

Report of the

**REGIONAL WORKSHOP ON METHODS FOR AQUACULTURE POLICY
ANALYSIS, DEVELOPMENT AND IMPLEMENTATION IN SELECTED
SOUTHEAST ASIAN COUNTRIES**

Bangkok, 9–11 December 2009



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PREPARATION OF THIS DOCUMENT

This document is the report of the Regional Workshop on methods for aquaculture policy analysis, development and implementation in selected Southeast Asian countries, held from 9 to 11 December 2009 in Bangkok, Thailand. The workshop was organized by the Development Planning Service of the Fisheries and Aquaculture Department of FAO (FIEP) in collaboration with the FAO Regional Office for Asian and the Pacific (RAPI) and the Network of Aquaculture Centres in Asia and the Pacific (NACA). Funding for the workshop was provided by the FAO Regular Programme. The report documents the outcomes of capacity building exercises and discussions held during the workshop. It also contains summaries of the presentations and analyses made by participating countries.

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ABSTRACT

The Regional Workshop on Methods for Aquaculture Policy Analysis, Development and Implementation in Selected Southeast Asian Countries was held in Bangkok, Thailand, from 9 to 11 December 2009. It was co-organized by FAO and the Network of Aquaculture Centres in Asia and the Pacific (NACA). A total of 18 participants attended the workshop, from Cambodia, Indonesia, Thailand, Myanmar, Philippines, Viet Nam and Malaysia. The Southeast Asian Fisheries Development Centre (SEAFDEC) and the Secretariat of the Association of Southeast Asian Nations (ASEAN) were also represented. The workshop was in response to a request from the Sub-Committee on Aquaculture (New Delhi, 2006) to provide and disseminate information and advice on aquaculture policy formulation and implementation. It constituted an opportunity to build capacity related to aquaculture planning and policy development in the selected countries by providing participants methods for aquaculture policy analysis, formulation and implementation, and a follow-up to the recommendations of the Expert Consultation on Improving Planning and Policy Development in Aquaculture held in Rome in 2008. Through a series of presentations on the status of aquaculture planning in participating countries, discussions, group work and facilitated exercises, participants identified participation, achievability, accountability, continuity, monitoring and evaluation, and balancing goals as the six characteristics that aquaculture policies should bear. Participants were encouraged to critically reflect on their own experiences through a strengths, weaknesses, opportunities and threats (SWOT) analysis of the planning processes undertaken in their countries and on the relevance of the contents of their aquaculture policies. Discussions led to the formulation of a number of recommendations to make the contents of the outline for the FAO technical guidelines for aquaculture policy formulation and implementation more specific to Southeast Asian circumstances. The workshop also generated a number of ideas to lay a foundation for a common vision for aquaculture development in Southeast Asia.

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PART 1 – WORKSHOP REPORT

BACKGROUND

1. The production of fish for food from aquaculture has been steadily growing and now accounts for 50 percent of the total global fish production. With production from capture fisheries reaching a plateau, this trend is expected to continue in the next decade to meet the increasing demand for aquatic products, fuelled both by population growth and higher revenues. The sector will need proper planning through the formulation of appropriate and supportive policies that create an enabling environment for sustainable aquaculture development so that aquaculture can fulfill its role as the main supplier of quality food fish, and as a vector of economic growth and poverty alleviation.

2. In general terms, the act of planning provides the means to regulate, in the public interest, the development of an activity in order to achieve a defined set of goals and objectives. Planning reduces risks, informs decision-making and establishes trust. It also conveys information and establishes the “way ahead” (what to do, when, how, by whom and at what cost). However, planning is not a magic formula for achieving developmental progress. Inadequately carried out, it will yield results that may not be any better than no provisions for planning at all (Hamlisch, 1988). In addition, the outcomes of planning processes (i.e. policies, strategies and plans) rely on political will, commitment and support, stakeholder participation and resource allocation (Conroy and Berke, 2004). These considerations apply to aquaculture development where planning is an important process that will stimulate and guide the evolution of the sector by providing incentives and safeguards, by attracting investments and boosting development, while ensuring long-term sustainability (economic, environmental and social), to ultimately contribute to economic growth and poverty alleviation.

3. Yet, planning and policy implementation related to aquaculture are impeded by a number of factors relating to: i) limited human and institutional capacities; ii) confusion over terminology and requirements; iii) weak consultation and policy formulation processes; and iv) information gaps. This can lead to wrong economic choices and inappropriate policies. It could also result in the slow, uncoordinated and unsustainable development of aquaculture, as well as in conflicts within and outside the sector.

4. Confronted with the challenges of integrating and managing multiple stakeholder interests, allocating sufficient funds and resources to planning processes and policy implementation, developing the necessary human capacity, preventing and mitigating conflicts, devising supportive legislation and ensuring continuity in the face of political changes, members of the Sub-Committee on Aquaculture called for the continuous support of FAO in providing and disseminating information and advice on aquaculture policy formulation and implementation (Committee on Fisheries, 2006).

5. A first step in this direction was made through the holding of an FAO Expert Consultation on improving planning and policy development in aquaculture in 2008, which agreed on the definitions of “policy”, “strategy” and “plan”¹ and produced an outline for FAO Technical Guidelines on how to improve the process of aquaculture policy formulation and policy implementation (FAO, 2008).

6. The present regional workshop responds to the request of the Sub-Committee on Aquaculture to FAO and builds on the outcomes of the 2008 Expert Consultation. It focuses on selected Southeast Asian countries where aquaculture is developing rapidly but where aquaculture planning is still in

¹ An aquaculture **policy** consists of a broad vision for the sector, reflecting its directions, priorities and development goals at various levels including provincial, national, regional and international.

A **strategy** represents a roadmap for the implementation of a policy and contains specific objectives, targets and instruments to address issues which might stimulate or impede the comparative advantage of the sector and obstruct its development.

An (action) **plan** represents a roadmap for the implementation of a strategy, that is, to achieve its objectives and implement strategy instruments. It is time-bound, contains specific programmes and activities, and details the resources required to achieve them.

infancy. The workshop was organized and convened by the Development Planning Service of the Fisheries and Aquaculture Department of FAO (FIEP) in collaboration with the FAO Regional Office for Asia and the Pacific (RAPI) and the Network of Aquaculture Centres in Asia and the Pacific (NACA). Representatives from the governments of Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand and Viet Nam, and from the ASEAN (Association of Southeast Asian Nations) and SEAFDEC (Southeast Asian Fisheries Development Centre) Secretariats participated in the workshop. The full list of participants is provided in Appendix B.

OPENING OF THE MEETING

7. Dr C. Brugère officially opened the workshop and welcomed all participants on behalf of the Director-General of FAO. In her opening address, she highlighted the diversity of aquaculture policies in the region and stressed the importance of coherence in planning to ensure the long-term sustainability and economic contribution of the sector. The importance of aquaculture in Southeast Asia was given as one of the reasons for initiating capacity building to strengthen aquaculture policy formulation and implementation in the Asian region.

8. Mr K. Yamamoto, of NACA, also welcomed participants and, on behalf of the Director-General of NACA, conveyed his good wishes for a productive workshop, looking forward to concrete results that would assist the countries in the region in strengthening their aquaculture policy development efforts.

9. Mr S. Vichitlekarn, of the ASEAN Secretariat, also welcomed participants on behalf of ASEAN. He noted the importance of fisheries and aquaculture in this region and the long history of working together with FAO and NACA. He described the plans for the building of an ASEAN Community by 2015, which will act as a single unit in accessing the global market, in which aquaculture and fisheries will play a major role.

10. Mr S. Vichitlekarn was nominated by Thailand and seconded by Malaysia and unanimously elected to chair the workshop.

ADOPTION OF THE AGENDA

11. The elected Chair introduced the provisional agenda which was adopted without change (shown in Appendix A).

OBJECTIVES OF THE WORKSHOP

12. The specific objective of the workshop was to build capacity related to aquaculture planning and policy development in the participating countries by providing participants methods for aquaculture policy analysis, formulation and implementation.

13. Workshop outputs include: (i) a collection of national case studies based on the presentations made by participating countries during the workshop and national SWOT analyses of aquaculture policy formulation processes and contents; (ii) recommendations for the development of specific technical guidelines on planning and policy formulation and implementation for aquaculture development for Southeast Asia, on the basis of the existing generic FAO technical guidelines on the subject; (iii) a list of trends and key characteristics of aquaculture in future years upon which countries and organizations such as ASEAN and SEAFDEC should focus to maintain the sector's regional comparative advantage and which could lay the foundation for a "common vision" for aquaculture development in Southeast Asia.

14. It is foreseen that the outcomes of this workshop will feed into future events such as the 2010 FAO/NACA Global Aquaculture Conference and the 2011 ASEAN/SEAFDEC Regional Conference on Sustainable Fisheries for Food Security towards 2020.

15. The workshop was structured to encourage participants' inputs, reflections and self-learning, using presentations as case study materials in discussions and analytical sessions based on facilitated exercises.

16. Participants were encouraged to take home the knowledge gained through the sharing of experiences during the workshop and to seek ways to implement this new knowledge in their professional capacity, at national level.

COUNTRY PRESENTATIONS AND DISCUSSIONS

17. The first day of the workshop was dedicated to participants presenting the current status of aquaculture planning in their countries. Presentation guidelines had been circulated to ensure that presentations addressed thematic issues related to the planning processes undertaken at national levels, the overall structure of the planning documents, their salient features and their coherence with international concerns and approaches to development. Presentation authors were also encouraged to critically reflect on the effectiveness of the planning processes undertaken and on the means in place to implement their aquaculture policies. The free exchange of information and sharing of experiences proved to be a useful knowledge-enhancing exercise and constituted an excellent basis for subsequent discussions and facilitated sessions.

18. Detailed country summaries are provided in Part 2 of this report. The points that follow were noted in the discussion/synthesis held after the presentations.

19. Aquaculture planning in the region is advancing rapidly in many of the countries in Asia and the importance of sound planning is well recognized. These advances, and particularly the rich diversity of policies and plans in the region, were highlighted. It was noted that it is often necessary to strike a balance between potentially contradicting key policy goals (e.g. environmental sustainability and food security).

20. There is a growing awareness of the importance of adopting an ecosystem approach to aquaculture development and attempts are made at integrating it in aquaculture development planning.

21. Good governance characteristics, such as participation, consensus, effectiveness and efficiency, accountability, transparency, equity and the rule of law (UNDP, 1997; ESCAP, 2009) were reiterated as necessary to allow effective policy contributions to the development of the sector.

22. A variety of means and methods for tackling aquaculture policy formulation was noted. These ranged from bottom-up consultative processes, strengths, weaknesses, opportunities and threats (SWOT) analyses to new approaches such as "outcome-based approaches" (replacing "output-based approaches") in devising policy contents.

23. The strong linkage between research outputs and policy in terms of guidance and influence policy (e.g. Viet Nam) was noted.

24. High consideration is given to the broader context of aquaculture development, e.g. high-level national development objectives and international development paradigms emanating from international conferences and summits.

25. However, formulating strategies and plans to implement policies whose goals have been decided at highest levels but which may not be aligned with realistic production targets, remains a challenge for those in charge of implementing aquaculture policies.

26. Policy contents and timeframes vary according to the nature of the governments in place (e.g. Myanmar versus Thailand).

27. This point echoed the mention of the challenge of decentralization in effective policy implementation between national and local levels of government.

28. Another challenge to policy implementation relating to the influence of donor orientations and priorities (allocation of funding) was also noted.

29. The question of increasing the scope for collaboration among Southeast Asian countries, perhaps towards the formulation of a common aquaculture development policy, was raised.

CAPACITY BUILDING, ANALYTICAL SESSIONS AND DISCUSSIONS

“Perfect” aquaculture policies

30. A presentation was made by Dr C. Brugère (FAO, FIEP) to clarify a number of definitions and planning concepts.

31. This was followed by a brainstorming exercise which objective was to determine, in the participants’ own words, the characteristics of a “perfect” aquaculture policy. The experiential objective of this exercise was to test knowledge gained so far and to engage participants in reflecting on what they should strive to do in terms of aquaculture planning.

32. The exercise led to the identification of the following as the six characteristics upon which a “perfect” aquaculture policy (and the implementation process going with it) should be based (note that they are not ranked):

- participation,
- achievability,
- accountability,
- continuity,
- monitoring and evaluation,
- balancing goals.

33. Participants agreed that achieving all of the above would lead to effective policy implementation. However, they expressed doubts over their individual capacity to *influence* policy. Discussion focused on processes in place in each country to influence policy-making processes. Questions concerning the revision and adjustment of policy development processes (particularly if these are actually not requested by the central government) were raised and discussed.

34. In order to influence policy-makers in a country, the importance of international guidelines was noted. It was agreed that participants would return to some of these issues with a review of the existing FAO technical guidelines documents on the last day of the workshop.

SWOT analysis of national planning process and aquaculture policies

35. The objective of the session was for participants to analyse planning processes and aquaculture policies at national levels, bearing in mind characteristics of good policies identified earlier, i.e. participation, achievability, accountability, continuity, monitoring and evaluation, and balancing goals. As part of capacity building, the experiential objective was to encourage critical analysis.

36. Table 1 summarizes the salient features of all analyses combined. Individual SWOT tables are included in Part 2 of the report.

Table 1: Salient features of strengths, weaknesses, opportunities and threats (SWOT) analyses of planning processes and aquaculture policies at national levels.

Strengths – <i>Existing or potential resources or capability</i> – Participatory processes in formulation (Cambodia, Malaysia, Philippines, Thailand) – Long-term planning horizon with regular intermediary reviews (Cambodia, Malaysia, Myanmar)	Weaknesses – <i>The existing or potential internal forces that could be a barrier to achieving aquaculture policy objectives/results</i> – Implementation and management gap between higher and lower levels of government (institutional and governance issue) (Cambodia, Indonesia, Myanmar, Philippines, Thailand, Viet Nam) – Monitoring and evaluation (Indonesia., Myanmar, Philippines, Viet Nam)
Opportunities – <i>The existing or potential factors in the external environment that, if exploited, will help implement aquaculture policies and could provide a competitive advantage to the sector</i> – Increased demand for aquaculture products (domestic consumption and exports) (Cambodia, Malaysia, Myanmar, Viet Nam) – Growing interest in the activity because of job creation (Cambodia, Indonesia, Myanmar, Viet Nam) and because it attracts investments (Cambodia) and international support (Philippines) – Increased regional cooperation re. aquaculture development (Cambodia, Thailand, Viet Nam) – Availability of natural resources (Indonesia, Thailand, Viet Nam)	Threats – <i>The existing or potential force in the external environment that could hamper aquaculture policy implementation and inhibit maintenance or attainment of the unique advantage of the sector</i> – Climate change (Cambodia, Indonesia, Malaysia, Viet Nam) – Trade agreements and economic factors, incl. economic crisis and competition (Malaysia, Thailand, Viet Nam) – Political change and by-in (Myanmar, Philippines, Thailand) – Conflicts with other resource uses, including pollution and environmental degradation (Cambodia, Indonesia, Malaysia, Thailand)

RECOMMENDATIONS ON IMPROVEMENTS TO THE GENERIC FAO TECHNICAL GUIDELINES ON PLANNING AND AQUACULTURE POLICY FORMULATION AND IMPLEMENTATION

37. The outline for FAO technical guidelines on policy formulation and implementation for aquaculture development is presented in Appendix C. It was the first time, since its formulation by experts in 2008, that the outline was submitted to practitioners for their appreciation. There was a general discussion about its relevance and use, with a general positive feedback on its contents. Key improvements to bring to the guidelines to make them more specific to the Southeast Asian context are listed hereafter.

38. More background information needs to be added to introduce the need to understand better previous policy successes or failures, as well as emerging challenges and international factors that require consideration prior to initiating a policy formulation process and that will deserve addressing in the new policy.

39. While policy formulation steps are clearly indicated in FAO guidelines, there is a need to better understand the steps required in the translation of policy goals into strategies and plans. To this effect, more detailed and practical information on the means of “moving” through the sequence national policy > fisheries and aquaculture policy > aquaculture development strategy and implementation plan, needs to be provided.

40. The formulation of contingency plans to address unforeseen issues (e.g. fuel price crises, weather/disaster or animal disease-related emergencies, etc.), as part of the policy implementation process needs to be considered.

41. More emphasis should be placed in the guidelines on: (i) formulating strategies and plans themselves, rather than “policies” as such, which, given their broader scope, usually emanate from higher spheres of government and constitute the given framework within which aquaculture planners and implementers have to operate; (ii) bringing Environment Departments more closely on board at all planning stages; (iii) resorting to non-governmental organizations (NGOs) to enhance participatory and bottom-up processes in formulation processes; (iv) taking advantage of decentralized structures and (positive) political interferences in implementation phases; (v) treating with caution private sector lobbying when it may be against national priorities and interests; (vi) considering broader national plans (social and economic) as well as external factors such as regional/international instruments (e.g. ASEAN community framework) that can play an important role; (vii) highlighting that adequate time needs to be given to the process of formulating policies and strategies/plans, and that if too short a timeframe, focus may remain on practical measures that are not comprehensive enough to achieve policy goals.

42. It was recommended to draw clear lines between different types of communications and their requirements, for example between getting feedback on policy implementation, which requires a thorough consultation, and feedback on regulations of policies, which may not require consultation at the farm level.

43. Short-term plans, developed within the longer timeframe of policies, were found to be more adapted to the Southeast Asian context as they allow for greater flexibility in approaches (e.g. commodity-based approaches) and in coping with the rapid changes occurring in the region.

44. In the discussion that followed, it was noted that policy reviews often occur through: (i) periodic government restructuring; (ii) outdated processes due to situation changes. Proactive policy change is normally uncommon but rather triggered by reaction-based attitudes or crisis events.

45. Overall, policy formulation steps indicated in the FAO guidelines have been followed by the governments of the participants; however there are obviously variations among countries about the processes they undertook and that need to be borne in mind: countries often establish task forces through which advice is sought from partners and regional organizations with appropriate competencies, whilst others will resort to broader participatory elicitation.

46. Specific perspectives on policy formulation and implementation, complementing the information provided in the presentation, were also shared by participants. In Thailand, the policy review process is driven by feedback from the field. The length of the policy is usually set to three years, and supported by the implementation of three-year commodity-based strategies (for shrimp and tilapia). In Malaysia, although most previous policy development processes have been top down and market driven, changes are underway to highlight poverty alleviation concerns and the use of co-management. In Cambodia, policies focus on small-scale farmers and in co-opting their views through strengthened participatory approaches. This was achieved, for example, by working with more than 3 000 NGOs (1 000 international, 2 000 domestic) in this process. In the Philippines, policy is sometimes formulated at the level of the President and then comes down to the Bureau of Fisheries and Aquatic Resource (BFAR) leading to a mix of top-down as well as bottom-up approaches. Planning has been restrained by available funds, with a scope that may be too short termed and/or responsive rather than proactive.

47. The discussion led to practical recommendations to help strengthen aquaculture policy formulation and implementation processes, using the key characteristics of “perfect” policies previously defined. This is summarized in Table 2.

GENERATION OF IDEAS FOR A COMMON VISION FOR AQUACULTURE DEVELOPMENT IN SOUTHEAST ASIA

48. The objective of this session was to reflect on past trends and generate ideas related to the future directions of aquaculture development in the region, based on the identification of emerging, established and diminishing trends in the aquaculture sector. This exercise yielded a list of the characteristics for aquaculture development in future years upon which countries and regional organizations such as ASEAN and SEAFDEC should focus to maintain the sector's comparative advantage. Table 3 presents the visual output from this exercise.

Diminishing trends

49. Direct subsidies, chemical use, inconsiderate resource exploitation (e.g. mangroves) were identified as diminishing trends, and show that Southeast Asian aquaculture is taking stock of new and more sustainable modes of farming. Investment in extension was however also identified as a diminishing trend, with the negative consequences this may bear on the development of new activities (**threat**).

Established trends

50. Among **important** established issues deemed to require attention to maintain Southeast Asian aquaculture at the cutting edge, were cited the fishmeal trap (use of trash fish/low value fish in the aquaculture) and trans-boundary movements of species (e.g. invasive spp., health disease). In addition, adherence to farm certification schemes, Free Trade Agreements (FTA) and international codes of conducts and policies (voluntary compliance, CCRF², CITES³, OIE⁴), along with species/strain improvements (e.g. R&D on shrimp), implementation of better management practices (BMPs), sustainability stock enhancement and maintained focus on the culture of key species such as sand goby species and shrimp were identified as established trends that the sector can keep building upon to further its development.

² Code of Conduct for Responsible Fisheries.

³ Convention on International Trade in Endangered Species of Wild Fauna and Flora.

⁴ World Organisation for Animal Health [former Office international des épizooties].

Table 2: Recommendations on how to achieve the key characteristics of “perfect” aquaculture policies in the Southeast Asian context.

Characteristics	Recommendations
Participation	• Allocate sufficient time (minimum 1 year) for the formulation of strategies and plans (e.g. 2 years-Thailand, 2 years-Cambodia). Higher level ministers need to be involved and understand. • Understand the stakeholder views by conducting stakeholder analyses, that can be utilised for effective engagement (not only at the production level, but throughout the overall supply chain). • Multi-stakeholder workshops are a useful tool to seek wider inputs, before and after the formulation of policies and strategies/plans. • Effective involvement of NGOs is useful to implement participatory approaches. • Qualified and designated full-time staff need to work on the policy formulation process. • Promote effective involvement and consideration of small-scale farmers, along with other “weaker voices” (compared to other better-organized stakeholders such as feed, chemical and hatchery stakeholders).
Achievable	• Ensure that outputs and outcomes are sufficiently addressed in the strategy. • Understand the available resources to carry out the policy or strategy formulation and the implementation process. • Ensure that there is a common awareness and understanding about what a policy and strategy/plans are and provide assistance where necessary through appropriate communication tools (e.g. log-frames or others) to increase buy-in and to appropriately respond to stakeholders’ concerns, for example through the translation of planning documents in local languages. • Where possible include some flexibility in the strategy to account for ongoing learning processes. • In the process of translating policies into strategies, plans and regulations, draw a clear line between mandatory and voluntary. • Seek government officials’ commitment (from Departments of Fisheries in particular) through appropriate incentives (e.g. salaries). • Build capacity of farmers throughout the policy implementation phase.
Accountability	• Ensure close monitoring of spending and implementation of activities by concerned government authorities. • Ensure that appropriate feedback mechanisms are in place. • Create a dedicated work force (instead of an ad hoc group) for formulate policies/strategies and oversee their implementation. • Key stakeholder ownership is very important to ensure accountability and should be built around the aquaculture policy development. • Strengthened political will supporting aquaculture will help capitalize on (positive) political interference. • Both policy-makers and implementers need to be held accountable. • Seek outside and impartial evaluation of government performance in policy implementation. • Increase collaboration throughout the entire supply chain (vertical integration) to improve transparency and communication with regard to profit distribution and equity.

Characteristics	Recommendations
Continuity	• Short-term (approx. 3 years) strategies and implementation plans, implying regular review and, if necessary, adjustment in policy implementation, allow to account for political change and external forces whilst maintaining the overall direction set by the policy itself (longer term). • Short-term strategies and implementation plans may however not be reactive enough to adequately cope with unforeseen crises (e.g. fuel price increase, disease outbreaks, trade barriers, etc.). The devise of specific “contingency plans”, containing a range of measures that could be implemented temporarily to specific problems in specific circumstances would be useful without compromising continuity. • A simple “repackaging” of a strategy/implementation plan without fundamentally modifying its contents can be a way to ensure continuity in the face of political change.
Monitoring and evaluation	• M&E is seldom at the level of policies, but more commonly encountered at the level of strategies or implementation plans as a M&E system implies devising targets and indicators. A “key performance index” is an example of methodology that can be implemented to evaluate the effectiveness of strategies and plans. • Effectiveness, efficiency and impacts of strategies or plans should be assessed. The reasons for past (or failed) policies should however be analyzed to inform future planning processes. • The usefulness of a M&E system depends on its design (i.e. its relevance to the issues to monitor) and on those who will be in charge of its implementation (i.e. who will monitor). This is directly related to the accountability characteristic of policies previously discussed. • M&E should not be carried out for its own sake, but directly lead to tangible changes and actions for improvements in policy implementation (i.e. effectiveness, efficiency and impacts).
Balancing goals	• Balancing goals of environmental sustainability and economic growth/poverty alleviation remains a very challenging and politically sensitive act. • Research into environmentally-friendly production methods, supporting regulations and law enforcement can assist in achieving the twin goal of economic development and environmental sustainability. • Each country may remain sovereign in its decision over the “balance” it wishes to achieve as it will be dependent on its own level of development. • The effects of external forces such as climate change should be recognized in establishing and balancing development goals. The positive attributes of aquaculture in achieving simultaneously environmental sustainability and developmental benefits should be emphasized. • Ensure the representation of multiple interests in policy formulation and implementation processes to help mitigate conflicts of interests and reach consensus over diverging development goals.

Emerging trends

51. Identified **positive** emerging trends, gaining momentum and opening new horizons for the development of the sector in the region included: farm cluster/group production (**important**), traceability, certification, value chain development (**important**), high value species, organic farming, use of zoning (GIS, remote sensing), new technologies and economic incentives, feed certification, implementation of ecosystem approaches and Public-Private Partnerships. These constitute the key characteristics that the aquaculture sector should focus upon in coming years to maintain the role of the region as a key producer worldwide, in particular in the face of emerging competitors such as Latin America. However, **threatening** emerging trends such as the reliance on market-based measures,

along with the economic crisis and its uncertainties (fuel price variations, social impacts, land use conflicts) will challenge the sustainable development of aquaculture regionally. These trends will require particular attention in their addressing to ensure that they do not undermine the long-term benefits gained from the comparative advantage the sector has gained so far.

52. Looming over these trends, climate change adaptation was considered as both a threat and an opportunity for the future of the sector. Furthermore, regardless of the ultimate path of development chosen for aquaculture development in Southeast Asia in years to come, R&D, capacity building, investment in extension and improved governance are issues that will continue to require the requiring *sine qua non* attention of aquaculture policy makers.

Table 3: Identification of emerging, established and diminishing trends in aquaculture development in the Southeast Asian region.

Emerging trends	Established trends	Diminishing trend
• Farm cluster/group (important) • Traceability, certification, value chain development (important) • Market based measures (threat) • Climate change adaptation (threat and opportunity) • High value species • Zoning (GIS, remote sensing) • Economic crisis (fuel, social impact, land use) • Organic farming • New technologies • Economic incentives • Feed certification • Ecosystem approach • Public-private partnerships	• Fishmeal trap (use of trash fish in the aquaculture) (important) • Transboundary movement (e.g. Invasive species, health disease) (important) • Farm certification • Species/strain improvement (R&D on shrimp) • Free Trade Agreements • Sand goby species and shrimp • Better management practices • Sustainability stock enhancement • Food security and safety • International policies and frameworks (voluntary compliance, CCRF, CITES, OIE)	• Investment in extension (threat) • Dichotomy extensive versus intensive production methods • Direct subsidies • Chemical use • Resource exploitation (e.g. mangrove)
(Cross cutting) • R&D • Capacity Building • Governance • Investment in extension		

CONCLUSIONS AND RECOMMENDATIONS

53. Participants suggested:

- The holding of similar capacity building workshops at national levels.
- The follow-up by SEAFDEC of the issue of regional integration in the aquaculture sector to harmonize aquaculture development across the region and overcome intraregional competition.
- The dissemination of the FAO technical guidelines for aquaculture policy formulation and implementation, if possible in their Southeast Asian specific version.

54. To maximize the impact of the workshop and disseminate its outputs to aquaculture policy-makers and the wider scientific community, it was also suggested that the present workshop report be shared with participants at the FAO Global aquaculture conference in June 2010 in Bangkok and at the ASEAN/SEAFDEC Regional Conference on Sustainable Fisheries for Food Security Towards 2020 in 2011.

55. It was finally recommended that the present workshop report be sent to SEAFDEC and ASEAN Secretariats to further their work towards regional aquaculture integration.

CLOSING OF MEETING

56. Summarizing the workshop recommendations and re-emphasizing the role and expertise of FAO in assisting its Members in the strengthening of their aquaculture planning and policy implementation processes, the Chairperson thanked all participants for their valuable contributions as well as FAO and NACA for their organizing of the workshop, and subsequently brought it to closure.

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APPENDIX A

Agenda

Wednesday, 9 December 2009	Event
♦ 9.00 – 9.30	Registration
♦ 9.30 – 9.45	Opening of the Regional Workshop – Welcoming of participants and calling to order – Welcome address on behalf of FAO DG
♦ 9.45 – 9.50	Election of Officers (Chair and Vice-Chair) and handover by Technical Secretary
♦ 9.50 – 10.20	Self-introduction of participants
♦ 10.20 – 10.25	Adoption of the agenda
♦ 10.25 – 10.35	Arrangements for the meeting
♦ 10.35 – 11.00	Coffee break and group photo
♦ 11.00 – 11.10	Introduction of the background, objectives and expected outcomes of the workshop
♦ 11.10 – 11.30	Presentation Cambodia (15 min + 5 min discussion)
♦ 11.30 – 11.50	Presentation Indonesia (15 min + 5 min discussion)
♦ 11.50 – 12.10	Presentation Lao People's Democratic Republic (15 min + 5 min discussion)
♦ 12.10 – 12.30	Presentation ASEAN (15 min + 5 min discussion)
♦ 12.30 – 14.00	Lunch
♦ 14.00 – 14.20	Presentation SEAFDEC (15 min + 5 min discussion)
♦ 14.20 – 14.40	Presentation Malaysia (15 min + 5 min discussion)
♦ 14.40 – 15.00	Presentation Myanmar (15 min + 5 min discussion)
♦ 15.00 – 16.00	Coffee break
♦ 15.30 – 15.50	Presentation Philippines (15 min + 5 min discussion)
♦ 15.50 – 16.10	Presentation Thailand (15 min + 5 min discussion)
♦ 16.10 – 16.30	Presentation Viet Nam (15 min + 5 min discussion)
♦ 16.30 – 17.00	Summary/synthesis of the presentations and discussions
♦ Evening	Informal dinner

Thursday, 10 December 2009		Event
♦ 9.00 – 9.30		Presentation on aquaculture planning “theory” and outline of guidelines for improving aquaculture policy formulation and implementation.
♦ 9.30 – 12.00 incl. coffee break		Analysis and discussion: what makes a “perfect” aquaculture policy, using knowledge gained from country presentations and “theory” of planning (brainstorming exercise in plenary)
♦ 12.00 – 13.30		Lunch break
♦ 13.30 – 15.30		Strengths, weaknesses, opportunities and threats (SWOT) analysis of planning processes and aquaculture policies at national levels. Suggestions of ways forward at national levels (country work groups)
♦ 15.30 – 16.00		Coffee break
♦ 16.00 – 16.30		Summary/synthesis of the day (plenary)
Friday, 11 December 2009		
♦ 9.00 – 10.30		Discussion and recommendations on improvements to bring to the current outline for technical guidelines on aquaculture policy formulation and implementation ⁵ to make them more specific to the Southeast Asian context (plenary or work groups).
♦ 10.30 – 11.00		Coffee break
♦ 11.00 – 12.00		Generation of ideas for a common vision for aquaculture development in Southeast Asia (facilitated exercise in plenary)
♦ 12.00 – 13.30		Lunch
♦ 13.30 – 15.00		Organization of ideas generated in the morning to build on current ASEAN and SEAFDEC efforts in the region (facilitated exercise in plenary)
♦ 15.00 – 15.30		Coffee break
♦ 15.30 – 16.00		Evaluation of the workshop by participants (individually)
♦ 16.00 – 16.15		Closing of the workshop

⁵ Available in annex of: FAO. 2008. Report of the Expert Consultation on Improving Planning and Policy Development in Aquaculture. Rome, Italy, 26-29 February 2008. *FAO Fisheries Report*. No. 858. Rome, FAO.

APPENDIX B

List of participants

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INDONESIA Sayoko Setyowibi Head of Subdivision on Planning and Budgeting Directorate General of Aquaculture Jakarta Djoko Rudationo Head of Sub Directorate Capital and Investment Directorate General of Aquaculture Jakarta	PHILIPPINES Nelson A Lopez Chief, Inland Fisheries and Aquaculture Division (IFAD) Bureau of Fisheries and Aquatic Resources Department of Agriculture, 2/F PCA Bldg., Elliptical Road., Diliman, Quezon City Elymi-Ar-J S. Tunacao Project Evaluation Officer II Fisheries Policy and Economics Division Bureau of Fisheries and Aquatic Resources Department of Agriculture, Quezon City
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VIET NAM Nguyen Van Hao Director, Research Institute for Aquaculture II, Ho Chi Minh City Nguyen Thanh Tung Vice Director Viet Nam Institute of Fisheries, Economics and Planning (IFEP) Ho Chi Minh City Nguyen Thi Phuong Dung Head of Center for Community Fisheries Development Institute of Fisheries Economics and Planning (IFEP) Hanoi	Association of Southeast Asian Nations Secretariat (ASEAN) Suriyan Vichitlekarn Senior Officer Agriculture Industries and Natural Resources Division, ASEAN Secretariat, 70A Jl. Sisingamangaraja Jakarta 12110 Southeast Asian Fisheries Development Centre (SEAFDEC) Somboon Siriraksophon Policy and Program Coordinator SEAFDEC Secretariat Suraswadi Building, Department of Fisheries Compound, Kasetsart University Campus Lat Yao, Jatujak, Bangkok 10900, Thailand Virgilia T. Sulit Fisheries Technical Officer SEAFDEC Secretariat Suraswadi Building, Department of Fisheries Compound, Kasetsart University Campus Lat Yao, Jatujak, Bangkok 10900, Thailand
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APPENDIX C

Outline for the FAO Technical Guidelines on Improving Planning and Policy Formulation and Implementation for Aquaculture Development

THEME 1: POLICY FORMULATION PROCESS

The following are major issues that would be deliberated on:

1. What factors might initiate a need for policy development or review?
2. Who will lead the process? Who is the "champion" or "agent of change" (relevant to all levels) and/or the organization who will actually implement the process?
3. Can we adopt existing policy formulation methodologies instead of reinventing the wheel? – or is a blueprint not possible?
4. What mix of top-down and bottom-up approaches can be adopted? What is the right balance of expert/stakeholder involvement?
5. Which methods and tools can be used for stakeholder analysis?
6. Consensus, alternative options – or hard choices?

Guideline 1.1: Aquaculture policy should reflect relevant national, regional and international development goals and agreements. Therefore it may be necessary to:

- Conduct a periodic review of aquaculture policy effectiveness and supporting legislation in order to identify and address needs, constraints and to ensure consistency.
- Monitor the external policy environment relevant to aquaculture, e.g. capture fisheries, water management, trade, environmental management, food processing and safety, animal health and safety, etc.
- Reflect regional and international obligations and standards (e.g. CCRF) in aquaculture policy.

Guideline 1.2: The aquaculture sector should be enabled to develop optimally and sustainably. Therefore it may be necessary to:

- Proactively identify opportunities and constraints to aquaculture development resulting from policy gaps or failures (e.g. via a strengths, weaknesses, opportunities and threats (SWOT) analysis, risk assessment or other analytical method) and address these through policy change.
- Recognize changes in markets, trade issues, technological possibilities and other development opportunities (e.g. species, etc.) need and responded accordingly.
- Consider and reconcile the conflicting use of resources needed for aquaculture development.

Guideline 1.3: A legitimate and competent authority should lead the policy development process. It is therefore important to consider that:

- If such an entity does not exist, it may be necessary to establish it.
- If such an entity exists but does not have the capacity, it may choose to nominate external capacity to implement the process on its behalf and under its supervision.
- The legitimate and competent authority should consider the formation of a specific task force of working groups to facilitate the process and steering committees to provide the necessary overview. Such groups should be suitably representative and may be either thematic or multidisciplinary.

Guideline 1.4: General policy formulation approaches from other relevant sectors could be adopted and adapted for aquaculture purposes. Therefore it may be necessary to:

- Identify and adapt documented policy development processes having been utilized in other relevant sectors (e.g. those utilizing other natural resources) or other aquaculture policy formulation approaches in common environments and settings nationally, regionally and internationally.
- Select methodologies that accommodate both bottom-up and top down approaches.

Guideline 1.5: Consultation with stakeholders should be as extensive as possible. Therefore it may be necessary to:

- Identify the stakeholders involved and analyse the characteristics of the stakeholder environment (e.g. number, diversity, culture, literacy, geographical distribution, etc.) in order to determine the most appropriate participatory approach for maximizing engagement and interaction.
- Explore, where necessary, the opportunities to participate (e.g. clusters, associations, road shows, etc.) that help ensure less vocal views are not excluded.
- Substantiate the legitimacy of stakeholders and ensure that their contribution is proportional to their overall role in the sector.
- Establish transparent procedures for the convening of meetings and reporting, with appropriate means for the timely dissemination of outputs.
- Define the purpose, relevance and endpoint of the consultation process.
- Give appropriate regard to the cost-effectiveness of different approaches to such stakeholder participation.
- Allocate sufficient time to capture stakeholder considerations in policy formulation, taking into account the trade-off between the extent of participation and the limitations in time and financial resources.

Guideline 1.6: Policy development based on consensus is desirable. Therefore it may be necessary to:

- Define consensus, and agree on how it is measured and the levels of acceptability.
- Ensure that where consensus is reached, it is compatible with policy objectives.
- Consider realistic policy options and alternative conflict resolution strategies where consensus is not achievable.
- Document fully the stakeholder process to reflect the evolution of stakeholder views and their integration into the planning process.

THEME 2: POLICY IMPLEMENTATION PROCESS

The following is a major issue that would be deliberated on:

1. How to make a policy (vision) become reality?

Guideline 2.1: Implementation of policy should be operationalized through a set of well-defined strategies and action plans. Strategies and action plans should:

- Reflect both short-term and long-term policy goals as well as provide priorities for action.
- Be consistent with the overarching vision of the policy framework for environmental, economic and social development in general.
- Be subjected to suitable assessment (i.e. an appropriate degree of social and economic impact and cost-benefit analysis to maximize their efficacy, effectiveness and relevance).
- Define and agree on public and private sector responsibilities that are realistic, achievable and ensure coherence between them.

- Encourage procedural simplicity and transparency for governance of the aquaculture sector.
- Be formally launched and made publicly available and accessible in a timely fashion.

THEME 3: SUPPORTING POLICY IMPLEMENTATION

The Consultation recognized the following as the major issues that would be deliberated on:

1. Communication and cooperation between institutions.
2. The human and institutional capacity to reflect sectoral needs.
3. Resources available to implement policy.
4. Presence of a legal framework to support policy development and implementation.
5. Information needs to support sustainable development.
6. Continuity in the face of political change.
7. Monitoring and evaluation of policy processes and impacts.
8. Instruments can fail – what to do? Could this be anticipated?

Guideline 3.1: Effective implementation of aquaculture policy requires systematic coordination, communication and cooperation between institutions, tiers of governments, producers and other stakeholders. Therefore it may be necessary to:

- Ensure that the roles and responsibilities of government, private institutions, other stakeholders and donors for policy implementation are explicit, accountable and where necessary, supported by a legal framework.
- Agree on a lead agency with an intersectoral legitimacy and agreed mandate to reduce intragovernmental competition and promote efficient resource allocation.
- Establish effective coordination in research, legislation, extension, etc., between local and provincial governments at national level, as well as regional commissions and other countries in order to facilitate policy implementation.
- Disseminate adequate information on matters related to policy in a timely and accessible manner to all relevant stakeholders. The channels for the dissemination of this information should be predefined and well publicized.

Guideline 3.2: Where possible, decisions should be taken by the lowest level competent authority according to the principle of subsidiarity. Where possible:

- Policy implementation should be as much as possible informed by local circumstances, knowledge and concerns.
- Criteria should be created in advance for making decisions and ensure their approval by the appropriate competent authority.
- Consider that in some circumstances, higher-level decision-making might be necessary where wider interests are at stake.

Guideline 3.3: The development of human and institutional capacity should reflect sectoral needs (e.g. producer, research, management, trade development, regulatory and associated societal levels). Therefore it may be necessary to:

- Conduct a capacity needs analysis against allocated roles in the policy implementation process.
- Ensure that capacity development address a wide range of individuals, organizations and societal levels and their networks
- Identify and address short-term capacity constraints and long-term capacity issues.
- Ensure that institutions undergo periodic assessment to make sure that they remain robust, relevant and effective in relation to current policy.

Guideline 3.4: In order to effectively implement policy, adequate resources need to be identified and allocated. Therefore it may be necessary to:

- Clearly identify and define priority actions, estimate costs and allocate appropriate resources.
- Identify opportunities and mechanisms (i.e. licensing, permitting, etc.) to allow the sector to contribute to meeting its own costs, with a long-term goal of greater sectoral self-sufficiency. However it is recognized that ongoing public support for small-scale aquaculture may be necessary (e.g. research, extension, micro-credit support, etc., as well as longer-term capacity building).
- Ensure that policy delivery is not unduly influenced by the vested interests of external funding sources.
- Support the aquaculture sector through appropriate arrangements for essential support services (e.g. health certification).

Guideline 3.5: Policy development and implementation should be supported by a suitable legal framework. It may be necessary to:

- Conduct periodic reviews of legislation to assess relevance, effectiveness and conflicts of aquaculture and other relevant legislation relative to policy goals.
- Keep prohibitions and sanctions to the minimum in order to avoid unnecessary restrictions to aquaculture development.
- Develop legislation to secure user rights and responsibilities (e.g. traditional rights as well as tenure mechanisms for leasing water bodies for aquaculture).
- Quantify the costs and benefits of regulation to ensure their efficacy prior to enactment.
- Ensure that there is a wide level of sectoral input into legislation development.
- Allocate adequate resources to the enforcement and compliance of sectoral legislation.
- Ensure that legislation clearly delimitates the mandate of key players in aquaculture development.

Guideline 3.6: Incentives, where appropriate, should be used to encourage good practice throughout the sector. In such cases:

- Enshrine in the legal framework economic and other incentives for good practices to ensure continuity in the face of political change.

Guideline 3.7: Aquaculture policy implementation should be supported by appropriate research. It should be considered that:

- Funding of research should reflect producer priorities and concerns.
- The outputs of research should be as widely disseminated as possible, although it is recognized that some research will be proprietary.
- Research should be coordinated in order to minimize duplication and maximize efficacy.
- Where appropriate, regional and international cooperation should be encouraged to combine experience, transfer knowledge and reduce costs.
- Mechanisms should be developed for improving feedback between farmers, extension services and researchers and *vice versa*.

Guideline 3.8: The impact of policy implementation should be monitored and evaluated to ensure that future policy development remains relevant and effective. Therefore it may be necessary to:

- Establish measureable indicators (qualitative and quantitative) for the monitoring of policy inputs and impacts.
- Allocate the financial means for the monitoring and evaluation of policy processes and impacts.
- Put in place mechanisms for utilizing impact analyses results (ex-ante baseline evaluation, recurrent and ex-post) and feeding these back to the policy formulation process (including strategy).

PART 2 – SUMMARIES OF NATIONAL AQUACULTURE POLICIES AND SWOT ANALYSES

CAMBODIA

National aquaculture policy summary

Aquaculture policy, strategy and plans are all contained in the appropriate documents for the fisheries sector overall. Aquaculture is covered under the Law on Fisheries. Policy is contained in the Statement of the Royal Government on National Fisheries Sector Policy (2005). This contains the following key points for aquaculture:

- (i) Encouraging the development of different kinds and scales of aquaculture both inland and coastal by implementing the "Regional Code of Conduct for Aquaculture";
- (ii) Extension of indigenous species of fauna and flora aquaculture, especially of species with a high economic export value;
- (iii) Carefully monitoring the import of exotic fauna and flora species that may have a negative impact on Cambodian's fisheries resources.

Aquaculture strategy is covered in the Strategic Planning Framework (SPF) for Fisheries 2010–2019. Specific indicators and targets for aquaculture are:

Indicator	2-year targets	5-year targets	10-year targets
The increase in freshwater aquaculture production in line with food security and export demands	Freshwater aquaculture production increased by 15% per year to 67 000 tonnes by the end of 2011	Freshwater aquaculture production increased by 15% per year to 102 000 tonnes by the end of 2014	Freshwater aquaculture production increased by 15% per year to 185 000 tonnes by the end of 2019
The level of fish seed production for aquaculture	Fish seed production increased by 15% per year to 56 000 000 by the end of 2011	Fish seed production increased by 15% per year to 85 500 000 by the end of 2014	Fish seed production increased by 15% per year to 150 000 000 by the end of 2019
The level and nature of domestic feed production for aquaculture	A baseline study on the use of feedstuffs for aquaculture conducted and a plan for reducing the reliance on fishmeal and imported vegetable protein produced by the end of 2011	Use of locally-produced vegetable ingredients increased by 20% on baseline by the end of 2014	Use of locally-produced vegetable ingredients increased by 60% on baseline by the end of 2019
The level of aquaculture production from small-scale production systems	At least 25% of total aquaculture production produced by small-scale operators ⁶	At least 25% of total aquaculture production produced by small-scale operators	At least 25% of total aquaculture production produced by small-scale operators

⁶ The aim of this target is to ensure that pro-poor benefits are maintained from aquaculture regardless of the level of growth from large and medium-scale operations.

The number of schools actively producing fish from aquaculture	At least 60 schools producing farmed fish and teaching children in aquaculture by 2011	At least 90 schools producing farmed fish and teaching children in aquaculture by 2014	At least 140 schools producing farmed fish and teaching children in aquaculture by 2019
The production level of marine fish	Marine fisheries baseline data collection designed approved and implemented by 2011	Scientifically-based plans for the sustainable exploitation of marine capture fisheries and the growth of marine aquaculture implemented by the end of 2014	Marine wild capture fisheries exploitation at stable and sustainable levels and marine aquaculture in overall growth by the end of 2019

Further detail is given in the three-year rolling Fisheries Development Action Plan (FDAP) and the Annual Programme Plans which cover the roles of stakeholders and the key activities to be undertaken. The Annual Plans identify specific activities, locations, stakeholders and their roles. These stakeholders include local people, community-based and non-government organizations, and government entities at central, provincial and community levels.

Species choices and the associated factors are covered in technical documentation and guidance that is produced by the Department of Aquaculture Development, including information packs that are being developed jointly by the Fisheries Administration (FiA) and Ministry of Interior (MoI) (Decentralization and Deconcentration Programme) for the use of Commune Councils. In general, preference is given to indigenous species, or to species that pose no risk to the natural bio-ecosystem. Aquaculture of other species is subject to strict controls.

The SPF was developed through a wide-ranging series of stakeholder consultations and strategic analysis. This covered analysis of the current situation, goals and options for working towards them. Aquaculture was only part of this process – it was not considered in isolation. However, aquaculture was recognized throughout as being an essential element of the future sustainability and growth of the fisheries sector.

The process was effective but lessons can always be learned. An important part of the process was an agreement by the key stakeholders that the basic principles and goals would start to be applied to development activity while it was still in draft. There will be a formal review of the effectiveness of the SPF at the three – five-year point.

The SPF is closely linked to the Cambodia Millennium Development Goals and the National Strategic Development Plan. Goals and targets are either common or show traceability. It is recognized that aquaculture, at small, medium and large-scales, has the potential to very significantly increase production to maintain food security levels, increase employment opportunities and can fuel exports. Likewise, rice field fisheries have great potential for growth and for benefiting the rural economy.

Both climate change and other threats facing the fisheries bioecosystem are core factors in the development of the SPF. It is recognized that FiA cannot control the effects of climate change but that it has a responsibility to ensure that the vulnerability of the fisheries sector to these changes (especially where they affect the natural water resources) is reduced wherever possible. Aquaculture can help to improve resilience to these threats by reducing the reliance on the rivers and lakes that may be most affected. Although aquaculture continues to rely on sufficient water sources, these can potentially be managed to ensure the maintenance of supply and aquaculture is therefore potentially less affected by changes to seasonal flooding patterns. This will, however, require significant efforts to achieve.

All of the documentation in question is either already or will be formally approved by the higher government. The Fisheries Law and the Statement of the Royal Government on National Fisheries Sector Policy have both been in force for four years. The SPF is expected to be endorsed by the Prime Minister in early of 2010. All other plans are approved annually by the Fisheries Administration.

The FiA of the Ministry of Agriculture, Forestry and Fisheries is responsible for the overall programme. Within FiA, the Department of Aquaculture Development is responsible for the aquaculture sub-programme. Both are existing organizations. Intersectoral collaboration is initially dealt with through the Technical Working Group on Fisheries.

The current targets have only just been set and the first year of implementation of the programme is 2010. It is recognized that they are ambitious. However, similar targets were set for 2009 and these are expected to be achieved.

The SPF is agreed with and by all stakeholders involved in the development process, including international donors. The plan is entirely based on shared development goals and objectives. However, continuity and adequacy of funding will be essential.

Aquaculture policy is already formulated and implementing plans have been developed as part of the SPF. This has been a participative process throughout. Stakeholder forums have been held nationally, regionally and locally; participatory policy impact assessments have been widely conducted at the local level; and a joint review process has been carried out with governmental and non-governmental development partners. The main agent to influence aquaculture policy and plan is the Cambodia Code of Conduct for Responsible Fisheries (CamCode) which is embedded from FAO's Code of Conduct for Responsible Fisheries. CamCode stands at higher level than SPF, and it provides the way on how to translate it into actions. It was made jointly by FiA and Development Partners. CamCode is in final draft form and is expected to be finalized by the end of 2009. The need for more detailed enabling regulation is being considered and, if necessary, this will also be developed in a participatory manner.

SWOT analysis of Cambodia's national planning process and aquaculture policy

Strengths – Existing or potential resources or capability – Good participation from all stakeholders – Having clear objectives on aquaculture policy – People accept new technologies and information – Supporting to national economic – Successful application on community-based management – Improving institutional understanding and support – Long-term strategic planning framework (10 years)	Weaknesses – The existing or potential internal force that could be a barrier to achieving objectives/results – Lack of facilitation from government agency – Lack of awareness on aquaculture policy and planning process – Having some misunderstandings in implementation of policy – Less care from relevant institutions May need some changes on long-term planning, e.g. climate change
Opportunities – The existing or potential factors in the external environment that, if exploited, could provide a competitive advantage – Identify the cooperation and sharing information from neighbouring nations – Export growth through improving market strategy – High potential for aquaculture development help to attract investments – Provide jobs to reduce pressure on natural resources – Realistic and practicable – Comprehensive covering broad aspect	Threats – The existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage – Lack of good communication for information exchange – Climate change may impact to aquaculture activity and development – Lack of quality control for export product – Increase pressure on resource due to population growth and urbanization – Loss of land due to weakness in land management

INDONESIA

National aquaculture policy summary

The global economic crisis has not yet had an impact on Indonesian fisheries products. There is, in fact, increase in the demand for Indonesian fisheries products, especially Tilapia. The crisis may reduce somewhat demand for shrimp/prawn, but the demand for other relatively low-priced fishery products is likely to increase. To compete successfully, Indonesia needs efficiency and product innovation.

In the year 2030 it is estimated that the world population will reach 8 billion. The anticipated need for rice in 2025 will be 800 million tonnes, whereas rice production is expected to reach 600 million tonnes, leaving a deficit of around 200 million tonnes. To cope with the rice deficit, alternative staple food sources are needed. Aquaculture is an appropriate choice to fill this gap. Anticipating global warming and the energy crisis, Indonesia needs to develop seaweed farming, the culture of fish species with low oxygen requirements to improve energy efficiency, and aquaculture systems and technologies with low energy costs.

The development of aquaculture and marine fisheries is expected to become the foundation for achieving the three National Development pillars of the Indonesian Government. Aquaculture can take part in accelerating (1) economic growth (pro-growth), (2) the creation of job opportunities (pro-job), (3) the reduction of poverty (pro-poor).

The strengths of Indonesian aquaculture rely on available space, high biodiversity, adequate geography and climate and human resources. The target for Indonesia in 2030 is to become the sixth greatest economic power, behind China, India, Japan, the United States of America and the European Union. Indonesia will develop economically, based on its natural resources, and aquaculture development is underlying this choice (source of food, raw material for industry and employment).

On the one hand, although Indonesia aquaculture has great potential, only a small part of this potential is being exploited. On the other hand, capture fisheries are already suffering from a downward trend in resources. Therefore the general policy objectives of the Ministry of Marine Affairs and Fisheries are “Control of capture fisheries, development of aquaculture and increasing value added fisheries produce”.

Within the framework of the revitalization programme for aquaculture, the policy of the Directorate General of Aquaculture is directed towards three programmes, which are the programmes to increase aquaculture production for export (PROPEKAN), to increase aquaculture production for in-country consumption (PROKSIMAS), and to protect and rehabilitate fisheries resources (PROLINDA).

The Indonesian strategy to improve the professionalism of aquaculture enterprises are with training, technical advisory service and encouragement to fisheries experts to engage in aquaculture business/production activities. The operational strategy to achieve production are capital finance support for fish farmer groups (KUR, KKP, BLU), the development of aquaculture regions, the improvement networks to provide quality seed, support and surveillance and the improvement of physical infrastructure and services at regional level and diversification of species farmed.

SWOT analysis of Indonesia's national planning process and aquaculture policy

Strengths – Existing or potential resources or capability – Potential areas 15.59 million ha; total use net areas 762 320 ha = 2.23 million ha of freshwater bodies; 1.12 million ha of brackishwater area and 8.37 million ha of marine area – Geographic position gives comparative advantage: relatively close to the world market (China, Japan, United States of America, European Union) – Human resources in term of numbers are available to support development (population greater than 120 million in rural areas) – Most species diverse group of organisms are: shellfish 2 500 species; fish (over) 2 000 species; crustacea 1 500 species others 3 200 + species.	Weaknesses – The existing or potential internal force that could be a barrier to achieving objectives/results – Indirect participation of fish farmers on planning development – Limited number of indicators M&E (only production data) Lack to access credit – Limited socialization planning (awareness) – Limited budget for financing the programme
Opportunities – The existing or potential factors in the external environment that, if exploited, could provide a competitive advantage – Community have traditionally earned a living from farming (agrarian), and are not unused to the husbandry of plants and animals – Aquaculture business using low-cost manual processes – Availability of relatively large areas, natural conditions very conducive to the development of aquaculture	Threats – The existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage – The downward trend in the quality of the marine and freshwater environment is caused by waste from industry, residential development, etc. – Climate change – Political change – Development does not take proper account of the local spatial plans – Conflicts of interest over land use allocation often sacrifice aquaculture activities because of lack of awareness of their economic potential

MALAYSIA

National aquaculture policy summary

The aquaculture policy of Malaysia is covered under the agriculture development policy and the long-term development plan is identified in the Third National Agriculture Policy (NAP3) 1998–2010, which includes:

- meeting national food requirements;
- enhancing competitiveness and profitability in agriculture and forestry;
- enhancing the integrated development of the food and industrial crop sectors;
- strengthening requisite economic foundation; and
- adopting sustainable development.

The Malaysian five-year development plan is identified as the Ninth Malaysia Plan (2006–2010) and includes:

- increasing agriculture production including venturing into new sources of growth with greater private sector participation;
- expanding agro-based processing activities and product diversification;
- strengthening market and global networking;
- enhancing income of farmers, smallholders and fishermen; and
- improving the service delivery system.

Under this, the operational policy for aquaculture development has the following objectives:

- To increase efforts and promote small and medium enterprises (SME), thus providing employment opportunities, strengthening family businesses and reducing poverty.
- To promote private sector participation in the integrated aquaculture venture throughout the value chain especially for export purposes.
- To create conducive conditions and to facilitate harmonious and mutually beneficial relationships between SMEs and processing companies.

The other key points in the aquaculture policy document are:

- Zoning of aquaculture development areas (AIZ)
- Plan for Large-Scale Development and Production of Targeted Species
- Integrated approach
- Provision of infrastructure
- Greater private sector participation
- Development of guidelines
- Code of practice
- Stronger regulatory control
- Fish health and diagnostic centers
- Farm certification and product standards
- Food security and safety

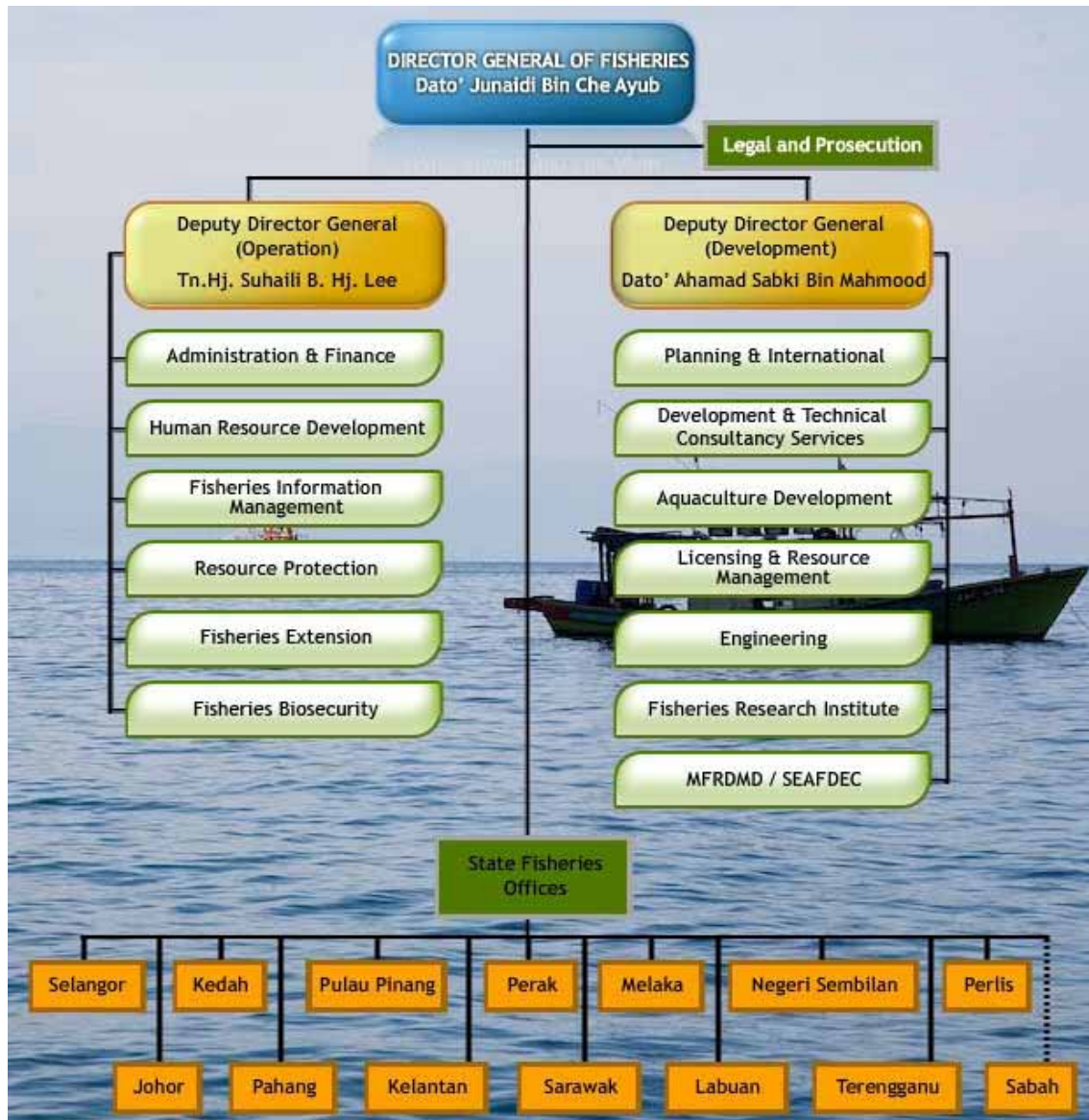
Formulation of the aquaculture development policy (1998–2010) involved the following Ministries and Planning departments

- Departmental Planning Committee
- Fisheries Industry Consultation Council (Target Group Consultation)
- Ministry Planning Committee
- National Planning Committee (EPU of Prime Minister's Department)
- Budget approval

Starting with the Tenth Malaysia Plan (2011~15), an Outcome-based approach to development planning will be adopted. The planning and implementation of development programmes will focus NOT just on achieving the outputs but also on achieving *outcomes* in specific *key result areas* (KRAs) that can be measured using selected *key performance indicators* (KPIs). The Public Sector Investment

Programme (PSIP) will be on a two-year rolling basis which means that Ministers can submit their projects on an annual basis. Thus this leaves more time for preparation. This also means more time for the EPU to assess the submissions and therefore to be more thorough and reject proposals that have not been well formulated. The approach taken will combine project cycle management (PCM) and logical framework approach (LFA) techniques to identify, formulate and prepare projects.

The following chart shows the agencies responsible for overseeing implementation and monitoring of aquaculture development in Malaysia:



Source: Department of Fisheries, Malaysia, 2009.

The Federal Government has responsibilities for macroplanning (AIZ) and development budget, R&D Programme, training and extension, enforcement of regulation, investment and trade promotion. The State Government has responsibilities for zoning of land/water body, investment, enforcement of regulation, Investment and Trade. The private sector and fish farmers have responsibilities for project implementation, technology procurement, marketing and trade.

Aquaculture will be further emphasized in the forthcoming Fourth National Agriculture Policy (NAP) planned for the period 2011–2020. Considerations of climate change and ecosystem approach will receive attention.

SWOT analysis of Malaysia's national planning process and aquaculture policy

Strengths – Existing or potential resources or capability – Participatory at all different levels in department – Full implementation of M&E activities – Development of system of accountability through IT – Policy covers long- and short-term with reviews along the way	Weaknesses – The existing or potential internal force that could be a barrier to achieving objectives/results – Only involve big private sector (representing around 10% of aquaculturists) – Production target set by central agency – Less focus on international needs (climate change, market needs, importing country requirements, etc.) – More focus to increase BOT and less on environment, people, livelihood of target groups.
Opportunities – The existing or potential factors in the external environment that, if exploited, could provide a competitive advantage – Global demand of fish due to health consciousness – Natural fish resources declining worldwide – Newest aquaculture technologies available – New demand for live organic fish – Increasing demand on Halal product	Threats – The existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage. – Climate change – Non-point pollution – Disease threat – Dependence on imported raw material for formulated feed – Competition among other producers – Non-tariff barriers – Economic down turn

MYANMAR

National aquaculture policy summary

Rationale

The Myanmar government is constituted with 34 ministries. Amongst these ministries, there are only five production-based ministries which are playing an important role in the State economy. They are:

- (i) Ministry of Agriculture
- (ii) Ministry of Energy
- (iii) Ministry of Forestry
- (iv) Ministry of Mines
- (v) Ministry of Livestock and Fisheries

Myanmar is an agriculture-based country. In terms of economic policy, the Government of the Union of Myanmar recognizes and endeavours to develop agriculture and other sectors for all round development. Each ministry has a development policy laid down by the Government. Fisheries sector plays a very important role in the State economy and as a source of fish protein in the daily diet of Myanmar people.

The Department of Fisheries (DOF) statistics showed that total fish production amounted to 316 864 million tonnes in 2007–2008 fiscal year and the export value of fish and fishery products amounted to US\$ 404.11 million, Euro 9.0 million and local currency kyats 30 756.45 million in 2006-1007 fiscal year. Fisheries sector is also creating over three million jobs in the whole sector including capture fisheries and aquaculture.

Role of aquaculture in fisheries sector

Regarding the fisheries sector in Myanmar, capture fisheries (including inland and marine capture) are dominant in terms of product quantity and work volume. According to the DOF statistic data of 2007–2008, out of the total production of 3.168 million tonnes, aquaculture production amounted to 0.674 million tonnes and the rest were from inland and marine capture fisheries. Aquaculture has drastically developed since the year 2000 based on realization that aquaculture is a promising industry and has still a lot of potential to be developed while the capture fisheries is reaching the maximum sustainable yield of 1.5 million tonnes and facing many challenges in terms of fish stock depletion, natural hazards, high operation cost, world climate changes, etc. As a result, the Government of the Union of Myanmar has intensified the development of aquaculture through relevant policy moves.

National policy on fisheries sector

The Government of the Union of Myanmar has laid down the national policy on fisheries sectors. Its goals are:

1. to promote all round development in the fisheries sector;
2. to increase fish production for domestic consumption and share the surplus with neighbouring countries;
3. to encourage the expansion of marine and freshwater aquaculture;
4. to upgrade the socio-economic status of fishery communities.

Fishery laws

After the change-over of the country in 1988, the Government of the Union of Myanmar represented by the State Peace and Development Council (SPDC) has promulgated four fishery Laws during the period 1989–1998. They are:

1. The Law relating to the Fishing Rights for Foreign Fishing Vessels, 1989.
2. Law Relating to Aquaculture, 1989.

3. Myanmar Marine Fisheries Law, 1990.
4. Freshwater Fisheries Law, 1991.

During the British colonialism, there were fishery laws mainly focusing on inland capture fisheries and those laws were applied up to 1988. Before that, there was no specific law on aquaculture and land utilization was strictly banned for aquaculture purposes. The 1989 Law Relating to Aquaculture is concrete and removes all barriers in order to develop aquaculture.

Ministerial policy on aquaculture development

Up to 1988, the fisheries sector was under other ministries like Ministry of Agriculture and Ministry of Forestry and Agriculture. But in the year 1989, SPDC created the Ministry of Livestock and Fisheries that is directly concerned with the fisheries sector. The said ministry has developed policy for the development of the fisheries sector. Some objectives of the policy however, relate to aquaculture development:

1. to boost distribution of quality fish strains;
2. to strive for all-round development of fish production;
3. to make arrangements to increase investments in the fisheries sector;
4. to further develop shrimp and prawn aquaculture;
5. to improve socio-economic standard of farmers raising and producing fish, prawn and shrimp under the leadership of Department of Fisheries.

Implementing institution

Myanmar's Department of Fisheries (DOF), under the Ministry of Livestock and Fisheries, is sole competent authority that is responsible for implementation to policy issues liberated by the Government and respective Ministry. In terms of aquaculture development, DOF has formulated short-term and long-term plans. DOF understands that to increase fish production for food security (domestic consumption) and for export earnings, the only way is to expand and develop aquaculture.

According to the ministerial policy, DOF prepared first a three-year project plan for development of marine shrimp aquaculture and implemented the project plan from the year 2000 to 2002. As a result, a lot of semi-intensive and intensive shrimp farming emerged during this period.

At the same time, the total shrimp pond area practising only traditional types of farming has expanded from 24 000 hectares to over 90 000 hectares, moving to semi-intensive and/or intensive methods of culture. Based on the experiences of first three-year project plan, a second three-year project plan was prepared and implemented with a view to encourage more systematically semi-intensive and improved extensive farming.

The short-term plan for development of freshwater aquaculture was implemented in the year 2000. Freshwater fish culture area of 40 000 hectares before 2000 has reached over 80 000 hectares in 2003.

Towards the long-term, a thirty-year plan has been formulated starting from the year 2005 to 2031. Baseline production was 0.28 million tonnes in 2005 and aims to be increased to 0.6 million tonnes in the year 2031. This is the long-term plan for aquaculture production to feed the country's increasing population.

Economics on aquaculture development plans

Aquaculture development was much hindered during last two decades by the following factors:

- (i) Legal aspects of land utilization
- (ii) Bio-technical expertise
- (iii) Financial support
- (iv) Religious constraints

Legal aspects of land utilization

Before 1988, land utilization for aquaculture was rigid and was in conflict with agriculture land use. Later, after the promulgation of the Aquaculture law, fallow land could be converted into aquaculture land. As a result, pond area for fish culture in the country has increased as there are plenty of lands unused. Note however that land is owned by the State.

Biotechnical expertise

Based on the aquaculture development plan, DOF staff have been trained through short-term and long-term training courses and scholarship programs. Thus, Master and PhD level staff are being involved in the aquaculture sector.

Finance support

To be in line with the policy on fisheries sector development, the Ministry of Livestock and Fisheries has its own bank since 1995 called the Livestock and Fisheries Development Bank, providing soft and hard loans to existing farmers and potential farmers, although loans are still limited.

Religion constraints

More than 80 percent of country population are Buddhists. In the past, people thought that aquaculture was ill-treating and an unfair pursuit. Today, people are changing their mind as aquaculture is a rather lucrative business.

Aquaculture has become a business and logical alternative. Aquaculture products from marine shrimp farming are exported while freshwater aquaculture products are mainly dedicated for domestic consumption. At present freshwater cultured fish are being exported to Middle-East countries and earning foreign currencies. Despite unavailable data on quantity and value of exported freshwater cultured fish, this export volume is in fact increasing year by year.

Aquaculture disciplines

In the past, aquafarmers were ignorant to good farming practices causing negative impacts on the environment. Currently principles of Good Aquaculture Practices (GAP) relevant and appropriate for Myanmar are being processed and implemented. DOF has encouraged the shrimp farmers and soft-shell mud crab farmers to keep up with bio-security measures at each farm. Transboundary movement and import of invasive alien aquatic species are properly controlled. Currently the DOF is currently encouraging organic aquaculture practices through collaboration with CFC/INFOFISH, although this is still at pilot demonstration level.

Documentation consulted

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2. Minn Thame, Hla Win, Khin Ko Lay. 2005. Opportunities and Challenges in Myanmar Aquaculture. pp. 4-5
3. Minn Thame. 2009. Status of Myanmar Aquaculture Industry with Special Reference to Organic Aquaculture of FAO/CFC/INFOFISH Project in Myanmar. pp. 10–11.
4. Pyi-Myanmar. 2005, Year-Book on Performances of Ministries. p. 4

SWOT analysis of Myanmar's national planning process and aquaculture policy

Strengths – Existing or potential resources or capability – Aquaculture law, 1989 and Freshwater fishery law, 1991 are promulgated. – Law removes all barriers to develop aquaculture. – 30 years long-term plan for aquaculture development based on 3-5 years short-term plans.	Weaknesses – The existing or potential internal force that could be a barrier to achieving objectives/results – Legal aspects of land utilization. – Technical expertise of farmers. – Monitoring of aquaculture policy for farmers – Management gap between higher and lower level.
Opportunities – The existing or potential factors in the external environment that, if exploited, could provide a competitive advantage – Expansion aquaculture. – More employment. – Food security and increased per capita consumption. – Potential to increase the export aquaculture products. – Promotion of SME for rural community development.	Threats – The existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage. – Policy-makers need to be convinced how the other countries are successful. – Some barriers need to be removed for independent policy formulation and implementation. – Lack of feedback or review on policy to assess the effectiveness of the policy and plan.

PHILIPPINES

National aquaculture policy summary

Brief CNFIDP process

The Comprehensive National Fisheries Industry Development Plan (CNFIDP) has been developed to provide holistic and strategic framework to manage the fishery resources of the Philippines. The Fisheries Code of 1998 (RA 8550) specifically requires the formulation of a CNFIDP. This document provides the strategic directions to be undertaken over the next 20 years (2006–2025). In addition, this CNFIDP lays out the key project interventions that may be implemented over the first medium-term plan (2006–2010). This plan builds on the gains of the previous national fisheries plans over the last three decades, starting with the Fisheries Industry Production Plan (1972–1986), and currently with the fisheries concerns subsumed within Chapter 2 (Agribusiness) Component of the Medium-Term Philippine Development Plan (MTPDP) for 2004-2010. This plan is a product of extensive consultations at all levels of governance, involving many concerned agencies and a whole array of stakeholders. The CNFIDP is likewise science-based, taking into account the best available scientific/technical information.

Executive summary of the Plan

A. CNFIDP Framework

The "Fisheries Sector Development Framework" portion of the plan focuses on the prognosis for the future. It provides the conceptual link between the development issues and opportunities and the management measures (Development Philosophy) covering pertinent sustainable development concepts, such as inter- and intragenerational equity, holistic development, integrated management and carrying capacity. It also covers relevant guiding principles specific to the fisheries sector that include precautionary principle, ecosystem-based management and decentralized administration. The development challenges include the relevant macro-global and regional issues (e.g. globalization, climate change and population growth), as well as fisheries-specific concerns (e.g. increasing demand of fishery products, excess capacity, technological advances and biodiversity).

A prognosis for the Philippine sector in terms of status and benefits highlights development scenarios in relation to the various driving forces. In terms of national food security, the main scenario is the increasing deficit in the supply of food fish due to the increasing population. Since such demand cannot be met from the municipal and capture fisheries, two pathways are desired: (1) expansion of environment-friendly aquaculture and (2) substantial reduction in post-harvest losses.

B. Vision, mission, goals and objectives of the Plan

Over a 20-year period, the CNFIDP defines the sectoral vision as “A sustainable and competitive fisheries industry that contributes to food security and provides optimum socio-economic benefits to Filipinos”, while the CNFIDP’s goal over the long-term is to sustain the industry’s socio-economic benefits without jeopardizing the fishery resources and the associated habitats in the most administratively efficient and cost-effective manner. There are nine associated strategic objectives: (1) rationalize utilization of fishery resources; (2) protect fishery habitats; (3) reduce resource use competition; (4) maximize full potential of aquaculture; (5) promote competitiveness of fishery products; (6) minimize post harvest losses; (7) enhance capability of LGUs, NGAs and local communities; (8) promote appropriate fisheries policies; and (9) strengthen institutional partnership.

The first medium term plan (2006–2010) – which initially describes the five subsectors components (1. municipal capture fisheries; 2. commercial capture fisheries; 3. aquaculture; 4. post-harvest; and 5. institutional) – will strengthen the existing foundation of fisheries management. The Medium-Term Programmes and Projects tackle the specific measures and/or interventions proposed to address the

various management problems and issues identified over the first five years (2006–2010). In effect, this chapter provides the five-year action plan. Each project (described briefly in 11-point elements) has an implementation period of between one to five years. In total, 35 priority projects have been identified for the five subsectors.

C. Priority thrusts in aquaculture

To address the aquaculture sector, nine projects have been identified:

Project 1 – Advocate a Focused, United, and Strategic Vision and Road Map for the Industry.

Project 2 – Enhance RD & E Programs and Prioritize according to Immediate Needs of the Industry.

Project 3 – Strengthen the Local Hatchery Industry.

Project 4 – Developing Domestic Supply Chain and Expanding Export Markets for Aquaculture Products.

Project 5 – Institutionalize Best Aquaculture Practices (BAP).

Project 6 – Establish Standards for Quality and Implement Farm-Based HACCP.

Project 7 – Rationalize Policies on the Introduction of Live Aquatic Organisms.

Project 8 – Promote Agriculture Development through Special Economic Zones.

Project 9 – Empower Small Holders and Fisheries in Aquaculture.

These projects shall contribute to the thrust of increasing the contribution of the aquaculture industry in national development through the adoption of progressive and economically competitive technology under a framework of social equity and environmental sustainability.

Concerning the institutional sub-sector, six projects have been proposed:

Project 1 – Improving the Policy and Regulatory Framework for Fisheries.

Project 2 – Building the Institutional Capacity of BFAR.

Project 3 – Fisheries Management Capacity through Partnerships.

Project 4 – Networks of Local Fisherfolks and Aquaculture Communities.

Project 5 – Alliance for the Integrated Co-Management of Ecosystems.

Project 6 – Upgrading Business Sector Capability.

These projects shall address the critical capacity gaps of the institutional system, as well as develop the management capacity and institutional partnerships for effective management of the fisheries sector.

D. Plan implementation and institutional arrangements

A chapter on Plan implementation describes the processes to be undertaken during the five-year implementation phase. The implementation plan for the sector will be based on the national priorities, as well as local needs. Institutional arrangements described cover the roles/responsibilities of the relevant agencies and stakeholders, including the relevant organizational structure. Although BFAR shall take the lead role in the implementation of the CNFIDP, a Fisheries Development Coalition (FDC) and a number of partnership initiatives shall be established to assist in implementation of projects. Some projects were implemented on the first year (2006), while others will be implemented throughout the five-year period.

E. Budget allocations

The section on cost and financing summarizes the plan's total indicative cost of PhP 1 638.13 million to implement the 35 priority projects. The bulk of the budget goes to aquaculture (43%). This is followed by the institutional (29%), postharvest (13%) and commercial (12%), and municipal component at 3%. Aquaculture has the highest budget given that the supply deficit for food fish shall come from this sector; the institutional subsector has also a large budget as the medium-term plan will also focus on strengthening the institutional foundation. The CNFIDP projects will require an annual

budget of PhP 324.1 million. External financing schemes will be explored given the limited capability of the national government, such as the private sector and international funding institutions.

F. Monitoring and evaluation

The monitoring and evaluation plan includes a mechanism to monitor progress of plan implementation based on indicators and targets, and a protocol for re-assessing the efficiency of the plan. Reporting and feedback mechanisms will be used to build accountability among the stakeholders. As part of an adaptive management approach, the relevant elements of the CNFIDP will be revised as required and as agreed upon. The implementation of the above 35 priority projects is anticipated to strengthen the foundation towards the sustainable development of the Philippine fisheries.

SWOT analysis of Philippines' national planning process and aquaculture policy

Strengths – Existing or potential resources or capability – Well-defined plan and policy. – Participatory approach used in planning/formulation. – Science-based.	Weaknesses – The existing or potential internal force that could be a barrier to achieving objectives/results – Limited capability/capacity for monitoring and evaluation of impacts of the policy/plan being implemented. – Limited institutional composition necessary for policy/plan implementation (e.g. manpower support, funding support). – Weak link between R&D and extension. – Deficient market and credit facilitation.
Opportunities – The existing or potential factors in the external environment that, if exploited, could provide a competitive advantage – Positive impact of climate change on aquaculture as a strategies for climate change adaptation. – Assistance from international and regional organizations.	Threats – The existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage – Political intervention (e.g. identification of project location and beneficiaries, etc.). – Typhoon occurrence and other natural calamities.

THAILAND

National aquaculture policy summary

Aquaculture plays an increasingly important role in the food security and the economy of Thailand. Thailand proves itself to be a country of high potential and success in aquaculture. The Department of Fisheries (DOF), under the Ministry of Agriculture and Cooperatives (MOAC), as a single lead national government agency, plays a significant role for both fisheries and aquaculture development planning and implementation in Thailand.

Currently, “The Department of Fisheries Strategic Plan (2009–2012)” is formulated by the DOF to reflect a set of goals and objectives determined in the Agricultural Development Policy (2007–2011) by MOAC, in the Public Administration Plan, in the Directive Principles of Fundamental State Policies under the Constitution of the Kingdom of Thailand B.E. 2550 (2007), and in the National Master Plan: the Tenth National Economic and Social Development Plan (2007–2011). In order to ensure the success of directives set out by MOAC under the Restructuring the Economy of the Agriculture Sector Policy, aquaculture development planning, as proposed in the DOF strategic plan, is one of major strategies. The direction of aquaculture development planning is consistent with the national policy principle, “Balance and Sustainability”; it is compatible with food security, food safety, international trade, environmental sustainability and other international agreements guiding development as well. Specifically, missions include the development of fishery products from aquaculture to achieve international quality standards, to increase the sustainability of fishery products from aquaculture, to enhance aquatic resources, and to strengthen the development of research and technology for aquaculture.

The success of aquaculture development in Thailand is directly related to the resources invested in research and technology development for both food security and food safety aspects. An expanded scientific information and technology development programme for aquaculture offers significant benefits to both producers and consumers by enhancing the production efficiency and quality of cultivated aquatic species with appropriate culture practices. Furthermore, the diversity of species cultured and of production systems employed presents added challenges for the future aquaculture research agenda. There is a considerable pressure in food safety issue; accordingly, a resource investment to ensure that aquaculture productions are safe and comply with international standards tremendously impacts on the sustainability of aquaculture development. In addition, the private sector is one of key players in the successful and sustainable aquaculture development in Thailand; hence, the views of industry are taken into account in the formulation of the DOF strategic plan.

Thailand DOF has full responsibility to overcome problems to ensure the success of aquaculture development. A clear, well-formulated, and realistic policy for aquaculture development is the first success step for sustainability of aquaculture policy implementation in Thailand.

SWOT analysis of Thailand's national planning process and aquaculture policy

Strengths – Existing or potential resources or capability <u>Aquaculture policy</u> – A sole main competent authority. – Clear responsibility. – Appropriate medium organization structure. – Decentralized structure. – Full personnel capacity. – High technology and equipment. <u>Planning processes</u> – Participation among stakeholders. – High accountability. – Appropriate monitoring and evaluation. – Balance the goals from many issues: food security, food safety, economic growth, environmentally-friendly, international trade and agreements. – Short-term policy give an advantage for revising and renewing the strategy to overcome all challenges.	Weaknesses – The existing or potential internal force that could be a barrier to achieving objectives/results <u>Aquaculture policy</u> – Unsuitable organization structure for the present situation. – Policy and strategy are unclear; some are difficult to bring to the implementation processes. – Integration among organizations is limited. – Inappropriate designation of responsibility. – Human Resource management is not transparent. – Lack of shared values. – Lack of necessary equipment. – Research results are not effectively fed back to the target groups. <u>Planning processes</u> – No separation of aquaculture policy from fisheries policy.
Opportunities – The existing or potential factors in the external environment that, if exploited, could provide a competitive advantage. <u>Aquaculture policy</u> – Good support from national policy – High demand for fisheries products from aquaculture for both international and local markets – High biodiversity of aquaculture species – Appropriate location for aquaculture production – The output from DOF work has been well accepted by people – Thai farmers have high potential for aquaculture development – Good international cooperation – Good participation among stakeholders <u>Planning processes</u> – Good support from national policy	Threats – The existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage. <u>Aquaculture policy</u> – Trade barriers – Market only-determined product prices – Trade agreements from major international buyers – Unfriendly environmental practices – High competitiveness among producers – High cost of production – Farmers have limited knowledge of food product quality – Effects of political influences <u>Planning processes</u> – International trade and agreements – Economic issues are rapidly changes

VIET NAM

National aquaculture policy summary

Vietnamese government considers aquaculture to be an important part of the national agriculture development plan. There are two aquaculture development plans to the year 2010 and 2020. The first one is almost nearly finished (ends in 2010) and the second one is now submitted to the Prime Minister's Cabinet for approval. The objective of the aquaculture development plan to 2010 is "Aquaculture development for food security, sufficient raw material for exporting, increased income, contributing to national socio-economic development and defending the national coastal zone". The specific targets of this plan are: total aquaculture production of about 2 million tones, with an export value of 2.5 billion US dollars and the creation of employment for 2 million people. Based on the result for the first development plan, the second plan to the year 2020 is focused on four main points: (i) a large production industry with high yield, quality, efficiency and competition; (ii) a sufficient supply raw aquatic material for domestic and international consumption; (iii) an efficient contribution to growth and economic development; and (iv) a contribution to social security (job creation) poverty alleviation (income increase) and defense of the national coastal zone. The specific targets of the second plan are: a total aquaculture production of about 4.5 million tonnes, with a surface area of approximately 1.12 million ha, an export value estimated at 5.0 to 5.5 billion US dollars and the creation of employment for 3.0 million people.

Multidisciplinary types of activities are included in the plan, such as zoning and planning, regulation, mechanism and policy, science-technology and extension, restructuring model of production, processing and marketing, human resource development, logistic arrangement (seed, feed, chemicals, irrigation) and investment (government fund, loan from internal and international bodies).

The Ministry of Agriculture and Rural Development (MARD) is the coordinating agency working with different collaborating agencies such as Ministry of Planning and Investment (MPI), Ministry of Internal Affairs (MIA), Ministry of Finance (MF), Ministry of Natural Resources and Environment (MNRE) and National Bank (NB). The implementing agencies are the provincial authorities. In term of supply chain, partners are very diversified, ranging from NGOs (e.g. Viet Nam Fisheries Society VINAFIS, Viet Nam Farmers Association VFA, Viet Nam association of seafood export and processing VASEP), private companies and farmers.

The plan was formulated through instruction by the Governmental Cabinet. Based on this, the MARD set up a working group which included experts from different sectors. The working group developed the draft document. Different stakeholder workshops and meetings were organized to provide comment, suggestion and discussion on this draft. The final version is under elaboration and will be completed based on the output of these above meetings and submitted to the Prime Minister by MARD for approval. MARD in central and DARD in provincial level will be responsible for overseeing implementation and monitoring aquaculture development

Regarding how contents of the plan fit with other planning framework, MARD receives the same guidelines and instructions from the Governmental Cabinet to submit a Master plan of Agriculture development to the year 2020. Obviously, the agriculture development plan of MARD must be linked with other planning frameworks. Consequently, the aquaculture development plan is one component of the Master plan of Agriculture development to the year 2020.

The consideration of climate change and ecosystem approaches is given high attention by different research projects and extension programs in their activities in relation to aquaculture development. Naturally, these activities must be designed and implemented with the consideration of climate changes and ecosystem approaches. This plan will receive legislative value after its approval by the Prime Minister.

In general terms, the development objective of the aquaculture development plan to 2010 for Viet Nam has been successfully achieved.

In term of the sustainability of this plan, Viet Nam will not face any political change in the next five to ten years due to Vietnamese strategic policies that are to stabilize political issues for creating a sound background to economic development.

MARD highly values the key role of research institutions in the whole planning process. MARD researchers are the key partners in different stakeholder workshops, key members of the working group drafting and finalizing the development plan and key members for overseeing implementation and monitoring. This ensures that MARD influences this process.

SWOT analysis of Viet Nam's national planning process and aquaculture policy

Strengths – Existing or potential resources or capability – Economic development based on political stability. – Governmental framework strongly developed and well operated. – Proper aquaculture development Plan strongly supported by Government (roadmap, objectives, programme, projects, etc.). – Support from NGOs, private sector, associations and producers (large and small-scale).	Weaknesses – The existing or potential internal force that could be a barrier to achieving objectives/results – Financial insufficiency and poor infrastructure. – Top-down approach in policy formulation; participation of stakeholders still limited (no participation at farmers' level). – M&E still in "theory," enforcing still weak. – Insufficient information inputs (resources, socio-economic, environment, etc.) for policy formulation. – Applicability and enforcement of institutional framework still weak. – Low level of producer– education. – Social welfare differentiation (poverty, especially in coastal and mountain areas).
Opportunities – The existing or potential factors in the external environment that, if exploited, could provide a competitive advantage – Suitable natural and human conditions. – Globalization process (international market potential). – International collaboration (access to advanced techniques, technologies, supports from International organizations and consultants).	Threats – The existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage – Climate change. – Degradation of environment and natural resources. – Technical barriers. – Global economic crisis. – Severe competition on international markets.

SEAFDEC

SEAFDEC's regional perspective on aquaculture national planning processes and aquaculture policies

Strengths - <i>existing or potential resources or capability</i> – Strong linkages between aquaculture and economic development and integration (Good Agricultural Practices (GAP), safety standards, tariff reduction). – Political interests and high level commitment. – Clear regional broad policy framework and instruments (i.e. ASEAN Charter, Roadmap for an ASEAN Community (2009-2015), Blueprints for ASEAN Economic Community (AEC), ASEAN Socio-Cultural Community (ASCC), and ASEAN Political-Security Community (APSC), Work Plan for Initiative for ASEAN Integration). – Regional cooperative mechanisms in place and comprehensively cover all aspects, linking political (Summit and Aquaculture Certification Council (ACC) and Councils for AEC/ASCC/APSC), policy (AMAF) and implementation (Senior Officials Meeting of the ASEAN Ministers of Agriculture and Forestry (SOM-AMAF) and ASEAN Sectoral Working Group on Fisheries (ASWGF)). – Regional supporting mechanisms and facilities/funding, including ASEAN Secretariat, ASEAN affiliated institutions, dialogue partners and donor agencies.	Weaknesses - <i>the existing or potential internal force that could be a barrier to achieving objectives/results</i> – Development disparity among the Member States of SEAFDEC. – Too much emphasis on economic aspects and limited considerations to social and ecosystem/environment aspects. – Aquaculture is only one of the many issues under agriculture, so focus is diluted, with a subsequent rubber-stamping process. – Long timeline between regional integration and national policy and implementation (i.e. enabling legislative support, harmonization of standards). – Unclear regional cooperative mechanisms on cross-cutting issues (i.e. poverty alleviation, food security, natural resources), particularly among the lead agencies. – Unclear resources allocation for regional integration. Large dependence on resources provided by dialogue partners. – Unclear regional common goals/ objectives on aquaculture. Interests are patches. – Background and competency of ASEAN focal points on aquaculture. – Limitation of stakeholder engagement, particularly private sectors and CSOs.
Opportunities – <i>the existing or potential factors in the external environment that, if exploited, could provide a competitive advantage</i> – Comparative advantages of the Member States in the whole value chain. – Regional policy and plan as template for national development and platform for knowledge/ experience sharing and national capacity building. – National centres of excellence and various networks (public, private sectors, CSOs, academic). – Free trade agreements as a tool for economic partnership.	Threats – <i>the existing or potential force in the external environment that could inhibit maintenance or attainment of unique advantage.</i> – Weak national policy and capacity for aquaculture development as the basis for regional integration. – Donors'/ dialogue partners' interests and priority. – Conflict of national interests, including market access competition. – Mind set and trust (domestic protection vs. regional integration). – Many schools of thoughts on regional economic grouping formula (East Asian Community, Asia-Pacific Community, Asian Community). – Free trade agreements as threats to social and environmental impacts.

The Regional Workshop on Methods for Aquaculture Policy Analysis, Development and Implementation in Selected Southeast Asian Countries was convened by FAO and the Network of Aquaculture Centres in Asia and the Pacific (NACA), in response to a request from the Sub-Committee on Aquaculture (New Delhi, 2006). The workshop was also a follow-up to the recommendations of the Expert Consultation on Improving Planning and Policy Development in Aquaculture held in Rome in 2008. It enabled the building of capacity related to aquaculture planning and policy development by encouraging participants to critically reflect on the planning processes undertaken in their countries and on the relevance of the contents of their aquaculture policies. Participation, achievability, accountability, continuity, monitoring and evaluation, and balancing goals were identified as the six key characteristics of sound aquaculture policies. The workshop recommended the holding of similar capacity building workshops at national levels, the follow-up by the Southeast Asian Fisheries Development Centre (SEAFDEC) of the issue of regional integration in the aquaculture sector and the dissemination of the FAO technical guidelines for aquaculture policy formulation and implementation, if possible in their Southeast Asian specific version.

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