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RESEARCH ARTICLE

STAKEHOLDERS' ACTIONS AND INVOLVEMENT IN WETLAND RESOURCES MANAGEMENT IN THE CENTRAL RIFT VALLEY OF ETHIOPIA

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ABSTRACT: This study examined the actions and involvement of stakeholders in the management of wetland resources in the Central Rift Valley of Ethiopia. Data were generated through interview conducted with 78 key informants selected from different stakeholders using snowball sampling technique. Thematic analysis was used to analyze the data using NVivo 8 qualitative data analysis software. The result revealed that wetland management is in the dominion of many stakeholders that are categorized into local community, government institutions, private sectors, research institutions and civic societies. The stakeholder arena was characterized by weak coordination, conflicting and/or overlapping roles, responsibilities, and influence power asymmetry. Stakeholders' collaboration and engagement in wetland management is challenged by weak institutional frameworks typified by inconsistency, vague provisions on wetlands, and weak enforcement. The common property notion and the lack of clear property rights regime for wetland resources exacerbated the challenge for proper management of wetland resources. All these factors have contributed to the lag in the management of wetland resources of the area which probably may lead to unsustainable resources outcomes. Hence, there is a need to integrate institutions to avoid conflicting or contradictory issues, enact wetland-specific institutional frameworks, and design multi-stakeholder platforms at various levels via public-private partnership for effective, proactive and synergetic involvement of stakeholders.

Key words/phrases: Central Rift Valley, Ethiopia, Institutions, Stakeholders, Wetlands.

INTRODUCTION

The ever-increasing population growth and economic development and the resultant exorbitant rate of resource consumption have greatly affected the healthy functioning and sustainability of natural resources (Davidson, 2014;

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Chaikumbung *et al*., 2016). This is vividly observable in wetland ecosystems. The different components of wetlands, such as the water, land and biodiversity capture the interests of many stakeholders for various purposes, including irrigation, domestic water supply, fishing, industry, recreation and tourism. Owing to these various arrays of uses, wetlands are facing severe degradation and loss (Smrekar *et al*., 2020).

Ethiopia is endowed with varieties of wetlands including freshwater (riverine, lacustrine and palustrine), saltwater and human made wetlands that have various socio-economic and ecological benefits (Israel Petros and Timar Petros, 2018). However, like many other wetlands of the world, Ethiopia's wetlands are facing sustainability challenges. The Central Rift Valley (CRV) Lakes region of Ethiopia is one of the areas where human and natural factors are heavily devastating wetland resources[1]. The sustainability of these wetland resources is highly impacted by the ever increasing human activities and wetland users' competing claims for various purposes, such as subsistence and commercial farming, business enterprises, industries and tourist activities. The limited response measures (wetland management) more often speeds up degradation and loss (Hengsdijk *et al*., 2010; Israel Petros and Timar Petros, 2018).

Management of wetland resources deals with varied and usually conflicting interests and views of various stakeholders. The conflicting interests often results in failure in resource management efforts (Reed *et al*., 2009). In view of this, the prevailing degradation of wetlands of Ethiopia in general and the CRV Lakes in particular suggest the need for analysis of stakeholders' actions in wetland resources management. Moreover, examining stakeholders' perspective on institutional arrangements[2] that guide the management of wetland resources is indispensable. This is because studies (e.g., Chaikumbung *et al*., 2016; Ramsar Convention on Wetlands, 2018) have revealed that wetlands in different parts of the world remain ignored or under-emphasized in conservation and management policies and practices. Thus, degradation and loss of wetlands are partly attributed to absence or laxity of institutional arrangement, inconsistency among policies and policy

[1] Wetland resources herein refer to open water of lakes, the land surrounding the lakes that is temporarily or permanently saturated or covered with water; and the biodiversity-floras and faunas- found there.

[2] In this study institutional arrangements refer to the rules-in-use, i.e., sets of formal rules (policies, strategies, legislations, regulations and directives) as well as informal rules (norms, practices or codes of conducts) that societies establish to define, guide or govern stakeholders' action in the management of wetland resources.

intervention failures (Marambanyika and Beckedahl, 2016). In Ethiopia, hitherto there is a policy vacuum, and also the need for a stand-alone wetland policy has been contentious. Some scholars, for example, Dessalegne Mesfin (2003) argue that an independent wetland policy is not needed since wetlands are represented in different other policies. On the other hand, some others (e.g., Mengistu Wondafrash, 2003; Messele Fisseha, 2003; Tadesse Amsalu and Solomon Addisu, 2014) argue that because wetlands have critical roles for Ethiopia's water resource and livelihood of local community, it makes sense to consider an independent wetland policy. Owing to such conflicting views, it is imperative to look at stakeholders' perspectives on the existing institutional arrangements that could be pertinent for wetland management. Thus, the objectives of this study are: (i) to identify stakeholders and examine their actions and involvement in wetland resources management in the CRV of Ethiopia, and (ii) to assess stakeholders' perspective on existing institutional arrangements that guide the managements of wetland resources.

CONCEPTUAL FRAMEWORK

The study is informed by Ostrom's IAD framework, a widely used framework in studying management of common property resources (CPRs) (Fig. 1). It has a conceptual unit, which is an 'action arena' where the human environment interaction is conceptualized. The action arena consists of two major components: the actors and the action situation. Actors (or stakeholders[1]) are the participants in an action arena who hold specific positions, perform different activities and make decisions. Action situation is a social space where the various stakeholders engage in different activities; operate and interact (Ostrom, 2010). Accordingly, in this study the action arena is the management of wetland resources (Fig. 1). Within this action arena the study has assessed stakeholders' roles and responsibilities in the management of wetlands as well as their capacity to realize their roles and responsibilities. The collaboration of stakeholders, the challenges they are facing in their collective action and the rules-in-use that guide their action have also been examined. The possible outcome from the action arena is the sustainability or unsustainability of wetlands, which could in turn influence the whole action arena.

[1] Stakeholder in this study refers to any individual, group or organization that has a *stake* in management of wetland resources; and are directly or indirectly involved in decision making (Ramsar Convention Secretariat, 2010).

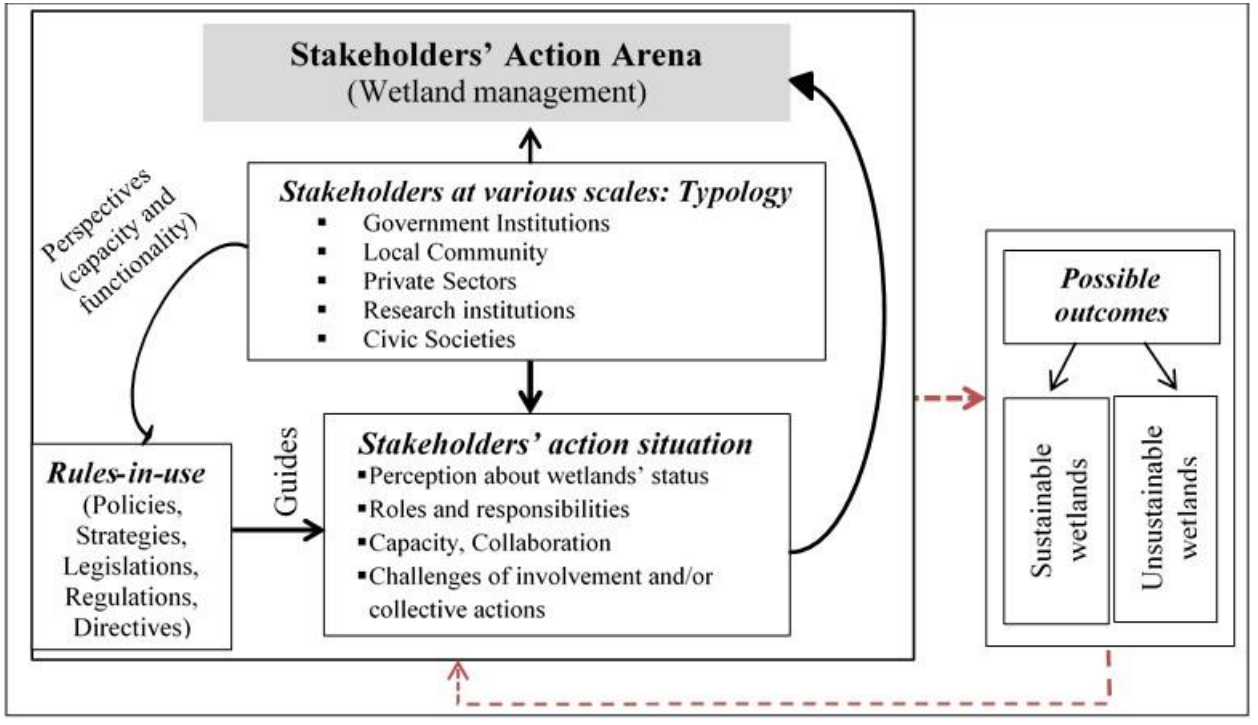

Fig. 1. Framework for analysis of stakeholders' action in wetland management (Adapted from Ostrom, 2010).

MATERIALS AND METHODS

Description of study area

The study was conducted in the CRV of Ethiopia with specific interest to the wetlands of Lakes Ziway and Abijata where misuse and overexploitation of resources have resulted in rapid degradation of wetland resources (Getaneh Gebeyehu *et al*., 2015). The two lakes are situated in the Ziway-Abijata catchment of the CRV of Ethiopia; and they are hydrologically connected with a major inflow of Lake Abijata being discharged from Lake Ziway. The study covered mainly three *woredas*[1] (Districts), namely Adami Tulu Jido Kombolcha (ATJK), Arsi Negelle and Ziway Dugda that are found in the catchments of the two lakes (Fig. 2). Arid and semi-arid agro-climate dominate the study districts with mean annual rainfall ranging from 250mm to 800mm and mean annual temperature range of 4.3°C to 29.5°C (Derege Tsegaye *et al*., 2012). Acacia woodlands and savannas are the dominant vegetation in the districts. According to the national population projection, in 2017 the total population of ATJK, Arsi Negelle and Ziway Dugda districts was estimated to be 172,649; 320,364 and 144,748 (CSA, 2013). The livelihoods of local people depend on mixed farming of livestock rearing and crop production, which is rain-fed with limited irrigation for long-cycle crops (Pascual-Ferrer *et al*., 2014).

Sampling method

The data was collected from experts and professionals of different categories of stakeholders. First, list of stakeholders were identified through the researchers' own acquaintance of prior literature review and informal discussion with experts during reconnaissance[2] survey. Initially interviewed stakeholders recommended other stakeholders to be considered as they have stake in the management of wetland resources. So, there was a need to employ snowball sampling[3] in selecting additional interviewees. Accordingly, a total of 78 individuals were sampled from different stakeholder groups (5 from local community, 57 from government

[1] Administrative units (self-administered districts) in Ethiopia, next to *kebele.*

[2] Reconnaissance-preliminary investigation of the study area- was conducted prior to the main data collection in order to get good insight about the context of the research area and identify pertinent stakeholders.

[3] Snowball sampling can be used when the researcher may not be aware, at the outset, of all the relevant informants involved (Somekh and Lewin, 2005). It involves interviewing individuals from initial stakeholders and then asking the interviewees to refer to other relevant stakeholders (Reed *et al.*, 2009).

institutions (GOs[1]), 3 from private sectors, 8 from research institutions and universities and 5 from civic societies). On the other hand, participants for Participatory Rural Appraisals (PRAs) were selected from study *kebeles* in consultation with development agents (DAs) or agriculture extension agent of the study areas.

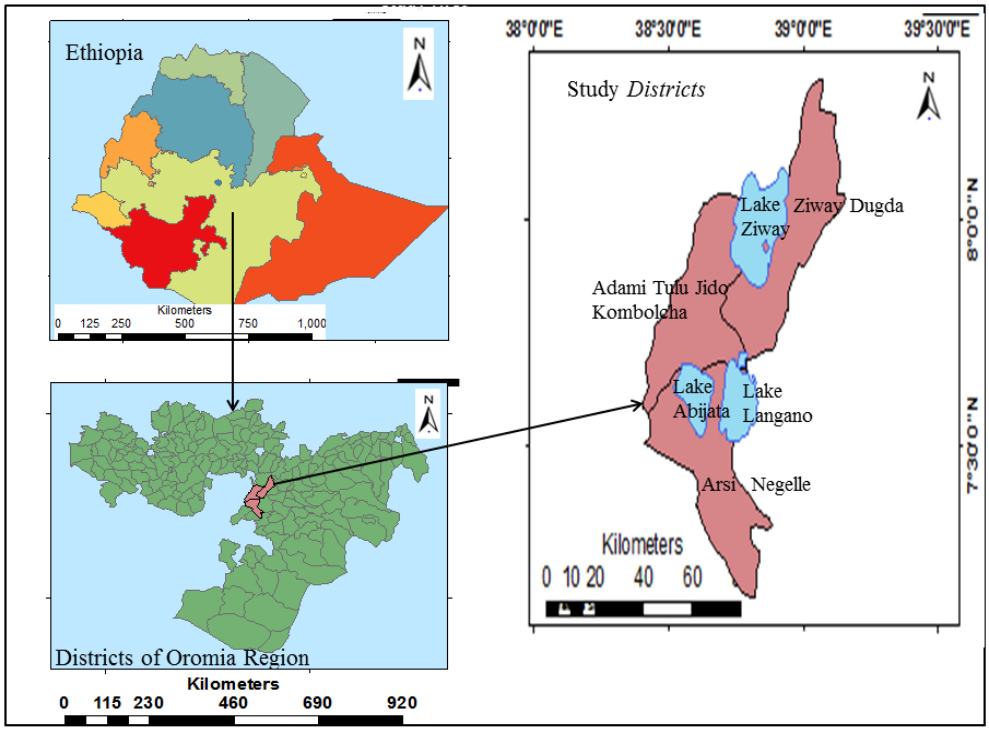

Fig. 2. Location of study districts.

Data sources and data collection methods

Both primary and secondary data sources were employed to produce the document. The data were collected from December 2016 to February 2017 using the following methods:

Key informant interviews (KIIs)

In-depth interviews were held with 78 key persons (officials, experts and/or professionals) of different stakeholder groups. The interviews were

[1] Sector organizations from five levels of the government structure, viz. *kebeles* (the smallest administrative unit in Ethiopia), districts (the three study districts), three respective zones, region (Oromia) and federal level.

managed using semi-structured interview schedule. The main focuses of the interview's questions were on stakeholders' mandates, roles and responsibilities; capacity, involvement and collaboration with other stakeholders; challenges for collective actions in the management of wetland resources; as well as their views on institutional arrangements that currently regulate the management of wetland resources of the area. To assess stakeholders' level of interest and influence in the management of wetland resources, the stakeholders were asked to rate their responses for statements that were forwarded[1]. A four point Likert scale with weighting of 1 to 4 ("Very low", "slightly low", "slightly high" and "very high") was used to rate the scores of the stakeholders' responses.

Participatory rural appraisals (PRAs)

Data was also collected from local communities (farmers, fishermen, women, local community leaders, elderlies and DAs) using PRAs in order to get understanding of the possible conflicts of interests that exist among stakeholders in the management of the wetland resources and their role in resolving the conflicts. Two PRAs were conducted using pairwise ranking and seasonal diagram methods of PRA. Semi-structured guides were used for the discussions.

Field observation

Field observation enabled to capture realities and first-hand information regarding the actual practices in the management of wetland resources. The field observation was managed using observation guide. The results were documented in note books.

Secondary documents

Data has been also collected through review of documents, mainly government sectorial and cross-sectorial policies, strategies, proclamations, legislations, regulations, plans and programs relevant with respect to wetland resources management. The review aimed to assess: (i) the provisions that different policy documents have for management of wetland

[1] In this study the criteria used in previous related research works (Reta Hailu *et al*., 2017; Vogler *et al*., 2017) were adapted. Accordingly, the criteria used are: (1) collecting and/or pay resource use fees, (2) advocating management of wetland resources, (3) protection of wetland resources, (4) capacity building or funding for management of wetland resources, (5) formulating rules for the management of wetland resources, (6) resolve conflict(s) related to the management of wetland resources, (7) coordinating resource management and (8) conducting studies.

resources, and (ii) the (in) consistencies within and among these documents.

Data organization and analysis

Thematic analysis was employed to analyze the data using NVivo 8 qualitative data organization and analysis software. Thematic analysis is the most widely used approach to analyze qualitative data (Maguire and Delahunt, 2017). In this study we have used Braun and Clarke's (2006) 6-step approach of doing thematic analysis, which is the most widely, used approach in social science (Maguire and Delahunt, 2017). The analysis process however is not necessarily linear where one move from one step to the next, rather as Braun and Clarke (2006) recommend it was more recursive - with a back and forth move throughout the steps. Accordingly, at first the transcripts of the interviews were reviewed by repeated reading while taking summary notes/memos/ on key issues that helped to develop initial codes. Secondly, the data was organized in a meaningful and systematic way by generating initial codes. Deductive /theoretical/ thematic analysis (opposed to an inductive[1]) was used whereby the segment of data that is relevant to the research questions was coded. The third step was collating and sorting the coded data extracts into themes and sub-themes. Next was reviewing and refining the themes to check for their internal consistency and external heterogeneity or distinctiveness. In the fifth step the themes are defined and further refined. Lastly the results were written from the analytic narrative by capturing similarities and differences, and confirming and disconfirming evidences.

To analyze stakeholders' level of interest and power of influence[2] in the management of wetland resources, stakeholders were systematically represented in 2 x 2 interest-influence matrix, following Reed *et al*. (2009), Aapaoja and Haapasalo (2014); Reta Hailu *et al*. (2017), Vogler *et al*. (2017) and Smrekar *et al*. (2020).

[1] Inductive thematic analysis follows line-by-line coding of every piece of text in every single line; and the coding is done without trying to fit into a pre-existing coding frame or researcher's analytical preconception (Braun and Clarke, 2006).

2 Stakeholders' interest refers to the position and priority the stakeholders ascribe to management of wetlands, whereas stakeholders' influence refers to the power they possess or entitled to access, control and manage resources.

RESULTS AND DISCUSSION

Typology of stakeholders in the action arena

Scholars have forwarded different ways of identifying the typologies of stakeholders. According to Grimble and Wellard (1997), the exact identification and categorization of stakeholders cannot be pre-determined and it depends on the needs of individual cases. In this study, stakeholders are classified as local community, government institutions, private sectors, research institutions and universities, and civic societies.

Local community

Local community refer to people that reside close to wetland areas (Darradi *et al*., 2006). In this study local community include: local residents that use wetland resources for various purposes, fishermen cooperatives, irrigation cooperatives or Water Users Associations (WUAs), DAs, *kebele* office administrators (KAs), *kebele* watershed committees (KWCs), *kebele* land administration and use committee (KLAUC). They are mostly affected (positively or negatively) by the outcome of the wetland resources management activities. Darradi *et al*. (2006) labeled local communities as stakeholders that use wetlands mainly for their livelihoods. Reta Hailu *et al*. (2017) also stated that local communities usually use water resources for different purposes and so are affected by resources management programs.

Government institutions

Stakeholders in this category include Ministry of Agriculture and Natural Resource (MoANR), Ministry of Environment Forest and Climate Change (MoEFCC), Ministry of Water Irrigation and Electricity (MoWIE), Ministry of Livestock and Fishery Resource Development (MoLFRD), Ministry of Culture and Tourism (MoCT), Ethiopian Investment Commission (EIC), and their respective tiers at lower levels of government: regional (Oromia), zonal[1], *woreda* and even some at the town level. Moreover, there were Rural Land Administration and Land Use Implementation Bureau/office (RLALUIB/O) and Irrigation Development Authority (IDA) that are independent at lower tiers- regional, zonal and *woreda*, yet they just exist as a department at the federal level. Other stakeholders are Abijata-Shalla Lakes National Park (ASLNP), Rift Valley Lakes Basin Authority (RVLBA) - both Hawassa main office and Batu branch office. At town

[1] In this study experts and/or officials in the respective offices were consulted from three zones, viz. East Shewa, West Arsi, and Arsi where the respective three study *woredas* – ATJK, Arsi Negelle, and Ziway Dugda- are located.

level, there was Batu Town Administration Environment Forest and Climate Change Authority (BTAEFCCA) and Batu Town Culture and Tourism Office (BTCTO). Stakeholders of this category do not have immediate direct interest to generate benefit out of wetland resources. Reta Hailu *et al*. (2017) noted that government stakeholders are usually mandated to policy formulation and enforcement. Darradi *et al*. (2006) have also stated that government stakeholders are influential in policy making and making decision in management of wetland resources.

Private sectors

Small-, medium- and large-scale commercial farms such as floriculture and horticulture enterprises, ELFORA Agro-Industries private limited company, hotels, resorts, or recreational industries were considered as private sectors. There are also semi-autonomous public enterprises[1] such as Abijata Soda Ash Plant (ASAP). As Darradi *et al*. (2006) noted these groups of stakeholders consider wetlands as a good opportunity to develop economically. For Reta Hailu *et al*. (2017) private sectors are profiting sectors owned and operated by public or private actors and they are obliged to meet 'corporate social responsibility' (CSR)[2]. However, as Fentaye Kassa (2018) noted Ethiopian private sector is not taking the leadership in CSR and there is a limited private-public partnership (PPP). This might be because of the high priorities that have been given by the government to businesses and enterprises that contribute to growth with little emphasis on CSR performance to environment values (Robertson, 2009).

Research institutions and universities

The stakeholders of this category are Addis Ababa University, Hawassa University, Arsi University, Adama University, Haromaya University, Ziway Fishery Research Centre (ZFRC), Ethiopian Environment and Forest Research Institute (EEFRI) and Ethiopian Biodiversity Institute (EBI). Smrekar *et al*. (2020) labeled these groups as 'Knowledge Providers'.

Civic societies

This category includes semi-governmental and NGOs, most of which are non-profit making that indirectly influence management of wetland resources. The stakeholders in this category include Horn of Africa

[1] Enterprises that are partially owned by the federal or regional governments (FDRE, 2012).
[2] CRS is "the extent to which firms integrate, on a voluntary basis, social and environmental demonstrate concern in their ongoing operations and interactions with stakeholders" (Idowu *et al*., 2015:8).

Regional Environment Centre and Network (HoA-REC&N), Ethio-Wetlands and Natural Resources Association (EWNRA), Catholic Relief Services (CRS), Ethiopian Wildlife and Natural History Society (EWNHS) and International Water Management Institute (IWMI). These stakeholders mostly provide support for wetland management activities, through finance, technical or material, and research output (information) and advocacy. For Smrekar *et al*. (2020) these stakeholders are 'Civil Society' that represents the interests of individuals, citizens, civil society organizations and right-holders. Some of these are at the heart of advocacy, policy prescriptions, and political interests (Reta Hailu *et al*., 2017).

Stakeholders' roles, responsibilities, interests and influence

Stakeholders in the CRV Lakes area differ in their roles and responsibilities. Some of the stakeholders such as government institutions have multiple roles and responsibilities whereas research centres and universities have specialized roles and responsibilities (Table 1). Likewise, they vary in their interests and influences in the management of the resources (Fig. 3).

The findings on the roles and responsibilities revealed that local community have practically important roles and responsibilities in conservation and management practices. These stakeholders particularly, local community leaders have also great role in resolving disputes and conflicts in resource use and management. Local residents, small-scale irrigators and fishermen are mostly active in mobilizing and contributing labor to resource conservation activities such as watershed management (WSM) (Table 1). PRAs findings have attested that for these stakeholders protection and conservation of wetland resources are among the practical roles and responsibilities since their livelihood is highly dependent on these resources. Herein, Darradi *et al*. (2006) stated that the local stakeholders' concern of conserving wetlands is strongly attached to their uses of the wetlands. On the other hand, some of the roles and responsibilities of the local community lack practicality (Table 1). This is mainly because they have weak power to influence the resource management system as the higher government structures are vested with the powers. Except in conservation activities, such as WSM, they are hardly consulted and involved in most activities of resource use and management. Local residents and indigenous people are the custodians and legitimate stakeholders that should take active roles in planning and joint management of wetlands (Ramsar Convention Secretariat, 2010). However, in this study, these stakeholders were less entitled to this right. For example, the local people in ASLNP strongly

claimed that they are less privileged because of the lack of institutional frameworks that include their voice. Also, Fekadu Teferra and Fekadu Beyene (2014) noted that the state, which is the de jure owner of the park, was ineffective to devise means to accommodate local people's interests where indigenous claims are based on customary rights to resources in the park before its delineation. Because the local communities are the mainstay of resource conservation, underrating their concern may lead to unsustainable management outcome.

Local communities have high interest in conserving wetland resources, resolving conflicts, coordinating and controlling the management of wetland resources (Table 1). Despite their high interest and their de facto[1] rights to manage resources of their locality, they are mostly voiceless, marginalized and thus had low influence. Interviewees and PRA discussants of these stakeholders have often referred to the inability to confront and influence stakeholders at the higher level of the government institutions towards their interests unlike other stakeholders (such as the private sectors). Concurrent with these findings, Aapaoja and Haapasalo (2014) pointed out that local people are "Keep informed" stakeholders with low impact and no power to control resources management although they have the interest. Likewise, for Reed *et al*. (2009) local stakeholders are "Subjects" with high interest but low influence (Fig. 3). Despite often being marginal and lacking the capacity for impact, these stakeholders are supportive. Hence, they need to be empowered since they can be influential by forming alliances with other stakeholders.

[1] Actual or exercising power without being legally or officially sanctioned.

Table 1. Stakeholders' roles and responsibilities, interest and influence in management of wetland resources.

Stakeholders (Nature of stake)	**Stakeholders' practical roles and responsibilities[18]**	**Stakeholders' potential roles and responsibilities**	**Areas of high interest**	**Areas of high influence**
Local community (A *de facto*- customary right)	Participate in resources conservation (contribute or mobilize labor (for WSM); resolve disputes or conflicts in resource management	Monitor resource use; control pollution, resource wastage; promote and sensitize wise use of wetland resources and resource-saving technologies (for DAs, KAs, KLAUC, KWC)	Protect wetlands; coordinate and control resource management; resolve conflicts of resources management	- Resolve conflicts related to management of wetland resources
Government institutions (Regulatory, administrative right and obligation)	Formulate rules-in-use; plan and implement resource management activities (WSM, IWRM); capacity building through training; request submission of EIA from development projects or investments; promote resource-saving technologies; collect water use fees; determine allocation and manner of resources use	Promote efficient and equitable resources use; evaluate impacts of projects' activities and regulate their conformity with EIA and other standards; control and monitor water quality and proper wastes and disposal; ensure enforcement of rules-in-use; assess available resources and establish resource database; conduct studies	Collect resources use fee; control resources management; protect wetland resources; building capacity or funding for resource management; formulate rules for resource management	Collect resources use fee; control resources management; protect wetland resources; building capacity or funding for resource management; formulate rules for resource management
Private sectors (Profit making-ownership right)	Use resource-saving technologies (e.g. sprinkler); recycling in resource use (in water use); participate in or fund resources management activities	Efficient and equitable use of resources; control pollution through proper waste disposal, proper management of agrochemicals and use of waste treatment technologies	Protect wetland resources (mostly to generate benefits); payment of resource use fee	Few of them in funding for resources management
Research centres and universities (Knowledge generation-intellectual right)	Conduct studies; facilitate capacity building training; design and publish national strategy; research and documentation on Ethiopia's biodiversity and distribute to relevant stakeholders	Disseminate research outputs; design and implement resource conservation projects; facilitate and create platform for stakeholders to work jointly	Protect resources; capacity building (training, awareness creation); conduct studies related to wetland resources	Capacity building (via training and awareness creation); conduct studies related to wetland resources
Civic societies (Advocacy- intellectual right and social obligation)	Capacity building (training, funding, technical assistances for resource management; awareness creation and advocate sustainable use of resources; conduct studies; develop land use or lake management plan.	Disseminate information and/or research outputs	Protect resources; capacity building (training, funding); conduct studies related to wetland resources	Capacity building (via training or funding); conduct studies related to wetland resources

Source: Synthesized from own field data, 2017

[18] Practical roles and responsibilities refer to the roles and responsibilities that stakeholders are now actually performing; whereas the potential roles and responsibilities are those that the stakeholders are supposed to perform but they are in most cases not well performed.

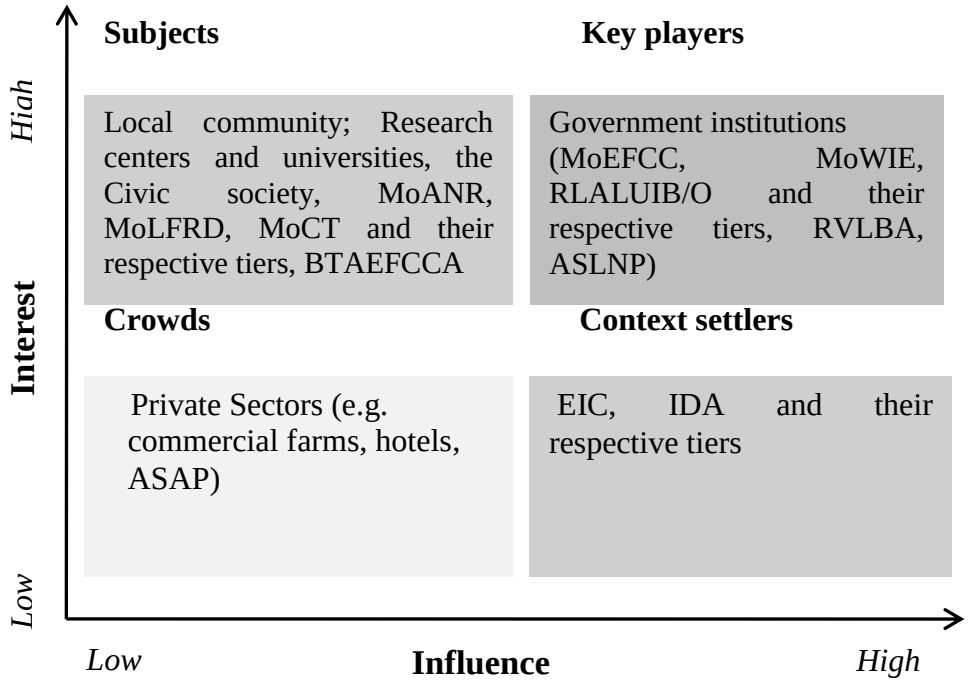

Fig. 3. Representation of stakeholders' level of interest and influence to wetland resources management; Source: constructed based on field work in 2017.

Government institutions are authorized with regulatory and administrative rights in the management of wetland resources. They have several roles and responsibilities (Table 1); including formulation of rules-in-use; to plan, supervise, coordinate and implement activities related to wetland resources development, conservation, and management; capacity building; determine allocation and manner of resources use; and to collect water fees. Despite these practical roles and responsibilities, the government institutions have also many potential roles and responsibilities that need proper enforcement but not sufficiently realized. For example, MoANR, MoLFRD and MoCT and BTAEFCCA and their respective tiers are inept in execution of their roles and responsibilities. This is because, firstly, there are contradictions, lack of clarities and overlapping responsibilities for the management of wetland resources. Consequently, there are multiple sectors that are claiming the legitimate power to manage wetland resources. Secondly, some of the government institutions, particularly at *woreda* level, faced resource limitation (financial, human and/or physical). Thirdly, there are government institutions (such as EIC and IDA) that promote development activities, but

give less emphasis to the environment (and wetland ecosystems). This can be exemplified by the failure of these institutions to properly monitor the compliance of different development projects with EIA and other standards. Likewise, Darradi *et al*. (2006) argued that, unlike the local stakeholders, external stakeholders are more concerned about the expansion of development activities.

Government institutions revealed varying level of interest and influence in the management of wetland resources. The MoEFCC, MoWIE, RLALUIB/O and their respective tiers, RVLBA and ASLNP possessed high interest and influence in the management of wetland resources. Reed *et al*. (2009) labeled them as "Key players" (Fig. 3). On the other hand, the MoANR, MoLFRD and MoCT and BTAEFCCA and their respective lower tiers had high interest yet low influence, and thus occupied the upper left corner of the interest-influence matrix; labeled as "Subjects" or "keep informed". These government institutions (the "Subject") are blamed for having a superficial high interest just because of the administrative obligation they are assigned to manage resources. However, they are quasi-influencing stakeholders that just possess the power given by virtue of the law but not exercising it. Similarly, Reta Hailu *et al*. (2017) documented that some stakeholders seem to 'abuse power' in the sense that they have high importance and potent power yet unable to influence and get involved in management of resources. The low level of influence of MoANR, MoLFRD and MoCT and BTAEFCCA may be attributed to the fact that most of the rules-in-use that govern the use and management of wetland resources are either 'local community' under the MoWIE, RLALUIB/O or MoEFCC. For example, the Federal Democratic Republic of Ethiopia (FDRE) Proclamation No. 197/2000 (FDRE, 2000), Proclamation No. 916/2015 (FDRE, 2015) and Regulation No. 115/2005 (FDRE, 2005a) have vested power for the MoWIE to plan, manage, protect and equitably allocate and utilize water resources of Ethiopia. The Oromia Region Rural Land Administration and Use Regulation No. 151/2012 (ONRS, 2012) has assigned RLALUIB/O to handle the use and management of rural land (and wetland) resources. Likewise the River Basin Council and Authorities Proclamation No. 534/2007 (FDRE, 2007) and the Councils of Ministers Regulation No. 253/2011 (FDRE, 2011) decrees RVLBA as an autonomous federal government organ to promote and monitor the implementation of Integrated Water Resources Management (IWRM) in the Rift Valley Lakes Basin.

Government institutions with low interest and yet high influence in the management of wetland resources are EIC and IDA - so called "Context setters" (Fig. 3). It is worth to recognize that these stakeholders have significant role in the management of wetland resources because most investments (such as the horticulture and floriculture) in the study area get the permit for resource use and investment from these stakeholders. Thus, the low level of interest of these stakeholders in the management of wetland should not be neglected, and there is a need to boost their interest in the management of the resources. Reed *et al*. (2009) argued that, unless there is some mechanism to monitor and manage the "Context settlers", they could be a significant risk.

The other group of stakeholders - private sectors mainly commercial farms (floriculture and horticulture), ELFORA Agro-industry and ASAP are direct users of wetland resources. These stakeholders have role in conservation and management of wetland resources, through the use of resource-saving technologies (for example, sprinkler for irrigation), recycling of resource use and financing conservation activities. However, they were ineffective in performing most of their roles and responsibilities (Table 1). Although they have the capacity to play great roles in management of wetland resources, they were highly blamed for their imprudent use of the resources and reluctance in management activities. According to Cohen-Shacham *et al*. (2014), private sectors are merely interested in developing their projects for greater income. Likewise, in the CRV area, private sectors were mostly targeted on maximizing their profit.

Private sectors occupied the bottom left corner in the interest-influence matrix, with low interest and low influence in the management of wetland resources, that Reed *et al*. (2009) named as 'Crowds' (Fig. 3). Although the interest-influence matrix analysis revealed their low level of influence, private sectors have the potential to influence and reinforce the management of wetlands (through their financial capacity). Herein, Reta Hailu *et al*. (2017) documented that despite their limited commitments to contribute to resource management; private sectors have 'silence power', to access resource and influence public stakeholders. This suggests that the power of influence is not only be vested politically but also via financial capital of stakeholders. However, private sectors in the CRV area mostly use their financial power just to secure their economic benefit rather than influencing resource management, for example, through funding resource management activities. Moreover, these stakeholders did not have clear vision and common ground with most other stakeholders on sustainable use and

management of wetland resources of the area. In Ethiopia owing to the undeveloped public-private partnership (PPP), the private sectors are little involved in and influence resource management activities. In this regard, Reta Hailu *et al*. (2017) posited that the PPP is useful for sustainability and effective management of resources and the job remains to be done in developing countries like Ethiopia.

Research institutes and universities have great role in the management of wetland resources of the CRV Lakes. Their roles and responsibilities mainly involve human capacity building through training in NRM and conduct research in the CRV Lakes' ecosystem and biodiversity. For example the EBI was highly engaged in researching on and conservation of biodiversity (Table 1). They had high interest to coordinate and engage in wetland resource conservation and management activities. However, they do not have the power to directly influence the resource management activities. Hence, they are "Subjects" that occupy the upper left corner of the interest-influence matrix (Fig. 3). Stakeholders of the civic society had also great role in capacity building (technical and financial support). They were highly responsible in advocating wise use of resources, capacity building and conducting research/studies. Like the stakeholders in the research institute, the civic societies have high interest to coordinate and engage in wetland resource conservation and management activities. Their level of influence is, however, minimal; they hardly have the power for decision. They are mostly well-resourced in terms of finance and/or expertise. Reta Hailu *et al*. (2017) referred to these stakeholders as 'architects behind policy prescriptions' such as IWRM and Millennium Development Goals (MDGs). Aapaoja and Haapasalo (2014) have also noted that most NGOs are important in creating partnerships among stakeholders.

Stakeholders' synergy in management of wetland resources

Collaborative involvement of all stakeholders within (vertical) and across (horizontal) all levels is imperative for sustainable management of wetland resources. There have been few endeavours among stakeholders to work jointly in different activities that contribute to the management of wetland resources of the CRV area. The stakeholders' main areas of partnership are watershed management (WSM) and ecosystem restoration (ESR); capacity building; research activities and development of land use and management plan (Table 2).

Table 2. Stakeholders' realm of collaboration for management of wetland resources.

Areas of collaboration	Collaborative stakeholders
WSM and ESR	Local communities, *Kebeles*' chairmen, DAs, *Woredas*' offices[a], zones' offices[b], RVLBA, RVLIWDM, ASLNP, Universities, CRS
Capacity buildings (mass mobilization, training, awareness creation, finance and technical support)	*Kebeles*' chairmen, DAs, Universities, HoA-REC&N, CRS, RVLBA, RVLIWDM, BTAEFCCA, ASLNP, *Woredas*' offices[c], zones' offices[d], Region bureaus[e], Ministries[f]
Research and development of land (resource) use and management plan	Universities, HoA-REC&N, EEFRI, EBI, EWNRA, RVLBA

Source: Synthesized from own field data, 2017

[a] *Woreda* Agriculture and Natural Resource Office (WANRO) , *Woreda* Rural Land and Environmental Protection Office (WRLEPO), *Woreda* Irrigation Development Authority (WIDA), *Woredas*' Administration Office (WAO)

[b] Zone Agriculture and Natural Resource Office (ZANRO), Zone Rural Land Administration and Land Use Implementation Office (ZRLALUIO), Zone Water, Mineral and Energy Office (ZWMEO)

[c] WANRO, WRLEPO, WIDA, WAO, *Woreda* Water, Mineral and Energy Office (WWMEO), *Woreda* Livestock Production and Protection Agency (WLPPA), *Woreda* Culture and Tourism Office (WCTO)

[d] ZANRO, ZRLALUIO, ZWMEO, Zone Environment Forest and Climate Change Office (ZEFCCO), Zone Livestock and Fishery Development Office- (ZLFDO)

[e] Oromia Rural Land Administration and Land Use Implementation Bureau (ORLALUIB), Oromia Agriculture and Natural Resource Management and Utilization Bureau (OANRMUB), Oromia Environment Forest and Climate Change Authority (OEFCCA), Oromia Livestock and Fishery Development Bureau (OLFDB), Oromia Water Mine and Energy Bureau (OWMEB)

[f] MoANR, MoWIE, MoEFCC, MoLFRD

Stakeholders particularly government institutions of the lower tiers (*kebele*, *woreda* and zone levels) have been jointly working in WSM program. They have been also working in ESR in the degraded ecosystems. As a passive[1] ESR approach, for example, area closures have been done in the upper and lower catchments of Lakes Ziway and Abijata. This practice has legal ground that is clearly stated in the FDRE Rural Land Administration and Land Use Proclamation No 456/2005, Article 13(7) as "Rural land of any slope which is highly degraded shall be closed from human and animal interference for a given period of time to let it recover, and shall be put to use when ascertained that it has recovered" (FDRE, 2005b). Area closure has contributed to ESR in some parts of the study area; however, in most contexts this approach could not help for the regeneration of the ecosystems. This is possibly because most of the ecosystems in the area are highly degraded that could not recover through self-regeneration. Hence, stakeholders have also implemented active ESR through tree plantation. In this regard, Mulugeta Lemenih (2004) noted that ecosystems differ in their ability to recover after disturbance, and so for ecosystems that are slow to recover passive ESR is less effective. Thus, area closures are not adequate

[1] A passive approach seeks to restore the ecosystem by leaving the system alone to regain desirable structure and function through natural succession. Conversely, an active restoration approach involves active human intervention to complement and reinforce the self-regenerating potential of an ecosystem (Mulugeta Lemenih, 2004).

unless active management activities are taken.

Local residents were the foremost actors in the active ESR and WSM activities. KAs, DAs and experts of different government sector offices at *woreda* and zone levels had significant role in mobilizing local residents for tree plantation and building different physical soil and water conservation structures. It is also worth to mention the efforts of universities in establishing partnership with local community and government institutions to engage in WSM activities. Arsi University and Hawassa University have largely worked on conservation and management of the watersheds of Arsi highlands and Gurage highlands respectively. Likewise, MoWIE and HoA-REC&N in collaboration with government institutions at *woreda* and zone levels have made some efforts for delineation of buffers. However, the WSM as well as ESR were inadequate compared to the extent of resource degradation in the area.

Stakeholders' were also collaboratively working in capacity building. In this regard universities have been working in capacity building of human resources via training. Different minister sector institutions, regional bureaus and the civic society had practical importance in provision of physical resources, finance and technical support. Reta Hailu *et al*. (2017) noted that government institutions usually establish partnerships with donor agencies for financial, physical and human capacity building; and similarly donors and NGOs create strong relationship with the local communities through provision of funds and trainings. In the present study such kinds of collaboration were mostly confined between the civic societies and the stakeholders in the federal and/or regional bureaus. Admittedly, stakeholders at the lower levels of the government (zonal, *woreda* and *kebele* levels) require financial, physical and technical support since they have high responsibility in resource management activities. However, in most cases these stakeholders have weak collaboration with the civic societies.

Research and development of land use and management plan is the other area of collaboration mainly among research institutions, universities and environmental NGOs. However, due to poor communication and documentation, there were overlaps and duplications of activities. On the other hand, the partnership of private sectors with other stakeholders was very weak, and hitherto there were limited endeavour to form partnership. Consistent with our finding Rao (2013) noted that it is rare when the business interest and the public interest are aligned; and mostly it is arduous

for these adversarial interests to collaborate in NRM.

Challenges for stakeholders' collective actions

In the CRV area stakeholders' collaboration in management of wetland resource has been challenged by different factors. Absence of framework for joint planning, implementation, follow-up and evaluation of activities are among the prominent challenges. It is often assumed that the role of coordination in forming partnership is the responsibility of the government institutions. This could be why some stakeholders (for example, the private sectors) mostly failed in collective actions of wetland management. Moreover, contradictions and conflicting issues because of conflicting objectives of different stakeholders have often resulted in uncoordinated activities. This has been also a big threat to proper management of wetland resources of the CRV Lakes. In this regard the Wildlife Protection and Monitoring expert of ASLNP reported that soda extraction (by ASAP) from Lake Abijata is in direct conflict with the conservation objectives of the ASLNP. This implies that the multi-sectorial nature of wetland resources could not allow a single stakeholder to effectively work on resource management. Collaboration of stakeholders is problematic in a context when the stakeholders did not synchronize and collaborate while planning their activities that potentially result in a conflict of interest and claim for legitimacy over the management of resources (Reta Hailu *et al*., 2017).

Lack of clarity of mandate, conflicting and overlapping responsibilities are also among the challenges for effective involvement and collaboration of the stakeholders. As the interviewees from WWMEOs illustrated, the multi-sectorial management claim on the lakes' water resources was very contesting for strict management of the resources. Often, informants underscored the conflicting rights of WWMEOs and WIDA. The water office is working on permit system for water use, while the irrigation authority allows water uses for small scale irrigation by any person without holding any permit. There were also overlaps in the responsibilities of the MoWIE and RVLBA; for example, issuing water use permit was legally vested to both sectors. Besides creating duplication of efforts, this has made the management of water resources very challenging. Reta Hailu *et al*. (2017) and Vogler *et al*. (2017) have also highlighted that overlaps and lack of clarity in the stakeholders' roles and responsibilities are among the big challenges of collective action for sustainable management of resources.

The influence power imbalance among stakeholders is the other big challenge for stakeholders' effective involvement in wetland resources management. Interviewees from government institutions, research institutions and local communities underscored the difficulty to confront the vested interests of private sectors that are financially powerful. A Natural Resource Development and Utilization Coordinator of ATJK WANRO described that "Because of their financial power and by virtue of their economic importance in generating foreign exchange, private sectors usually receive greater attention. Hence, the tendency to realize their interest is high as opposed to other public". This can bring discords in resources management that in turn results in unsustainable resource management outcomes. According to Rao (2013) and Vogler *et al*. (2017), resource managers, conservation groups and policy makers prefer to avoid bringing all stakeholders together for open discussion since it is complex to tradeoff their interest. Hence, we argue that bringing together stakeholders that have influence power imbalance, some potent and others voiceless, is gruelling in the absence of a common and impartial framework or platform.

Apart from the influence power imbalance, capacity limitation was the other challenges of stakeholders in the management of wetland resources. This was highly noticeable for government institutions at the lower administrative levels- zones, *woredas* and *kebeles*. The limitation in finance, human and physical resources deters their effective involvement in the management of wetland resources. Herein, the Environmental Protection Team Leader from Ziway Dugda WRLEPO reported that, in the new administration structure this office (the WRLEPO) has been split into two units: Rural land administration and land use implementation sector and Environmental protection sector. But, there are very few experts running these units. Although local NGOs and donors provide financial and technical support for local communities, there is also limitation in financial capital. As it has been reported in NBI (2013), because many countries do not have a wetland specific policy or strategy, most often funding on wetland conservation and management is lacking and the allocation of funds, if any, does not contain the necessary funding support for wetlands.

Stakeholders' collaboration and involvement was also challenged due to indeterminate property regime or unclear property rights over the management of these resources. Herein, a best case in point that stakeholders particularly zone and *woreda* level experts unanimously agreed on is the contested resource (land) tenure in ASLNP. There was years lasting tension between local people and the Park's governing authority. The

government intends to protect the Park for conservation, tourism development and research, whereas the local people had claim for livelihood security. This has frequently triggered disputes thereby widespread illegal use and encroachment. Such ill-defined property right has challenged the proper management of resources, which has great implication for the sustainability of the resources in the area. Moreover, insight from the account of expert in Arsi Negelle WRLEPO illustrated that the jurisdiction on the administration of land and other resources in ASLNP is confusing since the park's boundaries[1] do not coincide with any administrative boundaries- *kebeles*, *woredas* or zones.

Gaps in institutional frameworks and the resultant weak enforcement have also been big challenges for stakeholders' active involvement in wetland resource management. Because wetland resources management involves multiple stakeholders, the tradition of role confusion and power mingling has long been a challenge for proper enforcement of institutional frameworks. A detail finding on this is presented in the next section.

Stakeholders' perspective on the capacity of institutional arrangements

Stakeholders unanimously asserted that the capacity of the existing institutional arrangements is unsatisfactory in serving effective management of wetland resources of Ethiopia in general and CRV areas in particular. Among the prominent limitations were the contradictions and inconsistencies that exist between and within the institutional arrangements. For example, Article 29 of the Oromia National Regional State (ONRS) Proclamation No. 180/2013 legally assigned the power to the Oromia Irrigation Development Authority to use water for the sake of small scale irrigation without any permission (ONRS, 2013b). On the other hand, the Ethiopian Water Resource Management Proclamation No 197/2000 emphasizes on the permit system for water resources use and management. The proclamation by itself contradicts because in Article 12(1b) it plainly declares that "any person shall utilize water resources for traditional irrigation without holding a permit issued by the supervising body" (FDRE, 2000). Such provision could intensify abuse of water resource by free-riders, such as expansion of smallholder irrigation farms that could impact on the sustainability of the lakes and associated wetlands.

[1] ASLNP lies in three *woredas*: Arsi Negelle, Shalla and ATJK where a respective 85%, 10% and 5% of the park's area is located (Fekadu Teferra and Fekadu Beyene, 2014).

Similarly stakeholders underscored the contradiction of the policy statements of EWRMP and the Ethiopian water sector strategy (EWSS). The EWRMP stipulates conservation, protection and enhancement of water resources and the overall aquatic environment on a sustainable basis (MoWR, 1999); whereas the EWSS targets on draining the country's wetlands and converting them for other purposes (MoWR, 2001). In an economically poor country like Ethiopia, several economic activities (subsistence and commercial) occur at the expense of resource degradation. Given this reality, the damage to resources will be great if resource exploitations have such policy backing. Many stakeholders blamed the EWSS since its provisions on wetlands focused on sacrificing wetlands for human's socio-economic values with complete disregard of their ecosystem services. Melesse Damtie (2011) has also referred the EWSS as an extreme example where anthropocentric view[1] on wetlands is highly reflected. Such contradictory and conflicting provisions highly deterred the enforcement of policies and strategies.

The other pitfall of the existing institutional arrangements is the vague provisions and controversial issues stated regarding the use and management of wetland resources. As an illustration, stakeholders frequently mentioned the provision in Article 20(3) of the Oromia Rural Land Administration and Use Proclamation No. 130/2007. It proclaimed that wetlands shall be used for agriculture purposes with the consent of the community and technical support of professionals (ONRS, 2007). Herein, stakeholders strongly argued that such kind of provisions are open for interpretation. It is indisputable that farming and open grazing in the wetlands highly threaten the ecological functioning of these ecosystems. However, a ban on the use of wetlands for such purposes may be challenging in the presence of such kinds of proclamations.

Stakeholders have also stressed that the CPRs notion reflected in different statutory laws is controversial, and thus has great implication for the management of wetland resources. The constitution of the FDRE in its Article 40(3) stated that all natural resources, including land, are common properties of the Nations, Nationalities and Peoples of Ethiopia (FDRE, 1995). This provision might egg on land grabbing that prevails in recession farming in the lake retreat areas around Lake Ziway. The Ethiopian Water Resource Management Proclamation No. 197/2000 has similar provision in

[1] The mindset that we human being are master of nature and the centre of everything and that everything is created to meet human interest (Melesse Damtie, 2011).

Article 5 that states all water resources of the country are the common properties of the Ethiopian people and the state (FDRE, 2000). Such mechanism of putting resources under the common property favours private sectors as they have the power to exploit more resources to their best interest. Herein Beckh *et al*. (2016) documented that usually, governments statutorily declare land, water, fisheries and forests as public goods, on the argument that these resources are open, free or un-owned and they just provide environmental services. However, in the context of weak collective action or no action by different user groups that hold tenure rights to the same publicly owned common resources, the tendency to act based on individual interest increases and may lead to overuse, degradation and loss of resources. This view was originally initiated by Hardin (1968) in his well-known article 'The tragedy of the commons', with a central argument that nobody will be concerned to improve and protect 'common resources', since each individual tries to maximize economic benefit from it.

Poor enforcement of institutional frameworks is the other gap. Stakeholders underscored that the farming practices in CRV Lakes areas are utterly against the provisions given in different legal frameworks. The ONRS Rural Land Administration and Use Proclamation No. 130/2007 in it Article 20 (2) and (3) stipulated that rural land users should not perform activities that are damaging to the wetlands and springs and ban on mismanagement and improper utilization of wetland (ONRS, 2007). Likewise the Oromia Region Rural Land Administration and Use Regulation No. 151/2012 in its Article 21(3) decreed that "*Any land user whose holding is adjacent to water points, ponds, streams, and marshy lands is obliged to keep away the distance of 25 meters, and similarly 100 metres from the big ponds and water points*" (ONRS, 2012). Despite such provisions, stakeholders stressed that farming of wetlands is very common in the study areas. Over and indiscriminate fishing in Lake Ziway is also another manifestation for the poor enforcement of legal frameworks. Acquisition of legal fishing permit for undertaking commercial fishing is decreed in the Fisheries Development and Utilization Proclamation No. 315/2003 (FDRE, 2003) and the ONRS' Fishery Resource Development, Preservation and Utilization Proclamation No. 178/2013 (ONRS, 2013a). Informants from ZLFDOs and WLPPAs affirmed that although most fishermen cooperatives have permit for fishing from Lake Ziway, there were also many private fishers who practiced commercial fishing with no legal permit.

Likewise, waste management and disposal system of private farms, commercial sectors and public enterprises infringed the Environmental Pollution Control Proclamation No. 300/2002[1]. However, accounts of informants from *woreda* stakeholders and evidences from field observation revealed that the provisions of the proclamation lacked enforcement in the study area. The large scale flower farms directly release their wastes to the water system of Lake Ziway. The municipal solid waste management and disposal system of Batu town is also accused of being against prescribed laws, such as the Environmental Pollution Control Proclamation No. 300/2002[2]. The disposal of effluents and solid wastes has aggravated the pollution of Lake Ziway. The poor enforcement of institutional arrangements certainly increases the transaction costs in the process of pollution abatement.

In the CRV of Ethiopia, farming of wetlands, illegal fishing practices as well as improper management and disposal of wastes are illustrations of the poor enforcement of existing institutional frameworks that have ramification on the sustainability of wetland resources. Many stakeholders asserted that the major reason for the poor enforcements of existing institutional frameworks is the absence of subsidiary governing documents such as directives, standards and guidelines to control or monitor their enforcement and assure compliance at the local level. In this regard, Dessalegne Mesfin (2003) noted that at federal level there are policies and strategies; however, most of them have poor enforcement because they are not based on an understanding of the problems and difficulties facing wetlands at local level.

Apart from proper enforcement of available policies and legal frameworks; stakeholders have stressed on the need for wetland-specific policies that can effectively address wetland problems. Over the past decade there has been attempt to formulate wetland policy, although it has not yet been endorsed. According to Messele Fisseha (2003), because wetlands have a critical role

[1] Article 3 sub article 1, 3 and 4 state that "*(i) no person shall pollute the environment by violating environmental standards; (ii) if engaged in any field of activity that is likely to cause pollution or any other environmental hazard, shall install a sound technology that avoids or reduce the generation of waste; and (iii) if causes any pollution, shall be required to clean up or pay the cost of cleaning up the polluted environment*" (FDRE, 2002).

[2] The proclamation in its Article 5(1) states that '*All urban administration shall ensure the collection, transportation, and, as appropriate, the recycling, treatment or safe disposal of municipal waste through the institution of an integrated municipal waste management system*' (FDRE, 2002).

in Ethiopia's hydrology, it makes sense to consider a separate policy, which exclusively deal with these resources and ensure that the whole landscape of wetlands is managed. Consistently, research institutions, universities, and the civic society strongly advocate the catch phrase of Ramsar Convention: *'A unique wetland policy provides a clear opportunity to recognize wetlands as ecosystems requiring different approaches to their management and conservation, and not being masked under other sectorial management objectives'* (Ramsar Convention Secretariat, 2010:17). Cognizant of the significances of the Ramsar Conventions to the management of wetland resources, stakeholders have also reiteratively underscored the need to sign the convention as it will capacitate Ethiopia for effective management of wetland resources.

CONCLUSION AND RECOMMENDATIONS

The management of wetlands of the CRV area is in the realm of multiple stakeholders. The stakeholders' action situation is characterized by conflicting and/or overlapping actions, interests, roles and responsibilities power asymmetry. The collaboration and collective actions among stakeholders were also weak with a significant gap in the collaboration of private sectors with other stakeholders. The existing efforts of stakeholders in wetland resources management are uncoordinated and fragmented. Such conventional resources management scenario, whereby stakeholders plan and implement activities in isolation cannot ensure sustainable wetland resources management outcomes. The existing institutional frameworks that are presumed to guide the management of wetland resources are characterized by inconsistent, vague and contradictory or conflicting provisions; poor regulatory performance, and weak enforcement. This poses challenges to the management of wetland resources. So, it is plausible to deduce that existing institutional frameworks are not practically rules-in-use to adequately address issues pertinent to ensure sustainable management of wetland resources.

Because multiple stakeholders are involved in the management of wetland resources, an integrated perspective among different actors is needed to ensure sustainability of wetland ecosystems. It is therefore sensible to recommend that the management of wetlands needs to involve multi-stakeholder platform, such as public-private partnership (PPP) for a proactive engagement of all stakeholders for joint planning, implementation, monitoring and evaluation of resources use and management activities. It is also reasonable to call for formulation of strong regulatory framework and

institutional arrangements to properly administer these resources if their sustainability needs to be guaranteed.

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