



Aquaculture can contribute to feeding the world in 2050 sustainably

Aquaculture can make a significant and sustainable contribution to feeding the world in 2050. That is the conclusion of the booklet "How can aquaculture contribute to feeding 9 billion people in 2050 in a sustainable way?" published recently by Skretting.



To succeed, say the contributors, the practice of aquaculture must be developed in a responsible manner. The booklet features introductory texts from FAO and WWF. These lead on to sections on the challenges, the potential role and the opportunities for aquaculture as a provider of protein for the population of the earth in 40 years time.

All stages of the aquaculture value chain are represented, from fishmeal and fish oil production through to fish processing and retailing, with top industry contributors at each stage. They are joined by politicians from China and the EU, industry organisations and academics. In his concluding remarks, Knut Nesse, the Executive Vice-President of Nutreco Aquaculture / Skretting Group, observes, "Aquaculture can deliver seafood that is healthy and delicious. By ensuring we keep sustainability central in the growth of aquaculture we will open

oceans of opportunity." The booklet is available at http://www.nutreco.com/media/pageflip_new/index.html

More foresight: Global Food and Farming Futures

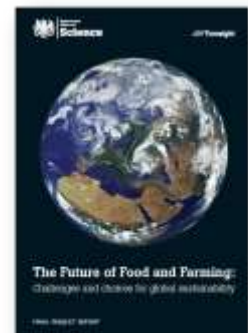
The Foresight project Global Food and Farming Futures (sponsored by the UK Government's Department for Environment, Food and Rural Affairs (Defra) and Department for International Development (DFID)) explores the increasing pressures on the global food system between now and 2050. The Report highlights the decisions that policy makers need to take today, and in the years ahead, to ensure that a global population rising to nine billion or more can be fed sustainably and equitably.

Involving around 400 leading experts and stakeholders from about 35 countries and drawing upon over 100 peer-reviewed evidence papers, the Foresight report makes a compelling case for urgent action to redesign the global food system to meet the challenge of feeding the world over the next 40 years, analysing five key challenges for the future:

- Balancing future demand and supply sustainably – to ensure that food supplies are affordable.
- Ensuring that there is adequate stability in food prices – and protecting the most vulnerable from the volatility that does occur.
- Achieving global access to food and ending hunger - this recognises that producing enough food in the

world so that everyone can potentially be fed is not the same thing as ensuring food security for all.

- Managing the contribution of the food system to the mitigation of climate change.
- Maintaining biodiversity and ecosystem services while feeding the world.



As reported by SeafoodSource.com "Aquaculture will play a major role in feeding the world's population sustainably and equitably over the next 40 years when it's expected to top 9 billion, according to a new report out of the United Kingdom. As a result, demand for seafood is expected to increase "substantially," at least in line with other proteins, particularly in eastern and southern areas of Asia, according to the report. And the majority of the increased demand will need to be met by

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EAS is an International Non-Profit Association that promotes contacts among all involved in aquaculture. EAS was founded in 1976. EASinfo is the members' e-newsletter of EAS.

<http://www.easonline.org>



expanding aquaculture production, which will “significantly” impact the management of aquatic habitats and the supply of feed resources. However, aquaculture productivity worldwide could be raised 40 percent by applying existing knowledge and technology, found the report. For example, average yields could be increased

two-fold in Russia and two- to three-fold in many areas of Africa.”

Various versions of the final report can be found at: <http://www.bis.gov.uk/foresight/our-work/projects/current-projects/global-food-and-farming-futures/reports-and-publications>

Marine Conservation Society – Feeding the fish of the Future

The Marine Conservation Society (MCS) hosted the event “Feeding the Fish for the Future- Alternative



Choices for Aquafeed” on November 9th, 2010 in Edinburgh. The event, kindly sponsored by EWOS, Skretting and Biomar, was developed to explore and discuss the range and scope of alternative, non-marine ingredients that can be used in aquafeeds.

The audience was limited to key decision makers and leaders within the aquaculture industry in Scotland. The format of the day was designed to draw upon the expertise within the room to explore and discuss the issues and questions presented. The day consisted of a series of presentations followed by discussion sessions lead by questions generated by the audience. MCS would like to thank all those that attended and contributed to the day. We had over 60 attendees from a range of sectors associated with aquaculture from fish farmers, producer organisations, retailers, NGO, Government and academia, a combination that proved informative and constructive throughout the day.

There are a range of feed ingredients; both in current use and emerging that are available for use in aquafeeds. Scottish aquaculture has the highest level of inclusion of marine protein and oils in feed formulations and the lowest percentage of substitution of the four main countries farming Atlantic salmon. One of the aims of this event was to explore the reasons behind that and to showcase the range of alternative ingredients that could be used in partial replacement.

FEEDING THE FISH OF TODAY – WHERE WE ARE NOW WITH AQUACULTURE AND FEED

Dawn Purchase (photo), MCS Aquaculture Officer began by providing an overview of the current situation within aquaculture in terms of global aquaculture supply, the Blue Revolution and population growth.

Paddy Campbell, Research Manager at Biomar gave an overview of current feed formulations and how they have changed over time, reviewing the range of current ingredients that are used in UK aquafeeds and compared those in use elsewhere – Chile, Canada, Norway and for non-salmonid species.

Ally Dingwall, Aquaculture and Fisheries Manager, Sainsbury’s explained what a retailer wants a feed to deliver and what are the barriers to substitution from a retailer perspective.

HUMAN AND FISH HEALTH – DELIVERING HEALTH BENEFITS AND ASSURANCES

Professor Gordon Bell, University of Stirling provided an overview of how a partially substituted diet can still meet the nutritional requirements of both fish and deliver health benefits to humans. The presentation also provided a brief overview of research in this area and in the area of emerging and novel ingredients including algal oil; reclaimed cleaned fish oil and GM oils.

Stephen Woodgate, Food Chain and Biomass Renewable Association presented a comprehensive overview of land animal protein availability and use in aquafeeds.

FEED AND THE FUTURE – WHAT’S ON THE MENU OF TOMORROW?

Paul Morris, Skretting reviewed novel ingredients and provided an overview of ingredients available for use in aquafeeds of the future.

Piers Hart, WWF gave an explanation of the process used to develop standards through multi-stakeholder roundtables and looked at the feed standards in the Aquaculture Dialogues and described how we can influence that process.

Douglas Low, EWOS discussed what feed options are available to the industry in the future, how the markets affect those choices and what are the drivers for change.

Two panel discussion sessions took place as part of the event and this provided an opportunity for participants to both question the panel of presenters and to debate issues within the room.





Key topics of discussion included consumer perceptions of alternative feeds; the role of the retailer in promoting a substituted diet; NGO role in consumer education and progressing the agenda; health benefits of feeding a substituted diet and a number of different technical discussions surrounding the ingredients mentioned in the presentations.

"What role can MCS play to progress this work?."

Over the coming months MCS will analyse these responses and, in conjunction with the information generated throughout the day, use it to inform the

planning of our work in the area of feed substitution. A full report will be produced including this data analysis as well as an outline of future work plans. On initial review it is certain that part of this work will include some consumer awareness work introducing the need for feed substitution.

Presentations are available to view online at: http://www.mcsuk.org/what_we_do/Fishing+for+our+future/Aquaculture+-+what+we+do/Feed+event

Information and photo kindly supplied by Dawn Purchase, MCS.

State of the World's Fisheries and Aquaculture (SOFIA) 2010 now online!

The contribution of fish to global diets has reached a record of almost 17 kg per person on average, supplying over three billion people with at least 15 percent of their average animal protein intake. This increase is due mainly to

the ever-growing production of aquaculture which is set to overtake capture fisheries as a source of food fish, according to the State of the World's Fisheries and Aquaculture. The report also stressed that the status of global fish stocks has not improved.

Total world production of fish and fish products rose from 140 million tonnes in 2007 to 145 million tonnes in 2009, according to the FAO report. Much of the fish now comes from aquaculture, which is growing at the rate of almost seven percent a year.



The report held up aquaculture policies in Southeast Asia — where fish is a fundamental part of people's diets — as a good example of balanced management. The report praised continuously improving government

interventions built on comparative advantages and economic incentives that lead to growth, food security and better living standards. The report also contains a special chapter on inland fisheries. Inland fisheries are often overlooked by policymakers and irrigation and hydroelectric schemes are at times planned without regard for the impact on inland fishers' livelihoods. However, inland fisheries support 61 million people worldwide.

For the whole report: <http://www.fao.org/docrep/013/i1820e/i1820e00.htm>

Other FAO publications

- "METHODOLOGIES FOR ASSESSING SOCIO-ECONOMIC BENEFITS OF EUROPEAN INLAND RECREATIONAL FISHERIES". EUROPEAN INLAND FISHERIES ADVISORY COMMISSION. EIFAC Occasional Paper No 46. SEC/EIFAC/OP46 (En) Available at <http://www.fao.org/docrep/013/i1723e/i1723e00.htm>
- "Present Market Situation and Prospects of Meagre (*Argyrosomus Regius*), as an Emerging Species in Mediterranean Aquaculture" FAO 2010 Paperback 42 pages ISBN: 9789251066058 Price: USD \$15.00. Order online: <http://www.earthprint.com/productfocus.php?id=FAO111085>
- "Carp polyculture in Central and Eastern Europe, the Caucasus and Central Asia". A Manual by: Woynarivich, A., Moth-Poulsen, T., Péteri, A. FAO Fisheries and Aquaculture Technical Papers No. 554. Rome, 2010, 82 pp., A4, PB. ISBN 978-92-5-106666-9. USD 20.00

UK Environmental Agency FISH PASS manual

The Environment Agency has issued a new version of its Fish Pass Manual.

Since the first edition in 2004, European and National Legislation (WFD, Habitats Directive, Renewable Energy Directive, EU Eel Regulation and Eel Statutory Instrument) has provided strong drivers for installing solutions to in-river obstructions to fish movement and increasing the amount of river length accessible to a

greater number of river fish. This updated 375 page manual, written by Greg Armstrong with contributions from colleagues, collates recent advances in fish pass design and presents the fundamental principles, processes and equations in an easily accessible manner.

The Fish Pass Manual is available to download from <http://publications.environment-agency.gov.uk/pdf/GEHO0910BTBP-E-E.pdf>



Natura 2000 developments

On the 10th of January the European Commission communicated through a press release that the network of protected areas of the EU - Natura 2000 - has been enlarged, with the latest additions including 739 new sites covering nearly 27000 square kilometres. The latest update of Natura 2000 concerns fifteen EU Member States: Austria, Cyprus, the Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, Latvia, Poland, Spain, Sweden and the UK. The expansion covers six bio-geographical regions: the Alpine, Atlantic, Boreal, Continental, Mediterranean and Pannonian regions. More than half of the area added comprises marine sites (about 17 500 km²), mainly in France, Denmark and Spain.

Among the new marine sites included for the Atlantic region is a 680 km² stretch of the Loire estuary in France, harbouring cold-water reefs and sandbanks. Denmark has

added the Sydlige Nordsø area designated for the conservation of the harbour porpoise. Spain's El Cachucho, an extensive offshore bank and seamount located in the Cantabrian Sea off the coast of Northern Spain, harbours several newly discovered giant sponges.

For the European Commission press release "Environment: A good day for salmon, otters and beech forests" <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/18&format=HTML&aged=0&language=EN&guiLanguage=en>

For more details on the new additions to the Community Natura 2000 lists <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/9&format=HTML&aged=0&language=EN&guiLanguage=en>

Aquaculture Europe 2010: Seafarming Tomorrow – CD available



This publication (in CD only) contains the abstracts of the papers presented at the occasion of the 'Aquaculture Europe 2010: Seafarming tomorrow' conference in Porto, Portugal, from October 5-8, 2010.

Pub-170, 2010. CD-ROM only.

Available to EAS/WAS members for €15 (excl. postage) and €35 for non members (excl. postage).

To order download the orderform at www.easonline.org or contact: European Aquaculture Society, Slijkensesteenweg 4, 8400 Oostende, Belgium. Fax +32 (0)59 32 10 05; E-mail: eas@aquaculture.cc.

If you haven't seen it yet, the full summary report of Aquaculture Europe 2010 is available on the EAS website www.easonline.org See top right of the homepage for the report.

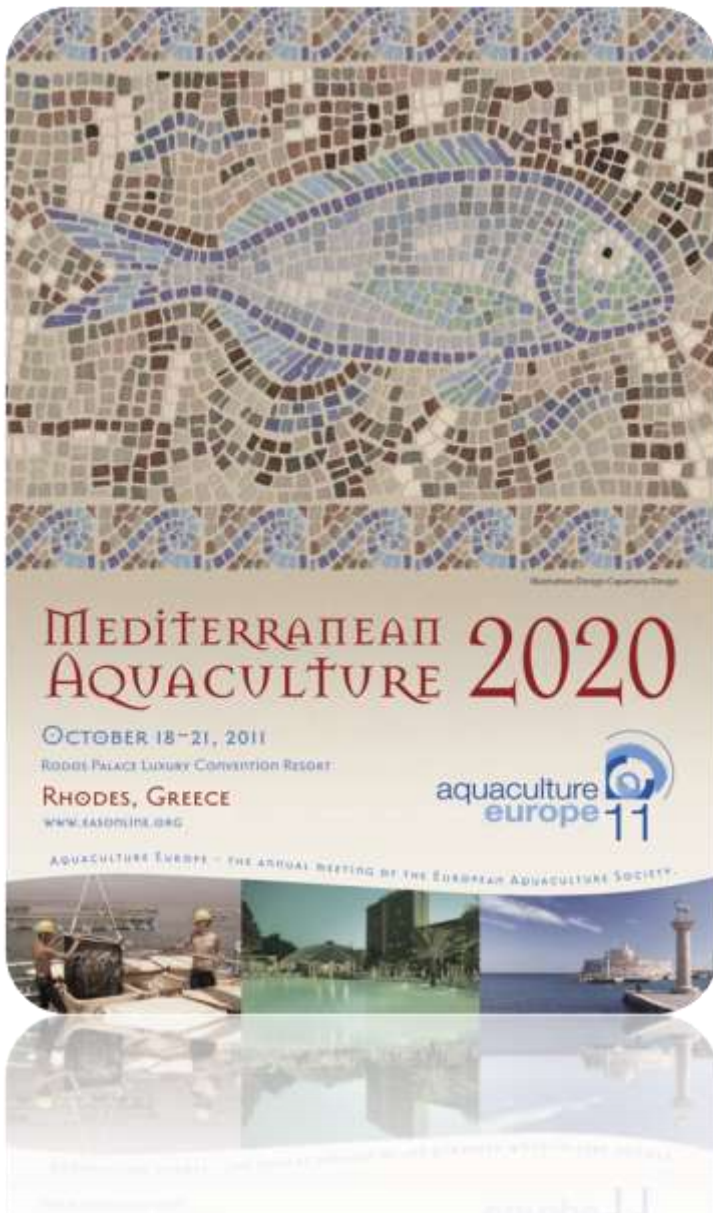


AE2011 Online abstract submission now available!

Online abstract submission for Aquaculture Europe 2011 (Rhodes, October 18-21) is now available on the EAS website www.easonline.org Click on the AE2011 logo top right of the homepage. Proposed sessions include:

- PS 01: Sustainable feeds and feeding management - feeding systems and management, alternative nutrient sources, nutrient metabolism, feed technology, nutritional pathology, nutriomics...
- PS 02: Reproduction and breeding -broodstock management, gamete quality, reproduction control and selective breeding programs.
- PS 03: Hatchery production -larval rearing methods, weaning, fry quality, skeletal deformities, probiotics.
- PS 04: Health management -Disease prevention and treatment, vaccines, alternative therapy and prophylaxis, epidemiology, mapping diseases.
- PS 05: Welfare management -operational indicators, monitoring, rearing conditions, stress, harvesting, transportation...
- PS 06: Novel technologies -biotechnology, nanotechnology, computer modelling, hybrid technologies with other ocean industries.





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- PS 07: New species for aquaculture production (including ornamentals) - production methods, product quality and markets.
- PS 08: Aquaculture engineering and technology -offshore aquaculture, submersible cages, RAS, remote sensing and automation, feeding systems, grading, processing.
- PS 09: Tuna farming -capture-based aquaculture, fattening, reproduction, larval rearing and feed development.
- PS 10: Zebrafish and other laboratory fish models for aquaculture applications.
- PS 11: Aquaculture and the consumer -product quality, awareness, safety, certification, markets and marketing issues, processing and presentation of aquaculture products.
- PS 12: Escapees -Environmental effects and methods to trace, mitigate and prevent escapes.
- PS 13: Energy efficiency in aquaculture production -renewable energy synergies.
- PS 14: Aquaculture governance - policy and socio-economics.
- PS 15: Aquaculture planning - establishing aquaculture as an equal user in coastal zone management.
- PS 16: Organic aquaculture - standards, rearing methods, feeds, product quality and marketing.
- PS 17: More than fish-use of aquaculture technologies for the production of products other than sea food (carbon capture, algae, bioactive compounds...
- PS 18: Diverse freshwater aquaculture systems -including salmonids, cyprinids, cichlids acipenserids...
- PS 19: Alternative aquaculture - artificial reefs, restocking, sports and leisure...
- PS 20: Mollusc aquaculture -genetics, diseases, new species, quality & food safety issues...
- PS 21: EU Forum (not open for abstract submission).

The EASinfo newsletter will be sent to EAS members in between each issue of their Aquaculture Europe magazine.

"Please make it yours and send us any information or announcements that you would like to convey to other EAS members". Mail your short contributions to eas@aquaculture.cc.