May 2014

CENTRAL ASIAN AND CAUCASUS REGIONAL FISHERIES AND AQUACULTURE COMMISSION

THIRD SESSION

2-4 June 2014
Baku, Azerbaijan

REPORT ON TECHNICAL ADVISORY COMMITTEE: RECOMMENDATIONS AND WORKPLAN FOR THE INTERSESSIONAL PERIOD 2014-2015

INTRODUCTION

1. The aim of this document is to report on the activities of Technical Advisory Committee (TAC) which were undertaken during the intersessional period. The document also summarizes the advice, recommendation and conclusions of TAC. The document needs to be read in conjunction with the document CACFish:II/2013/Inf.4 (Report of the Second Session of TAC).

ACTIVITIES OF THE TECHNICAL ADVISORY COMMITTEE (TAC)

2. During the intersessional period, the following two activities were carried out in accordance with the respective work programme of TAC approved by CACFish at its Second Session (16-17 April 2013, Dushanbe, Tajikistan): Expert Consultation Meeting on Fish Breeding and Broodstock Management; and the Second Session of TAC.

3. Expert Consultation Meeting on Fish Breeding and Broodstock Management (10-12 December 2013, Istanbul, Turkey) Expert from both from CACFish Member States (i.e. Armenia, Kyrgyzstan, Tajikistan, and Turkey) and Invited States, namely Azerbaijan (who became CACFish Member in March 2014,) Ukraine and Uzbekistan joined the Meeting.

4. The Second Session of TAC was organized in Bishkek, the Kyrgyz Republic from 21 to 23 April 2013. The Session was attended by 5 Member States: Azerbaijan, Armenia, Kyrgyzstan, Tajikistan, and Turkey. The Session was also attended by the representatives of the following invited non-CACFish Member States: Georgia, Kazakhstan, and Ukraine.

RECOMMENDATIONS AND ADVICE OF THE TECHNICAL ADVISORY COMMITTEE (TAC)

5. The Second Session of TAC produced the following recommendations per the thematic areas that were discussed, taking into consideration the framework and key issues highlighted by the background documents prepared by CACFish Secretariat for the Session.

Inland fisheries stock assessment

6. It was noted that both evidence and observations indicate that there exists significant uncertainty with the abundance of inland fish stocks occurring in CACFish Area while the reported fishery landing data and limited surveys often show fluctuations. It was further noted that developing Member States lacks fish stock assessment surveys. Limited assessment undertaken by the other Members, on the other hand generally are not undertaken on a regular basis. Inland fisheries stock assessment was identified one of crucial working areas to which TAC needs to pay attention. In this context, the following roles were suggested, while duly recognizing that a number of associated outstanding imperatives it has to undertake in order to achieve these roles: (i) promoting of enabling frameworks for generation of scientific advice for decision-makers and (ii) technical supervision in the development of region-wide protocols, guidelines, methods for stock assessment. Use of modern assessment techniques (i.e. hydroacoustic assessment methods) in large inland water bodies were found useful.

7. Identification and standardisation of methods; development of frameworks for data collection and analysis; regular research on aquatic ecosystems and habitats; population dynamics and stock assessment were identified by TAC as major areas of regional research.

8. Given the importance of having updated and reliable data on stock assessment on an interdisciplinary basis in the development of management options, TAC suggested the following broad-range actions which are associated with capacity building:

- Promotion of the systematic implementation and monitoring of fishery independent surveys, including those of biological and market,
- Promotion of implementation and monitoring of systematic fishery-independent research surveys and associated ecosystem/habitats assessments
- Promotion of data analysis,
- Inventory of the status of stock assessments, including techniques, methods, protocols and reference points used,
- Development of standard protocols and technical guidelines for classified water bodies,
- Demonstration or conducting of pilot studies on the techniques for the classified water bodies,
- Establishment of database for selected large water systems,
- Submission of findings of stock assessment research to TAC for their evaluation and generation of scientific advice,
- Consideration of scientist advice as a basis for determination of annual total and total allowable catches for given species,
- Implementation of assessment studies for at-risk species and aquatic ecosystems, including development of risk classification protocols for aquatic non-native species,

- Promotion of socio-economic research in fisheries,
- Promotion of development and implementation of a strategic management regime based on scientific advice and precautionary approach,
- Regional capacity building for research and data collection and analysis,
- Promotion of stakeholder involvement in fisheries decision-making,
- Establishment of a regional information system on the status of fish stocks,
- Optimization of research efforts
- Establishment and development of networking between research institutions and experts involved in stock assessment and ecosystem/habitat assessment activities.

9. The following prioritised research needs were highlighted by the TAC:

- Prioritization of standardized stock assessment methods for classified water systems
- Identification of rapid, direct and cost-effective assessment methods
- Development of national and regional cooperation mechanisms for stock assessment;
- Regular fishery-dependent and independent data collection,
- Population dynamics and stock assessment, and
- Research on ecosystems/habitats.

Regional strategic principles for climate change

10. Climate change affects in fisheries were largely linked to global climate-related risks in the context of CACFish Area. TAC noted that t the geographical distribution of fish stocks, life cycles of fish, and dynamics of aquatic ecosystems at global level are increasingly being affected by climate changes. TAC agreed that climate change would pose direct and indirect risks to fisheries and aquaculture in the CACFish Area. Attention was drawn to water level fluctuations in large water bodies and climate-related lake shrinkages in the Area. Increased water usage efficiency; usage of recirculation systems in fish farming; use of innovative technologies; integrated water resource management and planning were determined as likely measures on the mitigation of climate changes in fisheries and aquaculture. Uncertainties in climate change projections and scenarios were also underlined.

11. TAC identified the following prioritized research needs:

- An inventory of status of research on climate change in fisheries in CACFish area;
- Use of state-of-the-art statistical methods and modelling;
- Research on water level changes, fish migration patterns and dynamics of inland ecosystems;
- Collection of time series data, and
- Development/application of practical models for estimation of climate change impacts on fisheries.

12. TAC recommended the following actions for consideration of CACFish:

- Development of national and regional mitigation and adaptation strategies;
- Analysis of available information on climate change in CACFish area;

- Optimization of research efforts by regional networking;
- Establishment of regional data collection systems and databases of relevance to climate chance in fisheries;
- Developments of guidelines and dissemination of lessons learned from other regions;
- Analysis and projections for vulnerability of communities and key ecosystems, and
- Applications of geographic information systems.

Framework for a regional strategy and associated principles for aquatic animal health management in CACFish area

13. TAC underlined a need for development of risk-based health management strategies for prevention, control and eradication of diseases of fish and other aquatic animals. In the management of aquatic animal health, the use of a proactive and risk-based preventive approach instead of reactive disease treatment was suggested. Control and monitoring of trade of live fish and shellfish and fish and fishery were also seen as an action area. TAC approved the proposed framework for a regional strategy and associated principles for aquatic animal health management in CACFish area. The approved framework is provided in the Appendix I.

14. TAC identified a number of needs. Included are: capacity building; formulation and implementation of a Regional Aquatic Animal Health Capacity and Performance Survey, strengthening frameworks for networking, resourcing, data collection and exchange, alert systems. Rapid diagnosis of fish diseases was identified as the most prioritized research need.

15. TAC recommended the following actions:

- Enforcement of the framework for a regional strategy and associated principles for aquatic animal health management in CACFish area,
- Development and implementation of technical measures and applications (i.e. certification systems for fish introductions; certification in the exportation and importation of live fish, seed and eggs) and technical guidelines for these trade-based measures, and
- Networking among research institutions and researchers.

Fish breeding and broodstock management

16. The recommendations of the Expert Consultation Meeting on Fish Breeding and Broodstock Management, referred to in paragraph 3, served as the basis for the discussions which often addressed needs for, among others, capacity building, technical guidelines and protocols. Broodstock management was seen one of outstanding regional challenge while enforcement of regulatory rules for hatcheries was suggested as a measure for mitigation of risk associated with the applications of genetic techniques in fisheries and aquaculture. Establishment of a regional cryogenic gene bank or maintenance of genes of fish from the Central Asian and Caucasus Region in an existing bank was suggested. A need for implementation of strict regulatory rules for hatcheries was underlined.

17. TAC identified the following prioritized research needs:

- Implementation of biotechnological applications,
- Fish breeding, and
- Genetic characterisation of fish stocks.

18. The recommendations produced by the Expert Meeting were adopted by TAC as it stands:

- Broodstock management should be an integrated part of the National Fisheries and Aquaculture Policy,
- Promotion of production and trade of high quality and disease free seeds and healthy fry in the CACFish-area,
- Development of a "model hatchery" for the production, conservation and research of cultured species,
- Establishment of a regional database on genetic resources of important cultured species in the CACFish area,
- Establishing and supporting the maintenance of a regional cryobank of sperm for endangered and farmed fish (infrastructure, guidelines and proprietary issues),
- Maintaining of genetic identities of fish lines/strains/species and preventing inbreeding,
- Risk-based regulation for the use of exotic species,
- Productıon/dissemination of technical manuals for broodstock management;
- Practical training for the stakeholders (policy makers, lead fish farmers, etc.) about broodstock management and selective breeding,
- Specialised training for hatchery managers, researchers in cooperation with EU initiatives,
- Technical guidelines for transfer of farmed aquatic genetic resources, and
- Promotion/encouragement of renewal of depleted genetic stocks on the basis of scientific evaluation.

Other issues

19. TAC had a brief discussion on the duration of its Session. The alternative option of having the sessions of TAC every two years (i.e. biennial sesion) were suggested as an option with an aim allocating budget to more technical works. The difficulties in bringing varying types of thematic issues to the agenda of TAC were also addressed. TAC agreed that organization of biennial session would have associated implications for annual session of Commission in which the report and recommendations of TAC constitute a significant bulk.

20. TAC also revised the progress with the 5-year Work Programme of CACFish (2011-2015). Addition of the following items to Regional Work Programme was suggested by TAC: (i) capacity building for modern methodologies for stock assessment; and (ii) preservation of genetic resources.

WORK PROGRAMME FOR 2013-2014 INTERSESSIONAL PERIOD:

21. TAC agreed on the following activities for the 2014-2015 intersesional period:

	Estimated budget (USD)	Time/deadline	Place
Regional workshop on hatchery management	25,000	October 2014	TBD
Third Session of TAC	30,000	February 2015	Kazakhstan
Preparation and dissemination of a practical manual on broodstock management	9,000	February 2015	N/A
Preparation and dissemination of a practical manual on water use and fish disease management	9,000	February 2015	N/A
Development of methodologies for fisheries passport for small water bodies of Kyrgyzstan as a pilot study.	15,000	February 2015	N/A

SUGGESTED ACTION FOR THE COMMISSION

22. In the light of the above considerations, the Commission is invited to review the activities carried out by TAC during the intersessional period and to provide further guidance on next steps.

APPENDIX I:

Framework for a regional strategy and associated principles for aquatic animal health management in CACFish area

(Prepared by J. Richard Arthur and Haydar Fersoy)

Basic Requirements

The basic requirements for successful drafting and adoption of a regional aquatic animal health strategy are:

1) A high level of commonalities among the countries of the region with regard to:
   - aquaculture species and culture systems employed;
   - significant intra-regional trade in aquaculture/fisheries products (particularly in live fry and broodstocks for aquaculture development);
   - similar external trading patterns (commodities, trading partners); and
   - similar aspirations with regard to trade development and market access (e.g. European Union membership or 3rd Country Status)

2) Recognition among senior policy-makers and managers in all participating countries of the benefits to be derived from regional approaches and cooperation

3) Willingness and openness among senior policy-makers and aquatic animal health specialists to collaborate with regional partners in the sharing of information and expertise related to aquaculture, fisheries and aquatic animal health

4) Willingness of participating governments to allocate significant resources (human capacity, budget) to achieving regional goals, recognizing that the returns from such inputs are likely to be far greater than the expenditures.

Approach

The following approach has been developed by the FAO through a series of initiatives and workshops to develop regional aquatic animal health strategies. These include programmes in the Asia-Pacific under FAO Projects TCP/RAS 6714(A) and 9065(A) "Assistance for the Responsible Movement of Live Aquatic Animals" (begun in 1998), in the Middle East under the Regional Commission for Fisheries (RECOFI) in 2007 (RECOFI 2009), in the Pacific Islands and Territories (PICTs) in 2012 via an FAO/SPC Regional Workshop on Aquatic Biosecurity and Aquaculture Data and Statistics in the Pacific Region, held 1-6 October 2012 in Nadi, Fiji (jointly with the Secretariat of the Pacific Community) and in the West Balkans (under a recently approved FAO TCP commencing in 2013).

Framework for a Regional Strategy

A regional strategy can be comprised of the following components:

- Vision
- Purpose

- Guiding Principles
- Major Programmes/Elements
- Projects/Activities

The use of a ***SWOT (Strengths, Weaknesses, Opportunities and Threats) Analysis*** can be useful in defining the components of the strategy and ensuring that workshop participants have a shared perspective.

Similarly, the use of the ***Logical Framework Approach*** is useful in ensuring that all major themes/elements are addressed by appropriate Projects/Activities.

Purpose

The purpose provides a brief statement of why the Strategy is being formulated. As example is:

> *The purpose of the Regional Aquatic Animal Health Strategy is to reduce the risk of aquatic animal diseases impacting on the livelihoods of aquaculture farmers, national economies, trade and human health.*

Vision

The vision provides a shared overview of what the strategy is attempting to achieve. An example of a vision statement is:

> *To develop and maintain up-to-date an aquatic animal health management strategy that will support the sustainable development and management of the aquaculture sector and meet the growing demands for aquatic foods and products that are of high quality, safe, competitively priced and are produced in an socially and environmentally responsible manner with maximum opportunity for profitability in all stages of the aquaculture and fisheries product chain.*

Guiding Principles

The Guiding Principles outline the agreed upon premises upon which development of the regional strategy will be based. The following is an example of a set of Guiding Principles that could be applied to the CAC region:

1) Aquatic animal health management should enable aquaculture to make a positive contribution to the economy through being internationally competitive in the marketplace and economically viable at a national level.

2) Aquatic animal health management measures should facilitate aquaculture to develop in harmony with nature, managing and minimizing transient environmental impacts and avoiding significant, cumulative, long-term or irreversible changes to ecological systems, to cultural remains or to valued landscape and scenery.

3) Aquatic animal health measures should foster strong aquaculturists' links, recognizing and supporting the needs of private-sector aquaculturists and working with community initiatives to manage local environments for mutual benefit.

4) National aquatic animal health programmes should contribute to social, economic and environmental sustainability and embrace the precepts of transparency, integration, coordinated government and fit-for-purpose regulation, partnership and stakeholder

participation, accountability, ethics and regard for animal welfare, and a culture of best practice and continuous improvement.

5) Aquatic animal health is important for economic, social, development and public resource purposes. Collaboration among all stakeholders including governments, public institutions, the private sector and existing aquaculture and fishing industries is important to achieve effective health management.

6) The role of aquatic animal health management is to reduce the risks to aquaculture and wild fish stocks arising from the potential entry, establishment or spread of pathogens and the diseases they cause. This is necessary to protect living aquatic resources, the natural aquatic environment and the aquatic biodiversity in the CAC region and neighbouring regions, countries or territories.

7) Countries may introduce or maintain sanitary measures resulting in a higher level of protection than would be achieved by measures based on the relevant international standards, guidelines or recommendations (e.g. the OIE Aquatic Animal Health Code – OIE, 2013); however, such measures must be justifiable based on science (i.e. risk analysis) and be consistent with the country's appropriate level of protection (ALOP). Control measures applied to movements of aquatic animals within the country must also be consistent with this ALOP.

8) National aquatic animal health strategies and related procedures will adhere to international and regional standards and be harmonized on as wide a basis as possible.

9) The aquaculture sector is encouraged to use preventative measures to limit their exposure to pathogens and disease. Such measures include but are not limited to the use of better management practices (BMPs), health certification, specific pathogen free (SPF) and high health (HH) stocks, biosecurity and vaccination protocols.

10) Health management measures should be effective, practical, cost-effective and utilize readily available resources. These resources will allow the development of appropriate national and regional policies and regulatory frameworks as required to reduce the aquatic animal health risks incorporated in the culture, reproduction and movement of aquatic animals.

11) Access to relevant aquatic animal health capacity (infrastructure and specialized expertise) is crucial for health management of aquatic animals. Collaboration with international and regional organizations will be sought wherever possible to further increase national capacities in aquatic animal health issues.

Major Programmes/Elements

These provide the main components for the regional strategy framework. The regional framework is likely to consist of the following 11 universal elements, which have been developed and used in the formulation of both national and regional aquatic animal health strategies in many parts of the world. Each Programme/Element should include Objectives, Current Status (brief summary) and Key Issues (projects):

1) Policy, Legislation and Jurisdiction
2) List of Pathogens
3) Risk Analysis and Quarantine
4) Diagnostics and Health Certification
5) Surveillance, Monitoring and Reporting

6) Emergency Preparedness
7) Capacity Building
8) Research and Development
9) Information and Communication
10) International Collaboration
11) Resources and Funding

Implementation

Implementation requires preparation of an **Action Plan**. The Action Plan should, within the strategy framework (Elements/Programmes):

- define the projects to be accomplished
- indicate the relative time frames
- identify the milestones and the outputs/deliverables
- estimate the human and financial resources that will be required

The Action Plan should be supported by ***Project Briefs***, which will elaborate the details for each project and which can be used to develop more detailed project planning.