

# EUROPEAN INLAND FISHERIES ADVISORY COMMISSION

## MEETING OF THE EXECUTIVE COMMITTEE

Rome, 21–22 May 2007

### SUMMARY RECORD

#### 1. OPENING OF THE SESSION

The Chairperson of the European Inland Fisheries Advisory Commission (EIFAC), Mr P. Hickley, opened the meeting of the Executive Committee (EXCOM) of EIFAC on 21 May at 09.00 hours. Apologies were received from Mr K. Pinter, first Vice-Chair who was unable to attend the session.

#### 2. PLACE AND DATE OF THE TWENTY–FIFTH SESSION

The twenty-fifth session of EIFAC will be held in Antalya, Turkey, from 20 to 28 May 2008. Mr R. Celebi, who was nominated by the Turkish Government as official focal point for the general organization of the session and symposium, briefed the Committee that the Ministry of Agriculture and Rural Affairs (MARA) will be the host and Hotel Porto Bello in Antalya will be the venue.

The following timetable was agreed upon:

Tuesday, 20 May	Arrival
Wednesday–Saturday, 21–24 May	Symposium
Sunday, 25 May	Excursion
Monday–Wednesday, 26–28 May	EIFAC Session
Thursday, 29 May	Departure

An excursion and various social activities were discussed and agreed upon in principle, with details to be further developed by Mr R. Celebi and other local organizers.

A Letter of Agreement and Memorandum of Understanding between FAO and the Government of Turkey will be drafted and sent to MARA immediately following the Executive Committee meeting.

**Action: R. Al Khafaji**

The Committee requested that a list of official observers be established in accordance with FAO procedures and protocol. A preliminary list is attached as Annex 3. In announcements concerning the Symposium and the EIFAC Session, it should be explicitly stated that these are separate events. Invitations to the Symposium do not entitle people to participate in an official capacity at the Session. Unofficial observers may be present at the Session, but would not be able to make interventions.

**Action: R. Van Anrooy/D. Bartley**

### **3. PREPARATION FOR 2008 THE SYMPOSIUM**

#### **Item 3 for EXCOM report**

The EXCOM discussed the EIFAC Symposium on Interactions between social, economic and ecological objectives of inland commercial and recreational fisheries and aquaculture (Antalya, Turkey, 20–23 May 2008). The Convener of the Symposium will be Mr I. Cowx (United Kingdom) and the Chairperson will be Mr I. Okumuş (Turkey).

The prospectus/call for papers were finalized early 2007 and were sent out in early April to all EIFAC delegates; the prospectus was also placed at the FAO EIFAC portal. Staff of the FAO Subregional Office for Central Asia together with the Focal point for the General Organization of EIFAC Session in Turkey, Mr R. Celebi, visited the venue for the symposium and session, hotel Porto Bello in Antalya (<http://www.portobello.com.tr/>) and agreed that the venue was excellent for the occasion. The Turkish host institution has offered to produce a brochure to promote the symposium and disseminate information about EIFAC and the symposium at Aquaculture Europe 2007, which will be held in Istanbul in October 2007.

In view of the fact that to date no contributions were received and the brochure still has to be prepared, the EXCOM suggested and agreed to extend the deadline for abstracts to 30 November, 2007. The EXCOM further suggested that the Convener and Technical Secretary prepare a one-page promotional message about the symposium for various e-mail distribution lists and websites of partner organizations. Contributions should be 15 minutes in length. Written papers will be peer-reviewed and authors will be instructed to have nearly-completed papers ready for submission at the Symposium. On the EIFAC Web site a guide for authors will be made available to facilitate the formatting and publication of the papers at a later stage.

The symposium will be organized differently from recent EIFAC symposia, as there will be a workshop-type discussion at the end of each session. This discussion will be used to formulate advice on research priorities, policy advice and guidelines.

The EXCOM agreed that selected papers addressing the theme of the symposium and being of an appropriate standard will be published in a special issue of the Blackwell Science journal *Fisheries Management and Ecology*. All presented papers will also be published in the new series of FAO Fisheries Proceedings.

**Action: I. Cowx/R. Celebi/I. Okumuş/R. van Anrooy**

### **4. PROCEEDINGS OF THE 2006 SYMPOSIUM ON HYDROPOWER, FLOOD CONTROL AND WATER ABSTRACTION: IMPLICATIONS FOR FISH AND FISHERIES**

Mr Marmulla, Secretary of the 2006 EIFAC Symposium on Hydropower, Flood Control and Water Abstraction: Implications for Fish and Fisheries, reported that the preparation of the Special Volume of *Hydrobiologia* (Springer) was proceeding well. The Steering Committee, in collaboration with the peer reviewers, selected 35 papers of the 51 oral and 23 posters presentations for publication in *Hydrobiologia*. However, three authors withdrew. At present, 28 papers are ready for submission to Springer, four papers are currently being finalized.

A Special Volume Agreement has been signed between FAO (represented through Mr S.A. Dembner, Chief, Electronic Publishing Policy and Support Branch) and Springer. It was agreed that all material will be transferred to Springer by the Guest Editors by end of June 2007. The filled-in Manuscript Transmittal Forms and the Copyright Transfer Statements are currently being returned by the authors. It is expected that the whole package (including Preface and figure to be used for cover) will be transmitted to Springer as planned.

**Action: G. Marmulla**

## **5. REPORT OF THE FIRST MEETING OF THE REGIONAL FISHERY BODY SECRETARIATS NETWORK (RSN-1)**

Mr D. Bartley reported on the First Meeting of the Regional Fishery Body Secretariats (RSN-1). This group was formerly known as the Regional Fishery Bodies Secretariats. Although the majority of regional fishery bodies (RFBs) were concerned with marine fishery management and did not serve in an exclusive advisory capacity as EIFAC does, the meeting did address issues of relevance to EIFAC.

The report reviewed the decisions of the twenty-seventh session of COFI that related to RFBs. Of particular relevance to EIFAC was the growing emphasis on small scale fisheries and inland fisheries, and the need for improved data collection. In regards to data collection, the ExCom reiterated the fact that FAO questionnaire misses important aspects of inland fisheries and small scale fisheries and could be improved.

In regards to small scale fisheries, RSN-1 agreed that interested members, which include EIFAC, should collaborate to provide more consolidated input to FAO; such input could be in the form of briefing notes to be considered under COFI agendas or other meetings. The ExCom supported this idea and felt that the upcoming Symposium could provide material for the briefing notes. The EXCOM suggested that small scale fisheries could be an agenda item for the twenty-fifth session of EIFAC and that Mr Bartley, as EIFAC Secretary, should maintain contact with RSN and keep the EXCOM informed of developments and opportunities. The Secretariat was requested to consider a contribution on small scale fisheries for the twenty-fifth session.

**Action: D. Bartley**

## **6. REPORT OF SUB-COMMISSION I**

Chairperson: T. Brenner (Germany)  
Vice-Chairperson: J. Caffrey (Ireland)  
Rapporteur: I. Navodaru (Romania)  
Technical Secretary: G. Marmulla (FAO)

### **6.1 Joint Ad Hoc EIFAC/ICES Working Party on Eels**

Convener: R. Poole

The EIFAC Working Party on Eel (WPEEL) has been active since the 1970s and acted as a major focus for collation of eel data and biology through its symposia in the 1980s and 1990s. A widespread severe decline in eel recruitment was observed between 1983 and 1985. By 1993, this decline in recruitment, along with a stock-wide reduction in landings, was leading to serious concern. Between 1998 and present, the Working Party has operated on a joint basis with the International Council for the Exploitation of the Sea (ICES), providing scientific

advice on stock data and eel management, particularly in relation to the proposed European Union Action Plan for the Recovery of Eel and inclusion of eel in the Data Collection Regulation.

During 2006, Willem Dekker stood down as Convener of the WP after nine years service and Russell Poole (Ireland) was appointed for the next three-year period. Herewith, tribute is paid to Willem Dekker's outstanding contribution, both to the eel and to the Working Party. The WP held its 2006 meeting in FAO, Rome, and this was reported to the 2006 EXCOM and Session in Austria. The 2007 WP meeting will be held from 3 to 7 September in Bordeaux, France, hosted by the Public Agricultural and Environmental Research Institute (CEMAGREF). Fourty to 47 participants plan to attend. The Terms of Reference for the meeting are attached below. There are essentially two main tasks for the WP, i.e. (a) to update the existing databases on recruitment, landings and stocking, evaluate other data provided in the Country Reports, and using the data to formulate advice on the stock for 2007, and (b) to provide guidance and advice in support of the proposed EU Stock Recovery Plan. As requested by ICES, the report will be available in draft form for both EIFAC and ICES by 14 September 2007.

*During the Bordeaux meeting the Joint EIFAC/ICES Working Party on Eels will:*

1. Assess trends in recruitment, stock and fisheries indicative for the status of the stock, and the impact of exploitation; amongst others, this might involve the establishment an international data base for data on eel stock and fisheries, as well as habitat related data;
2. Review available methodology for assessment of the status of the eel population, the impact of fisheries and other anthropogenic impacts and of implemented management measures (that is: results of FP6 project Slime), and consider options for stock assessment at the population level;
3. Report progress in work on improvements in the scientific basis for advice on management of European eel fisheries; amongst others this might require the compilation of a comprehensive and realistic research agenda, aiming at elucidation of the causes of the decline in and quantification of their impacts on the stock (ocean and continent, anthropogenic and natural, etc.).

#### **Supporting information**

<b>Priority:</b>	The work is essential for ICES to provide advice on the urgently required development of eel protection and restoration plans, and to report on the rapidly deteriorating status of the stock.
<b>Scientific justification and relation to Action Plan:</b>	ICES Action Plan Numbers: 4.2, 4.3, 4.8, 5.8.  The eel stock and fisheries are in rapid decline. Urgent compilation of a stock recovery plan has been recommended by ICES, and to this end, the EU Commission has proposed a Regulation in 2005, which now awaits approval by the Council of Ministers. The proposed objective is for each eel river basin, to permit with high probability the escapement to the sea of at least 40 percent of the biomass of adult eel relative to the best estimate of the potential escapement from the river basin in the absence of human activities affecting the fishing area or the stock. Because of the special characteristics of eel fisheries (fragmented, small scale, extreme spatial differentiation, distribution from North Cape to Nile Delta), no traditional whole-stock approach (assessment, TAC, etc.) is feasible; management must be based on

	<p>international, common targets with local implementation. Overall post-evaluation of the stock status in relation to the objective requires population wide integration of assessments.</p> <p>The precautionary advice to protect the stock (ICES 1998–2006) was based on available time series, especially in recruitment and yield. Whereas previous meetings of WPEEL have documented the trends, have considered potential causes, have listed potential mitigation measures, have proposed management targets, and have explored options for monitoring and post-evaluation; further progress now foremost awaits political decisions.</p> <p>Current monitoring and research is almost exclusively based on national research programmes, which have gradually come under considerable financial strain. Progress in the support for the development of (national) management plans and progress in more fundamental research questions (causes of the decline, fundamental biological characteristics) will greatly benefit from international coordination and concertation. Progress in the routine tasks of WPEEL crucially depends on this too, since national decisions (on funding) await the international decisions in many countries.</p>
<b>Participants:</b>	Experts from ICES and EIFAC countries
<b>Secretariat facilities:</b>	Usual: production of report.
<b>Linkages to other Organizations:</b>	The Working Party on eels is a joint Working Party of EIFAC and ICES.

In early November 2006, ICES received a fast-track request for advice by correspondence from the Commission for the Protection of the Marine Environment of the North East Atlantic (OSPAR) in relation to the listing of threatened species and habitats, of which eel was one species. This request was passed on to the WPEEL and was delayed somewhat due to the change over of the Convener. In order to satisfy the request in the short time available, it was decided to use the WPEEL 2006 membership to address the issue. The recommendations will be included in the 2007 WPEEL report under a new item (d) of the Terms of Reference (ToRs). The following is the overall summary of the WP:

***Terms of reference (d) 2007: Provide fast-track advice, by correspondence, to OSPAR on new species and habitats to be potentially listed on their "Threatened and Declining list"***

*The joint EIFAC/ICES Working Party on Eel has reviewed the two nominations for the nomination of Eel, *Anguilla anguilla*, to the OSPAR list of threatened and/or declining species. i.e. one by the WWF and the other by Germany. The nomination by WWF would appear to be the more up-to-date although both appear weak, unbalanced and lacking in supporting arguments. Despite the weaknesses of the proposals as indicated, their factual basis is sound and they make the case that eels should be afforded the best possible management and protection. The recent reports from the EIFAC/ICES Working Party on Eel, 2004 (Galway) and 2006 (Rome) provide the most complete and up-to-date reviews of the expert judgment on the decline of eel recruitment and stock status, including potential factors implicated in the decline of eel. The scientific advice on the need to protect eel has been almost exclusively based on the analysis of historical time trends, which are poorly reflected in the nominations.*

## **6.2 Ad Hoc Working Party on Fish Monitoring in Fresh Waters**

Convener: P. Hickley

The updated Terms of Reference of the Working Party were presented to the twenty-fourth session of EIFAC and adopted.

The suitability of the Information Note on Electric Fishing Best Practice<sup>1</sup>, produced by Mr Peirson (UK) and Mr Beaumont (UK), continued to be assessed during field trials by members of the WP but feedback is still awaited.

The short manual on recommended sampling methods for the monitoring of fish populations in fresh waters<sup>2</sup> remains in draft form with text for some sections still being required. The manual should include the use of multimesh size nets and consider animal welfare. However, at least a soft copy will be available during the twenty-fifth session.

The WP continued to provide its regularly updated list of fisheries related conferences, courtesy of Mr Shields (UK). The EXCOM appreciated the list as a valuable contribution for the dissemination of knowledge.

As previously reported, a joint EIFAC/CEN workshop was convened to produce a draft standard on “Water quality – Sampling fish with hydroacoustics”. The workshop was held on 22–23 March 2006 at the Freshwater Biological Association River Laboratory, Dorset, UK, and was attended by 15 selected experts from eight countries. The output comprised an initial draft standard, “Data sampling fish populations with hydroacoustics”. This draft has now been fully revised and will be formally presented by Mr Hateley (UK) to the CEN TG4 Fish Task Group in Vienna on 14 June 2007 with the proposal that the draft be adopted as a new work item.

## **6.3 Ad Hoc Working Party on Introductions and Stocking**

Convener: I. Cowx

### *Review of stocking and introductions in EIFAC countries*

During the twenty-fourth session of EIFAC at Mondsee, Austria, the terms of reference for this working party were redefined as follows:

- review of stocking, introductions and translocations operations including economic importance of activities;
- audit the state of knowledge of the results of operations concerning stocking introductions and translocations of aquatic organisms, particularly concerning environmental and economic impacts and genetic interactions with wild populations;
- develop risk assessment protocols for future aquatic species stocking and introductions, with specific models and sub-routine assessments to consider economic issues, the potential environmental and economic impacts of diseases in wild aquatic organisms and ecosystems, genetic interactions with wild populations;
- provide guidelines for environmentally sound practices for stock enhancement operations.

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<sup>1</sup> <ftp://ftp.fao.org/FI/DOCUMENT/eifac/wpfmfw/WPFMSWbestpracticeguidev2.pdf>

<sup>2</sup> <ftp://ftp.fao.org/FI/DOCUMENT/eifac/wpfmfw/DraftGuidelinesMonitoringFishFreshwaters.pdf>

Several activities have progressed this WP since the 24th Session, the most important of which was confirmation of an EU FP6 funded project entitled “Impact of alien species in aquaculture (IMPASSE)”. The ToRs of the WP were incorporated in this project which was established to underpin the EU Council regulation “Setting rules governing the use of alien species in aquaculture” that was announced on 4 April 2006 registered as COM (2006) 154 final<sup>3</sup>. This regulation has important implications for stocking and introductions of fish in aquaculture in Europe. The project, which will be used as a vehicle for the WP has the following aims that are consistent with those of the EIFAC WP:

- review of introductions and translocations in aquaculture and for aquaculture-based restocking and assess the economic importance of introductions and translocations resulting from aquaculture and aquaculture-based restocking in the Community;
- audit the state of knowledge of the results of operations concerning introductions and translocations of aquatic organisms for aquaculture purposes, particularly concerning environmental and economic impacts and genetic interactions with wild populations; to analyse the economic importance of restocking, particularly for community aquaculture enterprises;
- develop risk assessment protocols for future aquatic species introductions and aquaculture, with specific models and sub-routine assessments to consider economic issues, the potential environmental and economic impacts of diseases in wild aquatic organisms and ecosystems, genetic interactions with wild populations, and the disruption of ecosystem structure and function. Special attention will be given to assessing whether modern land-based closed aquaculture facilities can be considered bio secure and to what extent movements into these facilities can be differentiated from movement into open aquaculture facilities under Community rules;
- provide guidelines for quarantine procedures to account for phylum-specific peculiarities, developmental stages and risk levels, including procedures for containment and control where invasive species are identified as a problem;
- provide guidelines for environmentally sound practices for introductions and translocations in aquaculture and stock enhancement operations.
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Further information on the project can be found on  
<http://www.hull.ac.uk/hifi/IMPASSE/index.html>.

Draft guidelines for stocking and introduction of fish have been developed through funding from the Environment Agency of England and Wales and FAO. It is anticipated these guidelines will be in support of implementation of the FAO Code of Conduct for Responsible Fisheries in the near future.

The Convener of the WP has been invited to represent EIFAC at a workshop entitled Ecosystem-based Stock Enhancement (Bruges, 6–8 May 2007). This has been set up to develop a road map to evaluate the potential for sea ranching, stock enhancement and restocking programmes within the European multinational context and seek funding from the EU FP7 programme<sup>4</sup>.

**Action: I. Cowx**

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<sup>3</sup> see [http://europa.eu.int/eur-lex/LexUriServ/site/en/com/2006/com2006\\_0154en01.pdf](http://europa.eu.int/eur-lex/LexUriServ/site/en/com/2006/com2006_0154en01.pdf)

<sup>4</sup> <http://www.vliz.be/NL/Infoloket/restocking>

#### **6.4 Ad Hoc Working Party on Mapping of Fish Distribution and Aquatic Habitat Quality**

Convener: R. Fricke

No progress can be reported for the first part of the intersessional period because due to lack of funding FAO could not provide the maps of European waterbodies as originally intended. The EXCOM realized that in course of the conversion of the Water Framework Directive (WFD) there is no further necessity to proceed with this WP. Therefore, the EXCOM recommended that the Working Party be abolished at the twenty-fifth session.

#### **6.5 Ad Hoc EIFAC/GFCM Working Party Management of Sturgeon**

Convener: M. Chebanov

The Working Party was represented at the workshop entitled “Broodstock management of the critically endangered sturgeon *Acipenser sturio*” held in September 2006 in Bordeaux (hosted by CEMAGREF).

The Aquaculture Compendium “Huso huso” has been completed by the Convener of the WP in reply to a request by the Conservation Ecology Programme International (CABI). Access to the electronic file of the huso huso Compendium is through search – <http://www.cabicompendium.org/ac/home.asp> – (Datasheet option enabled).

Members of the WP attended the Third Meeting of the Network of Aquaculture Centres in Central-Eastern Europe (NACEE) Directors (Dubrovnik, Croatia, September 2006). The fact that Laslo Váradi, Chairman of the EIFAC Sub-Commission II – Aquaculture, and Director of HAKI, also holds a NACEE Coordinator position is very important for productive sturgeon-related cooperative actions. In the framework of the NACEE activity, a special Working Party on sturgeon culture development was formed.

There exists information exchange between members of WP from the Azov and Black Seas basins countries concerning tagged sturgeon individuals. Unfortunately, the idea to hold a workshop on sturgeon tagging has not been supported financially so far, though the decision to organize such workshop has been approved at the EIFAC Plenary Session. It would be suitable to hold such a workshop during the EAS Aquaculture Europe 2007 Meeting “Competing Claims”, to be held in Istanbul on 24–27 October ([www.easonline.org](http://www.easonline.org)).

Links have been maintained with the World Sturgeon Conservation Society (WSCS). The members of the WP took an active part in the WSCS General Assembly that was held in China in March 2007. During this event members of the WP actively supported the work of the Organization Committee for the next International Sturgeon Symposium, which is planned for the year 2009 in China.

Members of the WP have compiled some essays on sturgeons of Azov and Black Seas basin for regional Red List (Krasnodar Territory Red List) edition that would be published in 2007.

#### **6.6 Ad Hoc Working Party on Fish Passage Best Practices**

Convener: M. Larinier

The first meeting of this newly formed WP was held in November 2006 in Toulouse, France. It brought together selected members of the WP and members of the “River Continuity”



Working Party of the DWA (Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall). The objective of the meeting was to discuss diverging views of a certain number of issues related to fish passage problems with the aim of harmonising design criteria. Relevant regulations in France and Germany, inter alia the concept of target species, the biological and hydraulic criteria, the typology and the design criteria of natural fish passes, were discussed. The meeting report has been finalized and circulated to all members of the WP for critical comments on the technical information presented.

As one selected member of the WP could not attend the Toulouse meeting due to other commitments, a separate meeting was held in Strasbourg prior to the Toulouse meeting to gather additional relevant information on the topic.

Upon invitation by Dr Jäger, Austria, the WP will hold its next meeting in October 2007 in Salzburg with the objective to:

- continue work on natural fish passes issues (design criteria, monitoring); and
- start work on downstream migration issues at small scale hydropower plants (spacing of trash racks, bypass design criteria, fish friendly turbines and intakes).

Preliminary information on this forthcoming meeting has already been sent out in February. More detailed information will be circulated to all members in near future. It is intended to have synthesized the current country-specific knowledge or experience, and the manuscripts circulated to all members of the WP, well ahead of the meeting. The workshop format could be the discussion of the pre-circulated theme papers after a short presentation by the author(s).

Since the inception of the WP, four new members joined the group, i.e. experts from Belgium, Finland and the Netherlands, the total number of members thus being 26 from 15 countries. Probably two more experts, i.e. from Germany and Sweden, might join.

## **7. REPORT OF SUB-COMMISSION II**

Chairperson: L. Váradi (Hungary)  
Vice-Chairperson: J.-P. Proteau (France)  
Rapporteur: T. Hubenova (Bulgaria)  
Technical Secretary: U. Barg (FAO)

Mr Váradi presented the intersessional activities of this Sub-Commission which includes three Working Parties (after the suspension of the activity of Ad HocWP on Organic Fish Farming) and an Eastern European Affairs initiative. The ExCom reviewed and discussed activities and achievements of this Sub-Commission during the intersessional period as follows.

### **7.1 Relationship between fish transfer and fish health**

Convener: E. Hudson

The Vice-Chairperson of the Sub-Commission, Mr Jean-Pierre Proteau had volunteered to assist Mr Váradi in his efforts to revitalize the WP. Mr Proteau prepared a background study (Annex 1) and compiled an information material on major projects, networks and organisations in the field of aquatic animal health (Annex 2). Mr Váradi explained that Mr Proteau had raised various issues which would need to be clarified before the TOR of the

WP could be finalised and specific actions are identified. Based on the comments and advice of the EXCOM meeting Mr Proteau would continue efforts aiming at the reactivation of the WP.

Mr Rohana Subasinghe, FAO Senior Aquaculture Officer, fish health expert, and designated FAO member of the World Organisation for Animal Health (OIE), Aquatic Animal Health Commission, attended these discussions, and advised the EXCOM on the general importance of issues associated with fish health and fish transfers, in particular as regards international trade and good governance measures at government and farm levels. He emphasized the opportunity and need for related EIFAC work in particular in Eastern Europe, especially non-EU countries, where there continues to be significant need for capacity building, awareness raising and scientific and policy advice . FAO currently runs fish health management related projects in Bosnia and Herzegovina, Latvia and Croatia.

Dr Subasinghe advised the EXCOM that the Director-General of OIE will be visiting FAO on 5 July 2007, and he saw the opportunity for discussion of possible collaboration between FAO/EIFAC and OIE. He also emphasized the significance of existing and emerging EU directives and regulations related to fish health management and control of transboundary movements of fish and pathogens. These requirements will have significant implications for the production sector, and aquaculture farmers might not be aware of the details of these regulations. Again, there is ample scope for cooperation, capacity building and technical assistance work in Eastern European countries, especially non-EU countries. The EXCOM meeting appreciated Dr Subasinghe's advice, and welcomed any feedback on the outcomes of the envisaged OIE-FAO discussions.

During the discussion, the meeting noted that NACEE experts participated in recent PANDA workshops, and, that the Chair of PANDA network is currently also the Chair of the OIE Aquatic Animal Health Commission.

Recognizing Mr Proteau's request for guidance, the ExCom agreed to his considerations and decided that the envisaged WP should collect, facilitate and transfer technical and policy information on emerging issues of fish transfers and fish health, as these may emerge from EU, OIE and other relevant initiatives. A particular focus should be on the needs and opportunities in Eastern Europe, especially non-EU countries. The WP should seek to develop working relations with OIE, in particular the OIE Aquatic Animal Health Commission. The EXCOM agreed that :

- The field covered by the working party should be extended to the exchanges of pathogens between fish of the natural environment and farmed fish and to the issues raised by animal welfare.
- The terms of reference of this Working Party should be more specifically related to the content of the Directive 2006/88/CE.

Cooperation with specialized projects and technical networks such PANDA, DIPNET and EPIZONE should be sought, and the envisaged WP should, when possible, and as appropriate, take part in the meetings of these networks and projects.

Mr Váradi agreed that he will collaborate with Mr Proteau on the further development of the ToRs of this WP and on the identification of a Convenor and possible members of this WP. A dedicated NACEE expert will establish links with the PANDA network.

It was agreed that Mr Hudson should be contacted again, to confirm his interest and commitment to continue as Convenor for this WP.

**Action: L. Váradi/E. Hudson/J.-P. Proteau/R. Subasinghe/U. Barg**

## **7.2 Working Party on Aquatic Resources Management in Aquaculture**

Convenor: M. Verdegem

The main activity of the WP was the finalization of the outline of the book “Water use and re-use in aquaculture”, the consultations with the potential authors/editors and with Blackwell as publisher. The outline of the book has been finalized (Annex 3). Johan Verreth from Wageningen University agreed to work as one of the editors of the book. The EXCOM noted that the originally planned mini-symposium will not be held because of funding issues. Nonetheless, it is expected that the first drafts of the manuscript should be ready by the end of 2007.

The ToRs of the Working Party have been slightly modified. The EXCOM agreed to the proposed modified TOR as follows:

- to assemble and review available information on freshwater use in aquaculture with emphasis on its interactions in the context of multiple users;
- to assess the degree of integration of aquaculture development into current approaches for water resource management, with particular emphasis on consequences-for local water management;
- based on the above reviews and assessments, to identify and address specific issues and options for the integration of aquaculture in the management of water resources;
- to formulate recommendations and guidelines for further work by the Working Party.

**Action: M. Verdegem/L. Váradi/U. Barg**

## **7.3 Working Party on Market Perspectives of European Freshwater Aquaculture**

Convenor: L. Váradi

The Convenor and EUROFISH have jointly started to explore the possibility of organising a workshop regarding market perspectives of European freshwater aquaculture. Due to the uncertainties in funding for organising a specific workshop, the current approach to move forward is to arrange for a series of consultations which could be combined with aquaculture events during 2008. The events which may involve expert consultations/specific sessions on freshwater aquaculture marketing are:

- EUROFISH Aquaculture conference in Riga, Latvia (2008 spring);
- EIFAC Symposium in Antalya, Turkey (20–23 May, 2008);
- EAS Aquaculture Europe Conference, Krakow, Poland (16–18 September, 2008).

These consultations may also be considered as preparatory meetings for a specific workshop in 2009. The involvement of NACEE in the organisation of a future workshop on freshwater fish marketing has also been considered. A young economist in HAKI, Hungary will be involved in the activity of the WP who will assist the planned works according to the proposed Terms of References as following:

- to assemble and review available information of marketing issues in European freshwater aquaculture products;
- identify and contact relevant partners (institutions and experts), who could work in partnership with the WP;
- organize expert consultations/specific sessions and workshops together with partners, where critical issues in freshwater aquaculture marketing would be addressed;
- formulate recommendations and guidelines and disseminate information to relevant EIFAC member countries.

The young economist at HAKI will be guided by the Convenor.

The EXCOM also recognized that marketing of the products from inland capture fisheries practices are important for marketing aspects and these should also be considered in this activity.

**Action: L. Váradi/U. Barg**

#### **7.4 Eastern European Affairs initiative**

The Network of Aquaculture Centres in Central and Eastern Europe (NACEE) representing 38 institutions from 15 Central and Eastern European countries is a strategic partner of Sub-commission II. The strategic partnership EIFAC–NACEE is based on two major facts: inland aquaculture is the main type of fish farming in the NACEE region; EIFAC (Sub-Commission II) is an excellent linkage between EU and non-EU countries in some specific areas of freshwater aquaculture development. Both the member institutions of NACEE and EIFAC Sub-Commission II can benefit from regular exchange of information between the two parties. This collaboration helps NACEE to achieve its main goal, the integration of Central and Eastern European aquaculture institutions into the European Research Area.

The EXCOM recognized that FAO’s Director-General has granted NACEE a formal International NGO liaison status with FAO, which allowed NACEE to participate in a COFI Sub-Committee on Aquaculture meeting in New Delhi last year. EIFAC Sub-Commission II can benefit from the involvement of NACEE in activities of COFI Sub-Committee on Aquaculture through their collaboration. FAO also provided technical and financial assistance for the publication of a bilingual leaflet of NACEE.

The Sub-Commission II is making efforts to involve scientists and professionals from Central and Eastern European countries into various EIFAC activities (WP activities, Symposium etc.) through its collaboration with NACEE.

**Action: L. Váradi/P. Lengyel/U. Barg**

#### **7.5 Other future activities**

Mr Váradi emphasized that experts active in Sub-Commission II are ready to assist the organization of the 2008 EIFAC Symposium on “Interactions between social, economic and ecological objectives of inland commercial and recreational fisheries and aquaculture”. The Sub-Commission is also highly interested in the “Cormorant workshop” being organized by Volker Hilge, and will arrange for involvement of scientists and fish farmers.

**Action: L. Váradi/P. Heinimaa/V. Hilge/U. Barg**

## **8. REPORT ON SUB-COMMISSION III**

Chairperson: Mr G. Castelnaud (France)  
Vice-Chairperson: Mrs E. Ciccotti (Italy)  
Rapporteur: C. Popa (Romania)  
Technical Secretary: U. Barg (FAO)

### **Ad Hoc Working Party on the Methodologies for Rehabilitation of Lakes and Reservoirs (Convener: H. Lehtonen)**

A manual on Rehabilitation of Lakes and Reservoirs for Fish by H. Lehtonen, I.G. Cowx and R. Müller, have been planned since several years. Mr Cowx reported that a draft of this document had been circulated to H. Lehtonen and R. Müller but no feed back has been received as yet. The text is considered to be in an advanced state, although it requires formatting and inclusion of figures and photos. Mr Jagsch offered to provide photographs as appropriate. Mr Cowx confirmed that if no response is obtained from the other co-editors by the end of May, he will complete the task by the end of July 2007. Blackwell Publishing is willing to publish the document.

The EXCOM confirmed that this WP will be discontinued.

**Action: I. Cowx/A. Jagsch**

### **Ad Hoc Working Party on the Handling of Fishes in Fisheries and Aquaculture (Convener: R. Rösch)**

The secretariat clarified that the report of the Utrecht workshop, which includes both the meeting report as well as an annotated literature compilation is still to be finalized in terms of formatting and layout. Delays are due to excessive workload and issues of priority setting. It is expected that the report will be published before the end of the year.

Mr Roland Rösch, the new Convener of this Working Party, has initiated work to produce a draft EIFAC position statement, as requested by the twenty-fourth session of the Commission. Mr Roland Rösch is still looking for possible members of the Working Party. Three experts already have confirmed their participation and he is in discussions with a few more colleagues. A very preliminary draft of a position statement will be circulated within the Working Party, which will be discussed and worked on during summer and autumn 2007.

**Action: R. Rösch/U. Barg**

### **Ad Hoc Working Party on Prevention and Control of Bird Predation (Convener: P. Heinimaa)**

During the twenty-fourth session of the Commission Mr Petri Heinimaa became the new Convener. The Commission agreed with Mr Heinimaa that new TORs would be formulated and new experts identified.

It was recognized that cormorants still continue to increase in numbers and attempts to stop this, mainly by shooting, have been largely a failure. Earlier attempts to develop an European management plan have not been successful. Dr Volker Hilge (Germany) informed EIFAC of the possibilities to organize a workshop with the aim to develop a cormorant management plan. The proposed 2-day workshop would be held in Bonn during the second half of October 2007.

The Chair of EIFAC had confirmed EIFAC's interest in this initiative and had thanked Mr Hilge for inviting EIFAC to participate by providing the platform for discussion and development of the envisaged cormorant management plan. However, the EXCOM recognized that the EIFAC Secretariat does not have a budget for this activity. It was also noted that the interested German ministry would finance the attendance of a staff of the Secretariat which could act as an experienced rapporteur (and advisor on EIFAC procedures). Mr Petri Heinimaa had confirmed he will chair the workshop and he will invite Erich Staub to be the co-chair.

**Action: P. Heinimaa/V. Hilge/E. Staub/U. Barg**

### **Liaison Group on EU Water Framework Directive (WFD) (Convener: I. Cowx) and future Working Party**

The EXCOM recognized the valuable efforts by the Liaison Group and its Convenor, and in particular the forthcoming book 'Assessing the ecological status of rivers, lakes and transitional waters' edited by I.G. Cowx and to be published by Blackwell Science in late 2007.

The twenty-fourth session of the Commission had decided to create a new Working Party on the WFD, as recommended by the Mondsee Symposium. the Chair of Sub-Commission III reported that there have been suggestions by Mr Niels Jepsen to explore opportunities of developing cooperative efforts between the Inter Calibration (IC) –process<sup>5</sup> and EIFAC, particularly if fishing is to be included as a relevant pressure in some rivers and lakes. Niels Jepsen underlined that there is a good basis for working together as many persons involved with the IC process are also active in EIFAC (Ian Cowx, Tom Buise, Teppo Vehanen and Trygve Hesthagen).

Based on this proposition and other consultations held with colleagues involved in WFD-related initiatives, G. Castelnaud proposed the organisation of a new Working Party in charge of the questions associated with the implementation of the WFD, with Ms Christine Argillier from France, as new Convenor. Christine Argillier, CEMAGREF, is in charge of developing a classification tool based on fish in lakes and reservoirs and she works with colleagues the IC network.

Ms Argillier had agreed to prepare draft of Terms of Reference for this new Working Party and identify possible experts to join this WP. The EXCOM welcomed Ms Arguillier's initiative, and appreciated her efforts in launching this WP.

**Action: G. Castelnaud/C. Argillier/U. Barg**

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<sup>5</sup> This Inter Calibration process is currently under development. The aim is to harmonize the quality assessment of the different water bodies (lakes, rivers, costal waters and transitional waters) among countries sharing the same type of water bodies. All the bio-indicators listed in the WFD are considered and fish are included. To achieve this exercise, the countries will have to define reference conditions taking into account the natural variability of the bio indicators defined and then to develop pressure/impact models to measure a distance to the reference condition and to identify the origin of this distance.

## **Any other matters**

The EXCOM was informed that Mr Zalewski, European Regional UNESCO Center for Ecohydrology, had invited Messrs Castelnaud and Mr Hickley to participate in an interdisciplinary symposium on Ecohydrological Processes and Sustainable Floodplain Management scheduled to be held 19–23 May 2008 in Poland. The EXCOM noted that the proposed dates for this symposium coincided with the dates of the envisaged 2008 EIFAC Symposium in Antalya, Turkey. It was decided that Mr Zalewski be informed of the possible overlap of the dates of the two symposia, with a view to inviting him to consider targeting other dates for his symposium.

**Action: G. Castelnaud**

## **9. REPORT ON SUB-COMMISSION IV**

Chairperson: I. Cowx (United Kingdom)  
Vice-Chairperson: M. Sipponen (Finland)  
Rapporteur: R. Arlinghaus (Germany)  
Technical Secretary: R. van Anrooy (FAO)

### **Ad Hoc Working Party on Recreational Fisheries**

Convener: R. Arlinghaus (Germany)

At the twenty-fourth session of EIFAC in Mondsee, Mr R Arlinghaus became the new convener of the WP on Recreational Fisheries. To reduce the overlap between the WP on Recreational Fisheries and the WP on Socio-Economic Aspects of Inland Fisheries the terms of reference were modified to the following:

- 1) Produce a European Code of Good Practice for Recreational Fishing until the end of 2007 in collaboration with various NGO's and key players.
- 2) Monitor key ongoing research worldwide related to social, economic and ecological aspects of relevance for recreational fisheries and its management.
- 3) Work closely with the WP on Socio-Economic Aspects of Inland Fisheries in producing methodological guidelines for the undertaking of social and economic surveys on recreational fisheries. Focus of this WP shall be on social-psychological approaches to measure basic concepts such as motivations, consumptive orientation, constraints experienced by recreational anglers etc.
- 4) Observe opportunities for funding a Pan-European study on the social and economic importance of recreational fisheries or similar endeavours on a European scale

These updated ToRs were endorsed by the EXCOM.

The WP has made progress with the European Code of Practice (CoP) for which a small amount of funding became available through Ireland and The Netherlands. The EXCOM noted the significant contribution of the Technical Secretary of SubCom IV in the process of searching for support to the drafting of the CoP. It was recalled that the WP started in Dublin in 1996 and that discussions on the production of the CoP have been lengthy, but that now finally a CoP is being prepared. Messrs I.G. Cowx and Mr R. Arlinghaus have drafted a paper Recreational fisheries in the 21st century: towards a Code of Conduct for publication in a book entitled "Global Challenges for Recreational Fisheries" (Mr O. Aas editor); this will form the framework for the CoP. Work on the actual CoP has started with the goal to develop

a draft by August 2007. This draft will be subjected to critique during an international workshop to take place in November in The Netherlands. The WP will be leading the whole endeavour and aim to complete the task by the end of 2007. It is expected that the finalized CoP will be presented for endorsement to the twenty-fifth session of EIFAC. The EXCOM suggested the WP to draft a project proposal in support of the wider dissemination and implementation of the CoP for discussion at the same session.

The WP was also been involved in collaboration with the WP on Social and Economic Issues of Inland Fisheries to produce methodological guidelines. Drafts of the report are currently circulating for feedback. The WP has presented a compilation of European statistics on recreational fishing participation at various international meetings. The convenor of the WP together with the Chairperson of the Sub Commission IV were heavily involved in producing various chapters for the book “Global Challenges for Recreational Fisheries” to be published in late 2007. In this book, the state of the art of recreational fishing research and management are reviewed. The convenor of the WP has also produced global synthesis papers on ecological issues associated with recreational fishing and has initiated a global partnership to work on the ethics of catch-and-release. Finally, the WP has actively worked on a proposal for a Pan-European internet-based data collection system called “Sportfish”; this system will include data on the socio-economic aspects of recreational fisheries. Provisional enquires for funding through the EU COST programme have been made, but there has been no feedback to date.

**Action: I. Cowx/R. Arlinghaus/R. Van Anrooy**

#### **Ad Hoc Working Party on Socio-Economic Aspects of Inland Fisheries**

Convener: M. Sipponen (Finland)

The WP Terms of Reference were updated at the twenty-fourth session of EIFAC in Mondsee but have been amended since. The following TORs were endorsed by the EXCOM:

1. Produce methodological guidelines for the undertaking of social and economic surveys on recreational fisheries in collaboration with WP on Recreational Fisheries.
2. Prepare a report of the significance of private property rights on the alternative traits to manage inland commercial fisheries by April 2008.

The EXCOM noted the considerable progress has been made towards completion of task 1. A draft of the methodological guidelines for undertaking social and economic surveys on recreational fisheries has been prepared by the Convenor (Mr M Sipponen) in collaboration with Mr R. Arlinghaus. This draft will be circulated for comments in the near future with the aim of completing the final draft for publication as an EIFAC Occasional Paper by March 2008, with a summary version to be published in the journal Fisheries Management and Ecology in 2008. The EXCOM also noted that many of the EIFAC members were not fully aware of the FAO Strategy for Improving Information on the Status and Trends of Capture Fisheries and the FAO Strategy and Outline Plan for Improving Information on Status and Trends of Aquaculture. Both were endorsed by different sessions of the Committee on Fisheries (COFI) and as such should be implemented by the members. The Secretariat was requested to send information on both strategies to the EIFAC members.

Work on Task 2 will be developed by the Convenor in preparation for presentation at the symposium on conjunction with the twenty-fifth session of EIFAC in Antalya, Turkey, 2008.

**Action: I. Cowx/M. Sipponen/R. Van Anrooy**



## Other activities

At the twenty-fourth session of EIFAC it was suggested that a liaison group be formed to maintain a watching brief on illegal, unreported and unregulated (IUU) fishing in relation to inland fisheries. The Terms of Reference for the LG will be developed by convener (Mr I Cowx) for endorsement by the twenty-fifth session of EIFAC in Antalya, Turkey, 2008. In the meantime a draft contribution on IUU Fishing in inland waters, funded by FAO, has been prepared by Mr I Cowx. It is intended that the final product will be published in the FAO Technical Guidelines for Responsible Fisheries Series, under the FAO Code of Conduct for Responsible Fisheries. This will be made available once it has been endorsed.

**Action: I. Cowx**

At the nineteenth session of EIFAC it was suggested that the WP initiate work on resolution of conflicts within river catchments. Some progress towards this has been forthcoming through the preparation of several publications:

- R. Arlinghaus and I.G. Cowx (2007) Meaning and relevance of the ecosystem approach to recreational fisheries management, with emphasis on the importance of the human dimension. In: O. Aas and R.B. Ditton. (eds) *Global challenges in recreational fisheries*. Oxford: Blackwell Science.
- I.G. Cowx and R. Arlinghaus. Overview of the ecosystem approach to inland fisheries – in review.

The Chairman of Sub-Commission IV, together with the Convenors of the WPs in the Sub-Commission have been invited to make presentations at a European Commission workshop on “EFF, Inland Fishing, and Aquaculture Production Methods Enhancing the Environment” in Bucarest, Romania, from 27-29 June 2007. The EXCOM stressed the importance that an official letter is sent the organizers on behalf of EIFAC by the chairman to announce who will be representing EIFAC at the workshop. The important workshop will be reviewing issues relating to inland fisheries and aquaculture in Europe and is expected to set the agenda for funding for these areas through the European Fisheries Fund for the foreseeable future. Member countries are requested to forward any issues they feel should be raised to Mr I Cowx. One issue that will be raised is the potential impact of climate change on inland fisheries in the EIFAC member countries, especially from the social and economic dimensions.

Given the current importance of this topic, Sub-Commission IV recommended that EIFAC establish a cross sub-commission WP on the impact of climate change on inland fisheries in the EIFAC member countries. The EXCOM requested the Chairman of Sub-Commission IV to prepare a ToRs for this future WP for endorsement by the twenty-fifth session. It was noted that the issue was very important and of great interest to many EIFAC members. The WP on climate change issue should include in its ToRs the development of a methodology to separate the impact of climate change from other factors (e.g. pollution) affecting inland fisheries and aquaculture or the wider aquatic environment.

**Action: I. Cowx/R. Van Anrooy/P. Hickley**

The Sub-Commission IV recommended further that EIFAC establishes a WP on the ecosystem approach to inland fisheries (including aquaculture), which is also of great interest to those people working on the ecosystem approach to aquaculture and marine fisheries. It was noted that GFCM was working on the former and that possible linkages with some

ongoing projects would be possible. Moreover it was argued that the ecosystem approach to marine fisheries could use the experiences of catchment management planning in inland fisheries. The EXCOM agreed that a TORs for this future WP should be developed for endorsement by the twenty-fifth session and recommended the development of an EIFAC project proposal on this subject for submission to the EC for funding under the EFF.

**Action: I. Cowx/R. Van Anrooy/P. Hickley**

## **10. ASSESSMENT OF THE ROLE AND FUNCTIONING OF EIFAC**

The EXCOM noted the important roles of the National Correspondents and the Working Parties in the functioning of EIFAC. It was noted that Working Parties in order to be effective must have active convenors and participants, clear TORs, defined outputs, and should be aware of funding issues. The EXCOM recommended that a standard format be used for the reports of the Working Parties; the format would include participants, TORs, activities, outputs, an assessment of how the Working Party functions and general implications for EIFAC. This could also serve as format for a Web site (see below). The Chairman agreed to establish a standard format and communicate it to the Working Party convenors.

**Action: P. Hickley**

The EXCOM also took note of the problem of finding financial resources to support EIFAC activities. New activities that are proposed should consider how they will be financed. Mssrs I. Cowx and T. Brenner will discuss funding opportunities at EC workshop on “European Fisheries Fund, Inland fishing, and Aquaculture Production Methods Enhancing the Environment”, in Romania, in June 2007.

**Action: I. Cowx/T. Brenner**

The EXCOM expressed its appreciation for the support given to EIFAC by the Fisheries and Aquaculture Department. The Secretariat thanked the EXCOM members, who work to serve the commission by donating their time to EIFAC activities.

### **10.1 National reports**

In referring to paragraphs 83–84 in the report of the twenty-fourth session, the Chairman noted that no decision had been taken in regards to re-establishing the practice of producing national reports on inland fisheries and aquaculture. The EXCOM considered updating existing information on inland fisheries and aquaculture and the creation of a Working Party on National Reporting. Mr Ramazan Celebi offered to have Turkey and the junior professional officer from Turkey who will be recruited to work for 2 years in the Sub-Regional Office in Ankara (starting the second semester of 2007) take the lead on exploring options of updating existing information and creating a working party. The EXCOM thanked Mr Celebi for this offer and look forward to additional information on this subject.

**Action: R. Celebi**

## **10.2 EIFAC Web site and publicity**

The EXCOM appreciated the work of FAO in upgrading the EIFAC Web site. The Chairman referred to paragraph 84 and Appendix J of the report of the twenty-fourth session noting the request to involve National Correspondents in the establishment of links to National web sites from the EIFAC Web site. The Chairman stated that he had received several links and that he would develop a standard format for communicating this information to the Secretariat.

**Action: P. Hickley**

The EXCOM requested that Working Parties should post relevant documents under their section of the EIFAC Web site. Information to be posted by the working parties should include TORs, membership, activities and outputs. Chairs of the Sub-Commissions will invite the rapporteurs to provide this information.

**Action: Sub-Commission Chairs/rapporters**

The EXCOM noted that EIFAC could do more to promote relevant activities and suggested the creation of an electronic newsletter. Information would be sent to the EIFAC list-server and posted on the EIFAC Web site. Mr A. Jagsch agreed to take the lead on producing a trial newsletter. The EXCOM appreciated this offer by Mr Jagsch and looks forward to the first issue.

**Action: A. Jagsch**

## **10.3 New members**

The Secretariat will again contact Russia to determine if the government would like to become a member of EIFAC.

**Action: D. Bartley**

## **10.4 National correspondents**

The Chairman referred to Appendix J of the report of the twenty-fourth session and noted that many national correspondents need to be reminded of the obligations of their assignment. Of special importance are the national correspondents' role in ensuring good attendance at Sessions. The Chairman further stated that non-response of many national correspondents was becoming an issue that needs to be addressed. The Chairman was asked to contact all the correspondents to encourage greater participation in EIFAC activities.

**Action: P. Hickley**

In regards to attendance at sessions of the commission, the secretariat was advised to send informal notification and invitations to National Correspondents at the same time that formal invitations are sent; these should be hard copies and E-mail. A telephone conference of the EXCOM will be convened in Autumn (September) 2007 to review progress toward the next session of the commission.

**Action: Secretariat**

Mr Castelnaud stressed another key role as that of taking responsibility for facilitating flow of information on fishery and aquaculture statistics. The secretariat will also contact fishery statistics officers in member countries to try to improve the information on inland fisheries and aquaculture.

**Action: Secretariat**

## **11. COLLABORATION WITH PARTNERS**

The Sub-Commission Chairs expressed a common feeling that in light of the numerous and complex issues facing inland fisheries and aquaculture in the region, EIFAC needs to improve participation of partners in relevant EIFAC fora. Toward that end, the EXCOM recommended better advertising of EIFAC activities, a more active role of National Correspondents, the use of both official and unofficial list-servers, and ensuring that information is sent to all stakeholders. There should be an active search to identify new partners, even at the Working Party level. The EXCOM noted that one of the best means to advertise EIFAC is to produce more high quality outputs and distribute them to all stakeholders. The EXCOM also noted that fishers and fish farmers are important partners and should be incorporated in and informed of EIFAC activities more regularly than at present.

Following on the recommendation in paragraph 85 of the report of the twenty-fourth session, FAO strengthened partnership with the Ramsar Convention by co-producing a brochure on the value of wetland for fisheries as part of their seventh World Wetlands Day (2 February, 2007)<sup>6</sup>.

## **12. EMERGING ISSUES**

The Chairman presented a list of emerging issues taken from the twenty-fourth session, which he offered to update. Mr I. Cowx offered to synthesize the list and to identify criteria that would help the commission in prioritizing the long list of emerging issues.

**Action: I. Cowx/P. Hickley**

In regards to paragraph 86 of the report of the twenty-fourth session, the convener of the newly re-established working party on crayfish will be contacted by Mr T. Brenner to finalize TORs and establish membership.

**Action: T. Brenner**

## **13. ANY OTHER MATTERS**

### **13.1 Report of the twenty-fourth session<sup>7</sup>**

The EXCOM expressed its pleasure on the production of the Report of the twenty-fourth session in English; the electronic version is on the EIFAC Web site.<sup>8</sup> The French version is being edited and should be available by early summer 2007.

### **13.2 EIFAC brochure**

The EXCOM discussed the need for an updated brochure on EIFAC. The updated brochure would be used for increasing visibility and awareness on EIFAC and its activities. It was decided that the current brochure be updated, circulated to EXCOM members for comments, finalized, prepared in PDF file format and published in English language with support of the

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<sup>6</sup> [http://www.ramsar.org/wwd/7/wwd2007\\_leaflet\\_e.pdf](http://www.ramsar.org/wwd/7/wwd2007_leaflet_e.pdf)

<sup>7</sup> FAO Report of the twenty-third session of the European Inland Fisheries Advisory Commission. Wierzba, Poland, 26 May – 2 June 2004. FAO Fisheries Report, No. 771. Rome, FAO. 43 p. Report of the 23<sup>rd</sup> Session

<sup>8</sup> <ftp://ftp.fao.org/docrep/fao/010/a1055e/a1055e00.pdf>

FAO Subregional Office for Central Asia for distribution at Aquaculture Europe 2007 which will be held in Istanbul, Turkey, in October 2007

**Action: R. Van Anrooy**

### **13.3 FAO Commission on Genetic Resources for Food and Agriculture (CGRFA)**

Mr D. Bartley briefed the EXCOM on the eleventh session of the CGRFA to be held in Rome, June 2007<sup>9</sup>. This is the first time that the CGRFA will address issues related to genetic resources in fisheries and aquaculture. The Fisheries and Aquaculture Department has prepared a status report on fishery genetic resources<sup>10</sup> and proposals<sup>11</sup> for a multi-year programme of work to be addressed by the CGRFA which includes; i) improvement of information on genetic resources in fisheries and aquaculture; ii) an analysis of international policies regarding the use, conservation and benefits associated with aquatic genetic resources focusing on the FAO Code of Conduct for Responsible Fisheries; and iii) eventually producing a State of the World's Aquatic Genetic Resources. Mr Bartley is the Department's contact for this commission and will keep EIFAC informed of relevant events and opportunities.

**Action: D. Bartley**

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<sup>9</sup> <http://www.fao.org/ag/cgrfa/cgrfa11.htm>

<sup>10</sup> <ftp://ftp.fao.org/ag/cgrfa/cgrfa11/r11w152e.pdf>

<sup>11</sup> <ftp://ftp.fao.org/ag/cgrfa/cgrfa11/r11w21e.pdf>

## Annex 1

### AD HOC WORKING PARTY ON THE RELATIONSHIP BETWEEN FISH TRANSFER AND FISH HEALTH

**Background and discussion paper by  
Jean Pierre Proteau, Vice-Chair, EIFAC Sub-Commission II (Aquaculture)**

#### Intersessional activities

Since the Mondsee session (14–21 June 2006), the background related to the management of fish health has quickly become stronger in Europe, both at the level of the regulation and at the level of the scientific knowledge.

Firstly, the publication on 24 November 2006 of the European Directive 2006/88/CE<sup>12</sup> will make a regulation framework which will compel the Member States to set up measures aiming at preventing the propagation of the diseases of farm fish during the inside European Union (EU) exchanges and with countries located outside the EU. This Directive takes into account the very important development of the EU fish farming sector and widens the regulation which concerned originally mostly the hatching of salmon, trout, oyster, to the other species and to the new hatching practices.

Several articles of the Directive should be used as a basis in view of revising the terms of reference of the working party. Particularly, it becomes necessary:

- To associate the World Organization for Animal Health (OIE) to the works of the Working Party,
- To take into account the risks of exchange of pathogen between farm fish and wild fish, whether it is for farmed fish or in view of protecting species registered in the directory of the Convention on International Trade in Exchanged Species of Wild Fauna and Flora (CITES),
- To resume the proposal to disseminate the information collected on the Web site of the “EIFAC” (or to establish links towards sites of the networks operating in the field of aquatic animal health),
- To favour prevention over fight against the diseases of aquatic animals and to take into account the monitoring networks,
- To prevent the introduction of epizootic disease during the transit or the trade of fish coming from countries located outside the EU,
- To take into account the aquatic ornamental animals when they are in direct contact with the EU country waters (example of the Koi carp).

The implementation of the Directive will require the publication of application texts which will be set up in the various Member States of the EU. In each of the Member States, Working Partys work on the translation of this Directive (applicable in August 2008) into the national law.

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<sup>12</sup> COUNCIL DIRECTIVE 2006/88/EC of 24 October 2006 on animal health requirements for aquaculture and products thereof, and on the prevention and control of certain diseases in aquatic animals

Several **European projects** (FP6) related to the health of farm or wild aquatic animal occurred in the past or are in progress on the way to be completed.

**DIPnet** (Diseases Interactions and Pathogen exchange between farmed and wild aquatic animal populations – a European Network)

**PANDA** (Permanent Advisory Network for Diseases in Aquaculture)

**EPIZONE** (Network of Excellence for Epizootic Disease Diagnosis and Control)

The themes which were addressed by these projects exceed the mere framework of the freshwater fish, which is more specific to the activities of our sub-commission (but bivalves must be considered as potential reservoirs or vectors of fish pathogenic agents).

These projects provide updated scientific information on most pathogens which will be able to be used as support at the time of the implementation of the Directive 2006/88/CE and to define the investigations that remains to be initiated to meet the requirements of this Directive. They also provide information on the emerging diseases through monitoring networks. On the issue of the Herpès Koi virus, for example, a synthesis review of the situation of the knowledge has been established and is in the report which will be published in the DIPnet network. Moreover, the PANDA network plans a molecular tracing of this disease in the event of a possible spreading.

How do the well-being of the aquatic animals, the activities of the “OIE” and of the “EFSA” in this field justify that representatives of these two organizations are requested to contribute to the works of the working party.

Beside this information, these projects have enabled to make networks of specialists of the aquatic animals (sea or freshwater), pathologists or epidemiologists, whose sustainability will have to be ensured throughout the coming years.

These networks are not independent and they show a complementary nature. Among the partners of these networks, there are such organizations as:

- World Organisation for Animal Health (OIE)
- Food and Agricultural Organization of the United Nations (FAO)
- Network of Aquaculture Centres in Asia Pacific (NACA)
- Network of Aquaculture Centres in Eastern Europe (NACEE)
- Federation of European Aquaculture Producers (FEAP)
- European Association of Fish Pathologists (EAFP)
- International Council for Exploration of the Sea (ICES)
- International Society for Aquatic Animal Epidemiology (ISAAE)
- EU Community Reference Laboratory for Fish Diseases
- EU Community References Laboratory for Mollusc Diseases

So, in comparison with the 2004 situation, it is possible to mobilize updated information and the reference terms of the working party of the sub-commission Aquaculture of EIFAC/FAO should be altered and widened in order to take into account these changes.

But before redefining the terms of reference of this Working Party, it is necessary to agree on what direction EIFAC wants to give to it.

Indeed, in order to be efficient, the Working Party should take into account the issues related to the health of the fish in all their dimensions and it is therefore important to be able to rely on the previously mentioned organizations and networks. This involves an important job, whereas most of the specialists are already overloaded by work.

Moreover, the issues of the means that the EIFAC can implement, in order to at least pay the expenses of the experts (including some of them who are consulting advisers) who would be led to travel in order to take part in the meetings of the Working Party of the EIFAC, as the experts I called have emphasized, will have to be met.

There are relationships between the three European projects, DIPnet, PANDA and EPIZone. The two first have been completed but the third (EPIZone) should have its second yearly meeting from 4 to 6 June 2008 in Italy (Hosted by Izler, Brescia).

This meeting will be an open meeting and external scientists will be invited to register.

### **Proposals for the working party on the pathogen transfers.**

Considering the change of the situation since the modification of the terms of reference of the working party in 2004, I suggest that :

1. The field covered by the working party should be extended to the exchanges of pathogens between fish of the natural environment and farmed fish and to the issues raised by animal welfare.
2. The terms of reference of this Working Party should be more related to the content of the Directive 2006/88/CE (see what is written before).
3. The “EIFAC” takes part in the second annual meeting of the PANDA network as a specific organization to the inner European waters for the issues of fishing and aquaculture.

I also suggest that the necessary contacts should be established by the “EIFAC” in order to ensure:

- a) the durability of the networks DIPnet and PANDA by calling the scientific coordinators of these networks;
- b) the possibility to access and to use the information provided by the reports of the projects DIPnet and PANDA (either by sending to the web sites of these two networks, or by using these information on the Web site of the “EIFAC”);
- c) the access to the forum of the networks DIPnet and PANDA if they remain active in the forthcoming years.



## Annex 2

### **MAIN PROJECTS NETWORKS AND ORGANIZATIONS ON THE FIELD OF AQUATIC ANIMAL HEALTH: SELECTED EXTRACTS FROM WEB REFERENCES (see links for full version)**

**Compilation by  
Jean Pierre Proteau, Vice-Chair, EIFAC Sub-Commission II (Aquaculture)**

**DIPnet network (Diseases Interactions and Pathogens exchange between farmed and  
wild aquatic animal populations – an European network (<http://www.dipnet.info>))**

Laurence Miossec, IFREMER, Scientific Co-ordinator, DIPNET project,  
[Laurence.Miossec@ifremer.fr](mailto:Laurence.Miossec@ifremer.fr)

The European project DIPNET (EU Framework Programme 6) is a two-year project, started on October 2004. It aims to integrate current knowledge on the transfer of pathogens between wild and cultured aquatic animal populations.

It addresses key issues needed to ensure sustainability and responsible exploitation of aquatic environments. The aim is to deliver information that is useful to all parties interested in understanding disease interactions and in managing the control and reductions in risks of transmission of infectious disease between wild and farmed populations.

Findings and recommendations have been disseminated to all stakeholders via the web site and have also been collated into reports to the European Commission.

The European project DIPNET ended in December 2006 with an important report providing a review of information available concerning infectious disease interactions between wild and farmed fish, shellfish and crustaceans within Europe.

The report is composed of four different sections based on ecological areas of Europe and the principal fish species in those areas:

1. North Atlantic and anadromous salmonids.
2. Continental and freshwater resident fish.
3. Mediterranean
4. Molluscs and Crustaceans

First and mainly second section includes up-to-date scientific informations which apply especially EIFAC WP on transfers of pathogens.

For example, conclusion of this report about Koi Herpes Virus is *‘Until now it was not possible to identify genuine natural reservoirs of KHV. The disease should be manageable by control of trade, eradication measures in case of outbreaks in farmed common carp and koi (both aquaculture and in the ornamental sector), restocking with fish from known free sources and of course by good farming practice. The final control of the spread of the disease can be reached through a consequent notifiability of the disease throughout the affected countries’*.

In the report, pathogens selected for individual reviews have been pathogens known either to have important disease impacts in aquaculture or wild fish and were prioritised in order of impact. Definitive report will be soon available online (<http://www.dipnet.info>).

Member of the subgroup 1 “North Atlantic and anadromous salmonid ecosystems” of the DIPnet network we have to contact is:

Rob Raynard (leader of the subgroup), Fisheries Research Services, Scotland, UK E-mail: [r.raynard@marlab.ac.uk](mailto:r.raynard@marlab.ac.uk)

Members of the subgroup 2 “Continental and Freshwater resident fish” of the DIPnet network we have to contact are:

Thomas Wahli (leader of subgroup), Centre for Fish and Wildlife Health, Institute for Animal Pathology, PO Box 8466, 3001 Berne, Switzerland.

E-mail: [thomas.wahli@itpa.unibe.ch](mailto:thomas.wahli@itpa.unibe.ch)

Paul Johan Midtlyng (member), VESO, PO Box 8109 Dep.NO–0032 Oslo, Norway.

E-mail: [Paul.Midtlyng@veso.no](mailto:Paul.Midtlyng@veso.no)

**PANDA network** (Permanent Advisory Network for Diseases in Aquaculture)

<http://www.europanda.net>

Barry Hill (project coordinator), Panda project, Cefas Weymouth Laboratory, UK.

E-mail: [b.hill@cefasc.co.uk](mailto:b.hill@cefasc.co.uk)

Started in January 2004, the FP6 project ‘PANDA’ has a key purpose of providing a sound scientific foundation for the development of EU policy and legislation for aquatic animal health management, through development of a pro-active Community-wide network of experts in fish and shellfish diseases. The long-term objective is the establishment of a permanent network of aquatic animal health specialists, including researchers, diagnosticians, industry practitioners, etc., to provide a forum for the exchange of views on major issues concerning diseases in European aquaculture, and to communicate the results of these discussions to the European Commission.

The final workshop of the PANDA project was held at Cefas Weymouth Laboratory, UK, 20–21 March 2007, to review the progress made to date and to look at future options for maintaining the network after this FP6 project finishes (see: <http://www.europanda.net/programme.doc>).

### **Related Projects**

DipNet (<http://www.dipnet.info> )

FishEggTrade (An EU funded project appraising of the zoonosanitary risks associated with trade and transfer of fish eggs and sperm) (<http://www.veso.no/fisheggtrade> )

### **EPIZone – Network of Excellence for Epizootic Disease Diagnosis and Control**

<http://www.epizone-eu.net>

In addition to the project consortium of partners and several of their task force members, there were participants from the European Commission and the European Food Safety Authority (EFSA), as well as representatives of PANDA-associated organizations, namely:

- World Organisation for Animal Health (OIE)
- Food and Agricultural Organization of the United Nations (FAO)
- Network of Aquaculture Centres in Asia Pacific (NACA)
- Network of Aquaculture Centres in Eastern Europe (NACEE)
- Federation of European Aquaculture Producers (FEAP)
- European Association of Fish Pathologists (EAFP)
- International Council for Exploration of the Sea (ICES)
- International Society for Aquatic Animal Epidemiology (ISAAE)
- EU Community Reference Laboratory for Fish Diseases
- EU Community Reference Laboratory for Mollusc Diseases

All researchers and practitioners in aquatic animal health in the EU and elsewhere have been, and still are, encouraged to participate in the PANDA network, whether to play a key role and participate in the workshops, to join in the online discussions in the forums, search for specific expertise, seek information, advice or materials from other members, or to simply to keep abreast of progress and the latest 'hot issues' in aquatic animal health. The forums allow the network members to comment on documents produced by the project, offer information and opinion to help to progress the work packages, debate other issues in the field of aquatic animal health, request information or materials, communicate widely and share their expertise with other members.

### **EPIZone: Network of excellence for Epizootic Disease Diagnosis and Control**

([www.epizone-eu.net](http://www.epizone-eu.net))

EPIZONE is a Network of Excellence supported by the EU's Sixth Research Framework Programme and started on 13 June 2006. The main strategic objective of EPIZONE is to improve research on preparedness, prevention, detection, and control of epizootic diseases by improvement of excellence through integration and collaboration while taking into account the public health concerns of consumers and other stakeholders throughout the food chain.

EPIZONE will generate a worldwide network of institutes contributing to available expertise and spreading of excellence. EPIZONE includes the Food and Agriculture Organization (FAO) of the United Nations. The World Organisation for Animal Health (OIE) will be a member of the Advisory Board.

### **Work Package 6.1 : Surveillance and Epidemiology of emerging viral diseases in aquaculture**

Leaders : Niels Jorgen Olesen and Olga Haenen, CIDC Lelystad ([info@cidc-lelystad.nl](mailto:info@cidc-lelystad.nl))

This WP focuses on viral diseases in aquaculture in particular generation of quantitative data and implementation of GIS, molecular epidemiology, emerging diseases and serology.

#### **1. Generation of quantitative data and implementation of GIS**

For improvement of the health status of European aquaculture basic knowledge on fish farms and their disease status are needed. The establishment of a Geographical information system (GIS) for aquaculture and the collection of quantitative data on the notifiable diseases will together with disease modelling capabilities provide new concepts for disease monitoring. All partners will try to implement and assess GIS in their country.

#### **2. Fundamentals for molecular epidemiology**

At present approx. 75 VHSV and 35 IHNV full length G-genes are at disposal through the EU funded EUROPA database. More, selected isolates will be sequenced from a wide area in and around EU, making molecular tracing of isolates from new outbreaks in Europe possible. In addition sequence data of Koi Herpes virus will be included in the database in order to make molecular tracing of the spreading of the disease possible.

#### **3. Emerging diseases**

The aim is to collect and publish data on the epidemiology (KHV questionnaire), molecular characteristics and clinical pathology of KHV in Europe and abroad and to provide advice for the containment of the disease.

#### **4. Diagnostic tools: Serology**

As the period in which most viruses are detectable in fish for surveillance is rather short, serology based surveillance might be a useful alternative or supplement in fish health control. Epidemiological data will be a basis for recommendation for use and applicability of standardised and validated tests, including an international proficiency test.

Second Annual Meeting of EPIZONE will be hosted by Izslar, Brescia, Italy, 4–6 June 2008

This meeting will be an open meeting and external scientists will be invited to register.

**WORLD ORGANISATION FOR ANIMAL HEALTH (OIE)**

**OIE Designated Experts for Diseases of fish and crayfish**

([http://www.oie.int/eng/oie/organisation/en\\_listeLR.htm#bkd](http://www.oie.int/eng/oie/organisation/en_listeLR.htm#bkd))

**Epizootic haematopoietic necrosis**

Dr A. Hyatt

Australian Animal Health Laboratory , CSIRO

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**Infectious haematopoietic necrosis**

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**Oncorhynchus masou virus disease**

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E-mail: yosimizu@fish.hokudai.ac.jp

**Spring viraemia of carp**

Prof. B.J. Hill

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**Viral haemorrhagic septicaemia**

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**Channel catfish virus disease**

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**Viral encephalopathy and retinopathy**

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**Infectious pancreatic necrosis**

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**Infectious salmon anaemia**

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Dr F. Kibenge

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**Epizootic ulcerative syndrome**

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THAILAND

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E-mail: somkiatkc@fisheries.go.th

**Bacterial kidney disease (*Renibacterium salmoninarum*)**

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E-mail: jim\_winton@usgs.gov

**Enteric septicaemia of catfish (*Edwardsiella ictaluri*)**

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Gyrodactylosis (*Gyrodactylus salaris*)

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**Crayfish plague (*Aphanomyces astaci*)**

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**OIE (World Organisation for Animal Health) Collaborating Center for Information on Aquatic Animal Diseases (<http://www.collabcen.net/>)**

Director of Collaborating Centre: Dr. Barry Hill, Cefas Weymouth Laboratory

The OIE Collaborating Centre for Information on Aquatic Diseases was established in May 1997 at the Cefas Weymouth Laboratory with a mandate to provide National Delegates of OIE member countries with information from the International Database on Aquatic Animal Diseases developed at the laboratory. It was subsequently decided to make the database freely available via the internet so that it can provide benefits to a wider audience, including veterinarians, scientists and regulators with interest in aquatic animal health, as well as universities and students.

The development and maintenance of this database is funded entirely by the Department for Environment, Food and Rural Affairs (Defra), UK who has made it publicly available on-line through the OIE Collaborating Centre.

**Mandate of Collaborating Centers**

Collaborating Centres of the Office International des Epizooties shall have as their mandate:

- to operate as a centre of research, expertise, standardisation and dissemination of techniques within their sphere of competence;
  - to propose or develop any procedure which will facilitate harmonisation of international regulations – applicable to the surveillance and control of animal diseases;
  - to place expert consultants at the disposal of the Office International des Epizooties.
- In addition they may:
  - within their sphere of competence, provide scientific and technical training to personnel from Member Countries of the Office;
  - organise scientific meetings on behalf of the Office;
  - coordinate scientific and technical studies in collaboration with other laboratories or organisations;
  - publish and disseminate any information in their sphere of competence which may be useful to Member Countries of the Office

**EUROPEAN FOOD SAFETY AUTHORITY (EFSA) <http://www.efsa.europa.eu/en.html>**

**An European scientific source of advice, information and risk communication**

Contact : Ana Afonso, Scientific Panel on Animal Health and Welfare,  
European Food Safety Agency

In accordance with its funding regulation 178/2002/EC the main mission of the Authority is to provide scientific advice and scientific and technical support for the community's legislation. For the accomplishment of its mission the Authority has between its tasks the responsibility to promote the European networking of organisations operating in the fields within its remit.

EFSA's role is clearly defined in two areas of the risk analysis process: Risk assessment and Risk communication. The Authority Animal health and welfare Panel deals with questions on all aspects of animal health and welfare of food production

### Annex 3

#### DRAFT LIST OF OBSERVERS FOR THE TWENTY-FIFTH SESSION OF EIFAC

In accordance with FAO/EIFAC Rules of Procedures, the following groups will be invited to participate in the Symposium and twenty-fifth session of EIFAC.

##### **States:**

Russian Federation  
Azerbaijan  
Kazakhstan  
Kyrgyzstan  
Turkmenistan  
Tajikistan  
Uzbekistan  
Armenia  
Belarus  
Georgia  
Moldova  
Ukraine  
Slovenia  
Serbia

##### **International organizations:**

European Environment Agency  
United Nations Development Programme (UNDP)  
United Nations Environment Programme (UNEP)  
United Nations Educational, Scientific and Cultural Organization (UNESCO)  
International Labour Organization (ILO)  
World Health Organization (WHO)  
Organisation for Economic Co-operation and Development (OECD)  
General Fisheries Commission of the Mediterranean (GFCM–FAO)

##### **Institutions:**

World Conservation Organization – IUCN  
Ramsar Convention  
Wetlands International  
Convention on Biological Diversity  
American Fisheries Society  
World Sturgeon Conservation Society  
European Association of Fish Pathologists  
European Ichthyological Society  
Network of Aquaculture Centres in Central and Eastern Europe – NACEE  
Network of Aquaculture Centres in Asia-Pacific (NACA)  
International Association of Astacologists  
European Association of Fishery Economists – EAFE  
European Aquaculture Society (EAS), AQUA–TT, also WAS  
North Atlantic Salmon Conservation Organization – NASCO  
EUROFISH



**Other observers:**

Council of Europe

European Anglers Alliance (EAA)

European Ichthyological Union

Federation of European Aquaculture Producers (FEAP)

International Cooperative Alliance

International Council for the Exploration of the Sea

International Federation of Organic Agriculture Movements

World Organisation for Animal Health (OIE)

International Organization for the Development of Fisheries in Eastern and Central Europe

World Wide Fund for Nature (WWF)

Confédération Internationale de la pêche sportive (CIPS)

Sportvisserij Nederland (anglers association)

European Fisheries and Aquaculture Research Organisation (EFARO)

## Annex 4

### OUTLINE OF A BOOK TITLED: WATER USE AND RE-USE IN AQUACULTURE

Editors: M.Verdegem/L.Váradí/ /J. Muir/J.Verreth

This book gives a comprehensive review of present and future water use in aquaculture as well as water related constraints for further development. The reader gets insight on water use in aquaculture, learns to compare productions systems in terms of water use, and learns to deal with consequences of possible water shortages at local or regional level. The effects of water pricing on present and future aquaculture production are reviewed. It treats the subject in a global context, considering the issues in both developed and developing countries. The book targets a broad audience, including irrigation specialists, aquaculturists, students, policy makers, administrators, water engineers and scientist involved with aquaculture development. The book will help readers further understand the costs, opportunities and constraints of water use in aquaculture, and venture into new and promising areas leading to the further improvement of water-efficient aquaculture production systems.

#### 1 Review of water use worldwide

This chapter sets a broad framework of global freshwater resources and global freshwater use. Terminology used in the book is also defined. The chapter concentrates on:

- Introduction to concepts: hydrological cycle – green water – blue water – RFWR – Rws – virtual water trade)
- Global freshwater use:
  - Water use for agriculture, industry, urbanization, ecological functions (in percentages of total water availability)
  - Balance between rain fed and irrigated areas, giving attention to aquaculture water use
- Outlines trends in future water availability:
  - Shifts from agriculture to industry and urbanization
  - Demographic developments and expected impact on water availability

Authors: A. Hoekstra (CTW, section waterbeheer)

#### 2 Global water use in aquaculture

This chapter gives a review of water use in aquaculture by system and by country/region. Attention is given to the amount of aquatic products produced and the related water use. Such a comparison will allow to make a by country comparison for aquaculture water use efficiency (for instance kg produced/m<sup>3</sup> water). Special attention is given to water use in brackish water environments.

Authors: Stirling University (Muir/Siriwardena)

#### 3 Water use in the aquaculture production chain

Water uses in aquaculture include on-farm water use (evaporation + seepage + drainage), post-farm water treatment/purification systems, fish processing water use, and transportation/distribution water use. Additional water use is related to the construction of facilities, energy consumption, etc. The goal of this chapter is to review and to define the water use along the whole aquaculture value chain, and the relative importance of the various steps in the aquatic product chain in total water use.

Authors: Verdegem, Bosma (Wageningen) and Hoekstra (CTW)

#### **4 Future growth in aquaculture production and related water needs**

FAO has published various scenarios for future development of aquaculture. The goal of this chapter is to relate future growth in aquaculture to future freshwater demand. Where possible, water scarcity limits for future aquaculture development will be identified assuming present technologies stay the same.

Authors:

#### **5 Approaches to reduce water use in aquaculture**

##### 5.1 Intensification of pond aquaculture

Recent insights in pond production techniques allow to increase production per unit surface area, without negative impacts on sustainability and water use. Intensification leads to reduction in water use per amount produced. This chapter reviews recent developments in pond aquaculture and analyses the impact on water use in aquaculture. Techniques to reduce seepage losses will also be discussed.

Authors: Avnimelech & Verdegem

##### 5.2 Recirculation technology

###### *5.2.1 Outdoor recirculation systems*

This chapter reviews developments in semi- and closed production technology of outdoor systems in relation to water use. The chapter contains two subsections. The first subsection concentrates on the use of artificial wetlands, stabilization ponds and within pond submerged filters, the second subsection concentrates on partitioned aquaculture systems.

Authors: Brune

###### *5.2.2 Indoor recirculation systems*

This chapter reviews indoor recirculation systems and strategies going into the direction of zero-water exchange. Attention is given to evaporation losses from buildings and water exchange rates to control system water quality.

Authors: Eding/ Blancheton/Losordo/Ouwekerk

###### *5.2.3 Desert aquaculture*

This chapter describes options for aquaculture development under extreme dry environments, and water saving technologies. Systems considered include greenhouse technology and measures to reduce evaporation from tanks or reservoirs.

Authors: Neori *et al.*/Rakocy/ABT

#### **6 Costs of water use in aquaculture**

##### 6.1 Direct and indirect costs of water use in aquaculture

Pricing policy of water use in selected European and Asian countries will be reviewed and compared, as well as the consequences on aquaculture production costs. Often different price tariffs are used for water for agricultural, industrial and human use. The (potential) impact of pricing policy on production costs and water use in aquaculture will be reviewed.

Authors: Stirling (Muir/Siriwardena)

##### 6.2 Economics of shared water use in integrated systems

Use of ponds as nature reserves, recreation, flood control, recharge of aquifers and water storage. This also includes the use of reservoirs and rivers for fish production. Effect of joint use on total costs.

Authors: IWMI (Molden *et al.*)

### 6.3 Water productivity in aquaculture, poverty alleviation and livelihoods

Reviews the relation between water productivity and poverty, and reviews examples of improved water management in aquaculture influences food security and livelihoods.

Authors: World Fish (Brummett/Bene/Heck)

## **7 Knowledge gaps and research priorities for water use in aquaculture**

This chapter draws conclusions on the basis of previous chapters and gives recommendations for reducing water use in aquaculture, and discusses future trends in aquaculture water use.

Research priorities are also reviewed

Authors: Editors

## **Annex 5**

### **EIFAC WORKING PARTY ON FISH MONITORING IN FRESH WATERS**

#### **Terms of Reference**

##### **Membership**

Convener – Phil Hickley

Members – Membership is open to anyone willing to serve. (List of current members is posted on the EIFAC web site.)

##### **Purpose**

To promote consistency of purpose and use of best practice in the monitoring of fish populations in fresh waters by facilitating:

- A. Provision of a scientific and technical advisory resource;
- B. Development of guidance on available and preferred methods of sampling.

##### **Specific objectives**

1. To gather information on the scientific work programmes of member countries relevant to fish monitoring;
2. To build understanding and fill knowledge gaps that currently compromise effective fish monitoring;
3. To encourage international consistency in the collection, analysis and reporting of information about fish communities and fisheries;
4. To produce best practice guidance and technical notes on fish monitoring;
5. To act as a forum for debate relating to fish monitoring methods and strategy;
6. To develop robust links across member countries for the dissemination of information;
7. To organise workshops on specific fish monitoring topics;
8. To advise on the development and content of European Standards on fish monitoring methodology, especially for the Water Framework Directive;
9. To identify and evaluate future scientific and technical fish monitoring issues of importance to the management of fish populations.

##### **Outcomes**

- a) Database of key information on fish monitoring;
- b) Network of user groups within member countries;
- c) Communication of methodology and best practice;
- d) Consistency of sampling and reporting across member countries;
- e) Awareness of fish monitoring emerging issues.

## Annex 6

### **AQUATIC RESOURCE UTILIZATION BY AQUACULTURE HEADLINES FOR WORKING PARTY**

Proposed by: Mr Marc Verdegem

The primary concern of the Working Party is to analyze the present and future water use by European aquaculture and to interpret this information in the context of the total present and future water use in Europe.

European aquaculture is mainly carried out in marine and brackish waters. In these environments, the focus is not so much on total water use but on short and long term environmental impacts. This topic, although important, will not be taken up by the Working Party. Nevertheless, marine and brackish water cultures still use considerable amounts of fresh water (fry and fingerling production, processing, production and processing of feed ingredients), which will also be reviewed by the Working Party.

The goal is to summarize findings of the Working Party in a book of interest to EIFAC member countries as well as other countries worldwide.

The following topics should be taken up by the Working Party:

#### **1. WATER USE IN AQUACULTURE**

##### **1.1 Types of water use in aquaculture**

Water uses in aquaculture include on-farm water use (evaporation + seepage + drainage), water treatment/purification systems, fish processing and fish food production (ingredient production, processing). Water is also used for construction of facilities, energy use, etc. The question is if the latter types of water use should also be considered. The goal of this section is to review and to define the water use along the whole aquaculture value chain, and to define which types of water use will be considered in the rest of the study.

##### **1.2 Water use of different aquaculture production systems in Europe**

For one culture species, different production systems can be used. Water use for each commonly used production system will be calculated. Based on the water use by culture species/system, water use can also be calculated at country level.

##### **1.3 Trends in water use in aquaculture**

Based on predicted growth in aquaculture production (maximum and minimum scenario), predicted water uses in aquaculture will be calculated (by species and country).

##### **1.4 Promising technologies to reduce water use in aquaculture**

Promising technologies along the aquaculture value chain that can lead to considerable reductions in water use will be identified and discussed.

##### **1.5 Comparison of water use with other types of agricultural production, preferentially animal production**

When data are available, a comparison can be made to other types of agricultural activity.

- 2. COSTS OF WATER USE IN AQUACULTURE**
  - 2.1 Costs of direct water use in aquaculture**

Costs of on-farm water use by culture species/system. Cost of water in different European countries will be compared.
  - 2.2 Costs of indirect water use in aquaculture**

Focuses on water use for water purification (drainage water, seepage water), water use for input generation (feed for instance, fertilizers) and water use for processing and distribution.. Often different price tariffs are used for water for agricultural, industrial and human use.
  - 2.3 Economics of shared water use in integrated systems**

Use of ponds as nature reserves, recreation, flood control and water storage. Effect of joint use on total cost.
  - 2.4 Trends in water prices till 2020 and 2040**
- 3. SPECIAL ATTENTION WILL BE GIVEN TO IDENTIFYING AREA WITH FUTURE LOW OR HIGH WATER PRICES IN EUROPE**
  - 3.1 Aquaculture options**
  - 3.2 Acceptable forms of water use in aquaculture**
- 4. TOTAL COST OF WATER USE SHOULD BE LESS THAN A GIVEN TARGET PERCENTAGE OF VALUE OF THE PRODUCT PRODUCED. A COMPARISON IS MADE BETWEEN CULTURE SPECIES/SYSTEM COMBINATIONS AND BETWEEN COUNTRIES**
  - 4.1 Strategies for conversion from existing systems to sustainable water use systems**
  - 4.2 Needed research and proposed research priorities**
  - 4.3 Needed training and proposed training programs**

## Annex 7

### **DRAFT DUTY SHEET FOR NATIONAL CORRESPONDENTS OF EIFAC**

Extract from twenty-third session Session report, Wierzba, 2004.

*74. The National Correspondents have to play a more active role in promoting national and international collaboration among fisheries scientists, managers and administrators. National Correspondents should maintain a national database of fisheries institutions and fisheries scientists, thus enabling the flow of information to and from these partners. This concerns particularly the announcement of EIFAC symposia and sessions. National Correspondents and their ministries should be briefed on their function by the Chairperson, based on a duty sheet that will be prepared by the Executive Committee, assisted by the Secretariat.*

Based on EIFAC's Rules of Procedure<sup>13</sup>, in particular Rule I (Membership) Item 2, the following functions and duties are proposed.

#### **Functions and duties of EIFAC National Correspondents**

- Correspondents should be appointed by their Government. National Correspondents should be recognized formally by the administrative and institutional framework of their governments as official focal points of EIFAC. Outgoing National Correspondents brief the incoming National Correspondent on the ongoing activities of EIFAC and on the duties of a National Correspondent.
- Correspondents participate regularly in the Sessions of EIFAC. They make sure that their country is represented at the Session by a National Delegation, led either by themselves or by a substitute. The head of the National Delegation is authorised to speak on behalf of his/her Government at the Session.
- Develop and maintain a national network of fisheries and aquaculture institutions, scientists and practitioners to facilitate communication and the flow of information to and from EIFAC. Use electronic mail. Develop a National EIFAC website, as appropriate, to provide information links and resources on EIFAC and on inland fisheries and aquaculture matters of interest to their own country. Use the network frequently for information exchange.
- Promote national and international collaboration among fisheries and aquaculture scientists, managers and administrators by providing the necessary contacts, either directly or with the help of the EIFAC Bureau.
- Make use of the advice and information provided by EIFAC (reports, publications from symposia and by working parties). Inform national partners regularly of new inland fisheries and aquaculture publications by EIFAC.

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<sup>13</sup> See EIFAC rules of procedures (since 1998) at: <http://www.fao.org/fi/body/eifac/rules.asp>



- Periodically brief the superior office (e.g. Ministry) on the work and achievements of EIFAC.
- Notify EIFAC of problems and issues in inland fisheries and aquaculture that have been detected or that are or seem to be emerging. Inform EIFAC of relevant new publications and projects from their country.
- Encourage participation by experts from member countries in at least one of the activities of EIFAC (working parties, liaison groups, workshops, expert consultations, etc.).

## Annex 8

### AGENDA

- 1. Opening of the session (P. Hickley)**
  - Agenda EIFAC/EXCOM/2007/1
  - Timetable EIFAC/EXCOM/2007/Inf. 1
  - List of Participants EIFAC/EXCOM/2007/Inf. 2
- 2. Place and date of twenty-fifth session (P. Hickley/R. Celebi)**
  - Timetable for Session/Symposium 2008 (D. Bartley/ R. Van Anrooy/R. Celebi)
  - Compilation of list of observers to be invited
- 3. Preparation of the 2008 Symposium (R. Van Anrooy/R. Celebi)**
- 4. Proceedings of the 2006 Symposium (G. Marmulla)**
- 5. Report of First Meeting of Regional Fisheries Bodies Secretariats (D. Bartley)** EIFAC/EXCOM/2007/2
- 6. Report on Sub-Commission I (T. Brenner)** EIFAC/EXCOM/2007/3
  - Eels
  - Fish monitoring in fresh waters
  - Introductions and stocking
  - Mapping of fish distribution and aquatic habitat quality
  - Management of Sturgeon
  - Fish passage best practices
- 7. Report on Sub-Commission II (L. Váradi)** EIFAC/EXCOM/2007/4
  - Relationship between fish transfer and fish health
  - Aquatic resources management in aquaculture
  - Market perspectives of European freshwater aquaculture
  - Eastern European affairs initiative
  - Other future activities
- 8. Report on Sub-Commission III (G. Castelnaud)** EIFAC/EXCOM/2007/5
  - Effects of physical modification of the aquatic habitat on fish populations
  - Methodologies for rehabilitation of lakes and reservoirs
  - Prevention and control of bird predation (liaison group)
  - Handling of fishes in fisheries and aquaculture
  - EU Water Framework Directive (liaison group) and future working party
- 9. Report on Sub-Commission IV (I. Cowx)** EIFAC/EXCOM/2007/6
  - Recreational fisheries

- Socio-economic aspects of inland fisheries
- IUU fishing
- Other activities

**10. Assessment of the role and functioning of EIFAC (P. Hickley)** EIFAC/EXCOM/2007/7

- National summary reports
- New/potential Members

**11. Collaboration with partners**

**12. Emerging issues** EIFAC/EXCOM/2007/8

**13. Any other matters** EIFAC/EXCOM 2007/9

- Report of the twenty-fourth Session

**14. Closing of the session**

## Annex 9

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