Gender and Governance of Spate Irrigation Systems in Raya Valley, Ethiopia

Research Report

Prepared by Aurora Righetti, MSc Student in Development Economics

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Università degli Studi di Firenze

Background

This research has been carried out in the month of May 2018 in Ethiopia, focusing on Raya valley, in three villages (Harosha, Dayu and Tirge) close to the town of Alamata, Southern Tigray. Here, spate irrigation systems have been put in place in order to ensure water from rivers to be distributed to farmlands. These systems divert floodwater and channel it or spread it over the fields where crops are grown. In Tigray's semi-arid environment, it is often the only source of water and contributes substantially to food security, particularly for poor farmers. These irrigation schemes are taken care of by Water Users Associations (WUAs), whose committees are composed of *abo mais* (fathers of water), who gets elected by the community and take all relevant decision regarding maintenance, irrigation turns and flood water management in general (Yazew et al., 2016; Castelli & Bresci, 2017). The aim of this research has been to understand the way this type of interventions influences and interacts with other social aspects by modifying or perpetuating existing relations of power and discrimination among groups, in particular between men and women. This work focuses in particular on the role of women in terms of governance, ownership and responsibility over water-related resources. This has been done by assessing the equity of distribution of decision power, participation and water rights between men and women farmers. Water management is strictly related to land ownership and management, that is the reason why this aspect has been investigated too.

Study Area

The research was carried out in three villages (Harosha, Dayu and Tirge) around the town of Alamata. Here, rivers flow during rainy season and their stream is diverted by the use of many channels, some of which can be defined traditional (made of earth and stone) and others modern (made of concrete). These diversions lead to farmers' fields and are open according to specific criteria such as gender, age and health of the owner, among others. In this zone, the rainy season

starts at the beginning of June and finishes at the end of August, although it is possible to have some rainfall in April-May. Local farmers use mainly water from spate irrigation systems for their cultivation, and few of them also have access to other sources of water. Because of water scarcity during the year, very few families own a home garden.

Methodology

Both quantitative and qualitative data collection methods have been used. In particular, the two main methods have been semi-structured interviews and focus group discussions. Thirty interviews (ten in each village) and three focus groups (one in each village) have been carried out. Between six and ten farmers have taken part in each focus group. Thirty farmers (five women and five men from each village) have been interviewed by using questionnaires. Indicators suggested by Bioversity International (2014) and Participatory Rural Appraisal methods (FAO) have been used . After field work, data collected have been aggregated and analysed with the aim of uncovering existing patterns in water use in terms of gender, imbalances of power and control over water-related resources and the general role of women in spate irrigation. Due to the gender-specific focus of this research, all relevant data are sex-disaggregated.

Results from questionnaires

LAND OWNERSHIP					
	Farmers interviewed				
	women (both married and unmarried)	unmarried women	married women	men	wife and husband together
Exclusively entitled of land	**66,7%**	**100%**	**28,6%**	**53,3%**	**36,7%**
Directly	**80%**	**11%**	**100%**	**100%**	**-**

cultivate land					
Lease out their land	**53,3%**	**77,8%**	**16,7%**	**0%**	**-**
Exclusively farm their land	**0%**	**0%**	**0%**	**93,3%**	**6,7%**

WATER USES			
	Farmers interviewed		
	women	men	wife and husband together
In charge of irrigation	**0%**	**86,7%**	**13,3%**
Participation in irrigation	**6,7%**	**100%**	**-**
Decide which crops can be grown	**20%**	**40%**	**36,7%**
Decide which crops can be irrigated	**20%**	**80%**	**16,7%**
In charge of maintenance of irrigation systems	**0%**	**53,3%**	**31,7%**
Have received training for maintenance of irrigation systems	**6,7%**	**20%**	-
Have received training about efficient water use	**26,7%**	**86,7%**	-

WATER GOVERNANCE		
	Farmers interviewed	
	women	men
Contribute to WUAs through:		
- Labour	**26,7%**	**20%**
- Money	**0%**	**6,7% (disabled people)**
- Labour and money	**13,3%**	**73,3%**
- Nothing	**60%**	**0%**
Are in contact with WUAs	**46,7%**	**100%**
Are members of WUAs	**46,7%**	**100%**
Have taken part in WUA activities	**26,7%**	**100%**
Have voiced their opinions and needs in WUAs at least once	**13,3%**	**100%**
Are satisfied with how their interests are represented in WUAs	**20%**	**100%**
Consider it easy to get information about irrigation turns	**100%**	**100%**
Consider the delivery flow appropriate for their needs	**60%**	**100%**
Have had physical problems in handling the flow	**46,7%**	**20%**
Consider contribution fees to be hard to pay	**6,7%**	**6,7%**
Consider maintenance labor to be hard to perform	**0%**	**20%**
Consider their needs are taken into account by WUAs	**80%**	**100%**

Are satisfied with time and duration of irrigation	**60%**	**100%**
Are satisfied with the overall water management system	**93,3%**	**100%**
Perceive themselves as highly involved in WUAs	**0%**	**100%**

Results from focus groups

The following information has resulted from three focus groups, each one carried out in each village with 6-10 participants. One of them (in Tirge) was composed of both men and women, and men were the majority. The other two were exclusively composed of women.

Most women, if they are not married, lease out their land to another farmer who will be in charge of farming, paying for water management etc… Usually unmarried women lease out their land for two reasons:

- They do not have enough physical strength to till it
- They do not have time to till it, as they have to take care of their family.

Also, usually women do not take part actively in maintenance of irrigation schemes because it is hard labor. However, they help men in those occasions by cooking food and taking care of their clothes. People (men and women) say they treat women equally and fairly in all decisions and they think they have the same importance as men. However, according to data, women are not equally represented in WUAs committee (they cannot be elected there) and they almost do not have any decision power in it. The reason for it, according to focus groups, is that working in the river day and night (floods usually arrive at night) can be hard for women. So, they give them rights (water access, in most of the schemes they get water first etc…) but not responsibilities because they care about them. In one the villages (Harosha), women indicated some years ago it was decided to include women in WUAs committees. However, there was no follow up to this decision. In the same village, women during the focus group have expressed their will to elect one or more female representatives as an *abo mai* (member of WUAs committees), especially those who are very good at speaking and communicating problems.

Discussion and conclusion

Results suggest, in the villages analyzed, farming, irrigation and water management are almost exclusively a men's issue. In case of female-headed households, it is not common for a woman to farm the land, so usually this is leased out to a farmer. In case a woman is married, in many of the households interviewed most of the activities connected to farming and irrigation are exclusive responsibility of the husband, and in some of them they are a shared responsibility between them or among family members. In none of the households interviewed farming and/or irrigation were completely taken in charge by a married woman. As for water management and WUAs, female farmers are not represented in them. In fact, the percentage of women who are in contact with these associations, who are member of them, who have taken part in one or more of their activities and who have voiced their opinions and needs in them is very low compared to men's (respectively 46,7%, 46,7%, 26,7% and 13,3%, while men's percentage is always 100%). This demonstrates the role of women in these committees is not very important but not absent either. We can also see that contribution to WUAs through labor and money is very low for women, as compared to men. Nonetheless, in proportion to how much they exploit spate irrigation systems, women contribute more than men. Moreover, as we can see, females' level of training, both in terms of maintenance and of efficient use of irrigation systems, is much lower than males'. This clearly results from the fact that women are not involved in most physical activities connected to spate irrigation, so it follows that there is no need to take them into account when trainings are organized. However, this can also result in a greater difficulty for women to get involved in these activities, even if they want to.

These results are, at least partially, consistent with other studies carried out in the zone, even though there is still scarcity of literature regarding gender and water management in Tigray. As shown in CGIAR's Water Land and Ecosystems research program (2016), women do not participate in water management in agriculture as men do, mainly because this activity is difficult, labor intensive and often expensive (and female-headed households are usually poorer than male-headed ones). Also, female-headed households do not benefit so much from spate irrigation systems because they usually lease out their land and do not cultivate it directly. As stated in the above-mentioned document, "flood based farming requires higher physical and financial assets hence female headed households are less beneficiaries due to their current demographic and economic status relatively" (Hagos *et al.*, 2017 : 120). Our results confirm this situation. Also, both according to that research and to this work, water administration is dominated by men and women do not have a proper role in WUAs. The research conducted by Hagos *et al.* (2017) shows there were no gender differences in

poverty profiles as a result of using spate irrigation. However, that finding is calculated using mainly physical and health indicators, while this research is mostly connected to socio-economic aspects and, thus, shows a different type of reality. Nevertheless, it is important to mention that this study, due to the small number of people interviewed (sixty farmers involved in total), cannot be representative enough of the reality in the study zone. It is therefore necessary to further explore this research's topic taking into account gender differences. Moreover, these results must be interpreted cautiously, as they have been collected in a context where the interviewers were also considered as representatives of a "rich" world, thus potential bearers of donations and help. An outstanding example of this was one of the women who, at the beginning of the interview, declared she was a widower. Later on, she confessed she was actually married, but hoped, if her husband was dead, we would somehow help her through some Safety Net program. Even though these findings cannot provide a complete representation of reality, we can still draw some conclusions which, nevertheless, need to be confirmed by further studies. It is possible to conclude there is an insufficient representation of women in water management committees and decision-making power is not equally and fairly shared among men and women farmers in none of the three villages. Nonetheless, interviewed women did not express anger or other feelings of dislike regarding this condition: most of them accept it and only one of them has indicated she would like to participate more actively in WUAs. By analyzing the situation from a wider point of view, we can understand the main reason behind this is the widespread condition of poverty, scarcity of employment possibilities and existence of subsistence agriculture relying on traditional techniques, which is almost the only productive activity in the zone. Because of this, agriculture and water management, which require high physical strength, remain almost exclusively a men's job and women have to take care of their families with all the activities connected to it. However, it is fundamental to understand this situation can be transformed by empowering women, who could become actors of change and development in agriculture. In order to do this, in a zone where water is one of the most precious resources, not only new technologies should be introduced to make agriculture more efficient, but also women should be given equal rights and possibilities to be elected in WUAs and contribute to all decisions regarding water management.

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References

Castelli, G. & Bresci, E. (2017). Participatory Rural Appraisal for Diagnostic Analysis of spate irrigation systems in Raya Valley, Ethiopia. In *Journal of Agriculture and Rural Development in the Tropics and Subtropics.* Vol. 118 No. 1 (2017) 129–139

Food and Agriculture Organization. PRA Toolbox. *Conducting a PRA Training and Modifying PRA Tools to Your Needs: An Example from a Participatory Household Food Security and Nutrition Project in Ethiopia*. Available at: http://www.fao.org/docrep/003/x5996e/x5996e06.htm

Hagos, F., Mulugeta, A., Erkossa, T., Langan, S., Lefore, N., Abebe, Y. (2017). *Poverty Profiles and Nutritional Outcomes of Using Spate Irrigation in Ethiopia*. Irrigation and Drainage 66: 577–588 (2017)

UNU-IAS, Bioversity International, IGES and UNDP. (2014). *Toolkit for the Indicators of Resilience in Socio-ecological Production Landscapes and Seascapes* (SEPLS).

Yazew, E., Van Steenbergen, F,, Mehari, A. (2016). *Harnessing Floods to enhance Livelihoods and Ecosystem Services*. Research Program on Water, land and Ecosystems. CGIAR.