

An Introduction to NACA

*Network of Aquaculture Centres in Asia-Pacific
Bangkok, Thailand*

Promoting responsibility and
sustainability in Asian aquaculture



1. What is NACA?

We are an Intergovernmental Organization

- Established through international agreement in 1990
- 18 member Governments in Asia Pacific
 - Together produce >90% Global Aquaculture Production
 - About 50% of global food fish supplies
- Focus on sustainable regional Aquaculture Development through networking, sharing and communication
- Completing 25 years on 31st Dec 2014

Our Members



- 18 NACA Member Countries
- Australia
 - Bangladesh
 - Cambodia
 - China
 - Hong Kong SAR
 - India
 - Indonesia
 - IR Iran
 - Lao PDR
 - DPR Korea
 - Malaysia
 - Myanmar
 - Nepal
 - Pakistan
 - Philippines
 - Thailand
 - Sri Lanka
 - Vietnam



NACA Governance

- ▶ Governing Council (GC)
 - Meets annually and sets NACA policy
 - Representatives of the 18 member governments
- ▶ Technical Advisory Committee (TAC)
 - Develops the work programme and identifies priorities
 - Technical experts nominated by each member state
- ▶ Thematic Task Force
 - More than 90 experts
- ▶ Network of centres
 - Implements the work programme
 - 5 Regional Lead Centres and >30 participating centres in 18 states



Our Work Programs

Thematic Programs:

- Sustainable Farming Systems
- Genetics and Biodiversity
- Aquatic Animal Health
- Food Safety, Quality and Certification
- Response to Climate Change

Cross-Cutting Programs

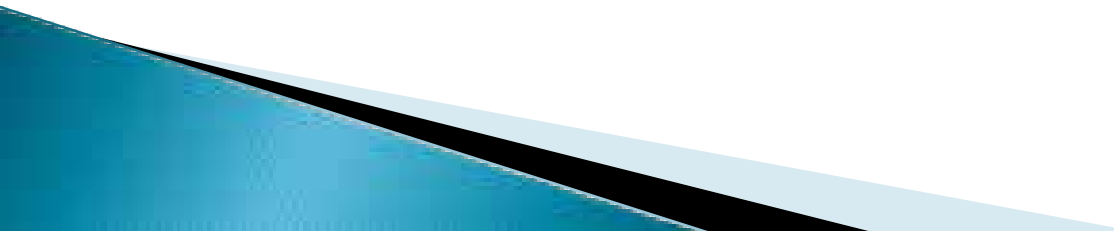
- Education and Training
- Information and Communications
- Gender



2. Responsible and sustainable aquaculture

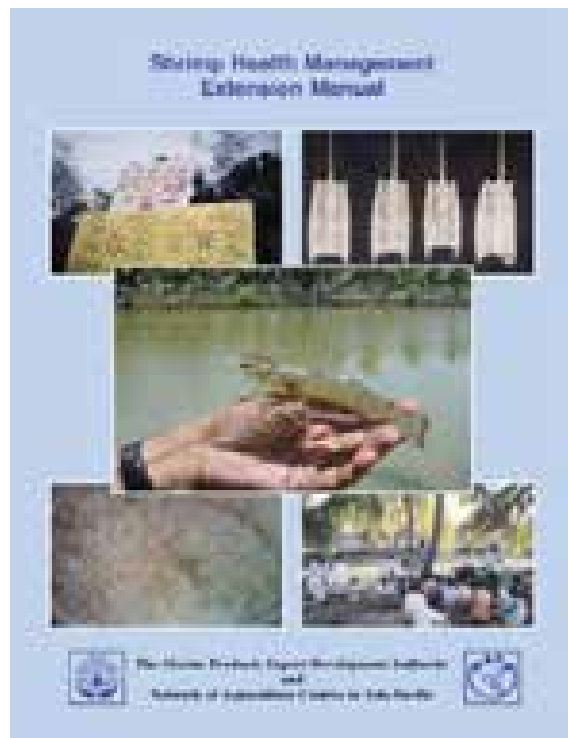
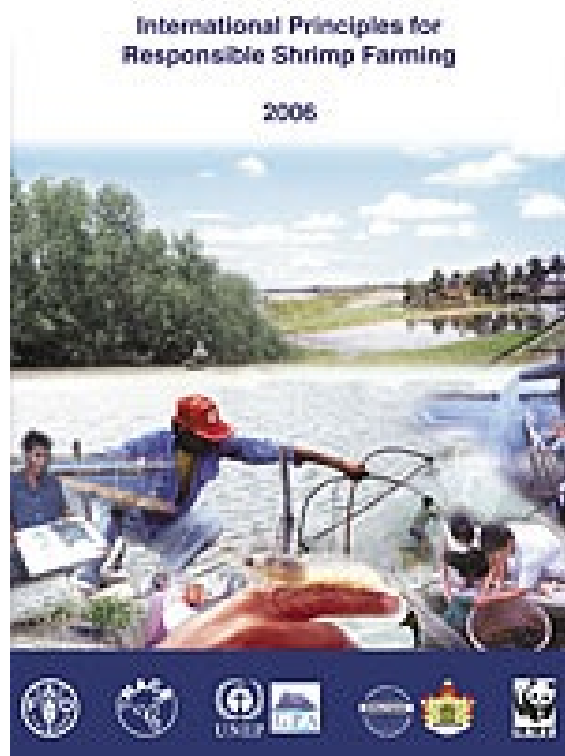
What has been NACA's role and involvement?

Promoting sustainability thinking

- ▶ Responsible development of Aquaculture
 - ▶ Quality and food safety
 - ▶ Animal health and welfare
 - ▶ Integrity of the Environment
 - ▶ Social responsibility
 - ▶ Supporting livelihoods of small farmers
- 

International principles for responsible farming

Translating principles to practice



Promoting implementation of BMPs through farmer clusters

- ▶ A group of inter-dependent ponds situated in a specified geographical locality



Cluster in Valsad, Gujarat



Cluster in Tanjavur, TN



Cluster in Kundapur, KA

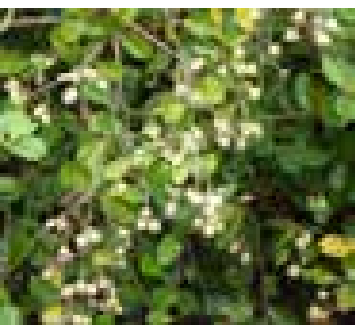
Promoting Concept of Cluster Farming

Collective planning, decision making and implementation of crop activities

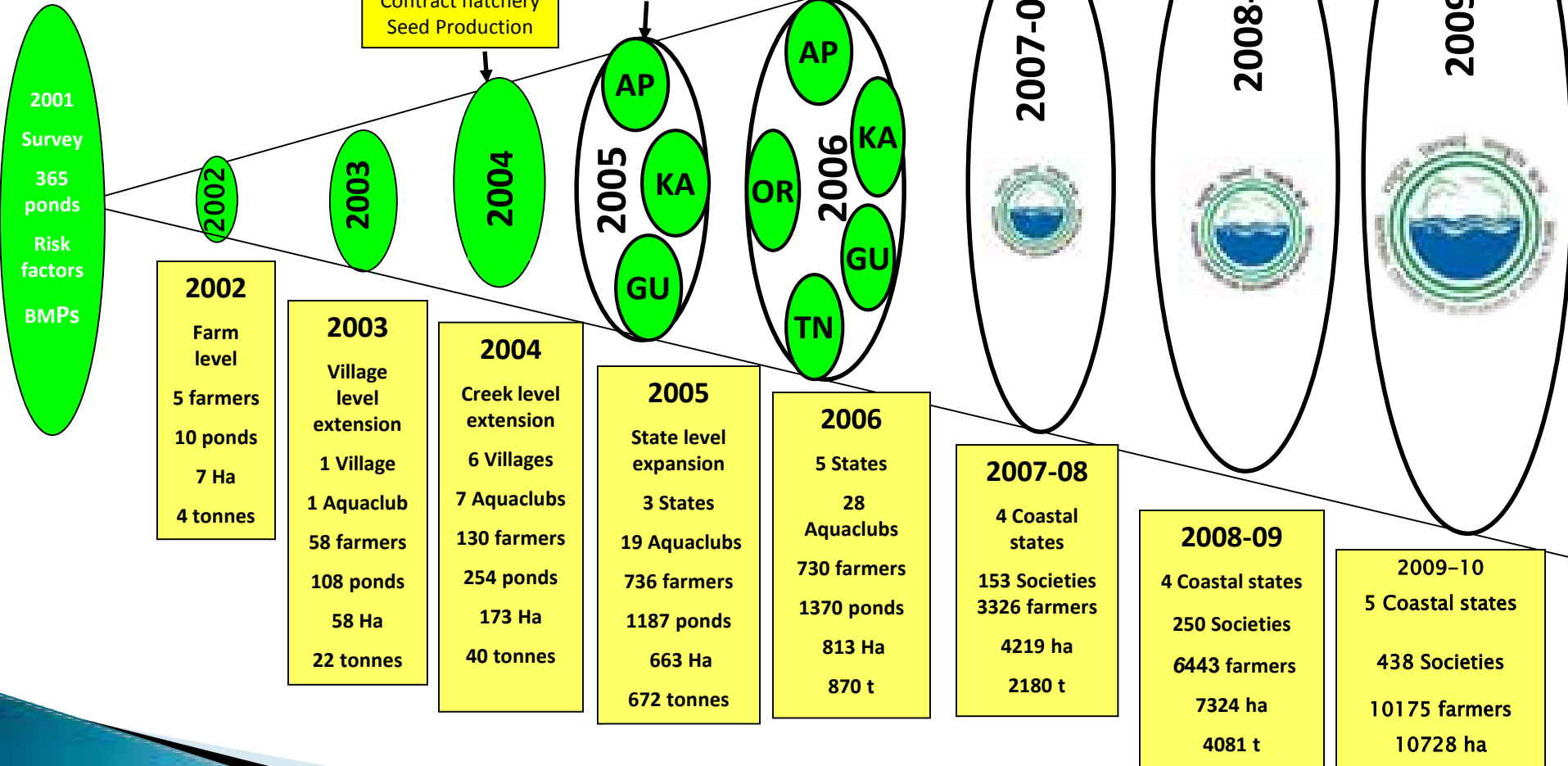


Common BMPs promoted across commodities

1. Good pond preparation
2. Good quality seed selection
3. Water quality management
4. Feed management
5. Health monitoring/Biosecurity
6. Pond bottom monitoring
7. Disease management
8. Better Harvest and post-harvest Practices
9. Record maintenance/Traceability
10. Environmental awareness



India Case Study



Shrimp and Milk Fish–BMPs and business models in Aceh, Indonesia



Project of Sustainable, Healthy and Economic Development
for MSME Aquaculture Businesses

Guide on Establishment of Fishery Cooperative



Final Project Report

IMPLEMENTATION OF SUSTAINABLE, HEALTHY AND ECONOMIC DEVELOPMENT FOR MSME AQUACULTURE BUSINESSES AND FISHING COMMUNITIES



November 2021
National Aquaculture Center
www.nac.or.id

Guide to Establishment of Community Based Aquaculture Management Groups



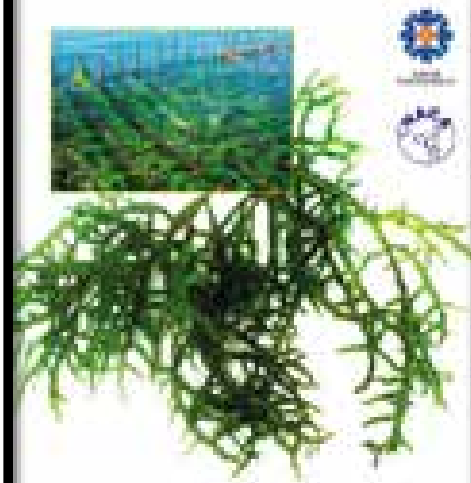
Project of Sustainable, Healthy and Economic Development for MSME Aquaculture Businesses



Prepared by Nuzul Hidayat Nur
16 April 2021
16 April 2021
16 April 2021



Better Management Practices for Banded Farming Echinurus and Kapasaurus



Prepared by Nur Hafidza Nur Hafidza
16 April 2021
16 April 2021
16 April 2021



MSME Project
Sustainable Aquaculture Practices



A Review of BMPs in selected cases of Value Adding Aquaculture: Lessons learned and strategies for scaling up

by Nur Hafidza Nur Hafidza



Ministry of Agriculture and Fisheries of Indonesia
2021-2022

PRACTICAL MANUAL

BETTER MANAGEMENT PRACTICES for Groupers Culture in Indonesia

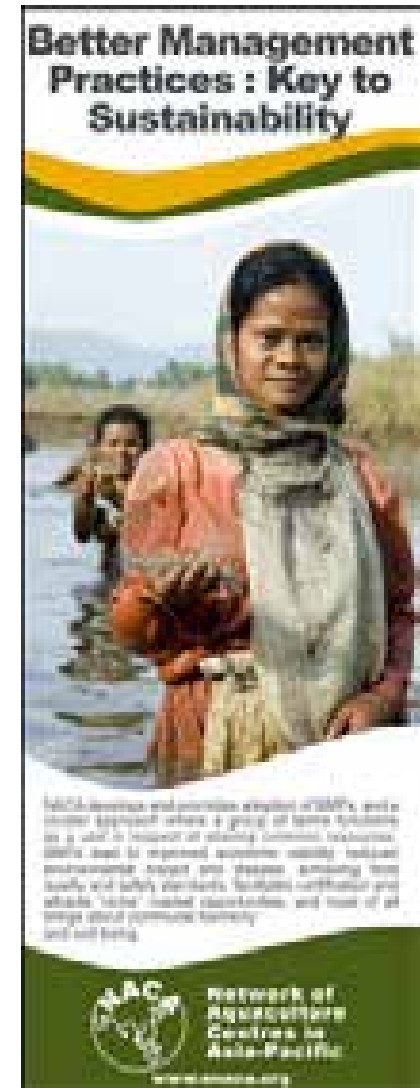


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Change is Possible

- ▶ BMPs and cluster model clearly demonstrated that it is possible to bring change in the behavior, attitude and practice of small farmers contributing to sustainability thinking

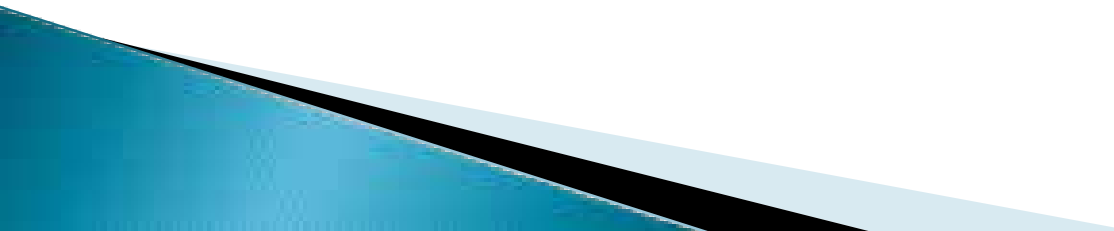


3. Certification and Market Access

Who is driving and who is benefiting?
What is our role?



Issues and Concerns

- ▶ Emergence of a wide range of certification schemes
 - ▶ Cost/benefit value for producer still not clear
 - ▶ Confusion in the minds of producers and consumers
 - ▶ Need for improved harmonization of standards
 - ▶ Need for benchmarking, mutual recognition and equivalence
- 

FAO Technical Guidelines on Aquaculture Certification



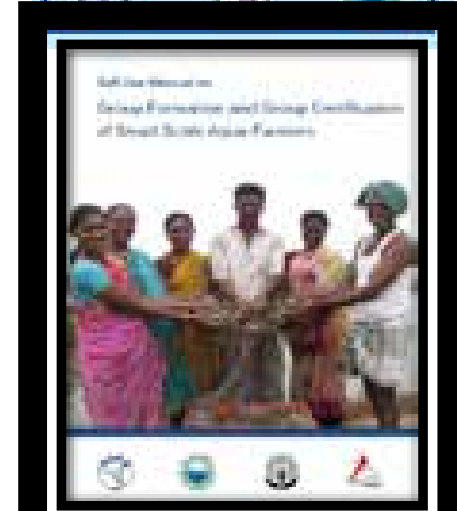
TECHNICAL GUIDELINES ON AQUACULTURE CERTIFICATION

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Cluster/group certification

- ▶ Achieve economy of scale
- ▶ Reduce cost & efforts of certification
- ▶ Enable small scale farmer to participate



5. Improving Biosecurity in Asia Pacific

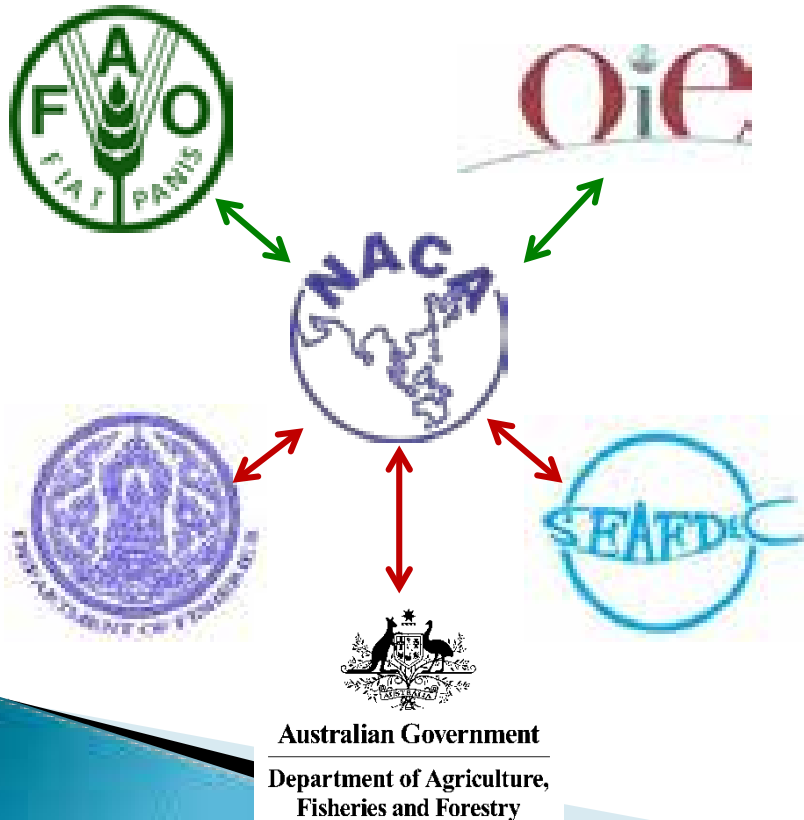
How to minimize the impact of trans-boundary aquatic animal diseases?



Regional Aquatic Animal Health Program

Works closely with international, regional and national organizations:

Improve regional cooperation to reduce risks of aquatic animal disease impacting on livelihoods of aquaculture farmers, national economies, trade and human health.





21 Participating Countries

Supporting regional and national strategies

- ▶ Asia Regional Technical Guidelines (TG): Global Context.
 - Consistent with FAO code of conduct for responsible fisheries
 - OIE Aquatic Code and Aquatic Manual
 - ICES protocols
 - Adopted by 21 countries in Asia-Pacific
 - Adopted by ASWGFi of the ASEAN
 - Promoting implementation of TG is the main focus of NACA's health program





Addressing Asian Concerns

Asia Regional Advisory Group on Aquatic Animal Health (AG)

Composed of invited aquatic animal disease experts and representatives from World Organisation for Animal Health (OIE), Food and Agriculture Organization of the United Nations (FAO), collaborating regional organizations, and the private sector.



AGM 7



AGM 9



AGM 10



“networking and sharing to manage”



Quarterly Aquatic Animal Disease (QAAD) Reporting System: Asia-Pacific

- First published in the 3rd quarter of 1998;
- Includes all OIE-listed diseases plus diseases of regional importance;
- Serves as early warning system for emerging diseases in the region;
- Useful mechanism for recognizing emerging disease problems in the region, and guide to participating countries in revising their national list of reportable diseases.





Supporting outbreak investigations in case of emerging diseases




Final Report

Asia Pacific Emergency Regional Consultation
on the Emerging Shrimp Disease:
**Early Mortality Syndrome (EMS) /
Acute Hepatopancreatic Necrosis Syndrome (AHPNS)**







Network of Aquaculture Centres in Asia-Pacific
Singapore, Thailand
8-10 August 2012

Diagnosis of Crustaceans – Acute Hepatopancreatic Necrosis Syndrome (AHPNS)

Signs of Disease

In the absence of identified lesions or viable organisms of the syndrome, the following disease signs can be used for confirmation (pond level) and confirmation (animal level) diagnosis of the disease:

Diagnosis signs at pond level

- White fecal or white hepatopancreatic (HP) cast or pigment loss in the consecutive faecal pellets
- Significant mortality reduction of HP
- Dark web casts and gas with abnormal consistency of the content
- Dark spots or visible hepatopancreatic necrosis within the HP
- HP does not expand easily for more than 1-2 days
- Clinical of clinical signs and histology starting to occur in 10 days post stocking
- Mortality during and/or post-stocking

Diagnosis signs of animal level by histopathology

- Acute progressive degeneration of the HP accompanied initially by a feature of H, S and T-cells followed later by a marked reduction of immune activity of the cells.
- Progress of lesion development is associated with dysfunction of H, S, T, and fatty S-cells, with affected HP where hepatopancreatic cells containing numerous heterophagically enlarged nuclei, and necrosis and sloughing due to HP tissue debris.



Microscopic view of hepatopancreatic cast with normal hepatopancreatic cells
(Source: [?])



Microscopic view of hepatopancreatic necrosis, reduction of nuclei
(Source: [?])



Two hepatopancreatic degenerated hepatopancreatic shrimps from culture activities
(Source: [?])



Page 2

This work is published as part of a collaborative activity in co-operation with the member states, contributing resources and information to support this





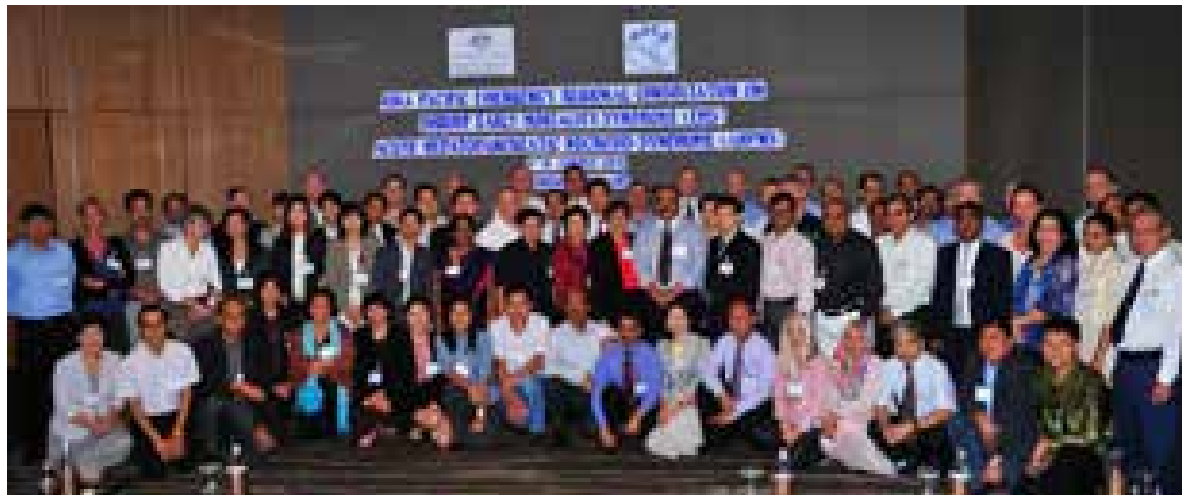
Improving biosecurity to support sustainability



Regional Expert Group Workshop on Transboundary Aquatic Animal Health Issues in the Bay of Bengal



Workshop on Regional Proficiency Testing Program for Aquatic Animal Disease Diagnostic Laboratories in Asia-Pacific




Asia Pacific Emergency Regional Consultation on Shrimp EMS/AHPNS



5. Addressing Climate Change issues in Asia Pacific

Scenario mapping
Mitigation measures
Case Studies
Policy briefs





Ministry of Natural Resources and Environment
Government Building, Department of Fisheries, Kasetsart University Campus, Bangkok, Thailand

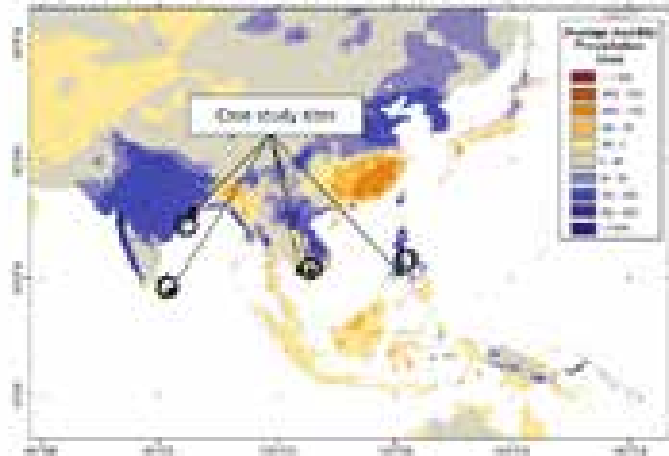
FINAL REPORT

Aqua Climate

*Strengthening Adaptive Capacities to the Impacts of Climate Change in
Resource-poor Small-scale Aquaculture and Aquatic Resources-dependent Sector
in the South and South-east Asian Region
(AQUA CLIMATE Project)*

Project Period: October 2010 - September 2012

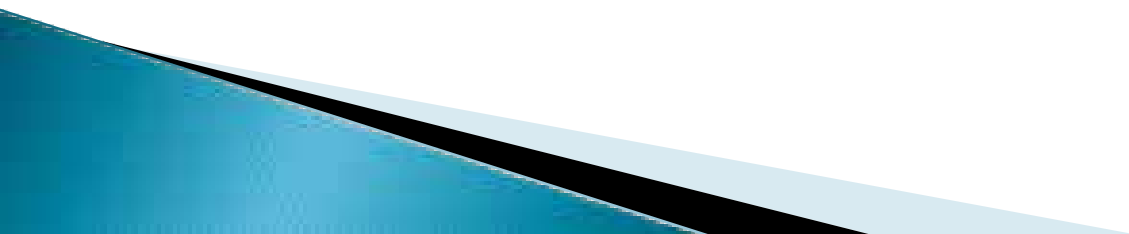
Map showing the geographical area covered by the project, with a focus on the study sites in the South and South-east Asian Region.



Norwegian Agency for Development Cooperation (NORAD)
Project NO. BAS - 2760 BAS - 08/012

October 2012

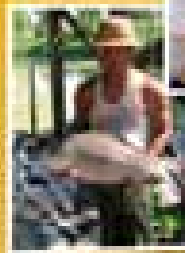
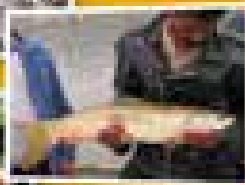
6. Supporting aquaculture through better brood stock management and quality seed



Manual on Application of Molecular Tools in Aquaculture and Inland Fisheries Management

Part 1

Conceptual basis of
population genetic
approaches



Manual on Application of Molecular Tools in Aquaculture and Inland Fisheries Management

Part 1:

Conceptual basis of population genetic approaches

Contributors

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Food and Agriculture Organization of the United Nations



7. Supporting food security and rural livelihoods through CBF

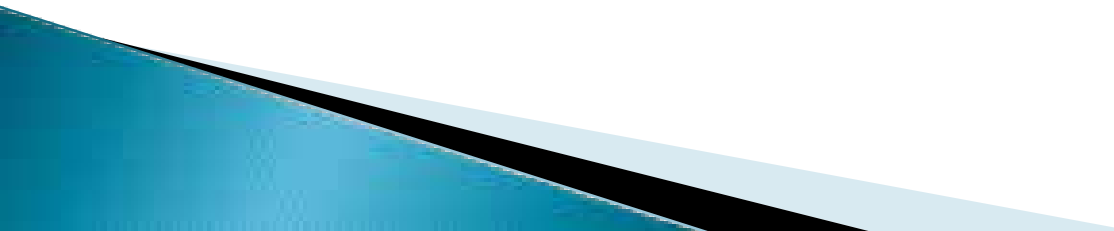
Promoting the concept of culture based capture fisheries

Utilization of seasonal water bodies

Community based approaches for managing inland water bodies



8. Building capacity through education and training



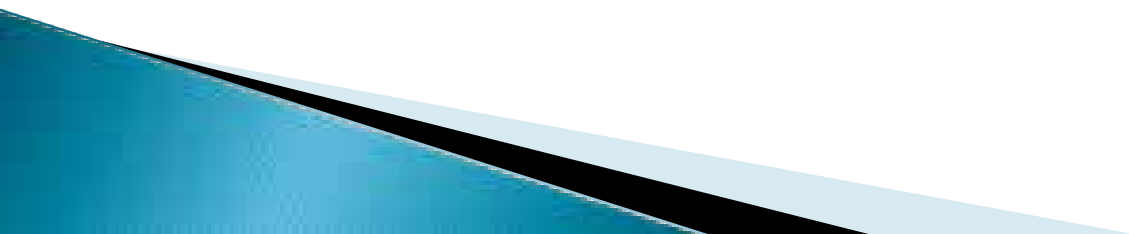
- ❖ A regional shared learning platform for individuals and institutions in fisheries and aquaculture

- ❖ **Objectives:**

- ❖ To assist in capacity building in fisheries and aquaculture development through education and training.
- ❖ To promote networking and collaboration through information exchange, experience sharing, and knowledge and skills transfer.



10. Information and communication key to sustainable aquaculture



- Website: www.enaca.org
- + Open access policy
- = 13,000 unique visitors per month
- = 114,000 page views per month
- > 1,000,000 publications downloaded since 2004
- Podcasting
 - Recordings of technical presentations from workshops and expert consultations
 - 100,000 audio recordings downloaded in 2012




Lessons learned

- ▶ The keys to NACA's success:
 - A truly participatory organisational structure that engages all stakeholders in the work programme
 - A large network of collaborating research centres distributed widely throughout the region
 - A genuine commitment from member governments to reach consensus and collaborate in addressing issues of common interest
 - An open philosophy to collaboration with external partners

Our Strengths

- ▶ We are a network of individuals, institutions and governments
- ▶ We have access to vast resources in the network
- ▶ Network has extensive expertise on a range of issues in aquaculture research & development including governance & policy, management, production technology, rural development, Certification, global and regional standards and BMPs
- ▶ Good Track Record in promotion of International Codes of practice for responsible Fisheries and Aquaculture

Towards mainstreaming Gender in NACA:

- ▶ Opportunities for integrating gender issues in Present and future programs / Regional Partnerships
 - ▶ Strategies?
 - ▶ Idea is to develop a major Gender Program / provide a regional platform for development of new ideas / approaches in the emerging science of Gender (in Aquaculture) Research
- 

Initial ideas for Gender mainstreaming:

- ▶ Aquatic Animal Health Program:

Perform an analysis of Women's role in diagnosing diseases in hatcheries and in markets; and in ensuring biosecurity

- ▶ Sustainable Farming Systems:

BMPs should include attention to gender equity in present and new farming practices

Gender equity in sharing of household and farm responsibilities



▶ Food Safety, Quality and Certification

Although the FAO certification guidelines does not mention gender, NACA can take a gendered supply chain approach to get a better understanding of the roles and responsibilities in fish supply and certification chains.

How can Gender sensitive training of workers improve the overall value and quality?

▶ Climate Change

There is now good resource materials available for putting gender firmly in the framework of CC projects

▶ Genetics and Biodiversity

Gender differences in breeding goals ?

Perception and valuation of Genetic Resources ?

Access to training of women hatchery workers?

Information, Education & Training

Reporting and highlighting stories with a gender dimension

Recording and reporting of gender differences in views on training programs, trainers.

Patterns of gender variations by country and topics of training?

Thank you

Open to your views, collaboration and partnership to progress the GENDER agenda in NACA for responsible and Sustainable Aquaculture