

# **A ROLE FOR AQUACULTURE IN POST CONFLICT RECOVERY:**

**SRI LANKA**

**REBUILDING AFTER A 27 YEAR  
WAR**

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# The Post War Impact on the Civilian Population

- Economically Disadvantaged
- Traditional Livelihoods Destroyed and Wealth Dissipated
- Resultant Poverty
- High Unemployment
- Many disabled
- Women More Impacted than Men
- Destroyed Infrastructure

# A Role for Aquaculture

- Providing Food Security (preventing starvation)
- Providing Incomes and Improving Livelihoods
- Sometimes crops will provide incomes to purchase food that is in excess of what subsistence crops would provide

# Other Advantages

- Some crops are particularly suited for folks with limited capital assets and skills
- Women can be very successful aquaculturists
  - Hatcheries
  - Growout (often most practical to implement)
  - Processing
  - Marketing

# Assistance Roles

- Government – Facilitate and not impede
- Donor Agencies and NGO's – Provide initial funding
- Lenders - provide realistic loans (Micro loans can be good, but not always)
- Private Sector will play the key role

# Keys to Success

- The project must be sustainable in the long run – It must make business sense
- Identify markets and work backwards
- Associative relationships (cooperative efforts) are most commonly helpful
- Vertical integration and ~~value~~ profit added activities can markedly increase the return on investment

# Sri Lanka (Ceylon)

- Island nation of 20 million people less than 10 miles from India
- In the process of rebuilding after a very bloody, 27-year civil war
  - Minority Tamil population led by Liberation Tigers of Tamil Eelan (LTTE)
  - More commonly known as the “Tamil Tigers”
- Problem exacerbated by a devastating Tsunami in 2005
- Previously had a relatively thriving shrimp culture, but it was wiped out by a one-two blow of the tsunami and white spot

- Area: 25,332 Miles<sup>2</sup>
- Coast: 1,056 Miles
- 6°-10° N, 80°-82°E
- Pop. 20.1 Million
- Literacy: M=90.5%  
F = 82.4%
- Workforce: 8.5 Million
- GDP: US\$64Billion(2012 est.)  
Per capita: US\$3200  
Agriculture: 12.8%  
Industry: 29.2%  
Services: 58%
- GDP growth: 7.2%
- Inflation: 6.9%
- LKRupee=0.0076US\$





# Government Efforts

- There are many positive steps being taken by the Sri Lankan government to bring relief to the impacted regions and people.
- Accompanied by multiple efforts by international governmental and non-governmental donors
- Foremost is the development of private and associative enterprises based upon the local fisheries resources.

# Key Sri Lankan Agencies

- Ministry of Fisheries and Aquatic Resources
  - NARRA (National Aquatic Resources Research and Development Agency)
  - NAQDA (National Aquaculture Development Authority)
- Ministry of Economic Development
- Ministry of Industry and Commerce
- Ministry of Finance

# Donors and Other Key Players

- USAID and USDA
- GIZ (German Government)
- Canada
- FAO
- Other United Nations Agencies
- Australian Aid
- World Bank
- Littlebear Research LLC

# Aquaculture Related Strengths

- The impacted northern and eastern regions have an abundance of lagoons and sheltered waters that can support marine aquaculture
- Also have a myriad of irrigation/water reservoirs (tanks)
- A rapidly developing transportation infrastructure that enables harvested products to be transported to both local and export markets
- As a result, fisheries and aquaculture are playing a leading role in the rebuilding the livelihood of the affected people., particularly for women and the disabled.
- However, in-shore harvest fisheries are over exploited and are also the battleground of conflict between Sri Lankan and Tamil Nadu fishers from the southern mainland of India

# Current Needs

- Technology and Training
- Local Feed Production
- International Support and Funding
- Commercial Lending
  - Operating
  - Capital

# Examples of Current Efforts

- 500 member cooperative with 1000 net pens rearing Asian Sea Bass or Barramundi (*Lates calcarifer*)





# Asian Sea Bass Farm – Negombo





Feeding Time





# Feed-Fish Trims



# Negombo Sea Bass Hatchery





# Private Sector Efforts

## Ornamental Fish Hatchery





*P. monodon* & *P. indicus*





# Shrimp Farm - Mahamew



# Shrimp Farm - Chilaw





# Shrimp Hatchery - Chilaw





*P. monodon* – Chilaw Hatchery





# Green Water – Chiliah Hatchery





# Sea Cucumbers









Sea Cumber Hatchery



# Lagoon (Mud) Crab Hatchery



# Mud Crab Growout Ponds







Male & Female Mud Crabs





Asian Sea Bass Sea Cage Farm – Trincomalee  
JV of Oceanpic and Kames Fish Farming Ltd  
of Oban, Scotland



# Approved Assistance Projects

- 500 Net Pens (Barramundi) – Trincomalee
- 500 Cage Units (Tilapia) – Central Highlands  
(Includes Construction of New Hatchery)
- Ministry of Economic Development

# Funding Pending

- 500 Sea Cucumber Growout Farms - Jaffna
  - Women's Project
- Ministry of Industry and Commerce

# Thank you

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# Aquaculture Opportunities for Sri Lanka

- Mussels (Native species)
- Clams (Native species)
- Oysters (Native species)
- Pearl (Mabe) Oyster (Native species)
- Sea Cucumbers (Native species)
- Abalone
- Lobsters
- Macrobrachia (Freshwater Prawns) (Native species)
- Tilapia (Stocked in Reservoirs)

# Aquaculture Opportunities Cont'd

- Lagoon (Mud) Crab:
- Blue & Related Crabs:
- Other Gastropods

# Keys to Successful Aquaculture

- Develop with the fishermen, DO NOT EXCLUDE
- Develop a comprehensive plan
  - Market
  - Brood Stock and Hatchery Production
  - Feed
  - Harvest and Cold Chain
  - Finance
- Government regulation should encourage and support, it should not create barriers