

S. Bergleiter, N. Berner, U. Censkowsky, G. Julià-Camprodon

Organic Aquaculture 2009

Production and Markets



Edited by:

Naturland e.V. and Organic Services GmbH

Organic Aquaculture 2009

- Production and Markets

Authors:

Stefan Bergleiter
Nina Berner
Udo Censkowsky
Gemma Julià-Camprodon

Editors:



Naturland
– Association for Organic Farming e.V.
Kleinhaderner Weg 1
82166 Gräfelfing, Germany
Tel.: +49 (0) 89-89 80 82-0
Fax: +49 (0) 89-89 80 82-90
Email: naturland@naturland.de
Internet: www.naturland.de



Organic Services GmbH
Landsbergerstr. 527
81241 München, Germany
Tel.: +49 (0)89/820759-0
Fax: +49 (0)89/820759-19
Email: info@organic-services.com
Internet: www.organic-services.com

© 2009 Naturland e.V. & Organic Services GmbH

ISBN 978-3-00-026707-9

Language Editing: Joy Michaud

Layout & Design: Susanne Krause

Printed on FSC paper by: J. Gotteswinter GmbH



Preface

Seafood plays an important role in human nutrition, especially in Southern countries where it makes a significant contribution to the population's protein supply and, therefore, to food security. With more and more wild fish stocks being ranked as fully- or even over-exploited, and with a world population that is dramatically growing, aquaculture (the farming of aquatic organisms) is increasingly being regarded as the main strategy for satisfying the demand for seafood and even to lower the pressure on the wild reserves. In fact, world aquaculture production has increased steadily over the last few decades, and with growth rates of approximately 10% per year, which is greater than any other food sector, it is enthusiastically referred to as the "Blue Revolution". About 47% of consumed fish and other seafood already originates from aquaculture (FAO, 2009). But, along with this massive proliferation of intensive aquafarming, questions on the sustainability of the sector are surfacing. Negative side-effects, like the destruction of natural habitats, use of noxious chemicals and questionable therapeutics, as well as violations of human rights and other stakeholders' interests, have regularly been reported and heavily criticized by NGOs and the media. As a reaction to this bundle of problematic issues, and out of an organic movement that is continuously growing, the first organic aquaculture initiatives developed in the mid-nineties.

In spite of a significant growth in the organic aquaculture market over the last decade, very little reliable and detailed data is currently available, making it difficult for interested market players to base their decisions on solid figures. This does not refer just to production and market development as such, but also to the regulatory frameworks as there is a confusing multitude of certification bodies, private standards and evolving legislation.

The authors aim, therefore, is to look back at the development of organic aquaculture production as well as to provide a collection of reliable data and relevant information. "Organic Aquaculture 2009 – Production and Markets" identifies and describes important issues with regard to standards and laws. It also offers a sound statistical database on worldwide production and markets, ongoing research and development, and on the perspectives for developing countries, which are major players in conventional and organic aquaculture. In addition, it gives a comprehensive and easy overview of the status quo of organic aquaculture, upcoming developments and trends, challenges and perspectives, chances and constraints. Thus, the book will serve as a tool for decision-makers in the aquaculture industry, as well as in related sector bodies, private certification and labelling organizations, governmental organizations, development agencies and international organizations. The official deadline for data collection presented in Chapter 3 was August 2008, more recent developments, however, are addressed in the continent reports.

Gräfelfing/Munich February 2009

Forewords

Angela Caudle de Freitas

IFOAM Executive Director



Organic aquaculture, an emerging sector within Organic Agriculture, with its production capacity expected to double between 2008 and 2009 has become a topic of great interest. This book provides much needed information and will help to further the dialogue around the development of organic aquaculture. Although this book is clearly focused on practitioners it is also useful to all players in organic aquaculture production from farmers and processors to regulators and certifiers. It not only addresses production issues, but also provides an overview of the market conditions around the globe and sets the context within which the sector is evolving. The INTERNATIONAL FEDERATION OF ORGANIC AGRICULTURE MOVEMENTS (IFOAM) applauds the authors and editors for their work and appreciates that this book moves the organic community towards solutions to current and impending issues for the organic aquaculture sector. This book will no doubt contribute to the further development and advancement of the organic aquaculture industry.

A handwritten signature in black ink, appearing to read 'A. Caudle de Freitas'.



Matthias Halwart

FAO Fisheries and Aquaculture Department (FI)
FI Representative in the Inter-Departmental Working Group
on Organic Agriculture

In the past five years, there were two landmark events on Organic Aquaculture: The FAO-INFOFISH-VASEP International Organic Aquaculture and Sea Farming Conference in Ho Chi Minh City, Viet Nam, 15-17 June 2004 and The International Organic Aquaculture Conference, Cattolica, 18-20 June 2008 organized by the INSTITUTE FOR ETHICAL AND ENVIRONMENTAL CERTIFICATION (ICEA) on occasion of the IFOAM World Congress. At the latter, FAO was part of the Steering Committee and I had the pleasure to chair one of the three main conference sessions. Coming from FAO – a knowledge organization with data and information at its very core – I was delighted to have one presentation in the session dealing with a global survey of Organic Aquaculture. The presentation was very well received and the authors have kept their promise that findings will be published in the near future.

Aquaculture has grown rapidly over the years, from less than 1 million tonnes in 1950 to over 50 million tonnes in 2006. The growing importance of the aquaculture sector at the same time also implies an ever increasing responsibility and accountability to produce safe and healthy products in a sustainable way – including in terms of economic feasibility, environmental integrity, and social responsibility. This is not easy as views differ on how sustainability should be achieved. The Code of Conduct for Responsible Fisheries (CCRF), unanimously adopted in 1995, has been a key reference point for FAO members and beyond.

Organic Aquaculture certification follows rather strict requirements and standards although these may differ between countries or certification bodies. This book informs about the history of Organic Aquaculture and describes the various regulatory frameworks and private labelling schemes in place. It is excellent to have this information available in a compiled format. It then continues to inform about production volumes and markets and provides examples and trends by continent. As such it fills a critical gap, providing data and information that has not been available so far yet will be of enormous relevance for producers, certifiers, traders and consumers alike.

Importantly, this book is being published at a time when Organic Aquaculture has a great momentum and a level of attention it never had before with the major import markets for the first time issuing guidance and regulations on Organic Aquaculture in the US and EU in late 2008 and early 2009, respectively.

Matthias Halwart

Acknowledgements

As so often, this publication would not have become a reality without many helping hands, in this case from friends, fellows and supporters of the organic aquaculture movement. Impossible to mention them all, the publishers wish to express their gratitude to every one of them here.

In particular, the authors are grateful to the following people, companies and organizations for the information and support they have provided:

The many organic certification bodies for providing data on their aquaculture certification activities, these were AGRIOR, ASURE QUALITY, AUSTRIA BIO GARANTIE, BioGro, BIoKONTROL HUNGARIA, BIoKREIS, BIoLAND, BIoPARK, BioSuisse, COFCC, DEBIO, DANISH VETERINARY AND FOOD ADMINISTRATION, ECOCERT, Gää, IBD, IMO, IOFGA, KRAV, LACON, LETIS, NASAA, NATURLAND E.V., OFDC, POSA, SGS, the SOIL ASSOCIATION, TEXAS DEPARTMENT OF AGRICULTURE, TÚN as well as other organisations like BIM IRISH FISHERIES BOARD.

The organic aquafarmers for providing company profiles as presented in chapter 6.

Many thanks to:

Hanspeter Schmidt, Attorney-at-law and specialist in organic food certification, for writing the chapter on the consequences of the new organic EU-regulation 834/2007. Deborah Brister, Research Fellow, Department of Fisheries, Wildlife and Conservation Biology, UNIVERSITY OF MINNESOTA, for writing the chapter on the legislation process for organic aquaculture in the United States. Stefan Holler, NATURLAND Aquaculture Department, for writing the chapter on organic micro-and macro-algae production. Susanne Krause for her creativity and attentiveness in doing the layout of the publication. And to Dominique Lorenz for designing the country maps with much patience and creativity.

Contents

Preface	III
Forewords	IV
Acknowledgements	VI
Advertisements	VII
Abbreviations	XIV
Authors	XV

1 Brief history of organic aquaculture 17

2 Regulatory framework for organic aquaculture 22

2.1 Private organic standards, national and regional legislation 23

2.2 Impact of legal regulatory frameworks and/or the need for harmonization 30

2.2.1 Major points of criticism in the prevailing draft of European production rules for organic aquaculture 31

2.2.2 Consumer perception and false claims in organic aquaculture 33

2.2.3 Development of organic aquaculture standards in the United States 35

3 Global survey on organic aquaculture production 39

3.1 Realisation of the survey 39

3.2 Organic aquaculture production volumes 40

3.3 Growth projections on farm level 44

3.4 Certification bodies, standards and the companies' perception of them 45

3.5 Challenges during the conversion period 47

3.6 Investment 49

3.7 Hatchery 50

3.8 Certified organic fish feed 51

3.9 Health 51

3.10 Turnover and production costs 53

3.11 Processing 54

3.12 Marketing 55

3.13 Survey on organic aquatic plants 58

3.13.1 Microalgae 58

3.13.2 Seaweed/Macroalgae 61

4 Fish feed	64
4.1 The question of sustainability and organic aquaculture feed	64
4.2. Pond aquaculture of herbivore and omnivore species	70
4.3. Nutrition of carnivore fish species in mariculture	71
4.3.1 Organic aquafeed production in professional feed mills	73
5 Market	79
5.1 Global organic food market	79
5.2 Global organic seafood market	82
6 Continent reports	85
6.1 Africa	85
6.2 America	86
6.3 Asia	92
6.4 Europe	100
6.5 Oceania	118

Authors

Organic Services GmbH

ORGANIC SERVICES is an international consultancy that specialises in organic and sustainable products markets. **Udo Censkowsky**, co-founder and director of ORGANIC SERVICES, was involved with the first organic aquaculture projects as head of the international department of NATURLAND E.V., and later on as consultant for the SWISS IMPORT PROMOTION PROGRAMME (SIPPO). In this context he contributed to the first organic salmon project in Ireland and to the first standards for organic shrimp production. Since 2005 ORGANIC SERVICES have organised the annual BioFish-Forum at BioFach trade fair.



Nina Berner has a Masters in agricultural economics and has spent the last year working on organic aquaculture as a junior consultant at ORGANIC SERVICES.



Naturland e.V.:

NATURLAND, founded in 1982, is an internationally recognized standard setting organisation for organic agriculture and organic food products, as well as for related topics such as organic forestry, organic textiles and cosmetics. In the mid 1990s NATURLAND developed the first standards for organic aquaculture. Currently, NATURLAND is also active in the field of sustainable fishery. **Stefan Bergleiter**, fishery biologist, has been working in NATURLAND's aquaculture department since 1998. Consequently, he has a deep insight into the organic aquaculture sector.



Gemma Julià-Camprodon has a degree in animal health as well as in agriculture. She has been working as a trainee in the aquaculture department for one year.