

 Sustaining Ethical Aquaculture Trade

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FP7 – KBBE – 2007 – 2A
 FP7 Cooperation Work Programme:
 Theme 2 – Food, Agriculture and Fisheries, and Biotechnology



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SEAT Consortium – Asia Country Partners

1. **Thailand:** Kasetsart University:
2. **China:** Shanghai Ocean Fisheries University
3. **Vietnam:** Can Tho University, Aquaculture and Fisheries
4. **Bangladesh:** Bangladesh Agricultural University

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SEAT Consortium - EU

1. **University of Stirling** (UK) – Aquaculture systems, environmental modelling, Marketing
2. **CEFAS** Fish disease Lab (UK) – EU Policy
3. **University of Copenhagen** (DK)- Veterinary Pathobiology & Public Health
4. **Wageningen University** (NL) - Ecotoxicology
5. **Leiden University** (NL) – Life Cycle Analysis
6. **Bergen University** (NO) - Ethics
7. **Danish Inst. for International Studies** (DK) – Political economy & global value chains

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SEAT Consortium - International

1. **World Fish Center**, Dept. Policy Economics and Social Science
2. **FAO**: Institute for Fish Utilisation and Trade

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Background and Objectives

- Seafood - highest value traded food sector
- Asia main EU supply – rapid growth
- EU standards: food safety, (animal welfare)
- Market standards: environmental, social
- Harmonisation of standards?
- Evidence-based multidisciplinary approach
- Ethical Aquatic Food Index (EAFI)



Rayner, 2009




HUGH'S FISH FIGHT
WWW.FISHFIGHT.NET

WE'RE ALL HERE TO THINK THERE IS A PROBLEM IN THE OCEANS. IN THE NEW CAMPAIGNING SERIES, HUGH TENNENT AND HIS GUILD IS JOINING THE COMFORT OF RIVER COTTAGE TO FIND OUT WHAT IS GOING ON AT THE INDUSTRIAL END OF OUR FISHERIES.

AND WHAT HE FINDS IS THAT IT'S NOT JUST BANG... IT'S MUD.

BEGINS **TUESDAY 11TH JANUARY 9PM CHANNEL 4**
 CONTINUES **WEDNESDAY 12TH & THURSDAY 13TH**

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Scope of Project



Country/ Species	Tilapia	Pangasiid Catfish	Penaeid Shrimp	Freshwater Prawns
China	✓		✓	
Vietnam		✓	✓	
Thailand	✓		✓	
Bangladesh			✓	✓
European Union	✓	✓	✓	✓

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Overall Objectives

- Interdisciplinary understanding of emergent Asian aquatic food chains
- Develop improved/ transparent measures of sustainability for target production systems (EAFI).
- Enhance sustainability & ethical 'values' of four major aquatic food commodities through action research
- Enhance farmed seafood, scientific, business and policy linkages between Asia and Europe

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Life Cycle Analysis

- Developed for assessing the environmental impact of producing industrial goods and services. From 'cradle to grave'.
 - ❖ Extraction of material
 - ❖ Manufacture
 - ❖ Consumption
 - ❖ Disposal of waste
- Standardised methods and boundaries allow comparisons.
- EC requested it form basis of analysis.



Factors that LCA cannot address

- Value of ecosystem services
 - Cannot easily measure changes in biodiversity
 - Destruction of sensitive habitats-e.g. seabed
- No socio-economic or demographic factors
 - ... and their knock-on effects
- Should be subject to sensitivity analysis measuring changes to scenario eg. method of electricity production, while it should also be generalisable and comparable to be of value.
- Must be used in conjunction with other tools.



SEAT Work Packages

Work package No	Work package title	Lead participant short name	Start month	End month
1	Project management	UOS	1	48
2	Scoping and systems overview	UOS	1	15
3	LCA	CML	2	48
4	Environmental models	UOS	2	33
5	Social and economic dynamics	WFC	2	48
6	Food safety and public health	UCPH	2	42
7	Contamination issues	WU	2	36
8	Key values in a broader ethical framework	UIB	2	42
9	Enhancing food values through action research	UOS	19	44
10	Transparency & utility of trade information	FAO	2	36
11	Policy development and implementation	CEFAS	9	48
12	Dissemination	UOS	2	48

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What's happened so far?

- Extensive systems scoping and literature review in 4 Asian countries.
- Integrated survey incorporating all work packages involving over 1,600 farmers.
- Stakeholder workshops involving actors throughout respective value chains.
- In-depth survey and analysis under way.



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Sustainability Concerns - Producers

- Farmers in all countries prioritised disease and water quality as main concern.
- These factors linked through transmission of disease through water exchange.
- Input suppliers and processors concerned about raw material costs and access to markets.



Sustainability Concerns - Producers

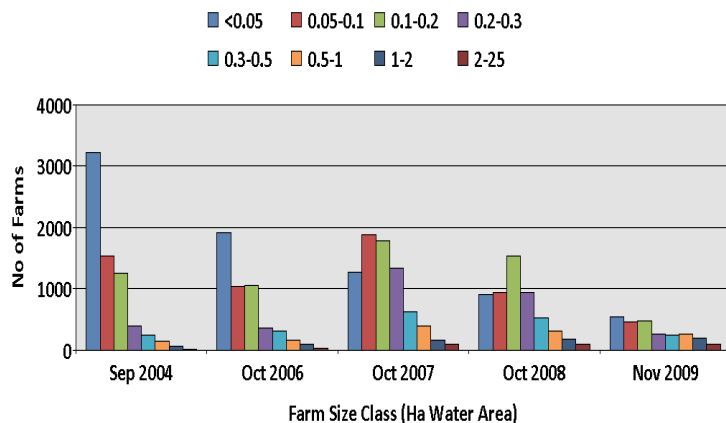
“Would you like your children to farm shrimp/prawn/catfish/tilapia in the future?”

Overwhelmingly smaller farmers answered “no”.



Consolidation in Pangasius - Vietnam

No. Pangasius Farms by Water Area (Ha) Class – An Giang Province Vietnam



Source: DOF



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Consolidation in Pangasius - Vietnam

Total Farmed Water Area & Production 2001-2009

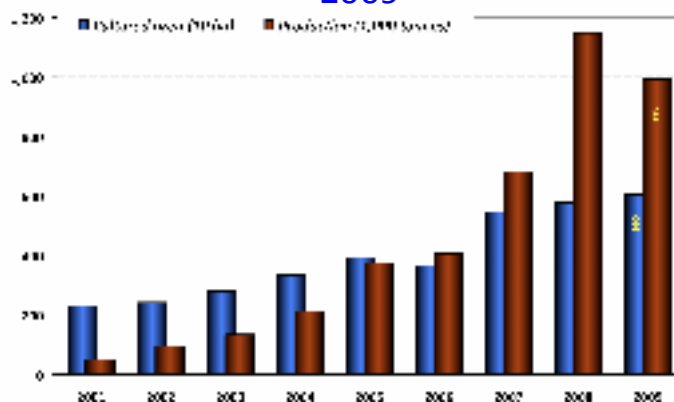


Figure :Phan Thanh Lam, Source DOF/VASEP

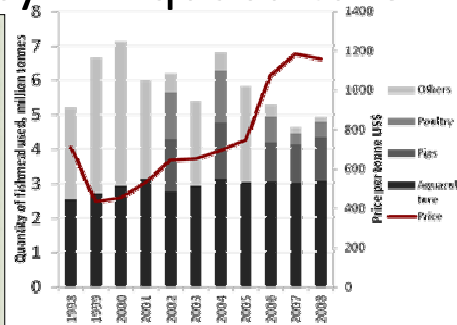


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Resource Efficiency in Aquaculture



Merino et al 2010



FAO, IFFO & IMF

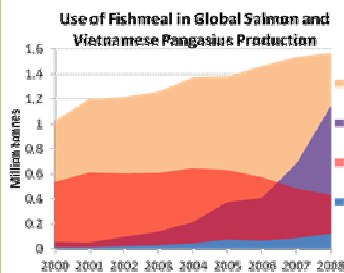
- Aquaculture has been criticised for dependence on some global resources.
- Aquaculture must compete with other livestock sectors
- Environmental pressures and reduced profit margins are necessitating increased resource efficiencies

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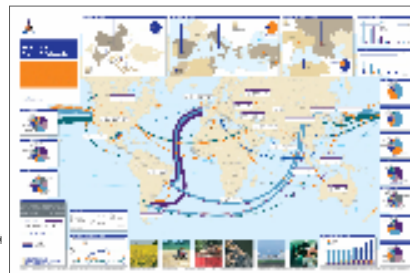


Resource efficiencies in Aquaculture

- Fish meal substitutes in aquaculture and livestock feeds include increasing quantities of soy.
- Increasingly important to maximise use of entire animal.
- Processing co-product can alleviate pressures on global resources.



Tacon and Metian 2008; FAO Fishstat 2010

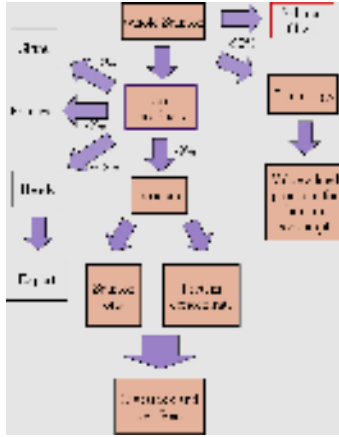


Rabobank.com

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Co-product utilisation



Co-product fractions from Ramirez 2007

- Aquaculture post processing co-products vary from >60% (pangasius and tilapia) to <40% (salmon)
- Co-product utilisation should meet ABP regulations
- Aquaculture can be suppliers of quality fishmeal and oils to other industries
- Halal gelatin and collagen from skins
- Chitosan and glucosamine from shrimp shells
- Fish peptides
- and many other products



Project Policy Impact

- Struan Stevenson - MEP and Senior Vice President of the European Parliament's Fisheries Committee

"shoppers are unwittingly buying a catfish farmed by "slave labour" in the filthy Mekong River in Vietnam"



"world-class welfare and hygiene standards and producing a quality product under first-rate conditions"



Next Stages for Project

- Action Research
- Development of EAFI
- Dissemination of research



Action Research

- Priorities highlighted by each investigative work package
- Improved practices in Asia
 - Feed sources
 - Knowledge sharing
 - Pond management for flesh colour and flavour
 - Improved animal welfare
- Improve understanding by European consumers
 - Environmental realities
 - Socio-economic benefits



EAFI

Ethical Aquatic Food Index

- Evidence based index of sustainability factors and indicators.
- To inform industry, policy makers and third party certifiers.

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Dissemination

- Publications and videos on the web
- Television quality documentary
- Posters in producing countries
- Stakeholder meetings
- Journal publications and upcoming special editions of 'Reviews in Aquaculture'.
- Look out for special session at World Aquaculture Society in Prague 2012.

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