Vol. 13(51), pp. 2862-2871, 20 December, 2018
DOI: 10.5897/AJAR2018.13090
Article Number: E6BA8CA59563
ISSN: 1991-637X

http://www.academicjournals.org/AJAR

African Journal of Agricultural Research

Full Length Research Paper

Gender differences in the use of plant health information services: A case of plant clinics under Plantwise Program in Kenya

Musebe, R. O.*, Mugambi, I., Williams, F., Mulaa, M., Nambiro, E. and Chege, F.

CAB International, P. O. Box 633-00621, Nairobi, Kenya.

Received 2 March, 2018; Accepted 5 November, 2018

A total of 8,699 female and 12,928 male farmers visited plant clinics in Kenya between 2012 and 2016. The lower clinic attendance by women farmers indicates they may lack information on plant health problems. This study aimed to understand the environment plant clinics operate in, identify the reasons for low clinic attendance by women, and possible strategies to reach more female farmers. Stratified random sampling was used to select 118 female and 119 male plant clinic users and, 138 male and 156 female farmers who had not used plant clinics. The study established there were significant differences ($p<0.01$) in use of different plant health information sources depending on region, gender and whether a farmer was a clinic user or not. Lack of awareness about plant clinics, services offered and who was supposed to attend were the main reasons for failure to attend plant clinics. Thus more awareness creation should be done. Limited access to plant clinics was reported by some farmers, suggesting that more plant clinics are needed. There were significant differences ($p<0.05$) in regional and gender access to plant clinics, highlighting the need for stratified plant health information dissemination methods. To extend the reach of plant clinics, training of plant nurses/lead farmers who are easily accessible to all farmers is warranted.

Key words: Clinic attendance, gender, plant clinic, plant doctor, plant health advice.

INTRODUCTION

The Plantwise programme launched its first pilot plant clinics in Kenya in 2010. The Plantwise programme works with national partners to strengthen countries' plant health systems, through establishing a network of plant clinics as well as supporting plant health system stakeholder linkages. There are currently 122 plant clinics in 14 counties distributed in 5 regions; Central, Eastern, Rift Valley, Western and Nyanza. The clinics are run by 222 plant doctors; 141 male and 81 female. Plant doctors are extension staff mainly from the ministry of agriculture, livestock and fisheries (MoALF) who have received training on how to diagnose plant health problems and run a plant clinic (Danielsen et al., 2013; Scheidegger and Graf, 2013). Most plant clinics are situated in market

*Corresponding author. E-mail: r.musebe@cabi.org.

places and operated during market days where farmers frequently take their farm produce for sale and purchase farm inputs. The MoALF is the local implementing organisation for Plantwise since it takes the lead in provision of agricultural extension services in the country (Scheidegger and Graf, 2013; Muyanga and Jayne, 2006). According to clinic records, a total of 8,699 female and 12,928 male farmers visited plant clinics between 2012 and June 2016. This means that women are under-represented at plant clinics and the proportion of female queries is on average half that of males, which does not reflect the proportion of female to male input to agriculture (Surridge and Rufsana, 2015).

Plantwise gender-disaggregated data on the number of queries per crop indicates gender differences in the types of crops taken to the clinics with male farmers taking mostly cash crops while female farmers take food crops. Data from the Kenyan agriculture sector shows that women do 80% of the food production, 50% of cash crop production, 80% of the food storage and transport from farm to the home, 90% of the weeding, and 60% of the harvesting and marketing of crops (GoK, 2007). This is consistent with Africa's agricultural sector, where women are responsible for producing 80% of the food as opposed to men who tend to engage more in income generating activities such as cash crop production, perhaps because of their responsibility of availing food for the family (Doss, 2001; FAO, 1998). Surridge and Rufsana (2015) established that there were differences in gender relations and division of labour at the household level even though the clinics were located in the same region. Women are involved in reproductive, productive and community activities in the different plant clinic areas and also interact with other service providers within their communities. There are however likely to be differences in gender roles in relation to farming and access to and control of resources in different clinic areas since there are differences in crops grown, farming systems and activity seasonal calendars. The different genders; adult male/female and youth male/female are likely to have different priorities, interests and needs in terms of plant clinic services and their time and availability.

The lower clinic attendance by women indicates that they lack information on key plant health problems about crops they prefer to grow. This is because providing information to one spouse (usually the husband) does not mean that the other spouse also learns about options and opportunities that meet their needs (Bernier et al., 2015). Women will miss the opportunity to receive advisory services that would enable them use effective and safe plant health management strategies to increase crop yields and have enough food and income for their families. It is necessary to understand the environment plant clinics operate in and involve the women in these communities to identify the reasons for low clinic attendance and possible strategies to reach more female farmers.

This study used a gender lens to examine the differences in use of plant health information services with a specific focus on plant clinics. In this study, gender refers to the social attributes and opportunities associated with being male and female and the relationships between women and men and girls and boys as well as the relations between women and those between men (EIGE, 2017). These attributes, opportunities and relationships are socially constructed and are learned through socialization processes. They are context/ time-specific and changeable. Gender determines what is expected, allowed and valued in a woman or a man in a given context. In most societies there are differences and inequalities between women and men in responsibilities assigned, activities undertaken, access to and control over resources, as well as decision-making opportunities. Gender may also be conceived of as adult men, adult women and youth. The new constitution of Kenya defines youth as all individuals in the republic of Kenya who have attained the age of 18 years but have not attained the age of 35 years (GoK, 2010). Gender is part of the broader socio-cultural context. Other important criteria for socio-cultural analysis include class, race, poverty level, ethnic group and age (EIGE, 2017). Whereas it is acknowledged that there are many gender categories, this study concentrated on two main gender categories that are adult men and adult women. This is because very few youth are involved in agricultural production or seek plant health information. The study examined sources of plant health advice as well as drivers and barriers to the use of plant clinics by men and women. In addition, the study developed recommendations on possible ways to make clinic services more attractive to men and women

MATERIALS AND METHODS

Data entered in the Plantwise Online Management System (POMS) between January 2012 and June 2016 were analysed for the 122 plant clinics and the ratio of male to female farmers calculated. Purposive sampling was used to select sites for the study. Clinics with the highest total attendance but a low proportion of women were selected from different regions. Study areas were adequately spatially separated to account for differences in agricultural potential based on differences in agro-ecological zones and ethnic groups hence diversity in the crops grown by farmers. Three clinics, Matumbei in Western Kenya, Kibugu in Central Kenya and Kauti in Eastern Kenya were selected for the study.

Stratified random sampling was used to select farmers who were interviewed in the survey using questionnaires. A minimum of 120 male and female farmers that is 30 male and 30 female users and 30 male and 30 female non-users were interviewed from four to eight villages in each clinic area. This translated to a sample size of 118 and 119 women and men users of plant clinics. The non-users were 138 and 156 men and women farmers, respectively. The list used to select clinic users was generated from POMS while for the non-users farmer lists kept by the agricultural extension officers were used. A total of 12 focus group discussions (FGDs) were held,

Table 1. Percentage of farmers interviewed in each region by gender and age group.

Age category	Kauti		Kibugu		Matumbei	
	Men (N=89)	Women (N=99)	Men (N=91)	Women (N= 85)	Men (N=77)	Women (N=90)
<21	2.2	2.0	0.0	1.2	3.8	2.2
21-30	4.5	6.1	8.7	12.9	33.7	18.9
31-40	21.3	23.2	16.5	22.4	18.2	16.7
41-50	19.2	18.2	33.0	31.8	14.3	27.8
51-60	24.7	31.3	12.1	17.6	15.8	23.3
61-70	22.5	13.1	14.3	10.6	6.5	7.8
>70	5.6	6.1	15.4	3.5	7.7	3.3

Table 2. Average farm size (acres) by gender.

Plant Clinic Area	Men	Women	Both men and women
Kauti	2.5 (2.23)	2.0 (1.68)	2.2 (1.97)
Kibugu	1.6 (1.52)	1.2 (1.40)	1.4 (1.48)
Matumbei	1.9 (1.38)	2.1 (1.63)	2.0 (1.52)
All clinic areas	2.0 (1.80)	1.8 (1.63)	1.9 (1.72)

Values in parentheses are standard deviations.

four in each clinic area, using FGDs checklist. Each FGD had 10-25 members that is, male users and non-users, female users and non-users of plant clinics separately. Those interviewed included different age groups (Table 1). Data collected were analysed using descriptive (mean, percentages, standard deviations and frequencies) and inferential statistics (Chi-Square and F-tests) for quantitative data and thematic analysis for qualitative data from the FGDs.

RESULTS AND DISCUSSION

Most farmers had formal education that was mainly primary level (47 to 64%) and secondary level (31to 44%). Less than 5% had no formal education and 1 to 5% had either middle level college education or a university degree. Respondents from Matumbei had the lowest education level, with more than 63% indicating that they had only schooled up to the primary level. This means that the farmers had low levels of education, which is consistent with small scale farmer categories in the African context. More educated persons look for white collar jobs because farming is assumed to generate low incomes that take a long time to be forthcoming. Female farmers had on average relatively lower levels of education compared to their male counterparts. The differences in education levels was statistically significant (χ^2=22.80, p<0.01). The average farm size of those interviewed ranged between 1.38 acres to 2.23 acres. There were significant differences ($F_{528, 2}$=12.21, p<0.01) in farm size across the three areas studied, with Kauti having the highest mean acreage and Kibugu the lowest (Table 2). Male farmers owned larger pieces of land than female farmers, but the differences were not statistically significant ($F_{528, 1}$ = 8.83, p>0.05).

There were statistically significant differences in farm size between plant clinic users and non-users ($F_{528, 1}$=15.95, p<0.01) with clinic users having relatively larger parcels of land (Table 3). Focus group discussions revealed that the plant clinic users were more active in farming and sought avenues to increase farm size to assure increased agricultural production.

There were significant differences in farm area under crops across the three study areas ($F_{528, 2}$=7.25, p<0.01) with Matumbei and Kauti having larger average acreage than Kibugu. Male farmers had significantly more acreage of land under crops compared to female farmers ($F_{528, 1}$=5.75, p<0.05). In Kenya generally men are considered the land owners and this may explain why on average women have smaller land parcels. A study by Bernier et al. (2015) revealed that women rarely consider themselves land owners. Youths especially females below 30 years had the lowest land under crops (Table 4). The youth, irrespective of whether they are female or male are less interested in agricultural production. In the perspective of most youths, agricultural production has low and slow return to investment. In addition agricultural

Table 3. Average farm size (acres) among plant clinic users and non-users

Plant clinic area	Plant clinic use	Men	Women	Both men and women
Kauti	Users	2.9 (2.13)	2.3 (1.79)	2.6 (1.97)
	Non-users	2.2 (2.29)	1.7 (1.55)	1.9 (1.93)
Kibugu	Users	1.9 (1.73)	1.8 (1.67)	1.8 (1.69)
	Non-users	1.3 (1.30)	0.6 (0.72)	1.0 (1.12)
Matumbei	Users	2.1 (1.26)	2.3 (1.58)	2.2 (1.41)
	Non-users	1.8 (1.47)	2.0 (1.67)	1.9 (1.59)

Values in parentheses are standard deviations.

Table 4. Average farm area (acres) under crops by gender and age category (years).

Age category	Kauti		Kibugu		Matumbei	
	Men (N=89)	Women (N=99)	Men (N=91)	Women (N=85)	Men (N=77)	Women (N=90)
<21	1.00	0.38	0.00	0.5	1.00	1.00
21-30	0.88	1.25	0.79	0.48	1.24	1.19
31-40	1.49	1.28	0.91	0.56	1.63	1.23
41-50	1.25	1.74	1.47	1.07	1.98	2.13
51-60	2.44	1.79	1.12	1.92	1.67	1.65
61-70	2.86	2.18	1.63	1.47	3.45	1.36
>70	4.71	1.46	2.36	1.67	2.95	1.42
All Age categories	2.13	1.63	1.43	1.09	1.73	1.58

activities are presumed to be labour intensive.

Sources of plant health advice

Farmers received plant health advice from different sources which included plant clinics. There were significant differences in the usage of different plant health information sources across the three regions (χ^2=51.77, p<0.01). Plant clinics and government extension workers ranked highest among male and female farmers across the three regions. Farmers who cited government extension workers as sources of plant health advice interacted with them in their capacity as extension agents and not at the plant clinics. There were significant differences (χ^2=14.65, p<0.01) in the use of information sources by female and male farmers. More male than female farmers seek plant health advice from government extension workers in Kauti and Matumbei, while in Kibugu more females than males seek plant health advice from this source. More males than females in Matumbei reported that they sought plant health advice from agro-input dealers, while more women than men reported getting advice from this source in Kibugu. Farmer groups ranked highest in Kibugu, and radio highest among males in Matumbei (Table 5).

Use of different sources of information by men and women in the different clinic areas was cross checked using focus group discussions in all the areas. Findings from the FGDs were consistent with those from individual interviews. This in practice means that prioritization of the different sources in different areas according to gender can be effectively used as a basis for dissemination of crop protection advice.

There were however significant differences (χ^2=11.44, p<0.01) in the sources of agricultural information between plant clinic users and non-users. All farmers who sought plant health advice from the internet, Kibugu coffee factory or used their own knowledge were non-users of plant clinics. Further, more than 70% of the non-users reported receiving plant health advice from agro-input dealers, women groups and family (Table 6).

Plant clinic users had more lead farmers, government extension and farmer groups as sources of advice. This suggests that plant clinic users are more proactive farmers in terms of seeking plant health advice and

Table 5. Percentage of respondents receiving Plant health advice from different sources across the three study areas.

Sources of Plant health advice	Kauti		Kibugu		Matumbei		All study areas	
	Male (N=89)	Female (N=99)	Male (N=91)	Female (N=85)	Male (N=77)	Female (N=90)	Male (N=257)	Female (N=274)
Government extension worker	21.2	11.8	9.3	11.3	12.9	12.7	14.4	11.9
Plant clinic	13.2	17.5	16.6	20.2	19.3	14.7	16.3	17.4
Agro input dealer	14.6	17.9	15.4	16.5	12.8	11.7	14.4	15.5
NGO extension worker	4.7	1.7	4.0	2.6	0.6	2.0	3.3	2.2
Friends and neighbours	17.9	17.9	20.3	17.0	23.4	21.3	20.3	18.7
Family	7.1	9.2	6.2	8.2	12.3	14.2	8.3	10.5
Lead farmer	5.3	4.4	7.0	3.6	1.8	1.5	4.9	3.2
Farmer group	8.5	4.8	10.6	8.2	4.1	4.6	8.0	5.8
Women group	0.0	9.2	0.0	6.7	0.0	6.2	0.0	7.4
Radio	6.1	5.2	9.3	5.2	10.5	9.6	8.5	6.6
Internet	1.4	0.0	0.9	0.5	1.1	0.0	1.1	0.2
Local leader	0.0	0.4	0.4	0.0	1.2	1.5	0.5	0.6

Table 6. Percentage of users and non-users of Plant clinics receiving Plant health advice from different sources.

Sources of plant health advice	Plant clinic users (%)			Plant clinic non-users (%)		
	Men (N=119)	Women (N=118)	Both men & women (N=237)	Men (N=138)	Women (N=156)	Both men and women (N=294)
Family	17.6	14.4	16.0	21.0	30.8	26.2
Lead farmer	14.3	11.9	13.1	9.4	3.8	6.5
Women group	0.0	15.3	7.6	0.0	17.9	9.9
Govt. extension officer	44.5	42.4	43.5	25.4	15.4	20.1
Plant clinic	100.0	100.0	100.0	0.0	0.0	0.0
Radio	19.3	12.7	16.0	21.0	16.7	18.7
Friends and neighbours	38.7	35.6	37.1	56.5	47.4	51.7
Local leader	1.7	0.0	0.8	0.7	2.6	1.7
Farmer group	23.5	17.8	20.7	15.2	9.6	12.2
NGO extension worker	10.1	5.9	8.0	5.8	3.8	4.8
Agro-input dealer	33.6	36.4	35.0	34.8	34.0	34.4
Internet	2.5	0.8	1.7	2.9	0.0	1.4

association amongst themselves. There were similarities between plant clinic users and non-users with respect to accessing information from agro-dealers. This is expected because both users and non-users of plant clinics obtain crop protection chemicals from agro-dealers.

Farmers gave various reasons for their most preferred choice of plant health advice. Those who preferred government extension workers stated they were more accessible and could visit farms, conduct on-farm demonstrations and they were generally very knowledgeable. Farmer groups were preferred by some farmers because they provided a platform to share their knowledge and experiences with each other, organized education days and other fora where experts educate farmers and also facilitated farmers' access to farm inputs by providing credit facilities. Some farmers preferred agro-input dealers because of their good knowledge about agro chemicals; they are easily accessible and operate on a daily basis, stock a wide variety of agro-chemicals and are experts in agriculture. Sources preferred by women in the different locations suggest that women prefer to receive advice from other women, especially female farmers, or those that they know. In addition, advice provided should reflect the needs of women farmers in terms of capacities and access to resources including time and physical inputs used in the production processes.

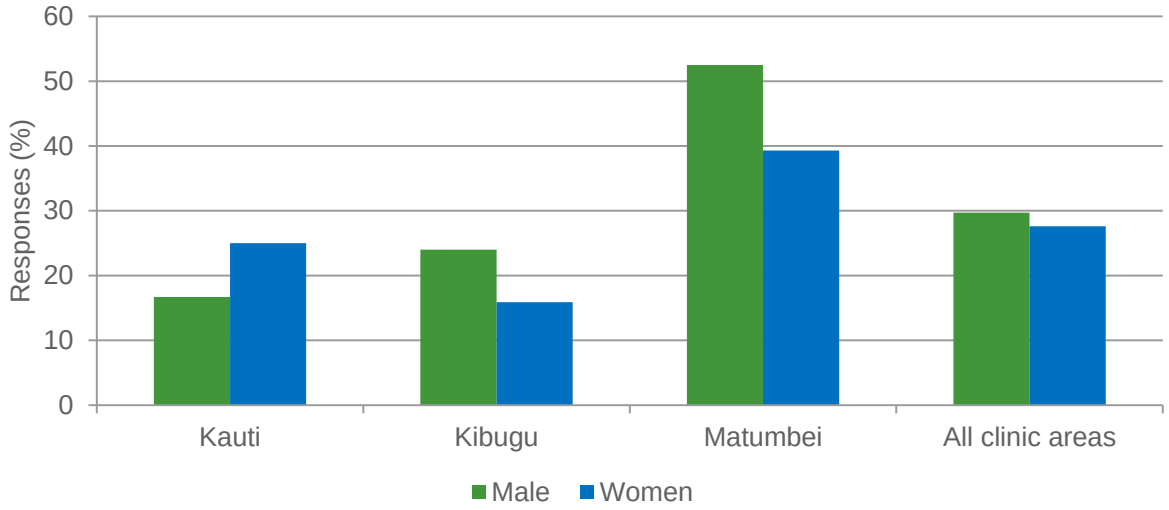

Figure 1. Percentage of respondents who knew about Plant clinics.

Awareness of plant clinics

Only 28.6% of the non-users knew about plant clinics, with slightly more male than female farmers (Figure 1). However, the difference between men and women was not statistically significant (χ^2=2.57, p>0.05) for all the plant clinic areas. These results suggest that one of the factors stopping the use of plant health advice from the plant clinics is lack of awareness. Women farmers were more disadvantaged in this regard because a relatively smaller number of women were aware of the plant clinics. Given the lack of statistical significance in difference between men and women who were aware of plant clinics the same awareness creation mechanisms could be used for both men and women.

Ten per cent of those who did not know about plant clinics prior to the interview reported that they would not attend the plant clinics even after they knew about them. The reasons they gave were that the plant clinics were too far from their homes; the time was not suitable, they were always very busy with other work or they did not need plant health advice. These reasons were similar for both men and female farmers.

Plant clinic attendance and number of visits

Focus group discussions revealed that on average, most of the plant clinic users had been to the clinic once or twice, mostly with different crops and crop health problems, or the same crops but different problems. Male farmers had been to the clinics more often than female farmers, with Kibugu having the highest number of average plant clinic visits by male farmers. More than 90% of respondents stated that gender of the plant doctor would not influence their visits to the clinic with the remainder stating that they preferred either a male or a female plant doctor. Knowledge about plant clinics was strongly positively correlated with plant clinic attendance.

Farmers reported that they took different lengths of time to reach the plant clinics because they come from different villages and the distances vary. On average, most farmers both male and female took 30 min to reach the plant clinic in Kauti and Kibugu with most farmers in Matumbei taking 10 min. This is because most plant clinic users in Matumbei live near the market where the clinic is usually held. In all regions there were some farmers who took 1 h or more to reach the plant clinics either due to distance or means of transport. Some farmers reported that they took longer time during the rainy season due to slippery soils. The association between frequency of plant clinic attendance and length of time it took to reach the clinic was however not statistically significant. The preferred time for clinic visits was not the same for men and women farmers. More farmers visited between 8 am and 11 am in Kauti, 8 am to 2 pm in Matumbei and 2 pm to 5 pm in Kibugu (Figure 2).

There are regional differences in patterns, as well as the gendered differences within the regions. This indicates that it is not accurate to make broad assumptions about gender patterns and to ensure Plantwise work is truly gender responsive or even transformative there is need to understand the local context in which the activities are undertaken. It is also necessary to take time to conduct analysis before the start of a project to ensure it is going to address the needs of both women and men in that particular community. Policies and an enabling environment should

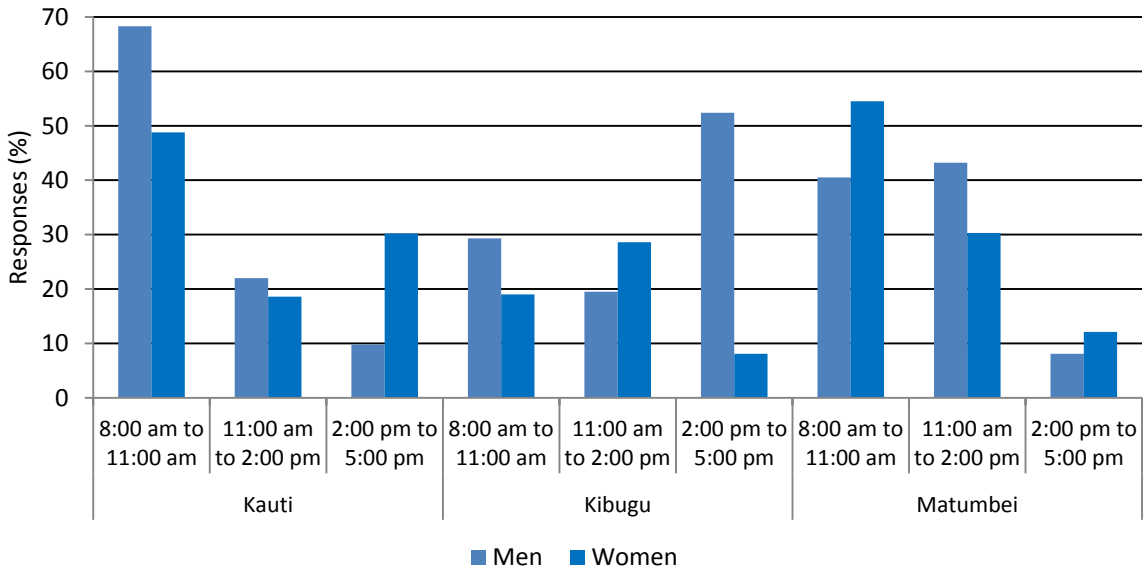

Figure 2. Percentage of respondents attending plant clinics at the specified times.

be in place, but action is necessary at the local level (Cathy et al., 2013). The appropriate plant clinic approach for reaching men and women farmers equitably will differ across regions. This assertion is consistent with the views of Cristina et al. (2013) who argue that it is necessary to adapt gender-responsive techniques and methods to local context. In this regard plant clinic operations need to take cognizance of gender and social norms that influence women's time, mobility and education.

Farmers across the study sites indicated the day clinics were usually held as Tuesday for Kauti, Friday for Kibugu and Monday for Matumbei. Some farmers, especially women would however like the clinics to be held on Saturdays since their children would be at home to look after the homestead while they were away. Most farmers, both male and female across the three study areas indicated that they attended the clinic once a month, with the least numbers in Kauti and Matumbei saying that they attended the clinic weekly. There were no major variations between the genders (Figure 3).

Thirty two per cent of the plant clinic users reported that they had sent someone to the plant clinic on their behalf (Figure 4). About 91% received prescriptions given at the plant clinic while 99% used the recommendations. All clinic users who sent somebody to the clinic found prescriptions effective and were willing to go back to the clinics. Sixty eight per cent of the plant clinic users had not sent anyone to the plant clinic on their behalf. Out of all those who did not sent anyone to the clinic, 96% found the recommendations worked and they would still go back to get services from the clinics. Four per cent said the recommendations given did not work but they were still willing to go to the plant clinics. More than 90% of the respondents said the gender of the plant doctor would not influence their visits to the clinic with a few saying they preferred either a male or a female plant doctor.

Reasons for farmers not visiting plant clinics

Distance from home/farm to the plant clinics posed a challenge to both male and female farmers, especially those who had to cover long distances to reach the clinic. This agrees with the work of Nambiro et al. (2005) that farmers who live close to a source of extension advice are more likely to seek its services. Where plant clinics are further away, women will be more disadvantaged. This is because men are generally more mobile than women and while they may not primarily travel to look for agricultural information they are more likely to access this information than the women who are less mobile (Jost et al., 2016). Ignorance, which was perceived as not knowing plant clinics as well as the benefits and functions of the clinic contributed to failure to visit plant clinics especially among the female farmers. Lack of awareness was attributed to lack of advertising of the clinic venue, time and date. There were instances of long queues at plant clinics and as a consequence farmers took too long to be served by the doctors. Frequency/regularity of clinic days was sometimes not suitable, especially when there was an outbreak requiring immediate attention on a non-clinic day. There were delayed results when a plant doctor was not able to diagnose the problem immediately and had to consult further.

Some women farmers had the view that clinics were

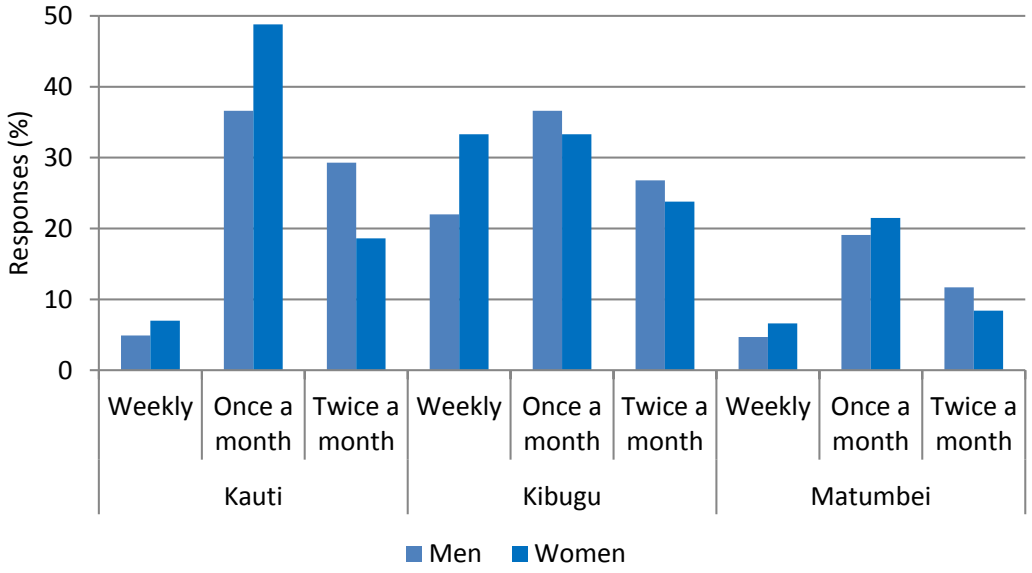

Figure 3. Frequency of clinic attendance across the three study regions by gender.

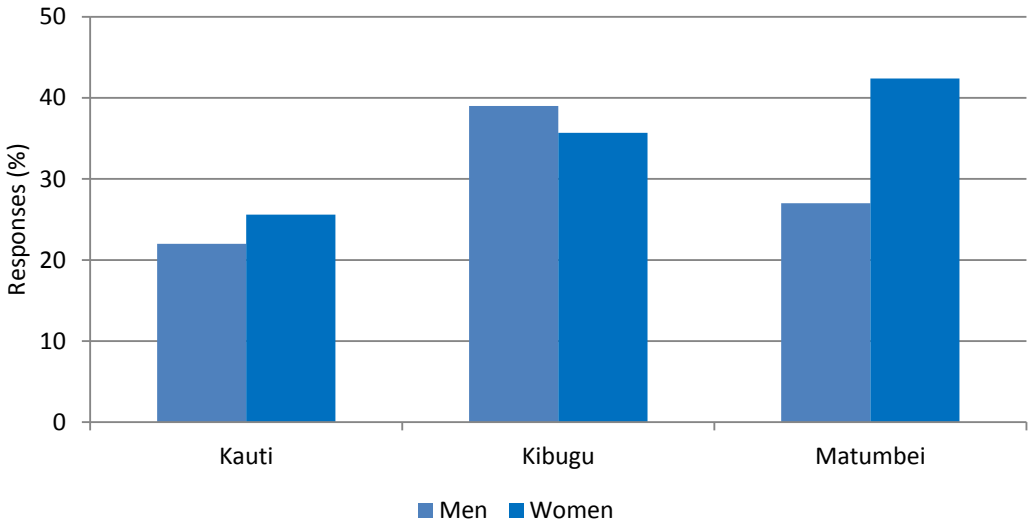

Figure 4. Percentage of respondents who sent someone to the Plant clinic on their behalf.

only for men, and for certain crops. The level of education was relatively low among the female farmers thereby compromising their capacity to understand plant clinic recommendations and discouraging them from attending. Female farmers reported that sometimes they could not make it to the clinic because they did not have someone to look after the homestead in their absence. Clinic time/duration, day and venue were not suitable to female farmers in some cases. In some instances the farmers noted that the venue was not permanent and was too open. The schedules were sometimes confusing especially in places where the clinic was held fortnightly as opposed to weekly.

The reproductive roles of women were in some cases incompatible with the timing of plant clinics. This finding agrees with Loagun (1998) who found that women in rural areas undertake many responsibilities concerning care and management of the family and farm animals. The burden of women was aggravated in certain instances by the need to obtain permission from

husbands before proceeding to attend plant clinics. Plant clinics were in an open environment that did not appear conducive to some women to present plant specimens in a cordial manner. This suggests that more direct action needs to be taken to site clinics where women can easily attend or to ensure that women realise that plant clinics are also meant for them. Some female farmers failed to visit the clinics because they felt that the advice given would need a lot of money to implement or would need a lot of physical strength which they may not have. Labour intensive and expensive technologies are less likely to be adopted by female farmers due to their limited access to labour and cash (Jost et al., 2016).

Conclusion

Farmers across the three regions received plant health advice from different sources. The main sources of plant health advice were plant clinics and government extension workers followed by agro-input dealers. Other sources were friends and neighbours, farmer groups, radio, women groups, lead farmers, family and own experience. There were significant differences in sources of information preferred by women and men, which calls for prioritization of sources depending on gender for effective information dissemination. In addition, various reasons were adduced for the preference of sources of information, reflecting the diversity in resource base and access options.

In order to increase plant clinic attendance by female farmers more awareness creation about plant clinics and services offered should be done through plant health rallies, branded t-shirts and caps, making announcements through radio, SMS and during chiefs' *barazas* and churches and other public places. More plant clinics need to be started to reach more farmers who might not be able to travel long distances to attend the plant clinics. In addition, more plant doctors should be trained to manage and cover more plant clinics. It would also be necessary to train plant nurses/lead farmers who would be easily accessible to all farmers. All these should be accompanied by an increase in the number of clinic sessions from twice a month to once per week. It is necessary to schedule different clinic dates in the areas so that farmers who fail to attend a clinic session in one area could visit other nearby clinics. Plant doctors should tailor their advice to circumstances of the farmer or provide a range of options which the farmer can choose from. Plant doctors should give reference materials at the plant clinic, as well as the prescription form.

It is also important to adopt a flexible approach to the clinic model to try and meet the needs of different farmers. Such approaches may include mobile clinics and plant nurses/lead farmers in order to reach farmers who live far away from the clinic area. It may also involve dealing with farmer (women) groups by explaining diagnosis and recommendations about different pest and diseases to the group. In this way plant doctors would be able to reach more farmers in a short time. These methods may also help to address obvious resource constraints in increasing the numbers of plant clinics as suggested above.

Plant clinics should make available reading materials such as manuals, booklets and posters specific to the area to be used as a point of reference by farmers to solve their problems. The materials made available should be in English, Kiswahili and the local language. Plant clinics should have latest technology and modern equipment to help in diagnosis of diseases e.g. soil analysis equipment, microscopes. They should pass new information on pest control options to farmers as soon as possible through sensitization. This would enable farmers to effectively control pests and diseases and hence improve farmer confidence in plant clinic services.

There were regional differences in patterns as well as gendered differences within the regions with respect to sources of plant health advice and use of plant clinic services. This means that it is not accurate to make broad assumptions about gender patterns. In order to ensure efficient and effective use of plant clinics as well as a have gender responsive and/or transformative plant clinics it is necessary to understand the local contexts in which the plant clinics are located. This would ensure that the plant clinics address the specific needs of both men and women in the different communities, and assure improved use by women farmers.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

ACKNOWLEDGMENTS

This paper is produced as part of the activities of the CABI Plantwise Programme. CABI is an international intergovernmental organisation and we gratefully acknowledge the core financial support from our member countries (and lead agencies) including the United Kingdom (Department for International Development), China (Chinese Ministry of Agriculture), Australia (Australian Centre for International Agricultural Research), Canada (Agriculture and Agri-Food Canada), Netherlands (Directorate-General for International Cooperation), and Switzerland (Swiss Agency for Development and Cooperation). See https://www.cabi.org/about-cabi/who-we-work-with/key-donors/ for details.'

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