

Gender Dimensions of Community-Based Groundwater Governance in Ethiopia: Using Citizen Science as an Entry Point

Nigussie L., Barron J., Tamiru A., Lefore N., Gowing J.

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Introduction: Groundwater governance through citizen science approach:

- *Citizen Science refers to the participation of the general public (volunteer citizens) in the generation of new scientific knowledge, together with professional scientists (Buytaert et al. 2014).*
- *Helps community to become part of the scientific process and ultimately enables them to play a larger role in decision-making.*
- *In the study sites in Ethiopia, citizen science is used to monitoring of shallow groundwater (SGW) resource. The data is used to describe the hydrological behavior of the micro-watersheds and to qualitatively evaluate the impact of watershed interventions.*



Objectives:

- *To assess the role of citizen science as a means to enhance groundwater governance as well as inclusion/empowerment aims.*
- *To assess the capacity of different members of the community to engage in groundwater resource management.*



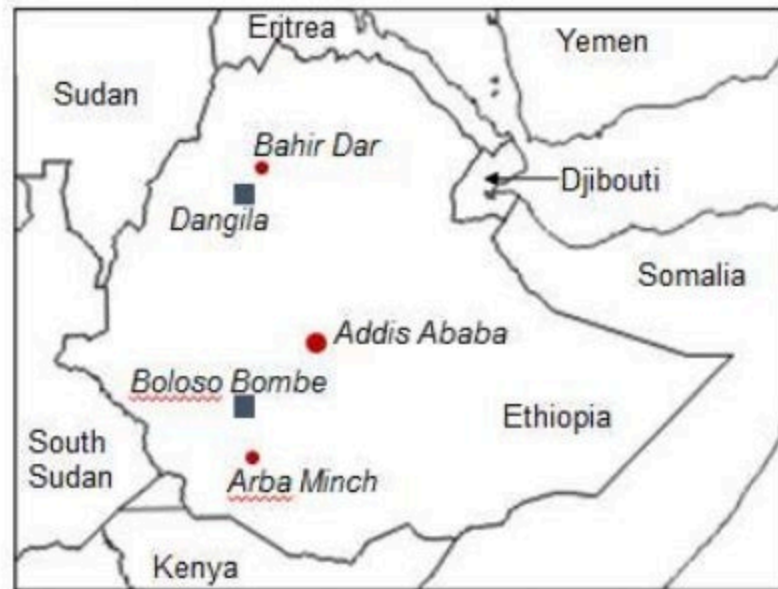
Methods

Location

- *In two districts of Ethiopia (Dangila and Bolosso Bombe).*

Methodologies

- *Literature review,*
- *In-depth discussions with key informants at woreda level,*
- *Separate household interviews with spouses within a household, and*
- *FGD with men's and women's groups*



Achieving inclusive groundwater governance: Gender matters

Most studies show access to GW and participation of men and women in groundwater development, management and monitoring is largely shaped by social and gender relations.

Men and women differ in:

- *Need for and use of groundwater*
- *Access to groundwater*
- *Amount of groundwater abstraction*
- **Level of participation in groundwater management**
- **Willingness to participate in groundwater monitoring.**



Roles of men and women in GW development and management differ:

Well development: Men dig pits, excavate soil from the pits and transport construction materials. Women provide the same labor contribution as men, except for digging. They also provide food and drinks for the workers.

Well management - Women are responsible to ensure the private wells are covered and the area near the well is clean.



Women can play greater role in groundwater governance: Women face constraints

Opportunity

- *Women play a leading role in obtaining and safeguarding water.*

Challenges

- *This role is not usually reflected in the institutional arrangements for water management.*
- *Men - chairpersons, secretary, guards and managers or maintenance laborers,*
- *Women - cashiers, storekeepers and pump attendant/care takers.*

Table 1 Percentage of men and women who participate in various water development and management associations (Nigussie et al. 2018)

	Farawocha kebele		Dangeshta kebele	
	Women	Men	Women	Men
Irrigation Water User Association	2%	98%	-	100%
Water Committees	40%	60%	-	-
Watershed Management Committee (community level)	40%	60%	40%	60%
Watershed Management Committee (sub-district level)	10%	90%	-	-
Watershed Management Committee (district level)	0%	100%	-	-

Women face exclusion from decision making

Challenges

- *heavy work burden,*
- *low educational status,*
- *male-dominated culture (where women need to get permission from their husbands to participate),*
- *limited participation in household decision making,*
- *limited understanding about the concept of participation and*
- *lack of self-confidence.*



Achieving inclusive groundwater governance: through citizen science: most women are not willing to participate

Opportunities

- *GW monitoring using citizen science approach provides equal opportunity for men and women to explore, learn and share.*
- *The approach can result in women empowerment and sustainable groundwater monitoring.*

Table 2 Percentage of men and women respondents indicating willingness to participate in groundwater monitoring (Nigussie et al. 2018)

	Farawocha kebele		Dangeshta kebele	
	Women	Men	Women	Men
Not willing to participate	56%	10%	54%	28%
Willing to participate	44%	90%	46%	72%
Not willing to have wife participate		20%		45%

Challenges....

Sub - district	Women	Men
<i>Dangeshta</i>	<i>low self-esteem, heavy work burden, fear of gender based violence from other men in the area, fear of being bitten by dogs near wells in private homestead, and limited freedom of mobility</i>	<i>old age, illiteracy, the perception that the work would be overly demanding and time consuming.</i>
<i>Farawocha</i>	<i>illiteracy</i>	<i>illiteracy</i>

Conclusion and recommendations

- *Women provide labour contribution to the development and management of groundwater. However, women's
 - *participation in decision making, and*
 - *willingness to participate in groundwater monitoring*is constrained by structural barriers.*
- *Addressing structural barriers requires specific interventions:*
 - gender sensitive approach to programs,*
 - gender awareness training and partnerships with organizations working for women's empowerment,*
 - natural resource management and*
 - adult literacy training.*

Thank you