

# Enhancing Stakeholders' Participation (Co-Management) Towards Achieving Ecosystem-Based Fisheries Management in The Nigerian Coastal Fisheries

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## ABSTRACT

*This paper highlights the importance of ecosystem-based fisheries management, importance of participatory fisheries management and discusses opportunities for the enhancement of participatory management towards achieving ecosystem-based fisheries management in the Nigerian coastal fisheries. The desire to move towards Ecosystem-Based Fisheries Management (EBFM) has been a common theme in fisheries policy and management discourse worldwide. Ecosystem Based Management (EBM) is a form of natural resource management that has grown consistently over the last two decades. It has emerged from the widespread feeling that traditional types of natural resource management have failed and that a new, more holistic way of understanding how ecosystems work is needed. Co-management systems have emerged over the years as a partnership arrangement using the capacities and interests of local resource users and complemented by the ability of government to provide enabling legislation, enforcement and conflict resolution mechanisms. The Nigerian coastal environment consists of rich and diverse ecosystems, natural resources and large human populations. Fishing is a major activity especially in the coastal areas where important resources such as fish, shellfish, such as shrimps, lobsters, crabs and molluscs are obtained. Successful implementation of Ecosystem approach to fisheries management will be highly beneficial to the economy and social well-being of the nation.*

**Keywords:** *Ecosystem-based management, Co-management, Stakeholders, Fisheries management, Coastal fisheries.*

## INTRODUCTION

Coastal communities especially in rural communities of Nigeria are highly dependent on natural resources for their livelihoods and well-being, making them highly vulnerable to the impacts of ecosystem degradation and natural resource depletion. This degradation is emphasized by population growth, urbanization, habitat degradation by spills and sand mining etc., fisheries depletion, public health and sanitation, lack of land use planning and coastal erosion.

The Ecosystem Approach to Fisheries (EAF) recommended by the Conference on Responsible Fisheries in the marine ecosystem held in Reykjavik in 2002 was adopted by the Food and Agriculture Organization (FAO) Committee on Fisheries in early 2003 (DOALOS, 2008). Ecosystem-Based Fishery Management (EBFM) is area-based, holistic, loosely cross-sectoral, focusing on habitats and ecosystem integrity as opposed to fisheries management that is sector-based, vertically integrated, focusing on target resource and people. Ecosystem-based

management is an environmental management approach that recognizes the full array of interactions within an ecosystem, including humans, rather than considering single issues, species, or ecosystem services in isolation.

The desire to move towards EBFM has been a common theme in fisheries policy and management discussions worldwide. Ecosystem based management is a form of natural resource management that has grown consistently over the last number of decades. It has emerged from the widespread feeling that traditional types of natural resource management have failed and that a new, more holistic way of understanding how ecosystems work is needed.

The basic concept of co-management recognizes that a natural resource can only be managed effectively with the co-operation and participation of the resource users in making laws and engaging in regulation work. Co-management or community based resource management is a "way of activating social processes at the community level in resource management"

(Pomeroy and Berkes, 1997). Co-management systems have emerged over the years as a partnership arrangement using the capacities and interests of local resource users and complemented by the ability of government to provide enabling legislation, enforcement and conflict resolution mechanisms. From the foregoing, the basic ingredients of co-management therefore, comprise the capacity and interests of the resource users and the capacity of government to provide legislative support for such action or intervention. "It takes two to tango" in a co-management arrangement (Pomeroy and Berkes, 1997). It is a game of two -largely between formal and informal institutions. Researchers have acknowledged that "failure of fisheries development policy can be attributed to a failure to recognise the range of stakeholders in fisheries, their characteristics and possible contributions to policy-making and implementation" . If co-management initiatives are to be successful while trying to achieve ecosystem based management of a nation's fisheries, basic issues of government legislation and policy to establish supportive legal rights and authority must be deliberately addressed.

The objectives of this paper are to; highlight the importance of ecosystem-based fisheries management; highlight the importance of stakeholder's participation in EAF and discuss opportunities for the enhancement of participatory management towards achieving ecosystem-based fisheries management in the Nigerian coastal fisheries.

### **Coastal Area of Nigeria**

There are thirty six states in Nigeria and the coastal zone sprawls nine, namely, Akwa-Ibom, Bayelsa, Cross River, Delta, Edo, Lagos, Ogun, Ondo and Rivers. The coastal states are estimated to account for 25% of the national population. The coastal areas stretch inland for a distance of about 15km in Lagos in the west to about 150km in the Niger Delta and about 25km east of the Niger Delta. The coastline stretches for about 853km comprising inshore waters, coastal lagoons, estuaries and mangrove especially in the Niger Delta.

The Nigerian coastal environment consists of rich and diverse ecosystems, natural resources, and large human populations. The Nigerian coastal and marine area is a narrow strip of land bordered by the gulf of Guinea of the Central Eastern Atlantic in the South. The zone lies within the Atlantic Ocean with its continental shelf, the

Exclusive Economic Zone and the coastal fresh water and brackish wet lands ramified by an atomising network of rivers and creeks. These water bodies are characterised by periodic tidal variations and ranges along water channels and the differences depend on the hydrological properties and slopes of the various channels (CEDA 1997). Fishing is a major activity especially in the coastal areas, important resources found in the areas are various species of fish, shellfish, such as shrimps, lobsters, crabs and molluscs.

In recent years the need for co-management in fisheries administration has been more widely recognized. Acknowledgement and the desirability for fisheries stakeholder groups to take part in the fisheries management process are evident in Nigeria through provision for a National Fisheries Advisory Council, but the fisheries resource-management process has been based on a centralized approach.

The Governments have formulated fisheries-development policy goals to maximize fish production at sustainable levels. These policies have always neglected existence of traditional fishing methods, probably because they are regarded as primitive and not able to meet demand for fish. The current situation is that there is no framework or structure for the co-management process in the country's fisheries management plan. No doubt, success in fisheries development and management would depend on the extent to which stakeholders have participated in the design and implementation of policies.

Equity in participation is therefore very weak in Nigeria's fisheries as many stakeholders are excluded from the various management and development processes. Ovie et al (2006) identified and characterized a host of stakeholders in the Nigerian inland fisheries (which is a typology of the coastal fisheries of Nigeria) and came with the following categories.

- a) The primary stakeholders who comprises- fishers, processors, buyers and sellers.
- b) The secondary stakeholders who comprises- transporters, retailers, ancillary actors and
- c) The Tertiary stakeholders comprising the Department of Fisheries(DoF), National Planning Commission(NPC), Micro-finance Institutions(MFI), NGOs and traditional institutions.

Table 1 illustrates the fisheries policy development processes and stakeholder participation. The table reveals low level of

participation (high level of exclusion) for many key stakeholders in the fisheries especially those in the primary and secondary stakeholder groups. Evidences indicate that the FDF is the dominant actor and most times monopolise the processes to the exclusion of the other groups. Primary and secondary stakeholders are largely excluded except for the traditional institutions that have ‘seized power’ and carved a very strong niche for themselves in the areas of implementation and enforcement of fisheries rules and regulations at the community levels. The fishers also perform similar roles as the through their Community-Based Organisation (CBOs) or professional organisations (PO). The fisheries research institutions such as NIFFR (National Institute for Freshwater Fisheries Research) and NIOMR (Nigerian Institute of Ocean and Marine Research) are sometimes invited to participate in planning and design by the Federal Department of Fisheries (FDF) which is the apex fisheries policy-making government agency in Nigeria. The institutes participate in extension services as part of their mandates.

The primary and secondary stakeholders that represent primary users and whose livelihoods depend directly on the fisheries resources are almost totally excluded. Also, the bulk of the tertiary stakeholders such as the National

planning, Commission (NPC), Micro-Finance Institutions (MFI) and very importantly the Traditional Institutions (TI) are excluded from participation. The reasons for inclusion, exclusion or marginalisation were, however, not due to gender, ethnicity, social or political considerations but by a share bureaucracy and long -time arrangement of government. The main actors are, therefore, restricted to staff of FDF but Federal Government Fisheries Research Institutions (eg. NIFFR NIOMR), one or two of Professors of fisheries from a University with a Fisheries Department and an NGO such as the Fisheries Society of Nigeria (FISON), are sometimes consulted to be part of the processes(Ovie and Raji, 2006).

It is in the interest of the resource and of all parties that there is establishment of clear, strong effort to develop co-management protocols that will give local stakeholders and their communities a genuine sense of proprietary interest and participation in setting management objectives, fishing plans and regulatory measures. For example in the Niger-delta area of Nigeria in particular the proactive energies of the youth could be turned to good use. Effective stewardship efforts by local communities in respect of fishing will have considerable impact on fisheries conservation.

**TABLE 1**

**Fisheries Policy Development Processes and Stakeholder Participation in Nigeria**

Stakeholders /Actors	Planning	Design	Implemen- Tation	Enforce- Ment	Evalua- Tion	Licensin g	Credit Deliver	Ext. Service
FDF	++	++	++	++	++	++	++	++
Fish. Inst.e.g. NIOMR	+	+	+ -	-	+ -	-	-	+
NGO e.g. FISON, NPC	+	+	-	-	+	-	-	+
MFI	-	-	-	-	-	-	+	-
Fishers and Fisher groups	-	-	+ -	+ -	-	-	+	-
Processors- Fish Traders	-	-	-	-	-	-	-	-
Commission Agents	-	-	-	-	-	-	-	-
Transporters	-	-	-	-	-	-	-	-
Ancillary actors	-	-	-	-	-	-	-	-

++ = V. High participation; + = High participation; +- = Weak participation; - = No participation  
Source: Adapted from Ovie et al ,2006

**Importance of ecosystem approach to fisheries management**

In the last two decades, all key international agreements adopted stress the need for the adoption of Ecosystem Approaches to Fisheries

(EAF) particularly the 1995 FAO Code of Conduct for Responsible Fisheries. In 2001, political commitment formally materialized at the Reykjavik conference as 57 participating countries issued the Declaration on Responsible

Fisheries in the Marine Ecosystem which included a declaration of their intention to work on incorporating ecosystem considerations into fisheries management. The FAO Technical Guidelines (Garcia *et al.*, 2003) on the ecosystem approach to fisheries define EAF as follows:

"An ecosystem approach to fisheries strives to balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries."

The statement above addresses the need to cater both for human as well as ecosystem well-being. This implies conservation of ecosystem structures, processes and interactions through sustainable use. Inevitably, this will require considering a range of frequently conflicting objectives where the needed consensus may not be readily attained without equitable distribution of benefits. In general, the tools and techniques of EAF remain the same as those used in traditional fisheries management, but they will need to be applied in a manner that addresses the wider interactions between fisheries and the whole ecosystem. For example, catch and effort quotas, or gear design and restrictions, will be based not just on sustainable use of the target resources, but on their impacts on and implications for the whole ecosystem.

### **Benefits of ecosystem-based fisheries management**

Establishing EBFM in the coastal fisheries of Nigeria will lead to healthier ecosystems which will invariably contribute improvement in fish stock abundance thereby increasing production of goods and services from aquatic ecosystems. There will be less habitat damage as there will be improved understanding of aquatic system as more attention will be given to fishing impacts on the environment. This will also reduce impact on threatened, endangered species and lower risk of stock or ecosystem collapse.

There will also be increase in benefits to fishers per fish caught as bigger fish from healthier environment will be caught. In the long term, catches will increase and increase contribution of fishery to the overall economy. In the long run there will be positive impacts on food supply in the country. EAF encourages better integration in management across fisheries, and with other aquatic uses. It brings about clear expression of management objectives leading to

more efficient achievement of societal benefits. There will be better balancing of multiple objectives (due to a broadening of management attention) and better balancing of multiple uses leading to increased net societal benefits. More robust management due to broadening from conventional single-species tools to more integrated management approaches and improved compliance due to more 'buy-in' management, through better participation.

Other benefits include; reduced fishing costs (as EAF results in reduction of unwanted by-catch); increased net economic returns (EAF reduces fishing effort toward maximum economic yield); higher-value fishery (if increased availability of food to top predators increases stock sizes); greater livelihood opportunities for fishers (e.g. in tourism, if charismatic species abundances increase through EAF).

The synergistic positive effect of coordinated EAF across fisheries and/or nations will reduce conflicts as EAF processes deals effectively with inter-fishery and multiple sectoral issues.

### **The importance of stakeholders' participation in EAF**

According to Garcia (2008), participation of stakeholders is used for their information and education, consultation and decision making. It has been generally agreed by several researchers that without community participation, socio-ecological problems and their solutions cannot be defined in human relevant ways. This tends to reduce the relevance and legitimacy of policy initiatives (Chopra *et al.*, 1989, Jentoft 2000, 2005, Hisschemoller *et al.*, 2001; Guimaraes and Funtowocz, 2003; Wilson and Delaney, 2005 and UNU-IAS, 2006). Participation is promoted on the basis that it can improve stakeholders' ownership of the EAF process; relevance and legitimacy of politically and socio-economically difficult decisions, moral force and political influence of the actors; consensus and mobilization; knowledge of the functioning of sector and expectations, problems formulation and identification of solutions

### **Opportunities in the Nigerian coastal fisheries**

Generally in fisheries science, stakeholders' participation, particularly in the scientific advisory process is limited. The participatory processes involve the use of instruments such as citizen panels, in depth groups, focus groups, actors' platforms, citizen juries, stakeholder analysis, participatory analysis, electronic public conferences and other modes of interaction

(Funtowicz, 2002, Engels, 2005), the difference between which are not always clear. In the fisheries arena, participation in decision making is usually agreed as necessary with degrees in stakeholders' decisional power depending on local culture and political system. Participation of stakeholders in the fishery advisory process takes many forms. These forms are opportunities to be enhanced in achieving ecosystem-based fisheries management in the Nigerian coastal fisheries. They include the following (adapted from Nauen and Hempel, 2011, Gracia, 2008);

- Promotion of integrated, interdisciplinary modes of pursuit of knowledge on aquatic ecosystems, their sustainability and balancing drivers, such as international trade, local employment, food security, wealth generation and distribution.
- Promotion of social awareness, including gender awareness and responsibility and connecting research to education, social and technological innovation.
- Promoting communication skills and novel ways of conducting research that connect social groups, citizen organizations with research process, thus increasing mutual understanding and chances research result uptake. Recent development of cheap communication technologies can enable voluntary collaboration of experts and non-experts in accumulating and validating information and has made global information within the reach of all.
- Promotion of policy dialogue among a wide range of actors to explore realistic transitions towards sustainable use and an enabling societal framework for science and general knowledge-intensive and locally contextualized approaches, including strengthening the capacity to take action.
- Promotion of transparency and accountability will be enhanced as all stakeholders were involved in decision making. These also ensure that actions and activities are implemented in a timely fashion.
- Appropriate and effective monitoring, control and surveillance regime will be promoted.
- Effective dispute resolution mechanisms will evolve naturally as stakeholders will tend to understand issues and action of other stakeholders.
- Contribution of raw data on the fishery without which fishery science would have probably never developed. Nigerian fisheries

are probably by far the economic sector most hard-pressed for operational data, improvement are necessary and possible by involving stakeholders to willing contribute and not by compulsion.

- Contribution of informal knowledge on the fishery system, the ecosystem and the resources obtained by fishers through personal experience, intra-generational exchange of information, transmission by elders; etc. The aim of collecting such knowledge is the co-production of better strategic and operational knowledge that can be validated and integrated in 'best scientific evidence'. The difficulties are in: (1) obtaining, usually for free, knowledge which, most often, is part of the fishers' assets; and (ii) separating beliefs from facts and facts from empirical interpretation. In rapidly changing situations, e.g. in reaction to economic or climatic evolution, informal knowledge might be timely responses.
- Contribution of perceptions, values and expectations which may appear as more problematic to the hard scientist. They are evidently relevant in the decision making process in helping to identify the multiple interests (and objectives), perspectives and expectations to be accounted for in the decisions.
- Participation in modeling and scenario-building: through this, as well as through targeted interaction, stakeholders can contribute to the process of knowledge representation, issue-framing. Option identification and scenario building with the view to create common grounds for decisions, ex ante.
- Quality assurance: The concept, developed by social scientists is that of a process to ensure that the knowledge used to take decisions affecting livelihood in the coastal communities is both scientifically sound (through disciplinary peer review) understood and accepted, increasing decisions legitimacy and people's trust.

## **CONCLUSION**

Evidence from various researches indicate that the concept of EAF and participatory planning, design and implementation of fisheries management systems is yet to be captured by government line ministries and Departments that assume primary responsibilities for developing and managing the Nigerian coastal fisheries.

EAF is as much about people and policy as it is about ecosystems. It is therefore essential that, from the outset planning for EAF is conducted in a consultative and transparent manner that allows interaction between stakeholders, managers and those providing scientific and other information. Involvement of stakeholders is very essential if EAF management plans are to be realistic, include the best available information and be likely to enjoy widespread support and credibility.

As the EAF recognizes the principles of sustainability and equity and through co-management/participatory management equity and social justice is sought. Equity and social justice is achieved through empowerment and active participation in planning and implementation of co-management.

The EAF is not a completely new start; it is a way of integrating what is being done under international and national obligations and commitment coherently and comprehensively.

Effective implementation of EAF will result in benefits, which may be ecological, economic, social and for it EAF to be sustained, it is essential that in planning and implementation phases, decision makers and all stakeholders are well aware of the benefits and costs of the management action proposed.

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