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Assessment of Water Governance Practices in the Central Rift Valley of Ethiopia: Transparency, Accountability and Participation

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ABSTRACT

Water governance embraces value-related principles such as public participation, accountability, integrity, and transparency. This study aimed to assess whether water governance practices in the Central Rift Valley of Ethiopia address transparency, accountability, and participation in irrigation water service delivery. Key informant interviews, focused group discussions, field observation, and document reviews were used to gather data for the study. The NVivo 11 software program was used to organize, code, and analyze the data. The result indicates that water policies were enacted and institutional reforms were undertaken to ensure integrity and accountability in water service delivery. However, the policy and legal frameworks were not fully implemented at the grassroots level. Mechanisms that enable diagnoses and prevent poor transparency and integrity did not exist in irrigation water service supply. Transparency tracking mechanisms were missed in the study area. Gender equity in water service delivery such as access to water and irrigation technologies for females remains unaddressed. Stakeholders' participation in water governance was not consistent and systematized. Hence, promoting legal and institutional frameworks that ensure accountability, tools, and systematic mechanisms that ensure integrity and transparency, capacitating regulatory institutions and coherent participation strategies needs more emphasis in the study area.

Introduction

Water governance considers multi-sector participation beyond the state, including the private sector, civil society, and the public in general (Tortajada 2010a). In addition to rules, regulations, and institutions, water governance embraces value-related principles including, but not limited to public participation, accountability, and transparency (Adhikari and Tarkowski 2013). The World Bank and UNDP also identified these principles as the major principles of good governance (Kaufmann 2021). Özerol et al. (2018) stated water governance is the social function that regulates the development and management of water resources and provisions of water services for society and guides the resources towards a desirable state and away from an undesirable state.

On the other hand, good water governance implies that water resources are managed and services provided in an equitable, transparent, and participatory manner with appropriate accountability mechanisms and in accordance with

human rights standards (Biad et al. 2015). Good water governance can also be proposed as openness and transparency, broad participation, rule of law (predictability), and ethics, including integrity (control of corruption) (Lautze et al. 2011; Ribeiro and Johnson 2018). Hence, improved water governance includes the participation of stakeholders in a transparent and accountable way in the decision-making mechanisms that achieve sustainable water uses.

In the governance arena, decisions should be coherent with a broad set of principles leading to a more progressive efficient, and equitable management of water resources (Torjatada 2010a), because involving users of water in the governance of the resource makes the participation more meaningful. Users involved may help to accept the regulations as appropriate and consistent with their values and interests and be more willing to comply with them (Kooiman 2003). In addition, local stakeholders may be more familiar with the peculiarities of local economic, social, cultural, and environmental situations (Torjatada 2010a).

Transparency refers to the openness and public access to information so that citizens can understand the decision-making processes that affect them, and are knowledgeable about the standards to expect from public officials (UNDP and SIWI 2011). It requires all key actors to facilitate all means for citizens to understand the decisions that may affect them (Das et al. 2016). Accountability is the requirement for powerful actors to accept responsibility and answer for their actions (Nuesiri 2016). Accountability could be vertical, horizontal, or diagonal (Karar 2017). When vertical, horizontal and diagonal accountability practices are primarily civil society or citizen-driven, they are referred to as social accountability (Nuesiri 2016; Karar 2017). The Human Rights framework identifies three essential principles for building accountability which include: responsibility, answerability, and enforceability (Jiménez et al. 2020). On the other hand, participation implies the meaningful and active involvement of a broad range of stakeholders, including vulnerable or marginalized groups in decision-making processes (Jiménez et al. 2020). Participation also refers to equity between and among the various interest groups and stakeholders with fair and impartial processes of decision-making (Biad et al. 2015).

The term governance embraces broad concepts and ideas that are widely practiced. The core principles of governance include participation; equity, non-discrimination and inclusiveness; gender equality; rules-based; transparency; and accountability and responsiveness (UNDP 2013; OECD 2015). In this paper, governance principles are conceptualized as the accountability mechanisms in implementing water policies, strategies, roles, and responsibilities; participation as key stakeholder involvement in water-related decision-making processes and implementation; and transparency as a process of publicizing water-related data and information, irrigation water allocation and distribution, means of financial transfers and uses.

To assess whether water governance addresses issues of transparency, accountability, participation, and equity in the Central Rift Valley (CRV) of Ethiopia, the TAP framework (transparency, accountability, and participation) was employed. TAP framework was selected because of the following benefits in water governance assessments. TAP framework helps to assess the core pillars of water integrity, which is critical for improved governance in managing water resources and providing water services to citizens; and the water TAP approach focuses on strengthening transparency, accountability, and participation in a utility's operations and ensuring compliance with internal rules and regulations (Biad et al. 2015). TAP also enables demonstrable democratic principles, rule of law, information sharing, and respect for gender capacity, and precludes secrecy in transactions pertaining to water supply (Louka 2008). The assessment of TAP within the water sector focuses on measuring: the effectiveness of existing systems and processes to make information open and public; the functioning of compliance and oversight mechanisms, both internal and external; and the level of participation of citizens/end-users in decision-making processes (Jacobson et al. 2013).

The CRV of Ethiopia, the study area, is endowed with various water resources (Berhanu et al. 2014). These water resources are sources for livestock drinking, fish harvesting, crop food production, tourism industry, and home for biodiversity (Vilalta 2010; Etissa et al. 2014; Elias et al. 2019; Hailu et al. 2018). However, these resources have been under severe stress in recent times due to improper human actions (Pascual-Ferrer et al. 2014; Lemi 2019). For instance, over-abstraction of water resources in upper and middle catchment areas, unsustainable and unprotected water use practices, pollution, chemical erosion, and degradation of buffer zones

and wetlands were reported (Jibat et al. 2023). The causes of such problems might be associated with water governance flaws related to transparency, accountability, and participation of stakeholders (UNDP 2013; Jiménez et al. 2020). Hence, this study aimed to assess whether water governance practices in the CRV of Ethiopia address transparency, accountability, and participation, and to implicate future policy interventions.

Methods and Approach

Background of the Study Area

The Ethiopian CRV is part of the African Great Rift Valley and located between 38°00'-39°30' east longitude and 7°00'- 8°30' north latitude. The altitude of the CRV ranges from 1500m above sea level at the lowest parts of the valley up to 4000m, and the climate is humid to sub-humid in the highlands and semi-arid in the Rift Valley the mean annual temperature is around 15°C in the highlands and 20°C in the valley (Pascual-Ferrer and Candela 2015). The rainfall in the CRV is highly erratic and very high rainfall intensity and extreme spatial and temporal variability are the experiences of the study area (Vilalta 2010).

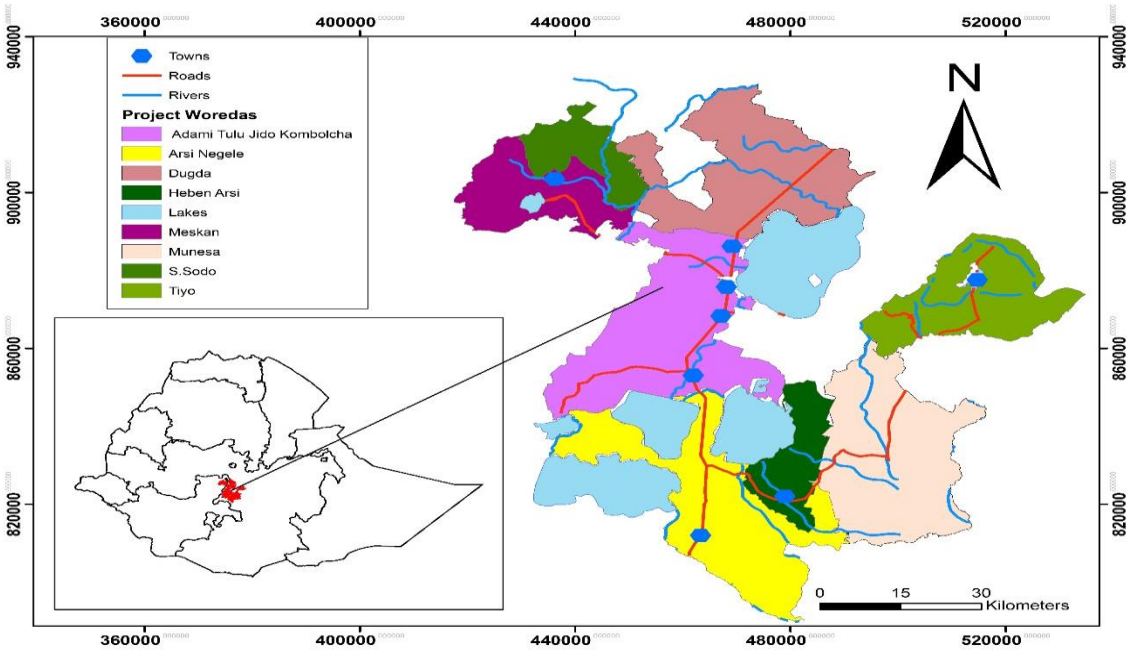

Figure 1. Location Map of the Study Area (Jibat et al. 2023)

The average annual rainfall ranges from 650mm on the rift floor to 1150mm in the highlands (Jibat et al. 2023). The area of CRV covers approximately 10,000 km^2 and is found in two different administrative boundaries, Oromia Regional State, and South Nation Nationalities and Peoples Region (SNNPR). The majority of the population is dependent on subsistence farming, and the area is characterized by small landholding size (Vilalta 2010). The population living in the CRV is estimated to be 2.6 million by projection using the census of 2007. Agricultural production (crops, livestock, fisheries, and forestry) is the main source of the economy and contributed about 67% followed by industry and service sectors accounting for 10% and 23% respectively (Pascual-Ferrer and Candela 2015). The main source of irrigation water is surface water (44% is by river diversion and 31% from Lake Dembel/Ziway), and 25% is used groundwater through wells (Pascual-Ferrer and Candela 2015).

The predominant farming system in the CRV is the small mixed rain-fed production system consisting of grain crops and livestock. The primary grain crops are wheat, maize, barley, and teff (Belay et al. 2017). The main livestock productions in CRV are cattle, sheep, and goats (in decreasing order); and for transportation donkeys, mules, and horses are kept (Vilalta 2010). However, communities in this area are

suffering from poor access to health and education facilities, and there are few opportunities to engage in income-generating activities (Lemi 2019).

Research Approach and Data Collection Methods

This study employed a qualitative research approach that includes key informants' interviews, focus group discussion, observation, and review of policy and legal framework documents. The study involved various government tiers from federal, regional, district, and Kebele levels. A total of 36 key informants were purposely drawn from government, development partners, NGOs, researchers, fishery associations, Irrigation Water Users Associations (IWUAs), farmers, and private company representatives based on their knowledge and experiences. Additionally, 4 focus group discussions (FGD) were held (the details of the participants are presented in Appendix II). Interview and FGD guides were prepared for data collection, and the data were collected through face-to-face personal interviews and focus group discussions. In addition, various policy and legal documents including the Constitution were reviewed.

Data Organization and Method of Analysis

Qualitative data collected through KII and FGD were transcribed and organized under major thematic areas of the study. A separate ID was given to each interviewee, and each file was documented. Transcribed data and policy documents were organized and imported into NVivo 11 software for coding and analysis purposes. Nvivo software package enables for mapping of the pattern of keywords and ideas - classifying of keywords and ideas, grouping keywords, themes, and sub-themes, managing data, and ideas, reporting and organizing thematic representation of the data, and facilitating accurate and transparent data analysis process (Zamawe 2015; Dollah et al. 2017). Following this procedure, all the imported data were carefully read and coded under each of the major themes and sub-themes. Data analysis was carried out qualitatively following a thematic approach.

Results and Discussion

Results

Transparency in Water Governance

Transparency refers to openness and public access to information so that citizens understand the decision-making processes that affect them, and know the standards to expect from public officials (UNDP-SIWI 2011). Several efforts were exerted to ensure transparency in water governance and water service delivery in the CRV of Ethiopia. For instance, one of the key informants (KI-16) mentioned that "*Public institutions have attempted to ensure transparency in water governance uses through Irrigation Water User Associations (IWUAs) regulation.*" Accordingly, every one of the community members who had a pilot of land in the compound of the irrigation site was voluntarily invited to be registered and organized in IWUAs.

In addition, the procedures and mechanisms of registration in IWUAs, the responsibilities and rights of IWUAs members, and how the members use water for irrigation were transparent for all. According to the idea of a key informant (KI-15), this was supported by awareness creation activities done by IWUAs organizer agencies. The informant (KI-15) added that following these efforts, the majority of farmers were registered in IWUAs and engaged in water aspects and uses in the study area. In a similar manner, a key informant (KI-16) stated that "*Public institutions have attempted to ensure transparency in private companies by enforcing them to disclose information about the quantity of water abstracted, and wastewater discharged to water bodies*."

Although various measures have been taken to ensure transparency in irrigation water supply, there was a lack of a mechanism and systematic approach that helps water actors get information about the quantity and quality of water available for various uses in the study area. One of the key informants (KI-27) mentioned that:

"*Water sectors were not providing relevant information for relevant actors about water resource conditions and availability, protection and conservation planning, and the role of each actor in improving water governance. Relevant and essential data and information on water resources were not collected, organized, and accessible for decision-making in the study area. Information-sharing practices that enable water users to make informed decisions regarding their irrigation activities during different irrigation seasons were lacking.*"

The informant also added that awareness creation efforts exerted to improve understanding of the community were weak, and the roles and responsibilities of water actors were not clearly identified.

Similarly, evidence from the study revealed that some of the water users who were engaged in

irrigation activities, particularly in the floriculture industry, were not cooperative enough to disclose information about the quantity of water they abstract, the types of chemicals they use, and the way they discharge wastewater. For instance, one of the key informants (KI-11) stated that:

"*The types and quantities of agrochemicals used in irrigation farming were not transparent*." Another key informant (KI-24) mentioned that "*Some private companies such as Sheer-Ethiopia and other industries have no willingness to show the process of production, the process of waste treatment, the types of chemical they use, the volume of water they use, and other related data and information*."

The informant (KI-24) added that the lack of community awareness about their right to access relevant information, and the limited capacity of lower-level regulating bodies were attributed to hindering transparency practices in water governance in the CRV of Ethiopia. In addition to private companies, some Cooperative Farmers Union members were complaining that some of the committees' decisions were not transparent. For instance, a key informant (KI-14) mentioned that "*The committee took credit from Cooperative Farmers Union and made payment for electric consumption bills, undertook maintenance of canals and pumps, etc without the knowledge of members.*" These actions of the committee have created distrust among some members of the Cooperative Farmers' Union in the study area, particularly in the Dugda District.

Accountability in Water Governance

Accountability refers to sets of controls, counterweights, and modes of supervision that make officials and institutions answerable for their actions and ensure that sanctions are applied against poor performance, illegal acts, and abuses of power (Karar 2017). Accountability is also a requirement for powerful actors to accept responsibility (Nuesiri 2016). The government of Ethiopia adopted various water policies and regulations to improve water resources governance in the country (FDRE 1995; FDRE 2005). These policy documents promote the development of appropriate institutional structures as well as decentralization to the lowest level of governance for better and more efficient management of water resources. Various public institutions were also established with mandates, which make the institutions answerable for their actions and performance, and to play their roles in the implementation of these policies and regulations.

However, in the CRV of Ethiopia, the roles and responsibilities of actors were inconsistent in water governance practices, which resulted in failure to ensure accountability in the study area. For instance, one of the key informants (KI-21) mentioned that:

"*Regulatory agencies failed to exercise their mandates, roles, and responsibilities in terms of regulating and controlling malpractices. Detailed standards, guidelines, or manuals that protect wastewater discharging into water bodies are lacking at the local level in the CRV. Measurement systems and necessary laboratory facilities that enable testing of the level of chemicals to identify the minimum acceptable level of polluting chemicals are not established. As a result, degrading water quality by water users and potential polluters continued in the area.*"

In addition, sources of evidence indicate that the lack of incentivizing mechanisms for small-scale farmers and the absence of well-capacitated regulatory water institutions at the local level were attributed to low accountability in irrigation water supply and service delivery in the study area. For instance, participants of the focus group discussion (FGD3) explained that the local community members were not empowered to check, monitor, and evaluate the performance of public service providers and private companies that are involved in water matters. Data and information obtained from the discussants revealed that water actors' engagement lacks systematized mechanisms, clear roles, and responsibilities that make them accountable for their actions to improve water governance in the CRV of Ethiopia.

In addition, data obtained through field observation (fig. 2, a & b) indicates that significant regulatory measures were not taken to monitor and control chemical uses, and waste management, which potentially degrades water resources, and affects human and livestock health. Many generators were installed at the mouth of Lake Dembel (fig 2, a) that instant for draining gasses and lubricants from generators into the Lake. The second figure (fig 2, b) indicates the outlet of the Sher-Ethiopia Floriculture Industry that was draining to a plot of land close to Lake Dembel.

(a) (b)

Figure 2. (a) Pumping generators on Lake Dembel, (b) Sheer Ethiopia outlet (Source: Field observation, 2021)

As observed during the field visit, draining gasses from generators and waste from the floriculture had been deteriorating the quality of the Lake though no one was accountable for these negligent practices. Measures such as developing buffer zones and other mechanisms to protect the drain of gasses into the water body were not undertaken.

Moreover, there were no clear mechanisms that every actor should know, play their roles, and be accountable accordingly. One of the key informants (e.g. KI-7) mentioned that:

"*Some government bodies assume that the Basin Development Authority (BDA) is accountable for violation of laws, rules, and regulations in water use. BDA is educating those polluting water resources, but it can't take measures such as warning and closing the polluting companies. This responsibility is given to the Environmental Protection Authority. However, there is no clear linkage between these two organizations to exchange data and information for decision-making. The majority of irrigators use irrigation water individually, and they think that irrigation water is infinite and lose a sense of ownership. Chemicals used in the farm are drained into water bodies by flood, and no one takes accountability for this fault*."

Evidence from the study indicates that actors failed to play their roles; non-compliance was left without accountability, and communities' awareness was low about freshwater scarcity in the CRV of Ethiopia. For instance, a key informant (KI-22) stated that: "*There was no clear understanding about the concept of water accountability including implementing agencies, irrigators, and stakeholders. Water users did not give attention to the main source of their production, i.e. the purity and sustainable availability of irrigation water.*" The informant argued that this is mainly due to a lack of community awareness about freshwater scarcity and finite, unless conserved and protected.

Participation in Water Governance in the CRV

Participation implies the meaningful and active involvement of a broad spectrum of stakeholders, including vulnerable or marginalized groups in decision-making processes and other activities (Jiménez et al. 2020). Participants of this study (e.g. KI-5) stated that "*The process of water resources management and water-related policy formulation was improved in terms of participating relevant stakeholders.*" The informant added that several times, water actors' workshops were arranged on environmental conservation and protection (including water resources) issues.

Various stakeholders have been participating in water resources matters in the CRV of Ethiopia. These include government organizations, local communities, irrigation water user associations, individual water users (farmers and private companies), development organizations, and NGOs. These stakeholders have been involved in different aspects of water resource development, management, and its uses. For instance, data obtained from community representatives (CR-28) indicates that members of the IWUAs participated in water resources development and governance such as scheme maintenance (in-kind contribution in developing and maintaining irrigation canals, in soil and water conservation activities, and managing irrigation schedules, etc), and contributing money for irrigation water development.

In addition, to improve water resources governance and to facilitate effective irrigation scheme management it was attempted to involve local elders in conflict resolution and irrigation schedule management. For instance, one of the community representatives (CR-28) stated that a public grievance outbreak due to the water shortage of Bulbula River as a result of high irrigation water abstraction at the upper catchment was resolved by

elders' participation in negotiation between upper and lower catchment community members. Similarly, evidence from this study (e.g., KI-24 and KI-26) indicates that development partners and NGOs have also participated in water resources governance in the CRV of Ethiopia.

Moreover, there was evidence that efforts were exerted to improve community participation in water resources governance by inviting irrigator farmers to be registered in IWUAs. One of the key informants (KI-28) stated that IWUAs have attempted to ensure participation and maintain equity, particularly by including women as committee members in the user associations. Efforts were also exerted to involve different groups (e.g. women, poor people, elders, and youth) in water matters in the CRV of Ethiopia. However, a lot remains in addressing women's desires for water access and irrigation technologies in the study area. The community could contribute a lot to improving water resource protection and sustainable uses if they participate in a meaningful manner.

Although there was improvement regarding participation in water laws development, participants of the study complained that the concerns and inputs from participants were not well addressed in the final policy and strategy documents. One of the key informants (KI-7) stated that:

"Most of the time, the contents of the water-related policy documents you commented on and criticized were not changed when you see the final version of the documents. The process of participation was not effective because of two reasons. On one hand, participants were not taking sufficient time and were not committed to providing valuable input, rather than simply attending the meetings and forwarding ideas. On the other hand, organizers of workshops mostly lack in-depth preparation such as preparing agreement documents, roles and responsibilities of each participant, and summarizing the consensus among participants, taking minutes and developing evaluation systems for the participation processes."

The data and information obtained from focus group discussions (e.g. FGD2) also showed that even though there were initiations regarding the participation of stakeholders, essential efforts were not undertaken to ensure meaningful participation in water governance in the CRV of Ethiopia. According to the ideas of the discussants, the participation of stakeholders in planning, implementing, monitoring, and evaluating processes in water resources governance was inadequate, and not systematized. Although efforts were exerted to improve participation in the water resources governance process, discussants of the study (FGD4) mentioned that the participation was not inclusive. For instance, all important stakeholders from the community, development partners, NGOs, individual investors, fishery associations, hotels and restaurants, and other private companies did not adequately participate in water resources matters in the CRV of Ethiopia.

Evidence indicates that the stakeholders' participation was not inclusive and holistic in addressing water governance problems in the CRV of Ethiopia. One of the key informants (KI-27) expressed that: "*The community members may contribute a lot in terms of protecting and conserving if they fully participate in the entire processes of water decision, implementation, and evaluation."* According to the informant's argument, if the community were fully engaged and reached a consensus on water resources governance processes and activities, they could be a safeguard for the entire irrigation infrastructure and scheme management. Another key informant (KI-9) also addressed that there were influential private Companies and Investors who could contribute more to water resource-saving and protection if they fully participated in water resources decision and implementation processes.

Data and information generated from this study indicate that the failures of public agencies to coordinate stakeholders' participation have contributed to the degradation of water resources in the study area. For instance, one of the community representatives (CR-37) mentioned that due to the lack of a dedicated and responsible organization to coordinate all stakeholders and facilitate essential procedures, Lake Dembel was put under stress. As a consequence, members of the community were under frustration and fragile situations due to the decline of aquaculture in the study area.

Discussion

This study revealed that efforts were made to ensure transparency in irrigation water service supply by enacting rules, regulations, and IWUAs proclamations and regulations that promote transparency. According to these legal documents, any irrigator who has irrigation land in the identified irrigation area has a right to be registered in IWUAs and use irrigation water for agricultural purposes.

IWUAs are local institutions established by irrigator farmers and also managed by a selected committee from the members of the associations. Another mechanism attempted to ensure transparency in water sectors' (public institutions) service delivery was by establishing structure and assigning focal persons who educate about anti-corruption and follow up on any misconduct against irrigation water service delivery procedures and practices.

On the other hand, information-sharing practices that enable irrigators to make informed decisions regarding water availability and their irrigation activities at different irrigation seasons were missed in the CRV of Ethiopia. A lack of tracking mechanisms to identify the level of transparency in water supply and service delivery was observed in the study area. Devising and implementing mechanisms that enable diagnosing and preventing poor transparency practices at different levels are essential as suggested by the OECD (2015). Transparency also requires actors to facilitate all means for citizens to understand the decisions that may affect them; and make the information accessible through open data that is complete, relevant, and timely (Hosseini et al. 2018). However, all these processes and practices were missed in irrigation water service delivery in the CRV of Ethiopia.

The government of Ethiopia adopted various water policies and regulations to improve water resources governance in the country by ensuring accountability (FDRE 1999; FDRE 2005). These policy documents promote the development of appropriate institutional structures as well as decentralization to the lowest level of governance. Various public institutions were also established with their mandates, roles, and responsibilities which make the institutions answerable for their actions and performances, and enable them to play their roles in the implementation of these policies and regulations to improve water resources decisions and practices.

The Ethiopian water resources management policy documents addressed the roles and responsibilities of the water supervising body and water users to properly manage the resources. For instance, the Ethiopian Water Resources Management Regulation (FDRE 2005) asserts that the supervising body needs to indicate the volume of water permitted monthly or annually for water users, and water users are expected to use the amount of water quantity permitted. Accordingly, the supervising body has the responsibility to periodically monitor and evaluate the quantity of water abstracted by users, and supervise water quality standards and related issues to take corrective measures if there are any failures to comply with the regulation.

However, over-abstraction or using excessive irrigation water was practiced in the CRV of Ethiopia. Releasing wastewater into Lake Dembel and other water bodies from floriculture industries and from irrigation farming was visible in the study area. In spite of this failure to comply with the rules and regulations, there were no measures taken on non-compliance of water use in the CRV of Ethiopia. Individual farmers and private companies were contributing to water resource degradation. Respective public institutions and other actors were not playing their roles and responsibilities. Significant regulatory measures were not taken to monitor and control chemical uses, which potentially degrades water resources and affects human and livestock health in the study area. The absence of local community empowerment to check, monitor, and evaluate the performance of public service providers was also attributed to the limitations.

Accountability is a process of making actors answerable for their actions, as well as compliance with rules and standards, and putting in practices of responsibility and enforceability (Jiménez et al. 2018). However, none of the actors were accountable for the over-abstraction, over-flooding, and depletion of water resources in the CRV of Ethiopia. There were no implemented or weak accountability tools such as monitoring systems, performance agreements, systematic complaints mechanisms, and public meetings to ensure accountability in water governance in the study area. Well-functioning accountability mechanisms can help to clarify the commitments of actors, lead to efficient management of fiscal resources, protect water resources, increase control over the actions of public and private stakeholders, and ensure minimum quality standards (UNDP 2013). In the CRV case, the lack of commitment of respective stakeholders was attributed to the deficiency of accountability in water resources governance and sustainable uses in the CRV of Ethiopia. Moreover, the lack of incentivizing mechanisms for small-scale farmers and the absence of a capacitated regulatory structure to control and monitor the activities of non-complaints have contributed to low accountability in irrigation water resources supply in the study area.

Ethiopian Water Resources Management Policy recognizes and promotes fairness, social equity,

water efficiency, and sustainability norms in water resources management in the country. Regarding this, efforts were exerted by various concerned actors to enhance participation in water resources governance in the CRV of Ethiopia. In the case of CRV, the IWUAs have attempted to include women in committee members to ensure equity; however, a lot remains in addressing women's desires in water access and irrigation technologies in the study area. The participation of stakeholders in planning, implementing, monitoring, and evaluation was not systematized. The result is similar to the previous study reported by Yami (2013) which indicates that equity in irrigation water service provision for women and other disadvantaged groups remains much behind in Ethiopia.

The study results indicate that there were various actors involved in water resources governance in the CRV of Ethiopia. However, all potential and concerned actors did not inclusively participate in water resources matters. Key stakeholders of water resources governance were not systematically coordinated. Stakeholders' participation failed to develop a strategy and common platform for an inclusive participation system in the study area. As a result, fragmented efforts to protect and conserve the resources were the common features of stakeholders' participation in water resources decision-making processes in the CRV of Ethiopia. OECD (2015) suggests a coherent, holistic, and integrated way of participation and coordination mechanisms of all stakeholders at all levels and scales to effectively contribute to improved water resources governance.

To ensure effective participation, having a coherent participation policy and strengthening the participation of local communities and indigenous people in water resources management are suggested by scholars (Morris-Iveson and Alderwish 2018; Glass and Newig 2019). In addition, participation is meaningful when all stakeholders, including marginalized and resource-poor groups, are meaningfully involved in deciding how water is used, protected, managed, and allocated (Das et al. 2016). These enable enhanced collective interest to respond to risks and safeguard water resources. In the case of CRV of Ethiopia, precisely designed participation policy enforcements and mechanisms that enable inclusive participation of local communities in water resources decision-making processes are missing.

The Ethiopian water resources management policy documents stated the participation of citizens in water management matters in general; however, there were no clear or weak mechanisms, procedures, or roles of the community during participation, monitoring, and evaluation mechanisms developed and implemented in practice. Previous studies conducted in Bangladesh, India, and Pakistan indicate similar results, which state that although the water policy of these countries recognizes public participation in all aspects of the water sector, in practice, people rarely participate (Shunglu et al. 2022). With the same talking, promulgating rules and regulations of water resources in Ethiopia is not sufficient unless the policy is accompanied by enforcement mechanisms to implement at the grassroots level.

Conclusions and Recommendations

The study was conducted to assess whether water governance in the CRV of Ethiopia addresses transparency, accountability, and participation. The government of Ethiopia has promulgated and decreed various water policies, rules, and regulations to improve water resources management. Although the policy and regulations were promulgated and decreed to improve water resources governance, the resources were under severe stress in the study area. This study identified that transparency; accountability and participation were not adequately addressed in the existing water governance systems and practices in the study area. Lack of meaningful local community participation in the water decision-making processes; and failure to address the need of women and other disadvantaged groups for access to water sources, irrigation technology, and financial services were evident in the study area. Failure to take corrective measures on non-compliance with water rules and regulations, inability of actors to accomplish their roles and responsibilities, and failure to answerability of institutions for their own actions and performance were the limitations observed in the study area. In addition, the lack of providing relevant data and information, and the inability to devise simple information dissemination mechanisms to improve transparency in water service delivery in the study area were the problems identified by this study. Hence, to contribute to effective water resources management in the CRV of Ethiopia and other similar areas in the country attention should be given to promoting legal

frameworks that ensure decision makers and stakeholders are accountable, educating all water actors focusing on norms and codes of conduct in service delivery processes, and devising tools and systematic mechanisms that address water integrity and transparency gaps. Moreover, capacitating regulatory institutions with necessary resources, encouraging local and informal institutions to enhance participation and inclusiveness in water decision-making, advancing evaluation and consultation mechanisms to improve regulatory processes, and devising and implementing appropriate enforcement tools are essential to address transparency, accountability, and participation in water governance in the study area.

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Data availability

Data are available under the terms of the CC-by Attribution (4.0 International).

Conflicts of Interest

The authors declare no conflict of interest.

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