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COMMITTEE FOR INLAND FISHERIES AND AQUACULTURE OF AFRICA

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CHALLENGES TO IMPROVED AQUACULTURE GOVERNANCE FOR NATIONAL AND REGIONAL PROGRAMS: A PROPOSAL FOR ENHANCED MULTI-LEVEL COOPERATION

EXECUTIVE SUMMARY

This paper reviews recent developments that have occurred in aquaculture governance in Africa, highlighting outstanding issues and suggesting some mitigating strategies. With the preparation of national aquaculture policies, strategies and plans, the promotion of farmer associations, the publication of national aquaculture laws or codes as well as guidelines for sustainable aquaculture development in several countries, along with the creation of SPADA and ANAF at the regional level, the last decade has seen important progress in addressing aquaculture governance issues. However, as exemplified by conflicts over aquaculture sites in some countries, disease outbreaks at the national and sub-regional levels, the inability of some producers to access adequate basic productive resources such as seed, feed and capital or to meet consumers' quality standard requirements, combined with inadequate development of the sub-sector in many jurisdictions despite favourable supply conditions and high demand for aquatic products, aquaculture governance remains an important issue in the region. Establishing and strengthening multi-level co-operation amongst countries in the region could be one of the best ways of easing these concerns. The Committee is invited to: revise, as appropriate, the information presented in this paper; share national experiences on governance of aquaculture; explore the possibility of establishing an *ad hoc* working group to identify guidelines for creating a functional multi-level cooperation for aquaculture advancement in the region; advise as to the desirability of elaborating a regional aquaculture strategy including identifying realistic challenges to undertaking this task and implementing the product should it be endorsed; and, provide guidance on how best to proceed with the issue of enhanced governance of aquaculture in Africa.

INTRODUCTION: WHY DOES AQUACULTURE GOVERNANCE MATTER?

1. For nearly two decades, aquaculture worldwide has consistently recorded impressive growth, amongst the most rapid of all food-producing sectors. In this process, global aquaculture has developed into a strong industry for food security and growth of many economies.

2. In 2008, the aquaculture sub-sector produced about 37 percent of the aquatic products produced worldwide[1]; more than 68 million tonnes of aquatic products with an estimated value of 106 billion US dollars. Although information on trade of aquaculture products is sketchy, there are credible indications that significant quantities of aquaculture products moved into global trade, bringing sizeable amounts of monies into national economies, sometimes contributing significantly to the their balance of trade. A recent FAO estimate of aquaculture employment indicates that the sub-sector provides over 30.5 million full-time-equivalent jobs, including about 21.5 million on-farm and nearly 9 million off-farm positions.

3. While this level of development is laudable globally, it has varied widely across nations, with a positive bias towards countries where private entrepreneurs were successful; an indication that this growth has come about mainly because of the active involvement of the private sector in the sub-sector.

4. In Africa, owing to the gradual influx of small-, medium and large-scale private commercial investments in some countries since the late 1990's, the aquaculture sub-sector has shown strong signs of developing into an important source of food supply for these participating nations. In 2008, the continent produced slightly less than one million tonnes (i.e., 955 237 tonnes) of fish with an estimated value of 1.9 billion US dollars[2]. It is also estimated that, on a full-time equivalent basis, African aquaculture employed 685 000 people, including about 306 000 on farms and 378 000 in up-and down-stream positions.

5. Though this performance represents a remarkable improvement compared to 1998 when Africa produced less than 0.2 million tonnes (i.e., 190 800 tonnes) of fish worth about 0.45 billion US[3] dollars, it also is an indication that Africa's contribution to world aquaculture production, as well as to national food security and economic development, remains relatively insignificant (i.e., the 2008 African aquaculture production represented a mere 1.4 percent of the world total, with the sub-sector producing slightly over seven percent of the continent's aquatic produce). There is, therefore, a need to develop further the sub-sector to increase its contribution to the worldwide aquaculture harvest and to the continent's socio-economic wellbeing.

6. To achieve this goal, it will be necessary to attract and ensure further successful private investments in the sub-sector whilst being mindful of the responsible use of the continent's significant natural resource endowments.

[1] Aquaculture production as a whole represented nearly 43 percent of the world's aquatic production.

[2] FAO FishStat, 2010.

[3] From 1998 to 2008, Africa's aquaculture production has increased 5.1 folds in volume (and 4.3 folds in value), which represents an average annual growth rate of 17.5%, compared to 6.5% for the World. Moreover, the 1998 production represented 0.52 percent of the World's total in volume terms and 0.96 percent in terms of value, compared to the 2008 production, which represented 1.4 percent of the World's harvest in volume and 1.84 percent in value.

7. One of the main reasons why investors flourish in some areas but not in others is governance[4]. Aquaculture governance is as critical to the success of the sub-sector as are capital, feed, seed, and technology. Without good governance, aquaculture operations will not appear, or will not be sustainable. Markets and inputs may exist, but unless there are individuals willing to spend time and money, taking the risks, aquaculture operations will not endure. These risk-taking individuals are the private sector entrepreneurs; they are the drivers behind durable aquaculture. Their operations may be small-, medium-, or large-scale, capital-intensive or low-input, but, as with agriculture, their motivation is risk-adjusted profit.

8. Hence, in addition to policies that facilitate access to capital and other productive resources, some of the minimum conditions for encouraging private entrepreneurs to invest are secure and exclusive rights to the property and proceeds as well as protection from arbitrary confiscation of farms and other facilities. Such governance instruments are among the elements that underpin the government-provided "enabling environment". Other elements include economic and political stability, accountability, effectiveness, and efficiency of government services along with equity and predictability of laws and regulations. If these elements are in place, and markets and inputs exist, entrepreneurs are more likely to invest in aquaculture.

9. However, experience has repeatedly demonstrated that, in their pursuit of profits, many entrepreneurs will ignore negative impacts of their actions. Thus, they must be monitored and controlled. That is, their behaviour must be modified so their interests are reconciled with those of society.

10. This control and modification of selfish behaviour can be done through economic instruments (incentives and disincentives), peer pressure, or by self- or coercive regulations. The ideal would be through self-regulation, because then entrepreneurs' sense of corporate governance would value all stakeholders, including future generations.

11. Unfortunately, there are problems within society that are not of farmers' own making and cannot be mitigated even by responsible practices. These problems - usually the result of social dysfunctions - underline the need for coercive regulation.

12. In the aggregate, these measures are all governance instruments that have been applied to some extent to the aquaculture sub-sector with varying degrees of success; the results of these previous applications providing important lessons learnt.

RECENT DEVELOPMENTS IN AQUACULTURE GOVERNANCE IN AFRICA

13. In virtually all African countries, aquaculture began as a mainly state-supported subsistence activity aiming to produce a "cheap" source of protein for family consumption and relying essentially on extra-budgetary donor support [i.e., handouts]. Such state-owned or

[4] There are several interpretations of governance. In this paper, governance covers not only the ways and means, in an apolitical context, by which a government exercises the authority in the management of its country's economic and social resources or a particular industry (sub-sector) such as aquaculture, being one of the users of these resources for its overall development, but also the processes by which decisions are made and implemented. By incorporating processes, governance supplements the traditional concept of "government", which is centralized and has decision-making elites. Governance is achieved through policies, institutions, laws, and regulations. Implicit in this approach is the dimension of responsibility; responsibility being attributed to both those engaged in the decision-making processes as well as the implementation of the resulting actions.

led aquaculture operations dominated the sub-sector for a long time, until quite recently when it became clear that subsistence-like aquaculture had failed to meet even the most modest expectations.

14. Beginning in the late 1990's, and especially the early 2000s, the trend of public-sector-promoted subsistence aquaculture gradually faded in many countries. With this new awareness, approaches to aquaculture development began to evolve towards a much greater emphasis on self-reliance and private-sector-led commercial farming.

15. At the international level, an illustration of this change in priorities is the commitment of the African Heads of States and Governments to promote and protect fisheries and aquaculture as strategic commodity alongside other crops following the 2005 NEPAD Fish for All Summit. Another example is the FAO initiative to launch the Special Programme for Aquaculture Development in Africa (SPADA), which follows closely the NEPAD Action Plan for the Development of African Fisheries and Aquaculture and whose backbone is the promotion of aquaculture as a business (i.e., aqua-businesses), especially for small and medium investors.

16. At the national level, producer associations in one form or another are present and are often playing a catalytic role in the sub-sector; facilitating information flow and the exchanges of experiences; expediting input and market access as well as in agenda- and priority-setting through enhanced lobbying capability. In some countries, these associations are coalescing into national aquaculture networks that encourage synergistic aquaculture action and national and local levels as well as linking up-stream to sub-regional and regional structures [e.g., intra- and inter-regional networks, societies, and assemblages]. Within the broader context of SPADA, one of these collaborative regional structures is the Aquaculture Network for Africa (ANAF[5]). ANAF, modelled after the successful NACA in Asia, is foreseen as a formal regional Inter-Governmental Organisation (IGO) that will sustainably promote the principles of SPADA, fostering an investor-friendly and responsible aquaculture environment in the Region.

17. Throughout the first decade of the 2000s, when significant aquaculture expansion occurred, this development has been largely driven by the private sector whose motive is profit[6], with governments generally playing a more facilitative role in these processes. These roles have varied depending on government's expectations for the sub-sector based on the genuine or anticipated importance, or even the potential of the aquaculture sub-sector in the country's socio-economic life. A few governments have designated aquaculture amongst priority strategic sectors, endorsing this activity as an important source of livelihood, contributor to economic growth and poverty reduction as well as a set of enterprises that can have a positive impact on the national balance of payments. When so prioritised, governments can intervene more easily with various governance tools to enable the sub-sector to develop and achieve these expected outcomes. Most of the governance tools utilized in these cases cover aspects of the supply side of aquaculture including planning and access to primary resources such as seed, feed, and investment capital.

[5] ANAF's has the objective of coordinating and facilitating scientific and technical information exchange, regional collaboration, research, training, extension and technology transfer so as to optimize utilization of the scarce resources. ANAF is open to all AU countries, its current membership including Cameroon, Ghana, Kenya, Mali, Mozambique, Nigeria, Senegal, Tanzania, Uganda and Zambia.

[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.

18. In the context of refocusing the sub-sector with an aim to increase investment and thereby sustainable production, a number of countries have defined their National Aquaculture Development Strategy (NADS) as well as the related National Aquaculture Development Plan (NADP). In so doing, the objective is to remove the main obstacle which has impeded aquaculture development over past decades: *ad hoc* and uncoordinated interventions due to lack of vision and a road map for the development of the sub-sector. The objective is also intended to correct one of the root causes of the poor performance of the aquaculture sub-sector, namely the lack of a business orientation of aquaculture activities.

19. Along with NADS and NADP, some countries have introduced aquaculture regulations, laws, or codes and produced guidelines with monitoring mechanisms for sustainable aquaculture development. These governance instruments frequently establish *inter alia* that aquaculture can only be practised in designated zones. They also require that most persons intending to engage in aquaculture should apply for, and obtain an aquaculture licence; to engage in aquaculture without the appropriate authorization considered an offence. Although this is especially applicable to shrimp farming, it is increasingly becoming common practice. For other species, species-specific high potential zones are promoted where the culture of this species fits best with the prevailing biophysical and socio-cultural environments. Because many aquaculture activities are still of small- to medium-scale, one of the main advantages of such a zonation policy is to achieve backward and forward efficiency. These practices allow farmers to conduct their operations in a common zone that facilitates creation of a critical mass and achievement of economies of scale, which are necessary for efficient distribution of production inputs, dissemination of technical knowledge and marketing of produce.

20. In most cases, these aquaculture policies, strategies, plans, regulations and laws have been established through participatory governance tools; consultations are typically held with stakeholder representatives at all levels. In some of the most effective cases, these instruments have actually been drafted by a private-sector-led advisory group directly assisting the technical ministries in putting these tools in place. These processes reach the local level where consultative meetings are held with farmers, extension agents and other key stakeholders. The aim is to identify clearly practical issues that strategies and plans can address. At the central level, consultations are expanded to encompass research and educational institutions along with government administrative units with stakes in aquaculture. At the national level, in addition to these institutions and units, consultations involve farmer representatives --usually through farmer associations, NGOs and the donor community. This round of consultations generally occurs at the adoption level of the drafts of strategies, plans, and laws (codes).

21. Irrespective of the efforts taken to ensure fully participatory methods, there are practical limits to participation. Participatory methods involve expenditure of significant quantities of money and time along with special skills; the absence of dedicated funding for such participation has often handicapped the effectiveness of policy, strategy, plan and law formulation. Moreover, in instances where modest funding has been secured, time constraints, logistic considerations, imperfect communications, staff shortages and other human resource limitations have also restricted the extent to which real and thorough participation can be achieved.

22. Access to good quality productive resources has been an obstacle to the growth of the aquaculture sub-sector for decades. To overcome these long-standing constraints, governments are increasingly focussing on how to provide access to high quality seed,

including issues regarding seed production, distribution, quality control, and regulation. A common policy is to leave much of the seed production in the hands of the private sector while having very limited public infrastructure that undertakes research and development, training and broodstock management. National demand for seed is expected to ultimately be met by private hatcheries. To promote this transition from public to private seed supply, some governments are providing enticements in the form of soft loans or other incentives. These incentives can be oriented towards particular species which are deemed to be socio-economically important or have a potentially good commercial value. Such policies have shown success in increasing the seed production in some countries.

23. There is also a trend for governments to intervene on the feed side of aquaculture in order to ease the issues of availability and access. A temporary measure used to lower the high cost of feed and, hence, increase its availability and accessibility, can be to reduce tariffs on imported feeds and/or basic feed ingredients. This strategy has allowed for a kick-start of small-, medium- and large-scale commercial farms and helped domestic feed producers, when present, to become more competitive and economically efficient in some countries. Other countries have also attracted domestic and foreign private investments in the feed sector through, for example, reduction of, or exemption from import duties on machinery. Still others have put in place incentives that encourage already established livestock feed mills to diversify into aqua-feeds. Overall, these policies have increased availability of good quality feed while reducing operating costs.

24. Sometimes, in place of industrial milling of aqua-feeds, small artisanal fish feed units have been encouraged. However, more often than not, not only are artisanal fish feed mills not reliable in terms of consistency of product and supply, but also, they do not adhere to any quality standards. This underscores the at-times misguided tendency to, at all costs, encourage local feed production for perceived benefits, even if the products are of lower quality and/or higher price than those available on the world market. When the priority is to increase production from the sub-sector, the feed policy should be to make available to investors the best available feed at the best prices, whether of local or external production.

25. As with feed and seed, policies relating to capital are critical if the sub-sector is to grow. Two successful alternative policies to encourage capital inflow in aquaculture are fiscal exemptions and foreign investors. Exemptions or reductions on income, land as well as sales taxes and import duties are offered in some countries. Such incentives may not be unique to aquaculture, as they are also available to other food producing sectors. However, there are instances where “Aquaculture Investment Codes” have been designed. The purpose of these tools is to take into account aquaculture-specific issues and define appropriate incentives when promoting investments. Unlike economic incentives such as interest rate subsidies, such fiscal incentives have no direct cost to the public treasury.

26. Governments have also encouraged foreign investments through joint ventures. 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.

27. While foreign investment in aquaculture production is still generally low, foreign participation has increased rapidly since the last decade, and has played an important role in pushing aquaculture forward in the region. This is especially true for shrimp farming and for non-pond farming technologies such as cage and tank culture.

GOVERNANCE PERSPCTIVES

28. With the preparation of national aquaculture policies, strategies and plans, the promotion of farmer associations, the publication of national aquaculture laws or codes and guidelines for sustainable aquaculture development along with the creation of SPADA and ANAF at the regional level, the last decade has seen important progress in addressing aquaculture governance issues in Africa.

29. These accomplishments can be viewed as critical governance instruments that have contributed to improving planning and policy development in aquaculture whilst reducing administrative burdens, thereby increasing investments in the sector and its overall performance as measured by its productivity.

30. These instruments indicate that where the aquaculture sub-sector has expanded, it has done so because, *inter alia*, governments have taken decisive steps to persuade the private sector to tackle the problem of **seed** supply with the public sector controlling the quality. To improve and assure seed quality from the private sector, regulations and inspections are used. Increasingly, fish and shrimp seed producers must be certified as seed quality standards are 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 are not always readily available.

31. As for seed, governments have generally paid attention to the quality of **feed**, often setting and controlling feed standards by regulations. Common practice is to require licences for the production and/or import of feed, additives, and/or premixes. Producers and/or importers should reveal the composition of feeds supplied. However, in many countries, perhaps because of the scarcity of fish feed, available suppliers often either do not adhere to any quality standards or seldom submit to quality control. Although, as is the case for seed, monitoring feed quality can be constrained by the lack of financial resources or skilled personnel, there is a need for clear policies in this regard.

32. Several countries worldwide also have legal provisions on the **movement of fish** including broodstock and seed according to international trading requirements. One of the main purposes of these regulations is to reduce the risk of diseases inside and outside their national boundaries. Many countries in Africa have similar regulations. However, implementation is generally marginal as monitoring and enforcement are expensive and require skilled local expertise along with specialised facilities that are not always available.

33. Governance requires responsibility and for stakeholders to be able to accept responsibility they must be informed. Knowledge is power and the dissemination of information, even misinformation, is becoming a business. Thus, the **collection and dissemination of accurate and verifiable information** on aquaculture is an integral part of good governance of the sub-sector. Accessible and verifiable information will not only empower stakeholders and facilitate investors, but it will also help improve the public image of the sub-sector. Yet, in many countries, data collection and information flow are overlooked; incomplete or otherwise unreliable data and information are propagated due to inadequate quality control and typically the lack of any form of independent audit to validate outputs.

34. The tools to develop accurate national or regional databases are readily available. However, thorough planning is required to develop robust databases. Elsewhere in the world, most countries rely significantly on the private sector, requiring producers to record information and pass this on to the relevant authorities. Whilst these individual reporting practices may be relatively inexpensive, concern by farmers over tax repercussions can reduce compliance. These practices can also result in deliberate inaccuracies as producers seek to avoid any negative financial effect of correctly reporting on their production. Nevertheless, in spite of any resistance, these measures are necessary and need to be put in place whilst producers are compelled to comply.

35. **Research and dissemination of research results** are also an essential part of aquaculture governance. With a few exceptions, aquaculture research and development (R&D) have historically been under-funded and poorly developed, especially in Sub-Saharan Africa. There is a need to increase investment in these areas, whilst making more efficient use of research resources, including the large body of available but perhaps under-utilised knowledge derived from investment in aquaculture research globally.

36. Experiences from elsewhere have shown that effective R&D are decisive for profitable and sustainable aquaculture development. Where these are well established, industry would generally fund mostly applied research leaving basic research, predominantly conducted by universities, to the public sector. This implies that private-public partnerships are crucial if research is to be advanced. Efficiency of research can also be considerably enhanced by significantly improved collaboration among national and regional institutions. Collaboration diminishes duplication and encourages specialisation, particularly if there is co-ordination of research efforts, perhaps by a lead agency.

37. Once the R&D results are known, it is important that these be widely disseminated. **Dissemination** is usually done by extension agents and outreach programmes. However, in the region, aquaculture extension services have been chronically underfunded and poorly staffed. Alternative and innovative cost-effective options to classic approaches are needed. ANAF and SARNISSA[7] are contributing to information flow and better exchange of experience; this role expected to strengthen as these structures grow. There is a need to target more resources and significantly enhance information flow to reach a larger audience through SPADA, ANAF and SARNISSA.

38. **Social acceptability** of aquaculture, also known as social license, is an integral part of sustainability and a goal of good governance. Yet, this subject has usually been a non-issue or belatedly become an issue only after sections of the population have demonstrated discontent through conflicts, boycott or litigation. While aquaculture can contribute to economic growth, it can also create social disruption and inequities. Jealousy, concern over resource allocation or use along with resentment over hiring practices may potentially trigger social conflict. This can be particularly acute if small elites, domestic or foreign, dominate the sub-sector.

39. There is also the question of aquaculture image. Although negative publicity of aquaculture is not yet a widespread phenomenon in the Region, decision-makers must be aware of **perceptions** towards aquaculture that are often damaging. Concerns about the manner in which fish are produced reflect a matter of trust. In some instances, public mistrust of aquaculture is demonstrated by legal challenges to site allocation, by pressure put on

[7] Sustainable Aquaculture Research Networks for Sub Saharan Africa.

politicians to declare moratoria on aquaculture expansion, or even by vandalism. As demonstrated by **opposition** to site licenses in some countries in the Region, the repercussions for aquaculture development can be severe. Unless addressed, these attitudes towards aquaculture are likely to continue or even exacerbate as aquaculture expands and resources become more limited. To counter public opposition, there must be more transparency and less secrecy on issues such as fish health, product quality control, social and environmental impact, as well as technologies employed. Information on escapees, diseases, product quality or any risk must be provided to governments who could then advise the public of necessary action. There should also be pro-active media communication strategies.

40. Countering public opposition could also be achieved by informing the public with campaigns about all aspects of aquaculture, ensuring that sound information is available from credible sources, and, where feasible, using the internet for two-way information sessions. These measures could include even certifying technical information just as other inputs are certified; guaranteeing quality and encouraging the use by stakeholders. Continued widespread participation in aquaculture planning also induces trust in the industry. Too often, communications have been ignored or downplayed by the aquaculture sub-sector and by governments, leaving NGOs alone to dominate the media. This can have deleterious consequences as sole sources highlight their vested interests or pet topics.

41. Not only are there resource allocation problems, there are also distributional concerns. Aquaculture production in the Region is still dominated by small- and, to some extent, medium-scale operations. For the sub-sector to develop adequately and mature, it must attract foreign investment, eventually, as elsewhere in the world, with increasingly larger operations progressively taking more responsibility for core functions of the sub-sector such as assuring the supply of good quality, affordable seed, and feed. While the domination by large producers is in itself not an issue in general, if the right policies and strategies are not put in place to protect small- and medium-scale farmers, the unhindered presence of large-scale operators can adversely affect the marketplace for the smaller investor, and lead to loss of income as well as possibly to increased food insecurity – especially if the smaller operators would be forced to compete from unequal grounds. Protecting these farmers, therefore, becomes a corporate social responsibility. In their efforts to improve social responsibility, many governments have established policies such as requiring large corporations to provide small-scale farmers some level of extension services, easing investment burden on them and ensuring market access for their produce. Thus, certification systems for aquaculture practices and products have begun to include standards for monitoring social responsibility and equity.

42. As aquaculture expands, entrepreneurs are more and more interested in farming the Region's shared waters. In most instances, there is a complete lack of monitoring, legal, and regulatory regimes related to aquaculture in these milieus. Thus, one of the biggest challenges facing policy makers is to establish regional/sub-regional policy, institutional, legal, regulatory, and monitoring regimes to govern aquaculture operations that occur in waters that are beyond national jurisdiction whilst ensuring that best practices are employed.

43. Beside internal factors, there can also be external shocks to aquaculture development that require the governance of the sub-sector to adapt. One of these factors is climate change and weather uncertainty. While some of the effects of climate change may be beneficial[8],

[8] Examples include shorter growing periods with improved growth rates and feed conversion rates, reinforcement of regional institutions and structures and co-operation in such areas as the gathering of common data and the sharing of best practices,

many others could be negative. With changing temperature patterns, there could be increased virulence of pathogens and disease, reduced ecosystem productivity and related economic declines leading to adverse impacts on livelihoods. Rising sea level accompanying rising temperatures would damage coastal and onshore facilities as well as cause salt-water intrusion while extreme weather conditions could cause destruction of farms and related facilities. Good governance is essential to facilitate the implementation of tactics designed to adapt to and/or mitigate such effects of climate change in aquaculture.

44. Another external shock to aquaculture governance in the Region could be global trade. International trade is already globalizing aquaculture hygiene and traceability standards, obliging governance practices and tools to adapt. Globalization of food chains, expansion of supermarket standards and the World Trade Organization, require increased traceability, ecological sustainability, along with health and safety certification. Domestic consumers are also becoming more demanding. There is growing legal pressure on companies to demonstrate due diligence in food risks, and an increasing sense of corporate social responsibility. These requirements and pressures result in a growing uniformity of food health and safety legislation to maintain access to markets. However, there are some concerns that they are also protectionist measures. Compliance for developing countries can be very difficult, jeopardizing their export opportunities. Nonetheless, because we live in a globalized world, Africa cannot afford to stand by as an observer; it will need to make adjustments in the way it conducts aquaculture if it wants to penetrate and maintain an important share of the world market. This will often require changes in governance practices.

45. There are important lessons to be learnt from the previous discussions:

a. One of the key issues for the growth of aquaculture remains the ability of countries and organisations to strengthen their institutional capacity to establish and implement policy and regulatory frameworks that are both transparent and enforceable;
b. Improving co-operation amongst stakeholders at national, sub-regional and regional levels remains a pivotal issue for further development of aquaculture in the Region;
c. Many countries will have to develop clear aquaculture policies and strategies whilst at the same time identifying a lead agency with adequate organisational stature and capacity to play a strong co-ordinating role;
d. Several countries have made commendable efforts to set up policies, strategies and plans, administrative methodologies along with legal and regulatory frameworks to properly manage aquaculture, but, such efforts are being particularly hampered by the lack of financial support and skilled human capacity for their implementation; without adequate skills and financial resources, they remain quasi ineffective, investment in the sub-sector lags and aquaculture remains poorly funded;
e. In many places, dialogue between the public and the private 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; there is a need to empower local stakeholders in aquaculture governance and to improve collaborative management. This issue can potentially be addressed in cases where a broad-

as well as fish disease and the introduction of exotic species. Increased supply volatility could oblige individual producers to review supply chains and distribution outlets, which would encourage more local and regional trade.

based Aquaculture Advisory Group is formally established to assist the lead government agency in the implementation of the national programme;

f. There is an urgent need to improve the quality of information available as well as information flow and individual extension services whilst strengthening the links between research and development and establishing functional farmer-to-farmer networks that can efficiently facilitate the smooth transfer of proven and profitable technologies being used across the Region and elsewhere in the world;

g. Access to seed and feed of suitable quality remains a constraining factor to aquaculture development in the Region as does access to capital and in some cases access to markets;

h. Unless adequate governance steps are taken to inhibit their potential impacts, climate change and trade could threaten aquaculture development in the Region.

46. The preceding lessons learnt highlight several common denominators: (i) there are common problems confronting most member countries; (ii) institutional strengthening and capacity building are critical; (iii) many activities are most effectively addressed at sub-regional or regional levels; (iv) intra-regional collaboration is required; and, (v) SPADA and ANAF offer existing regional structures which can serve as platforms for addressing and reinforcing the needed governance tools and practices. These tools and practices will ensure the necessary rational and sustainable interdisciplinary environment to foster increased investment in aquaculture Region-wide and significantly increase Africa's market share of the global aquaculture harvest.

47. Where aquaculture governance has been fruitful, governments seem to have followed four main guiding principles, namely accountability[9], effectiveness and efficiency[10], equity[11], and predictability[12]. The same principles could guide African policy makers in finding ways to foster this cooperation and nurture the development of the sector for an improved well-being of its people.

A PROPOSAL FOR AN ENHANCED MULTI-LEVEL COOPERATION

48. One of the important ways of easing many of these concerns could be to **establish and strengthen a Multi-level Cooperation amongst countries in the region within the context of SPADA and ANAF.** This cooperation could be established at sub-regional and regional levels, and would be synergistic to strengthening national institutions and improving collaboration amongst stakeholders at the national level. Such cooperation would seek to further reinforce linkages at the sub-regional level, by forging bonds with, for example, Regional Economic Communities (RECs). At the regional level, collaborative arrangements

[9] Accountability is the acknowledgment and assumption of responsibility for actions, decisions, policies and products by officials. It implies greater openness of administrations so that officials are answerable to the public and to their institutional stakeholders for their actions; it also implies performance-based standards for officials and mechanisms for reporting, auditing and enforcement. In practice, accountability would be reflected in timely decisions and would imply participation of stakeholders to decision taking processes. It would also mean that, for example, decisions on licences to farm are open to appeal and that the criteria for their granting are transparent.

[10] Simply put, effectiveness consists of doing the right thing; it is a measure of quality and decency of things we do. Efficiency is about doing things right, in a cost-effective way; it measures the speed and the cost at which things are done.

[11] Equity has been critical for sustainability. A society's well being depends on ensuring that all its members feel that they have a stake in it and are a part of the mainstream of society. This requires that all groups, particularly the most vulnerable ones, have opportunities to improve or maintain their well being. In practice, this will mean guarantying procedural fairness, distributional justice and participation to priority-setting and decision-making processes to men and women alike. The sharing of power leads to equity in the access to and use of resources.

[12] Predictability refers to the fair and consistent application of laws, regulations and implementation of policies.

could be fostered and/or strengthened, inter-alia, with the Forum for Agricultural Research in Africa (FARA) and the African Union-NEPAD. The list is not exhaustive.

49. The ultimate goal would be to harmonize and consolidate programs with multiple competing actors. With consolidation will come efficiency, and with efficiency comes better productivity. High productivity drives the standards of living. An immediate output of this enhanced regional co-operation would be a regional aquaculture strategy, building on the function and structure of successful national aquaculture strategies, identifying those issues and practices, with an emphasis on good governance tools that can most effectively be dealt with at regional level.

SUGGESTED ACTION BY THE COMMITTEE

50. The Committee is invited to:

- revise, as appropriate, the information presented in this paper;
- share national experiences on governance of aquaculture;
- within the overall context of SPADA/ANAF, explore the possibility of establishing an ad hoc working group to identify guidelines for establishing a functional multi-level cooperation for aquaculture advancement in the region;
- advise as to the desirability of elaborating a regional aquaculture strategy including identifying realistic challenges to undertaking this task and implementing the product should it be endorsed; and,
- provide guidance on how best to practically and pragmatically proceed with the issue of improved governance of aquaculture in Africa.