

**16th Biennial Conference of the
International Institute of Fisheries
Economics and Trade
(IIFET 2012 Tanzania)**

**Visible Possibilities: The Economics of
Sustainable Fisheries, Aquaculture and
Seafood Trade**

**Dar es Salaam, Tanzania
16 – 20 July 2012**

Volume 1 of 2

ISBN: 978-1-62748-148-9

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by The International Institute of Fisheries Economics and Trade (IIFET)
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact The International Institute of Fisheries Economics and Trade (IIFET)
at the address below.

International Institute of Fisheries Economics and Trade (IIFET)
Dept. of Agricultural and Resource Economics
C/O Kara Keenan
Oregon State University
Corvallis, Oregon 97331-3601

Phone: (541) 737-1439
Fax: (541) 737-2563

iifet@oregonstate.edu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Volume 1

Appraisal of Fresh Fish Marketing in Ondo State, Nigeria	1
<i>M. Adeleke, J. Afolabi</i>	
Community Participation In Fisheries Management In Tanzania	22
<i>F. Sobo</i>	
Comparative Analysis of Fresh and Dried Fish Consumption in Rural and Urban Households in Ondo State, Nigeria	46
<i>T. Mafimisebi</i>	
Dagaa Fishery The Unknown Wealth Of Lake Victoria	71
<i>J. Luomba, P. Onyango</i>	
Ethnic Diversity, Social Capital, And The Potential For Co-Management: A Case Study Of Hawaii's Longline Fishery	88
<i>M. Barnes-Mauthe, S. Arita, S. Allen, P. Leung, S. Gray</i>	
Fisheries Co-Management in Senegal	103
<i>M. Thiam, M. Ikeda</i>	
Impacts Of Climate Change And Adaptation Strategy Selection Under Constrained Conditions In Ben Tre Province, Vietnam.....	111
<i>H. Le</i>	
Improving The Supply Chain Of Tilapia Industry Of The Philippines	124
<i>W. Jamandre, U. Hatch, R. Bolivar, R. Borski</i>	
ITQS in a Rough Water	155
<i>T. Matthiasson</i>	
Measuring Profitability In Small Scale Aquaculture Enterprises In South West Nigeria.....	187
<i>Y. Akegbejo-Samsons, D. Adeoye</i>	
Performance, Potential And Prospects Of Fisheries Sector In Eritrea	211
<i>T. Araya, M. Krishnan</i>	
Pilot Study Of The Economic Performance Of Coastal Purse Seiners In Morocco. -Case Of The Atlantic Center Of Morocco-	224
<i>A. Kamil, A. Laabdi, A. Lahmim, H. Chfiri, G. Ishimura, T. Fujino, N. Tojo, K. Miyashita, A. Talibi</i>	
Reducing Post-Harvest Losses of the Artisanal Dagaa (<i>Rastrineobola Argentea</i>) Fishery in Lake Victoria Tanzania: A Cost and Benefit Analysis.....	227
<i>L. Ibengwe, D. Kristoffersson</i>	
Reservoir Water Re-Allocation And Community Welfare	250
<i>M. Kularatne, S. Pascoe, C. Wilson, T. Robinson</i>	
Structural Performance Of Artisanal Fish Marketing In Ondo State, Nigeria.....	271
<i>L. Olusola, S. Oluwadare</i>	
The Gender Roles Of Women In Aquaculture And Food Security In Nigeria.....	297
<i>M. Olufayo</i>	
The Value Chain Of Farmed African Catfish In Uganda	305
<i>M. Ssebisubi, O. Knutsson, H. Gestsson</i>	
Value Chain Analysis Of The Egyptian Aquaculture Sector	331
<i>A. Nasr-Alla, G. Macfadyen, M. Dickson, D. Al-Kenawy, M. Fathi, G. El-Naggar</i>	
Vertical And Horizontal Integration In The Ugandan Fish Supply Chain: Measuring For Feedback Effects To Fishermen.....	353
<i>D. Gordon, S. Maurice</i>	
An International Instrument For Securing Sustainable Small-Scale Fisheries (SSF Guidelines): Implementation Strategies	373
<i>N. Franz, A. Charles, S. Chimatiro, S. Mathew, R. Pomeroy, L. Westlund</i>	
The Impact of Climate Change on the Vulnerable Fisheries Resource and its Coastal Community in Cilacap Regency, Indonesia: A Set-up for Adaptation and Mitigation Strategy.....	381
<i>I. Waridin, R. Yulianisa</i>	
The Value Of Environmental Impact Of Fisheries On Nutrient Dynamics.....	402
<i>J. Virtanen</i>	
Stability Of International Fisheries Agreements □ Implications Of Nonmarket Benefits And The Country Of Origin	403
<i>S. Kulmala, K. Parkkila, E. Nieminen, H. Pulkkinen, A. Romakkaniemi, P. Pintasilgo, M. Laukkanen, M. Lindroos</i>	

Structure And Economic Performance Of The European Union Fishing Fleet	412
<i>J. Anderson, N. Carvalho, J. Virtanen</i>	
Persistent Subsidies In Fishing: How Will A Fuel Price Increase Affect Fleet Behaviour And Performance?	424
<i>J. Isaksen, O. Hermansen, O. Flaaen</i>	
Perception In France Of Economic Actors And NGO About Genetically Modified Fish.....	435
<i>C. Mariojouls, S. Barrey, E. Pucheu</i>	
Social Costs Of Keeping Pension Fishers in the Community: The Case of Japan.....	436
<i>H. Yamashita</i>	
DISPLACE: A Dynamic, Individual-Based Model For Spatial Fishing Planning And Effort	
Displacement - Integrating Underlying Fish Population Models.....	445
<i>F. Bastardie, J. Nielsen, T. Miethe</i>	
Analysis Of Power In Fisheries Co-Management: Experiences From Lake Chilwa, Malawi.....	447
<i>F. Njaya</i>	
The Structure of Wholesale and Retail Marketing of Fram Raised Catfish (<i>Clarias Gariepinus</i> Burchell, 1822) in Southwest, Nigeria	459
<i>A. Ayanboye, M. Ipinmoroti, O. Olaniyi</i>	
Climate Change: Implications On Aquatic Resources, Food Security And Livelihoods	470
<i>O. Badmus, F. Obadiyah, S. Yacim, A. Laniyi, F. Adedeji</i>	
Beach Seining In Mozambique - Bane Or Benefit?.....	483
<i>J. Wilson</i>	
Bioeconomic Model Of Eastern Baltic Cod Under The Influence Of Nutrient Enrichment	495
<i>N. Thanh</i>	
Economic Analysis of Fish Farming in Osun State, South-Western Nigeria	496
<i>J. Olasunkanmi</i>	
Economics of Adaptation to Climate Change of Sea Cucumber Fishers in the Philippines	506
<i>M. Campos</i>	
Catch Shares, The Theory Of Cooperative Games And The Spirit Of Elinor Ostrom: A Research Agenda.....	507
<i>G. Munro, U. Sumaila, B. Turris</i>	
Challenges And Investment Opportunities For Large-Scale Aquaculture Farmers In Nigeria	517
<i>D. Adeoye, Y. Akegbejo-Samsons, T. Omoniyi, A. Dipeolu</i>	
Changing Aboriginal Policy In Canada, And The Effects On Scale And Capacity Use In The Commercial Fisheries Of Quebec	529
<i>J. Wilson, M. Wilson, B. Urli, A. Hammouda</i>	
Empirical Ways Forward Towards Increasing The Contribution Of Fisheries To African Economic Growth.....	541
<i>S. Cunningham, N. Gitonga</i>	
West Africa Fisheries and Seafood Bio-economic Assessment Model.....	546
<i>G. Sylvia, S. Davis</i>	
Role Of Gender In Global Fishery Value Chains: A Feminist Perspective On Activity, Access And Control Profile	566
<i>A. Silva, T. Bjorndal, A. Lem</i>	

Volume 2

Deterministic Population Dynamics Of Fish Stocks At Low Population Sizes: A Parametric Spline Approach.....	579
<i>J. Maroto, M. Moran</i>	
Developing A Predator-Prey Model For The Hake And Blue Whiting Spanish Fisheries	584
<i>M. Perez-Perez, J. Torralba-Cano, M. Garza-Gil, M. Varela-Lafuente</i>	
Economics of Recreational Fishery in Namibia	613
<i>M. Nghipunya</i>	
Open Innovation in Fish and Seafood Processing: External Insights to Boost Internal R&D Efforts	624
<i>D. Silva, T. Bjorndal</i>	
Fisheries Co-Management And Its Benefits: The Case Of Small Scale Fisheries In Malawi	637
<i>S. Donda</i>	
Institutional Quality And Catch Performance Of Fishing Nations	647
<i>O. Flaaen</i>	
Gender Roles In Tilapia Capture And Marketing Supply Chain On Lake Kariba, Zambia	668
<i>E. Syampaku, T. Mafimisebi</i>	

Estimating MSY and MEY in Multi-Species and Multi-Fleet Fisheries: The Case of the Bay of Biscay Mixed Fisheries	680
<i>J. Guillen, C. Macher, M. Merzereaud, M. Berrignac, S. Fifas, O. Guyader</i>	
Will I Clear my Feet? Vessel Owners' Stay or Exit Dilemma in a Stock Recovery Situation	690
<i>H. Curtis</i>	
Introduction To The Proceedings For The IiFET Special Session On Markets And Value Chains For Small Aquaculture & Fisheries Enterprises With A Focus On Gender	702
<i>H. Egna</i>	
When, Where And What To Fish? Fishermen's Behaviour When Choosing Optional Seasonal Profiles	705
<i>O. Hermansen, A. Eide</i>	
Optimal Management Of Conflicting Species: Grey Seal (<i>Halichoerus Grypus</i>) And Atlantic Salmon (<i>Salmo Salar</i>) In The Northern Baltic Sea.....	718
<i>M. Holma, M. Lindroos, S. Kulmala, F. Game</i>	
Bycatch Avoidance Programs in Two New England (USA) Fisheries	724
<i>D. Georgianna, C. O'Keefe, D. Bethoney, S. Cadrin, G. DeCelles, K. Stokesbury</i>	
African Catfish Farmers' Perception on Climate Change and Contribution of Catfish Production to Household Income in Lagos State, Nigeria	741
<i>M. Adeleke, T. Amos, O. Fagbenro</i>	
Socio-Economic Assessment Of Management Measures Of The New Common Fisheries Policy (Cfp) – Challenges And Methodological Background	746
<i>R. Doring, L. Goti</i>	
Thin Wholesale Markets And Direct Marketing In Renewable Resource Exploitation	750
<i>C. Kennedy, S. Scott</i>	
Recovering Aquatic Species At Risk: The Valuation Of Management Actions For Incorporation Into Policy Decisions.....	761
<i>K. Forbes, P. Boxall, V. Adamowicz, C. Rivera</i>	
Middlemen's Informal Trading System And Its Linkages With IUU Fishing Activities In The Port Of Progreso, Mexico	770
<i>C. Pedroza</i>	
Biological And Socioeconomic Viability Of Recreational Fisheries Of Two Nigerian Lakes	780
<i>I. Omovumi, A. Oluyemi</i>	
Poor Rich-Country Industries: Fish-Processing Industries Out-Competed by Low-Labour-Cost Countries?	787
<i>A. Iversen, B. Bendiksen</i>	
Economic Valuation Of Mangroves For Assessing The Livelihood Of Fisherfolk: A Case Study In India	798
<i>P. Debroy, R. Jayaraman</i>	
Sustainable Management of the Shrimp Trawl Fishery in Tonkin Gulf, Vietnam	809
<i>N. Thanh</i>	
Fishing for Beads: Simple Games, Serious Insights	820
<i>G. Knapp, J. Murphy</i>	
A Value-Chain Analysis Of International Fish Trade And Food Security With An Impact Assessment Of The Small-Scale Sector	832
<i>N/A</i>	
Marketing, Distribution And Consumption Of Frozen Fish In Anyigba Metropolis Of Kogi State, Nigeria (ID: 234)	845
<i>F. Ogbe, U. Onuche, A. Danjuma</i>	
Sun-Dried Mukene (Rastrineobola Argentea) Value-Chain Analysis In Uganda	857
<i>M. Masette</i>	
Value Addition-Hot Smoked Lake Victoria Sardine (Rastrineobola Argentea) For Human Consumption	867
<i>O. Mhongole, M. Mhina</i>	
Micro-Economic Drivers Of Profitability In An Itq-Managed Fishery: A Preliminary Analysis Of The Queensland Coral Reef Fin-Fish Fishery.....	879
<i>O. Thebaud, J. Innes, A. Norman-Lopez, S. Slade, D. Cameron, T. Cannard, S. Tickell, J. Kung, B. Kerrigan, L. Williams, R. Little</i>	
Bioeconomic Modeling for the Evaluation of Fishery Resources Based on the Schaefer Model.....	881
<i>T. Oishi, N. Yagi, M. Ariji, Y. Sakai</i>	
Gender Roles, Rural Household Food Security And Entrepreneurship Among Women In Selected Fishing Communities In South Western Nigeria	889
<i>A. Omolara</i>	

Optimal Bioeconomic Multispecies Fisheries Management: A Baltic Sea Case Study	903
<i>E. Nieminen, M. Lindroos, O. Heikinheimo</i>	
Aquaculture as a Vehicle for Socio-Economic Development in Namibia.....	908
<i>P. Elago</i>	
Economic Incentive For Wetland Biodiversity And Fisheries Conservation: The Case Of Chalan Beel (Wetland).....	915
<i>A. Rahman</i>	
Climate Change Awareness And Impacts On Aquaculture In Poor Rural Coastal Communities, Ben Tre Province, Viet Nam.....	922
<i>T. Nguyen, K. Nguyen, H. Le, C. Jolly</i>	
Climate Change Impacts, Vulnerability Assessment And Economic Analysis Of Adaptation Strategies In Ben Tre Province, Vietnam	932
<i>T. Nguyen, K. Nguyen, H. Le, C. Jolly</i>	
QUOTA: From Experimental Computer Game to Fishery Management Education Tool	944
<i>J. Ledyard, T. Groves</i>	
Catfish Production to Household Income in Lagos State, Nigeria.....	959
<i>M. Adeleke, T. Amos, O. Fagbenro</i>	
Reforming Europe's Fleet Policy: A "Sea Change" Solution To Overcapacity?	960
<i>E. Lindebo</i>	
Report on IFET Special Session "Fisheries Games and Experiments: Applications for Education, Outreach and Science" IIFET 2012 Tanzania Conference	961
<i>T. Groves, G. Knapp, J. Ledyard, J. Murphy, J. Schmidt</i>	
Robust Management of a Harvested Ecosystem Model.....	973
<i>E. Regnier, M. Lara</i>	
Robust Viable Management Of A Harvested Ecosystem Model.....	984
<i>E. Regnier, M. Lara</i>	
Contribution Of Lake Victoria Dagaa Fishery In East And Central African Fish Trade.....	1000
<i>M. Salehe, E. Mlaponi, P. Onyango, H. Mrossou</i>	
Gender Mainstreaming And Women Empowerment – Reflections And Upshots From Fishing Industry Of Kerala, India	1009
<i>S. Salim</i>	
Aquaculture In Urban And Peri-Urban Areas: Implication For Food Security And Environmental Consideration	1027
<i>O. Siyanbola, J. Adebayo</i>	
Social And Economic Dimensions Of Seaweed Farming: A Global Review	1038
<i>D. Valderrama</i>	
Socioec – Socio-Economic Effects Of Management Measures Of The Future Cfp – Overview On A New European Fp 7 Project.....	1049
<i>R. Doring, L. Goti</i>	
Crayfish Management in the Ljungan River: Managing the Shocks	1061
<i>J. Stage, J. Zimmerman</i>	
Assessing Policies Promoting Poverty Alleviation and Marine Resource Sustainability in Impoverished Coastal Communities	1062
<i>M. Stern</i>	
Strategies For Seizing Control Of Genetic Development In Aquaculture	1064
<i>S. Borgen</i>	
Summary: Overcoming Gender Inequalities in Fish Supply Chains to Inform Policy and Action	1073
<i>M. Williams</i>	
The African Catfish Clarias Gariepinus (Burchell, 1822) Was One Of The Most Suitable Species For Aquaculture In Africa	1079
<i>N/A</i>	
The Australian Coral Reef Fin-Fish Fishery ITQ Market	1087
<i>J. Innes, O. Thebaud, A. Norman-Lopez, R. Little</i>	
The Current State of the Clam, Galatea paradoxa, Fishery at the Lower Volta River, Ghana	1099
<i>D. Adjei-Boateng, N. Agbo, N. Agbeko, K. Obirikorang, S. Amisah</i>	
The Economics of Recreational Fishery in Namibia	1111
<i>M. Ngipunya</i>	
The Fishery As An Economic Base Industry After The Newfoundland Cod Moratorium.....	1117
<i>N. Roy</i>	
The Influence of Consumer Preferences on Aquaculture Technology and the Sustainability of Fisheries.....	1123
<i>E. Regnier, K. Schubert</i>	

Theme Session: Coupled Economic-Ecological Models for Ecosystem-Based Fishery Management:	
Exploration of Trade-offs Between Model Complexity and Management Needs.....	1138
<i>E. Thunberg, D. Holland, R. Nielsen, J. Schmidt</i>	
To Invest Or Not - Renewal Of The Norwegian Bottom Trawler Fleet	1146
<i>T. Larsen, B. Dreyer, O. Hermansen</i>	
Valuing Marine Parks In A Small Island Developing State: A Travel Cost Analysis In Seychelles	1155
<i>P. Mwebaze, A. MacLeod</i>	
Well-Being and Fishery Governance.....	1167
<i>A. Charles, E. Allison, R. Chuenpagdee, P. Mbatha</i>	
New Socio-Economic Role Models for Women in Fisheries and Aquaculture	1173
<i>S. Williams, C. Nauen</i>	
Women in Fish Value Chain in Nigeria	1179
<i>A. Cheke</i>	
Author Index	