

Institutionalising Community Participation in Watershed Management: A Study of the Inchaban Watershed in the Western Region of Ghana

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Abstract- Currently, the participatory watershed approach has now become necessary in any developmental activity especially with regards to natural resource management. However, in spite of the numerous advantages of this management approach, there are still major challenges that militate against its successful implementation in most developing countries. This paper explored the need, challenges, and the extent to which the participatory approach has been incorporated into the management of the Inchaban Watershed found in the Western Region of Ghana. Using two non-probability sampling methods: purposive and convenience, a total number of 41 key respondents were selected. With in-depth interviews and focus group discussions guides, information relating to the importance, challenges and the extent of community involvement was solicited from local chiefs, management and user institutions, and individual users in the Inchaban Watershed. The study revealed that the watershed management institutions could not attract the valuable initiatives of the local users in monitoring and evaluation stages because these users were coerced. It is therefore recommended that local communities should be induced to support the conservation of the watershed using public education and workshops organised by the district regulatory institution such as the Forestry Commission, the Environmental Protection Agency and the Mining Commission.

Index Terms- Integrated water management, Environment, Planning, Public participation, Ghana.

I. INTRODUCTION

This article guides a stepwise walkthrough by Experts for writing a successful journal or a research paper starting from inception of ideas till their publications. Research papers are highly recognized in scholar fraternity and form a core part of PhD curriculum. Research scholars publish their research work in leading journals to complete their grades. In addition, the published research work also provides a big weight-age to get admissions in

reputed varsity. Now, here we enlist the proven steps to publish the research paper in a journal.

Over the past decades the word 'participatory' has been incorporated into the vocabulary of governmental and non-governmental organizations (NGOs) programmes both at the level of implementation and research (Rhoades, 1998). Currently, community participation is a basic principle in any developmental activity and natural resource management programmes in most developing countries. It is generally believed to be the right approach currently used in the management of all natural resources: forest and water resources such as lagoons, rivers and watershed (Walker & Carpenter, 2002). Participatory watershed management has been defined as a process which aims at creating community self-supporting systems at various stages that enhance continuity to bring the desired results (Arthur & Moore, 1999).

The preliminary stage in the participatory watershed approach entails identification of the concern institutions which will establish dialogue with local people (Dukes & Firehock, 2001). Subsequent stages involved in the participatory approach include identifying the basic watershed problem to be tackled, and assessment of resources available for project development (Dovers & Dore, 2003). Leach and Sabatier (2002) discovered that participatory watershed planning must go beyond initial implementation of policies; the implementation stage must be followed by a system of monitoring and evaluation so that local people will be able to follow and measure project developments. Sommarstrom (2000) advised that participatory watershed management must provide opportunities to stakeholders to jointly negotiate their interests and set priorities. Cohen and Uphoff (1980) point out that community involvement should include people's participation in decision-making, implementation of programmes, monitoring and evaluation as well as sharing the benefits from development projects. This is what the author calls the participation in the project cycle.

The definition of community involvement in watershed management largely depends on the level of acceptance and understanding of the inhabitants in

communities where watersheds are essentially important asset for livelihood. Arnstein (1969) identified in a five-stage ladder of community participation, the importance of cooperation from watershed management institutions that will induce community initiatives in project development. The Food and Agriculture Organisation (1982) elaborated that peoples' participation is essential to enhance economic and political relationship within wider societies. Kumar and Pretty (2002) have recognised different levels of participation, ranging from passive to active levels, and have concluded that active participation is where and when local people are totally involved in all processes of management. At the moment, Participatory Watershed Management (PWM) is the foremost strategy in natural resource management which improves agricultural lands for livelihood in many developing countries (Johnson & Ravnborg, 2001). For example, in some East African countries such as Kenya and Tanzania, accesses to land for crop cultivation and adherence to common rules in watershed conservation have improved tremendously [Economic and Social Commission for Asia and the Pacific (ESCAP), 1997]. Martin (2008) has enumerated the advantages of participatory watershed management in the Tano South District in Ghana. These were the advantages;

- arresting free-rider behaviour among members,
- mobilising the needed financial and labour resources from communities,
- imposing self-devised sanctions on individual members for resource degradation,
- providing incentives for resource saving, and
- implementing group decisions for equitable resource distribution and environmental protection.

In spite of the advantages of participatory watershed management, there are still major challenges that militate against its successful implementation and evaluation in most rural communities in Ghana. These are: the delay in decision-making, policy formulation, and over reliance on unprofessional ideas from inhabitants of rural communities which sometimes lead to project failures [Food and Agriculture Organisation (FAO), 2009]. It is against this background that this paper sought to answer the following questions using the Inchaban Watershed in the Western Region of Ghana as the unit of investigation.

- To what extent are the local communities involved in the management of the Inchaban Watershed?

- What challenges do the institutions encounter in involving the local communities in the management of the Inchaban Watershed?

II. CONCEPTUAL FRAMEWORK FOR THE STUDY

A number of frameworks have been used to analyse institutional arrangements in watershed management and conservation. They include the Institutional Framework for Watershed Management by the International Institute for Environment and Development (IIED) (Stewart, 1993), the Institutional Framework for Integrated Watershed Management by the Water Resource Commission (2000), the International Union for Conservation of Nature Framework (King, Pizan & Milman, 1993). However, the Institutional Framework for Integrated Watershed Management by the Water Resource Commission (2000) of Ghana has been adopted for this study because it places emphasis on important civil societies which can support project development in local communities. The framework spells out the important roles (cell CG) that communities can play to support the conservation of watersheds. According to the WRC (2000), the active involvement of local communities in important stages such as identification of problem, project design, data collection, policy formulation and implementation, project implementation, monitoring and evaluation, is essential for project success.

The Integrated Watershed Management Framework: IWM-framework

The strength of this concerned framework (Figure 1), the Integrated Watershed Management Framework, is that, it shows institutional elements that permit community involvement or participation [Water Resource Commission (WRC), 2000]. Consequently, the integrated watershed management framework is designed to include the indigenous knowledge of people as an essential component to make natural resource management in general more effective. The framework integrates nature and peoples participation, and thus creates room for both users and managers without limiting access to resource use.

III. STUDY AREA

Location

The Inchaban Watershed is located in the Shama District of the Western Region of Ghana. The size of the watershed is 13,553.80 acres. The climate is dry-humid tropical (Acheampong, 2009), and has a

double maxima rainfall; the main rainfall season lasts from June to early August, and the minor from September to November. The average annual precipitation is 1195mm (Acheampong, 2009). The dry season is short, occurring from December to February. The average annual humidity of the area is high (over 94 percent) and the mean annual temperatures is 29⁰ 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. The nature of the climate and vegetation of the district has limited the growth of most local food crops but rather sugar is extensively cultivated. Consequently, mining and charcoal burning activities have absorbed about 45

percent of the active labour force. Many pockets of farming activities occur in communities such as Dwomo, Nyankrom and Ituma whereas charcoal burning activities have been intensified in portions of the watershed at Inchaban. 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. River Anakwari 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.

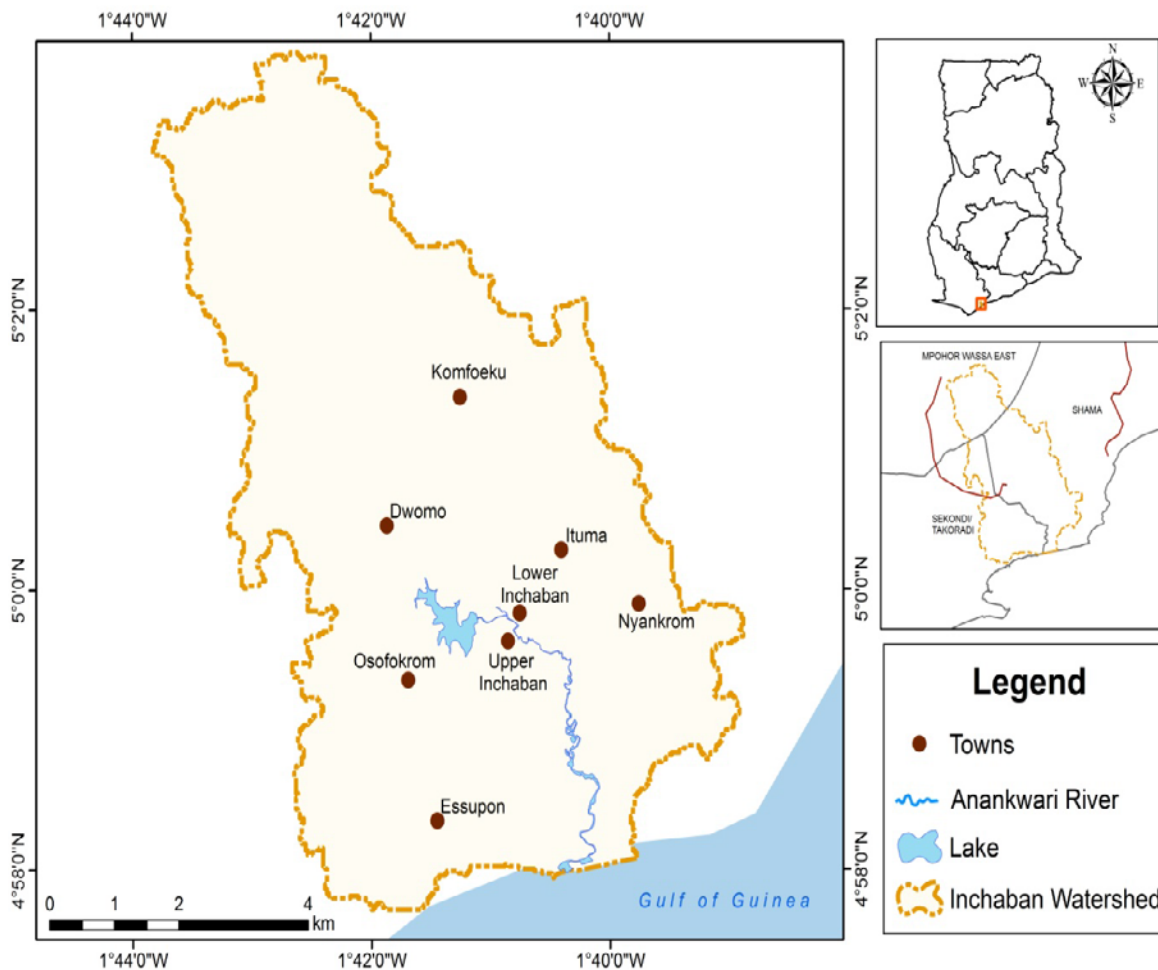


Figure 2: Study area in Regional and National Context

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

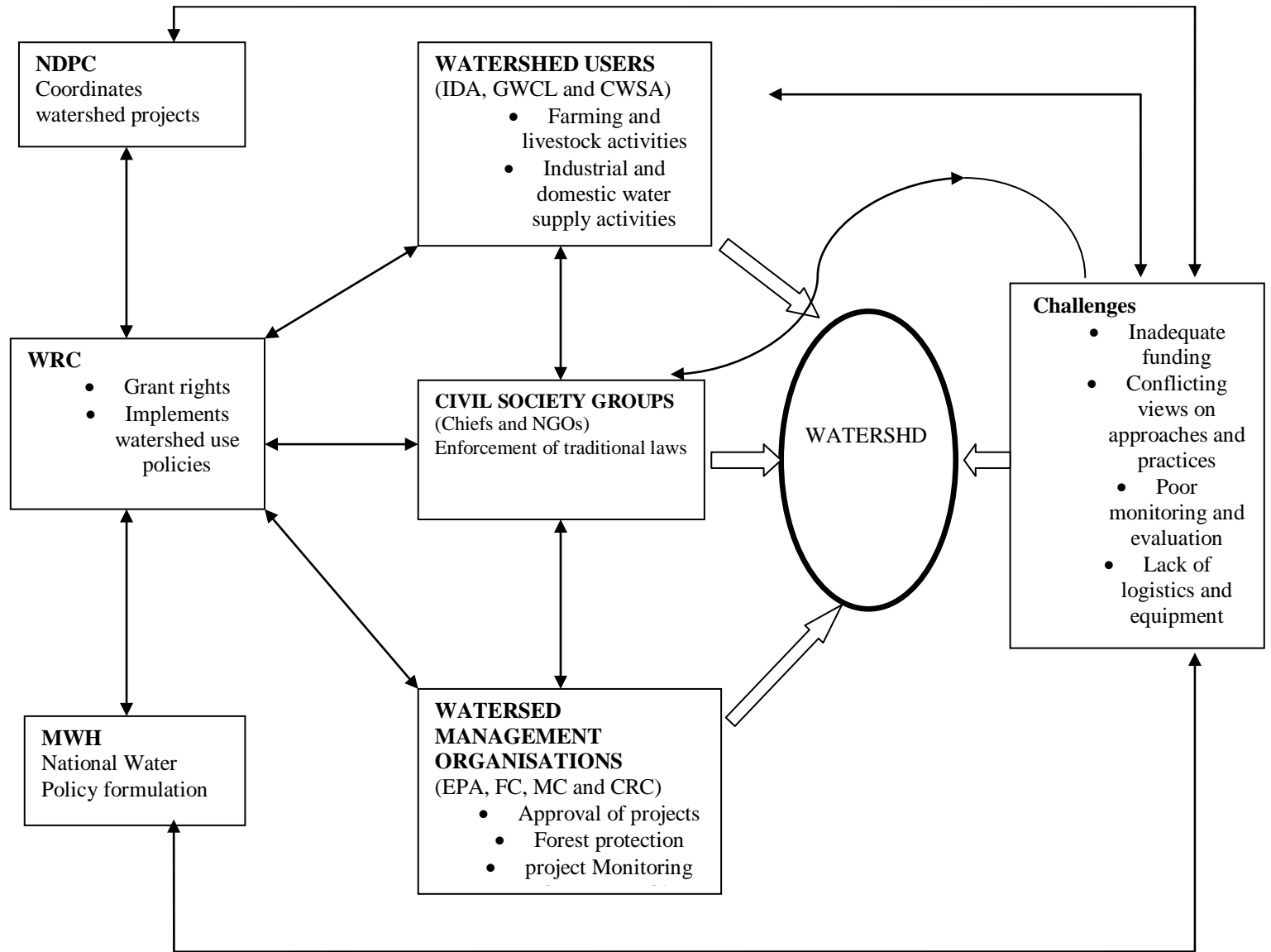


Figure 1: Integrated Watershed Management Framework
 Source: Adapted from Ghana Water Resource Commission, 2000

Methodological issues

The study was purely qualitative since it dwelled on in-depth interview guides to solicit information from the respondents. The basic data for analyses in the study was primary data collected from four major groups of stakeholders in the management of the Inchaban Watershed: community chiefs, management institutions, user institutions and individual users. The study employed the purposive sampling methods to select four each of watershed management and user institutions, and three community chiefs as well. Additionally, the convenience

sampling method was used to select nine crop farmers out of 15 in Ituma, 12 charcoal producers out of 16 in Inchaban and nine fishermen out of 15 in Dwomo. Focus group discussions were conducted for these individual users in their homogenous groups from the above-mentioned villages (Ituma, Inchaban and Dwomo). Therefore, in all, a total sample population of 41 was used in the study (Table 1). The data collected was conceptually organised into themes based on the objectives of the study, and analysed manually.

Table 2: Total sample size for the study

Sample units	Sample size
Watershed management organisations	4
Watershed user organisations	4
Community chiefs	3
<i>Individual users</i>	
- Crop farmers	9
- Charcoal producers	12
- Fishermen	9
Total	41

Source: Author's construct

IV. RESULTS AND DISCUSSION

This section presents the results and discussion of the study under the following sub-headings:

- assessment of the extent of community involvement in the management of the Inchaban Watershed.
- examination of the challenges of the management institutions to involve the communities in managing the Inchaban Watershed.

Assessment of the extent of community involvement in management

Focus group discussions with the key societal groups (stakeholders') in the local communities surrounding the watershed, to assess the extent of community involvement, revealed that there have been several meetings with the individual users. The outcomes of the meetings showed that the farmers, for example, had understood very well the concerns of the government about the conservation of the watershed. Indeed the chiefs of the settlements admitted that they had been involved in the discussions on planning and implementation of projects. Interviews with the chiefs of settlements in the watershed buttressed the start of the bottom-up approach in managing the Inchaban Watershed. The first among the local authorities to commend the watershed management institutions was a chief who recalled that the views of local people were taken on board in a number of projects to conserve the watershed. Nevertheless, the submissions of a farmer and the head of a non-governmental organisation in one of the villages indicated that;

"there was poor cooperation among the watershed management institutions which opened a leeway for some farmers, charcoal burners and fishermen to abuse the Inchaban Watershed".

Table 2 gives a picture of the levels of involvement of the key stakeholders in the management process to conserve the Inchaban Watershed.

Table 2: Levels of participation by key community stakeholders

<i>Participation in decision-making for policy formulation.</i>	<i>cooperation with other watershed mgt. stakeholders</i>	<i>monitoring and evaluation of projects</i>
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<p><i>Officials from almost all the management institutions come to me to solicit my views on a number of projects to conserve the watershed. I quickly invite the leaders of the Crop Growers Association, and . . . Agreeably, we meet the farmers and have discussions on a few projects (a local chief).</i></p> <p><i>Implication:</i> Individual users of a particular village had shown concern and had been involved at the initial stages of management.</p>	<p><i>We know about some fishermen upstream who dredge and pump much quantities of water from River Anakwari. These practices, I believe, are the causes of the low water supply. Yet we have been blamed for all the malpractices in the watershed (a thirty-four year old farmer)</i></p> <p><i>Implication:</i> Trans-boundary conflicts between upstream and downstream users of the watershed affected the management system. Users in different localities hardly cooperated in management</p>	<p><i>Truly speaking, the unwholesome activities by . . . destructive. The EPA has planted trees and they have been harvested . . . Similarly, the hedges created by the FC have been destroyed by farmers. We had the information that the FC permitted some of the farmers and charcoal burners to use the trees in the watershed (the head of non-governmental organisation).</i></p> <p><i>Implication;</i> Independent management styles gave local users the opportunity to abuse the watershed.</p>
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Source: Field Work, 2015

Challenges of community involvement

Matheny (1995) stressed on the need for adequate capacity to involve local communities in natural resource management. According to Matheny (1995) the delivery of services among institutions is better enhanced when the legal system for management is very sound and supportive. Based on the recommendation of Matheny (1995), it was necessary to look at the capacity of the management institutions in terms of availability of funds, logistics, and most importantly, legal mandate for organising programmes that will involve the local communities.

Financial capacity of the 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 financial challenges emanated from a number of factors:

Firstly, the heads of the management institutions recalled instances where their attempts to claim funds from the government yielded no good results. In separate interviews, the heads poured their displeasure on government’s quarterly

subventions which they described as inadequate. Some of the heads of the management institutions said, 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. The following remarks tend to support the situation:

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. do not come. For nearly two years, all the state institutions have not received any government allocations or funds.

Secondly, the institutions recalled their past bitter experiences when they did not get the support of local authorities (chiefs, district assemblies, leaders of various groups which use the watershed) to mobilise funds locally. 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 (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.

Thirdly, the management institutions had relied heavily on external support for funding was no longer reliable. According to a World Bank estimates financial assistance to countries for watershed management indicated huge sums of money given to especially developing countries where cost of environmental damage has been generally high. For example, Africa was supported with a total sum of US\$ 311.4 million out of which Ghana received US\$ 94.1 million between 1995 and 1998. According to the heads of the watershed management institutions in the district, several attempts which they had made to solicit funds from international associations such as the World Natural Resource Conservation (WNRC), the World Conservation Strategy and many others, had proved futile. The simple reasons were that the external donors did not accept the project reports sent by the local heads and promised to send down their own project correspondents which they have unfortunately failed to do. This is what the head of one of the management institutions had to say:

We struggle hard to get financial support from external bodies. We wait for so many months, sometimes nearly a year, before getting approval from the WRC to use the little monies that we have solicited. Most at times, we are not able to complete our projects because the District Assemblies have failed to support us in terms of revenue generation.

Nevertheless, the non-governmental organisations in the district had external support in terms of financial assistance. For example, interview with the head of Coastal Resources Centre (CRC) a non-governmental organisation mandated for environmental management gave some examples of the external organisations and some mining companies that had over the years supported many of their projects. He recalled some instances as follows:

We are being supported by external donors such as the USAID, World Fish Environment Sustenance and some oil drilling companies like the TULOW Oil Company in the Western Region of Ghana. We have had several disappointments from the government in terms of financial assistance. Fortunately, we are a bit resourced and it comes through our own initiative and effort.

Technical 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. More so, in some instances, the heads said, the government had recruited unqualified personnel. Only one of the institutions, a local NGO (CRC) was averagely 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. He had the following to say:

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 Forestry Commission and the MoFA for revealing them to the best farming practices and erosion control strategies. Using this approach, community support which has now been identified as important technical and human resource was tapped. The management institutions could be commended even though this technical resource had less impact in the management system. However, the local users of the watershed especially, the farmers, could not hide the negative practices of their colleagues on the watershed. The following is what a forty-three year old farmer at Ituma had to say:

At the beginning of this year, the Forestry Commission, the Environmental Protection Agency and the NGOs came to educate us on some farming methods, some of which included, sedentary farming, contour farming and smallholder rehabilitation methods. Yet, a lot of us did not go by these methods. As a result, the soil is being eroded, and this disturbs those of us at the downstream portions of the watershed.

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 Ministry of Food and Agriculture (Plate 1) explains why the institution could not undertake frequent patrols to stop the illegal activities in the watershed.



Plate 1: The poor state of vehicles at MoFA

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 Water Resource Commission easier, the Environmental Protection Agency, Forestry Commission, 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 statement tends to suggest:

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 the 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, 2006). For state watershed management institutions to work effectively, government of Ghana has established institutions as the Lands Commission, the Survey, Town and Country Planning Departments and the judicial courts to support the state's claim for lands for social development. 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' 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. The statement by one of the key informants from the public regulatory bodies indicates 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.

The inadequate cooperation among the management institutions posed legal challenges for the institutions to battle with. Once the management institutions neglected collaborative project building and thus followed, to a large extent, the sectoral management approach, there were always conflicting interests that made the legal mandate challenges very serious.

V. CONCLUSIONS

Based on the results and discussion the following conclusions could be drawn:

- Community involvement in the management process was only up to decision-making level. The communities surrounding the watershed had done virtually nothing to support the watershed management institutions in terms of implementation, monitoring, evaluation and re-

diversification of projects to meet the changing watershed environment. Hence, the community involvement was poor.

- The management institutions performed poorly due to several challenges relating to capacity for operation. Most importantly, with respect to financial and technical capacities of the management institutions, only one of the organisations (CRC) was better resourced by external non-governmental organisations such as USAID and World Fish Environment Sustenance. The rest, that is, the government institutions were seriously handicapped in terms of funds, personnel and logistics. Again there were conflicts in the legal system of administration which grew serious when the courts in the district failed to amicably resolve them.

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