introduction and exchange of AqGR	Process	Number of countries reporting the existence of risk management procedures/protocols in place for managing risks of AqGR exchange	National questionnaire
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 strategies or policies	Process	Number of international agreements reported by countries as incorporated into national strategy or policy on AqGR.	National questionnaire
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	National institutions, including NFPs, established or strengthened	P4.SP5.P1 Extent of countries with national institutions/National Focal Points for AqGR	Process	Number of countries having national focal points for AqGR and number of countries having institutions with recognised responsibility for planning, implementing and monitoring AqGR	National questionnaire
SP 4.6: Establish or strengthen national and regional institutions for characterization, inventory, and	Institutions for education and research established or strengthened and intersectoral coordination enhanced	P4.SP6.P1 Extent of countries/regions with institutions for characterization, inventory, and monitoring of AqGR,	Process	Number of national and regional institutions per country/region	National questionnaire

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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		intersectoral coordination, education and research			
SP 4.7: Facilitate access to and the fair and equitable sharing of benefits arising from the use of AqGR	<i>Adequate policies and measures developed or adapted and implemented, reflecting the distinctive features of AqGR and associated traditional knowledge and the species role of AqGR and traditional knowledge associated with them for food security</i>	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 (IPLCs)	Process	Number of countries having consulted relevant stakeholders and IPLCs in the development of access and benefit-sharing measures applying to AqGR and associated traditional knowledge.	National questionnaire