E

联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura | منظمة الأغذية والزراعة للأمم المتحدة

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 11.2 of the Provisional Agenda

Nineteenth Regular Session

Rome, 17–21 July 2023

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

TABLE OF CONTENTS

I. INTRODUCTION

1. At its Eighteenth Regular Session, the Commission on Genetic Resources for Food and Agriculture (Commission) highlighted the need for the development of quantifiable indicators for monitoring the implementation of the *Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources* (Global Plan of Action).[1] It requested that these be incorporated into the global information system for aquatic genetic resources (AquaGRIS) under development by FAO, as appropriate.[2]

2. This document proposes resource and process indicators that National Focal Points for aquatic genetic resources (AqGR) should report on, at regular intervals, with a view to: (i) address the recognized lack of information on AqGR; and (ii) effectively monitor the implementation of the Global Plan of Action.

3. Furthermore, the document proposes, for consideration by the Commission, a timeline for monitoring and reporting on the implementation of the Global Plan of Action, synchronized with the timeline for the preparation of *The Second Report on the State of the World's Aquatic Genetic Resources for Food and Agriculture* (SoW-AqGR).

II. INDICATORS FOR MONITORING THE IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION

4. Monitoring the status of AqGR and the implementation of policy responses to the SoW-AqGR, including the Global Plan of Action, are key elements of the Global Plan of Action itself (strategic priorities 1.2; 1.3; 4.1; 4.5; 4.6). In developing indicators for the implementation of the Global Plan of Action, FAO reviewed the four priority areas and considered how progress could realistically be assessed against the long-term goals of each priority area and the more specific goals related to the 21 strategic priorities. In doing so, FAO took into consideration data collected through AquaGRIS and data available from other existing information resources, with a view to avoiding double-reporting and minimizing the reporting burden for National Focal Points.

5. With the proposed set of resource and process indicators, a dual monitoring system is suggested: countries will report on farmed types and wild stocks of AqGR through AquaGRIS, and on any relevant activities taken to implement the Global Plan of Action through a stand-alone questionnaire. Thus, the proposed indicators fall into two different categories: **resource indicators** measuring the status of AqGR at national, regional and global levels, as reflected in the data contained in AquaGRIS; and **process indicators** that relate to national, regional and global processes concerning the management of AqGR on which countries report through the stand-alone questionnaire. Resource or process indicators for the high-level long-term goals for each priority area are referred to as **headline indicators**. Priority areas 2 (conservation and sustainable use) and 3 (development of genetic resources for aquaculture) each have two headline indicators covering key aspects of their long-term goals. Indicators were identified for nearly all strategic priorities and, for some strategic priorities, multiple indicators are proposed.

6. Presently, indicators of the status of AqGR are generally not considered in monitoring progress towards the Sustainable Development Goals (SDGs). The ongoing review of SDGs and further work to fully implement and review the effectiveness of the monitoring framework for the Kunming-Montreal Global Biodiversity Framework,[3] in particular Target 4, may provide an opportunity for these indicators to be aligned with the indicators developed for monitoring the implementation of the Global Plan of Action and for greater consideration of the status of AqGR within these international instruments.

7. *Annex I* to this document contains the proposed headline, resource and process indicators, following their review and revision by the Commission's Intergovernmental Technical Working

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

[2] CGRFA-18/21/Report, paragraph 59.

[3] CBD/COP/DEC/15/4.

Group on Aquatic Genetic Resources for Food and Agriculture (Working Group).[4] Guidelines explaining in detail how data should be entered into AquaGRIS and how the questionnaire should be completed could be developed, in line with the Working Group's recommendation. The Working Group also recommended that data collection in AquaGRIS and through the questionnaire to be developedfor the process indicators be integrated, to the extent feasible, with data collection for the preparation of *The Second Report on the State of the World's Aquatic Genetic Resources for Food and Agriculture*, to avoid double-reporting.[5]

Resource indicators

8. The resource indicators will be reported directly through AquaGRIS. Questions in AquaGRIS used for data collection on aquaculture species and their farmed types and wild relatives will be adapted so that the data entered into AquaGRIS can be aggregated/quantified to provide indicators of the status of AqGR at the respective levels. Once finalized, the AquaGRIS online data-query interface will allow for the generation of reports on the status of the resource indicators.

9. Resource indicators are proposed for strategic priorities within priority areas 1, 2 and 3 (inventory, characterization and monitoring, conservation and sustainable use and development of AqGR, respectively) and include three headline indicators.

10. Training in the use of AquaGRIS will be conducted following the release of the full version by September 2023, through a series of virtual webinars and, where feasible, in-person workshops.[6]

Process indicators

11. National Focal Points will be invited to report on the process indicators by completing a qualitative questionnaire that will be developed upon finalization of the indicators. The questionnaire will allow for scoring (e.g. "yes, exists already" – "yes, under development" – "no, but development is planned" – "does not exist and is not planned"). Prior to its first use, the questionnaire will be tested by National Focal Points to identify difficulties in answering the questions and to identify and remove inconsistencies and ambiguities. As requested by the Commission,[7] the questionnaire will be complemented by questions related to climate change.[8]

12. Process indicators, including three headline indicators, are proposed covering strategic priorities in all four priority areas.

III. DATA COLLECTION AND REPORTING TIMELINES

13. Data collection for AquaGRIS will be coordinated through the National Focal Points for AqGR and involves the collection of data at the level of the species, farmed types and wild stocks. Data will be entered via a web-based data-entry interface or alternatively via an MS Excel-based questionnaire for offline data collection.

14. The data gathered and stored in AquaGRIS are focused on and specific to the status of sustainable management of farmed types and wild relatives of aquaculture species. While AquaGRIS is comprehensive and relatively broad in scope, it currently does not cover all issues relevant to the implementation of the Global Plan of Action, particularly those under priority area 4 (policies, institutions and capacity building). These issues are therefore addressed by the separate questionnaire focusing on process indicators.

15. For resource indicators, it is suggested that National Focal Points be invited to update national information in AquaGRIS every two years with an initial round of data entry anticipated for 2025. Based on the data submitted through AquaGRIS, FAO will compile reports on the status and trends of AqGR and report to the Working Group and the Commission at their biennial sessions.

[4] CGRFA-19/23/11.1, paragraph 24.
[5] CGRFA-19/23/11.1, paragraph 21.
[6] See CGRFA-19/23/11.2.1.
[7] CGRFA-18/21/Report, paragraph 19.
[8] CGRFA-19/23/4, *Appendix I*.

16. For process indicators, it is suggested that National Focal Points be invited to complete the questionnaire every five years, with the first questionnaire anticipated to be circulated in 2025 or 2026. Based on responses received to the questionnaires, FAO will compile progress reports on the implementation of the Global Plan of Action every five years for the Working Group and the Commission. Every second report on process indicators (i.e. once per decade) will feed directly into the next global assessment.

17. Given the timeline for finalization of the indicators and monitoring system, *The Second Report on the State of the World's Aquatic Genetic Resources for Food and Agriculture* may therefore be delayed and the Multi-Year Programme of Work[9] may need to be adjusted accordingly.

18. In addition, FAO will report on its activities in support of the implementation of the Global Plan of Action by countries to every session of the Working Group and the Commission.

IV. NEXT STEPS

19. Following the review by the Working Group and the Commission, the indicators and their related means of verification should be reviewed by the Committee on Fisheries Advisory Working Group on Aquatic Genetic Resources and Technologies. Subsequently, National Focal Points for AqGR and other relevant stakeholders could be invited to provide feedback on the indicators and the timeline for country reporting, including through written procedure and/or regional virtual workshops, as recommended by the Working Group.[10]

20. The review and refinement period will also present an opportunity to review the indicators for the monitoring of the Global Plan of Action in the context of the indicators endorsed for the monitoring of the CBD Kunming-Montreal Global Biodiversity Framework.

21. Following these further consultations, a finalized set of indicators, a timetable for monitoring and reporting and a questionnaire to cover the process indicators could be presented to the next sessions of the Working Group and the Commission, for their consideration.

V. GUIDANCE SOUGHT

22. The Commission may wish to:

(i) take note of the draft indicators and timeline proposed for monitoring the implementation of the Global Plan of Action;
(ii) recommend that FAO hold further consultations, including of the Committee on Fisheries Advisory Working Group on Aquatic Genetic Resources and Technologies and of the National Focal Points for AqGR, on the proposed indicators and the timeline for country reporting, with a view to provide the revised indicators and timeline to the next sessions of the Working Group and Commission, for their consideration;
(iii) recommend that FAO prepare guidelines explaining in detail how data should be entered into AquaGRIS and how the questionnaire focusing on process indicators should be completed;
(iv) recommend that FAO take the steps necessary to allow reporting on all the resource indicators through AquaGRIS, as appropriate;
(v) recommend that the questionnaire focusing on process indicators be integrated, to the extent feasible, with data collection for the preparation of *The Second Report on the State of the World's Aquatic Genetic Resources for Food and Agriculture*, to avoid double-reporting;
(vi) recommend that FAO's activities in support of the implementation of the Global Plan of Action are reported to every session of the Working Group and the Commission; and

note the critical importance of long-term support and resourcing of AquaGRIS and recommend that the Commission and FAO endeavour to secure long-term support for the management of AquaGRIS.

[9] CGRFA-19/23/12, *Appendix I*, *Annex 1*.
[10] CGRFA-19/23/11.1, paragraph 19.

ANNEX I

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

Priority Area/Strategic Priority	**Long-term goal/ Strategic Priority goal**	**Indicator**	**Type of indicator**	**Means of verification**	**Data source** (code numbers refer to the relevant questions in the AquaGRIS questionnaire)
Priority Area 1: Inventory, characterization and monitoring	***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***	**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)**	**AquaGRIS**
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	*Long-term funding secured for the development and maintenance of an appropriate information system for AqGR*	P1.SP3.P1 Extent of development of national registries of AqGR	Process	Number of AqGR registries reported by countries	National questionnaire

diversity of farmed types and stocks)					
Priority Area 2: Conservation and sustainable use	***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***	**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 AqGR information system) and ensure that they are managed sustainably and that appropriate conservation measures are implemented where necessary, nationally and regionally	*Wild relative genetic resources conserved as reservoirs of genetic diversity and local/global extinction of wild relative species prevented*	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
		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 Extent of wild stocks subject to conservation measures	Resource	Number and proportion of wild stocks subject to conservation	AquaGRIS *(GS9)*
		P2.SP1.R2 Extent of local extinctions of wild stocks of cultured species	Resource	Number of national extinctions of wild stock of cultured species recorded	AquaGRIS *(S16.1)* (extinct or extinct in wild
		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,	AquaGRIS *(S16.1)*

				Endangered and Critically Endangered	
		P2.SP1.R4 a & b Extent of wild stocks subject to *ex situ* conservation measures	Resource	Number and proportion of wild stocks subject to *ex situ* conservation measures	AquaGRIS *GS9 (*ex situ *option)*
		P2.SP1.R5 a & b Extent of wild stocks subject to *in situ* conservation measures	Resource	Number and proportion of wild stocks subject to *in situ* conservation measures	AquaGRIS *GS9 (*in situ *option)*
		P2.SP1.R6 Average effective population size of wild stocks	Resource	Average effective population size for wild stocks	AquaGRIS *GS11*
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
SP 2.3: **Actively incorporate *in situ* conservation of AqGR in the development of fisheries management and ecosystem-based management plans, particularly for threatened species**	*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*	P2.SP3.P1 extent of consultation on *in situ* 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 *in situ* conservation of AqGR in development/review of fisheries management and ecosystem-based management plans	National questionnaire

	species increased, including as a resource for aquaculture	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 *in situ* conservation of threatened AqGR	National questionnaire
SP 2.4: Promote *ex situ* conservation for AqGR, including wild relatives and threatened species	*Threatened and important AqGR conserved in* ex situ *gene banks in support of aquaculture development and* in situ *conservation*	P2.SP4.R1a & b Extent of *ex situ* conservation for threatened wild stocks (a) and farmed types (b) AqGR	Resource	Number and proportion of AqGR (threated wild stocks (a) and farmed types (b) conserved in *ex situ* in gene banks	AquaGRIS *GS9 and PF23.*
		P2.SP4.R2 Extent of developed farmed types (i.e. strains or varieties) lost	Resource	Number of strains or varieties of farmed types that are no longer cultured or extinct	AquaGRIS *PF5 for strains and varieties*
SP 2.5: Improve sustainable use of domesticated farmed types through improved management of genetic diversity	*Productivity improved through retention of genetic diversity and genetic integrity of species and farmed types in seed supply systems*	P2.SP5.R1 a & b Ratio of native to non-native species (a) and farmed types (b)	Resource	Number and proportion of native/non-native species and farmed types cultured	AquaGRIS *S4 for species, PF9.2 for FTs.*
		P2.SP5.R2 a & b 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 *Number of strains and varieties plus PF 15.1 for CP*

		P2.SP5.R3 Average effective population size of farmed types	Resource	Average effective population size for strains, varieties and captive propagated farmed types	AquaGRIS *PF16 for S, V & CP*
		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 system	National questionnaire
SP 2.6: Safely manage and control the use and exchange of AqGR, taking into account national and international instruments, as applicable	*Farmed types safely exchanged and used*	P2.SP6 R1 Extent of non-native species that present risk of harm	Resource	Number and proportion of cultured non-native species presenting risk of harm	AquaGRIS *S4*
		P2. SP6.R2 Extent of species introductions for which risk assessments conducted	Resources	Number and proportion of introduced species for which risk assessments were conducted prior to introduction	AquaGRIS *S4.2*
		P2.SP6.R3a&b Extent of farmed types exchanges (introduced – a and exported - b)	Resource	Number and proportion of farmed types introduced (a) and exported (b)	AquaGRIS PF9.2 and SF10 for introductions (a) and PF24 and SF31 for exports
		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	***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***	**P3.H1 Extent of availability of developed farmed types in countries**	**Resource**	**Number of strains, varieties and captive propagated farmed types under improvement**	**AquaGRIS** ***Total number of strains, varieties and CP FTs PF15.1***
		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**	**AquaGRIS** ***PF4 for each primary FT***
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	*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*	P3.SP1.R1 Extent of farmed types developed using selective breeding	Resource	Number of selectively bred farmed types	AquaGRIS *PF14 selective breeding*
SP 3.2: Establish national and/or regional development strategies and programmes for	*Countries and intergovernmental organizations develop and implement strategies for the development of*	P3.SP2.P1 Extent of national and regional strategies including development of AqGR	Process	Number of countries reporting national and/or regional strategies	National questionnaire

species and farmed types, responsive to market and societal needs, to unlock the full potential of AqGR	*key AqGR based on understanding of risks and benefits of different approaches*			incorporating development of AqGR for aquaculture	
SP 3.3: Raise capacity of stakeholders in aquaculture to develop improved farmed types	*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*	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
		P3.SP3.P2 Extent of tertiary training in aquaculture genetic management and improvement	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	***Capacity to support sustainable and efficient implementation of AqGR policy that takes into consideration environmental and economic dimensions enhanced through dedicated institutions***	**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	*Dedicated policies or national strategies addressing the conservation, sustainable use and development of AqGR are implemented and implementation is monitored*	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 polices 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 local communities, youth and women, play in the conservation, sustainable use and development of AqGR	*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*	P4.SP2.P1 Extent of countries/regions with networks on AqGR	Process	Number of country/ regional networks reporting on awareness raising of the importance of AqGR among AqGR stakeholders	National questionnaire
SP 4.3: Support the responsible introduction, exchange and use of AqGR, including through appropriate risk assessments, adequate policies and their	*Responsible use of AqGR incorporated into national legislation*	P4.SP3.P1 Extent of countries with national legislation 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	Process	Number of countries reporting the existence of risk management procedures/protocols in	National questionnaire

effective implementation		procedures for introduction and exchange of AqGR		place for managing risks of AqGR exchange	
SP 4.4: Implement existing international agreements and instruments relevant to the conservation, sustainable use and development of AqGR	*International and regional agreements fully implemented in relation to AqGR, taking into account the specific needs of the sector*	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 recognized responsibility for planning, implementing and monitoring AqGR	National questionnaire
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,	*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, intersectoral coordination, education and research	Process	Number of national and regional institutions per country/region	National questionnaire

characterization and genetic improvement					
SP 4.7: Facilitate access to and the fair and equitable sharing of benefits arising from the use of AqGR	*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*	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	Process	Number of countries having consulted relevant stakeholders and Indigenous Peoples and local communities in the development of access and benefit-sharing measures applying to AqGR and associated traditional knowledge	National questionnaire