

## **PROFET POLICY - Conclusions per workshop - Aquaculture**

### **I. Bergen (Cold water [northern] marine aquaculture)**

Aquaculture creates continuous challenges and problems that need to be solved.

Basic knowledge about **organisms, environment and market** is the key to success.

#### ***A. RTD (Practical)***

- Impact of science on aquaculture can be measures (cf. salmon from >100 NOK/kg to +/-22) based on
  - Breeding, feeds, vaccines, equipment (larger cages, handling...)
  - Highlighted real cost of getting the basic research requirements for each new species (estimate 10 million €/year for +/-10 years = €100 million)
- Topics needed on this cover basic biology (inc feeds), breeding/genetics) but also applied technology (safety, quality), ethical and logistical issues (inc. good planning), market development and political support (planning, licensing...)
- Genetics/genomics seen as having great potential but...
  - Need basic knowledge on functional genomics
- Need knowledge on effects of feed [components] on growth, health, product quality
- Need new ingredients (availability, ethics...)
  - Krill, microalgae, plants, bio-proteins
- Minimise negative effects of aquaculture on environment
  - Key issues are: farmed/wild interactions, disease/parasite spreading, resistance to treatments (increased use)
  - Prove and communicate
- Ocean going cages and infrastructure for successful offshore aquaculture

#### ***B. Managerial/Commercial***

- Consumer preferences must be the focus on existing and new products; key issues
  - Sensory quality
  - Microbiological quality (Safety)
  - How to deal with the GMO issue (feed ingredients)
  - Ethical views on livestock production
- Better diagnostics on diseases
- New vaccines and treatments
- Need better ICT systems for
  - Farm control/management
  - Farm/Site surveillance and modelling
  - Traceability

### ***C. Social/Political***

- Marine Board created to provide policy advice
  - Collective vision on research that supports policy
  - Promoting research as a tool to build Europe (goes beyond science to European and societal dimensions)
- Coastal aquaculture subject of many conflicting interests
  - Can the Maritime Policy provide solutions?
- Carbon footprint – need new approach and knowledge for justification
- No country can go alone (on available resources) for successful RTD – need to cooperate
  - Should join forces on generic research
  - Need to identify needs

## **II. Athens (Mediterranean Aquaculture)**

### ***A. RTD (Practical)***

- Mediterranean sustainability guidelines seen as important doc
  - Need to bring these into reality & practise (new Code? Certifiable?)
- Fish Health – major topic
  - Need: epidemiological studies
  - Need: practical stress/best welfare indicators
  - Need: best husbandry practises
  - Need: strategies for combating viral diseases
- Research needed on fast-growing species & improved performance of established ones (selection? Genetics??? – no clear suggestion)
- Deformities remains a big issue for Mediterranean hatcheries
  - Trend of fewer but larger hatcheries
  - Need: Uniform diagnostics
- Concern raised with regard to the omega 3 level of fish fed with substituted ingredients in the feed (i.e. substitution would lead to weaker nutrient profile of fish)
- Research in the direction of identifying genetic strains of fish more susceptible/welcoming to feed substitution was mentioned as an important issue.
- Production of biolipid and bioproteins from natural gas was proposed as a possible alternative source of feed ingredient substitutes
- Lessons to be learnt from the salmonid industry with regard to treatment and health management of the fish stock. (networking/crossover)

## ***B. Managerial/Commercial***

- Consumer studies on drivers/barriers (Seafood Plus) – limited awareness of aquaculture
  - Better marketing, more consumer information needed
  - Communication needs improvement
- Potential for ‘new species’ not clear
- Proactive rather than reactive approach required in fish health management
- The promotion of organic fish in the market must be done in a cautious and responsible manner as not to harm the image of the ‘conventionally’ produced fish.
- Within the issue of image of the industry and its products, the need of common eu labelling standards was stressed by a number of speakers and participants.

## ***C. Social/Political***

- Long standing issues of importance must be supported by policy makers – **licensing, spatial planning, support & guidance to RTD** (spatial planning a regular topic)
  - Site selection and carrying capacity needs support data
  - Clearer position on MPAs and aquaculture potential needed
  - Marine policy could play an important role here
- **Constructive cooperation between producers and relevant stakeholders must be established**
- **Potential need for an aquaculture observatory (to follow developments)**
- **Aquaculture should be an equal rights user** (point comes back regularly)
- **Need: Better Coordination of RTD – quantifiable objectives, efficient evaluation mechanisms (of results)**
- Key factor remains **communication** by explaining sustainability (a better choice)
- The issue of access to research funds was raised, along with the problem of limited funding capacities for SMEs (and Associations under FP7 rules)
- Everyone stressed the fact that demand for fish will increase and that capture fisheries cannot supply the market. Aquaculture is here to fill the market gap with high quality products
- Mediterranean aquaculture has an important role to play in the wider European aquaculture environment.

### III. Warsaw (Continental Freshwater)

#### A. *RTD (Practical)*

- Impact of alien species (Impasse); ongoing project interlinks to alien species regulation. Looking for guidelines on quarantine and best stock enhancement practises.
- Potential for using fish farm waste – has scope for certain products. Probably needs refining and clarity in results.
  - **Recommendation** to address disease content/impact in waste discharge and treatment
  - **Recommendation** to assess impact/use/value of sludge (concentrated farm waste)
- ‘Sustainaqua’ – special focus on water treatment/recirculation in functional farms – use less water for same or higher production.
  - RAS has a role – but very slow on implementation – how can users benefit from this R&D on site (cost/benefit)
  - Model farms in Denmark best example to date
- Improved consumer communication needed – works well in France, Italy, Spain etc. (e.g. Test achats network) – Newer Member States not so well established on this front
- Malformations remain a major ‘quality’ and productivity issue;
  - need to look at dietary availability and legislation on supplements (some conflicts) in feeds
  - feed components/supplements still an issue

#### B. *Managerial/Commercial*

- Natura2000/Birds Directive – major problem for inland farmers
- FEAP/IUCN Guidelines on Mediterranean (Sustainability indicators) mentioned (addressing farmers/decision-makers): Can this model be applied to continental Freshwater aquaculture?
  - FEAP/IUCN agreement expanded to include freshwater in Oct 2008
  - Similar approach would need funding
- Presentations on eel production referred to Eel Management plans and difficulties encountered in this sector.
  - Glass eel/elver production? In hatcheries? To counter export of glass eel?
- Measuring and proving sustainability a big issue for the sector
  - Role for improving CONSENSUS indicators?
- Sturgeon seen as big opportunity – mainly for caviar production – but all of a sturgeon can be used (cf. pigs) – applications in other areas (cosmetics, pharmaceuticals...)
- Technology transfer and skill development remains an issue, particularly if difficult to get younger people into the sector

### ***C. Social/Political***

- Water Framework Directive rather scary as fish farmers seen as ‘industrial polluters’ – many freshwater farmers throughout Europe still not sure how WFD will affect their fish farm  
Need for a full impact study? Water charges based on volume ‘use’ would kill the business.  
Use based on transit vs. evaporation?

**Close consultation required on WFD developments needed (e.g. classification of water bodies)**

**Role of large ponds (inland Europe) in water catchment – Natura 2000 (needs promotion)**

**Benefits if water quality improves in passage through ponds**

**Pond Farmers should be seen as partners in WFD implementation**

- Spatial planning a big issue: no regional policies for freshwater aquaculture
- Fish Health; risk-based surveillance and compartmentalisation ); monitoring of health status of surrounding water. Overlap with principles of WFD. Does this need examination?
- Availability of land & water, environmental interactions dominate thinking; pond farms need large space for small production levels. Scope for development (inc productivity)
  - Need to quantify costs to meet environmental references – establish [economic] tolerance levels between farmer and society (research needed on this – absence of solid data)
- Irritation on implementation of WFD – farmers feel it has potential to reduce level playing field (subsidiarity application).
- Noted difficulty in getting RTD into practise in the field
- **Need** to raise skill levels
- **Need** review of financial impact and real costs of implementation of WFD (throughout Europe)
- **Need** improved governance within inland Continental aquaculture (cf NACEE, EIFAC...)
- **Need** to develop a more REGIONAL approach, including governance, on some issues (e.g. consumer issues, WFD management)
- **Communication again raised as an issue.**

## IV. Treviso (Quality Assurance in Freshwater Aquaculture)

This workshop had a particular focus on quality and freshwater aquaculture, underlining the application of standards and quality assurance.

A very comprehensive review was made on quality requirements of the consumer and how the quality of aquaculture products was subject to many influencing factors.

### A. *RTD (Practical)*

- Pikeperch and perch have potential opportunity, but
  - **Year-round production of eggs and larvae** needs resolving
  - **Special diets needed for broodstock** (big influence)
- Future fish feeds have a direct effect on fish farming
  - Improving feed efficiency while reducing dependency from marine raw materials
  - To what extent are vegetable raw materials suitable for freshwater fish feeds?
  - Develop aquaculture to be a net protein producer
- Future feeds may not be able to avoid GM
  - Needs new approaches and communication to succeed
  - Need to change approach from commodity use to incorporation of strategic ingredients that serve a purpose (fish and human nutrition/benefits)
- Lifestyle diseases are a global challenge
  - Many directly affected by an improved diet where fish/seafood has important role
  - New fish diets can act as functional food but
    - The public has been presented with conflicting scientific evidence regarding the risks and benefits of consuming various types of fish
    - The assessment and management of food safety in general tends to be a politically and morally charged issue
    - This highlights the need to develop **effective risk communication about farmed fish**
- Genomics/Genetics: Breeding efficiency is best achieved in the long term
  - sustained effort and support necessary for success
  - Can have undesirable side effects on fitness traits
    - have to be monitored and genetic basis explored
- « Genetic pollution » of wild stocks with escapees needs clarification
  - Is it worse than with non selected stocks ?
  - Option of containment with sterile (triploid) fish

## ***B. Managerial/Commercial***

- Quality is closely linked to safety
  - Post-mortem influences on quality v. important cf. quality pre-harvest (spoilage)
  - **Need BMP linked to risk analysis systems** to have clear safety objectives and standards
- **Quality Assurance schemes** are a definite advantage – industry has to set and lead the trend (vs. being dictated to) – ownership of standard is important
  - QA reduces risks, improves performance, increases autonomy

## ***C. Social/Political***

- Association provide essential hub with Government/Agencies/Organisations
  - Promote BMP and Codes of Practice/Quality Schemes
  - Need better communication tools and support – transparency of operation essential
- Licensing issues highlighted as being very complex for freshwater aquaculture, following regionalisation, noting
  - Diversity of local, regional and state authorisation procedures
  - Complexity of bureaucracy and procedures
  - Need for simplification and common rules
- Support needed to develop new projects (activities, investment, equipment)
  - Procedures lengthy & complicated, one-stop shop could help

# **V. Vigo (Fisheries & Aquaculture)**

## ***A. RTD (Practical)***

The Profet Policy workshop on 'Integrating Fisheries and Aquaculture with Marine Environment Protection' demonstrated that European fisheries and aquaculture share many common problems and issues.

As one of the first international workshops to address policy topics common to these traditionally separate sectors, the workshop looked at a wide range of approaches to the workshop theme.

There seems to be a change in the approach of different stakeholders, where the protection of a common resource, the marine, is perhaps being replaced by the **sustainable exploitation of the largest global ecosystem**.

However, when referring to sustainable development, it is evident that development cannot occur without investment – which is best achieved from economically profitable operations.

The project presentations, made by senior representatives of European RTD project consortia, demonstrated that, while a **huge amount of scientific data** is available, there is still a **need for clear benchmarks** – from which progress can be measured.

- A lot of projects have identified this issue, where the **methodology for referencing 'sustainability'** is needed urgently.
- There was much reference to **integrated management options and systems**, where all of these efforts have to recognise the **validity of all stakeholders in the coastal zone**.
- **Effective and efficient area management** must be promoted, where **aquaculture needs to benefit from the application of spatial planning**.
- A key issue for European aquaculture is the manner in which **licenses for operation** can be obtained; in many European countries, there is a need for multiple licences – of different duration and scope – in order to function. The application of **spatial planning – allocating specific areas for aquaculture development** - as well as other related options, could facilitate these procedures.

The measurement of the effects of aquaculture on the environment were presented in a number of different presentations, including a demonstration of the ECASA (An Ecosystem Approach to Sustainable Aquaculture) 'toolbox', which includes modelling options for Environmental Impact Assessment of different types of marine aquaculture.

Events such as Profet Policy provide a unique opportunity to learn the different points of view of the stakeholders, **promoting better communication between science and the producer sector**. Within this, it is clear that the **Technology Platforms** that were presented at the workshop (local, regional and European) are definitely important players in the RTD arena.

The aquaculture sector is very concerned about **policies that reduce its economic competitiveness**, noting that it is still young, has made a lot of improvements but needs its benchmark positions. The goalposts are being moved regularly on a wide range of topics, including environmental as well as other operating issues – such as farmed fish welfare. All of these actions end by increasing costs of production while market competition, particularly with 3<sup>rd</sup> country imports, becomes more and more severe.

**Certification and labelling**, perhaps for proving sustainability since there is increasing pressure from the consumer and general society on this topic, **is a core point of debate for both fisheries and aquaculture**.

It was agreed by the Workshop that **communication must be improved at several different levels – on what science is doing to improve, on what the professional sector is doing on implementing recommendations, on how science and the profession are working together, on what the Commission is doing in respect of policy development**.

**Identifying the best means of achieving such an effort should become a priority for all.**

Multi-stakeholder cooperation and agreement is seen as essential for the future, where consensus agreement will be required while understanding the need to move quickly, efficiently and effectively.