

GENDER AND CLIMATE INFORMATION DISSEMINATION SYSTEMS IN SEMI-ARID AREAS IN ZIMBABWE

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Case Study
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SYNOPSIS

One of the major challenges facing Southern Africa, including Zimbabwe is climate variability. The country is predicted to become drier and drier and mean average temperatures are on the increase. The impacts of climate variability affect vulnerable groups, including women and children, more than others in a community. It is within this context that a project on strengthening weather and climate information was initiated in three semi-arid districts of Zimbabwe namely Gutu, Chirumanzu and Zvishavane. This case study seeks to profile channels of communication and extension methods useful for disseminating gender sensitive climate information that takes into cognisance the gendered roles and responsibilities at household and community levels.

Main Findings: The findings indicated the gender differentiated perceptions on channels of communication, extension methods and their importance. Due to their differentiated roles and responsibilities, more men favour drama as an extension method than women. Short message service as a new means of communication was perceived to be important and useful by both men and women. Separately, women preferred school based extension (77%) and men preferred radio (69%) as sources of climate information. However, both men and women perceive home to home visits as a useful extension method, despite the economic costs and related challenges associated with this method.

Key lessons learned: Farmers react differently after receiving climate information depending on their gender, status and positions in society which influence the method of dissemination, how far the information is disseminated and to whom it is disseminated. Moreover, perceptions from mixed groups are not always representative of the community as men's perceptions tend to dominate the outcomes.

Recommendations: Despite the fact that the findings are specific and cannot be generalized as communities are unique, this case study suggests that gender and climate information dissemination systems in semi-arid regions be improved not only at local level but at national and regional levels. At local level there is need to include gender and climate related community perceptions into extension programming. The focus must be directed on capacities and vulnerabilities of men and women, ensuring that gender and climate change are mainstreamed simultaneously in extension. At national and regional level, emphasis should be on knowledge sharing networks, formation of new collaborations and capacity building focusing on lessons learnt from case studies.

Introduction

According to the fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC, 2014), climate change is predicted to make some countries in Southern Africa including Zimbabwe drier with higher temperatures. The report refers to climate change as any change in climate overtime, whether due to natural variability or other anthropogenic factors. Whilst climate change is long term, climate variability is related to deviations from the standard and occurrences of extreme weather events on a temporal and spatial scale. This will have serious consequences on food production despite technological advances in plant breeding, fertilizers and irrigation systems. It is the poor and vulnerable who will be the most susceptible to changes in climate, particularly women, children and those living with disabilities as they are marginalized in climate change programmes. This is especially true for those communities who live in the dry lands of Africa and who rely largely and/or totally on rain fed agriculture for their livelihoods. Both women and smallholder farmers who lack secure access and rights to productive natural resources (UNDP, 2011) and knowledge to mitigate and adapt to the effects of climate change remain at risk. More so, climate change affects factors most essential to women's means of subsistence such as food, water and energy (AfDB, 2011). Tasks and time for productive and reproductive work are altered thereby affecting women's participation in climate change programmes.

It is against this background that OXFAM in Southern Africa, Chinhoyi University of Technology and the Zimbabwe Meteorological Services Department (ZMSD) entered into a collaborative partnership to research the nexus of climate change, food security and livelihoods of which the gender perspectives were among the focus areas. The study areas were Chirumanzu, Zvishavane and Gutu districts in the Midlands and

Masvingo provinces in Zimbabwe. There were 15 manual weather stations and 3 automated weather stations installed in these districts under the Strengthening of weather and climate information dissemination project; a project designed to benefit smallholder farmers (SHF) through a smooth flow of information from the MSD to extension officers in the department of Agricultural Technical and Extension Services (AGRITEX) and ultimately to the farmer. The case study summarizes the gender dimensions of climate change information dissemination and the perceived impacts on livelihoods.

The study further provides perceptions of both women and male farmers on extension approaches in order to make informed decisions on climate change extension programming. The issues are interrogated mainly through the use of a household questionnaire (HHQ) key informant interviews (KIIs) and focus group discussions (FDGs) (following similar methods employed by Creswell, 2008; Kumar, 2002). Household and key informant interviews were conducted to assess climate extension and its effectiveness and importance in livelihoods. The study specifically employed FDGs and brainstorming sessions to identify key climate change issues and challenges to livelihoods and to analyse opportunities and constraints based on available capital assets. The study also analysed trends in information dissemination over a given period including ranking of climate change stressors. All the data collection methods took into account the gendered views of respondents and at specific points in the data collection process, isolated women from men to enable both men and women to freely articulate their views. The understanding of gender is based on the socially constructed roles, responsibilities and opportunities associated with men and women as well as the hidden power structures that govern the relationship between them (UNDP, 2010). The gender analysis was guided by the understanding of the crucial role played by gender in climate

change. Women and men, in their respective roles, are differently affected by the causes and impacts of climate change. Women and men differ in their perceptions and reactions to climate change and social roles and responsibilities between men and women differ thus impacting differently on their access to and control over natural resources. In many environments, male perspectives tend to dominate farming and other activities and the participation of women in decision making is very low (Ulrike, 2007). The next sections focus on gender climate dissemination in selected regions of Zimbabwe, the outcomes, overall assessment, as well as conclusions, lessons learnt and policy implications.

Gender and climate dissemination in selected regions of Zimbabwe

Communities in semi-arid regions of Zimbabwe are vulnerable to a number of natural disasters.(Brown *et al*, 2012). Semi-arid regions are characterized by low rainfall and high average mean temperatures. The IPCC (2014) report indicated upward trends in annual mean, maximum and minimum temperatures during the last half of the 20th century in Southern Africa. Modest downward trends in rainfall are found in Zimbabwe, Botswana and western South Africa. There is further evidence of changes in total mean summer rainfall and intra seasonal characteristics of seasonal rainfall, such as onset, duration, dry spell, frequencies and rainfall intensity.

However, the frequency of droughts and floods has impacted negatively on community livelihoods especially the vulnerable groups. Women's reliance on rain fed agriculture makes them even more vulnerable. The link between gender and climate change is important considering the gendered differences in impacts and adaptive capacities. Climate change slows progress towards

attaining gender equality as women become more and more burdened by the impacts of climate change. On the other hand, gender inequality can further worsen the effects of climate change as women are marginalized and lack access to information on mitigation and adaptation strategies (AfDB, 2011). Dissemination of gender sensitive information is exacerbated by the global impact models used in gender analysis which are not contextual and do not consider that impacts differ from region to region and by gender. A study carried out in four countries in Southern Africa namely Namibia, Mozambique, Botswana and South Africa indicated that gendered roles in South Africa had altered as a result of climate variability with more women participating in income generation activities unlike in the other three countries (Petre, 2014). Male dominance in income generation activities still prevailed in the other three countries. This could be attributed to the socio-cultural and economic status of the countries under study.

Communities are no longer able to carry out agricultural practices based on traditional extension messages and recommendations as these have proved to be irrelevant (Leeuwis, Hall and Weperen, 2013). Women being the majority in the rural areas are disproportionately affected by these extreme events. The sample size in the study included 61% (n=60) men and 38% (n=36) women from Gutu Rural District; 67% (n=96) men and 33% (n=46) women from Chirumanzu Rural District and 46% (n=66) males and 54% (n=76) females from Zvishavane Rural District. The major livelihoods options in the study area include dry-land crop production, livestock production and gardening (Oxfam, MSD, AGRITEX, 2013). Previous studies indicate access and control to means of livelihoods differ by gender and with climate variability the differences are more apparent with a disadvantage on women farmers. In addition, the gender discrepancies on vulnerability to

climate change is exacerbated by the lack of or limited access to climate information by the different groups. As a result, gender matters in adaptation to climate change (Nabanoga, 2016).

The choice of adaptation strategies as well as channels and extension methods for dissemination of climate information should ensure a relief on some of the burden endured by women due to climate change (UNDP, 2010). While a number of channels are available to disseminate climate information, their effectiveness according to gender needs further investigation. On the other hand, a number of traditional extension approaches in use have been reported to fall short in terms of climate information dissemination. The major extension approach used in dissemination of information is the group approach and training is the major extension method. However, with limited resources, extension has failed to take on board the gender related dimensions on access to information. Not much is taken into consideration in terms of gender related timing, delivery channels and methods of weather and climate information. One of the new extension and delivery channels that were introduced for sharing weather forecasts with champion male and female farmers was the SMS platform (Oxfam, AGRITEX, MSD, 2013). The results indicated that a minority proportion of 43% women were trained and 35% women received SMS messages in comparison to 57% trained men and 65% men receiving information.

The outcomes

The major outcomes of the work are presented according to perceptions on channels for dissemination, acceptable extension approaches and impacts on livelihoods all within the gender context.

Channels of dissemination

Mixed groups and responses from men and female farmer groups indicated the differences in access to climate information according to the channels used. Mixed groups ranked the channels of communication as indicated in Table 1.

Table 1. Ranking of channels of communication and % representation of respondents by gender

Rank	Channel/source of information	Male %	Female%
1	Phone SMS	65	35
2	Radio	68	32
3	Extension	59	41
4	Lead farmers	55	45
5	School teachers-Gomba secondary school	23	77
6	School children	23	77

Other channels of communication included television (TV) with a majority of women with access to TV indicating this as a source of information. In general, 42% men and 48% women were not receiving any climate information in any form. The ranking in a mixed group indicated the dominance in discussions by men thus giving a wrong impression on extension programming. Men’s perceptions dominated in the mixed group discussions. The study indicates that more women (77%) obtained climate information through schools and school children. This could be attributed to the relationship in terms of care between mothers and their children as they have time to discuss after school. Similar findings were presented in Uganda (WIMEA- ICT, 2015) where collective involvement of school children in dissemination of climate information was

suggested as an effective means of communicating climate information.

Another contributing factor to the marginalisation of women in communication could be linked to the access to Information and Communication Technologies (ICT) means of communication. An estimated 56% male, against 44% female had access to at least one mobile hand set. Those with access to mobile handsets had an advantage to receive messages directly from the server or from other farmers. More men (67% and 62%) than women (33% and 38%) had access to radio and TV respectively. However, the majority of women with access to TV indicated this as a source of climate information. Men use TVs at homestead for other purposes, as indicated by 70% of male respondents who use it for entertainment rather than access to climate information.

Women are disadvantaged in terms of ICT as narrated by the UN Women Watch¹. Technology is not gender neutral and is less gender sensitive. Moreover, access to ICT is constrained by social and cultural bias, inadequate infrastructure in rural areas, women’s lower education, women’s fear of or lack of technology and their lack of disposable income to pay for technology services.

Our findings are in contrast to one of the key informants who reported that both men and women were targeted with more women participating as the thrust of the livelihoods project. Even if more women participated in the livelihoods project they were disadvantaged in the way they accessed climate information, especially in respect to their ownership to means of communication. Another contributing factor could have been the lack of appreciation of gender in selection of recipients of SMS messages and perceived usefulness of communication channels.

¹ www.un.org/women/watch

Usefulness of channels of communication depends on gender of the user as indicated below. Furthermore emphasised that the importance of knowledge and effective dissemination of information means reaching women, children, men, the youth and the elderly (AfDB, 2011).

The trend on perceptions on usefulness of media and ICT as channels of communication was generally similar for both men and women. However, there were more men indicating usefulness of SMS followed by print media, radio and television (Figure 1).

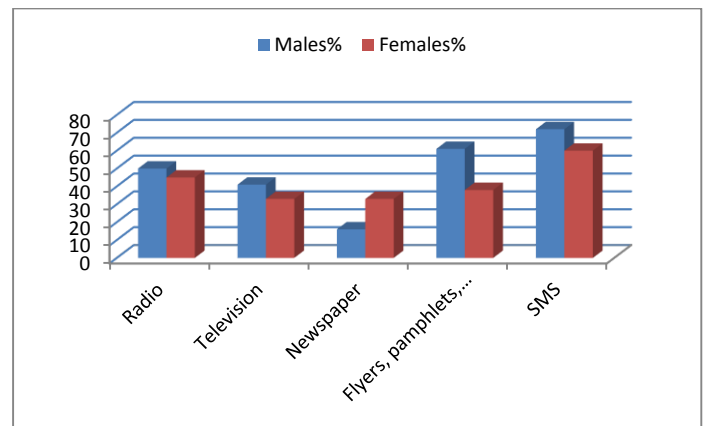


Figure 1: Usefulness of channels of communication by sex of respondent.

Usefulness of the SMS was elaborated by both female and male farmers who were trained and became champions in disseminating climate information (Box 1).

Box 1: Usefulness of the SMS

Female champion farmer

The SMS extension service is helpful. It advices my household on the weather forecast. Usually the household practices dry planting with a conviction that it will rain according to the forecast. Through this channel the household is also advised on the intensity of the rain. Once the message is received I

share the information with the members of the household, secondly with neighbours; thirdly with club members at meetings. If I have enough credit in the phone I send SMS messages to other club members. In some cases I allow people to read directly from my phone to get firsthand information. Lastly but not least I share information with church members.

Male champion farmer

Once I receive the SMS message, firstly I disseminate it through the traditional head man at meetings; secondly at Magomberde and Machawira townships and thirdly I share the information with people in the bordering district in Buhera when we meet at Nyazvidzi river. Besides receiving messages on SMS I have access to weather data at Magomberde High School which I share with other community members.

Source: (Fieldwork Gutu district -12/2014)

The study observed that depending on their gender, status and position in society, farmers react differently after receiving information. It is therefore necessary to include people from different social statuses in the dissemination of climate information. Men, in most cases, are in positions of decision making and consider it easier to share information at higher levels of decision making. On the other hand, women, because of their caring roles and strong social networks, are critical for dissemination of information at peer and local levels within their religious and other social networks. Similar findings were cited by Babugura (2014) where women farmers in India were receiving SMS messages on weather information through their social networks such as church groups and village information boards.

Preferred extension methods for disseminating climate information

Both men and female farmers found house to house visits to be the most useful means of

communication whilst drama was the least useful method for women. This could be attributed to the time requirements for preparing drama, taking into consideration the other roles performed by women in the community and at household level. House-to-house visits seem to be useful for farmers yet there are operational challenges that restrict their use. More men than women perceived demonstrations and training workshops as useful methods of extension because men usually have more opportunities to leave their homes to attend group extension activities (figure 2).

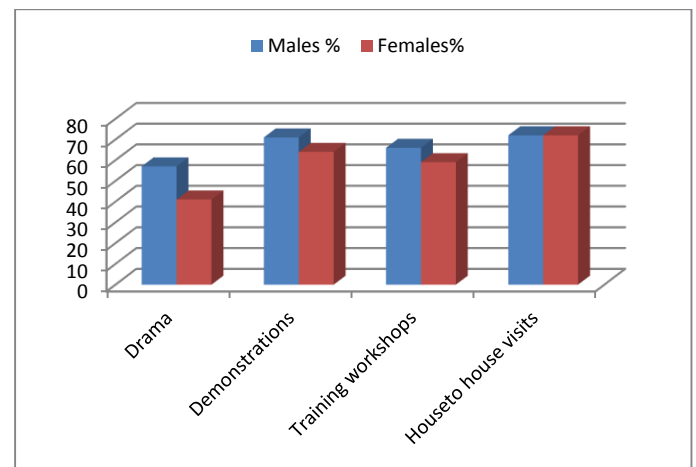


Figure 2: Preferred extension methods in dissemination of climate information by sex of respondent

Impacts of climate variability on livelihoods and gender

Men and women farmers react differently to effects of climate change because of the differences in access to climate information. In turn, their livelihoods are affected differently. Training for both men and women had no major differences in terms of climate change on livelihoods. However, women only groups and men only groups irrespective of training perceived differences in the impacts of climate change on livelihoods as discussed in this section (Table 2).

Table 2: Impacts of climate change on livelihoods by gender

Parameters	Rain-fed agriculture		Gardening		Livestock		Casual labour	
	males %	females %	males %	females %	males %	females %	males %	females %
Increased	15	8	16	21	9	8	7	20
Remained constant	16	9	27	18	6	16	19	30
Reduced	69	83	57	61	44	76	74	50

More women than men indicated an increase in gardening and casual labour as a result of climate variability. The increase in gardening was linked to the project on livelihoods that targeted women whilst the increase in casual labour shows the adaptive capacity of women to diversify when faced by adversities. Women seek casual labour to meet family requirements for food and income as part of their caring roles. Ownership of livestock has remained constant at 26% for men and 16% for women reflecting men’s dominance and preference for livestock ownership as a source of wealth and unwillingness to dispose of livestock in times of need.

Reductions in rain fed agriculture; gardening and livestock production have been noted for both men and women. However, more women face reductions in these sources of livelihoods than men. This could be attributed by their limited access to natural and physical resources.

Overall assessment

Perceptions on extension and channels of communication

Perceptions of usefulness of channels of communication by gender differ. More men than women consider the SMS, flyers and radio channels to be useful except for the electronic media. This shows the social differences in how men and women in rural areas spend their time. Women tend to spend more time at home than men and therefore have more access to electronic media. Similarly, perceptions of the utility of extension methods used for dissemination differ with more men than women preferring drama. Therefore, the preferences for and utility of channels of communication is influenced by the lifestyles of both men and women. As such, communication interventions may need to be differentiated by gender. Women are not always at home to listen to the radio and in most cases radio programmes on farming are aired during the day when women are busy with other chores. Whilst radios are not as portable as mobile phones, it is more socially acceptable for men than for women, to carry and listen to radios in the rural areas. Both men and women said they managed to become *champion farmers* due to their collaboration with the local extensions officers, highlighting the critical role that AGRITEX played in shaping farmers’ livelihoods.

Those farmers who received training had better response strategies to any hazards. This emerged during in depth interviews and focus group discussions with the men and women farmers. It emerged that they were able to engage in intercropping patterns, seasonal crop changing, planting of short term varieties, using traditional bank seeds, small livestock production and other livelihoods strategies such as migration, casual labour in cases where there were chances of dry

spells and bad weather patterns. Farmers ranked extension approaches and methods that were more preferable in dissemination of information, amongst them face to face interactions with extension, demonstrations, training and workshops. Drama, demonstrations, training and workshops require women to leave their homes, negatively affecting their productive work especially when the timing is not appropriate. The “house-to-house” or “train and visit” type of extension and demonstrations, are considered to be the most preferred and useful extension methods by farmers who did not receive training in climate change and by both males and females.

However the differences in gendered social responsibilities guide them on whom to talk to and where to disseminate information. Whilst women farmers disseminated information to local social networks, neighbours, church members, men interacted with local leadership as it is easier for them and culturally more acceptable. Some of the men would go even further outside the districts to disseminate information, if they could. Our findings show the need for inclusiveness as elaborated by AfDB (2011) and WIMEA-ICT (2015) in that effective dissemination of information means reaching women, children, men, the youth and the elderly.

Impacts on gender and productivity

For those farmers who were part of the Oxfam project, there has been an increase in poultry production for both men and women. However, there was a decrease in rain-fed agriculture for both men and women. Changes in income generating projects for men and cross border trading for women indicate that diversification into off farm activities has increased. However, further analysis focusing on men and women’s groups, trained and untrained, indicated that more women than men perceived a reduction in

rain-fed agriculture, gardening and livestock production. This finding indicates gender differentiated perceptions of the impact of climate variability on livelihoods.

Conclusion, lessons learned and policy implications.

This case study has highlighted the gender differences in access to information through a number of different channels including radio, print media and SMS; different extension methods such as drama, demonstrations, house to house visits, training and workshops. While communities were familiar with other extension and communication methods, the use of SMS was new. The new extension channel of SMS communication was favourable for both men and women and was considered very useful. Impacts on livelihoods for trained farmers both men and women do not portray a clear reality of gender related impacts on livelihoods. The gender analysis which compared groups of trained and untrained women with those comprising trained and untrained men, revealed differences in perceptions of climate change impacts on livelihoods. From our discussions the following are the major lessons learned:

- Farmers react differently after receiving information depending on their status and positions in society which influence the method of dissemination, how far the information is disseminated and to whom it is disseminated. There is need to include people from different socio-status during dissemination of climate information.
- Women’s and men’s groups are not homogenous hence the need to consider individual and specific characteristics of both men and women in gendered climate change extension.

- Perceptions from mixed groups are not always representative of the community as men's perceptions tend to dominate the findings.
- Women and men react differently in the dissemination of information
- Despite the fact that women are more vulnerable to climate vulnerability, they have better adaptive capacity since they have more diverse livelihoods options
- Women found the school method as a favorable channel of communicating climate change variability and other information.
- There is need to package information appropriately to recipients so that language and content are suitable for minors and the elderly and disabled are taken into consideration.

From this study, we can draw several conclusions about gender and extension policies in response to climate change.

1. Taking into consideration the roles and responsibilities of both men and women that affect how they access and disseminate information. Whilst it is generally agreed that women are more vulnerable to climate change than men, their adoption of a wider variety of coping strategies and capacities to adapt in comparison to men need to be taken into consideration. Thus, it is important to adopt extension approaches that take into account both community and individual capacities and vulnerabilities.
2. There is need to review extension approaches and methods in disseminating climate information. Both men and women perceive home-to-home visits to be a useful extension method, despite the time and cost-related challenges to this

approach. The study recommends alternative methods to this approach that take into account available human, financial and social capital. Variations of ICT which are interactive could be alternative methods. Other alternative methods include group centered and participatory methods such as learning centers, climate field schools, school based extension services as proposed by Mapfumo *et al*, (2008), Leeuwis, Hall, Weperen, (2013) and WIMEA ICT (2015)

3. Technological developments will help to take into account women specific priority needs and roles and responsibilities and make full use of their knowledge and expertise. Gender implications for both "soft" technological developments (insurance schemes, credit schemes, dissemination processes, agro ecology and traditional knowledge systems) and "hard" technological developments (drought tolerate varieties, conservation agriculture, and agroforestry trees) should be equally considered for both men and women.
4. Collective involvement in communicating climate information is important. The use of the school-teacher and children in communicating climate change variability and related information should be up scaled if more women are to be reached.
5. Mainstreaming climate change in agricultural programmes is recommended and this should be done simultaneously with gender mainstreaming if agricultural extension services have to make an impact in this era of climate variability.
6. Findings cannot be generalized as communities are unique, but the case study contribute to evidence on gender sensitive responses to effects of climate change including gendered dissemination

of climate information from an African perspective.

Gender and climate information dissemination systems in Zimbabwe are faced with operational challenges that need to be addressed at national level for implementation at local level as evidenced in this case study. In this regard, the need for capacity building not only for Zimbabwe but for other countries in southern Africa cannot be overemphasized. Capacity building in collective knowledge sharing processes and collaboration, design of gender sensitive climate extension programmes and collective involvement to improve the schools community links is needed. Furthermore, research in African models to analyze climate change and impacts on gender is needed. Acknowledgment of lessons learnt from gender and climate change case studies can enhance dissemination of climate information and adaptive capacity of both men and women in Africa.

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