

## **Claim and reality of community-based water management at the example of rural fisheries in Ghana**

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## **Claim and reality of community-based water management at the example of rural fisheries in Ghana**

### **Abstract**

To counteract low water productivity in many developing countries, international donors promote community-based management. This practice was meant to replace top-down governmental approaches. In Ghana, the water sector has come under review in the 1990s. Institutions have been decentralized, and management tasks transferred to communities, associations, and private-sector entities.

While assigning ownership and responsibilities to communities is feasible for rural water management, the paper shows, that policy makers and practitioners tend to ignore the historical background of existing structures and antagonisms of traditional and present management systems. Implementation strategies are thus prone to failure.

The paper analyses the administrative history of water governance in Ghana, and related problems to date. The case study on fisheries management has its setting in the Upper East Region of Ghana, where people use reservoirs to improve their livelihoods through irrigation, cattle watering, and fisheries. In the course of rehabilitation projects, rights and responsibilities of management have been handed over to water user associations and village committees. Clashing traditional, governmental, and participatory management strategies overtax communities to cope with responsibilities. This leads to distribution conflicts and overexploitation. The paper concludes with present incentives for local communities to improve the management of their reservoirs.

### **Keywords**

Historic coherences, water conflicts, Ghana, participation

### **1. INTRODUCTION**

Participatory decision-making and community-based management, practices that are theoretically well established in the western world, comprise some basic components associated with sustainable development. Very often, those, who are enjoying the benefits of public participation, do not take into consideration that it took centuries to reach this point. While there is little doubt that development efforts should encourage participation and decision-making from below, it is not possible to do so effectively without taking into consideration the complex socio-political and socio-cultural histories.

Looking at Ghana and northern Ghana in particular, we can find water governance structures that are characterized by an antagonism of traditional and present management systems. On the one hand, traditional, patriarchic practices, which are based on indigenous belief systems, still dominate water governance at the local level. On the other hand, international guidelines and national programs promote new policies, which are often contradicting the traditionally grown but insufficient water management structures. Twenty years ago, the first decentralization measures were taken and participatory decision making in the management of natural resources was promoted. In

this process, the rural water sector came under review and legal as well as administrative changes have been realized to enhance the participation of local stakeholders and their inclusion in self-reliant resources governance. Unfortunately, in many cases, water productivity is still very low, and the level of inefficiency in the rural water sector is still high.

Failures of the new water governance strategies have many reasons, which can only be understood when looking at historical contexts. History connects water related issues to political contexts and social conditions and the historical perspective needs to be integrated in the establishment of legal arrangement or reform processes. This holds especially true for the analysis of water related conflicts as demonstrated in the Transboundary Freshwater Dispute Database<sup>1</sup> of the Oregon State University. Thus, the analysis of basin wide water management structures and practices has to look at the social and political implications, the institutional set up, legal arrangements, conflicts, as part of historical processes of the region. A closer look into history and the emergence of current governance structures, which are interrelated with other spheres of society, may also help to explain why certain development approaches are accepted while others are not. Considering that history has a tendency to repeat itself, and that water is a highly political and politicised tool (Turton, 2005), it is of major importance to set it into the political and socio-cultural context. For development practitioners it is therefore indispensable to take that historical view following Cooke (2004) who states: “There is also a broader and equally important concern that we need to take a historical perspective to be able to put the role and function of participatory development into perspective and context”.

The first part of this paper contains the methodological approach and theoretical considerations to the study. Afterwards the Upper East Region (UER) of Ghana is introduced. In the next section, we examine some of the obstacles for community based water management by looking at the legal and administrative history of water governance in Ghana, as well as related problems to date. Subsequently we focus on a case study, which examines local fisheries management. In the concluding chapter clashing customary, governmental and participatory management strategies are discussed and possible ways of integrating them into a successful natural resources governance system are identified.

## **2. METHODOLOGICAL APPROACH TO THE STUDY AND THEORETICAL CONSIDERATIONS**

The underlying study of this paper is part of the GLOWA Volta research project (2000-2009), an interdisciplinary and international oriented research project funded by the German Federal Ministry of Education and Research and the state North Rhine Westphalia. Based on hydrological, meteorological, socio-economic, and socio-anthropological studies the overall project objective is to design and implement a scientifically sound decision support system (DSS) for the sustainable allocation and management of water resources in the West-African Volta River Basin under the condition of global climate change.<sup>2</sup> The UER is one of the focus areas as its population is highly vulnerable to environmental change.

The research agenda of the presented study was driven by an interest in the impact of historical derived water governance structures for today’s rural water sector. Likewise, problems related to participatory approaches and community based water management strategies are put into focus. Whereas the historical part of the study is largely based on a review of relevant literature on the topic, the case study on rural fisheries is based on

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<sup>1</sup> For more information, see <http://www.transboundarywaters.orst.edu/database/>

<sup>2</sup> For more information, see project homepage [www.glowa-volta.de](http://www.glowa-volta.de)

empirical data collected between February and August 2007. The investigation focused on three reservoirs, associated user communities and nearby markets in the UER. The reservoirs were selected based on an exploratory survey accomplished in 2006 with the goal to find out to what extent small reservoirs are used for fisheries (Hauck, 2006). A main selection criterion for the three reservoirs was to find a very active fishing community as well as attempts to form a fisherman group or association for participatory management. Kajelo reservoir and the adjacent community in the Kassena-Nankana district fulfil this criterion. A second reservoir with these characteristics is located within the Binduri community in Bawku municipality. A third reservoir is close to the border of Ghana and Burkina Faso. It is shared by two communities, Dasabligo community in Telensi-Nabdum and Dusabligo in Bongo. In contrast to the other two reservoirs, the Department of Fisheries and later the Ministry of Fisheries never got involved here. Nevertheless the communities have very active fishermen, who tried to form a group without encouragement from outside, which made the community very interesting for further studies.

Expert interviews with representatives of water authorities and organizations from both international to local levels provide data particularly on current water governance structures, policies, statutory and customary laws. Furthermore, the roles of the main actors as well as their perception of water reform processes were subject to investigations. A large number of official and semi-official documents were included in the analysis, to complement the information derived from the interviews. The long-term fieldwork combined mainly semi-structured and open-ended interviews with participant observations and document reviews during repetitive visits to four communities in the UER. Several other participatory appraisal tools (PRA), such as timelines and Net-Maps (Schiffer, 2007) complemented the information about the recent and ancient history of natural resources governance in general and fisheries management in small reservoirs in particular. Although PRA tools are known for their usefulness to get a first insight of the socio-cultural and –political conditions of the study area, they also have their limitations. For example, studies often rely on purposive and snowball sampling. Many scientists and practitioners argue that these insights are not representative for a large population and observations might only show a particular point of view. Furthermore, it is often a challenge to capture comprehensive information when larger groups come together.

The mentioned drawbacks of participatory research methods were also experienced in the context of the study. Opinion leaders usually voice their perception of the situation. They often belong to the wealthier segment of a population and poorer fellows may not want to take the risk to upset them by articulating their own, often contradicting, opinions. This so-called elite bias can often be found in Ghana and extends to exclude opinions of younger people, who are not allowed to contradict elders. Another delicate issue for research in the UER is the communities’ familiarity with PRA approaches, thanks to a large number of NGOs working in the region, and a long history of development projects making use of the tools. Many people tend to think of PRA methods as part of aid interventions and thus respond in a politically correct way to increase their chances of being selected for development projects. Another difficulty is the idea of sharing ideas between participants of the discussion. Rather than have information flow in unidirectional manner toward the researcher, the researcher should also share his or her knowledge about his area of expertise (regional, institutional, environmental etc.). This must be done with great care in order to not change the situation, which is focus of the investigation. In addition, there is risk of information being biased by the researcher’s personal opinion. In order to avoid these and other pitfalls, the information captured was triangulated as much as possible and analysed carefully. Small workshops were organized for fishermen and fishmongers at the end of the research term, where the researcher fed back preliminary results and ideas for improvement.

The theoretical debate on participatory approaches in development aid has opened up interesting aspects about the limits and drawbacks of this widespread practice. One line

of arguments points out, that participatory approaches linked to institutional reforms do not acknowledge the fact that many decisions are negotiated and made outside formal organizations (Cleaver, 2001), during daily interactions which dominate social exchange and political decisions. Schouten und Moriarty (2003), who looked at participatory practices in drinking water supply, identify the complex mix of social, technical, and financial realities as one main reason for water system failure. According to the authors, many water development projects tend to homogenize the target group by pretending that conditions are the same everywhere. Consequently, the same development strategies are imposed on all project communities. With regard to community based water management strategies discussed in this article, the authors therefore suggest that: "if communities are to be acknowledged as the managers of water, then we have to know who these communities are, what skills they have, and how they should be involved and supported".

The crucial questions what is understood by the term 'community', who is included or excluded in decision making processes at local level also remains central as well as the question within which local arena decisions are taken (e.g. in public or private, formal organizations, traditional structures). Lund (2003), for example criticizes, that there is neither a common understanding of the terminology "population/ local people" nor a precise idea of the model of participatory collaboration or cooperation. Instead, a variety of definitions, models, and context-dependending meanings as well as an incoherent terminology are applied. It seems that participation has turned out to be an indispensable but not reflected ingredient for development projects. Participation can be understood as a political strategy to empower underprivileged groups. However, power issues, the redistribution of property rights, transfer of authority as well as the reallocation of natural and social resources may also lead to a reassertion of powerful interest groups and their occupation of spaces offered by participatory development schemes. Participatory approaches may also strengthen existing unequal power relations within a community and may lead to resource capture by powerful old or new elites as Kothari (2001) illustrates in her article about power, knowledge, and social control.

The theoretical considerations on participatory approaches in general and the mentioned difficulties with participatory research methods in particular, emphasize once more, how historical processes and the exercise of power are shaping current practices, decisions, arrangements and conflicts in water governance. After a brief description of the focus region and the main social and cultural characteristics, we have a close look at historical implications for water governance in Ghana.

### **3. BACKGROUND INFORMATION ABOUT THE UPPER EAST REGION IN GHANA**

The Upper East Region occupies the northeastern part of Ghana, sharing borders with Togo and Burkina Faso. The region was and remains one of the most vulnerable and poor areas in Ghana. It covers 8800 km<sup>2</sup> with a population around 1.000.000 inhabitants and a population growth of 3%. The area is rather densely populated compared to other regions in Ghana, even though migration to the resource rich and industrialized south seems to regulate the comparable high birth rates in the region (Bacho and Bonye, 2006; Laube, 2006). Although there is some export-oriented agriculture, such as peanut farming, the overwhelmingly rural population lives on rain-fed subsistence agriculture, livestock rearing, and to some extent, fisheries and dry season gardening. This is possible due to more than 200 multipurpose reservoirs, which were built over the past five decades to store rainwater.

The region is part of the White Volta basin, a river basin that is part of the semi-arid West African savannah zone, characterized by environmental changes and unreliable rainfall patterns (Rodgers et al., 2007). During the rainy season, which typically starts in May and lasts until October, water is abundant. The precipitation naturally feeds a large number of streams, creeks, shallow ditches and floodplains, which dry up during the

prolonged dry season. Evaporation rates are high and soon after the end of the rainy season, the population in the north begins to suffer from water scarcity. The lack of water makes the dry season a critical time, since the majority of the livelihood strategies promoted are based on agriculture and in spite of the reservoirs food shortages occur frequently.

Due to historical patterns of in-migration during hundreds of years, the region is home to a number of ethnic groups organized in different social systems, mainly segmented social groups and/or centralized political structures (Crook, 2005; Laube, 2006). This complex situation is sharpened by conflicts around scarce natural resources, creating disputes and warfare between families, clans, and different kinds of invaders (Massing, 1994; Lund, 2003; Bacho and Bonye, 2006; Kusimi et al., 2006; Laube, 2006). Today conflicts over land rights are in fact widespread around dams, since the land for the reservoirs and the irrigation schemes belong either to family clans or to the communities.

#### **4. HISTORY OF RURAL WATER GOVERNANCE IN NORTH GHANA – FROM CUSTOMARY LAW TO WATER USER ASSOCIATIONS**

In order to better understand the ambiguity of local natural resources regimes it is necessary to briefly describe how customary laws, colonial legacy, and reforms after the formation of the nation state have influenced current land and water governance in northern Ghana. The advent of different water governance structures also portrays how public participation and administrative involvement of the population in the study area has evolved in the face of historical developments and why traditional governance structures could partly persist.

##### **4.1 Pre-colonial times**

Before the colonization by the British, land and water governance in the region was determined by customary principles, reflecting the beliefs and practices of the different ethnic groups who migrated into the region over the centuries (Opoku-Ankomah et al., 2006). Main actors in customary land and water governance were on the one hand earth priests, or so called *tendanas*, who are generally descents of the first settlers of an area (Lund, 2006). Until today earth priests have been regarded as the custodians of the land. Through their ancestors, earth priests develop a relationship with the natural spirits that inhabit the land and perform specific rituals and sacrifices to ensure the responsible use of land and related resources including water (Kusimi et al., 2006; Laube, 2006). On the other hand, chieftaincy, a more political, rather than religious manifestation of control over natural resources, became important with the ongoing settlement of people from “outside” the region. According to the literature, “chieftaincy” as a new institution established by migrants or “newcomers”, did actually not affect the responsibilities of the regional earth priests (Laube, 2006; Lund, 2006). According to Lund (2006) earth priests’ roles in customary offices seem to be complementary to date, as the chief constitutes political authority, while the earth priest carries out more religious and spiritual functions.

In order to protect the earth and to regulate the use of natural resources, priests and chiefs enforced a set of rules, including the imposition of sanctions and taboos on land and water use. For example, farming on riverbanks, areas considered home to river gods and their children, and human activities in certain sacred forest areas and groves were prohibited. Water gathering was mainly allowed upstream from areas of other activities and during certain days of the week activities such as washing clothes, water abstraction, and fishing were prohibited (MoWH, 1998; Lautze et al., 2006). Surface water was publicly available and any user had the right to carry as much water as needed for private use. However, larger natural water bodies that could keep water throughout the dry season were scarce, and it seems that people at that time were not yet familiar with water harvesting techniques by means of reservoirs. Groundwater was mainly tapped by the person to whom the land belonged. Surface as well as groundwater

resources were considered as a public good and could therefore be used free (Lautze et al., 2006; Opoku-Ankomah et al., 2006; Sarpong, 2007 after Boateng, 1977). Pre-colonial tenure arrangements formed complex indigenous systems, which allowed local communities to continue their traditional practices of subsistence farming, cattle herding and fisheries (Lentz, 2006). However, it is important to note that the management of natural resources like land and water was not as homogenous and harmonic as often described. Conflicts over properties were also issues in pre-colonial management regimes of the region and widely contested between lineages and clans (Lentz, 2006).

#### **4.2 Under colonial rule**

After the Congo Conference, held in Berlin in 1885, the Europeans colonized and regulated trade in Africa. The British, French, and Germans colonized West Africa without consideration of ethnic or natural boundaries such as rivers, watersheds, and mountain ranges. The Volta basin as part of West Africa was partly colonized by the British, who built with the Gold Coast an enclave, surrounded by French colonies. The only exception was today's Togo, which was temporarily German Togoland (Buah, 1998; Lautze et al.; 2006). Consequently, new legislations and administrative principles influenced the Colonies institutional and political landscape. As a British colony, the Gold Coast was subject to a common law legal system. Because of the Gold Coasts long tradition of powerful monarchs and chiefs the British preferred to exercise power with the assistance of the countries traditional rulers. By creating Native Councils and Houses of Chiefs the British shifted certain responsibility and duties to local authorities, which also helped to meet the requirements of the National Congress of British West Africa. Doing so put forward requests for the political participation and administrative involvement of the African population in the British West African Colonies (Cooke, 2004; Laube, 2006). Due to the legacy of indirect colonial rule, Ghana was governed by a dual system, the central government and regional governments, being dominated by chiefs and their councils (Rathbone, 2000). Consequently, chiefs were made a major element in colonial government, both at the local level (Native Council), and in central institutions such as the Joint Provincial Council (Crook, 2005). In this process, the political authority and leverage of the tendanas diminished as a result of their marginalization brought about by the chieftaincy rule. This regards especially to northern Ghana, where colonial legislation often led to the ignorance of traditional land tenure regimes and the misappropriation of land (Roncoli, 1994; Akrong, 2006). As a consequence local resource management structures were partly disrupted and earth priest disregarded as the custodian of land. The advent of Christianity further devalued and denigrated the authority of what was called fetish priests and pagan worshippers of the devil by the missionaries (Akrong, 2006).

Although earth priests lost much of their power, traditional land and water management practices could partly persist under colonial rule (Lund, 2006). This was also the case in the then called Northern Territories, where traditional forms of landholding were not necessarily linked to political jurisdiction, but to lineages. Hence, in many societies in the north land and other natural resources were held and governed by the earth priest.

Colonial water legislation was mainly driven by two key documents, the Rivers Ordinance of 1903 and the Forrest Ordinance of 1949. The former was the first attempt to comprehensively regulate the use of water other than for domestic use (Opoku-Ankomah et al., 2006). The Ordinance regulated river navigation and declared that the colonial government must approve water use for fishing, irrigation, mines, and power generation (Lautze et al., 2006). The second or Forrest Ordinance regulated water development and management activities such as infrastructure development, the construction of dams and weirs, etc. In the course of water conservation programmes, initiated in northern regions of the country by the government in the 1940s, reservoirs and dugouts were built to provide water for humans and livestock. In addition, these dams and dug outs are

servicing as a source of water for irrigated crop production, and fish (MacPherson and Agyenim-Boateng, 1991). The ownership of these reservoirs however remained unclear.

Apart from halfhearted infrastructural and institutional developments mentioned above, the British had a rather little interest in developing the vast and resource poor regions of the Northern Territories. Even though some attempts were made to develop the agricultural potential, the expansion and intensification of the agricultural productivity failed, partly due to farmer's refusal to cooperate with the imposed authorities (Laube, 2006). However, in some areas, for example, Bawku district in today's UER, the taxation policy of the colonial government uncovered the potential revenue extractable from local markets, and locals were forced to expand peanut farming, in the region by far the most important cash crop in the beginning of the 20th century (Roncoli, 1994). Desertification became apparent and a mixed farming program, aimed at environmental conservation, was implemented throughout the 1950s. However, a lack of political continuity and attention to local conditions aggravated problems of land pressure and ecological deterioration (Roncoli, 1994).

### **4.3 Post-independent developments**

After independence in 1957 natural resources management regimes underwent major changes. Many nation wide water management institutions were created in the course of the formation of the new state of Ghana. The first of these national water institutions was the Volta River Authority (VRA) established in 1961. The VRA has been responsible for the operation and maintenance of the then newly built Akosombo dam, which created the Volta lake. <sup>3</sup>The VRA was followed by the establishment of the Ghana Water and Sewerage Corporation – founded in 1965 - which was in charge of the provision, distribution and conservation of the country's water resources for public, domestic and industrial purposes. Another major water-related institution was the Irrigation Development Authority (IDA), established in 1977 to develop irrigation for farming, livestock improvement, and fish culture (van Edig et al., 2002; Lautze et al., 2006; Opoku-Ankomah et al., 2006).

In contrast, many governing instruments were carried over from colonial times in order to avoid rising opposition against Nkrumah's one-party state. The first president of Ghana Kwame Nkrumah kept hold of political power from 1957 until 1966 by cooperating with local chiefs and thus reduced their distrust against the newly independent state. Land and water management was dominated by Nkrumah's vision to industrialize the country and develop the economic value of its natural resources. Consequently, the misappropriation of land, which had its onset during the colonial administration, was not repealed but replaced by the State Property and Contracts Act of 1960. This act allowed Nkrumah to access land for development purposes (Laube, 2006). In the northern regions, the politics surrounding land appropriation were accompanied by economic development programs, amongst others through the construction of medium-scale dams for irrigation purposes. Additionally, a significant number of small-scale irrigation schemes were developed throughout the area. Unfortunately, Nkrumah's politics of integration of the economically lesser developed north failed and with it the increased political control over the northern regions he was aiming at. Regional conflicts between ethnic groups could not be reduced, but were rather intensified (Lentz, 1993; Massing, 1994; Laube, 2006). The role of the chief in natural resources management became even stronger in some areas after Nkrumah's fall. According to Laube (2006), political patronage dominated pragmatic and opportunistic strategies to keep up control over land and related resources.

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<sup>3</sup> The hydropower plant is still the main source of electricity for contemporary Ghana.



#### 4.4 Reform processes and land and water governance today

Under President Rawlings, who took over power in 1981, the constitution of the PNDC (Provisional National Defence Council) was put in place and decentralization and political participation became an outspoken subject to governance. By declaring the Local Government Law in 1988, district, municipal, and metropolitan assemblies were created with deliberative, legislative, and executive powers. As a result, chiefs and traditional rulers had henceforward no seats in the assemblies of the new local government system (Buah, 1998).<sup>4</sup> In spite of legislative and administrative efforts made by Rawlings to include the marginalized into political decision making there were mayor drawbacks connected with decentralization. While on the one hand political power was shared through decentralization, the empowerment of elected local representatives and governmental bodies were called into question as funds were not shared with local governments, but mainly remained in the hands of the central government (Holtkamp, 1993; Massing, 1994). Thus, incentives for the rural population to participate in political decision-making remained inadequate even though the foundation for more public participation was set.

Decentralization efforts were extended to include the rural water sector in Ghana in the early 1990s. Under the auspices of the World Bank and the International Monetary Fund (IMF), the formal organizational and institutional set-up of the water sector was revised according to international policy recommendations and principles of decentralization. As a cornerstone of the water sector reforms the Water Resources Commission (WRC Act 522) was created in 1996, which is currently the major instrument that governs water use and management in Ghana. The Commission’s main tasks are to coordinate the water sector, guarantee access to safe drinking water and sanitation, supervise water quality, and integrate different stakeholders in the water sector while respecting traditional norms and practices (van Edig et al., 2002). Consequently, water use for irrigation, mining, hydropower generation etc. must first to be confirmed by user licenses, which are granted by the WRC. Additionally, detailed water use regulations are supposed to make sure that registration procedures and investigations are progressed in a transparent manner through e.g. public hearings and River Basin Pilot projects (van Edig et al., 2002; Laube and van de Giesen, 2005). The WRC is composed as an umbrella organization, linking different user groups and stakeholders, including traditional authorities into its organizational structure. By that means, more public participation in water governance is targeted.

In rural water governance the role and responsibilities of the District Assemblies for infrastructural developments has also experienced significant extension. Ghana switched to participatory approaches for irrigation management and fisheries, by transferring the responsibilities and authority for the operation and maintenance of small-scale irrigation schemes and reservoirs to a large extend to water user associations (WUAs). International donor directives suggested that increased community participation in decision-making processes would result in a “sense of ownership”. It is expected that community “owned” resources lead to more reliability and responsibility. In the UER, the WUAs were developed under projects such as the Land Conservation and Smallholder Rehabilitation Projects (LACOSREP) I (1994–1998) and II (2000–2006) initiated by the International Fund for Agricultural Development (IFAD). The project aimed at the construction and rehabilitation of small reservoirs and attached irrigation schemes as well as the development of participatory management strategies (Abukari et al., 2007) for the infrastructure. Since the beginning of the first project in 1994, management

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<sup>4</sup> Even though the slightly altered Local Government Act of 1993 (Act 4) gave chiefs seats as nonvoting members in assemblies, big chiefs and their supporters were pressing for a restoration of chiefs role by giving them formal representation in the rural District Assemblies.

responsibilities of the WUAs at the dam sites include for example regular operation and maintenance of the infrastructure, fair (seasonal) distribution, and allocation of land and water, conflict mitigation between different user groups or collection of water user fees. The WUAs were envisaged as a membership organization following participatory decision-making processes. Amongst others, they were ideally supposed to take over control of the irrigable land in the dry season (from November to April) from the original landowners through negotiated access rights. However, in the rainy season (from May to October) the old/original landowners would mostly take back control over the land and cultivate it until the next dry season.

The long-term aim for the WUAs is to ensure sustainable management of this established and rehabilitated infrastructure, and thereby enhance the livelihoods of the WUA members (IFAD, 2001). This more western conception of resources management contradicts the hierarchical/paternalistic traditional governance of resources, as well as the top-down approaches carried out during the first decades following Ghana's independence.

The following chapter supports the complex character of natural resources management in the region by providing examples of historical and contemporary fisheries management of different communities that differ significantly from each other even within a small area.

## **5. THE CASE OF FISHERIES IN THE UPPER EAST REGION**

In-depth studies of three reservoirs and four attached communities in the UER provide some insights into how fisheries management, as one aspect of water governance, developed. Fisheries is understood as a livelihood strategy devoted to catching fish for income generation as well as home consumption. The chapter is divided into time-periods including traditional, pre-colonial era, colonial administration, the period of heavy state interventions after independence, and more recent developments influenced by international development organizations. The aim of this case study is to show the development and implementation of contradicting management strategies over a long period of time in order to explain contemporary partial or total failure of aquatic resources governance.

### **5.1 Pre-colonial fishing rules and colonial interventions**

Fishing in rivers, and other mostly seasonal water bodies, such as floodplains attached to seasonal rivers, has a long tradition in the UER. Most waterbodies are fished out before drying up completely, and in the next rainy season, these were filled and naturally stocked again. This method of fishing has been practiced for a number of centuries in pre-colonial Ghana. Besides this rather exploitative approach, MacPherson and Agyenim-Boateng (1991) found traditional management strategies, such as closed seasons, restrictions on fishing rights, auctioning of fishing rights and the retention of shares of catch for local traditional leaders. This applied especially for migrating fishermen, mostly from the Ewe tribe, who came from the Volta Region to the north from time to time to harvest fish in deeper waters.

Some regulating practices could also be found in two of the study villages. For example, it has been forbidden for two month during the rainy season, when the millet<sup>5</sup> is about to built its seeds. Fishing, hunting, and several other activities were believed to cause strong winds, which in turn could jeopardize the formation of seeds. The two month coincide with the main reproduction phase of many fish species found in the region and a

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<sup>5</sup> In pre-colonial Ghana, millet was by far the most important staple crop in the Region.

ban on fishing allowed the fish to reproduce before they could be caught. Furthermore, some ethnic tribes imposed taboos on the catch of various animals, such as catfish, crocodiles, or snakes, which are partly or completely living in water. These animals have organs, which enable them to detect water over distances of several kilometres. Thus, when the water bodies, that those animals are currently inhabiting, dry up the animals, even some catfish species, which survive without water for quite a long time, migrate to the next detectable, deeper body of water. In the past, when water sources were extremely scarce, people followed the animals to the next water bodies. Based on these incidents the belief developed that the animals hosted ancestors, who show their descendents the way to the next source of water and the animals were tabooed.

The few deeper water bodies that could be found were often sacred places, building the last resort for the tabooed animals in the dry season. In such places, fishing was strictly prohibited. Anybody who would violate these rules was believed to upset the ancestors, who were held responsible for the rainfall patterns. An upset ancestor could cause droughts resulting in mass-starvation and death. The implementation and observation of these restrictions was realized in a top-down manner either by the *tendanas* or, where existent, by water priests, who had a connection to and influence on the ancestors. These traditional practices and beliefs gave priests power far beyond that established by today's law. Due to these restrictions no fishing methods for larger water bodies were developed.

In the beginning of the 20th century, the British government of the Gold Coast started to develop an interest in fishing along the coast as a potentially lucrative industry for the colony. A Fisheries Department was established in 1946, and new kinds of fishing equipment began to appear shortly thereafter (Atta-Kesson and Atuguba, 2007). Governmental efforts of fisheries development began in the late 1940s with the stocking of some newly created reservoirs in the region. However, fisheries activities in the north were still limited to traditional gear, which proved to be useless for the deeper water bodies.

Management of the newly build reservoirs and lands adjacent to them included water and land distribution, dam maintenance or measures to prevent soil erosion. These tasks were originally retained by the local communities and put into effect through traditional local authorities, either earth priests or chiefs (MacPherson and Agyenim-Boateng, 1991). In the four study villages, the *tendanas* or elders took over the responsibilities, even in Dasabligo community, which used to have a water priest. Fishermen explained that the old water priest in the village did not feel responsible for the reservoir, since he had neither experience nor influence on the fisheries potential of the man-made structure. As a consequence of missing technical know-how on behalf of the communities' traditional authorities and fishermen, fisheries potentials of most reservoirs were left untouched.

## **5.2 Centralized fisheries management under the Department of Fisheries**

After independence, the Department of Fisheries (DoF) opened one of the first offices in Binduri in the late 1960s. An office followed in Kajelo some years later. New, modern fishing gear and methods were introduced, and the first few fishponds in the region were constructed to supply fingerlings for the dams. Fishermen from the Ewe tribe in the Volta Region were employed as trainers and the first batches of local fishermen were taught how to use and construct the modern gear. Old fishermen and retired fisheries officers report a big interest and participation in the trainings at that time.

At that time responsibilities for fisheries administration, development and regulation were formally passed into the hands of the government (MacPherson and Agyenim-Boateng, 1991), and more precisely into the hands of the fisheries officers. Control remained there until the most recent rehabilitations of reservoir infrastructure under LACOSREP I and II. In practice, fishing was restricted to fishermen who had successfully finished the training

offered by the fisheries officers of the DoF. Fishermen were officially registered together with a limited amount of gear, which was only approved when it fulfilled certain requirements. The most important requirement has been the mesh size of the nets. Nets of mesh sizes less than 25 mm in stretch diagonal length were strictly prohibited (Lenselik, 2002) and catches were accurately recorded by the DoF staff. In the Kajelo community, fishermen were even only allowed to go fishing as a group and in certain time intervals, long enough to ensure that the fish population recovered from the fishing intervention. When the group was called together for such an event, they were always accompanied by a fisheries officer, who controlled their fishing gear according to size. This sounds rather restrictive but old fishermen report, that the catch per day was much higher and the sizes of the fish were a multiple of that from today. The same fishermen stated further, that at that time, everybody obeyed the officers and quarrels were rare. However, the fisheries staff at that time did not pay any attention to group dynamics or sustainability of groups structures.

Apart from the governmental control, local authorities such as elders and tendanas still played a role in management. Before entering the water body permission of the local leaders was obtained and sometimes fowls were sacrificed for good catches.<sup>6</sup> However, as mentioned above, due to large-scale Christianization these local leaders lost much of their authority, and asking for their permission became something of a farce. The loss of authority was worsened by an indirect threat of the extension officers shifting their attention and regular supply of fishing gear of low or no cost towards other communities, who would benefit from their presence.

Administrative decentralisation has been a major policy direction of the World Bank and the International Monetary Fund (IMF) as an adjunct to the Structural Adjustment Programme (SAP) (Kyei, 2000) to reduce public spending. In that course fisheries and agricultural service provision was put together in the beginning of the 1990s (Kapetsky, 1991), all fisheries offices were closed down and officers were either transferred to the Ministry of Food and Agriculture (MoFA), or retired.

Since the DoF followed a strict top-down approach and not functioning fishermen groups were established in the past, the management of fisheries collapsed soon after the offices were closed down, since no institutions were formed and no traditional authorities was left to take over.

### **5.3 Recent attempts at fisheries management in the Upper East Region**

In the course of decentralization efforts described earlier, fisheries management, like the general water governance, was to be modified to enhance local people's participation. For example, the reservoir rehabilitation projects LACOSREP I and II initiated in the early 1990s, had a fisheries component and WUAs were meant to include a fishermen association. The fishermen associations should be responsible for participatory and sustainable use of the aquatic resources in the reservoirs. A chief fisherman was to be elected to represent the fishermen group, a secretary was supposed to record the discussions during regular meetings and a treasurer was to be responsible for the collection of the water levies from the fishermen to contribute to the maintenance of the infrastructure. MoFA extension officers, supposed to be trained in fisheries management, were responsible for the establishment and functioning of these so-called fishermen associations. The reservoirs, where the communities were able to build up fishermen associations, at least on paper, were stocked with fish – a procedure that has proved to be very helpful for the development of catches.

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<sup>6</sup> During the research their advice and permission for research interventions was repeatedly obtained and they were very cooperative.

The Kajelo and Binduri communities were recorded to have such a fishermen association, which was one criterion for the inclusion in this study. The associations in these communities were urged to build saving associations in order to become credit-worthy. This form of formal cooperation across clan borders is not common in the region. Furthermore, the concepts of banks and accounts were new to many people, most of whom are illiterate and still rely on animals as living savings. Without the guidance of the extension officer to assist with bookkeeping and regular interaction with banks, the monetary contributions of the fishermen disappeared. Not surprisingly, this outcome bred mistrust and disappointment.

In 2005, the DoF was transformed into a separate Ministry of Fisheries (MoFI). Extension officers could once again focus on the development of fisheries and their management. However, the number of staff as well as funds and thus development interventions remain limited. In the two villages Binduri and Kajelo, the fisheries extension officers tried to reform fishermen associations, but once again failed to establish group structures. The reasons that followed this remark are not clearly attributed to either of the two groups. One reason given by both sides was the fact that officers rarely appeared in the village, to control fisheries activities, help them with the group formation and the administration of their contributions. Furthermore, the investigations showed that the extension staff were never properly trained, neither in participatory water governance approaches or group dynamics nor in up-to-date fisheries enhancement techniques. In addition, extension officers continue to approach the fishermen in their strictly top-down manner, a behaviour that fishermen report to be highly inappropriate.

WUAs often face the problem that members do not follow their instructions, because the WUA executives boards did not receive any district level backing, such as by-laws (van Edig et al., 2002), that would enable them to enforce management rules. Furthermore, weak leadership, such as peculation of contributions, corruption, or favouritism amongst executives is reported as one of the major reasons for the failure of implementing management rules. In the study communities, it was almost common practice to peculate money contributed by reservoir users for future maintenance expenditures. Another institution to solve these kinds of conflicts are the spiritual authorities of the village, which are often asked for advice and mediation. However, young fishermen in particular, follow these instructions only half-heartedly. Many of them migrated for labour to towns, and the more educated ones are often members of Christian and Muslim denominations and are no longer willing to listen to traditional beliefs and spiritual authorities. The very same fishermen rather accuse authorities of breaking their own rules, and doubt the integrity of both WUAs and traditional authorities.

In the two villages that share Dasabligo reservoir the situation is different. The Department of Fisheries and until recently the MoFI never worked with any of the two communities. Chief fishermen in both villages are in charge of fisheries matters on community level. They work with a council of elders and with the local traditional spiritual leaders. Chief fishermen are elected, but generally, they are old and have a lot of experience in fishing (Lenselik, 2002). However, the knowledge of these traditional leaders on how to use and manage these man-made reservoirs sustainably is limited. The reservoir shows high exploitation levels through a fast number of fishermen, resulting in dwindling natural stocks. The high fishing pressure is a consequence of few alternative income sources and accordingly high rates of poverty. Although some traditional fisheries management rules can still be found, these circumstances contribute to the regard of traditional rules, such as the ban on fishing in August and September. Younger fishermen, mentioned previously, do not believe in the power of the earth priests, and can be found fishing year round. After the old water priest died, even his own sons refused to take over his duties, which were since many generations passed from father to son.

Today’s reservoir management in the four reservoir communities Binduri, Kajelo, Dasabligo, and Dusabligo, but especially in the former two, is a potpourri of different management approaches. As described above, traditional leaders try to establish order amongst fishermen, but they neither have the knowledge nor the credibility and authority to effectively unite the fishermen and convince them to obey any rules. Their authority is weakened by both the influence of colonial rule as well as incoming belief systems. When the exploitation of the fisheries resources started at the end of colonial rule, the goal at that time was to exploit fish stocks as much as possible. This tendency could never be erased completely by post-colonial management attempts. Although after independence when governmental organizations took over the management of the water bodies, fisheries were very restricted, extension officers failed to establish sustainable group structures. This can be in part attributed to the top-down approach that took any responsibility away from the fishermen. Although this should have changed with the introduction of participatory management practices in the course of rehabilitations, these policies largely remained on paper.

Reasons for this failure are numerous and diverse. Observations by the researcher suggest that participatory cooperation across clan borders is not common in the region and modern banking remains cryptical for the mostly illiterate villagers. Without the guidance from outside such concepts are prone to failure. Another reason for the failure of community-based fisheries management is that many fishermen stated that they still consider fisheries officers responsible for the enforcement of fisheries management rules and regulations. It could be observed that responsibility is pushed from one institution to the next, leading to a situation where access to the aquatic resource is now practically free, and not even the chief fishermen of the study communities make attempts to establish order. Until now, the situation has not changed and the increasing population of fishermen contributes to the depletion of fish stocks, more competition, and intensification of conflicts, which are already widespread.

## **6. CONCLUSION: PARTICIPATORY RURAL WATER GOVERNANCE IN NORTH GHANA – A PRACTICE UNDER REVIEW**

The historical process of rural water governance with a special focus on fisheries in north Ghana discussed previously could provide some evidence for the big gap between the theory of community-based, participatory management on the one hand and its effects on the ground on the other. Whilst there is no doubt that, only an active and well-organized community will be able to sustainably govern their resources, the failure of proper implementation of participatory management practice can lead to increased conflict potentials and “bad” governance.

The formation of WUAs or fishermen association alone does thus not ensure participatory decision-making. External actors, such as development experts are often coming from a completely different cultural background. They determine development strategies as well as the processes of project implementation but often ignore or face great difficulties to understand traditional decision-making process and grown structures with are very resistant to change. Our case study has shown that historically derived and recently implemented institutions, which are embedded one upon each other, have led to indefinite competencies and overlapping responsibilities. This becomes even more problematic when taking into account the long period of top-down approaches by governmental extension agencies. After decades of paternalism, fishermen are unable to establish this new idea of participatory decision making without proper guidance and intensive training. This guidance and training should have been provided by the agricultural and later by fisheries extension staff. However, even those were neither properly trained nor familiar with participatory approaches. Therefore, they still act in a top-down manner and thereby increase resistance against alterations.

Apart from missing guidance, communities lack the financial means and technical knowledge of how to manage their water resources. Without the indispensable management, the communities’ capacity is overstretched with the newly defined administrative tasks and many give up with frustration. The rather difficult nature of the management tasks and low personal rewards might explain why we observed neither resources capture by powerful elites nor an exclusion of certain user groups, but openly accessible aquatic resources.

While assigning ownership and responsibilities to communities is a feasible strategy for rural water management, the analysis of the historical coherences and the resultant political, socio-cultural and –economic conditions under which participatory approaches were implemented showed that failure can largely be attributed to the implementation strategies of donors and the excessive demand of executive agencies on community resources.

In spite of the usual time constraints for development projects it is crucial to invest the time and get to know the people who are using natural resources. Information on local arenas of decision-making (e.g. in public or private, formal organizations, traditional structures) and other details such as the size of the community as well as the intensity and nature of interactions between villagers are important. While some of the communities may already need advice on selection criteria for their leaders, other communities already have their leaders. Ignoring one of them can jeopardize the success of the project and thus it is not only important to consider traditional authorities, but to bring representatives of every group on board. A good example provided those villages, where younger fishermen are excluded when it comes to decisions about fisheries resources. A proper management board must consider their needs, too. Women are another good example. Listening to their point of view and include their suggestions into decision making will ensure that a big share of water users will obey the regulations set-up. Since participatory and community-based management is first and foremost an additional responsibility and thus a new burden, much time must be devoted to build up the capacity within the community and help them to overcome possible first frustrations that might occur. Group formation is only the starting point. To guide the communities on how to manage group dynamics, establish social control in order to avoid speculation, overcome shyness, and frustrations, until proper management yield results, is indispensable.

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