## Feed The Future

The number of people suffering from chronic hunger totaled 925 million in 2010. In developing countries, vitamin and mineral deficiencies affect 1 out of 3 people. Such undernourishment severely impairs productivity and the physical and intellectual development of adults and children, thereby restricting their future earning capacity and perpetuating poverty. USAID is responding to this crisis with their global initiative, Feed the Future (FtF). As part of an overall strategic approach, FtF promotes actions that sustainably reduce global hunger and extreme poverty.

## Our Commitment

In aligning our goals with FtF, AquaFish CRSP strives to improve the livelihoods of smallholder fishers and farmers by:

- Promoting development of regional government-led programs that honor locally identified needs in sustainable aquaculture and fisheries management.
- Mobilizing aquaculture resources through collaboration with international partners to strengthen the capacity of stakeholders.
- Implementing comprehensive approaches to improve nutrition through sustainable aquaculture development and fisheries management initiatives.
- Leveraging resources and investments to align US and Host Country development priorities and provide essential financial and technical support.
- Establishing benchmarks to gauge Host Country progress towards improving livelihoods and building local capacity and infrastructure.

## Global Themes

AquaFish CRSP brings together resources from US partners and Host Country institutions to target constraints facing poorer countries through four global themes:

- **Improved Health and Nutrition, Food Quality, and Food Safety**
- **Income Generation for Small-Scale Fish Farmers and Fishers**
- **Environmental Management for Sustainable Aquatic Resources Use**
- **Enhanced Trade Opportunities for Global Fishery Markets**

## U.S. & International Partners

Oregon State University-Lead Award Institution
Bangladesh Agricultural University, Bangladesh
Can Tho University, Vietnam
Central Luzon State University, Philippines
Hainan University, China
Huazhong Agricultural University, China
Inland Fisheries Research & Development Institute, Cambodia
Institute of Agriculture & Animal Science, Nepal
Network of Aquaculture Centres in Asia-Pacific, Thailand
Nong Lam University, Vietnam
North Carolina State University
Shanghai Ocean University, China
Southeast Asian Fisheries Development Center, Philippines
The University of Arizona
The University of Michigan
University of Connecticut - Avery Point
Ujung Batee Aquaculture Center, Indonesia
Wuhan University, China

## Regional Center of Excellence

**The RCE is a support center that provides technical advice from a regional perspective.**

For more information, contact the RCE-Asia Lead Coordinator Dr. Remedios Bolivar at aquafish@oregonstate.edu


**Sources:**
*Feed the Future. March 2011. <http://www.feedthefuture.gov/>*
*World Health Organization. March 2011. <http://www.afro.who.int/>*


Supporting ongoing research in

# ASIA

AquaFish Collaborative Research Support Program


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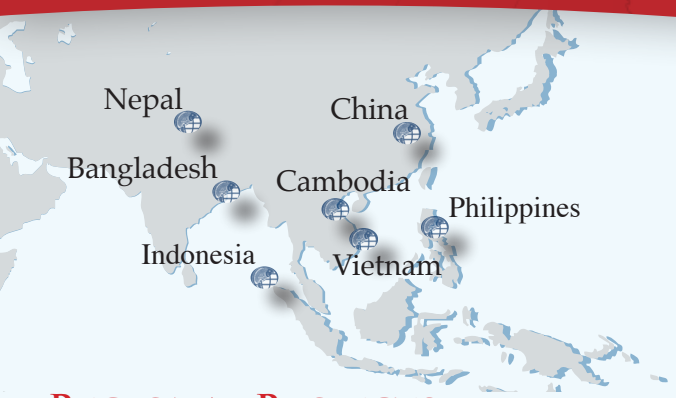
May 2011

# Research Highlights in Asia




## Regional Projects

AquaFish CRSP promotes integrative, crosscutting research to address the root causes of poverty and hunger through aquaculture development and fisheries management. Our projects are actively implementing USAID's FtF objectives to accelerate inclusive agriculture sector growth and improve the nutritional status of rural stakeholders. In Asia, these projects are:

**Improving Sustainability and Reducing Environmental Impacts of Aquaculture Systems in China, and South and Southeast Asia**

US Lead Institution: *The University of Michigan*

Host Countries: *Bangladesh, China, Nepal & Vietnam*

**Development of Alternatives to the Use of Freshwater Low Value Fish for Aquaculture in the Lower Mekong Basin of Cambodia and Vietnam: Implications for Livelihoods, Production and Markets**

US Lead Institution: *University of Connecticut - Avery Point*

US Partner: *University of Rhode Island*

Host Countries: *Cambodia & Vietnam*

**Improving the Cost Effectiveness, Sustainability and Income Opportunities of Farming Fish in the Philippines and Indonesia**

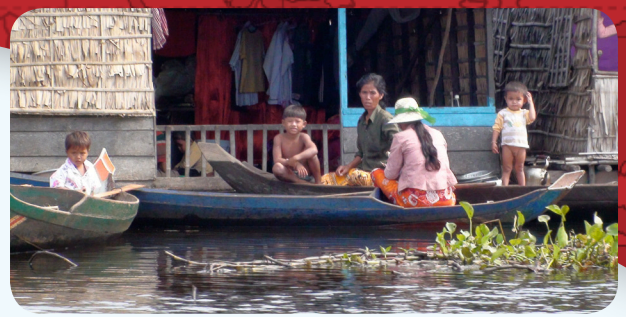
US Lead Institution: *North Carolina State University*

US Partner: *The University of Arizona*

Host Countries: *Indonesia & Philippines*

## Nutrition

Asia accounts for approximately two-thirds of the world's hunger. In rural Cambodia, poor women process small-sized, low-value fish caught in the Mekong River into a fermented fish paste known as prahoc. A key source of protein in regional diets, prahoc varies in quality and has a short shelf life that poses health and safety concerns, particularly for children. **CRSP researchers are training processors in best production practices for improved quality and food safety. Processors are also learning value-added product development and labeling and packaging standards that will help open new income opportunities.**



*CRSP researchers organized the Women's Fermented Fish Paste Association in Cambodia's Siem Reap Province. Members of this first-time cooperative who adopt prahoc processing standards will have opportunities to move into regional and international markets.*

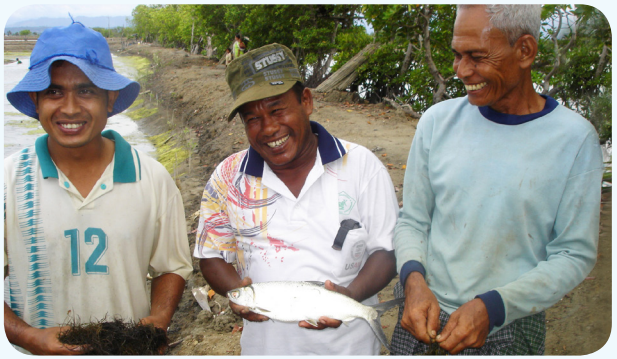
## Productivity

In Asia, aquaculture currently represents about 91 percent of world production. With rising population, aquatic food consumption is steadily increasing. Aquaculture is beginning to play a larger role in meeting demand and will continue to grow as wild fish catch rates decline. Rising production costs due in part to loss from feed wastage and high commercial feed prices already present challenges, particularly for small fish farmers in poor countries. **CRSP researchers in the Philippines are making significant strides in developing feed strategies that lower production costs. Working with tilapia, they have successfully tested lower-cost regimes to reduce feed inputs that farmers can now put into practice.**

*CRSP researchers have found that a daily 67% subsatiation feeding strategy effectively reduces tilapia production costs. This low-cost regime maintains standard productivity levels when compared to a traditional 100% daily satiation regime.*

## Environment

Aquatic disease and environmental degradation raise concerns about the environmental consequences of aquaculture. Monoculture, commonly used for shrimp produced in the Philippines and Indonesia, is one practice known to threaten the region's coastal resources and ecological balance. Shrimp farmers recognize the need for sustainable practices to maintain a viable aquaculture sector that provides their livelihood. **CRSP researchers are training small farmers in Banda Aceh, Indonesia, in polyculture techniques that incorporate best management practices for controlling disease, mitigating damage to the ecosystem, and improving overall productivity.**



*CRSP researchers have trained Indonesian farmers to incorporate seaweed into tilapia-shrimp polyculture, thereby reducing the negative environmental impacts on mangroves and water quality from traditional shrimp monoculture.*