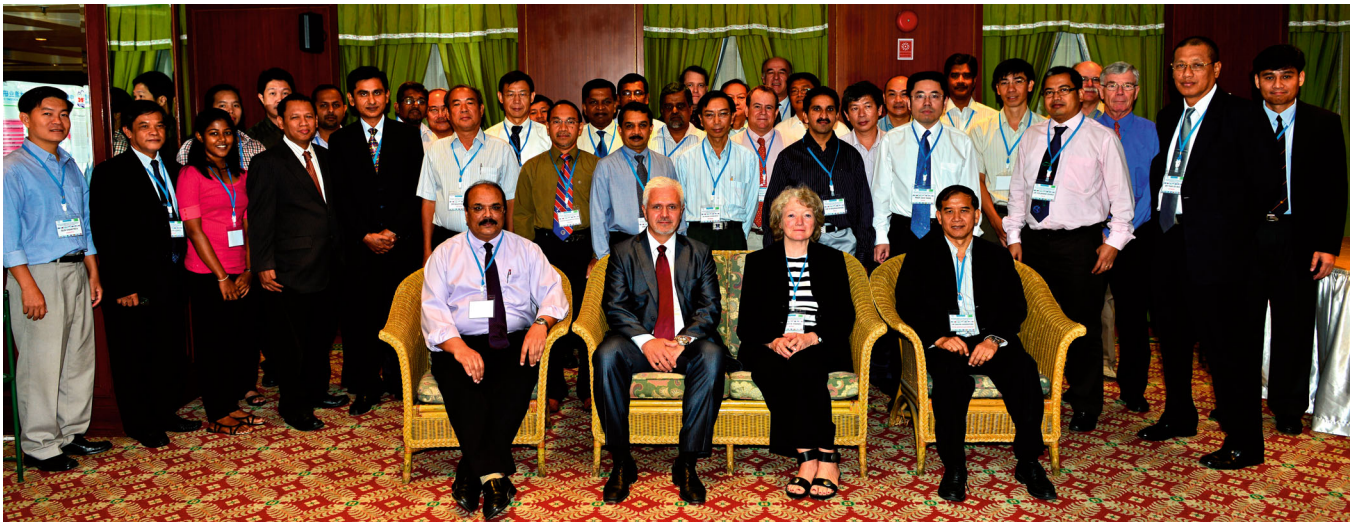
NACA Newsletter

Published by the Network of Aquaculture Centres in Asia-Pacific, Bangkok, Thailand

ISSN 0115-8503

Volume XXVII, No. 3
July-September 2012

Aquaclimate Project gets thumbs up from regional workshop on climate change



Participants in the Regional Workshop on the Impacts of Climate Change in Fisheries and Aquaculture.

For the past three years NACA has been working with a consortium of partners on a project to strengthen the adaptive capacities of small-scale farmers to climate change. The aim of the "Aquaclimate" project, funded by the Norwegian Agency for Development Cooperation (NORAD), is to identify the likely medium-term impacts of climate change on important aquaculture systems and to develop adaptation strategies that will help farmers to cope with the changes.

The project has focused on five case studies that are important from a livelihood and/or food security perspective: Catfish farming in the Mekong Delta of Vietnam; milkfish farming in the Philippines; low intensity shrimp farming in India; improved extensive shrimp farming in Vietnam; and culture based fisheries in seasonal reservoirs in Sri Lanka. The project has mapped farmer perceptions of climate change through an extensive series of stakeholder consultations and developed climate change scenarios for the case study areas through local downscaling of mainstream climate change models. All of these systems are at substantial risk from climate change due to impacts such as sea level rise, saline intrusion into freshwater reaches of river systems, changes in rainfall patterns and more frequent storms and other extreme events.

As the project is drawing to a close, a Regional Workshop on Impacts of Climate Change in Fisheries and Aquaculture was held in Bangkok from 14-16 May to share the findings with senior policy makers from the region, gather feedback on the recommendations and to facilitate exchange of experience. The workshop was attended by the representatives of twelve countries as well as the Mekong River Commission, Southeast Asian Fisheries Development Center, WorldFish Center, the Secretariat of the Pacific Community and FAO. The workshop was opened with an inaugural address by Mr Erik Svedahl, Chargé d'affaires of the Norwegian Embassy in Bangkok.

Mr Svedahl noted that "The Aqua-Climate Project is probably the first and the most extensive on-site study that has been carried out in the region so far. The Aqua-Climate Project departs from other studies which have not explicitly considered communities and individual famers' adaptation capacities to climate change".

"I wish to emphasise here the need to continue this type of studies pioneered by the Aqua-Climate Project to better understand and manage the risks from climate change impacts in the region", he said. "One key message that Norway will take to the Rio+20 conference next month, is that climate-resilient food production should be encouraged in both agriculture and fisheries".

The outcomes of the project case studies were presented at the workshop. Participants were invited to discuss the findings, which included proposed adaptation strategies for each farming system, and to comment on a related series of briefs and extension materials separately targeting policy makers, scientists and farmer groups. "I appreciate that there are different styles of briefing material available for different stakeholder groups", said Dr Sommano Phounsavath, Senior Fishery Officer from the Laos PDR Department of Livestock and Fisheries. Mr Svedahl noted that "the guidelines for policy makers will be of significant assistance

Dr Brit Fisknes, Senior Advisor to NORAD's Department of Climate, Environment and Natural Resources.

in framing appropriate regional adaptation strategies and framing of policy... the project is well poised to contribute to short and long-term adaptive strategy recommendations to address environmental and social changes that are likely to arise from climate change impacts".

Participants also gave a presentation on their own climate change activities, which were discussed in a plenary session Chaired by Dr Brit Fisknes, Senior Advisor to NORAD's Department of Climate, Environment and Natural Resources. It was clear from the presentations that most countries and institutions see climate change as a high priority issue of great concern. However, clearly distinguishing climate change impacts from natural variability and other factors was acknowledged as difficult, since the effects are gradual and changes require long-term monitoring to quantify. While many climate change adaptation measures require a significant investment and a long lead in time to implement, convincing policy makers with a short term planning horizon to act on long-term threats was seen as difficult.

As the first study of its kind in aquaculture, the Aquaclimate Project was seen to have provided a catalyst for initiating research on climate change impacts in aquaculture for the region. "The project methodology is a very useful contribution", said Dr Peter Degen, Chief Technical Advisor to the Mekong River Commission's Fisheries Programme. A multi-disciplinary approach had been developed integrating remote sensing and climate modeling together with a very strong social science and stakeholder engagement component. "The project has generated substantial methodologies and results that will be carried through to WorldFish Scientists", said Dr Bill Collis. "The methodology developed under the project would be a useful model for conducting similar studies for Malaysian aquaculture", said Md. Fariddudin bin Othman from Malaysia's Fisheries Research Institute, a sentiment echoed by participants from Nepal, India and China.

National partners indicated that through their participation in the project they had gained valuable insight into approaches for conducting such an investigation. "Participation in the project has greatly assisted in our understanding of methodologies to conduct such an investigation", said Dr A.G Ponniah, Director of India's Central Institute for Brackishwater Aquaculture. "This will be used in our own institute's work".

Workshop participants indicated that there was an ongoing need for countries and institutions in the region to network, share their experience and research findings and to develop common methodologies to facilitate the integration and analysis of data collected by different research groups. NACA will facilitate further regional research cooperation through its ongoing Climate Change Programme and through formation of institutional partnerships and alliances with like-minded organisations.

The case study reports, policy briefs and other publications from the project will be published on the NACA website in due course. For more information about the project, please visit the Aquaclimate Project webpage at:

http://www.enaca.org/modules/inland-projects/index.php?content_id=10

NACA wishes to express its thanks to NORAD for providing the funding to make this project possible.

Developing climate resilient aquaculture: The Aquaclimate Project

NACA was privileged to have Mr Erik Svedahl, Chargé d'affaires of the Norwegian Embassy in Bangkok, deliver the inagural address to senior policy makers at the Asia-Pacific Regional Workshop on the Impacts of Climate Change on Fisheries and Aquaculture, convened on 16 May in Bangkok, Thailand. Mr Svedahl had some very interesting things to say concerning the need to develop climate-resilient food production systems, which are the subject of NACA's new Climate Change Programme. A transcript of Mr Svedahl's address follows below - Ed.

Country Delegates from the Asia-Pacific region, Partner institutions of the Aqua-Climate Project, Representatives from regional and international organisations, Ladies and Gentlemen, Good Morning.

I am very pleased to be here with you this morning to inaugurate this important regional event.

Fisheries and Aquaculture contribute significantly to the national GDP of many countries across the globe, including Norway. The Norwegian aquaculture industry is a relatively young industry which has evolved during the past 40 years. There has been a continuous growth in production since 1980, and last year the Norwegian production of farmed Atlantic salmon reached almost 1 million tons. The value of the Norwegian aquaculture production now exceeds the value from the fisheries sector and the development of the salmon farming industry is one of Norway's greatest success stories.

Today, fisheries and aquaculture plays a significant role in providing essential nutrients for about 3 billion people, out of which 400 million are in the poorest countries. Despite the significance of these sectors in the global economy and food security, development and sustainability of Fisheries and Aquaculture are facing immense challenges, one of which being the impact of seemingly inevitable climatic variability and change.

Climate change is a growing threat to food security in many regions of the world. Higher mean temperatures and extreme weather events such as drought and flooding, together with the increased prevalence of animal and plant diseases, threaten food production. Areas where food security is already poor and where the population is least equipped to adapt to such changes are particularly hard hit.

One key message that Norway will take to the Rio+20 conference next month, is that climate-resilient food production should be encouraged in both agriculture and fisheries.

The body temperatures of fish and other seafood species vary according to the water temperature. Climate change-induced temperature variations therefore have a strong impact on the growth and reproduction rates of marine species, and consequently on the spatial distribution of fishing and aquaculture activities and on their productivity and yields. Thus, climate change adds a further argument for developing effective and flexible fisheries management systems in an ecosystem context.

Scientific evidence for direct and indirect impacts of climate change on aquatic ecosystems and its effects on aquatic food production systems are now on hand. The two ways of tackling this problem are mitigation and adaptation. Mitigation of greenhouse gas emissions should be done hand in hand with better management of the risks from climatic change impacts and capacity building of individuals, households, communities and nations which enables them to cope with the potential impacts. Many organisations have initiated studies on the impact of climate change on fisheries and aquaculture; FAO, SPC, MRC, SEAFDEC, Asia-Pacific Fisheries Commission (APFIC), World Fish Centre, to name but a few.

The NORAD - MFA - NACA Aqua-Climate Project

The Aqua-Climate Project sponsored by the Norwegian Agency for Development Cooperation (NORAD) and the Norwegian Ministry of Foreign Affairs (MFA) and implemented by NACA and its partners, is probably the first and the most extensive on-site study that has been carried out in the region so far. The Aqua-Climate Project departs from other studies which have not explicitly considered communities and individual famers' adaptation capacities to climate change.

The Aqua-Climate Project revolves around the guiding principle that measures for mitigation and adaptation should be integrated into national economic and social development plans and harmonised at the policy and practical levels with other environmental management and socio-economic development activities. This requires partnerships, capacity building, innovative funding mechanisms and the involvement of a wide range of stakeholders, motivation at all levels, and political will.

The Aqua-Climate project comprises five case studies, which cover several different species, ecosystems, culture systems and social setups. The study sites spans across four countries in the region, namely, India, the Philippines, Sri Lanka and Vietnam.

The targeted beneficiaries of the project are the small-scale fish farmers who are mostly poor people who depend on aquatic resources for their livelihoods. Small-scale fish farmers constitute about 80% of the estimated ten million fish farmers in Asia. They represent a large economic sector in the Asia-Pacific Region and contribute significantly to the regions' food security. Much of the land and water bodies they derive their livelihoods from are marginal, degraded and/or under severe threat of degradation, and are therefore ecologically sensitive and highly vulnerable to climate change impacts. The communities targeted for the study have in general low capacity to cope with natural calamities and economic shocks, have relatively weak resilience, and are less able to protect themselves and their livelihoods from various threats.

Outputs of the Aqua-Climate Project

I understand that during the past two days you had intensive discussions on the outputs of the Aqua-Climate Project. I am very pleased to see the draft outputs displayed and I look forward to receiving a final copy of the report when it is ready.

The Aqua-Climate project has endeavoured to assess the potential impacts of climate change on small scale aquaculture sector in the near and long term in the selected study areas. The focus is on developing realistic future scenarios of impacts of climate change on aquatic resources and to assess the plausible adaptive measures for different aquatic farming systems and suggest appropriate management practices for such systems. Mapping of perceptions, attitudes, and general preparedness of various stakeholder groups – farmers', researchers' and policy makers' – to the looming threat of climate change is the major highlight of the Aqua-Climate Project.

I am very pleased to see on display guidelines for policy makers that will be of significant assistance in framing appropriate regional adaptation strategies and framing of policy. It is my understanding that the project is well poised to contribute to short and long-term adaptive strategy recommendations to address environmental and social changes that are likely to arise from climate change impacts. The project has underscored the need to improve management/governance mechanisms and decision support systems; capacity building; strengthen institutional partnerships and alliances.

I wish to emphasise here the need to continue this type of studies pioneered by the Aqua-Climate Project to better understand and manage the risks from climate change impacts in the region.

The Asia – Pacific Regional Workshop

The primary objective of the Regional Workshop today is to disseminate the knowledge and experience gained in the Aqua-Climate project to a wider community of scientists and decision makers and to strengthen regional collaborations to combat the 'climate challenge' faced by the fisheries and aquaculture sectors.

I am indeed very pleased to see Senior Level Representatives from NACA member countries, Regional and International agencies who have gathered here to share their experiences. The primary objective of this exercise is to place in context the significance of work carried out under the Aqua-Climate Project in relation to other similar studies in the region; and to develop a collective plan of action and approaches to further advance this "nascent" scientific discipline.

This collective plan of regional action should ultimately result in a climate resilient food producing sector, climate resilient aquaculture practices, and farmers' who are better equipped to cope with the vagaries of the climate change impacts.

I wish you all the very best for productive meetings ahead. Thank you.

Emergency regional consultation on shrimp early mortality syndrome, 9-10 August, Bangkok

Recently, an emerging disease known as early mortality syndrome (EMS) in shrimp (also termed acute hepatopancreatic necrosis syndrome or AHPNS) has been reported to cause significant losses among shrimp farmers in China, Vietnam, Malaysia and the eastern Gulf of Thailand. Outbreaks in Vietnam and Malaysia have caused severe economic losses and significantly lowered annual farmed shrimp production.

The disease affects both *P. monodon* and *P. vannamei* and is characterised by mass mortalities, reaching up to 100% in some cases, during the first 20-30 days of post-stocking culture. Clinical signs include slow growth, corkscrew swimming, loose shells, pale colouration and an abnormal hepatopancreas.

This degenerative pathology of hepato-Pancreas is highly suggestive of a toxic etiology, but anecdotal information suggests that disease spread patterns may be consistent with an infectious agent. The primary cause / pathogen (considering the disease to be infectious) has not yet been identified.

Considering the likely threat of great economic loss that EMS will cause in the region's shrimp industry, concerted action by every shrimp producing country in the region is urgently required to prevent the spread and/or occurrence of this disease. Farmers, on the other hand, should be made aware of this threat and requested to cooperate with the concerned agencies by promptly reporting any suspected mortalities among cultured shrimp that appear to be similar to the clinical description of EMS/AHPNS.

Please download the NACA Disease Advisory on EMS for further details about this emerging threat from:

- http://library.enaca.org/Health/DiseaseLibrary/disease-advisory-ems-ahpns.pdf

See also a poster 'Shotgun sequencing of bacteria from AHPNS: A new shrimp disease threat for Thailand', reproduced on the NACA website with the kind permission of Prachumwat et al. at:

- http://library.enaca.org/Health/DiseaseLibrary/ahpns-poster-nru-summit.pptx

Immediate action warranted

As a first step, NACA is widely disseminating a Disease Advisory to Competent Authorities (CA) and concerned stakeholders in member governments urging improved surveillance and reporting efforts on the part of all stakeholders including farmers. Only through surveillance, early response, contingency planning and disease preparedness, can countries minimise the impact of the impending threat.

Regional consultation and contingency planning

Given the serious impact of this emerging shrimp disease, NACA and the Australian Department of Agriculture, Fisheries and Forestry are also convening an emergency consultation to:

- Develop a regional emergency response and contingency plans to contain, control and prevent the disease.
- Improve surveillance, monitoring and reporting arrangements for EMS and a protocol for outbreak investigation.
- Develop a case definition and field level disease information card to improve awareness.
- Coordinate collaborative research to identify the primary causative agent.

The consultation will bring together around 50 people including 10 global shrimp health experts, the competent authorities of regional governments, international agencies such as the World Organization for Animal Health (OIE) and the private sector to develop a coordinated response.

The consultation will include detailed lectures on this emerging disease including gross signs, histopathological characteristics, production losses, suspected pathogens and causative agents, and case studies of outbreaks in affected countries, followed by open discussions. NACA will make audio recordings of the technical presentations available for download and streaming shortly after the consultation, in addition to available technical documentation.

For more information, please download the consultation prospectus from the link below. Enquiries may be directed to Dr Eduardo Leano, Coordinator for Aquatic Animal Health (email Eduardo@enaca.org) and Dr CV Mohan, R&D Manager (email mohan@enaca.org).

- http://library.enaca.org/announcements/2012/ems-prospectus.pdf

NACA wishes to gratefully acknowledge the financial support provided by the Australian Department of Agriculture, Fisheries and Forestry to make this consultation possible. We very much appreciate the timeliness of DAFF's support to the region.

Follow developments on EMS

The outcomes of the regional consultation will be made available at:

http://www.enaca.org/modules/news/article.php?article_id=1952

Audio recordings of the workshop technical presentations will be made available for download.

Regional study/workshop on adoption of aquaculture assessment tools for sustainability

The importance of promoting responsible and sustainable aquaculture practices at national and local levels is widely recognised. Planners, policy makers and manager are expected to consider environmental, social, animal health and welfare and food safety issues among others while developing national programs and activities to promote aquaculture to support rural development and empower small scale farmers. Various aquaculture assessment tools (e.g. import risk analysis, environment impact assessment, residue inspection, process and product certification) have been developed and used to support development of responsible and sustainable aquaculture.

Broadly speaking, aquaculture assessment tools could include methods, guidelines and processes that are used for planning, development, management and decision making. Some could be specific while others more generic.

Some tools are guided by international agreements and instruments. Based on purpose, they can be classified as (1) tools for assessing risks in aquaculture (e.g. pathogen risk analysis, food safety risks, genetic and ecological risks), (2) tools for assessing risks in international trade (e.g. import risk analysis), (3) tools for assessing impacts (e.g. environmental impact assessment), (4) tools for assessing governance (e.g. codes of practice), (5) tools for management (e.g. BMPs, GAPs, Certification) (6) tools for socio-economic assessments and so on. Other tools could include communication tools, information tools, guidance tools such as the FAO Code of Conduct for Responsible Fisheries.

However, appropriate use of these tools by relevant stakeholders has been rather limited in Asia Pacific for various reasons. Following the recommendation of the recently completed APFIC regional consultative workshop on "Strengthening Assessments of Fisheries and Aquaculture in the Asia-Pacific Region for Policy Development and Management" (4-6 October 2011, Yangon, Myanmar), FAO, NACA and APFIC are collaboratively organising a regional evaluation study on adoption of existing aquaculture assessment tools. The project will also convene a regional workshop from 3-5 July 2012 in Pattaya, Thailand, to develop a strategy to promote wider application of aquaculture assessment tools in the Asia Pacific.

The specific objectives are:

- Assess the status of the use of various aquaculture assessment tools in selected countries in the region.
- Evaluate the applicability and effectiveness of existing tools for aquaculture development and

management and suggest possible modifications for better applicability in the region.

- Develop 8-10 country study papers and one regional synthesis paper on the application of aquaculture assessment tools.
- Formulate a set of regional strategy recommendations for promoting application of well established aquaculture assessment tools in aquaculture development and management in Asia Pacific through a regional expert workshop
- Produce a FAO/NACA/APFIC publication on the regional study.

Eight to ten countries from the region which are very active in aquaculture development will be participating in the workshop. These countries are Bangladesh, China, India, Indonesia, Malaysia, Philippines, Republic of Korea, Thailand and Vietnam. In addition, Australia and Republic of Korea will be invited to attend the workshop and share their experiences in application of aquaculture assessment tools. In addition to delegates from NACA and FAORAP, experts from FAO Rome, SEAFDEC AQD, WFC and the private sector will be invited to participate.

For more information, please download the prospectus from:

http://www.enaca.org/uploads/temporary/aquaculture-assessment-tools-2012.pdf

Have you visited the NACA website lately?

News, publications, audio recordings...free

www.enaca.org

Regional framework for cooperation on climate change

At the recent Asia-Pacific Regional Workshop on Impacts of Climate Change in Fisheries and Aquaculture, held under the "Aquaclimate" project, senior policy makers from the region agreed that a networking mechanism was needed to facilitate sharing of experience and data between governments and institutions.

Climate change is widely seen as a priority issue, particularly for agricultural sectors, which are a significant contributor to climate change impacts, but also highly important in terms of livelihoods and food security. Research activity to address climate change in agriculture is rapidly ramping up, both in terms of mitigating the impacts of farming and in the development of adaptation strategies to help farmers cope with the coming changes.

As climate change is a truly global issue, the development of a networking mechanism, institutional partnerships and alliances were seen as critical elements to a successful response. There was a need to improve communication not only within the aquaculture sector, but also to improve cross-sectoral sharing of information and experience. As research funds within the aquaculture sector are limited, there are significant benefits to be had from coordination of effort. It is also important to develop common methodologies to facilitate the integration and analysis of data collected by different research groups across the region.

NACA has undertaken to facilitate further regional research cooperation through its ongoing Climate Change Programme, which was approved by the 23rd Governing Council Meeting in March. The programme will endeavour to link and establish a network between like-minded organisations working towards sustainable and climate resilient aquaculture. More information about the programme will be posted on the NACA website as it develops.

Audio recordings available

Download or stream the technical presentations from the AquaClimate workshop as mp3 files.

www.enaca.org/modules/podcast

Recordings from other technical workshop are also available. Subscribe to NACA's podcast feed today!

www.enaca.org/modules/podcast/rss.php

Regional proficiency testing for aquatic animal disease diagnostic laboratories

Proficiency testing is an important mechanism for animal health diagnostic laboratories to test and improve their capabilities. Testing conducted by such laboratories helps underpin national health and quarantine programmes, and also plays an important role in facilitating international trade.

Participation in a recognised proficiency testing program is usually a requirement for formal laboratory accreditation. However, there is currently very limited access to proficiency testing programs for aquatic animal health laboratories in Asia. The NACA Regional Advisory Group on Aquatic Animal Health has previously noted that ad hoc proficiency testing programs have been run for a limited selection of diseases and countries, but there is limited or no access to any on-going laboratory proficiency testing programs.

Asia is the largest producing region in the world for aquatic animal products, including more than 90% of global aquaculture production by volume. In response to the need, a joint laboratory proficiency testing programme will be conducted for aquatic animal disease diagnostic laboratories by NACA, the Australian Department of Agriculture, Fisheries and Forestry (DAFF), Australian National Quality Assurance Program (ANQAP), and the Australian Animal Health Laboratory of CSIRO. The programme is funded by the Australian Government, through DAFF.

The objectives are to:

1. Strengthen Asia's regional capability to diagnose important aquatic animal diseases that impact on trade, industry sustainability and/or productivity.
2. Train participating laboratory personnel in diagnostic standards, and proficiency testing procedures, and to provide technical assistance to improve laboratory performance.
3. Establish a laboratory proficiency testing program that meets regional needs and which can be accessed following completion of the project (on a fee for service basis).

This programme will focus on aquatic animal diseases of significance to the Asian region. The program will provide access to proficiency testing services from an accredited provider (ANQAP), which is accredited as a proficiency testing provider by the Australian National Association of Testing Authorities, and will draw on the expertise of the CSIRO AAHL to develop required testing reagents and materials. Participants will include national/key aquatic animal disease diagnostic laboratories of NACA member countries plus two additional diagnostic laboratories with level III (molecular/PCR) diagnostic capabilities.

The first activity of the programme will be a workshop (hosted by NACA) which will be held in Bangkok, Thailand on 25-25 July 2012. The workshop will focus on providing participants with an overview on diagnostic standards, proficiency testing procedures, laboratory accreditation and to reach agreement on the panel of tests to be included in the program. Subsequent to the workshop, appropriate test materials (non-viable pathogen material within an appropriate matrix and at a variety of concentrations) will be developed. Pathogen material will be obtained, purified and rigorous quality assurance procedures followed for preparation of materials for a total of ten priority diseases of crustaceans, fish and molluscs. CSIRO AAHL has the expertise, experience and facilities (including biosecure facilities for processing exotic disease material) to undertake this work.

In years two and three of the programme, at least four rounds of testing will be offered to participating laboratories. The testing rounds will follow National Association of Testing Authorities (NATA) standards and provide participants with confidential reports on their testing proficiency.

Network of Aquaculture Centres in Asia-Pacific

Mailing address:
P.O. Box 1040,
Kasetsart University
Post Office,
Ladyao, Jatujak,
Bangkok 10903,
Thailand

Phone +66 (2) 561 1728
Fax +66 (2) 561 1727
Email: info@enaca.org
Website: www.enaca.org

NACA is a network composed of 18 member governments in the Asia-Pacific Region.