



22nd Governing Council Meeting and a new Director General

The Government of India hosted the 22nd NACA Governing Council Meeting in Cochi, Kerala, from 9-11 May. Delegates from NACA member governments, regional lead centres and international partner organisations were welcomed by Dr B. Meenakumari, Deputy Director General (Fisheries) of the Indian Council of Agricultural Research. Opening remarks were delivered by Dr Nantiya Unprasert, Deputy Director General of the Thai Department of Fisheries and by the Director General of NACA, Prof. Sena De Silva. The inaugural ceremony was marked by a special address from Dr E.G. Silas, former Director of the Central Marine Fisheries Research Institute and founding Director of the Central Institute of Brackish Water Aquaculture, Indian Council for Agricultural Research (ICAR), which follows below.

The Governing Council is NACA's peak policy body, which meets annually to review the organisation's activities and set priorities for the year ahead. Collectively NACA's 18 member states produce more than 90% of global aquaculture by volume, which now represents around 50% of the global food fish supply.

The Secretariat and the Regional Lead Centres for China, India, Thailand and the Philippines gave progress reports on their activities over the past year (audio recordings of these presentations are available for download / streaming), leading into a discussion and proposals for the year ahead. While many issues were raised at the meeting, key points included the following:



From left to right: Incoming NACA DG Dr Ambekar Eknath, Dr B. Meenakumari, Deputy DG (Fisheries) ICAR and outgoing NACA DG Prof. Sena De Silva.

- The need to improving the sustainability and productivity of aquaculture through promotion of group-based implementation of science-based better management practices by small scale farmers will continue to be a key focus of the work programme, expanding into new commodities.



Delegates and staff participating in the 22nd NACA Governing Council Meeting.

- The impacts of climate change are a universal and increasing concern to member governments, not only in terms of environmental damage but also on the livelihoods of rural communities and potentially severe implications for food security.
- Many members are placing increasing emphasis on freshwater aquaculture production, particularly with regards to culture-based fisheries and improved utilisation of dams and reservoirs.
- NACA's food safety and quality programme, currently focusing on on-farm issues will be expanded to include the processing sector, which form a large component of exports. Organic aquaculture will also be included in the work programme.
- NACA will facilitate group-based approaches to certification of aquaculture products to enable small scale farmers to access such schemes.

This year the Governing Council also had the task of electing the next Director General of NACA. Following a highly competitive selection process, we are pleased to announce that the Governing Council has chosen Dr Ambekar E. Eknath to serve as the next Director General of NACA. He will serve a five year term commencing on 1 September 2011.

Dr Eknath is well known throughout NACA. A graduate from the Mangalore College of Fisheries/Dalhousie University, he has served as the Director of the Central Institute for Freshwater Aquaculture, the NACA regional lead centre for India, since 2008. He spent the decade previous conducting fish breeding research at BioSoft/GenoMar at the University of Oslo Research Park using both classical approaches and molecular genetic tools on tilapia and other tropical fish species. However, he is undoubtedly best known for his pioneering work in development of the genetically improved farmed tilapia (GIFT) strain with the WoldFish Center (formerly ICLARM), where he worked for ten years.

The Governing Council also expressed their appreciation to the outgoing Director General, Prof. Sena De Silva for his substantial contribution to regional aquaculture development and for the personal commitment he has displayed to aquaculture development in the region. Prof. De Silva will resume his post with Deakin University in Australia, where he plans to continue developing and implementing projects in collaboration with the network. Prof. De Silva was present at the inaugural meeting of NACA more than twenty years ago and has been one of the most long-standing and prolific contributors to the network. Member governments wished him well and looked forward to his continuing support.

NACA receives the Margarita Lizárraga Medal

NACA is very pleased to have been awarded the Margarita Lizárraga Medal for the biennium 2010-2011 at the Thirty-seventh Session of the FAO Conference. The award was presented by Dr Jacques Diouf, Director-General of the FAO, in a ceremony at the FAO Headquarters in Rome on 27 June.

The Margarita Lizárraga Medal Award was established by the FAO Conference in 1997 to honour the memory of Dr Margarita Lizárraga, former Senior Fishery Liaison Officer, for her decisive role in promoting the Code of Conduct for Responsible Fisheries and for her productive work in the field of fisheries for almost forty years, particularly in developing countries. The Award is presented to a person who, or an organisation which, has served with distinction in the application of the Code of Conduct for Responsible Fisheries.

The award was presented to NACA "in recognition of its significant contribution to the development of sustainable aquaculture in the Asia and Pacific Region. NACA continues to serve as a cohesive intergovernmental forum for the formulation of regional policies as well as cooperation and coordination in aquaculture research, development and training. In particular, NACA has noteworthy achievements in the areas of environmental and aquatic animal health, support to small-scale fish farming, promotion of better management practices (BMPs) and aquaculture certification. The contribution of NACA to application of the Code is therefore outstanding, practical, tangible and sustainable as well as catalytic for other regions to follow".

Speaking at the Award ceremony, Prof. Sena De Silva, Director General of NACA said "I am deeply honoured and privileged to accept the Margarita Lizárraga Medal on behalf

of the Network of Aquaculture Centres in Asia-Pacific, its 18 Member Governments, Governing Council, collaborating centres and scientists, past and present staff and many friends of the organisation."

"We at NACA are humbled by the recognition bestowed on us by this award", he said. "To our understanding this is the first time ever that this award has been made in recognition of endeavours in the aquaculture sector, which in turn is also a recognition of the sector's gaining importance as a contributor to the global food basket, provider of critically important livelihoods, in particular to the rural poor, and an ever increasing contributor to food security and poverty alleviation."

Prof. De Silva highlighted the catalytic role FAO had played in NACA's development, with the network having originated as an FAO project before becoming an intergovernmental organisation in its own right twenty-two years ago. "The first ever Aquaculture Ministerial Conference will be held jointly with FAO and the Government of Sri Lanka in July 2011", he noted. "This will be the first time such a high level policy dialogue is held and this is a good example of the type of collaboration that NACA and FAO have developed over the years".

Prof. De Silva noted that "NACA will continue to work to contribute to the application of the Code of Conduct for Responsible Fisheries in its endeavours, particularly to safeguard and improve the well being of small farming communities, and to play a catalytic role to assist other regions in the sustainable growth of aquaculture development".

He closed by noting that “NACA wishes to dedicate this award to the millions of small-scale farmers, their resilience, adaptability, determination and endurance, which have enabled them to keep pace with globalised community.”

On behalf of the network, the NACA Secretariat wishes to offer its sincere thanks to FAO for its support and ongoing partnership towards our common goals in pursuit of rural development throughout both the region and globally.



Mr Jacques Diouf, FAO Director General (right) and NACA DG Prof. Sena De Silva. Photo credit: FAO/Giulio Napolitano.

NACA receives Gold Medal Award from the Asian Fisheries Society

We are pleased to announce that the Asian Fisheries Society presented a Gold Medal Award to NACA “in recognition of its distinguished contribution to regional aquaculture education, training and development”.

The Asian Fisheries Society is a non-profit scientific society founded in 1984 by fisheries professionals in Asia. The society aims to promote networking and cooperation between scientists, technicians and all stakeholders involved in fisheries and aquaculture production, research and development in Asia.

The award was presented on 21 April 2011 at the 9th Asian Fisheries and Aquaculture Forum in Shanghai, China. It was received on behalf of the organisation by Prof. Sena De Silva, Director General of NACA.

On behalf of the network, we would like to extend our thanks to AFS and also to the thousands of people who participate in NACA and who have made it what it is today.



Special address by Dr E.G. Silas at the inaugural session of the 22rd Governing Council Meeting 9-12 May, Kochi, India

Welcome to the beautiful city of Cochin in "God's own country". We feel privileged to have this important meeting in Cochin which is the hub of fisheries activities in this country. I feel honoured for being invited by Dr S. Ayyappan, Secretary, DARE and Director General, ICAR and Dr Sena De Silva, DG, NACA as the chief guest to deliver a special address at this inaugural session.

The vision and mission oriented approach of the late Dr T.V.R. Pillay has today seen the growth of regional aquaculture networks, with global coverage in Asia-Pacific (NACA), Africa (ARAC), Latin America (CERLA), Mediterranean (MEDRAP), Central and Eastern Europe (NACEE) and the Americas (NACEA). His goal was to achieve food, nutritional and livelihood security for the fishers and rural poor. No doubt, this global networking aided by the UNDP and FAO has strengthened and expanded aquaculture development globally. There has been an emphasis on inter-regional cooperation which is evident from the joint projects with institutions and countries, undertaken as direct partnership or jointly with international organisations for imparting training and developing sustainable aquaculture. NACA's response to the restoration and developmental needs of the coastal communities so badly affected by the devastating 2004 tsunami is an example of its commitment to societal concerns.

I have admired Dr Pillay's ability to mobilise financial support from donors for the successful working of the global networking programmes in aquaculture that he initiated. So also, my friend Dr Chen Foo Yan emulating the same. The requirement and conditions vary from country to country and regionally also. The focus of Dr Pillay was on the use of locally available fish species and development of appropriate technologies for food production and supply; and prevention and treatment of diseases of locally important species under culture. The integration of aquaculture with area development plans especially in the inland and coastal areas with allied sectors such as agriculture and forestry was one of the underlying principles of his approach to aquaculture development.

Enlarging the area of operations, NACA today functions from 18 states in the Asia-Pacific with considerable diversity in life style, socio-economics and food habits. Coordination of activities under such diversity is a major task. So also, the effective monitoring of a widespread network. The reports of the regional and lead centres to be presented here should bring out how effective this coordination has been and how best this can be streamlined.

Aquaculture is increasing in importance throughout most of Asia and is likely to continue expanding. The global population is predicted to increase by about 50% to almost 9 billion people with the largest share in this region before it stabilises towards the end of the century. A 70% increase in food production will be required to support and increasingly affluent population; and as income rises people diversify and improve their diet habits demanding healthier, tasty and

value-added food. Asia produced 92% of global aquaculture and Asian aquaculture is characterised by small scale, family operated farms that are typically less than 1 ha in area and the sector is a major source of income and employment for rural communities. With Asia's rapidly expanding and increasingly affluent populations, the greatest demand for fish will be for domestic rather than the export market.

Traditional aquaculture still has relevance for the poor seeking to diversify their small farms. Its principles when compared to intensive aquaculture practices have relevance for lowering the cost of production and also improving environmental sustainability. NACA has played a vital role in improving the traditional aquaculture practices and development of better management practices (BMPs) for culture based fisheries development in Asia, for culture of the striped catfish (*Pangasianodon hypophthalmus*) in the Mekong River Delta in Vietnam, implemented through groups of small-scale farmers to improve their efficiency and profitability. This has resulted in a massive expansion of striped catfish production over the past decade in Vietnam with an annual production now exceeding 1 million metric tonnes. NACA was also instrumental in developing culture-based fisheries in eleven seasonal reservoirs in Sri Lanka, stocking common carp, tilapia and *Labeo dussumieri* with the financial support of the Australian Centre for International Agricultural Research (ACIAR). This has provided a means of increasing food supply in rural areas of Sri Lanka. I hope NACA will extend such activities in other member countries.

Hill stream / cold water fishes form an important component in the aquaculture practices in the Himalayan region of countries such as Nepal, China, India, Myanmar and Pakistan. NACA may consider assisting cold water aquaculture practices as it has no ongoing activities in this field.

Climate change is affecting farming systems worldwide. It is expected that the impacts will be disproportionately felt by small scale farmers who are already amongst the most poor and vulnerable members of the society. NACA's efforts to map farmers' perceptions and attitude towards climate change impacts and adaptive capacities to address these impacts in four Asian countries including the shrimp culture practices in India (CIBA-NACSA/MPEDA-NACA project) through the 'Aquaclimate' project is highly admirable. I hope the project will provide farmers with strategies to maintain their resilience in the face of climate change.

The Aquatic Animal Health Programme of NACA is helping member states to reduce the risk of aquatic animal diseases. One of the ACIAR projects aims to improve the capability of shrimp virus PCR laboratories in Vietnam with well developed plans for PCR lab registration and accreditation. I recall such a practice successfully developed and applied in India in a NACA-ACIAR-CIBA-MPEDA project in 2005-2006 and I expect that NACA will extend further assistance to combat the challenges of newly emerging diseases not only in shrimp but also in freshwater prawns, finfish and molluscs in all member

states. The Shrimp Health Management Extension Manual prepared during the joint technical assistance programme of NACA and MPEDA at the time of the white spot syndrome outbreak in 2002 and translated into Indian regional languages, namely Tamil, Telugu and Oriya was well-received by the shrimp farmers of the region. The detailed proforma of crop and shrimp pond management and daily record sheets developed by NACA and MPEDA have been adopted by over 700 shrimp farmer societies and are currently in practice in the Indian states of Andhra Pradesh, Tamil Nadu, Karnataka and Orissa.

Incorporating the latest technologies such as molecular genetic tools in aquaculture and fisheries management will help to reduce negative impacts on biodiversity. NACA's programme on artificial propagation of indigenous mahseer species in Malaysia through scientifically based enhancement programmes and the development of conservation strategies for Mekong giant catfish has been successful. However, such an important programme has not identified any component or activity in a biodiversity rich country such as India. I urge the DG and office bearers of NACA to initiate propagation assisted rehabilitation of regionally important and endangered freshwater food species of the Western Ghats and North Eastern region of India jointly with the National Bureau of Fish Genetic Resources (NBFGR, Lucknow) and the regional lead centre, CIFA, at Bhubaneswar.

Semen banks form the backbone in animal husbandry programmes that revolutionised the entire sector. NACA may initiate establishment of cost effective milt banks for aquaculture species that would reduce the cost of broodstock maintenance, help in multiple breeding, avoid sacrificing males as in catfishes and in producing superior strains. China has made considerable progress in selective breeding of its native shrimp, *Fenneropenaeus chinensis* which may even compete with *Litopenaeus vannamei* in the coming years. Similar efforts may be initiated in Indian white shrimp, *Fenneropenaeus indicus* for faster growth rate in South Asian countries under the leadership of NACA in a collaborative mode with organisations such as the Central Institute of Brackishwater Aquaculture (CIBA), Chennai.



Dr E.G. Silas, former Director of the Central Marine Fisheries Research Institute and founding Director of the Central Institute of Brackish Water Aquaculture, Indian Council for Agricultural Research (ICAR) and former Vice-Chancellor, Kerala Agricultural University.

Grouper culture has led to a significant contribution to fish production and rural economy in coastal communities in Asia and also played an important role in conservation of the fragile coral reef fishes which are increasingly being threatened with overfishing and habitat destruction. One of the major constraints to furthering grouper culture is seed supply. The hands-on training course on grouper hatchery production offered by NACA and the practical guides on feeds and feed management and hatchery management have been immensely helpful in producing commercial quantities of grouper seed and enhancing skills in grouper culture in the Southeast Asian coral triangle. The Rajiv Gandhi Center for Aquaculture, in its programme on cage culture of groupers in the Andamans, benefited greatly from the advice of Dr Mike Rimmer, who was one of the founders of the Asia-Pacific Marine Finfish Aquaculture Network. Other candidate species such as pomfret, cobia, yellow-fin tuna and snappers can be included to widen the scope of seed production, stock

enhancement and mariculture in the region. Another area of interest is coastal zoning and management with a view to identify appropriate hassle free sites for mariculture and coastal aquaculture with the help of GIS and land based surveys. The possibilities of developing aquaculture practices for non-conventional species such as ornamental fishes and sea cucumbers can be attempted by NACA to increase the revenue of the fishers as well as to curb over exploitation of resources from the wild. Experimental small volume, high density farming of locally important food fish such as the pearl spot (*Etroplus suratensis*) in floating net cages (1.0-2.0 m³) in South India was found to be highly rewarding; such species may be prioritised in other member states to develop appropriate region-specific aquaculture technologies for rural areas.

Today there is need for certification in aquaculture, based on the chain of custody and value-chain systems. The modalities of the formulation of guidelines and execution of the same

would be major tasks. I am sure NACA could function as a catalyst to promote this activity aimed at good aquaculture practices and best management practices for assuring quality products.

Through well-organised networks, extension activities and publications, the role played by inter-governmental organisations such as the Bay of Bengal Programme has great visibility in India and other member nations and they also disseminate information in several regional languages. Likewise, NACA with more linkages, extension and developmental activities in the region could play a pivotal role. Sharing the fruits of research with countries in the network should strengthen linkages. NACA may organise more training programmes, enhance technology dissemination and promote visits of professionals among the countries for the overall development of aquaculture in the region. At the same time, it may also strengthen its interaction with other similar international networks (ARAC, CERLA, MEDRAP, NACEE and NACEA) for better utilisation of appropriate technologies and expertise.

Talking of networks, it reminds me of the webbing in fishing nets and fortunately we have in our midst our greatest expert in nets, Dr Meenakumari. Through the ages, fishing nets have evolved from weakness to strength and durability through the use of successive improved netting material, culminating now in the use of ultra high molecular weight polyethylene, popularly known as Dyneema. Its characteristics such as low weight, resistance to weathering and high durability strengthen its webbing to last longer and function efficaciously. NACA may similarly strengthen its networking in member states as well as with other international organisations to increase its visibility, improve the livelihood of rural communities to contribute towards fish food security and aquaculture sustainability.

Today you also have assembled here for the governing Council Meeting, which will elect a new Director General to head this august body. The world is slowly recovering from a devastating economic recession. In this scenario, the new Director General will have a formidable task in generating resources for the various activities of the organisation. I am sure, wisdom will prevail in the selection of the new DG. Once again, I think Dr Sena De Silva, DG NACA, and Dr S. Ayyappan, Secretary, DARE, GOI, for giving me the opportunity to participate in this inaugural function. I wish NACA a very bright future.

Thank you.

Sign up for the NACA Email Newsletter

Stay up to date with all the latest free news, publications, and audio recordings from the network by signing up for the NACA Email Newsletter service. It's a free, low-volume newsletter that we send out only when we have some useful downloads to give away. Sign up at:

http://www.enaca.org/modules/wfdownloads/email_newsletter.php

Striped catfish farming in the Mekong Delta: A tumultuous path to a global success

De Silva, S. and Phuong, N.T. (2011). Striped catfish farming in the Mekong Delta, Vietnam: a tumultuous path to a global success. Reviews in Aquaculture 3: 45-73.

Abstract

The striped catfish (*Pangasianodon hypophthalmus*) (Sauvage), also referred to as tra catfish or sutchi catfish, farming sector is an icon of aquaculture development in Vietnam and globally. Over a decade it has developed from a humble backyard operation to one that currently accounts for the production of over one million tonnes, employing over 180 000 rural poor, and generating an export income exceeding US\$ 1.4 billion (2010). It accounts for the highest average production, ranging from 200 to 400 t ha⁻¹ crop, ever recorded for the primary production sector. The system is integrated and incorporates seed production, fry to fingerling rearing and grow-out, and is concentrated in a few provinces in the Mekong Delta (8°33'–10°55'N, 104°30'–106°50'E), along two branches of the Mekong River. In essence, perhaps, the initial trade restrictions on catfish exports to the USA provided the impetus and then the associated developments from 2002 to 2005 of the sector to a great extent in seeking new markets. The explosion of tra catfish farming has resulted in many competitive sectors challenging this 'tra catfish' invasion into a globalised market. These confrontations still exist with many instances of attempts to discredit the sector and discourage international consumers. However, the Vietnamese catfish sector is resilient and has managed to withstand such pressures and continues to thrive. This paper reviews the development of catfish farming in the Mekong Delta, its current status and what is required to sustain it as a major food source and livelihood provider.

Download from:

<http://dx.doi.org/10.1111/j.1753-5131.2011.01046.x>

Diseases in Asian Aquaculture VIII: Registration and abstract submission open

The Symposium on Diseases in Asian Aquaculture VIII (DAA-VIII) will be hosted by the College of Fisheries, Mangalore, India, 21-25 November, 2011.

Registrations and abstracts can be submitted on-line via the DAA-VIII website. Early registration opens on 1st June and closes on 31st August, 2011. Participants are requested to register early so that the organisers may facilitate the visa application process:

<http://www.daa8.org/>

DAA-VIII is your gateway to 'Incredible India' – Don't miss the opportunity. Register now !!!

Food safety and biosecurity

During the recently held 9th Meeting of the Asia Regional Advisory Group on Aquatic Animal Health (AG) (download report), one issue that was discussed was to broaden the scope of the group to address emerging issues related to aquatic animal health such as food safety, certification and biosecurity. There is an ongoing need to strengthen aquatic animal health management in the Asia-Pacific region driven by increasing production and trade in aquatic animal commodities, the need to meet sanitary requirements for international trade, the importance of preventing the spread of transboundary diseases, and recognition of the significance of aquatic animal production for food security. Effective coordination and communication of capacity building initiatives across the region are important to ensure that, wherever possible, available resources are applied for maximum benefit.

According to World Organisation for Animal Health (OIE), food safety and quality are best assured by an integrated, multidisciplinary approach, considering the whole of the food chain. Eliminating or controlling food hazards at source, i.e. a preventive approach, is more effective in reducing or eliminating the risk of unwanted health effects than relying on control of the final product, traditionally applied via a final 'quality check' approach. Approaches to food safety have evolved in recent decades, from traditional controls based on good practices (Good Aquaculture Practices [GAPs] and Better Management Practices [BMPs]), via more targeted food safety systems based on hazard analysis and critical control points (HACCP) to risk-based approaches using food safety risk analysis.

To ensure food safety of animal products, action is needed at the farm level during the production cycle, where many sanitary risks may be present and can be avoided through proper disease prevention policies and good practices recommended international organisations (e.g. NACA, OIE, SEAFDEC AQD, FAO and Codex Alimentarius Commission). Globalisation in aquaculture should ensure healthy and hazard-free food products for international trade.

Concerns on drug and chemical residues among internationally traded aquatic products have resulted in more stringent standards being imposed by many importing countries around the world. In the Asia-Pacific region, the use of chemicals in aquaculture still needs to be standardised and several projects/workshops have been implemented in this regard many years back. These include withdrawal periods of antibiotics among cultured species, surveillance of chemical contaminants in aquaculture products and feeds, status of antibiotics/chemicals usage and regulations in aquaculture, and dissemination of food safety awareness. Despite of these activities, however, harmonised guidelines on responsible use of chemicals in aquaculture, especially in less-developed countries in the region, still needs to be formulated.

Food safety of aquaculture in the Asia-Pacific region needs proper implementation of the following (Azuma 2010):

- Establishment of guidelines for the proper usage of antibiotics and other drugs in aquaculture.

- Clarification of chemical contaminants in aquaculture products and feeds.
- Investigations on the status of antibiotics/chemicals usage and regulation in aquaculture.
- Promotion of food safety awareness from farm to fork following the established guidelines.

On the other hand, biosecurity in aquaculture, as discussed during the Global Conference on Aquaculture 2010 (Phuket, Thailand), is taking a broader perspective to include aquatic animal health, invasive species, genetic risks, public health and climate change impacts. The following messages were conveyed after the discussion by panel experts:

- International and national efforts to promote biosecurity need to better reach the grassroots levels of the industry and the community stakeholders.
- Biosecurity frameworks need to keep pace with the unprecedented level of aquaculture development in terms of species, systems and technology.
- Standards on aquatic animal health for known pathogens, aquatic pests and food safety are already available, but greater commitment by governments is needed to implement these standards.

International standards need to be developed to address the high incidence of emerging diseases of aquatic animals and aquatic pests compared to the terrestrial scenario – there is a need to complement the pathogen/pest specific approach to biosecurity with standards that deter high risk practices.

On the different certification schemes which are creating confusion for many stakeholders, globally accepted guidelines are needed, which can serve as basis for a more harmonised and acceptable certification. At present, the proposed FAO aquaculture certification guidelines have been approved in the recent COFI (Committee on Fisheries) meeting. A range of issues relevant to certification schemes in aquaculture has been included in the certification guidelines including: animal health and welfare; food safety; environmental integrity; and socio-economic aspects.

By and large, food safety and biosecurity in aquaculture still need to be strengthened, and awareness programmes should be implemented and proper information disseminated especially for small-scale aquafarmers which are common in the region.

As a last note, the updated list of diseases for QAAD reporting starting January 2011 is enclosed in this report. This was revised by the 9th AG based on current OIE list and other diseases of importance to the region.

Ramping up adoption of catfish BMPs

A new project funded by the European Commission will help Vietnamese catfish farmers improve their efficiency and profitability. The project will assist farmers to implement better management practices (BMPs), working in cooperative groups formed from 'clusters' of nearby farms.

Vietnamese catfish aquaculture has expanded massively over the past decade, with annual production now exceeding one million tonnes. Production is extremely intensive, with average yields of around 400 tonnes per hectare. However, the profit margin is very low - just a few cents per kilogram - and farmers are under intense pressure to reduce their production costs.

Scientifically-based better management practices for catfish aquaculture have been developed by a recently completed NACA project. These improved practices increase farm resource-use efficiency, improving crop performance while reducing production costs and environmental impact. The BMPs were developed through extensive surveys of industry practices, consultations with farmers and on-farm trials.

The new project, *Development and validation of commodity-specific Better Management Practices for smallholder farmers in the Asia-Pacific region* is an activity of the ASEM Aquaculture Platform. The project aims to promote wider adoption of BMPs for key aquaculture commodities, including tra catfish in Vietnam, work on which is being implemented by Can Tho University.

The project held a workshop to discuss BMP implementation in Can Tho, Vietnam, on 16 April 2011. The workshop was attended by 60 farmers and officials from the four participating provinces of An Giang, Don Thap, Vinh Long and Can Tho and organised by Can Tho University. Discussions centred around the formation of collaborative groups to implement BMPs, mechanisms for group operation and governance, requirements for record keeping and standard operating procedures and arrangements for evaluation.



Project team discussing BMP implementation with a farmer cluster.



Workshop with Vietnamese catfish farmers on better management practices and cluster formation.

Eleven collaborative farmer groups were agreed to be established by participants, each of which consists of farmers whose properties are clustered within a small geographic area and share a common water supply. Eight of the groups are engaged in catfish growout and three are nurseries that produce fingerlings for sale to growout farms. Each group selected a Chair and Vice-chair and agreed on standard operating procedures and governance arrangements, including the development of crop and water calendars, organisation of meetings, record keeping and liaison with input suppliers and processors.

Participants suggested that there should be regular meetings between groups, including between nursery and grow out clusters. This will assist both types of group coordinate their activities better. For example, growout clusters will develop a crop calendars and then discuss their needs with nursery clusters to ensure that the required quantities and size/quality of seed will be available at the desired stocking time. Participants also expressed interest in inviting processors to attend their cluster meetings to observe improvements in farming practices and encourage them to buy BMP product.

The project will be implemented over two crop cycles, with staff from Can Tho University providing technical support to farmer groups on implementation of BMPs, monitoring compliance and outcomes. At the request of participants, Can Tho University will also provide a technical training programme for one person from each farmer group and two technical staff from each provincial government.

For more information about the project please visit the ASEM Aquaculture Platform section of the website (link below). The ASEM Aquaculture Platform is funded by the European Commission's 7th Framework project.

http://www.enaca.org/modules/asem/index.php?content_id=1

Scaling up BMPs: A national workshop

Better management practices have proved to be a highly effective tool for the Indian shrimp farming industry. Work to extend adoption of the practices is ongoing, and in this view a national workshop was held in Chennai, India, 16-18 May 2011 to discuss scaling up strategies, to extend the concept to new areas and involve more farmers, and identify lessons learned that can be applied elsewhere. The aims of the workshop were to:

- Build awareness and capacity of relevant stakeholders on BMPs, cluster management, standards and certification, cluster/group certification, internal control systems and market access issues.
- Share lessons from BMP and cluster management projects in India, Vietnam, Thailand and Indonesia.
- Perform a thorough assessment of the impact of shrimp BMP and cluster management programs in India, including technical, social, economic and environmental concerns.
- Identify factors for success and constraints to adoption.
- Identify opportunities and challenges for scaling up.
- Provide projections on the impact of scaling up at the national level.
- Develop scaling up strategies for use by national institutions, regional organisations and potential donors.

Participation

The workshop brought together key stakeholders from all over India. These included representatives from MPEDA/NaCSA, ICAR (CIBA, CIFA, CMFRI), state fisheries departments, NFDB, CAA, fisheries colleges of state agricultural universities, farmer leaders, hatchery operators and processors, certification and standard setting bodies. In addition, experts from various regional and international organisations (e.g. NACA, FAO, WFC, INFOFISH)



Participants in the workshop on scaling up BMPs at the national level.

with expertise on aquaculture development, small-scale aquaculture, BMPs and cluster management attended the workshop.

Process

The workshop had three sessions that were integrated in a logical fashion to ensure continuity, facilitate discussion and enhance uptake:

- The first session included expert presentations on opportunities and challenges for small scale aquaculture in Asia, development and implementation of commodity specific BMPs, cluster management, innovative networking and communication channels in support of small scale farmers, group/cluster certification, and linking small scale farmers to markets.
- The second session focussed on sharing of experiences from India, Thailand, Indonesia and Vietnam.
- The third session will focussed on impact analysis and strategies for scaling up, including working group discussions, development of action plans and recommendations and presentation back to the workshop.

Outputs

Outputs from the workshop were discussed with a view to adoption as policy by institutional stakeholders supporting small scale farmers to remain competitive, profitable, responsible and sustainable. Key outputs included:

- Better understanding of opportunities and challenges facing small scale farmers in India.
- Increased awareness and capacity in development and implementation of BMPs for key aquaculture commodities.
- Increased awareness and capacity on cluster formation, cluster management.
- Increased awareness and capacity on certification, cluster certification and market access.
- Strategies for scaling up BMP and cluster management programs at the national level for key aquaculture commodities.
- Recommendations in support of small scale farmers to remain competitive and sustainable.
- Recognition of inter- country benefits and ways to enhance such collaboration.
- Definition of next steps and an action plan.
- Preparation of a workshop report summarising the above.

The report of the meeting is available for download from the NACA website, please visit the project web page for more information about the ASEM Aquaculture Platform:

http://www.enaca.org/modules/asem/index.php?content_id=1

Audio recordings

Audio recordings of the technical presentations made at the workshop are available for download from the NACA website at the link below. If you prefer you can also stream them online, or subscribe to the NACA podcast feed:

http://www.enaca.org/modules/podcast/programme.php?programme_id=6

The available recordings are as follows:

- Opening ceremony
- BMPs and cluster management: Way forward for small scale farmers to remain competitive and sustainable
- Aquaculture certification and market access: Opportunity or bottleneck for small scale farmers?
- Fair trade certification: Enabling mechanism for small scale farmer groups
- Shrimp BMP adoption through cluster management approach in India
- Lessons learned from ACIAR shrimp BMP programmes in Indonesia
- Invisible hand in BMP adoption: Malaysian experience
- Theory and practice of scaling up and scaling out
- BMP and cluster management in India: Impact assessment and ideas for potential scaling up strategies
- Role of institutions in scaling up: MPEDA
- Role of institutions in scaling up: CIBA
- Role of institutions in scaling up: CIFA
- Role of institutions in scaling up: Central Aquaculture Authority
- Role of institutions in scaling up: National Fisheries Development Board
- Role of institutions in scaling up: Kerala Fisheries Department
- Scaling up BMPs in India: Opportunities for Professional Fisheries Educational Institutions
- Role of industry in scaling up: Farm cluster leaders
- Role of industry in scaling up: Hatchery operators
- Role of industry in scaling up: Mobiaqua
- Role of industry in scaling up: Certification bodies

2nd Aquaclimate project meeting

Aquaclimate is a three year project funded by the Ministry of Foreign Affairs, Norway, through the Royal Norwegian Embassy in Thailand, which supports scientific research in selected vulnerable farming communities in the Asian region.

The second annual meeting of the project, convened by NACA, was held at the Inland Fisheries and Aquaculture Training Institute, Kalawewa, Sri Lanka from 7-9 March 2011. The meeting brought together 22 professionals from all partner countries and created a platform for the partners to present their year's progress and to hold in-depth discussions about the way forward.

The technical presentation sessions portrayed that the project has generated a large quantum of information and data, perhaps most of which are for the first time on climate change impacts on aquatic farming systems per se. The meeting agreed that there is a need to consolidate such information and subject these to scientific scrutiny prior to disseminating to stakeholder groups and employing in preparation of policy briefs.

The team also agreed upon on a work plan for the next project year (March 2011 – March 2012) of which more emphasis has been given to the consolidation of available data, preparation of manuscripts for peer

reviewed international journals and preparation of policy briefs. Furthermore, the meeting identified prospective initiatives such as climate change impacts on fry and fry to fingerling rearing farming systems, culture-based fisheries in non-perennial reservoirs in Sri Lanka, captive breeding of major carps of Sri Lanka and value chain/market chains of commodities.

The meeting also comprised of a project evaluation session, which facilitated synthesis of the mid-term evaluation report. According to the report all project activities appear to be on track, however the option for seeking a six month extension from Norad for final report submission was considered appropriate, considering the complexity and scale of the various case studies presently underway. The report also pointed out the necessity of extrapolating the key findings beyond the scope of the case studies to different sectors and regions in order to achieve maximum impact.

Phase 2 of the project is comprised of two salient activities: the development of a broodstock management plan for salinity tolerant strain of tra catfish and better management practices for selected farming systems to mitigate some potential impacts of climate change. It was agreed that these components could be initiated independent of the current project activities. The report of the meeting is



Network of
Aquaculture
Centres in
Asia-Pacific

Mailing address

PO 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.



Copyright NACA 2011

Published under a Creative
Commons Attribution license.
You may copy and distribute this
publication with attribution of
NACA as the original source.

available for available for download.
For more information, please see the
Aquaclimate project webpage.



Participants in the 2nd Aquaclimate project meeting.