

Towards securing community and individual user rights and tenure: the case of two estuarine resources in Ghana

Kofi Agbogah¹, Antoine Rougier², Stephen Kankam¹ Balertey Gormey¹, Victoria Mundy², Cephas Asare¹, Justice Nana Inkoom¹, Justice Camillus Mensah¹, Samuel Richard Bogobley¹, Emmanuel Obeng Dekyi¹

¹Hen Mpoano, Box AX 296, Takoradi, Ghana. Email: kagbogah@henmpoano.org.

²Environmental Justice Foundation, Box DL148, Cape Coast, Ghana. Email: antoine.rougier@ejfoundation.org

Abstract

Most major rivers in Ghana empty into the Atlantic Ocean through estuaries that harbour biodiversity ranging from mangroves, fish, clams and other wetland resources. These resources provide livelihoods for riparian communities around the estuaries. Estuarine resource use by closed communities in Ghana presents a great opportunity to understand traditional tenure and user rights in community-based management or co-management arrangements. Ghana has practised community-based natural resource management in many forms in the forestry and fisheries sectors. While the forestry sector has a policy on community resource management areas (CREMA), the fisheries sector is yet to adopt a new fisheries co-management policy. Such policies seek to fully involve resource users in the sustainable management of the resources, combining traditional management with management by government agencies. In the meantime, civil society groups under various funding support mechanisms are accelerating the development of strong co-management institutions in some important estuaries, to demonstrate how community-based management can best be implemented while securing the rights and tenure of the resource users. This paper describes implementation approaches in securing community and individual tenure and user rights in two estuaries (Ankobra and Volta estuaries) in Ghana.

1. INTRODUCTION

Ghana is one of the biggest fishing nations in Africa, with over ten percent of its population directly or indirectly depending on fishing for livelihoods. Ghana's fishery waters comprise marine and inland and brackish waters. The marine provided the bulk of the fishery and dominated by artisanal fishers who land about 70 percent of the marine catch. The inland waters comprising river, lakes, lagoons and estuaries also support the fisheries and play critical socio-economic roles. The estuarine ecosystems harbour a wide range of biodiversity that provides livelihood opportunities for riparian communities.

This paper focuses on the fisheries and other natural resources governance in two important river estuaries – Ankobra and Volta river estuaries. It examines customary tenure and user rights arrangements, multiple-use and users, social aspects of tenure and user rights, as well as issues of gender and youth. It discusses approaches to securing *community* (Ankobra) and *individual* (Volta) tenure and user rights. The resources of the Ankobra Estuary include mangroves and important fish species – Nile tilapia (*Oreochromis niloticus*), bagrid catfish (*Chrysichthys nigrodigitatus*) and cassava croaker (*Pseudotolithus elongates*), while the Volta estuary resource use revolves around the Volta clam (*Galatea paradoxa*).

1.1 Description of the Estuaries

Ankobra Estuary: The Ankobra river is within the coordinates 4°52'N/5°00'N and 2°10'W/ 2°16'W. It opens into the Atlantic Ocean west of Cape Three Points (Figure 1). The estuary is located within two local

government jurisdictions (Ellembelle and Nzema East Districts), and the management area covers approximately 8 460 km². The estuary has rich biodiversity characterized by terrestrial forests, swamp, bamboo and mangroves forests. The fauna composition includes species of global conservation interest including the West Africa Dwarf crocodile (*Osteolaemus tetraspis*) and the cassava croaker (*Pseudolithus elongates*). Among the 27 estuarine fish species identified, the most important to the fishers are the cassava croaker, the Nile tilapia (*Oreochromis niloticus*) and the bagrid catfish (*Chrysichthys nigrodigitatus*). Together with mangroves, these resources support the food and livelihood security of riparian communities. The mangroves are harvested for fuelwood and for other domestic purposes such as building construction.

Fishing is done all year round in the estuary but peaks in the rainy season when fish is relatively abundant. Fish harvesting is done by men using small canoes with hook and line, traps and set nets. Besides fishing, food and cash crops are farmed, including rubber and oil palm.

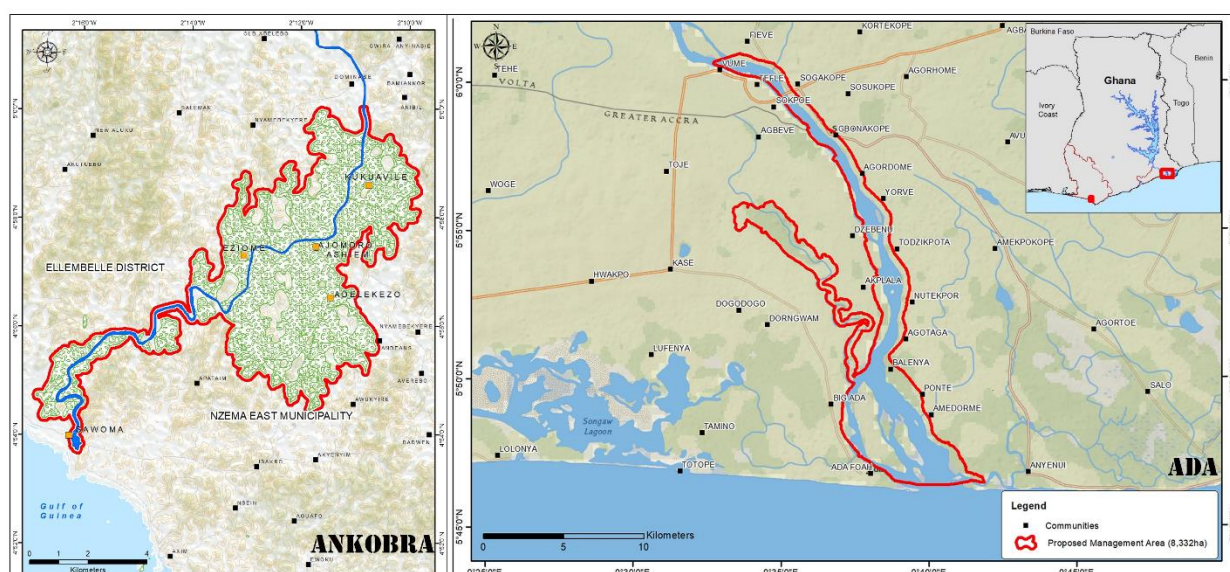


Figure 1. Map description of the Ankobra (left) and Volta estuaries (right) in Ghana.

Source: Hen Mpoano.

The Volta Estuary: The estuary lies between 0°35'E / 0°45'E and 5°45'N and 6°00'N. The estuary is linked to two important wetlands/lagoons; the Keta lagoon to the east and the Songhor lagoon to the west. These lagoons and wetlands are rich in biodiversity. Both lagoons are used for solar salt production. Upstream of the estuary are two multipurpose dams - the Akosombo and Kpong, primarily for generating hydropower though they are associated with a vibrant fishery and aquaculture. The creation of the dams has resulted in a constant discharge or flow regime of water to the estuary, leading to a very small salinity gradient as water discharges into the Atlantic Ocean. The brackish waters of the estuary support a vibrant clam fishery. The Volta estuary has many competing uses including navigation/transportation, recreation, tourism, real estates, fishing, tilapia aquaculture and clam mining/culture.

1.2 Economic contribution and social implications of the fishing activity

Ankobra Estuary: Several technical assessments have shown that the fishery has gone through significant changes over the past decades with regard to fishing effort, size of the catch, fuelwood for fish smoking and price of fish. In the last decade, fish has become less abundant, and fisher numbers have decreased.

In some communities, the canoes are only used for harvesting and transporting mangroves or for the transport of farm produce. The decline in the catch is perceived to be a result of the illegal gold mining activities upstream and the use of undersize mesh nets in fishing. Historically, fish was only harvested for subsistence. Currently, fishermen sell the fish as there is increasing demand for fish protein. The fish are either sold fresh or processed (smoked, fried, salted or sun-dried). Women dominate the post-harvest and fish is sold on the local markets.

Mangroves are also heavily harvested; they are used for domestic fuelwood, for fish processing, or sold commercially. This has led to a degradation of the mangrove forest, with observed implications for fish production. Three fishes, the Nile tilapia, bagrid catfish and cassava croaker are the priority fish for the riparian communities.

The Volta clam is a sedentary bivalve buried in the substratum of the river. Harvesting requires that clam miners dive three to five meters to pick them. Traditionally, a clam picker was allowed to pick one clam at a time and miners may not spend more than two minutes underwater. Currently, the miners have devised a system using air compressors, tubes and facemasks, to allow them to stay underwater longer and to pick as many clams as possible. They spend 15 to 30 minutes underwater before surfacing and delivering the clams into a boat. This system has the potential of over-harvesting. However, clams picked may be of various sizes and maturity and immature clams are returned to the water. To ensure clams returned to the water are not lost by the individual picker, clam miners started to own clam farms by cultivating the clams underwater. The boundaries of farms are marked with long bamboo poles that poke out of the water surface. The harvesters easily identify individual farms and pickers, by rule, are not allowed to access another person's farm. This practice presents a new dimension to underwater tenure and user rights that are yet to be adequately documented.

Both men and women dive for clams, but farming clams is a male-dominated business. The women dominate the downstream – processing and marketing of clam meat and shells. The clamshells have better market value than the meat.



Figure 2. The Volta Clam *Galatea paradoxa* (left) and processing of the meat by women (right).

Source: Hen Mpoano.

2. MANAGEMENT OF THE FISHERY AND RIGHTS-BASED APPROACH

A rights-based approach means that individuals and communities know their rights, are fully supported to participate in the development of practices that affect their lives and are able to claim their rights where necessary. This means that community or individual rights to the fisheries are assured and such communities or individuals are part of the rule set in the management of resources. This paper examines tenure and rights-based approaches in the two estuaries. While the Ankobra estuarine focuses on community rights, the Volta estuary clam fisheries consider individual rights to the resources.

2.1 Management of the Fishery

Ankobra Estuary: There are five riparian communities around the Ankobra estuary. Fishing is open access and is not restricted by boundaries. Nonetheless, each community has preferred fishing grounds. Each riparian community historically has restricted fishing activities to identifiable tributaries, and the communities are perceived to possess de-facto user rights to those fishing grounds. The fishing grounds may overlap in some cases, but conflicts are rare, and when they do occur, they are addressed through traditional norms or rules.

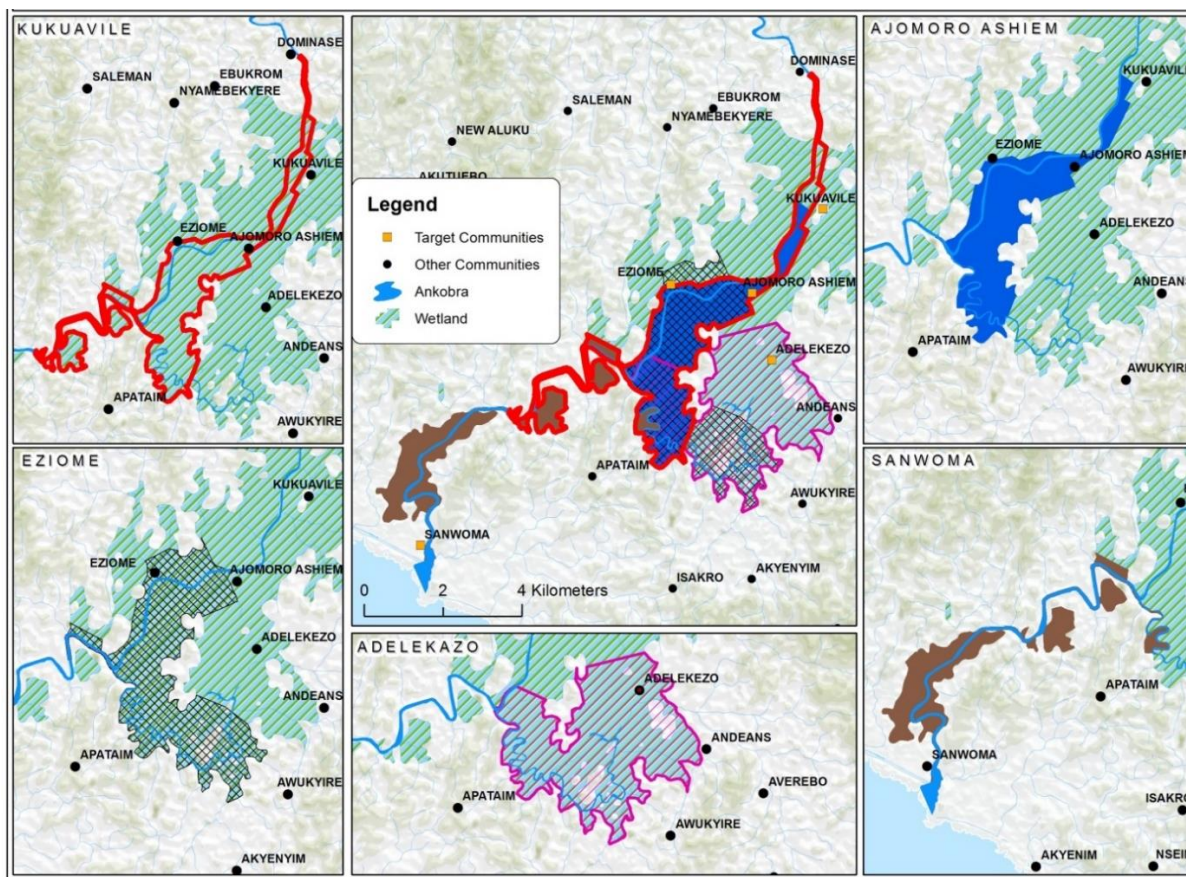


Figure 3. Fishing grounds of estuarine communities and combined overlay showing overlapping fishing areas and exclusive fishing areas.

Source: Hen Mpoano.

Although some government agencies have responsibility for wetland and fisheries resources, community chiefs who are custodians of the norms predominantly conduct traditional management. In recent times, the government agencies (Fisheries Commission, Wildlife Division and the District Assemblies) have shown interest in the management as a result of the involvement of civil society organizations working with the communities to establish co-management arrangements that involved the government agencies. The awareness raised also rekindled the management interest of the traditional authorities.

Volta Estuary: Clam mining or harvesting in the Volta estuary is a vibrant fishery supporting the livelihoods of many youths, older persons and women. The fishery is open access but self or group regulated and predicated on traditional religious taboos that are believed to be enforced by local deities. There is no active involvement of government institutions in resource management at the estuary, while the traditional authority occasionally steps in to resolve conflicts. There are competing uses of the estuarine resource. Resource users observe non-fishing days, closed seasons or seasonal mining or harvesting of clams. Tuesdays are set aside by local tradition as no harvest days but can be used to tend cultured farms. No person is allowed to mine clams from another person's farm. A three-month closed season is observed from December to March when clams are reproducing. The rules in the clam fishery are self/user regulated.



Figure 4. Eighty-year-old woman dives for clams for her livelihood.

Source: Hen Mpoano.

Mining or harvesting clams is not restricted to the community members, as individuals from other areas can join in the harvesting in so far as they are able to dive. Matured clams are harvested by women processors while immature or undersized clams are replanted in individual clam farms in the substratum underwater, where they are tended until mature. Clam harvesters travel between 5-10 kilometres (km) to upstream areas to mine clams for sale or for culture. During periods of high salinity at the lower reaches of the estuary, some farmers move their clams to upstream farms with less salinity. The migration of the

harvesters to farm in other 'community waters' is sometimes a source of conflict. During the closed season or non-fishing days, individuals can visit and tend their farms, but the sale of land clams is prohibited. Ownership of the underwater farm is conferred to individuals, but only recognized peers.

2.2 Brief history rights-based approaches used in the fishery

In the Ankobra estuary, community resource use patterns are very well known, e.g. community mangrove areas or fishing grounds. In the last decades, resource extraction has been indiscriminate and lacked regard for sustainability. This has led to the degradation of mangrove forests and dwindling fish catches, as well as the erosion of some traditional community rules that granted rights to users. This is partly because the rules are not codified and difficult to enforce - by either the traditional authority, the local government or law enforcement agencies.

The Volta estuary clam fisheries are self-regulated by norms and taboos that give rights to resource users. The rules are uncoded but largely obeyed, with occasional violations and situations of conflict. Violations and conflicts are reported either to law enforcement or to the traditional authority for prosecution or mediation. Since the laws are only conventional or traditional, individual rights are not clearly defined or absolute, while conflict resolution or enforcement has not been satisfactory. The traditional activity of clam business is also challenged by the increasing tourism activities, including water sports and the need for more waterfront areas for real estate and hospitality facilities. Landing sites, which serve as market locations for the miners and women processors, are at risk of being lost to emerging developments.

2.3 Rights-based approach: allocation and characteristics

Civil society has engaged the Ankobra riparian communities in developing approaches towards securing user rights through the mapping of the community resources and identification of critical mangrove areas to be restored, as well as the setting aside of closed areas to aid the recovery of fish and other resources. Additionally, management groups have been formed that comprise representatives from all the riparian communities, to engage in discussions with the traditional authority and the government agencies on approaches that would lead to the devolution of authority and rights to communal resource use.

The communities have been assisted in forming recognized associations. They are registered with the local government authorities and have developed a management plan that sets the mechanisms for the management of the resource. There are also bylaws that provide for sanctions. The civil society-led intervention, supported by the traditional authorities, local and other government agencies have served as a blueprint for implementing a broader co-management framework to improve food security and livelihood benefits for the participating estuarine communities and to demonstrate how the granting of user rights could benefit natural resources management and sustainability of the resources.

Quick win actions that yielded short-term gains increased the commitment of resource users in implementing actions with long-term results. It was also proven that respecting existing rules and norms in traditional governance, codifying traditional norms into district bylaws, and developing a management plan were valuable in securing the user rights of community resource users.

As part of early actions, degraded mangrove areas were restored by the mangrove harvesters (men and women). While they are able to link mangrove forests to fish production, the fish and mangroves in certain tributaries and sheltered areas were protected by making such areas off-limits to the resource users. Violations attract sanctions by community leaders or traditional authority. The communities agreed closed season and closed areas within the estuary allow for the rejuvenation the fishery and the protection of the mangrove and other resources. When the management plans and bylaws are passed, a certificate of

devolution granting exclusive user right to the resource users of the riparian communities will be issued to the association.



Figure 5. Certificates of incorporation of Ankobra river estuary resource users and their Management Plan.

Source: Hen Mpoano.

Volta Estuary: Underwater farming of clams presents an interesting situation for management, user and tenure rights. Since 2017, a European Union-funded collaboration between the Environmental Justice Foundation and Hen Mpoano has been working with the communities and clam harvesters at the Volta estuary to secure individual rights and tenure of clam miners/farmers. As an innovation, the project was supported to pilot the FAO Open Tenure tools for mapping underwater clam farms. A step-by-step approach was used to analyze current traditional tenure rights arrangements in the clam fishery, spatial mapping of main clam fishing areas, and development and distribution of maps showing competing uses. The process identified key stakeholders and potential for fisher associations to develop a co-management programme, with options for the administration of user rights, tenure needs and sustainability. Documentation and dissemination of best practices and lessons learned were discussed with the traditional authority and the local government, to inform the devolution for securing user rights.

The Open Tenure tool uses mobile application for Android and iOS devices and allows citizen and community recording of tenure rights. It also records claimant details, capture boundary information, and collects scanned documents and photos to support a claim. Although this has been used on land, the Volta estuary example is the first in mapping underwater farms. See Figures 6 and 7.

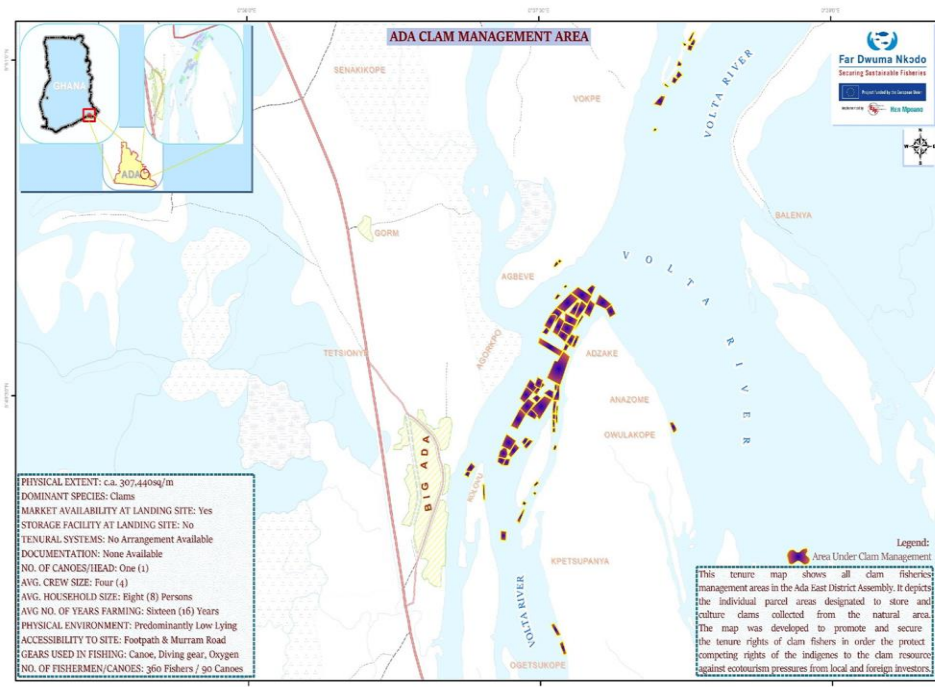


Figure 6. An aggregate of clam farms in a channel in the Volta delta.

Source: Hen Mpoano.

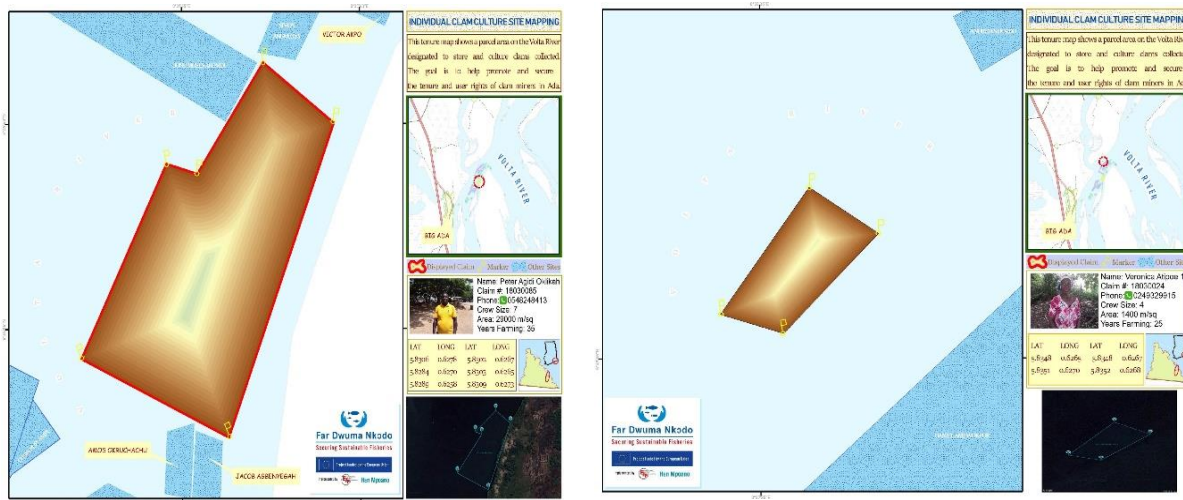


Figure 7. Individual farms with claimant attributes.

Source: Hen Mpoano.

3. CONTRIBUTION OF THE RIGHTS-BASED APPROACH TO ACHIEVING SUSTAINABILITY

The two examples described demonstrating that community, as well as individual rights, can be secured when individuals and community resource users are involved in designing and discussing issues around their rights to resource use and management. Top-down approaches to resource management have not been effective. More often than not, they alienate resource users from decision making on issues that affect their livelihoods and draws a wedge between them and the authorities. Once they see the resources as their own and have the authority and rights to manage them, they see the resources as theirs and manage them for posterity.

3.1 Sustainable use of the resource

Community-based natural or common-pool resource management has previously been controlled by traditional rules, norms and sanctions that ensure the resources are well managed and protected. With central authority or government annexing those rights, resources users and their traditional authorities (custodians of the resources) have felt alienated by the consideration that these rights belong to the government. This has led to disinterest, sustainable management, and wanton exploitation. Realizing this, central government agencies are now beginning to devolve such authority back to communities for sustainable exploitation through policies such as Community Resource Management Areas (CREMA) or Community Fisheries Management (Co-management). These policies confer expanded rights to resource users. In the Ankobra estuary, for example. Mangrove harvesters have now become an association of mangrove restorers, while fishers have been able to set aside closed fishing areas and seasons to rebuild fish stocks without the involvement of government.

3.2 Economic viability

Good management of community natural resources ensures the optimal provision of economic opportunities for those whose livelihoods depend upon such resources. For example, the sale of large-sized fish or clams is more profitable than immature ones. In the Ankobra estuary, the communities have agreed on management rules such as minimum mesh size for fish harvest. This means only large-sized fish are harvested, while the closed areas and seasons ensure that fish are able to spawn for the recruitment

of next cohorts. Meanwhile, mangrove harvesters have been trained in sustainable mangrove harvesting, which ensures that stumps are able to regenerate.

Within Volta, farming clams is a growing business. Small-size clams that are mined are planted in an individual's farm and may take two years or more to reach maturity. Based on local ecological knowledge, the closed season period allows matured clams to release their spats for continuous repopulation of the estuary. This also makes clam farming a source of continuous livelihood for the youth.

3.3 Social equality

Community associations formed around the resources are gendered, and representation is by self-selection by resource user groups. In the Ankobra, the men focus on the fisheries while women have shown greater interest in mangrove management, restoration and harvesting. The riparian communities now consider the resources as collective private properties and ensure that the rules and sanctions apply to all resource users. Within the Volta estuary, men lead in the harvesting of clams while women specialize in processing and trading.

Mobilizing the resource users to discuss the sustainable management of the resource has rekindled the interest of the traditional authority. For example, there is the risk of the traditional authority selling off the clam landing areas and marketing to real estate or hospitality industry developers. Mapping and securing these sites for the women through negotiation with the traditional authority is insurance for clam farmers and the women. Underwater rights for clam farmers also reinforce the traditional rule: no tampering with another person's farm. The use of technology to demarcate the underwater farms and the provision of titles to owners will ensure the rights and tenure of the clam farmers. It is also expected to boost clam culture in the estuary.

4. MAIN CHALLENGES AND WAY FORWARD

Collaborative management or co-management involving communities, individuals and authorities is the paradigm shift in fisheries and natural resources management. If effectively developed, it leads to a sense of ownership and responsibility towards natural resources by resource users. Government or any higher authority always hesitates or is afraid to cede such powers or rights to individuals in a community or communities or user associations in natural resources governance. Ostrom suggests that if some eight cardinal principles are followed in the management of common-pool resources, it is possible to secure sustainability.

4.1 Challenges for the fishery

However small the scale of the co-management, it involves time and financial commitment. Quick wins that yield short-term gains are important in attaining the commitment of resource users to implement actions with long-term gains. In order to implement community-based resource management effectively, it is important to respect the existing rules and norms of participating communities. For example, rules and sanctions may have to be built on top of an existing traditional natural resource governance system, incorporating local knowledge of resource users in resource management.

4.2 Improving fishery sustainability in the future

Securing user rights and tenure in fisheries and natural resource governance can be achieved by involving a wide range of stakeholders, governments, communities, user associations, individuals, private sector interests and traditional authorities. These actors should come together and understand the issues involved in the governance of natural resources. The process requires transparency, communication,

information sharing, sound policies, science for decision-making and, above all, commitment and sustainable and innovative financing.

CONCLUSION

The two examples discussed have demonstrated that the understanding and involvement of resource users in decisions that affect their livelihoods provides an opportunity for sustainable management of natural resources. Tenure, user rights and devolution of authority to resource users in natural resource management (such as fisheries or forests) can be a useful approach in securing community or individual user rights. Technology can play an important role in the visualization of resource extent for management. Once ownership is conferred on them, resource users are able to manage common-pool resources better. They will see resources as belonging to them, while the community rules that have been endorsed by the government may be viewed as more legitimate, commanding more respect.

ACKNOWLEDGEMENTS

Ada Traditional Council, and Ada Clam Harvesters and Processors Associations, The Nzema Manle and Communities within the Ankobra estuary, local government authorities (Ada East, Nzema East, and Ellebelle Districts). Funding support was from USAID, EU, German Ministry of Economic Development, UN Food and Agriculture Organization and Business Sector Advocacy Challenge (BUSAC) Fund.