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TOWARDS BETTER GOVERNANCE IN AQUACULTURE

SUMMARY

The purpose of this paper is to review and share experiences of FAO Member countries in ensuring the development of responsible aquaculture, be it through developing, establishing, maintaining and enforcing appropriate legal, regulatory and administrative frameworks or through diverse policies. The aim is also to explore the constraints that impede or could impede better governance of the sector and to suggest mitigating strategies. In this regard, the paper reviews governance tools used to provide an orderly and sustainable development of aquaculture, explores current or potential constraints to better governance of the sector and suggests mitigating strategies. Good governance has been ensured through predictable, transparent, equitable and easily enforceable legislative frameworks and simple regulations covering all aspects of aquaculture and its value chain, economic incentives that encourage best practices, prompting and assisting farmers to elaborate, support and enforce self-regulating management codes and the promotion of sustainability-conducive production systems. Although significant efforts have been made to develop suitable regulatory frameworks to comply with law and order in aquaculture development, there is still public concern that some forms of aquaculture are environmentally perturbing at the expense of society, and that local communities are not sufficiently empowered nor aware of the safety and quality of aquaculture products. The lack of financial and skilled human capacity to establish, monitor and enforce regulations in developing countries, which lead aquaculture production, could particularly threaten efforts to properly govern aquaculture. Internationally, there is the danger of “environmental or societal dumping” as the sector grows and countries compete to remain attractive to foreign investment. It is equally important to ensure adequate protection of small-scale farmers, who are the bulk of producers, from the increasingly stiff corporate competition. The Sub-Committee is invited to review, as appropriate, the ideas conveyed in this paper and share national experiences in aquaculture governance, identify actions which could help Member states improve aquaculture governance and provide guidance on the way forward on this issue in general.

INTRODUCTION

1. By providing nearly 50 percent of fish¹ consumed globally in 2006² and, in the same year, creating an estimated more than five million jobs worldwide, aquaculture increasingly contributes to global food fish supplies and to the alleviation of malnutrition, hunger and poverty, especially in developing countries.
2. Most policy makers and development agents believe that with existing resources and continued technological advances the sector can further develop in a sustainable manner and close or significantly reduce the projected shortfall between global demand for aquatic food and the supply of aquatic food from capture fisheries.
3. For aquaculture to continue growing and developing in a sustainable manner, and in order to achieve its potential, its effective governance is a necessary pre-requisite³.
4. There are different interpretations of governance, one of which refers to “the manner in which authority is exercised in the management of a country’s economic and social resources for development”. Aquaculture is one of the users of such economic and social resources.
5. Some of the key reasons for the absence of effective governance are i) the failure to distinguish between what is private and what is public ii) the failure to establish a predictable framework of laws, iii) non-transparent decision-making and arbitrariness in the application of laws and rules⁴. They also include excessive rules and regulations, and priorities inconsistent with the development and lack of coherence and/or coordination between public institutions.
6. In brief, and in addition to sound policies, good governance requires a predictable, transparent and easily enforceable legislative framework and regulations which are not excessively cumbersome, coherent and coordinated administrative and institutional structures⁵.
7. The importance of governance in aquaculture is underlined in Article 9.1.1 of the 1995 FAO Code of Conduct for Responsible Fisheries (CCRF), which requires states to “establish, maintain and develop an appropriate legal and administrative framework to facilitate the development of responsible aquaculture”.
8. Legislation exists to provide an orderly and sustainable development of aquaculture; either by reducing negative externalities such as pollution or conflicts over land and other resource rights, or by encouraging positive externalities such as some countries’ policy of promoting voluntary business partnerships between small- and large-scale aquaculture operations to protect small-scale farmers’ interests or policies that encourage farmers to supply produce safe for human consumption.

¹ Fish in this document refers to aquatic food products unless otherwise specified.

² FAO, 2008 (FISHSTAT+).

³ FAO, 2008.). <http://www.fao.org/fishery/topic/13542>. (accessed 2 April 2008)

⁴ World Bank, 1991. *Managing Development: the Governance Dimension* (World Bank: Washington, DC. pp76

⁵ Ridler, N. and Hishamunda, N. 2001. *Promotion of sustainable commercial aquaculture in sub-Saharan Africa. Volume 1: Policy framework.* FAO Fisheries Technical Paper No 408/1. FAO, Rome, 67 pp.

9. Better governance in aquaculture will minimise the risks and transaction costs for producers, enable the smooth development of the sector, sustain and fulfill its potential to meet humanitarian needs for fish and fishery products and ensure consumer demands.

TRENDS IN AQUACULTURE GOVERNANCE

10. In many countries of the world aquaculture began as a state activity aiming at producing a “cheap” source of protein for domestic consumption and diversifying rural livelihoods. This trend of state-owned aquaculture development gradually faded away as approaches to economic development evolved away from the reliance on the government towards greater emphasis on the private sector⁶. Thus, throughout the 1980s and 1990s, aquaculture development was largely driven by the private sector with governments adopting a laissez-faire approach. The private entrepreneurship’s only motive was profit, which was triggered by the domestic and foreign demand for fish and fishery products. This laissez-faire policy, however, led to environmental degradation in many instances and to the near collapse of some aquaculture industries around the world.
11. During the past, and until quite recently, aquaculture expansion was driven by the private sector’s profit motive. However, having learnt from earlier mistakes, governments have generally played a more pro-active role in this development. This role has gradually changed and varied in nature depending on the importance or potential of aquaculture in the country’s socio-economic life.
12. Where aquaculture has been designated amongst strategic sectors and industries and has been endorsed by governments as a source of livelihood, a contributor to economic growth, poverty reduction or balance of payments, some governments have intervened with various governance tools to enable the sector to develop while limiting the degree of laissez-faire.
13. Most governance tools utilized cover aspects of the supply side of aquaculture including planning and access to primary resources such as seed, feed, and capital investment. There are also tools that govern the demand to ensure product quality and safety, and consumer health protection.
14. In terms of planning and access to productive resources, many countries have regulations according to which aquaculture can only be practised in designated zones. These laws and regulations require that persons intending to engage in aquaculture should first of all apply for, and subsequently be granted, an aquaculture licence. To engage in aquaculture without the appropriate authorization is considered an offence.
15. In some countries, there are species-specific zones; only in designated zones can certain species be farmed. This is particularly so where aquaculture occurs on a small scale. The main aim is to create a critical mass in order to obtain economies of scale and to encourage the dissemination of technical knowledge amongst farmers, all of whom are growing the same species, than to sustainably utilise, protect and preserve environment⁷.
16. Surface water is often considered a common resource when found on public or private property. In many countries, lakes, rivers and the sea are by tradition and by law always considered part of the public domain and can never be alienated or disposed of. Its allocation is often a source of conflict amongst competitors such as other fish farmers,

⁶ Hishamunda, N. and Ridler, N.B. 2004. Commercial aquaculture: policies in the context of sub-Saharan Africa. *International Journal of African Studies*, 3 (2):27-43.

⁷ Hishamunda *et al.* 2008. Analysis of aquaculture development in Southeast Asia: A policy perspective. FAO Fisheries Technical Paper No 509. FAO, Rome, 2008. 78 pp.

agriculture and home consumers and can be critical to the development of the sector. Different governments use different governance tools to address this issue.

17. In most countries, at least in principle, the right to put up any structure in open water areas, such as fish traps and fish cages, requires a permit from the designated authority. In some countries, drilling or digging a well on one's own property, for the extraction of ground water, can be carried out without any prior approval from authorities. However, one cannot dam flowing water for exclusive private use without a proper permit or licence. Such laws are often difficult to enforce as it is not always possible to monitor such activities.
18. In some instances, local communities and/or farmer associations manage freshwater resources and resolve conflicts through Water User Farm Associations. Moreover, many countries encourage multiple uses of water as an efficient means of using scarce freshwater. An example is the integration of rice and fish farming.
19. There is an increasing use of regulations to control environmental impacts from effluent and other wastes from aquaculture operations, which include specific governance tools such as a permit system which controls the maximum permitted levels of key chemical elements/nutrients in the discharged water. Whilst, in many countries, these levels and standards are set with inadequate scientific data and are often adopted from other countries, some countries are adopting risk analysis to focus on environmental assessments and the monitoring of systems and sensitive environments.
20. Seed production and seed quality are increasingly focussing on aquaculture policies and regulations. Many developing countries have public hatcheries which undertake research, training and technology dissemination. Occasionally they also produce seed for stocking public waters, some of which are destined to small-scale farmers at a rate that may be subsidised. With regard to meeting the demand for seed however, in most countries, public hatcheries have become a minority compared to private hatcheries. The latter have developed with the industry with some governments providing incentives in the form of soft loans or tax exemptions. These incentives can be oriented towards particular species which are deemed to have a potential commercial value. Such policies have succeeded in increasing the seed production.
21. To improve and assure seed quality from the private sector, regulations and inspections are used. Increasingly, fish and shrimp seed producers must be certified and seed quality standards are being prepared and implemented. These standards are often species-specific. National and local seed inspection and certification schemes are created to ensure compliance with standards; such schemes, however, may be expensive and require skilled personnel that it not always readily available.
22. Many countries, especially where aquaculture is well established, also have legal provisions on the movement of fish including broodstock and seed according to international trading requirements, specially aiming at reducing the risk of diseases inside and outside national boundaries. However, enforcement of such laws is marginal in many countries, as monitoring and enforcement is expensive and requires skilled local expertise which is not always available.
23. There is a trend for governments to intervene on the feed side of aquaculture in order to ease the issues of availability and access to feed and to control feed quality.
24. Feeds, the main cost of more intensive aquaculture farming, are expensive. Amongst the policies used to lower these expenses are reductions in tariffs on imported feeds and or basic feed ingredients. This has helped domestic feed producers to become more

competitive and economically efficient. Some countries have also enticed foreign investment in the feed sector, which has increased feed availability and reduced costs.

25. In some countries where aquaculture is developed, governments have generally paid attention to the quality of feed used, set and controlled feed standards by regulations. Licences must be obtained for feed, additives and/or premixes production and/or import. However, as with seed quality, monitoring can be constrained by the lack of financial resources or skilled personnel. In addition, the majority of fish feed in many developing countries is still supplied by small artisanal fish feed units which, more often than not, do not adhere to any quality standards.
26. As with feed and seed producers, two successful alternative policies to encourage investment in aquaculture farming are fiscal exemptions and foreign investors. Exemptions or reductions on income, land and sales taxes and import duties are offered in a number of countries. Such incentives may not be unique to aquaculture, and are also available to other food producing sectors. They can also be species or location specific. Unlike economic incentives, e.g., interest rate subsidies, such fiscal incentives have no direct cost to the public treasury.
27. Governments have also encouraged foreign investments which can be joint-ventures only, or with maximum limits to the extent of foreign participation. A minimum requirement for the policy to be successful is to guarantee capital and profit repatriation. Some countries, however, also offer fiscal incentives such as “tax holidays” or exemptions from import duties. While foreign investment in aquaculture production is still generally low, foreign participation has increased rapidly, especially in marine and brackishwater aquaculture.
28. There is a demand for insurance within the aquaculture sector. While insurance is intended for sharing and covering the risks associated with farming, it nonetheless is becoming an indirect powerful governance instrument. In order to ensure that they only protect farming operations against unforeseen inopportune events, insurance providers generally do not release policies unless farmers implement sustainability practices such as Better Management Practices (BMPs), Codes of Conduct, Codes of Good Practices and Standard Operational Procedures. In the event that farmers fail to follow these practices thereafter, a possible scenario could be that insurance premiums rise, which is a good incentive for farmers to stick to these practices.
29. Genetically Modified Organisms (GMOs) in aquaculture continue to be a controversial issue. Proponents claim that GMOs enhance the performance and profitability of farmed aquatic resources and hence boost food security. Opponents argue that they pose significant risks to the environment and, possibly, to human health. There are also serious doubts about increasing food security through GMOs because aquaculture biotechnology largely focuses on high-valued species destined to the luxury market. There is also an issue of using GMOs in aquafeeds.
30. The situation is similar from the governance point of view. While there is a universal consensus that GMOs and their use must be regulated, there are disagreements as to what the regulations should entail. Some groups advocate a complete ban of GMOs; others call for mandatory labelling of genetically modified food and other products in order to alert consumers of any possible health effects.
31. Not all countries have legislation specific to aquaculture, either because of the infancy of the sector or because aquaculture is of minimal economic importance. Where there is no specific legislation, aquaculture is usually administered under regulations of the capture fisheries or subordinate to agriculture.

32. Economic incentives⁸ are becoming popular in aquaculture governance and used in addition to regulations. Proponents of economic-incentive policies contend that they are more economically efficient than the traditional command-and-control regulations; if properly designed and implemented, they encourage producers to control pollution in a manner which is in their financial self-interest (most efficient way), thereby allowing policy makers to achieve the desired level of pollution at the lowest possible cost to society. There are also equity arguments because much of the cost of pollution is borne by the polluter, rather than the public who fund monitoring and enforcement of regulations⁹.
33. Self-policing is also becoming a widely used governance tool, especially in respect of small-scale aquaculture farmers who constitute the great bulk of producers. Many have understood that it is in their best interest to manage better and minimize pollution because the latter affects their operations in the long term. In fact, there is evidence from salmon farming that as the industry develops, although total pollution probably increases, net pollution per tonne may decrease¹⁰.
34. Although self-policing offers the means of internalising some of the negative externalities, there are arguments that, in the absence of mandatory legal obligations, aquaculture industry self-regulation and environmental safeguards through voluntary Codes of Practice are ineffective forms of governance.
35. In addition to fish production, fish quality and safety are gaining increasing regulator attention, for not only are importing countries under pressure from their consumers, but also domestic consumers are increasingly demanding assurances of fish quality and safety. Governments have taken a number of steps to ensure that products sold domestically are safe and that fish exported meet international standards. For example, issuance of health certificates and inspection certificates by the competent authorities, in accordance with OIE and Codex Alimentarius standards, are now mandatory.
36. Linked to, but distinct from, consumer demands for standards of fish quality is the public concern over aquaculture production itself in some countries. Both reflect a matter of trust. Aware of the need to address these issues, FAO and its partners continue to promote the FAO CCRF through various activities, such as technical guidelines, etc. etc. Recently, consultations have taken place on drafting technical guidelines on aquaculture certification¹¹. These guidelines, which cover animal health and welfare, food safety and quality, environmental integrity and social responsibility associated with aquaculture provide guidance for the development, organization and implementation of credible aquaculture certification schemes. Once implemented, they will provide an international mechanism and benchmark for aquaculture certification, helping to reassure buyers,

⁸ Policy instruments that encourage behavior through price signals (such as pollution fees wherein polluters pay unit of pollution, tradable permits polluters are assigned a certain amount of pollution which they can trade with others and environmental taxes, which represent taxes on inputs or outputs) rather than through explicit instructions on pollution control levels or methods.

⁹ Other forms of economic incentives including subsidised credit have also been used by some governments to promote and support investments by small-scale farmers. However, other governments have abandoned this policy because of its apparent bias. Loans without collateral are another successful policy to target small-scale farmers.

¹⁰ Asche, F., Roll, K. and Tveteras, S. 2008. Future trends in aquaculture: productivity growth and increased production. *Aquaculture in the Ecosystem* (ed. H. Holmer, et. al.) Springer.

¹¹ COFI/AQ/IV/2008/Inf.7

consumers and civil society regarding the quality and safety of certified aquaculture products and provide a further tool to support responsible and sustainable aquaculture.

37. The international dimension of aquaculture governance is gradually gaining ground. For example, the European Union has legislation on aquaculture and its entire value chain, which is directly applicable and binding on all EU Member States without the need for any national parallel legislation. This directly and indirectly influences the governance of the sector in countries exporting to the EU.
38. There is also an extensive array of international agreements already in place relevant to various aspects of aquaculture and its domestic and international value chain. Compliance to these agreements is mandatory and recognised competent authorities should be empowered to verify compliance with relevant standards, procedures and requirements.

IMPEDIMENTS TO BETTER GOVERNANCE AND MITIGATING STRATEGIES

39. The administration of regulations can, and in some instances does, create governance problems and disincentives to aquaculture farmers. As legislation is often not neutral in its impact on different socio-economic groups. Ideally, during the process of developing aquaculture legislation, all relevant stakeholders, both within and outside aquaculture, should be consulted even if the process is lengthy. Yet, this is not always the case. The importance of consultation in aquaculture governance was underlined by the recent FAO Expert Consultation on Improving Policy and Planning in Aquaculture. By allowing different interests to be incorporated in the legislation, consultations can help promote consensus, thereby minimizing conflicts and ensuring its legitimacy¹².
40. Whichever authority is responsible for regulation, there is always a need to clarify responsibilities. Clarification of responsibilities amongst different institutions provides greater certainty to farmers. The lack of coordination (and even antagonism) of regulations amongst government institutions (generally environmental agencies and fisheries-aquaculture agencies) is often an obstacle to the sustainable development of the sector. To reduce the burden of administrative overlap which could have an impact on farmers, some countries have established “one-stop shops”, where all information is available in one place.
41. When properly done, regulations are important for social and environmental reasons. However, there are many instances where regulations are overly cumbersome; that is, where aquaculture is over-regulated, and in such instances the regulations are also uncoordinated and lose stakeholder credibility. Over-regulation can destroy the very ingredients necessary for successful aquaculture i.e., entrepreneurial initiative and motivation. Excessive regulations also provide opportunities for enticement by regulators and enforcement officers.
42. To avoid over-regulation, policy makers may use a number of options including consultations with farmers and other stakeholders. They also conduct reviews on the costs and benefits of regulations prior to enactment. This cost-benefit analysis, which could be done by an independent agency, would include any potentially damaging effect on incentives and additional costs of monitoring and enforcement. Regulations must be monitored and enforced, which is time-consuming and expensive, requiring the allocation of budgets from governments, and sometimes private sectors under a “polluter pays” principle.

¹² FAO. 2008. Report of the Expert Consultation on the Assessment of Socio-economic Impacts of Aquaculture. FAO Fisheries Report No. 861. FAO, Rome, 116 pp.

43. Not only the number of regulations can hinder aquaculture development but also the time to process regulations can have a delaying effect. An example is the obligation to acquire permits or licences now common in developing and developed countries¹³. Depending on countries and the nature of the business, it may take between three months to several years¹⁴ to obtain new licences to be able to farm. To expedite a rapid response to licence requests, some countries impose time constraints on the processing of the applications.
44. On an international level, there is the danger of “environmental or societal dumping” as countries compete to remain attractive. This is particularly acute for species that become global commodities. Generally located in isolated rural coastal communities, large-scale commercial fish farming companies often enjoy monopsony power over the labour force as the dominant employer. To remain attractive, communities may be prepared to sacrifice assets including environmental endowments, or good working conditions. This is particularly pertinent when the industry has become oligopolistic due to industry concentration.
45. While for large multinational companies, geographical diversification is a rational strategy as it reduces disease and economic risks (due to exchange rate volatility), there are dangers to communities reliant on a single employer, particularly one which is foreign. If there is a negative shock to the market, a dominant company can demand environmental or wage concessions, and if foreign, it may have little commitment to the community if unsatisfied. How responsible the company feels to its employees as well as its owners depends on its commitment to social responsibility and corporate governance, but the danger of regulatory abandonment exists.
46. As concentration in aquaculture of some commodities such as salmon continues, and even accelerates, this issue will also be one for aquaculture governance in general.
47. Where international agreements permit, another governance option would be to limit the extent of foreign ownership of national aquaculture production systems. This has already happened in many developing countries. Some have set varying limits on the proportion of assets held by foreigners and restricted foreign participation in primary production activities natural resource operations, including aquaculture, although this may have been circumvented by using local people as “frontiers”. Others require that foreign farms be joint-ventures with domestic participation.
48. There is a shortage of expertise in aquaculture governance in developing countries which may seriously handicap responsible aquaculture development. Most countries also have limited financial resources to monitor and enforce regulations. In fact, the lack of enforcement or acceptance of existing regulations, due to shortage of resources, may be more important than weak legislation in explaining unsustainable practices in aquaculture¹⁵.

¹³ FAO, 2007. The State of World Fisheries and Aquaculture 2006. FAO, Rome, 2007. 162 pp.

¹⁴ Marine Harvest, 2008. Salmon Farming Industry Handbook. Marine Harvest: Norway.pp80. http://www.marineharvest.com/Documents/Salmon%20farming%20industry%20hand_book.pdf (accessed April 3rd 2008)

¹⁵ FAO, 1998. Bangkok FAO Technical Consultation on Policies for Sustainable Shrimp Culture Fisheries Report No 572 Supplement. FAO, Rome, 31p.

PROSPECTS AND CONCLUSIONS

49. This paper has recalled how strong an incentive the profit motive can be in promoting aquaculture development, as in most business activities. However, it also brought to mind how damaging it can be if left unrestrained, as in agriculture or other sectors reliant on natural resources for development. Prompted only by perspectives of profits, aquaculture farmers can cause environmental pollution, aquatic animal disease outbreaks and community conflicts. These issues of environmental integrity, aquatic animal health and community concerns have prompted governments to intervene to provide a better enabling environment through improved governance of the sector.
50. An enabling environment for entrepreneurs means providing law and order, and encouraging responsible investment and production. In practice, it may mean drafting a legislative framework, that should include all elements of the CCRF, such as ensuring property rights, administering aquaculture regulations transparently, processing aquaculture licences rapidly and equitably, encouraging self-regulation through voluntary codes of practices and promoting more efficient, less polluting production technologies. For consumers, it means providing them with good quality and safe aquaculture products.
51. Governments worldwide are doing their utmost to avail and improve such governance tools. However, there are a number of issues which, if left unaddressed, could hamper further development of the sector.
52. There is evidence that current efforts towards better governance could be particularly hampered by the lack of financial and skilled human capacity to establish, enable, monitor and enforce regulations. Policies and regulations must be formulated with the active participation of the stakeholders. They may be enacted, but unless there are sufficient government personnel with adequate skills and financial resources to monitor and enforce them, they will remain ineffective. In fact, the lack of resources for monitoring and enforcement may be as critical as the absence of legislation or regulations.
53. There is also a need to continue empowering local communities in aquaculture governance and to improve collaborative management. In many places, dialogue between the public and the production sectors is poor, and when it occurs, often biased towards big businesses at the expense of small-scale farmers and the rest of the community. It is equally important to anticipate the impending concern of environmental or societal dumping which could result from the increasing trend of aquaculture companies to concentrate and from the competition amongst developing countries to attract and retain them.
54. It is also necessary to improve dialogue amongst farmers themselves, especially the resource poor small-scale farmers, and to empower them to compete on the market. Assisting farmers to organise themselves into “clusters” or farmer associations and building their capacity to better manage their farming practices has proven beneficial, particularly in the shrimp sector.
55. Although policies are generally used to assist farmers and boost aquaculture development, there are instances where governments provide grants to reduce production costs of targeted species (specially feed costs), thereby enhancing the competitive advantage of the species farmed. While this kind of intervention is often justified as a temporary measure for young industries, it could be an unfair trade practice and create friction

between competing countries, if the commodity under cultivation is internationally traded.

56. There are also places where governments still intervene in the aquaculture industry by providing subsidies, mainly to stimulate development. Hatchery operations to supply farmers with subsidized seeds and various tariff and tax incentives for feed producers to reduce production costs. This policy can be justified as a transitory measure of providing the often much needed initial impetus to infant industries. Unfortunately, it is applied to some aquaculture leading countries where fish farming is not new and as a permanent measure to help the industry remain competitive. In the long-term, this policy could produce distortion effects on the sector, including dependence on subsidies.
57. Domestically, this policy could deter private seed production investors who find themselves in unfair competition with the public sector. This, in turn, could slow down development. Internationally, for the products reaching export markets, the policy could distort trade, which could trigger ugly retaliation from foreign countries competing for market shares with damaging effects on the development of the sector at home.
58. Having learnt from past mistakes, many countries, early movers as well as new comers in aquaculture, now emphasise environmental sustainability and social responsibility. In addition to laws and regulations, and voluntary codes of practice which aim at ensuring environmental integrity, some of the means of achieving such goals include innovative, less-polluting production techniques such as “Integrated-multitrophic aquaculture” (IMTA), a practice which is different from the century old practice of polyculture¹⁶, which consists of incorporating species from different nutritional (trophic) levels in the same system¹⁷.
59. Organic aquaculture is also increasingly attracting the attention of consumers, environmental advocates and entrepreneurial innovators’. They maintain that, by prohibiting the use of genetic engineering in the production and by reducing the overall exposure to toxic chemicals from pesticides that can accumulate in the ground, air, water and food supply, organic aquaculture reduces consumers’ health risks¹⁸. This growing interest has prompted governments to regulate organic aquaculture. However, universally accepted standards are necessary to promote investment, and it is still far from clear whether some forms of organic aquaculture – such as the large land areas needed for some extensive farming systems – are necessarily environmentally beneficial.
60. GMOs are still an internationally controversial governance issue. While there is a universal consensus that GMOs should be regulated, there are disagreements as to the content of regulations. Some groups advocate the complete ban of GMOs, others call for mandatory labelling of genetically modified food, including aquaculture products, in order to alert consumers of potential health effects.
61. There is also a problem of biased resource allocations. It is now recognized that aquaculture can and does make an important contribution to alleviating hunger,

¹⁶ Reference on IMTA

¹⁷ Thierry Chopin , 2007. Integrated Multi-trophic Aquaculture. <http://en.wikipedia.org>. Accessed April 18, 2008 at 17:21.

¹⁸ R.A. Bullis. 2004. Environmental and social aspects of organic aquaculture. <http://www.google.it-bullis> r.a. organic aquaculture. Accessed April 18, 2008 at 20:30.

malnutrition and poverty in many parts of the world. Yet, there is hard evidence that, in most places, fisheries including aquaculture, is often underfunded, compared to similar sectors of the economy such as livestock. The light weight of aquaculture in countries' development agendas could stem from their inability to gauge the potential socio-economic benefits of aquaculture against those from alternative enterprises. A recent "FAO Expert consultation on the assessment of socio-economic impacts of aquaculture" has provided a methodological tool which can be used to overcome this barrier. However, most of these countries would need additional resources to undertake such tasks.

62. Not only resource allocation problems, there are distributional concerns too. In many developing countries, aquaculture production has been dominated by small-scale operations. As the sector matures and attracts foreign investment, big corporations are progressively taking the upper hand. While this in itself is not a problem on the aggregate, if no right policies are put in place to protect small-scale farmers, the situation can nevertheless result in loss of income and food insecurity by this category of producers as they are forced to compete from unequal grounds. In fact, protecting small-scale farmers through some policies such as, for example, large corporations providing them some levels of extension services, easing investment burden and ensuring market access for their produce becomes a corporate social responsibility. In their efforts to improve social responsibility, many governments have established minimum wages, improved labour conditions and worker welfare systems. Certification systems for aquaculture practices and products are also beginning to include standards for monitoring social responsibility and equity. The public is generally of the opinion that this trend should be encouraged.
63. The international dimension of aquaculture governance is gradually taking another twist. Perhaps pressured by public opinions or driven by the desire to meet their constituencies' demand for standards of fish quality or by other reasons, importing countries regularly send experts on veterinary missions to all exporting countries. These experts not only conduct veterinary inspections in fish producing countries, but also make assessments of the whole governance setting including legislative and regulatory, and institutional capacity. Failure to meet their standards in either aspect may lead to export restrictions. There are already concerns by exporting countries that "certification of governance" could be a non-tariff barrier to trade which could impede the development of aquaculture at home.
64. Similar concerns have also been recorded as to the potential negative repercussions of the current Doha Round on aquaculture and trade of aquaculture products, especially in developing countries. Perhaps ensuring that producing countries are properly represented in standard-setting bodies and a greater regional cooperation can help alleviate these impacts.

SUGGESTED ACTION BY THE SUB-COMMITTEE

65. The Sub-Committee is invited to:
 - revise, as appropriate, the information put forward in this paper and share national experiences in aquaculture governance;
 - identify priorities for policy and actions that could assist Members in improving and strengthening aquaculture governance; and
 - provide guidance on the way forward.
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