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Determinants of Women Farmers' Access to Agricultural Extension Services in Ethiopia: A Review

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Abstract: Women and men living in rural areas in the world are involved in range of productive activities that is crucial for the welfare, agricultural productivity and economic growth of the household. However, women's significant contribution continues to be systematically marginalized and underestimated in conventional agricultural and economic analyses and policies, while men's contribution remains the dominant, and got attention. In Africa, women farmers participated in various farming activities while receiving little of the infrastructural support men farmers get. Women farmers rarely get extension services and have little contact with extension services organizations in Ethiopia. There are an interaction of different demographic, socio-economic, institutional and women related factors that hinder them to participate in agricultural extension services. Among these factors sex of household head (being male), age of women farmers, sex of development agent (being male), time spent on domestic activities, mobility constraints and distance from extension services decreases the probability of women farmers' access to extension services. On the other hand, education level, farm experience, family size, land holding size, access to credit, access to irrigation, participation in off/non-farm activities, access to information and access to market increase the probability of women farmers access to extension services. Based on this, provision of gender inclusive extension programs, awareness creation and training, provision of informal education, considering women farmers' situation in extension services, provision of credit services, developing irrigation facilities, dissemination of appropriate information and reaching women farmers who are far from extension center are recommended.

Keywords: Agricultural Extension Services, Determinants, Women

1. Introduction

On average, 43 percent of agricultural work force in developing countries is women that range from 20 percent in Latin America to 50 in Eastern Asia and Sub-Saharan Africa. However, women have less access to agriculture related assets, inputs and services than men [7].

African women farmers traditionally have been participated in different aspects of farming activities while getting little of the infrastructural support that male farmers get. Women are often seen as unpaid labour and helper whereas male are considered as the real farmers. Women farmers' access to land, extension services, and credit sources has been hampered by the perception that they are unproductive, which has led to less than optimal production of the food crops that they are in charge of. Furthermore, women farmers are overlooked during the development planning stage since they are invisible in the field [13].

Rural women in Ethiopia make a substantial contribution in subsistence agriculture and to ensure food security and are the backbone of the farm labour. They work in all agricultural aspects. In addition to their active participation in agriculture and livestock production, women are responsible for all household tasks, mainly as a result the gender division of labor. In spite of their great contribution to the household economy and given their critical role in determining, guaranteeing food security as food producers, food providers and contributors to household nutrition and security, rural women often face problems than men in gaining access to agricultural information to increase their production and productivity [5, 11].

Globally, rural women face a particular load in division of labor. Delivering better agricultural extension services to rural women is indispensable in using agriculture for development [10]. According to IFPRI– World Bank report, a

recent study in India, Ghana, and Ethiopia revealed considerable gender discrepancies in access to agricultural extension in these countries, owing mostly to female farmers' restricted involvement in extension-related meetings and a lack of incentives to contact these female farmers [14].

Agricultural extension services offer vital access to the knowledge, information and technology that farmers need to enhance the productivity and thus improve the quality of their lives and livelihoods. It is therefore important to give farmers with the knowledge and information in a quality and timely way [11].

Even though extension services are relatively available in Ethiopia, there are inequalities in access between men and women, as well as regional differences [16]. Women rarely involve in extension services and have limited contact with extension service organizations. Increasing female farmers' access to agricultural extension services in rural areas of Ethiopia remains challenging [15].

There were many studies conducted on constraints and determinants of women farmers' access to agricultural extension services in different districts of Ethiopia. Therefore, it is important to summarize those works to suggest the best policy strategy required to mitigate those problems. Hence, this review was initiated with the objective of reviewing the determinants of women farmers' access to agricultural extension services in Ethiopia.

2. Determinants of Women Farmers' Access to Agricultural Extension Services in Ethiopia

Participation of rural women farmers in agricultural extension services are influenced by the interaction of different demographic, socio–economic, institutional and women related factors [3]. The following are some of the factors determining women farmers' access to agricultural extension services in Ethiopia which were identified by diverse researchers in different parts of the country.

Sex of household head: according to the research [3, 15], women who live in households headed by male have less probability to participate in extension services than women who live in female-headed households. This may be because women in households where men are the head of the household must obtain their husbands' permission. Male heads of families often shoulder all obligations outside the home while delegating all domestic duties to the women. Mostly in households headed by male, the head of the household takes all the tasks outside home and thrusts all the household activities to the women.

Age of women farmers: age of household head influenced the possibility of participating in public extension services negatively. As age of the household head increases, the probability to participate in public agricultural extension services decreases [11]. Young females have a better understanding and awareness of agricultural extension services and are more likely to participate, whereas elders are more conservative and prefer to stick with the traditional customized system [1]. Older farmers are conservative and lack flexibility to adopt new technologies therefore, have low interest to contact with extension agents. In addition, older farmers may have more household and social responsibilities and may have less time to attend extension events.

Education level: the finding of [9] showed that, as education level of women farmers' increases, their likelihood of participation in agricultural extension services increases. Similarly, according to [2] formal educational qualification of the household head had positive and highly significant influence on the probability of women farmers' participation in seed producer and marketing cooperative. The probable reason is that education can change the outlook of farmers through enhancing understanding of innovations and is thought to create a favorable mental attitude for the willingness and acceptance of new venture. More educated people are information seekers and aware of new technologies than less educated people. Education improves farmers' capacity for adopting and interpreting new technologies as well as their capacity for logical decision-making, all of which lead to higher rates of technology adoption. Hence, more educated people have more contact with extension agents.

Farm experience: women farmers having higher farming experience have higher possibility to participate in agricultural extension services than women farmers who have less experience [15]. Compared to women with less farming expertise, those with greater experience most probably take advantage of agricultural extension programs. A woman farmer may be better able to evaluate the advantages of agricultural extension services as her experience grows. Therefore, experienced women farmers have higher likelihood in participating in agricultural extension programs [3].

Family size: women in larger-sized households have greater access to agricultural extension services than women in smaller-sized households. Women are preoccupied with both productive and reproductive roles in the home, so having access to family labor for poultry production is critical [1]. Women's engagement in modular training was affected positively by the availability of family labor. The availability of family work would free up time and relax women farmers in preparation for participation in modular training. Women's involvement in modular training will be impacted by the absence or scarcity of family labor. Women reproductive role takes more of their time which affects their participation in modular training [4]. Like other developing countries majority of home activities are conducted by women in Ethiopia. Hence, availability of family labour may enable women farmers to share domestic activities with other family member and get time to attend extension events.

Land holding size: according to the author [2] households with larger farmland have higher probability to participate in agricultural extension services than households with less land. These showed that having large farm size increase women's participation in agricultural extension services. The

finding of [11] also revealed that, increases in cultivated land area would increase the likelihood of female and male household head farmers participating in public agricultural extension programs. Many agricultural inventions need large productive resources, the most important of which is land. Thus, compared to farmers with small farms, households with bigger cultivated land are more likely to participate in agricultural and livestock production activities and assign a better share of land. The farm size of the family head had a favorable and substantial effect on the likelihood of involvement in the Seed Producer and Marketing Cooperative by women farmers. Many agricultural inventions need large productive resources, the most important of which is land. Thus, household with larger cultivated land are more willing to participate in seed production activities and allocate better proportion of land as compared to farmers with small farm size [2].

Sex of development agent: The likelihood of women farmers participating in agricultural extension services increases if they sex of extension agent is female. This demonstrates that female extension agents are often in a better position to assist female smallholder farmers in adoption of innovations [3, 15]. In Ethiopia, researchers note that male extension agents are prevented from interacting with female farmers by strict cultural taboos. Another issue noted is that male extension officers more likely subscribed to the common misconception that women are not farmers and overlooked women in the household [10].

Access to credit: access to credit services increases the likelihood that female farmers will participate in agricultural extension services. By removing financial constraints to the purchase of agriculture inputs like seeds, fertilizer, etc., access to credit benefits them. This indicates that women who have access to credit services are more likely to obtain farm inputs [3, 15]. Access to credit services can increase households' participation in agricultural extension package program [12]. Access to credit services enable farmers to use modern agricultural input technologies and increase their information seeking behaviour for better utilization of input and consequently increase their contact with extension agents.

Time spent on domestic activities: like other developing countries, women who spend more time domestic activities are less likely to participate in agricultural extension services than those who have more free time. Women and girls are traditionally tasked with general domestic activities, fetching water, gathering firewood, processing and preparing food, cooking, and other household chores. Domestic work performed by women is characterized by long, grueling days with few suitable and affordable technologies to ease the workload and drudgery. In many cases, women are unable to adopt improved technology that requires additional workload due to the heavy workload they already face [3].

Access to irrigation: Households who have access to more irrigable land are more likely to participate in agricultural extension services as compared to households who have less land [15]. According to the finding [4], there was highly significant relationship between access to irrigation and participation in modular training among women farmers. Access to technologies such as irrigation increase women's understanding on the importance of extension services.

Participation in off/non-farm activities: Participation in off/non-farm activities was higher for non-participant group than participant group. This may be due to time constraint of women farmers who participate in off/non-farm activities [4]. Women farmers' who participate in off/non-farm activities could busy with their work and may face time constraints to attend agricultural extension events. In addition, their focus may be maximizing their profit from the non-farm activities and give less attention for agricultural activities.

Access to information: Women who have access to information on poultry extension service are more poultry extension service beneficiary and participant than that of less informant women. Producers that have contact with technological information can improve their production more efficiently than those who are not [1]. Increases in the mass media exposure would result in the probability of increasing female farmers' participation in public agricultural extension services. Mass media play an important role in transferring information in relatively shorter time and can cover a large area at the same time [11].

Mobility constraints: women farmers who have no mobility constraints can involve in any association, development intervention, and etc. Women farmers can be hindered from accessing public extension and formal agricultural information services by mobility limitations [15]. Women who have no mobility constraints can take part in any association, improvement intervention, etc. In such situations, women depend notably on their female social networks to study new agricultural technologies [3].

Distance from extension services: distance from extension services affect women farmers' access to agricultural extension services negatively. According to [4], the increase of distance from training centers to homestead decrease women farmers' participation in modular training. Distance could be a barrier for women farmers' participation in modular training. The reason could women's work load of women, it can be difficult to attend extension services because most of women's activities are time consuming. So, their participation in extension events decrease as distance to extension center increase.

Access to market: access to market increase women farmers' participation in agricultural extension services [9]. The probability of participation in public agricultural extension services decrease as the distance from market center increases [11]. Farmers who have market access want to produce surplus production for market and seek new technologies to increase their productivity. Hence they seek information than their counterparts.

3. Conclusions

Women farmers play a crucial role in agricultural production and productivity throughout the world. However,

in rural areas of developing countries like Ethiopia, women make a substantial contribution in subsistence agriculture and to ensure food security. In spite of their great contribution in farm livelihood, rural women often face problems than men in gaining access resources and services.

Agricultural extension services improve knowledge and understanding that farmers need to enhance the productivity and thus improve quality of their livelihoods. It is therefore important to give farmers with the knowledge and information in a quality and timely way. Even though overall extension services are relatively accessible in Ethiopia, women rarely involve services. Increasing female farmers' access to agricultural extension services in rural areas of Ethiopia remains challenging.

Participation of rural women farmers in agricultural extension services are influenced by the interaction of different factors. Sex of household head (being male), age of women farmers, sex of development agent (being male), time spent on domestic activities, mobility constraints and distance from extension services decreases the probability of women farmers' access to extension services. In contrary, education level, farm experience, family size, land holding size, access to credit, access to irrigation, participation in off/non-farm activities, access to information and access to market increase the probability of women farmers access to extension services.

4. Recommendations

1) Sex of household head negatively affects women farmers' access to extension services. Extension programs should consider both male and female headed women farmers during extension program planning and implementation.
2) Age of women farmers reduce the probability of participating in extension programs. Awareness should be given for older farmers to participate in extension services and enhance their productivity.
3) Education level positively affects women farmers' participation in extension programs. Therefore, informal education should be given for women famers to enhance their understanding about the importance of extension services.
4) Farm experience increases women's probability of participating in extension services. Hence, awareness and training have to given for non-experienced women farmers about the importance of extension services.
5) Family size positively affects women farmers' access to extension services. This could be due to women farmers who have less family size have work load that prevent them from attending extension events. Therefore, extension programs should consider women's work load.
6) Women farmers who have more land holding size have higher probability of participating in extension services. So, attention should also be given for women farmers who have less land size.
7) Sex of development agent (being male) negatively affected women farmers' access to extension services. Hence, awareness have to given for the society to overcome the barriers of male development agent contact with women farmers.
8) Access to credit increases women farmers' access to extension services. Therefore, concerned body have to provide credit services for women farmers.
9) Women farmers who spent longer time on domestic activities have less access to extension services. Thus, extension programs should take in to account women farmers' domestic activities.
10) Access to irrigation increases women farmers' access to extension services. Irrigation infrastructure need to developed to improve women farmers' production and productivity.
11) Access to information increases women farmers' access to extension services. Therefore, appropriate information have to disseminated for women farmers on time.
12) Distance from extension services decrease women farmers' access to extension services. Thus, extension program have to reach women farmers who are far from extension center.

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