



Part IV – Phuket Consensus





Aquaculture Development Beyond 2000

The Bangkok Declaration and Strategy

Conference on

Aquaculture Development in the Third Millennium

20-25 February 2000 Bangkok, Thailand

April 2000

Preface

The first major international Conference on Aquaculture organised by FAO was held in Kyoto, Japan in 1976. The Conference adopted the “Kyoto Declaration on Aquaculture.” In February 2000, some 540 participants from 66 countries and more than 200 governmental and non-governmental organisations participated in the “Conference on Aquaculture in the Third Millennium” in Bangkok, Thailand. This conference was organised by the Network of Aquaculture Centres in Asia-Pacific (NACA) and the FAO and hosted by the Government of Thailand. Additional support was provided by the European Union (EU), the Australian Agency for International Development (AusAID), the Canadian International Development Agency (CIDA), the Danish Centre for Environment and Development (DANCED), the Department of Agriculture, Forestry and Fisheries of Australia (AFFA), the Rockefeller Brothers Fund, and the World Bank-Netherlands Partnership Program.

Throughout 1999, NACA and the FAO facilitated the preparation of reviews on aquaculture developments in Africa, Asia, Europe, Latin America, North America, the countries of the former USSR, the Near East, and the Pacific Island nations and held expert meetings to consider major trends in aquaculture development. Fourteen Thematic Reviews on selected aspects of aquaculture were promoted and eight overviews on key issues were prepared for presentation and discussion at the Conference. All participants to the Conference received extended summaries of all material prepared. Twenty plenary presentations and discussions, and 12 workshop sessions facilitated by expert panels enabled participants to discuss and prioritise major issues and strategic actions for follow-up.

Major themes discussed included policy-making and planning for sustainable aquaculture development (covering food security and poverty alleviation, rural development, stakeholder involvement, incentives, and legal and institutional frameworks); technological and R&D priorities (including systems/species,

genetics, health management, nutrition/feeding, and culture-based fisheries); human resource development; international trade; product quality, safety and marketing; regional/inter-regional co-operation; financing; and institutional support.

Against this background, the Conference participants discussed priorities and strategies for the development of aquaculture for the next two decades, in the light of the future economic, social and environmental issues and advances in aquaculture technologies. Based on these deliberations, the participants adopted the **Bangkok Declaration and Strategy for Aquaculture Development Beyond 2000**. The Conference encouraged States, the private sector and other concerned stakeholders to incorporate in their strategies for aquaculture development the key strategy elements identified during this Conference.

The proceedings of the Conference, including global and regional reviews on trends in aquaculture development, thematic reviews, keynote addresses and other invited presentations will be published by NACA and FAO.

NACA and FAO acknowledge all individuals and agencies who assisted in the conference process.

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Aquaculture Development Beyond 2000

The Bangkok Declaration and Strategy

1 Preamble

- 1.1 The first international Conference on Aquaculture organised by the Food and Agriculture Organization of the United Nations (FAO) was held in Kyoto, Japan in 1976. The Conference adopted the “Kyoto Declaration on Aquaculture.”
- 1.2 In February 2000, some 540 participants from 66 countries participated in the “Conference on Aquaculture in the Third Millennium” in Bangkok, Thailand. This Conference was organised by the Network of Aquaculture Centres in Asia-Pacific (NACA) and the FAO and hosted by the Government of Thailand.
- 1.3 Throughout 1999, NACA and the FAO facilitated the preparation of reviews on aquaculture developments in Africa, Asia, Europe, Latin America, North America, the countries of the former USSR, the Near East, and the Pacific Island nations and held expert meetings to consider trends in aquaculture development. Thematic Reviews on various aspects of aquaculture were also conducted. Participants to the Bangkok Conference were informed of the findings and conclusions of these activities.
- 1.4 Against this background, the Conference participants discussed strategies for the development of aquaculture for the next two decades, in the light of the future economic, social and environmental issues and advances in aquaculture technologies.
- 1.5 Based on these deliberations, the participants to the Conference adopted the following Declaration.

2 The declaration

We, the participants to the Conference on Aquaculture in the Third Millennium, Bangkok 2000, recognise that:

- 2.1 during the past three decades aquaculture has become the fastest growing food-producing sector and is an increasingly important contributor to national economic development, the global food supply and food security;
- 2.2 aquaculture consists of a broad spectrum of users, systems, practices and species, operating through a continuum ranging from backyard household ponds to large-scale industrial systems;
- 2.3 the per caput supply of food fish from capture fisheries is likely to decline with population increase;
- 2.4 a great proportion of aquaculture production comes from developing countries, where aquaculture will continue to contribute to peoples' livelihoods, food security, poverty alleviation, income generation, employment and trade;
- 2.5 there has been a significant increase in commercial and industrial aquaculture, both in developed and developing countries, that has contributed to food supply, export income and trade;
- 2.6 globally, aquaculture is at varying stages of development and will require different strategies for growth;
- 2.7 the potential of aquaculture to contribute to food production has not yet been realised across all continents;
- 2.8 aquaculture complements other food production systems, and integrated aquaculture can add value to the current use of on-farm resources;
- 2.9 aquaculture can be an entry point for improving livelihoods, planning natural resource use and contributing to environmental enhancement;
- 2.10 responsible aquaculture practitioners are legitimate users of resources;
- 2.11 education and research will continue to make a significant contribution to the growth of aquaculture;
- 2.12 some poorly planned and managed aquaculture operations have resulted in negative impacts on ecosystems and communities;
- 2.13 aquaculture has also been negatively impacted by other unplanned activities;
- 2.14 the continued growth of aquaculture will occur through investment by the private and public sectors;

- 2.15 effective national institutional arrangements and capacity, policy, planning and regulatory frameworks in aquaculture and other relevant sectors are essential to support aquaculture development;
- 2.16 improving co-operation amongst stakeholders at national, regional and inter-regional levels is pivotal for further development of aquaculture;
- 2.17 the potential of aquaculture to contribute to human development and social empowerment cannot be fully realised without consistent, responsible policies and goals that encourage sustainable development;

and declare that:

- 2.18 the aquaculture sector should continue to be developed towards its full potential, making a net contribution to global food availability, household food security, economic growth, trade and improved living standards;
- 2.19 the practice of aquaculture should be pursued as an integral component of development, contributing towards sustainable livelihoods for poor sectors of the community, promoting human development and enhancing social well-being;
- 2.20 aquaculture policies and regulations should promote practical and economically viable farming and management practices that are environmentally responsible and socially acceptable;
- 2.21 national aquaculture development processes should be transparent and should take place within the framework of relevant national policies, regional and international agreements, treaties and conventions;
- 2.22 in pursuing development, States, the private sector, and other legitimate stakeholders should cooperate to promote the responsible growth of aquaculture;
- 2.23 strengthened regional and inter-regional co-operation should increase the efficiency and effectiveness of aquaculture development efforts; and
- 2.24 all parties formulating improved policies and implementing practices for aquaculture development should consider and where appropriate, build on the FAO Code of Conduct for Responsible Fisheries.

The following contains the major strategy elements based on the Conference session recommendations. The detailed recommendations from the sessions are given in the Conference Report.

3 Strategy for aquaculture development beyond 2000

States are encouraged to incorporate in their strategies for aquaculture development the key elements identified during this Conference.

The key elements are:

3.1 Investing in people through education and training

Further investments in education and training are essential to build the knowledge, skills and attitude of all people involved in the sector. Human capacity development can be made more cost-effective and responsive to needs through:

- using participatory approaches to curriculum development;
- improving co-operation and networking between agencies and institutions;
- multidisciplinary and problem-based approaches to learning;
- use of modern training, education and communication tools, such as the Internet and distance learning, to promote regional and inter-regional co-operation and networking in the development of curricula, exchange of experiences and development of supporting knowledge bases and resource materials; and
- providing a balance of practical and theoretical approaches to train farmers and provide more skilful and innovative staff to industry.

3.2 Investing in research and development

There is a need to increase investment in aquaculture research, whilst making efficient use of research resources and building the capacity of research institutions to be more responsive to development requirements through such mechanisms as:

- collaborative multidisciplinary research;
- stakeholder participation in research identification and
- improving linkages between research, extension and producers;
- collaborative funding arrangements between institutions and public and private sector organisations;
- efficient communication networks;
- regional and inter-regional co-operation; and
- a continued effort to build the skills of researchers involved in aquaculture development.

3.3 Improving information flow and communication

Efficient management of the sector requires improved information flows at the national, regional and inter-regional levels which will avoid duplication of effort and save costs, while encouraging consistency in areas such as education and training, policy-making, planning and the application of rules and procedures.

Improved information flows will increase institutional capacities for dealing with emerging issues and can be achieved by:

- establishing arrangements for sharing data and information;
- strengthening national capacity to determine data requirements and data selection and management;
- providing effective mechanisms for access to relevant and reliable information to all stakeholders; and
- making effective use of new technologies to improve information flows and management policies and practices within aquaculture.

The collection and dissemination of accurate and verifiable information on aquaculture may help to improve its public image and should be given attention.

3.4 Improving food security and alleviating poverty

Enhancing food security and alleviating poverty are major and complementary global priorities. Aquaculture has a special role in achieving these objectives because, firstly, fish is a highly nutritious food that forms an essential, if not indispensable, part of the diet of a large proportion of the people in developing countries. Secondly, while aquaculture contributes to the livelihoods of poor farming households, particularly in areas of Asia where it is a traditional farming practice, there is a huge, unfulfilled potential in most countries, as aquaculture is a relatively recent and underdeveloped sector as compared to agriculture and animal husbandry. Aquaculture could improve food security, provide entry points and contribute to sustainable livelihoods for the poor through:

- promoting poor-people-centred development focus in aquaculture sector policies, wherever appropriate;
- promoting systems to farm low-value fish affordable to the poor, particularly small-scale household production in rural areas where it may be the only source of fish due to poor infrastructure;
- disseminating information about the nutritional advantages of fish to vulnerable groups of people such as pregnant and lactating women, and families with infants and pre-school children;
- greater use of holistic, participatory approaches to identify the poor and assess their needs; and to develop and extend aquaculture technologies appropriate to the resources and capabilities of poor households;
- recognising that the development of small-scale aquaculture requires initial public sector support, with more support needed and for longer periods for poorer target groups; and
- empowering poor stakeholders to actively participate in policy decision-making.

3.5 Improving environmental sustainability

There is a need to develop and adopt policies and practices that ensure environmental sustainability, including environmentally sound technologies and

resource efficient farming systems, and integration of aquafarms into coastal area and inland watershed management plans. Improvements in environmental sustainability can be achieved through:

- development, adoption and application of environmental, economic and social sustainability assessment criteria and indicators of aquaculture development;
- development of and support to implementation of improved management practices and codes of good practice for aquaculture sectors that are supported by enforceable regulations and policy;
- research and development of resource-efficient farming systems which make efficient use of water, land, seed and feed inputs; exploring the potential for commercial use of species feeding low in the food chain; and utilising enhancement techniques;
- development of strategies to integrate aquaculture into the coastal areas and inland watershed management plans and ensuring aquaculture developments are within local and regional carrying capacities;
- promotion of good practices for environmental management of aquaculture; and
- promotion of aquaculture, where appropriate, as a means of improving environmental quality and resource use.

3.6 Integrating aquaculture into rural development

With the goal of increasing the impact of aquaculture on rural development and poverty alleviation, strategies are required to put people as the focal point for planning and development for such programmes and to integrate aquaculture into overall rural development programmes. In essence, this can be achieved through:

- integrating aquaculture planning within overall rural development planning, taking into account multi-sectoral developments and views, and multi-sectoral co-ordination which brings agencies together;
- integrating aquaculture with other rural development efforts to improve resource utilisation, such as integrated coastal area management and inland watershed management;
- awareness-raising in other rural development sectors of the potential of aquaculture to improve livelihoods;
- using participatory approaches to involve stakeholders in policy-making, planning, implementation and monitoring; and
- the documentation and wide dissemination of information on experiences and utilisation of good practices and benefits thereof.

3.7 Investing in aquaculture development

Future investment in aquaculture should be made with long-term strategies in mind to ensure sustainability. Private sector investments make the biggest contribution to aquaculture development, but adequate public sector finance for capacity building, institutional development and infrastructure, is indispensable for society to reap the full benefits of a well managed and efficient aquaculture sector.

Sound investment strategies should include:

- providing initial financial encouragement and facilitating investments in aquaculture development;
- encouraging continued public investment in rural and small-scale aquaculture in developing countries, and in applied research and farmer access to knowledge and capital;
- encouraging private sector funding and investment in aquaculture development and infrastructure which will provide the benefits of aquaculture to rural communities;
- developing mechanisms (e.g., investment screens, credit linked to performance or adoption of best management practices, performance bonds) which encourage the growth of environmentally and socially responsible aquaculture, including economic, educational and other incentives for responsible aquaculture;
- support to sponsorship of industry-driven codes of practice to promote responsible aquaculture;
- fostering a greater understanding within financial institutions and bilateral and multilateral assistance agencies regarding aquaculture development and its financial needs; and
- establishing credit schemes that support sustainable aquaculture, e.g., micro-credit programmes, particularly for small-scale development.

International development assistance is becoming increasingly directed towards poverty alleviation and needs to adhere to basic principles of social equity, including gender equity, environmental sustainability, technical feasibility, economic viability and good governance. The level of risk is important when supporting initiatives to address poverty alleviation.

To make efficient use of international donor resources, a programme approach to multi-sectoral development should be applied under which donors can more effectively co-operate and collaborate with each other. Ultimately, this should occur within comprehensive planning and development frameworks.

There is thus a need for donors to adopt more cohesive approaches and procedures.

3.8 Strengthening institutional support

One of the key issues for the growth of aquaculture will be the ability of countries and organisations to strengthen their institutional capacity to establish and implement policy and regulatory frameworks that are both transparent and enforceable. Incentives, especially economic incentives, deserve to be given more attention in the planning and management of aquaculture development.

Institutional capacity should be made more effective and strengthened through:

- developing a clear aquaculture policy, and identification of a lead agency with adequate organisational stature to play a strong co-ordinating role;

- developing, through a participatory approach, comprehensive and enforceable laws, regulations and administrative procedures that encourage sustainable aquaculture and promote trade in aquaculture products;
- providing education and training, research and extension services to support the development of enforceable legislation, policy and regulatory frameworks, encompassing economic and other incentives to improve aquaculture management;
- targeting not only government ministries and public sector agencies dealing with administration, education, research and development, but also organisations and institutions representing the private sector, NGOs, consumers and other stakeholders;
- developing mechanisms and protocols for the timely collection and reporting of statistics;
- sharing information on policies and legislation, rules and procedures that encompass best practices in aquaculture;
- clarifying legal frameworks and policy objectives regarding access and user rights for farmers; and
- improving the capacity of institutions to develop and implement strategies targeting poor people.

3.9 Applying innovations in aquaculture

The technologies for sustainable aquaculture development should provide a varied and adaptable “tool box” from which people can select and design the system which most effectively meets their needs and best fits the opportunities and constraints of the local environment. The delivery of such techniques requires efficient communication networks, reliable data on the merits and drawbacks of the various approaches, and help with the decision making process through which people choose their production systems and species.

As we move into the next two decades, water and land for aquaculture will become critical issues. New opportunities for aquaculture development will also emerge through improvements in science and technology for aquaculture systems.

The potential areas for further consideration include:

- technologies for sustainable stock enhancement and ranching programmes, and open ocean aquaculture;
- increased use of aquatic plants and animals as nutrient stripping;
- increased emphasis on integrated systems to improve environmental performance; and
- emerging technologies (e.g., recirculating systems, offshore cage culture, integrated water use, artificial upwelling and ecosystem food web management).

3.10 Improving culture-based fisheries and enhancements

Fisheries enhancements in inland and coastal waters include culture-based fisheries and habitat modifications in common pool aquatic resources, which require minimal food and energy inputs. These practices therefore provide important opportunities for resource poor sections of the population to benefit from relevant aquaculture technologies and permit efficient use of under-utilised, new or degraded resources. Culture-based fisheries in particular have considerable potential for increasing fish supplies from both freshwater and marine fisheries and generating income in rural inland and coastal areas.

The full potential of enhancements and culture-based fisheries could be achieved by:

- creating conducive institutional arrangements to enable and sustain investment in common pool resources;
- providing appropriate research and development inputs;
- managing environmental and other external impacts; and
- promoting effective regional co-operation and information exchange.

3.11 Managing aquatic animal health

Disease is currently an important constraint to aquaculture growth which has impacted both socio-economic development and rural livelihoods in some countries. Addressing aquatic animal health issues has, therefore, become an urgent requirement for sustaining growth of aquaculture, especially through proactive programmes. Harmonising health protection approaches and measures and effective co-operation at national, regional and inter-regional levels are needed to maximise the effectiveness of limited resources.

This can be achieved through:

- developing, harmonising and enforcing appropriate and effective national, regional and inter-regional policies and regulatory frameworks on introduction and movement of live aquatic animals and products to reduce the risks of introduction, establishment and spread of aquatic animal pathogens and resulting impacts on aquatic biodiversity;
- capacity building at both the institutional and farmer levels through education and extension;
- developing and implementing effective national disease reporting systems, databases, and other mechanisms for collecting and analysing aquatic animal disease information;
- improving technology through research to develop, standardise and validate accurate and sensitive diagnostic methods, safe therapeutants, and effective disease control methodologies, and through studies into emerging diseases and pathogens;
- promoting a holistic systems approach to aquatic animal health management, emphasising preventative measures and maintaining a healthy culture environment; and

- developing alternate health management strategies such as the use of disease resistant, domesticated strains of aquatic animals to reduce impact of diseases.

Establishment of an effective international mechanism, such as an international task force which is outcome-oriented with focussed strategies and milestones that are independent of vested interests, would be beneficial in reducing the losses due to diseases in aquaculture.

3.12 Improving nutrition in aquaculture

Nutrition and feeding strategies play a central and essential role in the sustainable development of the aquaculture sector. Feed development will need to give increased emphasis on efficient use of resources and reduction of feed waste and nutrient discharge. Fishmeal reduction in diets will be important to reduce feed costs and avoid competition with other users.

These can be achieved through:

- increasing the understanding of dietary nutrient requirements of cultured species, including their application to practical culture conditions;
- developing species-specific broodstock diets that allow complete domestication and maximal reproductivity and larval quality;
- better understanding of larval nutritional requirements in order to develop suitable compound diets, which will further reduce the need for live food;
- improving the understanding of the aquaculture farming systems and the potential nutrient loads and losses to the environment, to maximise nutrient retention efficiency;
- improving the use of agricultural and fishery by-products and non-food grade feed materials, and basing feeding strategies, wherever possible, on the use of renewable feed ingredient sources;
- better understanding of nutrient bioavailability and interactions of commonly used feed ingredients;
- better understanding of the mechanisms of nutrient modulation of disease resistance as well as improved strategies to minimise toxicity of nutrients and other compounds of feed origin;
- promotion of “good aquaculture feed manufacturing practice” and “good on-farm feed management;” and
- ensuring that limitations in the selection and trade of raw materials for aquaculture feeds are based on sound, documented scientific facts.

3.13 Applying genetics to aquaculture

Genetics has an important role to play in increasing productivity and sustainability in aquaculture through higher survival, increased turnover rate, better use of resources, reduced production costs and environmental protection. This will require resources, but the benefits in both the short and long term should justify these efforts.

There are many elements and practices of genetics that may be considered for aquaculture. Recognising that aquaculture has not benefited as much as terrestrial animal husbandry from the adoption of best practices such as selective breeding and stock improvement programmes, high priority should be given to the application of genetics in aquaculture. The interventions include:

- developing and utilising improved domestication and broodstock management practices and efficient breeding plans to improve production in aquatic animals;
- designing and promoting strategies for equitable dissemination of genetic techniques and genetically improved organisms;
- encouraging public awareness and providing information to consumers on the application of genetics;
- greater application of genetic technologies to the conservation of aquatic biodiversity; and
- addressing the potential implications for aquaculture, including environmental and human health implications, in a precautionary, safe and practical way.

3.14 Applying biotechnology

Biotechnology as a science has the potential to impact on all food production sectors. In the future the aquaculture sector will confront the issue of biotechnology through:

- developing and applying biotechnological innovations for advances in nutrition, genetics, health, and environmental management;
- addressing the potential implications for aquaculture of biotechnology, including GMOs and other products, in a precautionary, safe and practical way; and
- encouraging public awareness and providing information to consumers on the potential applications of biotechnology.

3.15 Improving food quality and safety

As consumer awareness increases, aquaculture producers, suppliers and processors will need to improve the quality of products and enhance product safety and nutritional value. The incentives for this will be potentially higher prices, lower insurance rates and increased consumer demand.

This can be achieved through:

- improvements in diets, feeding regimes and harvesting strategies to enhance product quality and nutritional value of aquaculture products;
- promoting the application and adoption of international food safety standards, protocols and quality systems in line with international requirements such as the Codex Alimentarius;
- adopting international protocols for residue monitoring in aquaculture and fisheries products;
- appropriate and informative labelling of aquaculture feeds, including information on additives, growth promoters and other ingredients.

- collection, analysis and dissemination of relevant and scientifically sound information to allow producers and industry operators to make informed decisions and ensure consumer confidence in the food safety of aquaculture products;
- application of appropriate safety assessments based on risk analysis and the precautionary approach prior to market approval, including products from modern biotechnology; and
- increasing consumer confidence in aquaculture products by ensuring that industry takes responsibility for the production and distribution of safe products, utilising systems that allow traceability of product ingredients, including information on packaging, processing and production conditions.

3.16 Promoting market development and trade

A focus on market development and trade will increase demand, add value and increase returns for aquaculture products. This will require developing marketing and promotional strategies for aquaculture products and understanding consumer requirements and changing market demands.

These goals can be achieved through:

- reducing trade barriers for aquatic products;
- assisting producers, processors and manufacturers in identifying markets for aquaculture inputs, products and technology;
- providing data for, and investing in, information technology based market-information systems that are easily accessed by producers and processors;
- researching changing consumption patterns, market segmentation trends and the emergence of new markets and products; and
- ensuring transparency in the chain of custody (“chain traceability”) of aquatic products and encouraging the provision of relevant information to consumers through product labelling (e.g., nutritional values, environmental friendliness).

3.17 Supporting strong regional and inter-regional co-operation

Over the years, regional and inter-regional co-operation has brought considerable benefits to aquaculture development through dissemination of knowledge and expertise. In an era of globalisation, further strengthening of this co-operation at all levels will ensure increased benefits for sectoral development and sustainability.

This could be achieved through:

- supporting and strengthening existing regional organisations;
- improving inter-regional collaboration and networking between existing regional organisations to ensure synergy;
- encouraging the formation and development of regional organisations for aquaculture development in regions where they are lacking; and
- facilitating in-country support for the establishment and operation of these organisations.

The Conference noted there are issues relevant to aquaculture development that require a strong global focus to be addressed and that this need might best be achieved by establishing a global intergovernmental forum within an appropriate existing international organisation, having sustainable aquaculture development as its primary focus, and with a mandate for discussion, decision and agreement on technical and policy matters.

4. Implementation

- 4.1 The Conference encourages States, the private sector and other concerned organisations to implement Strategies for Development of Aquaculture Beyond 2000;
- 4.2 The aquaculture sector has become considerably more diverse since the Kyoto Conference and has developed a broad range of stakeholders. This diversity provides considerable opportunity for productive co-operation.
- 4.3 The Conference recognises that the primary responsibilities for development and implementation of these strategies rest with States and their private sectors. The Conference recommends that States develop strategies through encouraging private sector development incorporating the key elements identified above.
- 4.4 The Conference further affirms that co-operative mechanisms among countries provide an excellent opportunity to co-ordinate and support the development of aquaculture, through sharing of experiences, technical support, and allocation of responsibilities for the varied research, education and information exchange. The fostering of co-operation among developing countries deserves special attention and support.
- 4.5 Furthermore, the Conference recommends that effective use of existing regional and inter-regional mechanisms be made, and that decision-makers seek to promote synergy and co-operation between existing organisations. Where effective regional inter-governmental organisations to promote co-operation in aquaculture development do not exist, such as in Africa and Latin America, building of such mechanisms, and sharing experiences with the existing regional networks, is recommended.
- 4.6 The Conference notes that there are considerable opportunities for enhanced regional and inter-regional co-operation among different partners including governments, non-governmental organisations, farmers organisations, regional and international organisations, development agencies, donors and lending agencies with a common interest in development through aquaculture.
- 4.7 In this regard, the Conference strongly recommends the development of an effective programme of regional and inter-regional co-operation to assist in implementation of the Strategies for Aquaculture Development Beyond 2000.

The Declaration and Strategy was drafted by a Technical Drafting Committee (TDC), taking into account the recommendations of all conference sessions, and the views and suggestions expressed by the participants during and after the Conference. The composition of the TDC is: Glenn Hurry and Chen Foo Yan (Co-Chairs), Uwe Barg, Pedro Bueno, Jorge Calderon, Jason Clay, Sena De Silva, Maitree Duangsawadi, Dilip Kumar, Le Thanh Luu, Modadugu V. Gupta, Joaquin Orrantia, Michael Phillips, Rolando Platon, Vincent Sagua, Sevaly Sen, Patrick Sorgeloos, Rohana Subasinghe, Rolf Willmann, and Wu Chao Lin.

Phuket Consensus: a re-affirmation of commitment to the Bangkok Declaration*

Preamble

The Kyoto Strategy for Aquaculture Development adopted in 1976 facilitated the transformation of aquaculture from a traditional to a science-based economic activity. It promoted technical cooperation among developing countries to expand aquaculture development.

The UNEP Convention on Biological Diversity that came into effect in 1993 reflected the world community's commitment to manage biodiversity for the welfare of present and future generations

The FAO Code of Conduct for Responsible Fisheries promulgated in 1995 enshrined the principles of sustainability and responsibility in the practice of fisheries, aquaculture and trade in aquatic products.

The Bangkok Declaration and Strategy adopted in 2000 articulated 17 strategic elements for aquaculture development. These could be broadly summarised as: (i) a responsible farmer is justifiably rewarded; (ii) costs and benefits are shared equitably; (iii) society benefits from the practice and products of aquaculture; (iv) adequate, affordable and safe food is available and accessible to everyone; (v) the environment is conserved for the next generation, and (vi) the development of the sector is orderly.

At the threshold of this millennium, in September 2000 in New York, the global community adopted the United Nations Millennium Declaration which set the eight Millennium Development Goals.

The Paris Declaration adopted in March 2005, provides the guidelines for the correct targeting, effective coordination and efficient management and utilization of external assistance.

In the third World Food Summit on food security held in November 2009 in Rome, the leaders of nations pledged their renewed commitment to eradicate hunger at the earliest possible date. Towards the end of the first decade in December 2009, the world agreed, in Copenhagen, to meet with resolve and a common purpose the challenges of climate change.

* "Phuket Consensus: a re-affirmation of commitment to the Bangkok Declaration" was adopted by the participants of the Global Conference on Aquaculture 2010, held in Phuket, Thailand from 22-25 September 2010.

These global accords, with the Bangkok Declaration and Strategy as the core instrument for aquaculture development, shall continue to guide the development and management of aquaculture beyond 2010 through the first quarter of this century.

Re-affirmation of the Bangkok commitment

In line with the above and recognizing that:

1. The principles and strategies advocated by the Kyoto Strategy for Aquaculture Development, the FAO Code of Conduct for Responsible Fisheries, and the Bangkok Declaration and Strategy have served well the processes and goals of aquaculture development;
2. The two assessments of progress made in responsible aquaculture development and trade conducted in this first decade of the millennium – the first, completed in 2005 and published as the State of World Aquaculture, the second in 2010 and appeared as the Global Aquaculture Review – have shown that:
 - the progress has been made possible largely by efforts made in line with the Bangkok Declaration and Strategy;
 - the Strategy continues to be relevant to the aquaculture development needs and aspirations of States; and
 - there are elements of the Strategy that require further strengthening in order to enhance its effectiveness, achieve development goals and address persistent and emerging threats;

Recommendations

We the participants of the Global Conference on Aquaculture 2010 re-affirm our commitment to the Bangkok Declaration and Strategy for Aquaculture Development and recommend these actions:

1. **Increase the effectiveness of governance of the aquaculture sector**, recognizing the crucial need for sound policies, strategies and plans in sustained development incorporating the principles of an ecosystem approach to aquaculture; and recognizing further that stronger institutions, improved capacity and more effective mechanisms of governance, including rules and regulations, the market, economic incentives, voluntary codes of practices, and responsible self-management, have enabled a more orderly and responsible development of aquaculture.
2. **Encourage and facilitate greater investments in scientific, technical and social innovations**, recognizing that these assist in the resolution of productivity and sustainability issues that had earlier been deemed intractable, extremely costly or impossible to solve.

3. **Conduct accurate assessments of the progress and contributions of aquaculture, including aquatic plants, to national, regional and global economies, poverty alleviation and food security**, recognizing that this will enable the aquaculture sector to formulate better-informed development policies, strategies and plans that governments and development partners will favourably consider for support and funding.
4. **Intensify assistance to the small farmers**, recognizing that the small (resource- limited and/or subsistence) farmers comprise the vast majority of aquaculture producers in the world and recognizing further that they are the most vulnerable to impacts of natural and economic risks.
5. **Support gender sensitive policies and implement programmes** that facilitate economic, social and political empowerment of women through their active participation in aquaculture development, in line with the globally accepted principles of gender equality and women's empowerment.
6. **Increase and strengthen collaboration and partnerships**, acknowledging the many economic and technical benefits to nations, governments and people, of Technical Cooperation among Developing Countries (TCDC), inter-regional cooperation, and institutional collaboration and partnerships; and further acknowledging that the capacities for sustainable aquaculture development and trade among regions and countries have been cost-effectively improved by economic and technical cooperation facilitated by appropriate investments in development assistance from donors and technical assistance from international development organizations.
7. **Give special emphasis on Sub-Saharan Africa and the least aquaculturally developed countries and areas**, recognizing the need to urgently develop their vast aquatic resource potentials to accelerate their social and economic development, and recognizing further that this will narrow the disparities among regions and countries and contribute to increased global aquaculture growth. In this regard, we recognize that technical cooperation should be further intensified using international and regional mechanisms.

Implementation

The implementation strategy and mechanisms for the Bangkok Declaration and Strategy continue to be valid and relevant. We note and commend the immediate initiative taken after the adoption of the Strategy in February 2000 to establish the FAO Subcommittee on Aquaculture of the Committee on Fisheries, and the subsequent support provided by FAO Member countries and other organizations and institutions to the formation of regional aquaculture network organizations.

We note and appreciate the stronger collaboration that was fostered among several regional and international agencies and bodies; the formation of a global

consortium on shrimp aquaculture and the environment; establishment of several regional aquaculture networks; and an increasing number of partnerships and alliances among government agencies, non government organizations, industry associations and farmer organizations. These cooperative mechanisms are illustrative of the increasing importance of cooperation in improving growth and enhancing the institutional environment for the sustainable development of the sector. These should be further strengthened and made sustainable with appropriate technical assistance and investments.

We recognize that a holistic approach to aquaculture development will promote effective and efficient synergies and linkages among the various economic sectors and leads to sustainable use of resources that are becoming scarce or increasingly demanded by other competing sectors.

We recognize that the lessons from the natural disasters and economic crises of this and the past decades could be an indication of impending threats to aquaculture development, which make us believe that the implementation of Bangkok Strategy shall benefit from the following considerations:

1. The rehabilitation of livelihoods from the tsunami of 2004 and other natural calamities, and the mechanisms adopted to cope with the global economic crises during the past decade have underlined the critical role of biodiversity in sustaining the flow of ecosystems services that enable rapid recovery and sustained development of aquaculture, the importance of infusing social and biological resilience into aquaculture systems and strengthening farmers' capacity to positively adapt to changes beyond their control; and the usefulness of risk management as a tool to reduce, mitigate and cope with the threats to farmers' livelihoods.
2. Economically viable and responsible aquaculture systems are resilient systems; adoption of better management practices, including by small-scale farmers based on cluster approach, enhance productivity and social and environmental responsibility; their net impact is to strengthen the ability of the aquaculture sector to successfully face the uncertainties and risks wrought by economic crisis and climate change.
3. The implementation of the Strategy should be guided by a governance mechanism that recognizes the power and limitations of the market is sensitive to negative public perception, promoted through intensified results-based consultations, public-private partnerships and cooperation, and monitored by FAO through progress reporting on CCRF.

The Global Conference on Aquaculture 2010 brought together a wide-range of experts and important stakeholders and reviewed the present status and trends in aquaculture development, evaluated the progress made in the implementation of the 2000 Bangkok Declaration and Strategy, addressed emerging issues relevant to aquaculture development, assessed opportunities and challenges for future aquaculture development and built consensus on advancing aquaculture as a global, sustainable and competitive food production sector. This volume, a yet another joint effort of FAO and NACA, brings you the outcome of the Global Conference on Aquaculture 2010, the much needed clear and comprehensive technical information on how aquaculture could be mobilized to alleviate global poverty and improve food and nutrition security in the coming decades.



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