



Global Conference on Aquaculture 2010

Farming the waters for People and Food

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**Global Conference
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**Plenary Lecture VI:
Enhancing Contribution of Aquaculture
to Poverty Alleviation, Food Security &
Rural Development**

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22–25 September 2010, Phuket, Thailand



Aquaculture and Food Security

- FAO estimates globally 950 million will go hungry in 2010
- 578 million hungry in Asia-Pacific, region that contributes over 90% of global aquaculture production
- Micronutrient deficiencies (hidden hunger) affecting more than 2 billion people
- Over 1 billion under-nourished live in developing countries
- Global economic slowdown and higher food prices in recent years pushed more people towards hunger and poverty
- Contribution of aquaculture to poverty alleviation, food security and rural development is better understood now than 10 years ago
- Should take advantage of renewed interest in agriculture in the context of recent food and financial crisis

Contribution to Livelihood

- 14 million involved in fish farming in Asia; many more million in supporting activities; over 80% farms small-scale
- In Asia, many rural households involved in some sort of aquaculture activities, for e.g., Bangladesh – 73% households;
- 80-100% of rural aquaculture products sold generating cash for families
- Small-scale aquaculture provides fish at affordable price to rural population
- Women empowered through employment in farming, processing and trade

Fish as a Source of Foreign Exchange Earner: Exports and Imports from Major Countries of Africa

In Million US \$

Country	Export		Import		Surplus	
	2004	2007	2004	2007	2004	2007
Morocco	804.0	1371.1	32.7	61.7	771.2	1309.3
Namibia	362.4	485.5	19.7	35.3	342.7	450.2
South Africa	416.0	510.8	100.9	192.7	315.1	318.0
Senegal	316.0	313.5	1.5	2.1	314.5	311.4
Tanzania	115.7	165.6	0.6	2.3	115.1	163.4
Tunisia	121.6	184.1	28.9	52.5	92.7	131.6
Africa	3300.5	4513.8	1529.3	2355.0	1771.3	2158.8

Source : FAO Year Book 2007



Fish as a Source of Foreign Exchange Earner: Exports and Imports from Major Countries of Asia

In Million US\$

Country	Export		Import		Surplus/Deficit	
	2004	2007	2004	2007	2004	2007
China	6636.8	9250.7	3125.6	4511.6	3511.2	4739.1
Thailand	4060.1	5708.8	1232.2	1714.9	2827.9	3994.0
Vietnam	2443.9	3783.8	213.2	364.0	2230.7	3419.8
Indonesia	1702.7	2100.9	139.8	115.0	1563.0	1985.8
India	1408.9	1670.5	47.4	47.1	1361.5	1623.3
Bangladesh	372.7	630.8	13.3	6.1	359.4	624.7
Pakistan	152.5	473.4	1.1	3.5	151.5	469.9
Philippines	413.7	473.4	68.2	122.7	345.5	350.7
Malaysia	583.7	752.4	527.9	633.7	55.9	118.7
Myanmar	318.5	357.9	191.8	466.2	126.7	-108.2

Source : FAO Year Book 2007



Balance in trade of fish and staple cereals in Sub-Saharan Africa, 2003 (\$ million)

	Net receipts from fish	Rice import	Wheat import	Balance
Madagascar	69.66	48.69	13.53	7.44
Mauritania	97.38	13.74	40.87	42.77
Namibia	323.69	2.20	7.28	314.21
Saint Helena	5.31	0.09	0.06	5.16
Senegal	282.19	217.39	59.06	5.74
Seychelles	143.40	4.36	1.64	137.40
Tanzania	133.73	34.06	77.07	22.60



Aquaculture and future demand for fish

- In the context of declining wild stocks, aquaculture is expected to meet the increasing demand up to 30 million tons per annum by 2030
- Aquaculture growth declining over time
 - 11.8 during 1985 – 1995
 - 7.1% during 1995-2003
 - 6.1% during 2004-2006
- Environmental problems increasing
- Number of small farmers declining
- Impact of global warming; declining water resources



Aquaculture Success

- 70-80% production comes from small farms in developing countries
- Many success stories from different parts of world:
 - Fish and prawn farmers in Bangladesh;
 - Catfish and shrimp farmers in Vietnam
 - Rohu farmers in Myanmar
 - Grouper farmers in Indonesia, etc.
- How do we scale-up these success stories, replicate in other places? What strata of farmers are we talking of? We talk of only success and failures and risks are not highlighted.
- Can the small rural farmers make the needed investments in the monoculture of these high value species?
- Low-input polyculture and integrated farming systems are not receiving the attention they deserve





Social Equity

- Which section of the farming community will contribute and take benefit from the increasing demand?
- It is stated that 70-80% of aquaculture production comes from small-scale farming. We have been using terminology – small farmers, resource –poor farmers, subsistence farmers, etc.
- The resources, technical capability, risk absorption and needs of a 0.4 ha shrimp farmer is different with 0.4 ha carp farmer or integrated rice-fish farmer
- Aquaculture interventions need to be specific for different target groups
- We need to ensure that benefits of aquaculture are equally benefitting resource poor farmers



Social Equity

- Inadequate access of new technologies/knowledge to small farmers
- Need for enhanced interaction between science, farmers' needs and their innovative knowledge
- Need for use of modern communication technologies and participatory approaches
- Need for increased research effort on technologies focused for resources poor farmers



Poverty Alleviation

- Need to understand the nature of poverty, causative factors for poverty, type of intervention that could benefit the target group, the institutional and technical support needed for motivating, training and assisting in the production cycle and marketing.
- Targeted interventions have been very successful in the past as evident from a number of case studies.
- Need to identify entry points for poor in to aquaculture



Aquaculture and Food Security

- Food security is linked to availability, access, utilization and sustainability
- Aquaculture contribution to per capita consumption of fish increased from 14% in 1986 to 30% in 1996 to 47% in 2006
- Disparities among regions, countries and people of different economic strata
- In some Asian countries, contribution of fish to total animal protein intake is relatively high among poor than the middle and rich income classes
- % expenditure on fish high among low-income households & decreases with increase in income



Use of non-conventional aquaculture resources for involvement of landless communities

- Culture based capture fisheries in reservoirs, ox-bow lakes, floodplains, irrigation canals, etc.
- Empowerment of communities around these water resources
- Success stories from many countries



Involvement of communities in farming of non-food species

- Ornamental fish:
 - \$ 5 billion market
 - \$ 15 billion industry

- Seaweeds:
 - \$ 5-6 billion market



Gender Equity

- Strong relationship between hunger and gender inequality
- Women mostly involved in processing and marketing while opportunities exist in farming;
- Success stories of women empowerment through aquaculture
- Ensure training, access to credit, investment capital and marketing opportunities; farmer to entrepreneur
- Gender issues receiving attention only in recent years (Asian Fisheries Society, FAO, WorldFish Center organised conferences)
- Equalising women status with men in S. Asia and SS Africa estimated to reduce malnourished children by 13.4 and 1.3 million respectively



Impact of globalisation

- Impact of globalisation, trade liberalisation on small farmers
- Stringent food safety standards and survival of small farmers
- Ensuring farmers' access to knowledge and BMPs;
- Success of farmer cooperatives/associations/clusters
- Need for long term aquaculture development policies; policies to address socioeconomic issues
- Need for increased research focus on small farmers



In conclusion:

- Aquaculture has been contributing to poverty alleviation, food security and rural development.
- Role of aquaculture has to be well articulated in debates on food security and poverty alleviation to enhance its contribution
- An accurate assessment of contribution of aquaculture need to be undertaken
- Need for increased research focus on small farmers



Thank you

