

Farmer Field School as an Extension Tool Promoting Vegetable Production in Rural Communities of the Gambia

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Abstract: The farmer field school is an extension tool or approach without walls use for dissemination of new agricultural technologies to farmers particularly women and youths. The extension system is widely using the farmer field school concept in vegetable gardens in a practical orientation of learning by doing, seeing and feeling. The main objective of Farmers' Field Schools is to help farmers learn and adopt new agricultural knowledge and skills and to make better decisions related to production and productivity. The questionnaires were administered to 300 farmer field school participants in three (3) regions. The data collected from the interview was analyzed using the SPSS package. It is evident from the findings that, a higher number of the respondents are between the active age brackets of (35-60 years) with a valid percentage of 50% while 78% of the respondents obtained their income from vegetable production meaning that, income is largely dependent on agriculture. In conclusion, the farmer field schools programs have been effective in promoting best agricultural practices amongst vegetable farmers in the rural Gambia. Therefore, recommend the extension system to be proactive in group formation of women for easy access to extension services of technology transfer and adoption while developing progressive land policy for women vegetable producers.

Key words: Farmer Field School • Extension • Vegetable • Production • Rural Communities

INTRODUCTION

Agriculture is the economic growth of the Gambia as it contributes 33% to Gross Domestic product (GDP). The government has endeavored relentlessly to improve the yields of farmers. One of such recent efforts was the implementation of the Farmer Field School (FFS) approach decades ago to help build extension delivery services at the grassroots level and to improve adoption of good agricultural practices in vegetable production. Importantly, vegetable production is very lucrative enterprise for smallholder farmers especially women as it provides food and nutrition as well as income security. The extension delivery system of the Gambia is using the farmer field school as a tool of transferring and adopting appropriate agricultural technologies to women vegetable producers. The farmers field schools, farmers were able to deepen their knowledge of agroecology, particularly the relationship between insect pests and beneficial insects and adopt practices that reduce the use of pesticides and improve the sustainability of crop yields.

The new extension policy and strategy developed through the support from Food and Agriculture Organization (FAO) where farmer field school is stipulated in the policy will help the extension systems in delivering quality services to farmers. The focus on farmer field school has widened to cover a broad range of agronomy practices, including onion, tomato, bitter tomato, hot pepper, egg-plant to address issues in land preparation, nursery management, irrigation, soil conservation, variety selection and marketing.

Primarily in a recent development is the application of the Farmer Business School concept by International Trade Centre jobs, skills and finance (ITC) developed the Farmer Business School (FBS) to help farmers learn how to make their farming enterprises and overall farm operations profitable and able to respond to market demands [1]. The school would enable farmers to learn and improve their knowledge, change their attitudes and enhance their skills needed for farm commercialization while working on their own farms. Furthermore, the innovative idea of farmer field school and farmer business

school concept have been widely accepted by government institutions, development partners, Non-Governmental Organizations (NGOs) and agricultural projects [2]. The schools have supported by our progressive policy documents that will guide the extension workers and school facilitators to improve on knowledge and skills as well as enhancing or boosting crop production and productivity of farmers [3-4]. Strengthening the capacities of farmers would enable the farmers to identify their problems and possible solutions by extension take informed decisions about their production practices and business management skills. This will improve on their lives and livelihood of farmers as one objective of the government [5].

Concept of Farmer Field School: The Food and Agricultural Organization (FAO) of the United Nations was the first in 1989 to implement a farmer field school in Indonesia. This was introduced to deal with the food security issues in Indonesia as at the time that was posed by pest infestation in rice fields. The term came into concept between the 1970s and 1980s. Farmer Field School has been defined as a non-formal training program generated out of T&V [6]. It is a participatory and interactive training approach of extension method and a form of adult education whereby farmers of similar interest (25-30 in number) meet regularly during the course of a growing season to experiment as a group. The farmers are given the chance to explore new production methods and practices through a discovery base approach. Therefore, farmers at the end make choices among the various production practices and implement the activities. Farmer Field School (FFS) provide farmers with better incite in crop ecology, analytical and problem-solving skills through experience. This skill helps farmers to evaluate the pros and cons of their already existing and the novel practices and technologies. Farmer field school focuses on practice, of cohesive farming communities, discuss different problems and describe potential solutions [7]. In Africa, Farmer field school has been identified as an effective approach to facilitate agricultural production, this is due to its participatory nature in provision of extension service; farmer-to-farmer learning and sharing [8]. Vegetable production is one of the major productions that is impacting greatly on the country's economy which contributes 4% to GDP. Vegetable production has been recognized as an important sector in improving food and nutritional security of the nation [9-10]. Despite the importance of vegetable crop production farmers faces several problems. One of the main problems is the availability of adequate supply of

water and fencing problems. Most produce from the vegetable production is for domestic consumption and excess produce (surplus) is sold on the local markets or tourist hotel [11] Notably to curb the issues around surplus production, several methods have been employed and one of these methods is to alternate production by changing planting dates of various vegetable crops. However, there were difficulties because women farmers do not start production until they harvest rice. Furthermore, another way is to plant a befitting range of both early and late cultivars as will help to achieve a suitable spread in production systems of vegetables.

Farmers' ability to participate effectively in extension programs to some extent influenced by their socioeconomic characteristics such as age, gender, education, gender, income and land ownership. According to Suved, *et al.* [12], indicates that, decision-making process to participate and adopt new agricultural practices depends on both intrinsic factors such as knowledge, perceptions and attitudes and extrinsic factors such as the characteristics of the farmer (age, education, social networks, farming experience), biophysical characteristics (soil quality, farm size, slope), farm management characteristics. However, it is believed that young farmers are more willing to participate in FFSs than older farmers because young farmers are expected to look for agricultural information and new innovations [13]. The impact of outsourced agricultural extension program on smallholder farmers' net farm income discovered that, the participation of farmers in an outsourced extension program. The number of years a farmer has been into farming may influence his or her ability to participate in Agricultural extension programs such as the farmer field schools [14]. For instance, an experienced farmer by virtue of his long time in farming may have been exposed to several extension programs, which may have brought significant benefit to him or otherwise, upon participation. As a result, he may decide to either effectively participate in a similar future program or not based on the experience. Baiyegunhi, *et al.* [9] showed that amongst the determinants of participation of farmers in a Community-Based Program in the Abia and Cross River States of Nigeria included the farming experience of farmers. Evidence suggests that, increase in farming experience is more likely to improve the understanding of conservation farming by farmers who adopted the practice [15] as well as important in evaluating technology information. However, Bello [16] refutes this claim by indicating that the older participants and those with more agricultural experience are expected to participate less frequently in extension programs such as the FFSs.

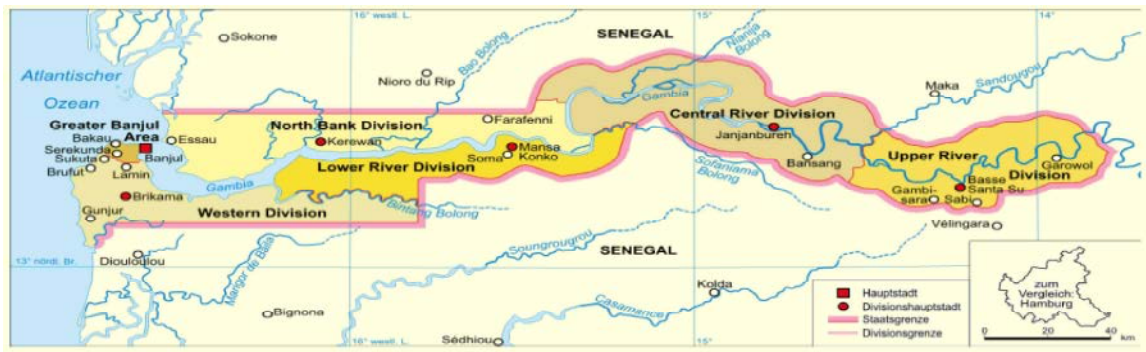


Fig. 1: Map of the Gambia

MATERIALS AND METHODS

The sampling method was purposive sample method in three (3) regions namely Lower River, Upper River and Central River Region designated because of their sites, cultural assortments and their vigorous participation in farmer field school schemes. The main reason of choosing these regions was as a result of favourable climatic condition in these regions due to extension service deliveries and projects intervention. In the context of this study, farmer field school participants are those who undertook long-season farmer field school training on vegetable production practices and non-farmer field school participants. In this context, 300 farmers were selected from a sampling frame which was provided by the trainers (facilitator) and/or lead farmers or the extension agents responsible for farmer groups. Data from the interview schedule was analyzed using the statistical Package for the Social Sciences (SPSS) software on frequency and percentage.

RESULTS AND DISCUSSION

It is evident from the observation that, a higher number of the participants are between the active age brackets of (35-60 years) with a valid percentage of 50% followed by a very active age bracket which are more youthful age of 18-35 years also with a valid percentage of 42.67% while 6% are above 61 years of age.

In Table 2, the result showed that a higher number of female producers are engaged in vegetable farming with a valid percentage of 93% of women and young youths fully participate in vegetable production and marketing. Thus, women are usually known not to be the head of the household but are more responsible for the household engagements as against the men, in terms of family welfare. However, the findings had conflicts of interest

that, male dominance with farming and suggested a gap between male and female headed household participants of Nepal [17].

In Table 3, result shows that, 38% of the respondents had form of education with the remaining 37% of the respondents not having any form of education. Primarily meaning that, education is regarded as a prerequisite for women producers engaged in vegetable farming. However, the farmer field school is targeted to provide its members with reliable and effective information sharing through training to aid the vegetable farmers to increase their yield and obtain substantial income as possible. The finding however contradicts [19-20] who found that there is no relationship between educational level and cashew growers. According to [21] also argued that there exists no significant relation between farmers and their level of education.

From the result in Table 4, 96% of the respondents are married while 1.33% are single. This is a clear that there are individuals who are charged with some form of responsibilities. As a saying goes, “two heads are better than one”, married couples are able to have an upper hand in terms of their access to and participation in extension programs, as this will enhance crop yield than the single. According to [14] supports this by stating that “marriage has the capacity to boost a house holds productive labour and in turn improves farming activities of the farm family.

The results in Table 5 indicate that 75% of the land used for farming were community owned while 14%, are family owned and the lowest was 1% on rent basis respectively. According to literature land title as in many cultures is passed from the family to the community [20-21] analyzed the issue of a landless generation amongst the blacks stating that they have endured countless attack from the westerners with regards to farmlands owned by families. He further concluded that

Table 1: Age of farmer field school respondents

Age	Membership		Total	Percentage (%)
	No	Yes		
< 18	3	0	3	1.00
18-35	58	70	128	42.67
36-61	75	75	150	50.00
>61	14	5	19	6.33
Total	150	150	300	100.00

Table 2: Gender of respondents

Sex	Membership		Total	Percentage (%)
	No	Yes		
Male	9	12	21	7.00
Female	141	138	279	93.00
Total	150	150	300	100.00

Table 3: Education level of respondents

School	Membership		Total	Percentage (%)
	No	Yes		
Non-formal	29	85	144	38.00
Primary	21	24	45	15.00
Junior	7	5	12	4.00
Senior	4	4	8	2.67
Vocational	0	6	6	2.00
Tertiary	1	1	2	0.67
None	88	25	113	37.67
Total	150	150	300	100.00

Table 4: Marital Status of Respondents

Status	Membership		Total	Percentage (%)
	No	Yes		
Married	143	145	288	96.0
Single	2	2	4	1.33
Divorced	1	2	3	1.00
Widow	4	1	5	1.67
Total	150	150	300	100.00

Table 5: Land ownership of respondents

Land	Membership		Total	Percentage (%)
	No	Yes		
Individual owned	11	17	28	9.33
Family owned	16	26	42	14.00
Rent	4	0	4	1.33
Community owned	119	107	226	75.33
Total	150	150	300	100.00

Table 6: Source of income

Income	Membership		Total	Percentage (%)
	No	Yes		
Farm	120	113	233	77.67
Loan	1	9	10	3.33
Petty trading	13	20	33	11.00
Remittance	16	8	24	8.00
Total	150	150	300	100.00

the Africans merged their thoughts with a policy reform about the adaption of a cooperative system with respect to the ownership of farmlands. In the long term, this in effect develops a culture of sustainable peace within families and the community [21].

The result in Table 6, indicates that 78% of the respondents obtained their source of income from vegetable production which implies that income is largely dependent on agriculture. Other sources of income for farmers were small business, which are non-farm income 11%, remittances 8% and loans 3% from either family, friends or credit facilities provided by government or privately owned. Besides other sources of income were obtained by vegetable growers that is used for the payment of utility bills and other expenses. The findings are consistent with [22] who reported that non-farm income contributes 12% of farmers' income. Income is a very important indicator used to establish the living standard of farmers and thus a measure of poverty among rural farmers. According to [22] argues that institutional factors that contribute and promote rural off-farm income help increase the availability of capital to farm families which is important for increasing investment for agricultural technologies.

CONCLUSION AND RECOMMENDATION

Conclusion was drawn based on the research questions of the research work with regards to the socioeconomic factors investigated study concludes that age, educational level, off-farm activities, land ownership and membership to other farm groups were significantly associated with participation in farmer field school. Furthermore, there were significant differences in knowledge acquisition regarding good vegetable production practices and the adoption of best vegetable production practices amongst the farmer field school and non-farmer field school participants. It is therefore evident from the results of the study that, there has been a significant rise in both the knowledge of farmers

regarding good vegetable production practices and also the adoption of new agricultural technologies by farmers, which inevitably led to the significant rise in the yield of vegetable crops and income over the years. In conclusion, the farmer field schools programs have been effective in promoting good vegetable production practices amongst vegetable farmers in the rural communities of the Gambia. Therefore, recommend the extension system to be proactive in group formation of women for easy access to extension services and farmer field school trainings while developing progressive land policy for the women vegetable producers.

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