

## **Gender-Related Problems Constraining Women Farmers' Participation in Soil Conservation in the Semi-Arid Areas within the Masinga Dam Catchment, Kenya**

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**Abstract:** This research investigated the gender related constraints impeding women farmers' participation in soil conservation in the semi-arid areas of the Masinga dam catchment area in Kenya. Data was collected mainly through a questionnaire administered to 150 farmers and analyzed by use of descriptive statistics. Findings of the research revealed that a significantly high number of women farmers as opposed to that of male farmers did not participate effectively in soil conservation activities. Why? Because women farmers especially those in female managed (de jure) and female managed (de facto) farms operated in a system characterized by unfair and unjustifiable distribution and allocation of resources. First, most of them unlike the male farmers experienced serious financial difficulties and as a result could not afford to hire labor or to buy farm inputs that are essential for soil conservation work. Secondly, women farmers did not enjoy security of land tenure and were thus skeptical about investing their meager resources and energy in conserving land that did not fully belong to them. Thirdly, these farmers faced a serious labor shortage constraint, a problem made worse by the unequal and unfair gender biased distribution of household duties which left women overburdened with the heavy and very demanding duties and no time to attend to soil conservation matters. Lastly, majority of women farmers never received extension advice because the extension agents preferred to advise men farmers. In addition, extension agents used some gender unfriendly approaches, which discouraged many women farmers from consulting with them. These four problems hampered the effective participation of the women farmers, who form the majority of the farming community, in soil conservation; hence the poor status of soil conservation in the study area. To remedy the situation, the government should devise gender friendly policies that empower women farmers to deal with soil conservation and other environmental problems effectively.

### **1 Introduction**

Kenya's semi-arid regions are experiencing a serious soil erosion problem. These areas, just like other semi-arid lands have poorly developed soils, which are highly susceptible to wind and water erosion. In addition, these already fragile ecosystems are facing increasing pressure as a result of natural population growth and migration from the neighboring densely populated high potential areas. With increasing population pressure, fallow periods are shortened, land is over-cultivated, overgrazing takes place and more and more vegetation is cleared for cultivation purposes. These poor land-use methods weaken further the already poor and thin soils, increasing their susceptibility to erosion and hence creating an urgent need for serious soil conservation.

The effect of soil erosion and the degradation of other natural resources is mostly felt by women, who are the main users of the natural resources Rodda (1993). In the case of soil degradation and erosion, reduced farm productivity followed by less food production occur, resulting to great suffering by women since they are the ones who shoulder the responsibility of feeding their families. Women have then to spend a lot of time walking long distances in search of food and also spend the meager family incomes (which in most cases they do not have access to) to purchase it. In addition, they experience emotional and psychological trauma when they have to watch their family members succumb to malnutrition or starve to death.

As a result, women have become important custodians of the environment. Their role in using, managing and protecting the environment and in particular the soils is increasing day in day out in view of the continuing male migration to towns. This ongoing male rural-urban migration is shifting more of the natural resource management responsibilities to women in addition to their already busy schedules. Not surprisingly, women have now, to spare time for soil conservation activities such as the construction, repair and maintenance of conservation work as well as manuring and mulching (Millar, Ayaringa and Anamoh, 1996; Lema, 1995). What is worrisome, however, is that soil erosion has persisted. Why? Is their participation effective? Do they operate within a favorable and supportive environment?

The underlying argument here is that women face unique problems of a gender origin that may hinder their effective participation in agricultural activities. Staudt (1976) found that very few women (4%) in female managed farms received credit, education or attended farmer training programs. Kimenyi, (1998) observed that overall visits by extension agents to individual farms were heavily biased in favor of male-headed farms. Salasya and Hassan (1998) found out that male farmers had better chances to attend farmer training courses, had more access to extension and credit services than female farmers. Green and Trhupp, (1998) noted that women are often allocated the most physically demanding jobs; and tools as well as means of transport that can be used to alleviate their workload are often allocated with priority to men and monopolized by them (men). These authors, however, fail to link these gender problems to women's participation in soil conservation. Also, they do not examine the unique structural gender-related problems afflicting women farmers particularly those in female (de factor) and female (de jure) managed farm enterprises; and do not show the seriousness of these problems on women and men farmers' participation in soil conservation.

The aim of this research was therefore to identify and evaluate the type, effect and seriousness of the gender-related constraints on women and men farmer's participation in soil conservation. The findings can be used to minimize the gender-related problems. This way, women will be empowered to deal with soil conservation issues and therefore their participation will be enhanced, soil conservation status will improve and consequently soil erosion will be reduced.

## **2 Objectives of the study**

(1) To identify and determine the type, effect and severity of the gender-related constraints impeding women and men farmers' participation in soil conservation;

(2) To suggest ways through which women and men farmers' participation in soil conservation can be enhanced.

## **3 The study area**

This study was conducted in the semi-arid areas within the Masinga dam catchment. Specifically, the study area lies between 37° 20' and 37° 45' Eastings and between 0° 50' and 1° 00' to the south. Its altitude ranges between 900m and 1,200m above sea level. The terrain is undulating with gentle slopes of less than 7%. The area receives an average annual rainfall within the range of 450mm—900mm with an average annual potential evaporation of 25%—45%. The mean maximum and minimum annual temperatures are 26°C—30°C and 14°C—18°C, respectively. Rainfed agriculture is the main economic activity practiced in the semi-arid areas of the Masinga dam catchment. Due to high population growth in this area, resulting mainly from the increasing number of immigrants from the neighboring densely populated high potential areas, as well as poor agronomic practices, soil erosion has become a serious land management problem (Mutisya, 1997).

## **4 Research methodology**

The proposed study was based on the understanding that rural households are either male or female headed. But in each of these two broad classifications it is possible to find a male managed, female managed (de facto), female managed (de jure) and jointly managed farms depending on whether a man or woman or both are involved in the day to day running of the farm. This study used these four basic types

of farm holdings in order to examine the unique gender issues impeding women and men farmers' participation in soil conservation.

The population sample included 160 women and men farmers selected randomly from two lists of female headed and male-headed households. These were drawn from eight randomly selected sub-locations in the study area.

In order to establish who the actual manager of the farm was, and therefore determine what type of farm holding each household was, the head(s) of the selected households were asked to provide information concerning the person(s) who manages the farm on a day to day basis. The households were categorized as male-managed; female managed (de facto); jointly managed and female managed (de jure) if the male head alone; female head alone (without consulting the absent husband); female and male (together) or female head alone or with son or male relative respectively, answered at least 3 out of the following 4 questions affirmatively.

- (1) who decides the activities undertaken in the farm on a daily basis?
- (2) who decided where these activities are to be undertaken?
- (3) who decided the person(s) to undertakes these activities?
- (4) who decides how the family income is used?

This research relied largely on primary data collected from women and men farmers through the use of a questionnaire. The questionnaire probed the type and seriousness of gender-related constraints that affect women and men farmers' participation in soil conservation.

In order to determine the seriousness of the gender-related problems, respondents were asked to name and rank the problems they experienced in their soil conservation endeavor as either (1) not serious; (2) fairly serious or (3) very serious.

Data was analyzed by use of descriptive statistics.

## 5 Results and discussion

The findings of the research revealed that an overwhelming majority of the women farmers did not participate effectively in soil conservation activities. Participation meant being involved in soil conservation activities not only through the provision of labor but also through decision making. In this research two types of participation were identified:- effective and ineffective participation. Following characteristics were considered to be important indicators of effective participation in soil conservation matters.

- Access to soil conservation information;
- Knowledge of more source of soil conservation information other than the most direct;
- Knowledge of alternative channels of communication. I.e. whether farmers were aware of possible options if there is lack of cooperation or an attempt to block off regular channels of communication;
- Influence on decisions concerning soil conservation at household and community levels;
- Freedom to use acquired knowledge without seeking for permission from husband, wife, or any other person within the family;
- Engage in soil conservation works through the provision of labor.

About 81%—85% of women farmers in female managed (de jure) and female managed (de facto) farms respectively compared to 48%—35% of farmers in the male managed and jointly managed farms did not participate effectively in soil conservation activities. Their major participation in soil conservation was mainly through the provision of labor. Other than extension agents, most of these women were either not aware of or did not have access to alternative sources of soil conservation information. About 78% of them were not aware of the existence of an agricultural training institution in the district, had not attended any agriculture related seminar or workshops, had not participated in agricultural farm visit/ demonstration and were not well versed with soil conservation literature.

So what if one did not participate effectively in soil conservation activities? Soil conservation was poor in the farms of nearly all the farmers who did not participate effectively in soil conservation. Although these farmers practiced one or more types of soil conservation, these were in dire need of repair; or were inadequately constructed in the case of terraces, contour bunds and cut off drains or not regularly

practiced in the case of biological measures such as manuring, crop rotation, mulching e.t.c. What then impeded their effective participation in soil conservation activities?

### **5.1 The gender problem in soil conservation**

Four problems of a gender origin were found to impede women farmers' participation in soil conservation. These problems are discussed below.

### **5.2 Gender and financial constraints in soil conservation**

Financial constraint was ranked as a "very serious" problem by a majority of the farmers. About 60% and 50% of the farmers in the male and jointly managed farms respectively ranked this constraint as "very serious". But a significantly larger proportion of the farmers in female managed (de facto) (86%) and female managed (de jure) (93%) described similarly. The implication was that farms managed by women had a more serious financial problem than those managed by men. Why? Most of the women farmers especially those in the female managed (de jure) farms struggled single handedly to earn a living for their families. They relied wholly on their farms for income. Sales from the their farm produce were the main source of income. But due to the low productive nature of their farms, a problem attributable to poor farming methods and unfavorable climatic conditions coupled with the prevailing low market prices for agricultural products, majority of these farmers were more of subsistence than commercial producers.

In view of the above situation, women farmers ventured outside their farms in search of casual employment in an effort to make ends meet. Over 85% of women in female managed (de jure) farms worked as casual laborers in the neighborhood. Finding the job was not easy either! Many farmers preferred to employ male farmers who were described as punctual and hard working. By the time the women completed their morning domestic chores, men would have arrived and started work! What was disturbing is the amount of money (wages) paid to them in return of their service! On average the daily wage ranged between Kshs 70 and Kshs 100 (US\$1). This amount was not enough to sustain a family let alone saving some for the costly soil conservation work. Only farmers with a relatively high and secure income participated effectively in soil conservation activities and consequently had well conserved farms. These farmers could afford to hire labor, purchase farm inputs and travel expenses to attend seminars and training.

The situation was not very different in the female managed (de facto) farms. Although husbands worked and resided far from home, remittances to their wives were usually very low, inadequate and irregular. To make matters worse, other family members demanded a share of the money once they got wind of its' arrival.

### **5.3 Gender and land tenure in soil conservation**

Results of this study showed that unlike men farmers, majority of the women farmers had access to but no control of the land they cultivated. About 66% and 82% of women farmers in female managed (de facto) and female managed (de jure) respectively, ranked this problem as "very serious". These women said that they had access to the said land but had to consult their husbands or other family members before undertaking any physical soil conservation work on it. In most cases there was unnecessary delay as they waited for a response to their request. Polygamy, which was prevalent in the study area, had a negative effect on women's participation in soil conservation. The first wife always expected her '*loaned*' land to be subdivided when a second, third and nth wives arrive. As a result, women were discouraged from undertaking long term soil conservation projects because they may not reap the benefits. In effect, land is available to an individual for too short a time to allow any benefits from long-term soil conservation strategies. As a result, some of the women respondents did not participate in soil conservation effectively in their farms because of the insecurity and uncertainty concerning land ownership.

Some women farmers (32%) in female managed (de jure) farms experienced different land insecurity problems, most of which originated from the in-laws. These women farmers complained that parents-in-law usually denied them access to and/or control of the family land especially after the demise

of their sons. For instance, one farmer with maintained and adequately spaced terraces and cut-off drains and who applied manure during every planting season reported that her mother-in-law gave her farm to her brother-in-law and showed her elsewhere to farm. The new farm was neglected and required serious soil conservation work, which she has not embarked on, because she fears the farm could be re-allocated to her brothers-in-law later or sooner. Under such conditions, women farmers develop a don't-care attitude towards soil conservation because they feel insecure. Such insecurity is detrimental to sustainable soil conservation.

The above explanation confirms that sustainable resource use depends on local people's ownership and control of land and other resources and on the sense of security this provides (Green and Thrupp, 1998). The arrangement by which tenure is granted to the land user can influence attitudes towards soil conservation, for instance. That is, farmers who enjoy a security of land tenure are more likely to consider long-term consequences of their actions and adopt soil conservation measures. Tenure systems based on short term cultivation rights and share cropping for instance generally lead to poor land management because of uncertainty about whether any conservation work carried out will be rewarded.

#### 5.4 Gender and labor in soil conservation

Soil conservation is labor intensive. Labor is needed for the construction and maintenance of terraces and cut-off drains; transportation and application of manure; the growing of additional soil protective crops either in rotation or by intercropping etc (Table 1).

**Table 1 Examples of labor requirement for soil conservation**

Conservation Practice	Labor
	Persons – day/ha
Construction of contour terraces	100 — 300 * <sup>1</sup>
Construction of bench terraces	200 — 300 * <sup>1</sup>
Construction of terraces and cutoff drains	150 — 350 * <sup>2</sup>
Annual maintenance of terraces and cutoff drains	40 — 60 * <sup>1</sup>

\*<sup>1</sup> in Morgan, 1995

\*<sup>2</sup> Critchley, 1991

The livelihood of any soil conservation measures being adopted depends on whether the farmer can realistically meet the increased labor demand. But, although over 90% of the farmers believed that soil conservation would bring about an improvement in crop yields, about 82% of them said that they did not have enough labor resource to implement the measures. But the labor problem seemed to be experienced more seriously by women farmers than men farmers. While about 67% and 82% of women farmers in female managed de jure and male managed de facto farms respectively, ranked labor shortage as a “very serious” problem impeding their participation in soil conservation; about 72% and 76% of the farmers in male and jointly managed farms respectively, ranked it as a “not serious” problem. Why? Women farmers, majority of whom were financially constraint, could not afford to hire labor to supplement the family labor. They reported that their reproductive, productive and community duties were too demanding and as such they did not have adequate time for soil conservation activities.

#### 5.5 Gender issues in agricultural extension education for soil conservation

Extension staff plays a major role in enlightening, training and educating farmers with regard to agricultural innovations. In as far as soil conservation is concerned, extension staff advises farmers on the most appropriate conservation techniques suitable for their farms. They also measure terraces and cut off drains.

But while noting how important extension advice is in the modernization of agriculture, it is a pity that the number of extension officers in the study area is grossly inadequate. There are only 4 extension officers serving a population of about 100,000 people in the study area. It's then no wonder that only a

few farmers (33%) had received extension advice!

It was even more disturbing to note that a relatively large number of the farmers who had never been visited by extension officers belonged to female headed-households. Specifically 78% and 73% of women farmers in female managed (de jure) and female managed (de facto) respectively were never visited at all during their farming life-time while only 29% and 35% of the farmers in male managed and jointly managed farms respectively were never visited. This state of affairs was attributed to: One, like was the case in Burkina Faso (Green & Thrupp, 1998), and Kenya (Kimenye, 1998) extension agents were not inclined to work on the smaller, fragmented farms cultivated by women. They instead preferred to work on the large farms operated by men farmers. Two, all the extension officers in the study area during the time of this research were men. As a result, women farmers, especially those in female managed (de jure) and female managed (de facto) farms, feared that they would be accused of having sexual relationships with the officers and were skeptical about interacting with them. Thirdly, unlike the male farmers, many women farmers were busy with the heavy and demanding domestic and agricultural duties that they did not have time for extension activities. Fourthly, most women farmers disliked the idea of extension officers' visiting early in the morning and on market days when they were busy with domestic duties. These four factors impeded women farmers' participation in soil conservation.

## 6 Conclusion

From the foregoing, it is evident that insecurity of and a low financial base, land tenure insecurity, labor shortage and lack of extension advice are serious constraints impeding women farmers' participation in soil conservation. The most affected women are those found in female managed de jure and female managed de facto farms. It is important for the government to devise policies to alleviate these problems so that the women farmer can be empowered to deal with soil conservation matters. In addition, the extension section should devise gender sensitive approaches.

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