Assessment of Extension and Advisory Methods and Approaches to Reach Rural Women

– Examples from Malawi –

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EXECUTIVE SUMMARY

Through an analysis of peer reviewed literature a number of extension approaches implemented in Malawi were identified. These are farmer participatory research approach, farmer-farmer extension, farmer groups, training, rural participatory appraisal, farmer field schools (FFS) and the T&V system (although now modified and evolved as demand driven provision of extension service). Within these approaches, the modes of service delivery range from individual and group visits, meetings, model farmer, demonstration plots, ICTs, FFS, field days and tours. Some evidence in the literature suggests that of these approaches women are considerably marginalized in group and community meetings. There was no mention in the literature of approaches specifically targeting women.

There was some information which indicates that farmers' commitment and the ability to participate in groups activities are essential to the success of some of the approaches.

There was evidence of some of the socio-cultural constraints to effective extension delivery. Some of these are: top down approaches which overlook local knowledge, farmers needs and concerns, women farmers can't raise their concerns in front of male extension agents (although increasing the number of female extension agents may not be the solution), women's lack of assets and land excludes them from extension activities, much of the extension is focused on richer rather than subsistence farmers, illiteracy makes taking part difficult in extension programmers. In Malawi, extension is implemented irrespective of gender.

The peer review literature did provide some recommendations on ways forward. These include, building capacity of women, sensitize male extension workers on the needs of women farmers and implement gender sensitive policies addressing gender inequalities.

Analysis of the grey literature indicates several approaches being used; extension workers, lead farmer, peer farmer, FFS, model villages, clusters, co-operative clubs. The success of these approaches seem to lie in providing incentives for farmers to join activities, the quantity of extension time spent with farmers and the availability of material for training.

In terms of constraints, extension is delivered by men and so there is a gender imbalance. There is a need to develop and promote gender sensitive approaches to extension delivery.

The case studies clearly revealed that what works for women farmers is their ability to work in groups especially to support each other and to learn from each other. What was clear was women's devotion and commitment to help each other. The case studies also revealed that having the support of their husbands is essential. Women farmers do prefer to work with female extension workers as this provides a conducive environment for women to be able to discuss issues. But the problem for women rests with their family situation. Women need the support of their husbands to act on extension activities.

The role of agriculture extension in the context of the women's empowerment framework is to connect structure with agency through effective relationships and partnerships with both male and female farmers. In practice, the effectiveness of the extension system to play this role is questionable. Given that

in Malawi, the agricultural extension service is dominated by male extension workers who normally work with male farmers, this systematically bars women from accessing valuable extension advice.

It can be reasonably argued that no single approach best suits extension development in all circumstances. There is a need therefore to analyze what approaches best fit in different communities since what works in one community cannot work in another. Policy issues which need to be addressed include land tenure, credit provision, input and marketing, prices and also gender roles.

It is of paramount importance to recognizes that strongly held beliefs that influence people's attitudes and behaviors related to gender identity needs time to change and empowering women is much of a long process which will be likely achieved if men and husbands are able to understand the concept fully and able to provide support as well.

1. INTRODUCTION

This report outlines the findings of the review of both peer reviewed and grey literature on gender and extension/advisory services in Malawi. The reviews were centered around the following key research questions:

What extension methods and approaches are being used?

- What are their impacts? What is the level of uptake?, What is the level of adoption?

What of these approaches are targeting women?

- What are their impacts? What is the level of uptake?, What is the level of adoption?

What are the success factors of these approaches?

What are the constraints of existing approaches to reaching rural women: social, cultural, economic, technical, environmental and infrastructural?

This report also contains case studies that were conducted in Malawi to provide evidence on the impact, scale in use, benefits to women as well as the challenges and constraints of the selected extension and advisory services being used. The case studies were also conducted to identify factors leading to the successes of the approaches being used as well as constraints and challenges being faced by both the implementers of the approach and the recipients; namely women farmers. The case studies selected for this research are on 1. transferring skills, technologies and expertise from extension agents 2. Social mobilization via training and demonstrations and 3. Experiences of women extension workers.

2. SYSTEMATIC REVIEW OF PEER REVIEWED LITERATURE

A total of 38 peer reviewed journal articles were identified through the systematic review process. However during the data extraction process only 23 articles were found to contain material relevant directly and in connection with the research question set out above. A breakdown of the articles review/data extraction process is provided in Annex I. This section summarizes the peer reviewed literature read based on the four key questions.

What extension methods and approaches are being used?

Approaches:

1. **Farmer participatory research (FPR) approach**: these have become increasingly typical for researchers and extension workers in Malawi. FPR is especially applicable for developing appropriate technology options in complex, diverse and risk-prone regions. An important advantage of applying FPR is the incorporation of indigenous technical knowledge in the technology development process.

   However, the FPR methods have been known to have problems with the interpretation of the data collected especially when the farmers produce false or desired answers, or alter the management of on-farm trials with the aim of maximizing benefits. Participatory research methods have been advocated as a means to improve relevance and adoption

2. **Rural participatory appraisal:** despite that it helps in identifying problems and constraints in farming systems, it has come under criticism for the reason that that it has not been effective in improving the livelihoods of the poor people and also it has not helped farmers acquire the necessary skills to innovate and sustain new ideas. Hence less preferred in some areas.

   This approach is important especially for the women as they are so often sidelined. And this gives them an opportunity to discuss their ideas and hopes for them to make progress. The farmers also become trainers of other farmers which they do for free while others form farm associations which are also able to negotiate better terms for provision of services they need like marketing their produce and attracting projects.

3. **Farmer-to-farmer extension:** This approach places farmers at the center of the knowledge generation and dissemination process. Farmers' abilities to spread innovation (perhaps more effectively than professional extensionists), due to their comprehensive local knowledge and location, make them potentially better able to communicate with fellow farmers, and at lower cost.

   Though there has been a burgeoning of farmer-to–farmer extension including farmer field schools, there is limited evidence of their impact at household level, sustainability and even potential for scaling up.

The other complexity of this approach is that if the lead farmers advance too far ahead of their neighbors technologically, their farming system appears too complex for the others to adopt.

4. **Farmer groups**: this is a well-established extension practice whose benefits include mutual support around common interests, joint activities such as group labor and providing a voice for members. Groups also provide a means for the extension agents to reach greater numbers of farmers. This is in fact a major mechanism through which development programs can enable women to increase their control of assets, improve their productivity, and enhance their status and well-being. Groups accommodate women's workload; ensuring that poorest women have opportunities to voice their concerns in group meetings; and soliciting women's feedback in monitoring and evaluation.

   This especially works where strong gender segregation exists.

   Potential advantages of farmers being reached through this include access to inputs, credit and technological and extension advice from organizations while facilitating the linkages with buyers (to whom farmers are linked).

5. **Trainings:** extension agents train farmers in technologies to do with sustainable agriculture so that they practice on their own farms and share with other farmers through group training, demonstrations and individual farm visits.

   Lead farmers are identified by village members and trained by external actors in specific technologies in order to improve their competencies.

6. **Farmer field schools**: involve farmers actively and train them to develop their own recommendations. However, they require a massive investment in education to train many farmers in the principles of experimentation and agro-ecology. Farmer field schools are less preferred due to the huge costs required to manage them effectively.

7. **Training and visit extension approach:** it was based on an efficient model of transferring new technologies to farmers but however, it did not effectively reach women farmers, small-scale producers, or farmers in some ethnic populations. Within the T & V system, women were largely viewed as beneficiaries but not as actors in their own right in agricultural production. As a result, gender imbalances remained a major inadequacy.

   This approach is still used in Malawi although it is now modified so that farmers can demand the service when they need it. It is now called demand driven provision of extension services.

Methods

Specific methods/techniques used to deliver information to farmers have been identified as:

- Individual or group visits
- Organized meetings

- Use of model farmers
- Demonstration plots
- Information and communication technologies (ICTs)
- Farmer field schools
- Field days
- Farmer tours

These methods of service delivery offer the opportunity to reach various types of farmers with different needs in various settings. However, women fare poorly when services are delivered through group or community meetings held by extension agents because they are marginalize. They are also excluded from rising to leadership positions as a result of biases that favor their male counterparts.

What of these approaches are targeting women?

All the mentioned approaches and methods are meant to target both women and men farmers. However, with exception is the farmer group approach. Farmer groups that are women only allow the women farmers a chance to voice out their needs based on the assumption that women will be free to express themselves. There was little other mention in the literature of extension approaches specifically targeting women.

What are the success factors?

The methods and approaches identified above have varying levels of success which depend on a number of factors. These are described below:

- Commitment of the farmers towards the extension approaches in terms of being able to participate in the discussions.
- Farmers' appreciation and understanding of one another's ambitions and abilities especially when working in groups.
- Availability of better markets for improving incomes gives a boost in terms of technology adoption.
- The presence of committees to monitor and evaluate the enterprises and to carry out market research.
- Commitment of the people to development; volunteering spirit, together with patience are some of the success factors that determine the workability of each of the approaches.
- Support in terms of providing the farmers with items like bicycles for the visiting farmers, gumboots, tools for use by groups and stationery from time to time.

What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

The methods and approaches identified above have varying constraints associated with them. These are described below:

- Insufficient training of researchers who interact with farmers and the lack of social scientists involved in agricultural technology adoption extension projects, due to failures of simplistic top-down development projects that have frequently overlooked local knowledge, as well as farmers' distinct needs and concerns.
- Trainings received by government extension staff is mostly reported to have a low impact. Moreover the extension agents involved in training in Malawi are dominantly male and continue to work primarily with male farmers despite the fact that women do the majority of farm labor and need greater support in terms of training. .
- Collaboration between farmers and extension staff has apparently been hampered by frequent government staff transfers, poor buy-in to the program and lack of transport
- Agricultural research and extension have been critiqued for using approaches that are not responsive to the needs of their clientele.
- Rural women's access to agricultural extension services is poor and the number of women extension personnel is extremely low in most cases. But then, increasing the number of women agents alone is not sufficient for reaching women farmers; programs must also seek to address the needs of small-scale producers.
- Though women are able to participate in trainings and producer organizations, gender norms impede them from voicing their opinions and needs in the presence of men. It may be useful in some places to consider working through single-sex groups or with socially sanctioned women's groups such as rotating savings and credit associations, self-help groups and church groups.
- There is a large gap between policy directives and implementation. Understaffing, weak linkages across line ministries, lack of authority, and few or no budget allocations are pervasive problems that limit implementation.
- Lack of access to credit to buy inputs such as fertilizer is a huge challenge especially by women since their income is lower than their male counterparts.
- Women are often excluded from irrigation projects or lose their usufruct rights to land when new irrigation schemes are introduced. This is so because membership is often limited to land owners and heads of households.
- Social and cultural roles assign productive and reproductive roles to men and that affect women's access to markets.
- On extension, the uptake of new technologies is often influenced by farmers' contact with extension services and several studies have shown that women have lower access to agricultural extension than men.
- In addition, most of the extension services are focused on cash crops (men's crops) rather than subsistence crops which are considered to be women's domain.
- For the few women who are able to access extension information, some of them lack basic education and therefore their ability to use technical information is compromised. Basic education places farmers in a better position to perceive potential benefits of adopting new innovations. Very few women acquire basic education in Malawi.

Some of the literature reviewed provided **recommendations** that may be adopted in order to increase access to extension for women and improve the extension system as a whole. These are summarized and discussed below:

- Agricultural Policy should not necessarily emphasize increasing yields, but should start with capacity building exercises amongst poorer urban farmers, specifically women farmers and help them better manage, distribute and market their agricultural produce.
- It is important that those employed in extension services be trained to be sensitive to the roles and needs of women farmers and to be skilled in methods of communicating with and organizing women.
- A solid curriculum should emphasize the importance of having female extension agents working with women farmers; the gender differences in involvement in agriculture; gender differentials in activities, needs and resources; and strategies for reaching women farmers.
- Much more donor and government support is required for the numerous emergent women's groups and organizations, both within the agricultural sector and in the spheres of politics and advocacy. There is increasing evidence that collaboration with such organizations stimulates the efficiency, relevance and effectiveness of agricultural research, extension and other services.
- Women in the international development community need to find more effective strategies for encouraging their male colleagues to understand gender issues and the subsequently operational requirements.
- It is important to build a critical mass of female civil servants within ministries of agriculture, training colleges and universities who are prepared to form an active network and act purposively together across departments. The reason behind this is the fact that most extension services are staffed wholly or predominantly by men who for one reason or another, may have little contact with or incentive to reach women farmers.
- By strengthening the linkages between researchers, extension workers and farmers, farmers' constraints and priorities would be better understood and information transfer would be more effective. These linkages could be strengthened through joint research- extension meetings and workshops, field visits, farmer training and on farm research.
- Women are now viewed as critical actors in agricultural development, and this recognition needs to translate into more equitably designed services and mechanisms for influencing extension policies and practices. An explicit gender dimension is needed to adequately remove inequalities that impede women from becoming active agents in improving their livelihoods and those of their house (World Bank, 2009).
- Addressing gender inequalities in extension and advisory services is important not only for poverty reduction and food security reasons but also because it makes for more efficient extension and advisory service practices. Addressing both the equity and efficiency constraints is mutually supportive and will produce more broad-based and sustainable outcomes.
- For women to compete favorably, and also have an edge, they need to move away from traditional agricultural products into a diversity of high –value products such as oil, soap, juices, body lotions, wine; and these can be done using the same raw materials.

- Gender sensitive policies in areas such as extension services, access to market information, micro finance and land tenure reforms need to be put in place. For instance on extension; some strategies could include; training more women extension officers particularly to serve communities that have strong traditions that prohibit male extension workers from interacting with women farmers, targeting women's' enterprises and groups for assistance and also holding separate meetings for men and women.
- In order to ensure that women benefit fully, evidence from the literature recommends that policies, technological and institutional interventions should include:

  Facilitating women to form and strengthen associations

  Assisting women to improve productivity and marketing of products considered to be in their domain

  Improving women's access to information via training more women extension staff, holding separate meetings for women farmers, and ensuring that women are fully represented at all levels/activities.

3. SYSTEMATIC REVIEW OF GREY LITERATURE

Grey literature on extension approaches and methods being used in Malawi have been reviewed in relation to the objectives of the study. The following section provides an analysis of the main findings based on the information gathered. We were only able to track a handful of literature that contained relevant information from the government sector, research and development sectors to answer the research questions. The most comprehensive of which is the report by Masangano and Mthinda (2012). These are discussed below.

What extension methods and approaches are being used in Malawi?

Malawi's Ministry of Agriculture (MOA) has the 'mandate to promote and accelerate broad-based and sustainable agricultural development, so as to stimulate economic growth and contribute to poverty reduction. It is responsible for policy formulation and regulation, the coordination of training and collaboration with other stakeholders in the agriculture sector, and supervision of parastatal organizations' (Chinsinga and Cabral, 2008). Their new extension policy proposes a bottom-up and participatory approach for planning interventions, in which it is expected that the Extension Planning Area (EPA) section work with farmers to identify priority extension needs, which are then fed upwards to inform planning processes at higher levels. The current challenge in Malawi is that of funding constraints which have led to the compromise of the plans at higher level of decision making (Chinsinga and Cabral, 2008).

Extension Services are delivered following the MoA District Agricultural Extension Services System Implementation Manual. This explains the duties and responsibilities of each and every position in the district agricultural extension system (Malawi Government (2004)). For example, the Agricultural Extension District Officers are notably the ones responsible for facilitating articulation of farmer demand at the village level (via needs assessment) from which an analysis of farmers problems can lead to the development of options.

An analysis of grey literature show a wide range of approaches being used by extension agents (Jones, 2012, Masangano and Mthinda, 2012, Chiwasa and Masangano, 2012).

The main ones are:

- Extension worker,
- Lead farmer,
- Peer farmer,
- Farmer field school,
- Model villages,
- Clusters (Communities),
- Cooperative clubs (based on common enterprise).

While some of these approaches seem to be working in some areas it is not always the case is in other areas. For example, the lead farmer approach seems to be widely effective in Malawi, mainly because the extension system in the country is understaffed leading to the contact hours with local farmers being much less than expected. As a result the responsibility for "extension" rests with the lead farmers. There are advantages; the lead farmers are able to communicate using the same language as their neighbors since they are selected amongst themselves, they share the same socio-economic background making it easier to communicate with each other more effectively than with extension workers who are seen as different from the ordinary farmers. Sharing knowledge amongst themselves and acting as role models allows for greater sustainability of the activities, community empowerment and increased adoption rate of innovations (Jones 2012).

Despite the lead farmer approach having advantages, farmers in some areas for example, Kasungu and Mzimba, do not favor the approach. Most members of the community viewed lead farmers as a separate 'advantaged' group that received preferential support such as trainings, bicycles and inputs in some cases. The other issue with the lead farmer approach is related to whether the lead farmers need to be compensated for the work they do. Whilst working as lead farmers is expected to be voluntary and essentially for free, some service providers provide do provide support such as bicycles, inputs and allowances. However, the Ministry of Agriculture and Food Security considers the roles of a lead farmer as part and parcel of community work and therefore they do not require any compensation (Chiwasa and Masangano, 2012).

According to Jones (2012), the issue with the peer farmer approach is that they are only effective when farmers are incentivized with for example with farm inputs e.g. seeds and sometimes bicycles, livestock. However, when the incentives are not provided, the approach does not work as well as it might (Jones 2012).

Chiwasa and Masangano (2012) identified the "best" approach to extension methods based on farmers' feedback. They found that the use of organized groups, such as, clusters, clubs and model villages were deemed as the best approach in reaching farmers with extension message as compared to approaches that target individual farmers. The reasons given were for example, the ability to share information and experiences amongst each other, sharing of resources (organized groups allow farmers to take advantage of economies of scale to perform tasks that could otherwise have not been achieved if farmers work

individually), and also valued voice, since the organized groups of farmers provide a platform for the farmers to speak and be heard on issues that could easily have ignored if the farmers had acted individually.

The main 'techniques' used in Malawi to supply information and knowledge by the approaches identified above are as follows: (Jones, 2012; Masangano and Mthinda, 2012; Chiwasa and Masangano, 2012 and ARET, 2001):

- Demonstrations,
- Trainings,
- Extension meetings,
- Field days,
- Field visits to individual and farmer groups,
- Workshops,
- Radio programs.

Demonstrations are the most common technique as they are the easiest to organize and can be done using locally available resources. Field visits also are effective but often depend on the extension worker as well as the lead farmer having means of transport to reach out to the farmers. The other techniques prove to be expensive since the resources to carry them out are not readily available; as a result some are not even used at all. (Jones 2012, Masangano and Mthinda 2012, Chiwasa and Masangano 2012 and ARET 2001).

Approaches Targeting Women

Out of the methods and techniques identified, there were none that specifically target women farmers. Extension approaches are generally implemented irrespective of gender. For example, the lead farmer or the peer farmer methods, can either be male or female depending on the qualities and abilities that he or she has in relation to promoting farming activities and their knowledge of the technologies, size of farm land and how fast they can adopt new technologies.

The same applies to the techniques that are used in delivering information. These techniques are applied mostly irrespective of gender.

Success Factors

Success factors associated with the effectiveness in terms of successes and constraints by any one method or technique used is poorly documented. From the documents reviewed it would appear that providing incentives to farmers has a positive effect on the performance of both peer and lead farmers (Jones M (2012). It is also noted that number of contact hours with farmers has a significant role to play. When the farmers are being visited frequently, the chance of adoption of technologies and innovations remains high. In addition to this the availability of materials for training is also important in determining the success of adoption. These were general finding and did not pertain to addressing gender issues.

Constraints

Extension services in Malawi are mostly delivered by men and thus there is a gender imbalance in provision of extension services. There is still a considerable amount of research and development which

needs to be conducted specifically on gender sensitive approaches to technology dissemination and adoption including elements of training provision as well as learning resources. That said currently learning resources available especially for women are few.

4. CASE STUDIES

Case study 1: Transferring skills, technologies and expertise

Where: Mlangali Village, Traditional Authority, Kauma, Kasungu District
What: Chiwayu Livestock Club

This is a case study about a club/group which is relatively new in its establishment. The reason for choosing this group as a case study exercise is to illustrate 'start-up' issues in relation to gender and extension. In other words what are the immediate challenges and obstacles that women face and how can success be achieved? The case study centers on the transfer of skills and technology to a women's group in relation to rearing pigs from extension agents.

About this approach (Extension Agents)

In terms of approach, the women receive all their extension information from the extension agent assigned to the village. The extension agent is responsible for delivering all information in relation to the activity of the women's group via trainings and demonstrations. In some respects the women find this a 'constraint' as the women would prefer to visit other farmers from other villages so that they may get a chance to learn from them different aspects of the rearing process. Nevertheless extension agents assist the women in finding markets for their pigs.

Evidence of scale in use

This women's group started pig production in 2012. The group initially consisted of 10 women. However, there is indication that some successes have been achieved. For instance, some of the women have already started benefiting from the enterprise in terms of income and other resource benefits. These are explained below. Because of this initial success there is indication that this group will grow. A further 3 women have already joined the club and some others have expressed their interest too.

Challenges and constraints

Since this is a relatively new group and presently as a group no immediate challenges have arisen yet though small disagreements amongst the women exist. In terms of support, when the women are having problems with their piggery, they call the extension agent for help. Most of the times, using their phones. The providers Airtel have provided the women with mobile phones after being impressed with what the group was doing.

However, the women express that they need training on how to effectively rear livestock especially their pigs. They also express the need for better information and clarification on how revolving livestock funds work i.e. regarding how many pigs they are to give back for others to benefit

The extension workers, who are veterinarian, come with medication and treatment for the pigs which seem to fluctuate. The women's club expresses the need for fixed and clear prices for the medication and treatment given to their livestock. The medication is bought as individual farmers and not as a club. According to the sentiments by the village health workers responsible for treating the animals, they wonder if they are getting the right medication at all.

Contributing success factors and stories

Despite these constraints and challenges, the future seems bright for the piggery units and that is evidenced by one lady who says to have bought cement amounting to MK 6,000 for the construction of a more comfortable and well-conditioned pig house (*kholas*) with the hope that the returns will be greater. What has led and contributed to the success of this relatively new group? Key factors/elements of this case study illustrate the tenacity of the women's group to work collectively for livelihoods gains. Although not all pigs survived the ones that did demonstrate the benefits to be gained to an extent that perseverance pays off. Since this group is limited in terms of their own knowledge they learn from each other as much as they can. It is clear that given the right information on training and medication would yield greater results. The role of the extension agent has been central by way of facilitation but it must be recognized that their capacity in terms of knowledge and expertise is limited.

Mrs. Malawi (not real name)

Mrs Malawi has benefitted from the club in a number of ways. She gets manure from the pigs that she applies in her garden as well as in the field. Her pigs produced 8 piglets which after selling some she paid her children's school fees and also used some of the money to buy food for home consumption. She also gave some of the piglets to the extension agents so that they could give it to other women farmers for them to benefit as well. So far the pigs have littered twice.

Mrs. Kaduna (not real name)

Mrs Kaduna gets income from the selling piglets. The money she makes is used for children's school fees and food for home consumption. She applies pig manure in the field. For her this pig production unit is coming in as a source of uplifting her livelihood status.

Chimwemwe (not real name)

Chimwemwe has not started getting any benefits yet because the pigs that she had been given all died. Before this though she was applying manure in her garden as well as the field. The fertilizer from the pigs has helped a lot in the field in retaining the fertility of the soil; she said. Presently, she has bought her own set of pigs hoping to get good results this time around.

Figure 1: Focus group discussions with the women farmers in Kasungu.

Figure 2: Farmer reaping the benefits of learning about pig production

Figure 3: An example of the pig kholas being made by the women farmers in Kasungu district

Case Study 2: Social Mobilization

Where: Dowa District Malawi
What: Development Aid from People to People (DAPP) Farmers Club; Women Project Dowa District

The Dowa women project started last year (2012) in May in Dowa district, in the central region of Malawi. It targets 3500 women farmers that are organized into clubs. Each club has 50 women farmers. This project is supported or funded by the Ministry of Foreign Affairs, Finland.

There are 14 field officers or extension workers (8 women and 6 men that are working with these women in three main categories of training programmers; farming, health and hygiene and farmer and family economy. In these programmers, one field extension agent is assigned to one club of 50 women.

About this approach (in this case, the DAPP Malawi)

In this project, women are reached through other women groups where they get to learn a lot of issues that can help them to build their capacity. This learning is done through trainings and meeting which are held on a weekly basis. The program is much cantered on three categories of training;

1. Farming: in this case, the women are trained in the issues of agriculture, irrigation as well as livestock keeping. Everything that has something to do with their agriculture is learned during this type of training.

2. Health and hygiene: in this case, the trainings are based around health issues for example, how they can prevent some of the diseases that have an impact on their agricultural productivity at household level. Care practices are also included in these trainings, where the women get to be trained on hygiene and foods that are important for their well-being and that of their families.

3. Farmer and family economy: these trainings basically involve empowering women farmers in terms of management or their income that come from sales of their produce.

After training, women farmer demonstrations are done (in demonstration plots and on their fields) to make sure that they have a handle on what was learnt. Women farmers demonstrate how they apply their new knowledge both on the demonstration plots as well as in their fields. The demonstration plots belong to the club and the land/field is usually given by the chief of the respective villages.

Livestock are also provided on the demonstration *kholas* where the women get to practice what they have learnt in managing livestock.

Executive members of the club are taken on as lead farmers. They take the role of ensuring that all the women are engaged by visiting their farms and by providing guidance if needed. Extension workers do also take time to visit the fields in order to assess that the women farmers are applying their knowledge gained from the trainings correctly.

Essentially the program is set up to empower more women farmers. This is a huge challenge given that fact that there exists a patrilineal culture in which women are marginalized. This program is trying to instil a 'behavioral' change towards women. To ensure the success of the program (since behavioral change is a process), husbands are encouraged to become involved at some of the stages to create a platform to which the women can portray their views and be understood and a platform on which the views on women's empowerment from the husbands' perspective can be analyzed.

Evidence of scale in use

Seven hundred (700) women are reached in this village, which is considerable number considering that each of the extension workers is assigned to 1 women club which comprises of fifty (50) women.

In terms of benefits that have been realized from this Programme the main ones are that of the establishment of 70 *Demas* for irrigation and also the practice of pit-planting for the rain fed maize that the farmers have adopted during the last rainy season. As a club they have harvested a considerable amount of maize that will be sold and the funds will be used in the implementation of other programs for the club, benefiting them a lot in their household lives.

Figure 4: The maize that has been harvested by the women farmers of Dowa on their demonstration plot.

Figure 5: Women farmers transporting their crop from the field to their homes

Other benefits of the club have been exchange visits and field days to see what other women groups are doing and thus in the process, learning new things.

Due to the momentum achieved and the successes so far has allowed for the establishment of adult schools (sukulu za kwacha) to cater for the illiteracy levels. 13 schools are in place and these are working hand-in-hand with the government to ensure that women farmers know how to read and write.

Because of the benefits that the women have realized from the club, it is expected that more of them will join this year since they have seen how other women's lives have been transformed.

Challenges and constraints

There are challenges and constraints that prevent it from being more successful. These are discussed here:

There has been a shortage of staff to look after each group; 14 extension staff for 70 groups. However this has been rectified by involving the executive members of the club to take the role of lead farmers and acts as pseudo extension agents.

Illiteracy which is being remedied by the establishment of adult literacy school (school za kwacha) to help the women read and write.

Access to land as demonstration plots is problematic. On a positive note, in some cases, when the chiefs have seen that the land given to the women is being productive, they tend to be swayed by the cause and offer to provide some unproductive sites to be turned into a productive base. But this is a long and slow process given the historic domination of land by men.

Contributing success factors

Despite the challenges of this type of extension approach, there have been a number of factors contributing to the success of these women's groups. These are discussed below:

- Exchange visits have been one good way of boosting up the morale in the women farmers since it allowed them to learn from others.
- Club trainings cover groups of women at one time and that has contributed to the cost of the program to be relatively low.
- The women were given start up seeds which make it easier. They did not have to deal with resource access issues which could have been difficult to do on their own.
- The involvement of husbands in some cases has also contributed since they have been supportive of the program. For example, the husbands of the women helped in establishing the fence around their irrigation *dimba.*
- Devotion and commitment on the part of the women has also helped considerably. One example is that of literate women helping those illiterate ones to read.
- Sharing of the duties in the club makes it easier for the work to be done effectively.
- For the future, to ensure continued success some suggested ways forward include the formation of cooperatives for example for the production of soy milk to capture and capitalize financially and establish 'common buying and selling dynamics' as a way of creating markets for the farmers. It is hoped that this dynamism continues to lift more women out of poverty.

Focus Group Discussion in Muononga Village

Over and above this overview of DAPP, a focus group discussion with women pinpointed to some of the real underlying issues associated with the gender dimension of reaching rural women via extension. Presented below is a focus group discussion conducted with a women's group in Muononga Village in the Cheval Extension Planning Area.

The women expressed their satisfaction with the exchange visits as part of the extension methods being used by the DAPP project. The meetings have been helpful especially the health and hygiene aspect that has helped them in managing their households and preventing their children from some diseases that are to do with nutrition. The fertilizer that was applied to their maize gardens came from the vegetable sells from the *Simba.*

They claimed to have never been visited by the extension workers from the government extension personnel since the start of their club which make them wonder why that is the case. These women are marginalized; in fact they know that they are marginalized. Because they say, despite the fact that this program is providing a lot of benefits that could have improved their living standards somehow, still their lives have not improved much and when asked why, below are the responses they gave:

- When they have harvested and sold their produce, most of the husbands take the cash and women are left with little or none to survive on.
- Beside, most of the critical decisions are made by the women (i.e. children have to go to school, have to eat, etc.) and most of the times, the money they make is not enough to suffice all these responsibilities and still expect their lives to improve.

When asked what should be done to improve their situation; this is what one woman had to say:

> "*This issue is very complex to tackle because the problem is not with us. Men are the ones who need to be approached so that they can get to appreciate the efforts and understand women from their perspective because as far as development programs are concerned, women may be given loans to start business etcetera but at the end of the day, the control of the usage of that money will still remain with the husband. And making matters worse, women are mostly afraid to stand and take charge of their finances because they are scared of losing their marriages"*

This kind of response gives us insights in the complexity of this issue in a way that, we realize that empowering women is just one aspect in a broader, difficult and complex environment. Husbands need to understand the needs of women and help to support these women to improve their lives. Despite that this is a long process; it might as well be futile if men do not take part in empowering these women. Though this program has been helpful to these women, they still need some help in terms of access to loans to enable them buy some resources to boost their livelihoods in terms of agricultural productivity.

Figure 6: Focus Group Discussion in Muononga Village

Case Study 3: Women Extension Workers

What: Dowa women extension workers under Development Aid from People to People (DAPP)
Where: Dowa District Malawi

Central to the DAPP project is the use of 8 women extension workers /para-extension workers to reach women better on issues related to agriculture, health, livelihoods. The women are reached both at club/group level as well as at the individual level. The goal of this approach is to empower women to be equal partners in the development process and take up leadership positions such as extension worker. It is a huge challenge in a patriarchal society.

Assessment of the success of this approach is then done by the individual visits of senior field officers to determine whether the lessons and innovations imparted by the extension officer have been adopted by women farmers. Although this has drawback in itself because the senior field officer is usually male and does not exclude him from male biasness in views expressed.

Information from the promoters of the approach (Senior Field Officer)

A senior field officer (Preston Yamane) was asked to give his views on the effectiveness between the female and male extension officers. He said "male extension workers are more active than the female ones and this might be due to their level of understanding of the concept of working with women (men seem to understand issues better). The mode of transport is a problem for getting to the rural areas. It requires women extension workers to cycle for long distances. This is proving to be difficult for some of them. But from observation women farmers seem to feel free to work with women extension workers though in some cases some of women farmers would prefer men extension officers for the reason that the male ones visit them more frequently and are more active than the women extension workers. Based on information from farmer clubs/groups, those that are handled by the male extension workers seem to be performing much better than those by women extension workers.

On the effectiveness of the approach in reaching women, he said that working with women farmers is proving to be a bit better as compared to men except for the tasks where men's help is needed for example the digging of wells. Hence a bit of involvement of the husbands in the women group work for support is remarkably effective.

Figure 7: Focus group discussion with the DOWA female extension workers

Evidence of scale in use and benefits to the women

There are 70 clubs (3500 women farmers, 50 in each club) in the district that are supported by the DAPP program. Shortly after start up the number of the women farmers interested was declining because as the clubs were establishing, farmers thought that they were going to have direct benefits such as fertilizers and other inputs given to them for free; but when that was not the case, some of them dropped out. However at present the number of women farmers has been observed to increase since the inception of the Village Savings and Loans Programme (VSL) - *Bank nkhonde*. This was set up to help the women farmers start small businesses that are benefiting their families. For example at one of the clubs called *Glevulo* there are 39 women that are actively involved in the program and others are still coming to join as well.

As to what benefits these women are getting from the club, not only is the knowledge they are receiving being beneficial to them but also to their families. Many new technologies and techniques are being used now by women farmers. For example:

- Pit planting- conservation agriculture: The yields they have obtained in the past year since they started practicing it, have enabled them to have enough food in the family.
- Mud stove (Figure7): The women claim to be saving a lot of fuel wood when using it which lessens the amount of time they go looking for fuel wood in the forest or even buying.
- They have learnt to store dried vegetables after they harvest. Some of which they eat and the rest they sell as a vegetable called *mfutso*. And now that they are able to make manure on their own, they can apply that to their gardens considering that fertilizer is expensive.

- Now that they have VSLs they are able to start small businesses to support their families. They have even constructed a *khola (animal house)* in readiness for the goats and pigs that are going to be given to the club. The livestock will provide manure and other benefits like income after sales.
- They will soon be making soy milk and peanut butter in these clubs which will in fact help them in value chain addition of their products and be able to support their families even better and the machines (figure 9) have already been bought for the clubs by the DAPP. They are to be trained soon on how to operate and manage the machines.
- vegetable production - one woman farmer (Mrs. Kaduya) who was able to practice the vegetable production at her own garden said that she has found a market at the airport where she goes to sell the vegetables every day and gets MK 2,000 and that makes a lot of difference to her livelihood.

Figure 8: The mud stove that the women are using in their houses to save energy

Figure 9: The machine for making soy milk and peanut butter

Challenges and constraints

There are numerous challenges and constraints felt by both the women extension worker and that of the impact on the women farmers. Some of these expressed by the women extension are presented here:

- When they teach or deliver lessons to the women farmers, some do not put them into practice them if the husbands disapproves of them (it is said that land belongs to the man).
- Activities in the village and culture: for example *nyau (traditional dance, kuwaka manda (local ceremonies)* since it involve/require every member to be there, it means they do not go to deliver their lessons or even visit the farmers during such occasions. And because of the culture in the villages, when there is a funeral in one village, it means all the neighboring villages go and support that one village and for that reason sometimes the gardens can stay without being irrigated because the members are not available. *They have not come up with any solution for this challenge since it is the culture of the village.*

When the women extension workers were asked of their opinion on the group (men and women group) they prefer working with, this is what they had to say:

"In terms of comfortability when delivering extension material, they prefer working with women farmer since they are free to express themselves and talk about a lot of issues besides agriculture. But in terms of effectiveness of the group when the lessons have been delivered, it is the mixed gender group that works better since conflicts to deal with are so many when it is a women's only group and uptake of innovations is much better in the mixed group".

Contributing factors for failure

- The biggest challenge that these women farmers are facing is absenteeism since some women farmers are torn between the chores at home and club activities and hence fail to be part of the group every week.
- Some of the women farmers do not know how to read and write. This proves to be a challenge when it comes to the lessons that require them to do.
- Some of the husbands that do not understand the purpose of the program come and pull out their wives from the meeting under the impression that they are wasting their time being at the club.

Clearly, there is need to put in place a variety/combination of methods, groups and delivery system of extension messages if success is to be realized. Certain extension messages have to be delivered at the household level to be effective- where the wife and the husband have to be together. Women extension workers seem to be effective in the delivery of extension messages appropriate for women farmers only, however from the feedback from this case study it is quite clear that a combination of approaches is required to reach women with extension services.

Contributing factors for success

Despite the constraints being faced by both women extension workers and women farmers, there are a number of factors which combined together have led to the successes of this project. Presented below are the views expressed by women extension workers of their experiences of working with women farmers. These views were collected via focus group discussion with women farmers (Figure 10).

- The involvement and support of their husbands when they need help for example digging of the wells contributes a lot to the success of the women groups.

- The fact that these women farmers are reached by fellow women makes them free to express themselves. They can talk about anything even if it does not have anything to do with agriculture for example HIV and AIDS issues as well as their health and hygiene.

- Women farmers' weekly meetings have helped in terms of boosting their morale since this is the time when they encourage each other. They meet every Tuesday of the week as a club on their own.

Figure 10: The focus group discussion with women farmers

5. Summary of Case Studies

Lessons learned

Women farmers work better in groups because they have a chance to learn from each other and help each other as well.

Participatory approaches are mostly preferred by women farmers because they are given a chance to contribute to the discussions and also voice out their opinions

Gender inequality issues stem right from the cultural norms and to deal with them is a long process that has to include, behavioral and attitude change for the people to accept it

What really works?

The participatory approaches such as the focus group discussions; the demonstrations and trials as well as the farmer-to-farmer extension are effective in a number of areas in Malawi. This is because these approaches give a chance to the women farmers to voice out their concerns, learn from other farmers that are apparently doing well in the group and also these approaches have respect in on the indigenous knowledge (*the local knowledge and innovation is respected, promoted, shared and scaled up*).

Challenges and constraints in scaling up successful approaches and methods

Most of the extension agents are males who usually work with male farmers. As a result, few women are trained by extension agents and as a result they do not have access to information and training as their male counterparts.

- Women farmers are often less active in mixed groups of women and men especially in areas where direct contact between women and men is socially and culturally restricted. This has serious implications for rural women in that this persistent inequality in training would contribute to men's dominant position in the society.
- Public extension systems are often inadequately funded; hence their effectiveness is limited by many administrative and design deficiencies and challenges. We have seen in one group that government extension workers rarely visit them.
- Lack of incentives, low staff morale and limited expertise. Staff numbers are small, under-trained, not mobile and therefore not proactive.
- Coordination amongst different sections of the ministry of agriculture, NGOs and international organizations is not well established. In this case, it can hardly be expected that that gender issues would be sufficiently addressed by different players at different levels.

What more needs to be done to improve the overall situation regarding scaling out of extension approaches and methods to have the greatest impact

That is there is need to analyze what approaches best fit in different communities since what works in one community cannot work in another. No single approach best suits extension development in all circumstances, just as there is no single approach that best suits development.

Policy issues which seem to have been reflected on the failure of extension issues to address rural women's problems need to be taken into serious consideration especially in issues such as; land tenure, credit provision, input and marketing, prices and also gender roles.

Women groups or associations need to be facilitated and emphasized since these are proving to be of much help and effective in terms of empowering women through extension services.

There is a need to improve women's access to information by training more women extension staff, holding separate meetings for women farmers, and ensuring that women are fully represented in all activities. Husbands need to be included where it is appropriate for uptake of technologies by women who are married.

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ANNEX I - MALAWI PEER REVIEWED LITERATURE DATA EXTRACTION

Ajayi, O.C., Place, F., Kehinde Kinnifesi F., and Weldsesemayat Sileshi, G., (2011). Agricultural success from Africa: The case of fertilizer tree systems in southern Africa (Malawi, Tanzania, Mozambique, Zambia and Zimbabwe). International Journal of Agricultural Sustainability pp. 129-136.

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Other notes

- Fertilizer tree systems (FTS) were developed as a technological innovation to help smallholder farmers to build soil organic matter and fertility in a sustainable manner. The FTS are inexpensive and significantly raise crop yields, reduce food insecurity and enhance environmental services and resilience of agro-ecologies.
- Both men and women are beneficiaries of this technology just that men in most regions control many household decisions including those involving cash transaction and as a result, although women may be using the technology as commonly as men, they may not be benefiting from it as much. *Yet women seem to be satisfied with serving their family and what benefits the husband thus gives pride to females. This is also true for many Good men as well. Thus benefits may not mean just for a given gender but fulfilment to achieve success for the loved one.*
- The key obstacles to its wider use include policy and institutional changes and the generally low returns on investments in rain fed smallholder agriculture in sub-Saharan Africa.

Anon (CIAT Africa) (2009) Empowered communities improve livelihoods. Appropriate Technology, Vol. 36, No 2, pp. 13-15.

Q1: What extension methods and approaches are being used?

Rural participatory appraisal: despite that it helps in identifying problems and constraints in farming systems, it has come under criticism for the reason that that it has not been effective in improving the livelihoods of the poor people and also it has not helped farmers acquire the necessary skills to innovate and sustain new ideas. Hence less preferred in some areas

Enabling rural innovation approach (ERI): this approach is being tried in several African countries to strengthen food security and raise incomes through competitive agriculture. It is based on partnerships between rural communities, NGOs and the research and extension services. This approach helps farmers identify their strengths, encourage them to look at their present methods of food production and see what needs to be done to achieve food security; and to seek new opportunities which will lead to higher incomes and standards of living.

This approach is important especially for the women as they are so often side-lined. And this gives them an opportunity to discuss their ideas and hopes forward.

The farmers also become trainers of other farmers which they do for free while others could form farm associations which are also able to negotiate better terms from a position of strength.

Q2: What of these approaches are targeting women?

ERI: They target both men and women farmers only that it gives the women farmers a chance to voice out their needs.

Its model is the active participation of women in the communities and groups that emerge from the community discussions so that their entrepreneurial aspirations are realized as well.

Q3: What are the success factors?

- ✓ Commitment of the farmers towards the approach especially being able to participate in the discussions is the success factor.
- ✓ When people appreciate and understand one another's ambitions and abilities is also another success factor of the approach.
- ✓ Better markets for improving their income are another success factor.
- ✓ Committee to monitor and evaluate the enterprises and to carry out market research.

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

The contents of the article did not address this question.

Acker, D.G., McBreen, E.L., and Taylor, S. (1998) Women in higher education in agriculture with reference to selected countries in east and southern Africa, The Journal of Agricultural Education and Extension, Vol. 5 No 1, pp. 13-22.

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Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Notes:

The importance of women's participation in key economic activities related to agriculture is undisputed. Given the need for science-based approach to agricultural development in Africa, there is a critical need to enrol more women in university-level agricultural science program to develop and strengthen human resources pool with higher level skills and knowledge.

Women's role in food production continues to increase as urbanization and economic difficulties drive men to the cities and women left to compensate for this.

Women as a client group and an important potential user of improved agricultural production technologies are often overlooked in research and extension programming. Potential agricultural output is also reduced owing to women's disadvantaged access to inputs and support services.

Deliberate policy changes have been made which are geared towards enhancing women's participation in the national development and decision-making process.

Boyson, H.Z.M. (2009) Indigenous Knowledge-Based Farming Practices: A setting for the contestation of modernity, development and progress, Scottish Geographical Journal, Vol. 125, No 3-4, pp. 353-360.

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Notes gathered from the article:

Development experts emphasize the use and application of science and technology in order to maximize the productivity of resources and factors of production such as land, labor and capital, directed toward an ultimate goal of profit making.

The role of indigenous knowledge may have been trivialized, yet in Africa and other parts of the world, it has a continuing impact in defining people's values and needs. Indigenous knowledge directly affects the management of resources at the local level.

The paper revealed that farmers conduct their own cropping experiments, drawing on existing local knowledge to ascertain the best use, and possible misuse, of introduced agricultural technologies. Accordingly, farmers adopt modern farming practices only to the degree that they tally with observations made on-the-ground and have been accepted as useful under their own farming conditions.

Therefore, it is necessary to define development in a wider context beyond the successful application of western science and technology. Development must involve the application of all tools and information available, including indigenous knowledge.

Farmers are stewards of indigenous knowledge which can be deployed in alliance with the Western agricultural technologies tied to newly- introduced agricultural practices. Farmers see development as progress not only in the adoption of Western farming techniques but also in their utilization of indigenous knowledge that changes their way of life to make them 'fuller' and 'richer'.

Chowa C., Garforth C., and Cardey S., (2012) Farmer Experience of Pluralistic Agricultural Extension, Malawi, Journal of Agricultural Education and Extension, pp.1-20

Q1: What extension methods and approaches are being used?

- ✓ On-farm demonstration
- ✓ Training sessions
- ✓ Field days
- ✓ Farmer tours

Lead farmers are identified by village members and trained by external actors in specific technologies in order to improve their competencies.

Q2: What of these approaches are targeting women?

These approaches targets both women and men farmers

Q3: What are the success factors?

The content of the article does not address this question

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

Smallholder sector is characterized by resource constraints and yet it is the main producer of food commodities.

Agricultural research and extension have been critiqued for using approaches that are not responsive to the needs of their clientele.

Suggestions:

A degree of regulation is needed to assure quality, to ensure farmers have access to adequate information and advisory services that enable them to achieve the potential of their farm enterprises (Chipeta, 2006). In the case of

Malawi, the main thrust of extension reform has been to promote pluralism and create institutions at local level to enable farmer demand to be articulated and then met with a coordinated response.

The need for involvement and participation in decision making platforms of people at grassroots level is increasingly recognized. Participatory approaches are therefore promoted in advisory services to address shortcomings of previous approaches.

Farmers need information beyond agricultural technology, such as how to access markets, reproductive health, climate change mitigation and adaptation, care and support for orphans and other vulnerable people in the village, and village savings and loans. *Actors just encourage them to produce but do not support them to access reliable markets.*

The disadvantaged position of farmers emanates from the poor coordination of actors who operate independently, without exploring how they can benefit from the synergies of pluralism and address issues from value chain perspectives for the benefit of both their organizations and farmers.

The system needs to reinvent in order to create new forms of horizontal communication between actors to complement the provision of material inputs to farmers.

There need to strengthen the role of local government bodies as intermediaries in decentralized extension. The behaviour of actors to supply farmers with what they think they need is a manifestation of weak monitoring mechanism by local government to ensure that actors are accountable for their actions.

Organization of farmers in commodity groups by innovation system actors is crucial to mobilize produce that satisfies buyers' requirements and to provide a platform to engage with buyers and bargain on prices.

The efficiency of decentralized extension in Malawi can be enhanced with policy intervention to respond to farmers marketing needs and provision of funding for multi-stakeholder learning platforms that will encourage interaction and coordination of innovation system actors.

Doorenbos J., Haverkort B., and Jiggins J. (1987) Women and the rationalization of smallholder agriculture. Ministry of Agriculture and Fisheries, Agricultural Administration and Extension 28, pp 101-112.

The contents of the article do not address the questions below but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Notes and suggestion:

Agricultural policies resource allocation and service provisions fail to recognize the extent of women's participation in farming hence, irrational

Special strategic intervention is required to re-orient ministries of agriculture towards serving women farmers. Women's contribution is not something which disappears as agriculture becomes industrialized. Few production services as yet to recognize the extent to which women contribute to edible and non-edible crop and livestock production.

Improving women's access to services and production incentives has helped to raise small farm output. And donor support to agriculture should be sensitive to women's agricultural roles.

It is important to build a critical mass of female civil servant within ministries of agriculture, training colleges and universities who are prepared to form an active network and act purposively together across departments. The

reason behind this is the fact that most extension services are staffed wholly or predominantly by men who for one reason or another, may have little contact with or incentive to reach women farmers.

On the other hand, a number of countries have fairly large number of women trained in home economics subjects who may lack training in field cropping. It has therefore been conceded that home economics subjects, though important, cannot substitute for agricultural training and information.

In some cases, insensitive institutional or structural change within ministries has tended to isolate services for women from mainstream provisions and budget rather than integrate them. Ministries have had difficulty in recognizing that women producers form a constituency for their services.

Women producers have not had many channels or much encouragement for expressing their own priorities or for demanding the services and resources they need to fulfil their obligations. The lack of strong female representation within producer organizations has been taken as a sign or used as an excuse by ministries that women are unimportant contributors of agricultural production.

The roles played by women remain invisible because routine agricultural and rural household data instruments are not designed to capture women's contribution, or the data that they generate are not analyzed to reveal the specific work, tasks, and output of women. As a result, senior administrators, technical specialists and field staff remain sceptical about the need to address services to female producers. So there is a tendency for women's work to be under-reported in rural households.

Efforts are therefore being made to achieve over time a better balance between male and female staff within mainstream extension programs. One excuse for not doing so has been the apparent lack of women willing to take agricultural training and once qualified to work in the field.

The two problems are interrelated since lack of peer group support and role models have discouraged women from choosing agricultural careers and accepting isolated placement remote from female support.

The incorporation of gender-sensitivity into mainstream agricultural and development education and the training of the upcoming generation is providing a slow business while the recruitment and promotion of already qualified and experienced females to positions of seniority in many parts of the world continues to be blocked by doubts as to their fitness or ability and willingness to combine family and professional responsibilities.

Much more donor and government support is required for the numerous emergent women's groups and organizations, both within the agricultural sector and in the spheres of politics and advocacy. There is increasing evidence that collaboration with such organizations stimulates the efficiency, relevance and effectiveness of agricultural research, extension and other services.

Women in the international development community need to find more effective strategies for encouraging their male colleagues to understand the issues and the operational requirements and to feel more confident in suggesting, defending and implementing the kinds of reorganization outlined.

Green, E. (2007) Modern agricultural history in Malawi: perspectives on policy-choice explanations. African Studies Review, Vol. 50, No. 3, pp. 115-133.

The content of the does not address the following questions but contains some information that might be useful for the study.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

Notes:

Smallholder sector in Malawi has been characterized by a low and stagnant level of production per capita, revealing a limited productive capacity. The question is whether or not this state of affairs is an outcome of harmful agricultural policies.

Various contribution have all argued that twentieth- century agriculture has been characterized by a conflict between the smallholder and estate sectors over productive resources and markets and in these, the state has intervened in favor of the estate, with the effect of shrinking the productive base of smallholder farmers.

The logical conclusion is that land and labor policies were aimed at directly supporting the estate sector at the expense of the smallholder sector.

It is commonly argued that empowerment and participation are two interdependent strategies for reducing rural poverty (Cornwall, 2002). But either the poor are already empowered to participate in development processes and thereby enabled to change their livelihoods, or they lack the powers to participate because they are poor and are thus in need of material support

In the case of smallholder agriculture, policies should be directly related to the local farming systems and agrarian institutions, since it is only by placing policies in such a context that their performance as well as their effects can be revealed.

Green, E. (2009) A lasting story: Conservation and agricultural extension services in colonial Malawi. Journal of African History, 50, pp. 247-67. Cambridge University Press.

The contents of the above written article does not address the following questions but it provides some insights on the history of extension in Malawi which might be of help in understanding the situations and different perspectives as well as dynamics to do with extension in Malawi.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Notes:

In the former period (colonial era), the main concern was to prevent erosion by performing peasant agricultural methods. Then it shifted towards transforming- institutionally and technologically- peasant production to increase yields.

The article reveals that the strategies and intensity of agricultural extension services changed over time but the aim of intervention i.e. to combat soil erosion remained the focal point throughout the colonial period. This shows that it is important to distinguish between strategies and scale of intervention on one hand and their aims and contents on the other.

Anti-erosion measures in Malawi (Nyasaland at the time), made the colonial government increasingly reluctant to support uncritically peasant-farmers' cultivation of cash crops.

The Malawian case supports the view that strategies and intensification of agricultural extension services changed over time, but it does not imply that the focus on soil conservation altered. On the contrary, the conservation paradigm prevailed throughout the colonial period.

Additionally, agricultural extension services in the post-war period remained dependent on the colonial officials' perception of African peasants and cultivation methods rather than empirical knowledge. The central concern was not to increase production per se but to ensure the good quality of the crops through the establishment of commodity programs.

The article shows the continued weaknesses of the colonial administration, which managed to intensify extension activities mainly because of increased funding from the colonial office. It is only by taking into consideration that we can understand the results of colonial agricultural extension services in terms of increasing peasant production.

Kerr R.B., Snapp S., Chirwa M., Shumba L., and Msachi, R.(2007): Participatory research on legume diversification with Malawian smallholder farmers for improved human nutrition and soil fertility, Experimental Agriculture. Vol. 43, pp. 437-453

The content of the article does not address the following questions but contains some information that might be useful for the study.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

Suggestions:

Different markets, household needs and cropping system niches should be identified and options developed for both market-oriented and subsistence production.

Participatory research by researchers, farmers and community members that consider the entire farming system is recommended to improve farmer involvement and adoption of varieties. In addition the approach leads to combination of learning from farmers, while also contributing useful knowledge based on critical gaps identified from research and dialogue.

Continuing support for farmer participatory experiment is required to enhance local capacity to solve the considerable challenges and document benefits associated with legume diversification in for example maize-based systems.

An understanding of gender elations, household variation, consumption preferences and household resources is crucial in determining whether legume introduction leads to positive nutritional outcomes

Kiptot E. and Franzel S. (2012) Gender and agroforestry in Africa: a review of women's participation. Agro-Forestry Systems, Vol. 84, pp. 35-58.

The content of the article does not address the following questions but contains some information that might be useful for the study.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

Notes and suggestions:

The review suggests that agroforestry has potential to offer substantial benefits to women; however, their participation is low in enterprises that are considered men's domain, such as timber and high in enterprises that have little or no commercial value, such as collection of indigenous fruits and vegetables.

In order to ensure that women benefit fully, the paper recommends various policy, technological and institutional interventions which include

- Facilitating women to form and strengthen associations

- Assisting women to improve productivity and marketing of products considered to be in women's domain
- Improving women's access to information by training more women extension staff, holding separate meetings for women farmers, and ensuring that women are fully represented in all activities.

There is a general consensus that gender inequalities are in areas such as access to resources, land tenure systems, household decision –making, education, extension and health have contributed to lower agricultural productivity and higher poverty levels.

On extension, the uptake of new technologies is often influenced by farmers' contact with extension services and several studies have shown that women have lower access to agricultural extension than men; this is not different from Malawi as well.

In addition, most of the extension services are focused on cash crops (men's crops) rather than subsistence crops which are considered to be women's domain.

For the few women who are able to access extension information, some of them lack basic education and therefore their ability to access and use technical information is compromised. Basic education places farmers in a better position to perceive potential benefits of adopting new innovations.

Promoting participatory domestication initiatives that integrate local and scientific knowledge will facilitate the integration of these valuable species into appropriate farming systems there by resulting in technologies that are economically, socially and ecologically acceptable.

For women to compete favorably, and also have an edge, they need to move away from the traditional products into a diversity of high –value products such as oil, soap, juices, body lotions, wine, and leaf meal; and these can be done using the same raw materials.

Gender sensitive policies in areas such as extension services, access to market information, micro finance and land tenure reforms need to be put in place. For instance on extension; some strategies could include; training more women extension officers particularly to serve communities that have strong traditions that prohibit male extension workers from interacting with women farmers, targeting women's' enterprises and groups for assistance and also holding separate meetings for men and women.

Governments, NGOs and the private sector need to intervene by facilitating women to form and strengthen their groups and associations, linking them up with markets and industry.

Manfre C., Rubin D., Allen A., Summerfield G., Colverson K., Akeredolu M., (2013) Reducing the Gender Gap in Agricultural Extension and Advisory Services: How to find the best fit for men and women farmers. MEAS Discussion Paper 2.

The content of the article do not address some of the following questions but expresses some important aspects that may be of use the core goal of the study.

Q1: What extension methods and approaches are being used?

Approaches

*Training and visit extension approach***:** it was based on an efficiency model of transferring new technologies to farmers but however, it did not effectively reach women farmers, small-scale producers, or farmers in some ethnic populations. Within the T & V system, women were largely viewed as beneficiaries but not as actors in their own right in agricultural production. As a result, gender imbalances remained a major inadequacy.

This approach is no longer in used in most of the countries.

Participatory approaches such as group meetings and training courses are the ones mostly preferred by the system.

Methods

- Individual or group visits
- Organized meetings

- Use of model farmers
- Demonstration plots
- Information and communication technologies (ICTs)
- Farmer field schools

These modes of service delivery offer the opportunity to reach various types of farmers with different needs in various settings.

However, women fare poorly when services are delivered through group or community meetings held by extension agents. They are also excluded from rising to leadership positions in these organizations as a result of biases about their skills.

Q2: What of these approaches are targeting women?

- The contents of the article does not address the question

Q3: What are the success factors?

- The contents of the article does not address the question

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

- Rural women's access to agricultural extension services is till poor and the number of women extension personnel is extremely low in most cases.

But then, increasing the number of women agents alone is not sufficient for reaching women farmers; programs must also seek to address the needs of small-scale producers.

- Though women are able to participate in trainings and producer organizations, gender norms may impede them from voicing their opinions and needs in the presence of men. It may be useful in some places to consider working through single-sex groups or with socially sanctioned women's groups such as rotating savings and credit associations, self-help groups and church groups.
- There is a large gap between policy directives and implementation. Understaffing, weak linkages across line ministries, lack of authority, and few or no budget allocations are pervasive problems that limit implementation.

Notes and suggestions:

The article noted that the past efforts to revitalize the agriculture sector have failed because they overlooked women's role in the sector and the role of gender inequalities in reducing agricultural productivity. The report argues that reducing gender inequalities in access to productive resources and services could produce an increase in yields on women's farms which could raise the agricultural output in developing countries. This requires reforming the institutions involved in the delivery of those services.

An important aspect of that process is recognizing that agriculture writ large, and specifically the process of providing effective extension and advisory services, involve much more than technical solutions. For example, ethnicity and gender influence the abilities of technicians to deliver the knowledge they have and the willingness and capacity of producers and processors to make use of the services offered.

Maximizing the benefits from agricultural growth for smallholder farmers and the economy at large depends on understanding these influences and designing programs that take them into account.

Some fundamental changes need to take place not only in the type of technologies being developed but in the structure of the service delivery system itself.

Women are now viewed as critical actors in agricultural development, and this recognition needs to translate into more equitably designed services and mechanisms for influencing extension policies and practices. An explicit gender dimension is needed to adequately remove inequalities that impede women from becoming active agents in improving their livelihoods and those of their house (World Bank, 2009)

Addressing gender inequalities in Extension and advisory services is important not only for poverty reduction and food security reasons but also because it makes for more efficient extension and advisory service practices. Addressing both the equity and efficiency constraints is mutually supportive and will produce more broad-based and sustainable outcomes.

Some of the reasons for the continued gender gap in (Extension and advisory services) EAS are as follows;

- Who is a farmer: the definitions of who a farmer has got a bearing in establishing who should be eligible to receive extension information, hence posing a challenge for providing equitable EAS.
- Head of household: in many societies the head of household, whether a man or woman is still defined as the primary farmer and perceived as the only appropriate recipient of agricultural extension information. As a result women are undeserved as clients of extension services in their own right, often seen to be only helping. Alternatively, they are targeted for agricultural information related to home economics. The assumption that their role in agriculture is linked to their household responsibilities ignores substantial evidence of women's contributions to the production and harvesting of cash crops.
- Land owner: this poses a challenge to women whose access to land is shaped by a complicated web of social, legal, and customary norms since globally, women's land ownership lags behind men's. When women own land, their plots are small often of poor quality.

Hence strengthening women's land rights is central to increasing agricultural productivity and leads to greater human capital investments in the household.

The segregation of information by gender, however, reinforces stereotypes about men's and women roles in the household. It does not reflect the overlapping and complementarity of men's and women's contributions to the production of a range of crops, some of which are consumed by the household while others are sold.

Carefully designed EAS will account for women's lack of time by identifying strategies for disseminating agricultural information at times and in places convenient to women.

For ICTs to reach women effectively, they need to account for women's lack of financial resources to pay for ICTs, higher level of technology and language illiteracy, norms that discourage women from using the technology, and lack of control over or ownership of technologies. (Manfre, 2011)

This requires that extension agents have the capacity to identify and address the differing needs and preferences of men and women farmers, as well as to create the conditions for women to have equal opportunity to contribute to and shape the institutions responsible for agricultural education, research, and extension.

The challenges in recruiting and retaining women extension staff are rooted in the low numbers of women in agricultural research and education. Besides, women extension officers, especially those with families, may resist moving to remote areas if these lack adequate housing, medical and educational facilities. Married women officers with working husbands may also find it difficult to take a posting in the field if their spouses are unable to relocate.

Identifying and developing channels through which farmers can provide feedback on the services and products they are receiving is a critical component to establishing a demand-driven system that is accountable to its clients, both men and women farmers.

Principles for gender-equitable extension and advisory services

1. Increase the proportion of women extension officers
2. Equip all extension officers with the knowledge and skills to address men and women farmers
3. Adapt gender-responsive techniques and methods to local context
4. Deliver cross-sectoral programming
5. Collect sex-disaggregated data
6. Evaluate the impact of extension services on reducing gender disparities in agricultural productivity.

Masangano, C.M. and Miles, C.A (2008) Factors influencing farmers' adoption of Kalima Bean (Phaseolus vulgaris L.) variety in Malawi. Journal of Sustainable Agriculture, Vol. 24 No 2, pp 117-129.

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Notes:

Agriculture is a dynamic science that is constantly being faced with emerging issues such as declining soil fertility, new insects and diseases, rising populations, and HIV and AIDS. There is need to promote adoption of appropriate agricultural technologies if sustainable agricultural growth and development is to be achieved in Malawi and other developing countries.

A major challenge of sustainable agricultural program is to promote new agricultural technologies that increase the economic contribution of agriculture while maintaining food production and supply in the country.

There are three generally recognized models that are used to evaluate adoption;

- The innovation diffusion model whose argument is that access to information about an innovation is the key factor in determining the adoption decisions. This model argues that problem of low technology adoption is a result of insufficient communication of information about the innovation to potential end users.
- The economic constraint model which suggests that availability of capital, land or labor significantly influences adoption decisions. It argues that the adoption of new technologies is determined by the resource constraints and endowments of the end users.
- Adopter perception model which suggests that the perceived attributes of an innovation determines adoption behavior.

Gender, farmer exposure to information about a technology, literacy level and level of education, all influence farmers' willingness to adopt new technologies

Agricultural development programs could increase adoption of the technologies they are promoting by working in collaboration with existing extension programs to deliver information to farmers. The farmers need also to know the advantages as well as disadvantages of the technology in order to develop appropriate perceptions that will help them decide whether or not to adopt a new technology.

By strengthening the linkages between researchers, extension workers and farmers, farmers' constraints and priorities would be better understood and information transfer would be more effective. These linkages could be strengthened through joint research- extension meetings and workshops, field visits, farmer training and on farm research.

Mkwambisi, D.D., Fraser, E.D.G., and Dougill A.J. (2010) Urban agriculture and poverty reduction: Evaluating how food production in cities contributes to food security, employment and income in Malawi. Journal of International Development 23, pp. 181-203.

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

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Other notes:

- There is need for a prolonged policy approach to improve the overall effectiveness of urban agriculture support to target poor women with extension and development project support.
- The issue of urban agriculture particularly in Malawi is pressing since persistent poverty and rapid urbanization have brought significant numbers of poor and hungry people into the cities. So increased food production could help solve the problems and reduce the risk of famine-associated mortality.
- The challenge is there are still no practical regulations to guide and support urban food production. In addition to that, most of the urban land officially earmarked for agriculture has been converted for other issues such as construction.
- Literature suggests that the best agricultural technologies are not available to all urban food producers and one reason to account for that is to hypothesize that poor producers and female-headed households do not have the same access to technology as their more "elite" farmers.
- Land alone is not a limiting factor because the issues of access to inputs, information, labor and proper land tenure also have a direct link to crop yield and must be addressed in developing policy support or development project plans for urban Malawi.
- The government is failing to address the needs of the poor, and a more appropriate response could be to create more opportunities in terms of marketable products that can in turn create employment opportunities for poorer households.
- Women are mainly engaged in the production side of agriculture, which has low wage rate compared to the marketing sector especially during the agricultural season when labor supply is high and cheap due to the shortage of food in most households.
- Policy should not necessarily emphasize increasing yields, but should start with capacity building exercises amongst poorer urban farmers, specifically those led by women and help them better manage, distribute and market their agricultural produce.

Njuki J., Kaaria, S., Chamunorwa, A., and Chiuri, W. (2011) Linking smallholder farmers to markets, gender and intra-household dynamics: does the choice of commodity matter?, European Journal of Development Research Vol. 23, pp. 426-443.

Q1: What extension methods and approaches are being used?

These are approaches being used to link farmers to markets and providing them with market information;

- ✓ Farmer groups
- ✓ Associations or cooperatives
- ✓ Contract farming and out-grower schemes

Most of these approaches have been evaluated based on the increases in household incomes, access to higher value markets and therefore higher prices for smallholder farmers and growth of market opportunities.

Potential advantages of farmers in these approaches are such as access to inputs, credit and technological and extension advice from organizations facilitating the linkages or from the buyers to whom farmers are linked.

Increased access to market opportunities can open up competition by other producers, driving local producers out of production.

Q2: What of these approaches are targeting women?

All these approaches targets both women and men farmers only that when forming these cooperatives or associations, the group can either be gender mixed or women only

Q3: What are the success factors?

The content of the article does not address the question

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

Women therefore do not benefit from the market –oriented production because men usually take over from them. Social and cultural roles assign productive and reproductive roles to men and that affect women's access to markets.

Suggestions;

- Increasing commercialization through linking farmers to markets will increase farmers' income but with complications for gender and intra-house dynamics. Therefore increasing commercialization or using or using a value chain approach needs to take into account these dynamics into consideration.
- Market related project need to adopt strategies that ensure women do not lose control of crops and the income from these crops so as to reduce the market-food security trade-offs.

Qamar, M.K. (2007) The HIV/AIDS epidemic: An unusual challenge to agricultural extension services in sub-Saharan Africa, The Journal of Agricultural Education and Extension, Vol. 8, No 1, pp. 1-11

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Other notes:

Both subsistence and commercial agriculture have been affected by AIDS significantly in the way of decline in crop yields, increase in pest and diseases, and decline in the variety of crops grown. The challenge currently posed by the epidemic to agricultural extension organizations in sub-Saharan Africa, is quite unusual as it affects both staff and clientele and involves human emotions to a depressing degree that is in addition to technical aspects.

Possible strategies to face the challenge:

- Formulation of a national policy on AIDS and extension
- Preparation of extension staff in terms of knowledge in HIV issues
- Institutional partnerships, anti-AIDS extension campaigns and preparation of rural leaders for collaboration

The most meaningful role the extension services can play is in strengthening the prevention of further spread of HIV infections by educating men and women farmers on the subject, and by demonstrating the relationship between the epidemic and food security.

Quisumbing A.R. and Pandolfelli L. (2010) Promising Approaches to address the needs of poor female farmers: Resources, Constraints, and Interventions. World Development Vol. 38, No. 4, pp. 581-592.

Q1: What extension methods and approaches are being used?

- Farmer field schools
- Individual visits- most dominant mode of extension

- Working with group: s is a major mechanism through which development programs can enable women to increase their control of assets, improve their productivity, and enhance their status and well-being. Groups accommodate women's workload; ensuring that poorest women have opportunities to voice their concerns in group meeting; and soliciting women's feedback in monitoring and evaluation.

This especially works where strong gender segregation exists.

Farmer field schools are less preferred due to the huge costs they require.

Q2: What of these approaches are targeting women?

- All the above approaches targets both men and women farmers except the groups in which some may be comprised of only women as well as only men

Q3: What are the success factors?

- The article does not address the question

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

Notes and suggestions

i. Literature on innovations that addresses the productive needs of poor female farmers is relatively limited, is typically confined to one key resource, Land, does not consider the interactions among other resources, and tends to be in the unpublished literature.

ii. Women are often disadvantaged in both statutory and customary land tenure systems, resulting in weak property and contractual rights to land, water and other resources.

iii. Even where existing legislation protects women's property rights, lack of legal knowledge and weak implementation may limit women's' ability to exercise these rights. Therefore, strengthening women's land rights may improve both equity and efficiency of land use.

iv. Lack of access to credit to buy inputs such as fertilizer is a huge challenge especially to women since their income is lower than their male counterparts.

v. Women are often excluded from irrigation projects or lose their usufruct rights to land when new irrigation schemes are introduced. This is so because membership is often limited to land owners and heads of households.

vi. Recruit and train female extension workers, particularly in areas where cultural norms restrict male-female interaction. Training male extension agents in extension methods and communication skills suitable for women and creating incentives for reaching a high number of female farmers could as well help.

vii. The nature of women's businesses limits women's ability to obtain credit. Social norms may also prohibit women from receiving information from outside lenders-which would be important if information is not fully transmitted from husband to wife. *But then access to financial services does not automatically empower women. It only provides possibilities, rather than a predetermined set of outcomes.*

viii. Market oriented interventions thus need to address gender norms that place women at a disadvantage when seeking new market opportunities.

ix. Lack of evaluation and lack of exploration of alternative design mechanisms make it difficult to prioritize innovations that might be more effective in meeting the needs of poor female farmers.

x. Gender norms do not change overnight and attempts to directly challenge such norms may unintentionally result in an erosion of women's claims to resources.

Riley P. (1995) Gender issues and the training of agricultural extensionists in Malawi. Agriculture and Human Values, Volume 12, Issue 1, pp 31-38

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

Notes

- Extension agents in Malawi continue to be predominantly male and continue to work primarily with male farmers. And because women do the majority of farm labor, this situation threatens the country's food security.
- Studies have reported that it is common for women farmers to be shy in the presence of male extension agents and even with men from their own village. They are often more receptive to information presented by females than by males (Sailo and Spurling, 1992)
- Male extension agents often say they are uncomfortable working with women because of jealous husbands, gossipy neighbors, and so forth. Nonetheless, only a little percentage of extension agents in Malawi are female and many of these have had little agricultural training. In fact, most of these female extension agents are trained in home economics and nutrition.
- Female farmers tend to be the smallest and poorest landholders, particularly the 30% of women who are heads of household (Spring, 1998)
- Despite the extensive involvement of women in agriculture in Africa, extension services continue to be directed primarily towards men who are more likely to participate in farmers' clubs, block meetings, credit schemes, and to receive field visits and demonstration. Unfortunately, husbands do not transfer the agricultural information gained in these activities to their wives who could use it to improve farming methods.
- It is important that those employed in extension services be trained to be sensitive to the roles and needs of women farmers and to be skilled in methods of communicating with and organizing women.
- It is logical that women should dominate at all levels of agriculture since they dominate in agricultural labor in most of Africa. The paucity of women employed in agricultural research, extension, training, and policy-making positions is largely due to their lack of training in these fields. Women do not obtain this training due to a variety of educational, social, and economic constraints, including insufficient school capacity, failure to enroll in school, inadequate training at the secondary level, and high rates attrition.
- Early educational opportunities and experiences influence the recruitment and retention of women at the college level in Malawi. Therefore the focus should be on the extent to which agents are presented with a curriculum that includes gender issues and on efforts to recruit and retain women students in agricultural extension training programs.
- A solid curriculum should emphasize the importance of having female extension agents working with women farmers; the gender differences in involvement in agriculture; gender differentials in activities, needs and resources; and strategies for reaching women farmers.
- The shortage of mentors and lack of academic and career counseling into non-traditional occupations influences the enrolment of women in agricultural education. Other obstacles to access include tracking of females away from agriculture and other male occupations, cultural traditions, lack of support by family, peers, and teachers for females to achieve in nontraditional subjects.
- African ministries of agriculture need to employ more women in agricultural research, extension, training and policy making positions.
- The wives of rural male agricultural extension staff should be actively recruited as students. This could improve retention of women staff in rural areas. Adequate accommodation for women students must be made available.

- Qualified women should be recruited as lecturers in the nontraditional areas so that they help to retain students by serving as mentors. This is not an easy recommendation to make since few qualified women are available.
- Training in gender related issues should have high priority considering that the majority of farmers are women and have different roles, resources, constraints, and responsibilities from men. A mandatory course on women and agriculture and development should be included in the curriculum and gender issues, where appropriate, should be incorporated in all courses.

Snapp, S., Kanyama-Phiri, G., Kamanga, B., Gilbert, R., and Wellard, K. (2002) Farmer and Researcher Partnerships in Malawi: Developing soil fertility technologies for the near-term and far-term, International Crops Research Institute for the Semi-Arid Tropics, Vol.38, pp. 441-431.

Q1: What extension methods and approaches are being used?

- Participatory research methods have been advocated as a means to improve relevance and adoption
- Demonstration trials
- Community meeting
- Farmer field schools: involve farmers actively and train them to develop their own recommendations. However, they require a massive investment in education to train many farmers in the principles of experimentation and agro-ecology

Q2: What of these approaches are targeting women?

- All the approaches targets both men and women farmers

Q3: What are the success factors?

- The content of the article does not address the question

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

- The content of the article does not address the question

Suggestions:

Institutionalizing more participatory research methods has been advocated as a means to improve the relevance of technologies.

Farmers' production priorities are often assumed to focus on maximizing yields of financial returns while, in reality, they may be concentrating on gaining the best return from a very small cash investment, or on maximizing food security.

Policy makers may need to be drawn into this work of extension, as there appear to be no easy answers to the problems posed by degraded sites and the intensive cropping systems of southern Malawi.

Sofranko A.J. and Fliegel, F.C. (1989): Malawi's Agricultural Development: A success story? Agricultural Economics, Vol. 3, pp. 99-113

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Notes and suggestions relevant:

There is probably less of a consensus now particularly amongst development agencies on the best agricultural development strategy than any time of the past half-century.

For Malawi, literature argues that the removal of the fertilizer subsidy affects women more than men farmers because it reduces fertilizer use on the local maize. As part of adjustment program, a purpose of removing the fertilizer subsidy is to reallocate resources from food production for domestic consumption to cash crop production for export.

Malawi's women farmers are undoubtedly especially affected by structural adjustment programs though a different analytical approach and supporting evidence may be required to show it. Efforts to address hunger in Malawi in the long term will need to address the social inequality, both at the household level and at the national level.

Literature has it that, development policy makers in Malawi, governmental, nongovernmental, bilateral and multilateral, support the communication for development idea once they become knowledgeable about it. Therefore the implication is that educating policymakers about communication for development will increase donor investments in pilot communication for development projects, a strengthening of agricultural extension systems, and success of poverty-reduction programs.

Extension systems are inadequate, under-financed, and too overstretched to deliver Integrated Pest Management messages effectively. The main production problem facing smallholders is not crop losses from pests but low average yields, reflecting the high cost of the new seed-fertilizer technology and declining soil fertility

National agricultural extension systems have largely failed to provide the support needed by the smallholders. In this regard, the farmer to field staff link has been identified as the weakest one in service delivery, furthermore, inadequate technologies, high degree of bureaucracy and poor working conditions of field staff are commonly cited as major constraints. In addition, there is lack of evidence on the contribution of public extension services to the improvement of smallholder farmer livelihoods.

Though appropriate methods are still being developed, success will depend on adequate support being provided to farmers through training and technical advice. Farmers still lack knowledge about use and benefits of some of the technologies being advocated. Therefore, there is still clear need for policies to articulate strategies for providing support in the form training and advice.

There is urgent need for national extension services to facilitate the development of grass root level advisory services involving farmers as the main actors and, at the same, solicit support from as many other service providers as possible.

Although Malawian government has subsidized inorganic fertilizers over the past cropping seasons, there is no guarantee these subsidies will continue, especially considering recent reports of political turmoil and budget crises since this is one huge limited resource for the smallholder farmers

Literature has gathered that benefits of new agricultural technologies are frequently realized only by farmers who can mobilize the resources necessary for their use. Often these technologies have resulted in fewer benefits for women and poor farmers

Agricultural technology adoption has been limited, due to failures of simplistic top-down development projects that have frequently overlooked local knowledge, as well as farmers' distinct needs and concerns.

Participatory research with farmers generates the right research questions for scientists to address and provides a reality check on the scientists' conceptions of system constraints and the performance of various technologies.

A farmer's decision in adopting or rejecting a new technology is influenced by a combination of factors related to farmer's objectives and constraints such as farmer's socio-economic circumstances 9age, formal education), and farmer's resource endowments (e.g. size of family labor, farm size and livestock ownership).

There is need for closer cooperation and exchange of technical information with the NGOs, government and seed companies in order to give farmers better information and technical skills to cope with the ever increasing drought conditions especially under the threat of climate change.

On several frequent cited development and agricultural production measures, Malawi has performed well relative to adjacent countries and sub-Saharan countries generally. Government policies have emphasized food self-sufficiency and promotion of agricultural export. A key element in this has involved moving farmers from a more traditional mode of production to more intensive commercial agriculture and expanded use of modern forms of inputs. There has been a concomitant emphasis on extension and training to improve farmers overall information level skills.

Van Asten, P.J.A., Kaaria, S., Fermont, A.M., and Delve, R.J. (2008) Challenges and lessons when using farmer knowledge in agricultural research and development projects in Africa. Cambridge University Press. UK.

Q1: What extension methods and approaches are being used?

- Farmer participatory research (FPR) approaches: these have become increasingly mainstream for researchers and extension workers in developing countries like Malawi. FPR is especially applicable for developing appropriate technology options in complex, diverse and risk-prone regions.

An important advantage of applying FPR is the incorporation of indigenous technical knowledge in the technology development process.

However, the FPR methods have been known to have problems with the interpretation of the data collected especially when the farmers produce false or desired answers, or alter the management of on-farm trials with the aim of maximizing benefits.

Q2: What of these approaches are targeting women?

- The content of the article did not address the above question

Q3: What are the success factors?

- The content of the article did not address the above question

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

- In certain cases, the methods used to collect farmer knowledge are flawed, leading to inaccurate or incomplete information being gathered. This potentially leads to the development and promotion of unsustainable, unprofitable or socially unaccepted technologies.
- In terms of research, farmers and scientists use different reference frameworks, hence this poses a major challenge. For example, farmers judge their farming system, its components and its problems within their own reference framework which is often not larger than their own field or village. Scientists on the other hand, learn to use a much wider reference framework.
- Insufficient training of researchers who interact with farmers and lack of social scientists in many research teams.

Notes and suggestions:

- African farmers have a thorough knowledge of their cropping systems and that this knowledge is dynamic, rather than static. The more reason they can guide scientific research.
- Participation of farmers at different stages of agricultural research is, without doubt, indispensable for researchers who wish to develop technologies that are both environmentally sound and socio-economically acceptable. However, the researchers have to be more rigorous in their interaction with smallholder farmers and in their use of farmer knowledge to guide their research.

- It would be of importance to combine FPR with a strong research component into problems identified by farmers to improve the understanding of the underlying causes. This is important if production constraints are related to processes that are not easily visible or entail numerous interactions between different farming systems.
- Researchers should as well provide feedback on research findings to farmers and extension workers in a format they understand.
- FPR tools will remain key to guide research for technology development, adaptation and adoption, but users of these tools should also be aware of the challenges and pitfalls of these tools if they wish to make significant and sustainable impact.

Wellard, K., Rafanomezana, J., Nyirenda, M., Okotel, M., and Subbey, V. (2012) A review of community extension approaches to innovation for improved livelihoods in Ghana, Uganda and Malawi, The Journal of Agricultural Education and Extension, pp.1-15

Q1: What extension methods and approaches are being used?

Farmer-to-farmer extension: this approach places farmers at the Centre of knowledge generation and dissemination process. Farmers' abilities to spread innovation (perhaps more effectively than professional extensionists), due to their comprehensive local knowledge and location, make them potentially better able to communicate with fellow farmers, and at lower cost (Tripp, 2005)

Though there has been a burgeoning of farmer-to–farmer extension including farmer field schools, there is limited evidence of their impact at household level, sustainability and even potential for scaling up.

The other complexity of this approach is that if the lead farmers advance too far ahead of their neighbors technologically, their farming system will appear too complex for the others to adopt.

Farmer groups: this is a well-established extension practice and benefits include mutual support around common interests, joint activities such as group labor and providing a voice for members. Groups also provide a means for the extension agents to reach greater numbers of farmers.

Trainings: extension agents train farmers in technologies to do with sustainable agriculture so that they practice on their own farms and share with other farmers through group training, demonstrations and individual farm visits.

Q2: What of these approaches are targeting women?

The farmer group approach targets women in such a way that sometimes these groups are established according to gender. The assumption is women will be free to express themselves in this kind of setting.

Q3: What are the success factors?

Commitment of the people to development; volunteering spirit, together with patience are some of the success factors that determine the workability of the approach.

Support in terms of providing the farmers with items like bicycles for the visiting farmers, Gumboots, tools for use by groups and stationery from time to time.

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural?

- Trainings received from government extension staff was reported as low to have an impact
- Collaboration has apparently been hampered by frequent government staff transfers, poor buy-in to the program and lack of transport
- Note: All programs should carry out gender awareness as part of their development training

Zeller, M., Diagne, A., and Mataya, C. (1998) Market access by smallholder farmers in Malawi: implication for technology adoption, agricultural productivity and crop income. Agricultural Economics 19, pp. 219-229.

The contents of the following article do not address the questions but contained relevant material for policy and recommendations.

Q1: What extension methods and approaches are being used?

Q2: What of these approaches are targeting women?

Q3: What are the success factors?

Q4: What are the constraints- social, cultural, economic, technical, environmental, infrastructural

Notes:

Some of the factors that have been frequently identified as being influential in determining the adoption of agricultural innovation include: farm size; risk exposure and capacity to bear risks; human capital; labor availability; credit constraints; tenure; and access to commodity markets.

The paper argues that households with small sizes and low risk-bearing ability are able to adopt capital-intensive crops, such as hybrid maize and tobacco, if policies improve their access to credit, extension, input and output markets.

Therefore, an expansion of existing credit programs could have beneficial effects on agricultural production of smallholders and rural incomes, but that its public costs must be weighed against these benefits.

This supports the conclusion that access to agricultural markets and related improvements in rural infrastructure and marketing institutions are essential for adoption of new technology and transformation of subsistence- oriented smallholder agriculture.