

**INSTITUTIONAL ARRANGEMENTS FOR MANAGING WATERSHEDS  
IN GHANA: A STUDY OF THE INCHABAN WATERSHED**

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**ABSTRACT**

The onset of the post-independence era opened the way for the establishment of agencies and institutions responsible for watershed management in every District in Ghana. This was done to address the diffused state of functions of institutions in charge of watershed management. It is, however a paradox to find that most of the watersheds in Ghana are still undergoing degradation which has socio-economic and ecological implications. This paper examined the institutional arrangements and challenges in managing watersheds using the Inchaban Watershed in the Western Region of Ghana as a case study. The study employed a qualitative research approach in the collection of data and analysis. Data for the study were gathered through in-depth interviews with purposively selected officials of the Inchaban watershed management institutions and other key informants in the Shama District. It was found out that weak institutional capacity, coupled with poor coordination amongst the major stakeholders led to an increased rate of degradation within and around the Inchaban Watershed. The study recommends stronger institutional capacity building and an active consultation and coordination among the relevant institutions for effective management of the watershed.

**Keywords:** Watershed management, institutional arrangement, Ghana

**Introduction**

In 1996, the Survey, Town and Country Planning Department of Ghana erected concrete pillars connected to each other by 'survey lines' or paths, to set out the boundaries of the Inchaban Watershed where economic activities will be regulated. Additionally, the management institutions, to promote integrated management, spelt out guidelines and sanctions to deter illegal users of the watershed. However, in spite of all these efforts of government, the Inchaban Watershed in the Western Region of Ghana is still under the threat of degradation. Degradation of the Inchaban Watershed is caused by a number of anthropogenic factors such as expansion of cultivated areas, unsustainable fuel wood and timber harvesting, bushfires, and the development of settlements and other infrastructures (Carson, 1992). To this end, Button (2010) indicated that the annual percentage increase in built-up areas on the Inchaban Watershed as being 7.6 percent. Indeed, the increasing encroachment of the watershed has adversely affected the ecological integrity of ecosystem which directly and indirectly affected socio-economic benefits. For example, the quantity of charcoal production, a major economic activity of the inhabitants living around the watershed, dropped by 30 percent between 2007 and 2009 (Biney, 2010).

This raises a number of questions about the management approach and the capacity of the institutions responsible for managing the Inchaban Watershed. Accordingly, this paper seeks to examine the level of coordination among the institutions responsible for managing the Inchaban Watershed and assess their capacity to effectively manage the watershed. The rest of paper is organised as follows: section two gives an overview of water management in Ghana; the three discusses theoretical perspectives on watershed management and institutional linkages; fourth section presents the research methods that adopted for this study; the results and discussion of the empirical analysis is presented in section five. Some conclusions and recommendation are outlined in last section.

### **An overview of water management in Ghana**

Before the twentieth century, watershed management in most Ghanaian communities relied solely on religious-based restrictions (Bullock, 2008) and the use of taboos and sacred groves, to deter people from encroaching on watersheds (Opoku-Agyemang, 2008). These restrictions were, to a large extent, dependent on the respect for religious, local and cultural structures for the protection of the environment (Odame, 2010). However, the advent of

Christianity, western education, and urbanisation, coupled with the desire to develop the resources of the country have reduced the effectiveness and respect for traditional restrictions for the protection of the environment (Opoku-Agyemang, 2008). Moreover, customary administration over watersheds has had a lot of challenge in terms of evaluation and assessment of environmental damages, enforcement of laws to bring illegal land users to book, and integrating the rights of land users with policies on regulation and management (Gibson, 2001).

In the face of these numerous problems in the reliance on customary laws and practices, the Government of the Gold Coast now Ghana resorted to the enactment of state laws and policies to strengthen mandates of institutions in charge of managing water resources. The first comprehensive attempt to regulate the use of watershed resources, other than for industrial production activities, was the enactment of the Rivers Ordinance Act (CAP 226) of 1903. Section 10 of this Ordinance states that “it shall be unlawful to pump, divert or by any means cause water to flow from any river, for purposes of large scale irrigation, mining or to generate power without a license from the appropriate quarters”. Unfortunately, there was no follow-up to the Rivers Ordinance Act. Consequently the ordinance was overtaken by time and other enactments which contained specific provisions that enabled agencies to perform certain functions, some of which were watershed-related (Bossman, 1998). For example, the Forestry Ordinance of 1927 made provisions for catchment protection and control of water abstraction in forest reserves. The Land Planning and Soil Conservation Ordinance of 1953 contained sections for checking soil erosion and the control of watercourses. State laws were very beneficial to some extent since they stressed the need to establish institutions and agencies to support watershed management (Odame, 2010).

The rest of the paper is organised as follows: Section Two discusses theoretical perspectives on perception, attitude, and willingness to pay for waste management. Section Three presents the methods and data. The empirical analysis is presented in Section Four and the final section deals with the conclusion and recommendations.

### **Watershed management in Ghana**

The onset of the post-independence era opened the way for the establishment of agencies and institutions with specific roles for water supply and irrigation in watersheds. Table 1 shows

some relevant watershed management institutions and their associated Ministries. As observed by Opoku-Agyemang, Micheal, Manu and Bossman (1998), Table 1 demonstrates the attempts made by previous governments to improve watershed management by some agencies in Ghana. For example, the Ghana Water and Sewerage Corporation (GWSC), established by Parliamentary Act 310 of 1965, and now called Ghana Water Company Limited (GWCL), manages and controls water supply and, to a very limited extent, sewerage. The Irrigation Development Authority (IDA), established by the Supreme Military Council Decree (SMCD) 85 of 1977, developed and managed irrigation to increase agricultural production, while the Environmental Protection Agency established by the National Liberation Council Decree (NLCD) 293 of 1969, is concerned primarily with the monitoring of environmental effects from water treatment. The Forestry Commission deals with the management of forest, lands and water bodies. In their submissions, Opoku-Agyemang et al. (1998) reported low performance rates among the water sector management agencies, and attributed it to less coordination. This, undoubtedly, fell in line with similar sectoral watershed management approaches which yielded poor results when practiced in some developing countries including India, Brazil, Togo and Nigeria (Shah & Schreier, 1995).

**Table 1: Watershed institutions and respective Ministries in Ghana**

Institutions	Ministry	Legal enactment
Ghana Water and Sewerage Corporation	Works and Housing	Act 310 of 1965
Irrigation Development Authority	Ministry of Food and Agriculture	SMCD 85 of 1977
Meteorological Service Department	Communications	Act 125 of 2004
Water Resource Research Institute	Works and Housing	Act 125 of 1962

Environmental Protection Agency	Environment Science and Technology	NLCD 293 of 1969
Forestry Commission	Lands and Forestry	NRCD 239 of 1974

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Source: Ghana Water Resource Commission, 2000

Later, when the government of Ghana, in 1996, identified the gaps and weaknesses regarding the coordination among the various institutions in the country, it took significant steps to address the diffused functions and authority of such institutions in charge of watershed management (Amakye, 2002). Among these steps was the establishment of the Water Resource Commission (WRC) of Ghana to grant watershed use rights, and define specific roles for the already established watershed management bodies including new ones such as the Minerals and Fisheries Commission. In order to integrate the functions of watershed managers and users rights, the WRC was established by an Act of Parliament (Water Resources Management Act 522 of 1996) and empowered with a superior mandate to allocate water resources and implement policies on watershed conservation. To ensure effective delivery of its duties, the WRC was placed on the shoulders of the National Development Planning Commission (NDPC) and the Ministry of Works and Housing (MWH), to coordinate national development plans and formulate policies following a laid down institutional framework (Amakye, 2002).

### **Institutional linkages and watershed management**

Institutional linkages are significant networks that exist between organisations, policies and laws to enhance effective execution of duties. Saleth and Dinar (1999) view 'institution' for watershed management as a combination of policies, laws, rules and regulations, organisational core values, operational procedures, incentive mechanisms, accountability mechanisms, norms, traditions, practices and customs which have been established to preserve the ecological systems of watersheds. Most watershed management institutions are meant to constrain the socially undesirable behaviour of individuals and groups in the distribution and use of watershed resources (Griffin, 1999). This implies that some watershed-related institutions, such as those governing watershed user associations, are designed to promote organised behaviour and equity,

and to provide various opportunities for individual and group advancement, thereby serving to liberate human action. Thus institutional frameworks designed for watershed management, when obeyed, help to reduce the uncertainty of human actions such as illegal mining, fishing, lumbering and sand winning (Hooper, McDonald & Mitchell, 1999).

Three key elements come up in the discourse pertaining to institutions- policies, laws and organisations (Saleth & Dinar 1999). This paper views institutional arrangements for watershed management as government policies, traditional laws and organisational roles that constitute the main elements to control human actions in the use of watersheds. A critical observation of the linkages in the Institutional Framework for Watershed Management in Ghana shows some important networks between the WRC and its subordinate institutions (Opoku-Agyemang et al, 1998). The WRC was established by an Act of parliament (Act 522 of 1996) with the mandate to regulate and manage the country's water resources and coordinate government policies in relation to them. The WRC works in collaboration with two main institutions: the Ministry of Works and Housing (MWH), and the National Development Planning Commission (NDPC), to promote horizontal linkages. The WRC implements water resource policies formulated by the MWH. Similarly, the NDPC coordinates national development plans on behalf of WRC to effectively allocate water resources (Oldeman, 2008).

### **Role of local government in watershed management in Ghana**

Under the Local Government Act 462 (1993) of Ghana, Metropolitan, Municipal and District Assemblies (MMDAs) are the highest political and administrative authorities at the local level with important roles of promoting productive activities and social development on behalf of the national government (Aryee, 2008). The administration of watersheds is equally vested in the hands of the MMDAs under Section 11 of the Water Use Regulation Act of 1962 (Opoku-Agyemang, 1998). Where most water bodies and basins straddle more than one MMDA, unsustainable uses in one MMDA affect the riparian MMDAs and it calls for the intervention of the beneficiary MMDAs to initiate programmes that will bring mutual benefit the parties involved (Mensah, 2005). Partap and Watson (1994) proposed that trans-district watershed management should be perceived in terms of interconnectedness of watercourses within a basin. The establishment of joint mechanisms or institutions by MMDAs to facilitate cooperation on

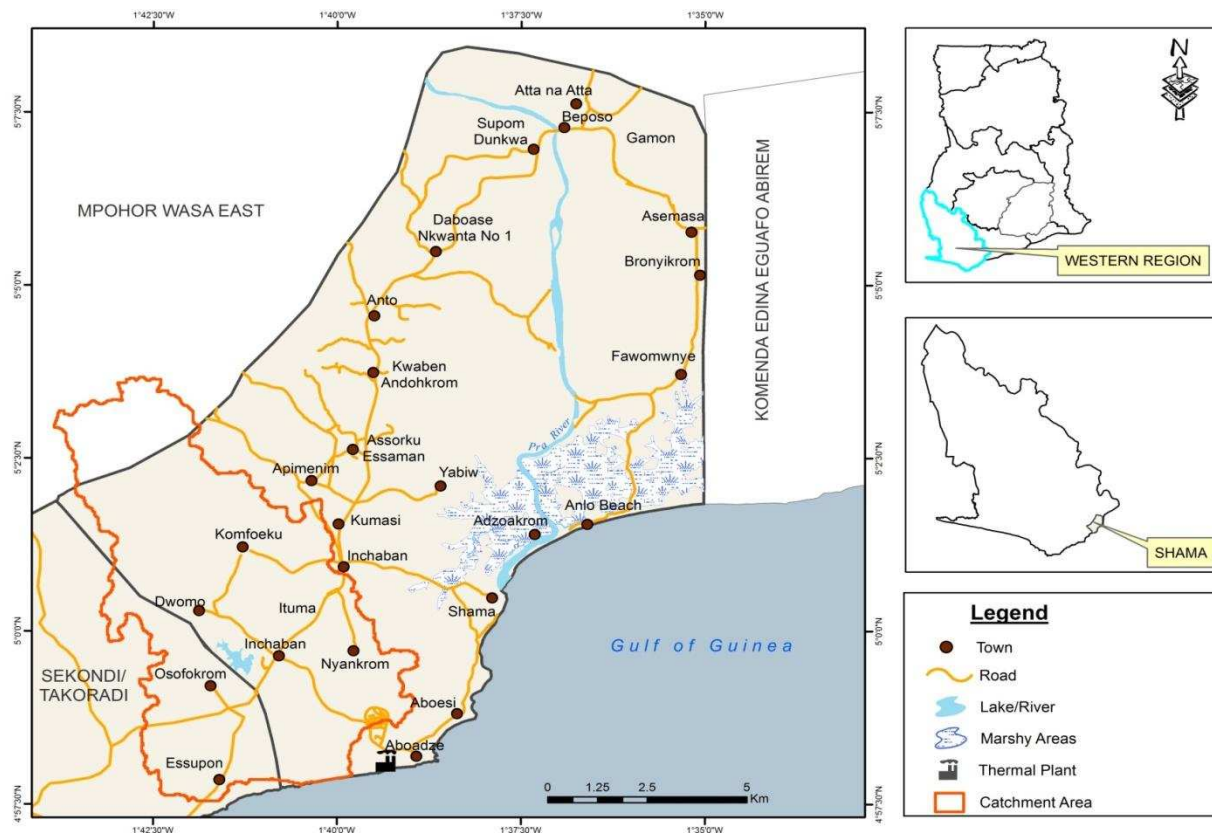
relevant measures and procedures in the light of experience and capacity of the MMDAs ensure sustainability of trans-boundary watersheds (Rasul & Karki, 2007). Thus, the principles of equitable utilisation of watershed resources, and the obligation not to cause harm to riparian communities, guide MMDAs to advise the WRC to grant watershed use rights (Putnam, 1993).

In the organisational structure of the decentralised system of Ghana, MMDAs have been empowered to mobilise funds from local communities to support development of projects towards watershed management (Mensah, 2004). In addition, the MMDAs have the duty to educate the community on watershed management implications (Ministry of Works and Housing, 2010). This is in view of the fact that as local level authority, they are better placed to educate local community members on the measures required to ensure effective watershed management.

### **Materials and methods**

The Inchaban Watershed is located in the Shama District of the Western Region of Ghana (Figure 1). The relief of the study area is undulating, gently sloping towards the coast, and is interspersed with plains in the west. The landscape is characterised by muddy lagoons and marshlands as a result of the undulating topography. The district is drained by River Anakwari which is dammed at Inchaban to supply potable water to Takoradi and its surrounding settlements that include Dwomo, Nyankrom, Ituma, Shama and Yabiw. Drainage in the district is very poor; the area is prone to flooding.



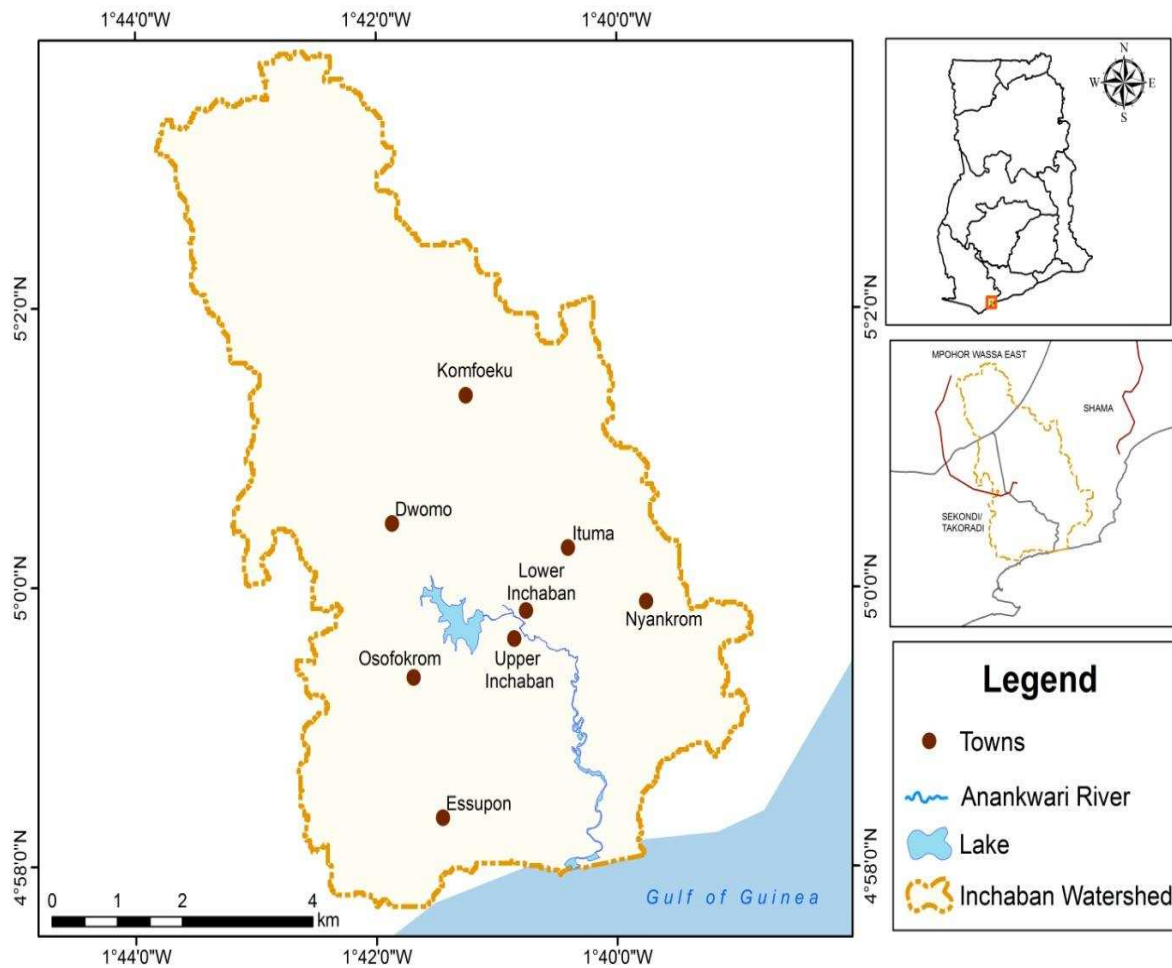


**Figure 1: Map showing Shama District where the Inchaban Watershed is located**

Source: Cartography Unit of the Department of Geography and Regional Planning (UCC), 2011

The size of the watershed is 13,553.80 acres (Figure 2) and contains important farming communities such as Dwomo, Inchaban, Nyankrom and Ituma. The climate is dry-humid tropical (Acheampong, 2009), and has a double maxima rainfall season: from June to early August for main season and September to November for minor season. The average annual precipitation is 1195mm (Acheampong, 2009). The average annual humidity of the area is high (over 94 percent) and the mean annual temperatures is 29<sup>0</sup> C. The main vegetation in the watershed consists of woodland savannah near the coast, while a semi deciduous forest occupies the upper courses of streams. Mangroves occur along the southern portion of the watershed.





**Figure 2: Map of Inchaban Watershed**

Source: Cartography Unit of the Department of Geography and Regional Planning (UCC), 2011

The study employed qualitative research approach. Qualitative research involves the collection of data in a natural setting sensitive to the people and places under study, and data analyses that is inductive and establishes patterns and themes (Creswell, 2007). Thus qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (Blaike & Crewel, 2001). Creswell (2003) criticized qualitative research asserting that “the approach takes time, involves ambitious data analysis, results in lengthy reports and does not have firm guidelines”. This notwithstanding, the

qualitative approach was adopted as means to offset the pitfalls associated with positivism, especially on issues related to how humans perceive and understand social reality (Blaikie, 1993; Creswell, 2003). The study involved the collection of primary data from purposively selected heads of watershed management, user institutions and local chiefs using in-depth interview guides. Additionally, individual community users of the Inchaban Watershed were identified and categorised as crop farmers, charcoal producers and fishermen. These were then selected conveniently, and through focus group discussion guides information on best management practices was solicited from them. A total of 41 respondents were involved in the study. Table 2 shows the distribution of respondents.

**Table 2: Total sample size for the study**

Sample unit	Sample size	Institution
Watershed management institutions	4	WRC, CRC, FC & EPA
Watershed user institutions	4	IDA, GWCL, MOFA & CWSA
Community chiefs	3	
<b>Individual users</b>		
• Crop farmers	9	
• Charcoal producers	12	
• Fishermen	9	
<b>Total</b>	<b>41</b>	

Water Resource Commission (WRC), Coastal Resource Center (CRC), Forestry Commission(FC), Environmental Protection Agency (EPA), Irrigation Development Authority (IDA), Ghana Water Company Limited (GWCL), Ministry of Food and Agriculture (MoFA), Community Water and Sanitation Agency (CWSA)

## Results and Discussion

This section of the paper presents the findings of the study. It is organised under three broad themes: institutional mandates and responsibilities, level of coordination among, and capacity of the institutions that exist among the watershed management institutions.

### Level of coordination among the Inchaban Watershed management institutions

An attempt was made to assess the cross-sectional linkages that exist among the various institutions responsible for managing the Inchaban Watershed. The Water Resource Commission (WRC), MWH (Ministry of Works and Housing) and the NDPC (National Development Planning Commission) operate at the top level of decision-making and are expected to coordinate the activities of the FC (Forestry commission), EPA (Environmental planning Commission) and the CRC (Coastal Resource Commission) to prevent conflicts with the user institutions: IDA (Irrigation Development Authority), CWSA (Community Water and Sanitation Agency), GWCL (Ghana Water Company Limited) and MoFA (Ministry of Food Agriculture) (Amakye, 2002). The outcomes of the interviews conducted with the head of the WRC showed that there was some level of collaboration among the institutions (WRC, MWH, and NDPC). For example, the head of the WRC disclosed some policies and projects (see Appendix I & J) that the MWH and the NDPC respectively, had worked out to support it's (the WRC) work. For example, it was recounted that the MWH had formulated and implemented several policies for the past five years such as the Water Use Regulation LI 1962 Policy and the National Water Vision Policy towards projects such as the Flood Warning Time to promote integrated watershed resource management. Better still, there was the need to assess the extent to which this collaboration had gone. Further discussions on management duties with the head of the WRC revealed that the WRC had failed to take up subsequent follow-up duties with the NDPC and the MWH, to ensure that policies and laws instituted were being obeyed by the local users of the watershed. This shows a poor collaboration between these institutions (NDPC, MWH and WRC). The failure of the WRC to work to expectation was due to a number of problems, and however the major one was summed up in the following statement. He said:

It is obvious that the institutions (MWH and the NDPC) do not have money to even attend meetings, fuel their cars to patrol the watershed. They cannot even follow the laid down policies in watershed management.

One realises that as population grows, societies become dynamic and it calls for a review of laws and policies governing resources use (Heckathorn & Maser, 2001). In interviews with the local people concerning resource use in the watershed, it came out that there were illegal erection of

buildings, crop cultivation and massive harvest of the forest trees in the watershed. Field observation corroborated the above findings as a number of important trees within the catchment area of the watershed had been cut down by residents living around the area (Plate 1).



**Plate 1: Acacia tree lost in the Inchaban Watershed**

Source: Fieldwork, June 2012

Such practices have been vehemently fought against by the management institutions in the area to no avail. This is in view of the fact that institutions involved in managing the watershed do not have a common front when it comes to dealing with encroachment and other practices that seek to reduce the size of the watershed. Some reasons were given about the WRC's reluctance to allocate the watershed resources to the local users. This is what the head of the WRC had to say:

*We can't permit all users including individuals to use the watershed because the watershed vegetation is fast depleting. We normally give priority to state institutions like the IDA, GWCL and CWSA. We had entrusted the use of the*

watershed to state institutions whose activities are environmentally sustainable and in the interest of the entire society. Unfortunately, individuals rather get the chance to work on the lands demarcated. We have information that some of the state institutions have sold their usage rights to these individuals but we find it difficult to prosecute them.

Yet, since 1996, the Ghana WRC had approved the 'Integrated Watershed Management Policy' which permit diverse uses of all watersheds in every region. Thus, the prohibitive laws contradict the policy of the government to promote integrated watershed management. This meant that, with increasing demand for land for farming and construction of buildings, the work of the NDPC and MWH was to collaborate with the WRC to re-formulate policies that could permit urgent uses of the Inchaban Watershed in order to follow the approved management approach. Without any options for land for survival, the individual users buy watershed usage rights from the government institutions. Cernea (1987) acknowledged the significance of sound networks among laws, policies and organisations: institutions, to bring good results in any natural resource management system. In the event that some of the laws and policies on watershed management contradict, the possibility of achieving any meaning collaboration among the management institutions will be difficult.

#### **Level of cooperation between watershed management institutions**

Fundamentally, the watershed management institutions (FC, EPA and CRC) in the Shama District are expected to work cooperatively in order to achieve their long term goals such as promoting integrated management of all watersheds especially trans-boundary ones. The outcome of interviews conducted with the heads of the FC, EPA and the CRC showed that although these institutions had the zeal to start projects, they lacked the ability to cooperatively monitor and evaluate the project developments to successful completion. For instance, a project that was initiated to manage charcoal production could not achieve the desired outcomes. A thirty-two year old charcoal producer gave a submission which indicated a rather poor cooperation among the management institutions. He had this to say:



Forestry Commission sells the acacia trees in the watershed to us. We use the trees for charcoal production to generate income to support our families. Those of us who have been in the business for long have constantly been threatened by officials of the EPA. I think that it will be better if all the institutions come together and make their terms of management clear for us to obey.

Thus, while the FC allows the charcoal producers to harvest trees within the watershed, the EPA gave counter instructions to the individual charcoal producers, and this was never helpful to the FC. The above finding supports the assertion of Heckathorn and Maser (2001) that serious challenges in natural resource management systems occur when managers have conflicting objectives.

#### **Level of cooperation between watershed management institutions and user institutions**

Usually, institutions involved in watershed management have to contend with trade-off issues between livelihood demands and environmental concerns. These concerns need to be addressed tactically to bring mutual benefits to stakeholders in any watershed. Addressing these concerns also require effective cooperation between watershed management institutions on one hand, and user institutions on the other hand. The head of MoFA gave his submissions concerning the institution's cooperation with some user institutions as follows:

We have been holding meetings with the GWCL, IDA and CWSA for support in a number of projects. Unfortunately, on several occasions, we have encountered *situations of 'conflicts of interest' in working together as a team. Some of the management institutions claim portions of the watershed and transfer them to individual users. Others also, reserve some portions that have been demarcated to them for longer periods and later give them out to local users. For example, we have a cold store in the watershed that has been permitted by the IDA. When we confronted the head of the institution (IDA), he explained that the cold store would generate jobs for the local people and must be permitted.*

In separate interviews, the heads of the management institutions claimed the institution had made several attempts to claim portions of the watershed that were under serious degradation. One of the heads of the management institutions disclosed that some of the government officials have taken bribes from individuals, and could not therefore stop the local users from erecting structures anywhere in the watershed. He again cited instances where they had petitioned the courts for support but the courts went on adjourning proceedings on cases brought to their notice. In further interviews, another bad practice among the local farmers at Ituma was disclosed. In further discussions, the district head of the Forestry Commission blamed most of the farmers for allocating portions of the watershed to foreigners for mining and farming purposes. He cautioned as follows:

The state institutions used their mandate to claim portions of the Inchaban Watershed and transfer them to foreigners to use. I can cite the case where some inhabitants transferred their lands to the Chinese for mining activities. We must desist from this practice.

Despite the absence of cooperation among the user and management institutions of the Inchaban Watershed, the district head of the GWCL announced some successful projects that it (GWCL) had had in collaboration with the CWSA. He attributed the success to the fact that the institutions (CWSA and GWCL) had been established with similar missions (goals) and therefore had the urge to work together. Recounting some of the successes, the district head of the GWCL remarked as follows:

Since its establishment in 1998, the CWSA with the support of the active members of the communities here, have assisted us in numerous projects. The agency has supplied water pumps and erected boreholes to support the work of the GWCL. For the past ten years, we have implemented several projects in collaboration with GWCL to support the community with water.

The above submission implies that when all the stakeholders involved in the management system are given goals properly streamlined in similar mission statements, it will improve the cooperation among the institutions managing the Inchaban Watershed.



### **Capacity of Inchaban Watershed Management Institutions**

The capacity of the management institutions involved in the management of the Inchaban Watershed was assessed in terms of availability of funds, logistics, and most importantly, legal mandate for operations.

### **Financial capacity of management institutions**

In an attempt to stop or reverse the degradation of the Inchaban Watershed and secure agricultural farmlands, protect aquatic life and biodiversity, the management institutions in the district have, over the past years faced serious financial challenges. For this reason, a number of them were not able to perform satisfactorily. The findings revealed that the financial challenges emanated from a number of factors including limited financial support from external and internal sources. For example some of the heads of the management institutions complained that, for nearly three quarters, they had not received any money from the government. The head of the Forestry Commission was quick to add that the institution never received monies from the Watershed Management Fund that was established in 1996. He commented as follows:

We have always been blamed for non-performance. However, we do not get the needed financial support from government. The quarterly funds that we need for routine repair of our vehicles, payment of casual workers, etc. does not come. For nearly two years, all the state institutions have not received any government allocations or funds.

In addition to the above complains, the various local authorities within the Shama District (e.g. chiefs, district assemblies, leaders of various groups which use the watershed) have not provided the needed financial support to the Watershed management institutions. Incidentally, under the 1993 Local Government Act 462 of Ghana, the District Assembly is now the highest political and administrative body which is supposed to see to the management of all natural resources including watersheds (Aryee, 2008). Unfortunately, the management institutions complained that the District Assembly hardly supported them to generate funds even at social gatherings. The general impression gathered in the field was that the administrative role over watersheds vested

in the hands of the District Assemblies under Section 11 of the Water Use Regulation Act of 1962 has not been performed.

### **Technical and logistical capacity of the management institutions**

The outcome of the in-depth interviews conducted to assess performances of the watershed management institutions indicated that generally the institutions had not performed satisfactorily because of serious challenges relating to logistics and human resources. With respect to human resources all the state institutions complained of inadequate staff. In some instances, some of the heads complained that the government had recruited unqualified personnel who lacked the technical competence required on-the-job. Only one of the institutions, a local NGO (CRC) was adequately resourced in terms of working staff. The rest, especially the state management institutions, conceded that their organisations were seriously handicapped, especially with regards to facilities to organise workshops and train workers. The head of a local NGO in the district narrated some positive steps taken toward improving the human resource capacity of the other management institutions, indicating that:

At the moment, we are working on projects on adaptation strategies to floods to support the communities. In so doing, we have invited a few workers from the Forestry Commission and the Environmental Protection Agencies to undergo training in disaster management. Since the past two years, we have had several letters from the government institutions to support them in terms of training of their personnel.

Notwithstanding, a few individual users admitted that they had been educated on several occasions on measures to conserve the watershed. In separate focus group discussions, for example, the charcoal producers and farmers commended the FC and the MoFA for exposing them to the best farming practices and erosion control strategies. Using this approach, community support which has now been identified as important technical human resource was tapped. The management institutions could be commended even though this technical resource had less impact in the management system.

With regards to logistics, government institutions with the greatest responsibilities expressed deepest concerns about the poor state of housing facilities, offices and store rooms, vehicles, computers and other accessories such as printers and photocopier machines. Also, other government institutions complained about inadequate technical equipment such as cutlasses, boots, and attire to patrol the watershed. For example, the deplorable state of vehicles at the MoFA (Plate 2) explains why the institution could not undertake frequent patrols to stop the illegal activities in the watershed.



**Plate 2: the poor state of vehicles at MoFA** Source: Fieldwork, June 2012

### **Legal capacity of the management institutions**

The Water Use Regulation Act of 1962, supports the integrated water resource management policy of Ghana, and gives WRC the mandate to regulate the use of all water bodies in the country. To make the work of WRC easier, the EPA, FC, NGOs and local authorities have also been assigned specific and separate roles to play to support the WRC to manage water bodies. Serious conflicts were however detected among the local management and user institutions. The local chiefs in the first place, said that the state management institutions did not give them room to exercise their powers. The chiefs recalled instances where they had given permission to some of the farmers and fisher folks to use the watershed, and have been chased away by the management institutions. For example, the queen mother of one of the communities made it clear

that it was time they claimed portions of the watershed to support local economic activities. This is what she said:

In colonial times, portions of the Inchaban Watershed were demarcated for our forefathers to use. It is just about time we reclaimed the lands that belong to us to support the local people here. We will not sit down and watch other people to use the watershed illegally. I have written several letters to take permission from the management institutions for the local users of the watershed but have not had any good feedback. Personally, I grant some of the local people usage right when they ask for help. I know they receive threats from the government authorities but we still support them in every way.

The Statutory Land Administrative Act 125 of 1962 of Ghana supports state watershed management institutions to regulate and control the use of all lands such as mineral sites, forest lands and water bodies that fall under the areas of interest of the state (Opoku-Agyemang, 2001). These institutions require effective collaboration from by state judicial institutions to effectively enforce their mandates in respect of watershed management. However, the reports obtained from the management institutions showed that the state judicial system, unfortunately, is weak to support governance over the Inchaban Watershed. In most cases, the reports were that certain institutions' allegedly took bribes from individual users and overlooked the illegal activities in the watershed. Others have also supported some political leaders to erect structures for self-owned businesses in the watershed. To make the situation worse, as was indicated by an official of the Environmental Protection Agency, the judicial courts went on adjourning cases involving illegal users of the Inchaban Watershed. He said frankly that:

Since the last four years we have sent three major cases to the courts requesting the support of the Takoradi Court to stop the construction of buildings in the watershed. As I speak to you, there are two additional cases of illegal construction in the watershed. The courts kept on adjourning the hearing of these cases. We have persistently referred the cases to the local chiefs for support but, to our dismay, the chiefs go behind us to encourage the illegal users

of the watershed. Some of the heads in the other sister watershed management institutions pay bribes to the court officials for the cases to be adjourned.

Thus, poor cooperation among the management institutions posed legal challenges for the institutions to battle with and by extension ensured that people continued to intrude into the Inchaban Watershed catchment area. Once the management institutions neglected collaborative project building and thus followed, to a large extent, the sectoral management approach, there are bound to be conflicting interests, a situation that hampers effective management of the watershed.

### **Conclusions and Recommendations**

This paper has established that there is poor collaboration among the top watershed management institutions responsible for managing the Inchaban watershed. Linkages among the management institutions to a large extent were not sound because these institutions followed the sectoral management approach. To a large extent there is little cooperation among all the stakeholders involved in managing the watershed. Most of the management and user institutions were seriously handicapped in terms of funds, personnel and logistics, a situation have constrained their capacity to effectively manage the watershed.

Again, to enable the institutions in charge of watershed management to work effectively, their financial and technical capacities should be improved. That is to say, government subventions (funds) allotted for watershed management should flow, as and when, the institutions expect them, so that budgeting and planning can be made easier. Besides, the Shama District Assembly should mobilise funds through social gatherings such as churches, durbars and festivals, from the communities surrounding the watershed to support watershed management. This will help to bring in the needed funds required by stakeholder institutions for effective management of the Inchaban Watershed.

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