

**THE IMPACT OF NARRATIVE AND PARTICIPATORY DRAMA ON  
SOCIAL INTERACTIONS, ATTITUDES, AND EFFICACY AROUND HEALTH AND  
ENVIRONMENTAL ISSUES IN MALAWI**

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THE INFLUENCE OF PARTICIPATORY DRAMA IN INCREASING  
SOCIAL INTERACTION AND EFFICACY AROUND HEALTH AND ENVIRONMENTAL  
ISSUES IN MALAWI

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**Abstract**

This dissertation explores the role of creative, participatory methods of communication in response to the impacts of climate change and other environmental and social pressures in Sub-Saharan Africa. Specifically, the research seeks to understand the extent to which narrative and participatory drama influence social interaction, attitudes, and efficacy around inter-related sustainability issues among smallholder farmers in Malawi. To test the role of these communication methods, 520 smallholder farmers in two regions of the country participated in an integrated curriculum on climate change, agroecology, soil health, health and nutrition, and social equity in the early summer of 2016. Half of the participants used stories and drama in their training, and the other half acted as a control group using small group discussions without the prompted use of narrative or drama. The findings presented here include qualitative in-depth interviews ( $N = 47$ ), firsthand observations, and quantitative baseline and follow-up survey data ( $N = 442$ ). The research draws on communication theories around social and behavioral science, specifically as these theories relate to health, environmental, science, and risk communication. The work is unique in context and scale and also in its consideration of how best to communicate the complex interrelationships between multiple sustainability issues. This research also aims to

strengthen communication efforts around sensitive social issues, such as HIV/AIDS, alcoholism, and violence in the household. Findings revealed that the use of narrative and participatory drama within the training served to influence social interaction, attitudes, and efficacy in positive ways. The results also showed that narrative and participatory drama play an important role in engaging and empowering vulnerable groups, including women and those with little or no education. The findings showed increased positive attitudes and efficacy around new ideas relating to environmental conservation and equality, some of which affirmed long-held traditional beliefs and some of which ran counter to those beliefs. Small group discussions also revealed many of the positive benefits of narrative and drama, including increasing engagement and the ability to talk about sensitive subjects for male participants. Both communication methods proved valuable as learning tools around sustainability information, with narrative and drama having the singular benefit of acting as both a learning *and* a teaching tool for farmers. Participants described the use of participatory drama, in particular, as helping them attract and hold the attention of large groups of farmers (often >200) when sharing information after the training. In this way, these creative and participatory communication methods aid in not only the communication of complex and linked sustainability topics but also making the information itself more sustainable as farmers pass on what they have learned to others. These findings help expand previous research on the use of narrative and drama around health and environmental issues, illustrating the valuable role of these communication methods in helping to tackle some of the world's most pressing and complex questions and challenges around long-term planetary health.

## BIOGRAPHICAL SKETCH

Carrie Young's research focuses on strengthening the communication of inter-related social, health, and environmental issues in the United States and Africa. She is especially interested in the context of Sub-Saharan Africa, and in working on communication methods that respond to challenges relating to food security, climate change, wildlife conservation, and other sustainability issues facing smallholder farmers. Countries of interest include Mali, Kenya, Zambia, Malawi, and Tanzania. Carrie's research program is both theory-driven and applied and explores health, environmental, and social issues through interpersonal, textual, and mass media channels. Her work aims to strengthen outcomes by creating an environment of participation and feedback, both within communities and between communities and campaign designers. Carrie holds B.A. and M.A. degrees from the University of South Carolina in English Literature, where she focused on the works of 17th and 18th century poets that drew from social and environmental contexts and metaphors to help usher in modern democracy. She also holds an M.P.A., degree in International Development Policy from Cornell, and M.S., and Ph.D. (Expected 2017) degrees from the Department of Communication at Cornell. Carrie is a member of the Pi Alpha Alpha Global Honor Society for Public Affairs and the Edward A. Bouchet Graduate Student Honor Society for Diversity and Inclusion. She served as the Chair of the Cornell Atkinson Center for a Sustainable Future's Research Fellows group from 2014-2017. Her work is inspired by her time spent living in a small rural farming village in West Africa as a Peace Corps volunteer. Carrie has taught University-level courses for both graduate and undergraduate students over the past decade. Carrie is also a creative writer and adventurer, summiting Mt. Kilimanjaro in 2007 and over walking 90 miles of the Camino de Santiago in 2017.

*If I know a song of Africa, of the giraffe and the African new moon lying on her back, of the plows in the fields and the sweaty faces of the coffee pickers, does Africa know a song of me? Will the air over the plain quiver with a color that I have had on, or the children invent a game in which my name is, or the full moon throw a shadow over the gravel of the drive that was like me, or will the eagles of the Ngong Hills look out for me?*

Isak Dinesen, *Out of Africa*, 1937

## DEDICATION

This dissertation is dedicated to my family in Mali, West Africa, who taught me what it means to be truly rich and happy. To my first friend in Mali, the poet Naman Traore, who taught me about the “mango rains,” whose philosophies fascinated me, who traded watches with me, and left me with one of my most cherished possessions – a poem of gratitude, written in French. To my mischievous sidekick, Boccar Wattara, who woke me up every morning outside of my house yelling “I ni wuli, Wassa?” (Are you awake yet, Wassa?). Boccar spent his days with me, his little hand in mine as we walked along the red dirt paths of the village and fields; and he inspired a children’s novel, *Boccar and the Blue Bird*. To Gaussou Wattara and his spitfire wife, Waraba, who were my host family in Woroni, making sure I was safe and fed, inviting me to their fields, and into their daily lives. To Owa Wattara, who I am convinced I’m related to, who became one of my best friends and taught me about making peanut butter, and about the realities of being a woman in a subsistence farming village. To Adama Jewte, the elder who did the daily call to prayer, who invited me to pray in the mosque, shared his time with me making red dye from berries, listening to his first CD, and who I wept to say goodbye to. To the old man weaver carrying on the ancient tradition of weaving from cotton grown in the village, a skill that he believed would die with him. And to all of my friends in the village who I will never forget – Allison, Yocuba, Fatimata, and the others, including the children living and who have passed, whose lives are of great value to me, and who have inspired this work and this dissertation. May I always honor you through my service.



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## CHAPTER ONE: INTRODUCTION

## **Context: Smallholder Farming in Sub-Saharan Africa**

For smallholder farmers in developing nations struggling with issues of household food security and health, the impacts of climate change can be devastating (Wolfe, 2013; Yadav, Redden, Hatfield, Lotze-Campen Hall, 2011). Both climate change and population growth add tremendous pressure to an already challenging situation for those who depend on their environment for their livelihoods (Niles, Lubell, & Brown, 2015). Within subsistence farming communities, food security and biodiversity are closely linked, with households often forced to make choices between short-term food security and long-term ecosystem health (Habel et al., 2015; Tschardt et al., 2012). Extreme weather events, such as flooding and drought, as well as an increase in unpredictable rainfall patterns, can create an even greater focus on short-term solutions that put sustainable, long-term environmental and human health at risk. Despite – and sometimes because of – the complex challenges facing farmers, many are open to new ideas and innovations, with some now believing there is more risk in not trying new things than in trying them (Young & McComas, 2016).

Those working on various issues relating to sustainable development often promote practices such as conservation agriculture and other means of sustainable intensification that reduce chemical inputs and water use while increasing long-term soil health and yield. These methods have been shown to help farmers “produce more food from less land through more efficient use of natural resources and with minimal impact on the environment to meet growing population demands,” while simultaneously working to mitigate greenhouse gas emissions (Hobbs, Sayre, & Gupta, 2008, p. 543).

Communication efforts aimed at helping to create a healthier future benefit from considering the many interrelated environmental and cultural factors of communities. These

factors include nutrition, feeding practices, water, sanitation, and poverty (Pinstrup-Andersen & Watson, 2011). They also include the socio-ecology of communities, taking into account traditions, values, attitudes, and perceptions around the benefits of local ecosystems (Palomo, Felipe-Lucia, Bennett, Martín-López, & Pascual, 2016). These efforts include paying special attention to the involvement of communities in sustainability efforts and are often strengthened by participatory approaches that are holistic and interdisciplinary (Godemann & Michelsen, 2011).

### **Formative Experience in Mali, West Africa**

My interest in communication as a means to help strengthen environmental and health outcomes in Sub-Saharan Africa began in 2000. I was living and working in the small rural farming village of Woroni in Mali, West Africa, as an agriculture volunteer for the United States Peace Corps. During this time, I worked with farmers, women's garden groups, and school groups; the methodological and philosophical approaches that I use today are influenced by what I experienced there. I came to understand many of the daily rhythms, challenges, beliefs, traditions, strengths, and practices of the villagers. I also came to understand the potential for misunderstandings and miscommunication when someone from another cultural background and context attempts to impact the health and livelihoods of others, even with the best intentions.

The village of Woroni sat at the base of the hills running through southern Mali into Burkina Faso and Ivory Coast. The village of mud huts and granaries formed a kind of labyrinth that was surrounded by fields of wheat, millet, and corn, peanuts, cotton, and rice. Beyond these fields were orange groves and waterfalls with root vegetables and ginger planted sporadically in the ground along way. The village had a population of around 300 people. The rains in Woroni,

as in many places in West Africa during that time, were becoming more unpredictable due to climate change. When the rain did come, it often arrived over the hills in large clouds filled with pink and orange flashes of lightening. First the wind picked up blowing dirt from mats and knocking mangos from the tall trees, and then the clouds opened up to a downpour that played like fingertips on a drum on my tin roof. When the rains came, it was always a time to celebrate, but the rains came less and less often, and in more sporadic patterns. One of my dear friends, Owa Traore, said to me one day as we waited patiently for the rain, “We think it’s Allah’s will that we die now.”

Owa was the first of two wives that her husband had married. She and I had become close friends, and after about a year of my service, I felt comfortable asking her about sensitive topics, such as polygamy, and what the experience was like for her. When I asked her if it bothered her being one of two wives, she explained to me that while it did bother her, and she wished it didn’t have to be that way, there was far too much work to be done on the farm and within the household for one woman. Women in subsistence farming villages, I witnessed in Mali and learned later, often do a disproportionate amount of household work, even when the farming season has ended. They gather wood, fetch water, wash clothes by hand, bathe the children, pound the grains, cook the food, clean after the meal, and more. These traditions around gender have been in place for many, many generations, as have traditions around eating.

A traditional meal in a farming village in Sub-Saharan Africa often consists of a polenta-like staple food and a green-leaf sauce, usually eaten with the hands while sitting on small wooden stools or a mat on the ground. In Mali this staple food was made from corn or millet and was called “tô.” The food was served in a communal bowl with male elders eating first, then other men, then female elders, followed by other women, and finally the children. Because the

children ate last, what little protein or vegetables that had been served with the sauce would often be gone, leaving only high calorie starch for those still growing and in need of greater nutrition. This was a tradition with long-standing historical roots in the community – one that would be very difficult to change without understanding and participation from community. These same children were also needed as help on the farms and had families who could not afford to send them to school. Much of their learning took place through modeling, often starting at a very young age. It wasn't uncommon to see a very small child create a mortar and pestle from old pieces of wood, mimicking the pounding of the grains that their mothers did each morning as the sun rose.

Challenges relating to health and nutrition, as well as to water, sanitation, food security, and environmental conservation were central and constant in the village. While I witnessed these profound challenges, I also witnessed a strength of spirit and will that inspired me and endeared me to my friends who became like family. Their challenges, as often happens with the challenges of those we love, became my challenges. But I quickly came to understand that facing these challenges was a complicated undertaking, one that required a number of things including real listening before making assumptions, patience for the slow process of change in communities rooted in tradition and living a subsistence lifestyle, and the will of individuals and the community to make change from the bottom up.

An example I often share relating to the importance of listening and understanding first happened in the cooking hut of my friend Waraba Watara. I noticed that Waraba had a knife but the sharp edge was on the top, rather than the bottom as we have in the U.S. At first glance, this seemed to make absolutely no sense. But when I asked Waraba about the knife, she said that because the women don't cut food using a downward motion (as one would on a cutting board)

but rather cut directly over the cooking pot, it makes it much easier to hold the vegetable, or whatever you're cutting, in your hand and use a arcing motion that moves towards you, which works best and most safely if the blade is on the top. It made perfect sense once she explained it, even though it hadn't at first glance. There are no tables in the kitchen huts, no cutting boards, so the Malian knife design worked so much better for their needs.

Another example is around the issue of sanitation. In the village there were no toilets, people used the bathroom in the fields and took what was called a "selidaga" with them – a water pot that they would use to clean themselves. The left hand, and not the right, was always used in this process. While the right hand was considered the clean hand and was used for eating, there was always a great chance for cross-contamination of that hand as people worked throughout the day using both hands. Despite this, many refused to use soap – only water – when preparing to eat. When I asked a friend why they didn't use soap to avoid eating with a dirty hand and getting sick (diarrhea was a common cause of death, especially among children), they told me that people believed that if they washed their hands with soap they would never be rich. At first this didn't seem to make any sense, it sounded like an old wives tale. But I came to understand that the only soap available in the village was lye soap, which is very corrosive. Because this soap was corrosive to the hands, it made it difficult to work in the fields, making it difficult to have a high yield, making it difficult to provide for the family or profit from any extra yield.

Another experience that has stayed with me and has impacted my current work and perspective relates to my efforts to help educate farmers about deforestation. I had two favorite trees that stood side by side just outside of Woroni, and one day I noticed that one of them had been burned. I went to the farmer who owned the field where the tree had grown and asked him why he had burned the tree. He explained that it was to make more room in his field for crops. I

then tried to explain to him the value of trees and the importance of not killing trees unnecessarily. I told him that without the trees, there would be less and less rain in the area. But what the farmer heard, I learned later, was that by burning this one tree, he had caused less rain in the village – a huge burden to carry and not at all what I meant to say to him. Language and meaning are complex even for those who share the same culture and context, and made even more so when people come from very different cultures. This experience helped me realize the importance of communication, and it was also very useful during the process of contributing to the curriculum development and evaluation, as communication and language were two of the greatest challenges facing the project. Finding ways not only to convey complex concepts such as gender equality and climate change, but to communicate the interrelationship of these issues, was difficult and raised questions about how creative forms of participatory communication might aid in this process.

These examples have stayed with me as reminders of always listening first and of the importance of understanding things from the farmer directly, rather than through someone else – even someone living in the same country, as well as the essential nature of good communication for accomplishing goals around sustainability issues in this context. The value I see in participatory methods, which place listening and democratic inclusion at their core, developed during my time in Mali.

### **The Case of Malawi**

In Malawi, as in Mali, issues of food insecurity and malnutrition are widespread. At least a third of the population in Malawi is impacted by food insecurity every year (Ellis & Manda

2012; Knueppel et al. 2010; National Bureau of Statistics and ICF Macro 2011). In this country, land degradation and deforestation pose serious threats to the well-being of farming communities (Kangalawe et al. 2008; Zulu 2010). Added to this is a lack of knowledge around health and nutrition, including during the crucial years of early childhood and during pregnancy (National Statistical Office and ICF Macro 2011). Issues of social inequality further put the health and livelihoods of those in minority groups at risk. For example, women do much of the labor on farm and in feeding the household but are often left out of decisions around which foods will be grown and eaten by the family; they also often have lower rates of education and literacy, and may suffer from the impacts of physical violence (Bezner Kerr 2005; Peterman 2011).

Malawi is currently facing, and is predicted to continue facing, many challenges in relation to climate change. These include rising overall temperatures and less, but more unpredictable, rainfall (Funk et al. 2008). Training within the country has typically been “top-down,” but evidence is increasingly pointing to participatory approaches as more effective means of education (Masangano et al., 2016). Education efforts around agriculture and interrelated health, climate, and social issues in Malawi are part of a larger agroecological framework defined by the FAO:

Agroecology is based on applying ecological concepts and principles to optimize interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system. By building synergies, agroecology can support food production and food security and nutrition while restoring the ecosystem services and biodiversity that are essential for sustainable agriculture. Agroecology can play an important role in building resilience and adapting to climate change....Agroecology is based on context-specific

design and organization, of crops, livestock, farms and landscapes. It works with solutions that conserve above and below ground biodiversity as well as cultural and knowledge diversity with a focus on women's and youth's role in agriculture....

Agroecology is the basis for evolving food systems that are equally strong in environmental, economic, social and agronomic dimensions. ([www.fao.org/agroecology](http://www.fao.org/agroecology))

The *Participatory Curriculum on Agroecology, Climate Change, Health & Nutrition, and Social Equity* was developed in 2015-2016 to address some of the most pressing and complex challenges facing smallholder farmers in Sub-Saharan Africa from an agroecological perspective. These include issues relating to food insecurity, malnutrition, long-term soil health, the impacts of climate change on crop yield and overall household security, issues of social equality, and issues of gender equality, violence, alcoholism, and budgeting in the household. This curriculum design is unique in that it includes information relating to the core topics – climate change, agroecology and soil health, health and nutrition, and social equality – as well as information about the connections among these issues. For example, farmers who were trained learned about the impacts of climate change on soil health and crop yields and the impact that these changes have on not only food security but also nutrition, including among children and nursing mothers. Farmers then learned that a lack of nutrition, in turn, can impact overall health and the ability to work – including on the farm and in the household – which can have a negative impact on relationships in the household. These pressures can lead to violence and drinking and a greater need for budgeting in the household due to scarce resources.

This element of the design was one of the curriculum's greatest strengths and innovations, as well as one of its greatest challenges. Primary questions facing the team early on

included how to incorporate these inter-relationships into the training and how to encourage the sharing of existing innovations among farmers, as well as how to best design the training so that the information being learned would be passed along farmer-to-farmer after the formal training ended – increasing the chances that the material, along with the ideas and innovations, would be sustainable. The team chose to incorporate narrative and participatory drama into the training to accomplish these goals. This decision was based on previous research by team members and literature highlighting the value of participatory approaches, stories, and drama for problem solving within local contexts that encourages community members to integrate the many complex and inter-related determinants of health outcomes, as well as the value of these methods for increasing social interaction, engagement, attitudes, and efficacy around environmental and social issues.

### **Curriculum Design<sup>1</sup>**

The curriculum was developed by smallholder farmers in Malawi and Tanzania working alongside faculty members, PhD students, and professionals from these two countries, as well as the United States and Canada. The interdisciplinary team came from multiple disciplines, including Communication, Development Sociology, Plant and Soil Sciences, Health and Nutrition, Health Administration, Horticulture, and Theatre. Participatory methods were used in both the development and the implementation of the training - encouraging farmers to share knowledge and problem solve collaboratively and to become teachers themselves. Four concepts

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<sup>1</sup> For more on the development and use of these key concepts in the curriculum design, please see Bezner Kerr, R., Young, S., Young, C. Santoso, V., Lupafya, E., Dakishoni, L., Magalasi, M. Entz, M., Morrone, V., Snapp, S., Nyirenda, B., Mtinda, E., Wolfe, D. and Kalonga. E. Farming for change: Development of a farmer-engaged integrated agroecology, nutrition, climate change and social equity curriculum in Malawi and Tanzania. *Agriculture and Human Values* (In Revision).

– participatory action research, experiential learning, transdisciplinary approaches, and food sovereignty – were central to the framework used for the development and implementation of the curriculum.

Participatory action research (PAR) and the methods used to implement PAR involve problem solving within local contexts using collaborative analysis strategies, with democratic inclusion being key (Fals-Borda & Rahman, 1991; Freire & Ramos 1970). The approach includes the three main elements of action, research, and participation. These methods encourage people to treat each other as equals, respect each other’s ideas, and build on each other’s experiences. Listening is an essential component of PAR, as are multiple opportunities for dialogue and exchange (Greenwood, 2007; Greenwood & Levin, 2007).

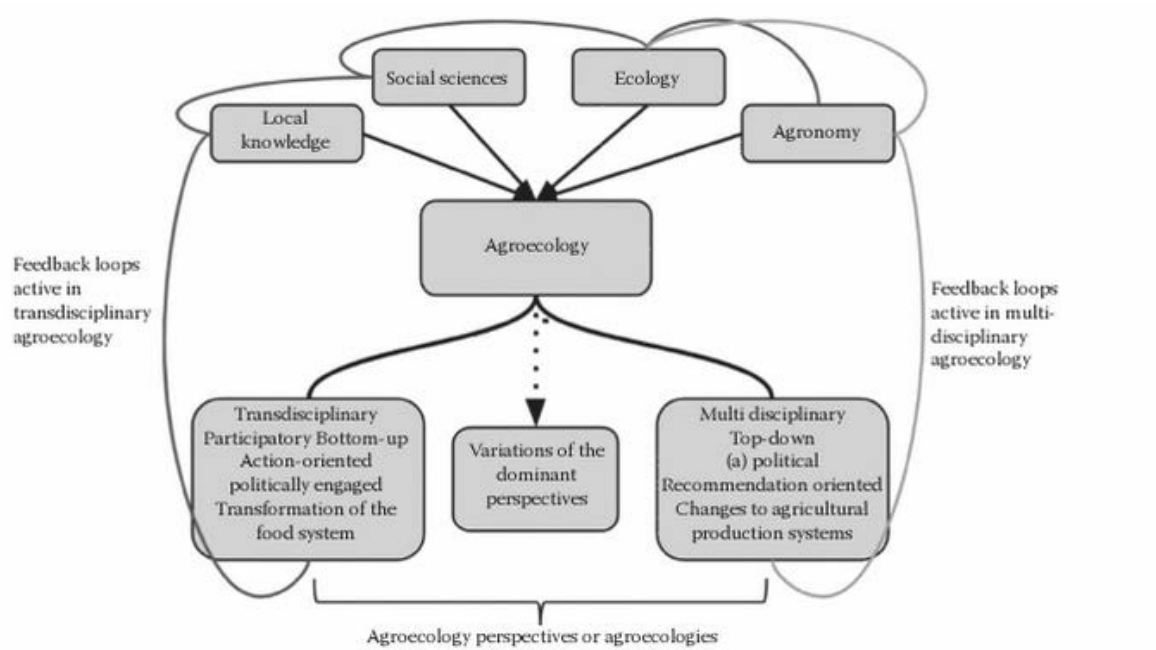
Another concept that helped guide the design of the curriculum is experiential learning. This kind of learning includes activities that are hands-on and have a well-defined structure and goals (Kolb, 2014). Experiential learning also requires time for reflection and evaluation (Kolb, Boyatzis, Mainemelis, 2001). One of the primary goals of experiential learning is immersion in the learning environment, which aids in the development of participants’ capacity to work together with others to become more educated and committed to action that is socially responsible (Moncure & Francis, 2011). “Experiential education is an effective method of holistic teaching, structured within a framework that promotes student autonomy, individual learning, and learning through doing” (Moncure and Francis, 2011, p. 75). Both the curriculum and the lessons that people glean through the act of participating in various activities are part of the learning experience (Østergaard et al., 2010).

The concept of transdisciplinary approaches was also central to the project design. This approach values and integrates different types of knowledge systems, including epistemologies

coming from science and academia, as well as experiential, local, and indigenous ways of knowing (Godemann, 2008). This approach brings together various bodies of knowledge that may be structured in different ways to respond to the complexities of natural and social environments (Méndez, Ernesto, Bacon & Cohen, 2013). The goal of this approach is the creation of new knowledge that moves beyond traditional disciplinary boundaries (Kaufman, Moss, & Osborn, 2003). Complex problems can often be solved using this approach, but the approach also offers its own challenges in finding ways to exchange knowledge across disciplines and integrate different ways of knowing (Godemann, 2008).

Transdisciplinary approaches have been shown to help reduce the gap between knowledge generated in formal settings and the needs of individual and communities outside of these settings- including those relating to poverty, health, and the environment, among other things (Méndez, Ernesto, Bacon & Cohen, 2013; Méndez, Bacon, Cohen, & Gliessman, 2016). The following diagram illustrates the difference between multidisciplinary and transdisciplinary approaches. Multidisciplinary approaches to agroecology are often limited to the biological sciences and can take on a recommendation-oriented, top-down approach. While transdisciplinary approaches include both the biological and social sciences, along with local knowledge in a more action-oriented, bottom-up approach (Méndez, Bacon, Cohen, & Gliessman, 2016).

**Figure 1: Multidisciplinary and Transdisciplinary Approaches to Agroecology**



Food sovereignty was also a driving force behind the project design. This included attention to issues of power and control (giving away food does little to address the underlying causes of disempowerment that lead to hunger), with a focus on local knowledge, social capital, gender equity, agroecology, experiential learning, involvement of farmers in building and sharing knowledge. (Moeke-Pickering, et al., 2015; Patel, 2012). Notions of food sovereignty aim to create a system that provides long-term sustainability through increased food security, environmental health, and local empowerment (McCune et al., 2016). This approach is often seen as an alternative to neoliberal models of industrialization, globalization and a free market, as it favors more small-scale, localized approaches. The approach “aims to transform dominant

forces, including those related to politics, economics, gender, the environment and social organization....” (Whittman, Desmarais, & Wiebe, 2010, p. 2).

After determining the content of the curriculum, the team determined the methods of delivery. These methods were informed by several communication theories, which are described in further detail below

### **Narrative and Participatory Drama**

A number of communication theories inspired the inclusion of stories and participatory drama during the curriculum training and informed the overarching research design and questions. Narrative theory was central to the guiding hypothesis that stories and drama would influence learning in a number of ways, including changes in attitudes, perceptions, and social interaction around social issues. Narrative is thought to be a fundamental, comfortable way humans interact, and exchange and acquire knowledge (Fisher, 1984; Hinyard & Kreuter, 2007). Stories relate to both real and fictive worlds – to stories of those who are living, and to stories grown out of the imagination (Fisher, 1984). In group interactions that involve stories, memories of things that have occurred in the past, or ideas about what the group might do in the future may arise (Bormann, 1972). Setting, character, and information about “goals, plans, actions, and outcomes” are often thought out and sometimes modeled, and narrative is thought to aid in information recall (Zebregs, van den Putte, de Graaf, Lammers, & Neijens, 2015, p. 2). The use of narrative often leads to greater impact and can offer an effective way of presenting and integrating multiple complex determinants of health outcomes (Niederdeppe, Shapiro, Kim, Bartolo & Porticella, 2014). Stories also help increase comprehension of new concepts, engagement around issues, and community members’ comfort in expressing their views in a

process of “eliciting rather than conveying,” especially in situations where voices might go unheard due to issues of power (De Groot & Zwaal, 2007, p. 52). Narrative has also been found to aid understanding and the interpretation of new technologies through the use of analogies and relation to personal stories (Hornig, 1993).

As a type of narrative communication, participatory drama is unique in that it includes physical participation and modeling, as well as other interactive elements. Participatory drama responds to the need for moving beyond traditional ways of teaching (Kerr, 1995). Previous studies have shown participatory drama impacts health and environmental outcomes through increased dialogue and social interaction, collaborative problem solving, community cohesion, increased engagement, and increased self-efficacy, among other things (Singhal, 2004; Sloman, 2011). Active participation in narrative through participatory drama has been found to increase ownership by giving individuals and communities voice and validation and has been shown to help people talk more easily about sensitive subjects (Abah, 1996; Kerr, 1995; Mosavel & Thomas, 2010). In indigenous contexts, drama is thought to draw on oral traditions and ritual performances (Dalrymple & Jaffe, 1996). It has also been shown to increase engagement by holding attention, and evoking emotion. As norms and values are acted out, individuals can gain new perspectives around issues embedded in tradition and cultural norms (Mosavel & Thomas, 2010). Participatory drama also offers valuable feedback and insights to researchers and others involved in creating or evaluating educational efforts.

### **Linking Attitudes, Efficacy, and Social Interaction**

In general, research has shown that positive attitudes towards a behavior often predict greater behavioral intentions and ultimately actions. Numerous scholars have acknowledged the

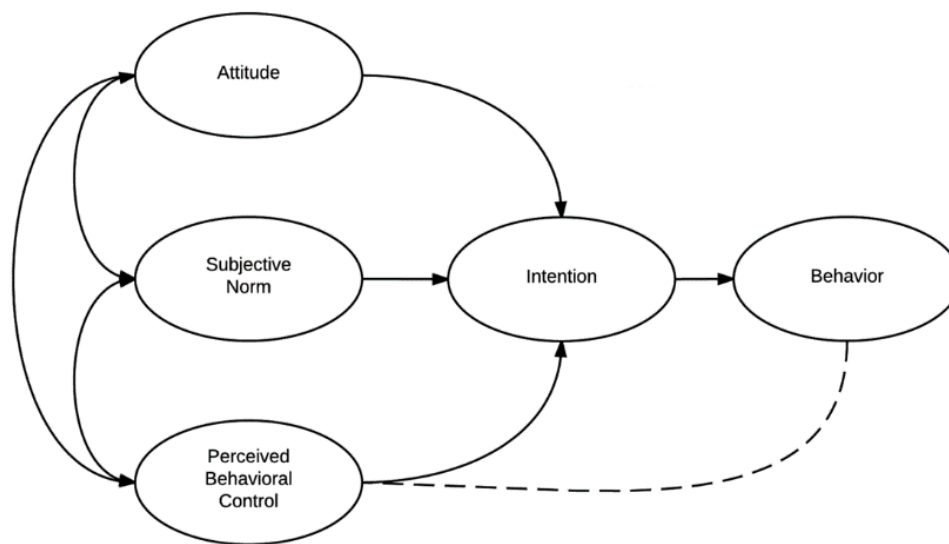
importance of considering attitudes and perceptions, as well as knowledge, in campaign efforts – especially in relation to health and environmental behaviors (Kollmuss and Agyeman, 2002).

There are a number of factors that come into play during attitude formation, including demographic factors, external factors, social and cultural norms, and internal factors, such as motivation, awareness, attitudes, and self-efficacy (Kollmuss and Agyeman, 2002). Earlier communication models often described behavior as following a linear progression of increased knowledge, awareness and concern (attitudes), and behavior (Burgess et al., 1998). And despite knowing that these linear models often fail, NGOs and governments often continue to develop projects based on the notion that increased knowledge will lead to positive behavioral change (Kollmuss & Agyeman, 2002).

Efficacy refers to an individual (self-efficacy) or group's (collective efficacy) perceived ability to carry out an action; these beliefs relate to both internal and external factors that influence perceptions of behavioral control (Bandura & Walters 1977; Bandura 1982). Bandura states that self-efficacy is the central mechanism of agency and action, stating that unless people perceive that they can produce the outcome they desire, they will have little incentive to act (1977, 1982, 1997). Collective efficacy is said to help “promote meaningful social change because such change is embedded within a network of social influences (Papa et al., 2000). Narrative and drama have both been shown to influence attitudes and efficacy beliefs (Melkote, 2003; Moyer-Gusé, Chung, & Jain, 2011; Singhal, 2004; Sloman, 2011). Often these creative communication methods can influence efficacy by giving people an opportunity to test out ideas; increase knowledge and comprehension; and increase information sharing and problem solving, including around sensitive subjects (Moyer-Gusé, Chung, and Jain, 2011; Vaughn, Rogers, Singhal, and Swalehe, 2000; Papa, Singhal, & Papa, 2006)

The theory of planned behavior, social learning theory, and social cognitive theory aid in linking some of the multiple social and environmental factors relating to attitudes, perceptions, social interaction and, ultimately, behavior. The theory of planned behavior extends the theory of reasoned action by accounting for situations where people have “incomplete volitional control” (Ajzen, 1991, p. 181). This theory considers the relationship between perceived behavioral control, which aligns with Bandura’s concepts of self-efficacy (1977, 1982), subjective norms (perceived social expectations about carrying out a behavior), and attitudes in relation to value and risk of carrying out a behavior. According to this theory, each of these factors impacts behavioral intention, which in turn impacts behavior (Ajzen, 1985, 1988, 1991, 2002, 2011; Ajzen & Fishbein, 1980).

**Figure 2: Theory of Planned Behavior**

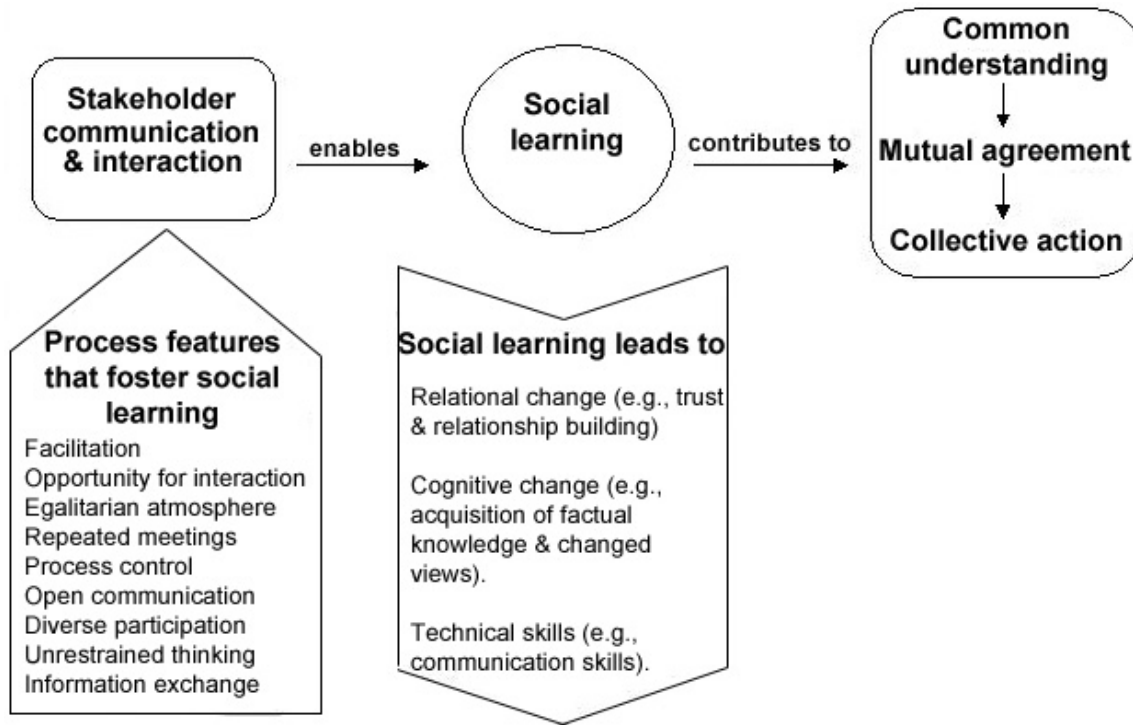


*(Ajzen, 1991, p. 182)*

Both diffusion of innovations and social learning theory suggest that people adopt new behaviors because of peer influence (Valente, 2010). Social learning theory explains the link

between social interaction and context, and learning, attitudes, and efficacy. This theory is often applied in sustainability efforts where local learning, teaching, and participation, or creating a “self-educating community,” is key (Milbrath, 1989, p.88). The theory moves beyond early psychology research that focused on internal “needs, drives, and impulses” and considers the “complexity of human responsiveness,” (Bandura, 1971, p.1). This theory describes learning as occurring in a dynamic social environment, with multi-faceted and multi-directional influences (Muro & Jeffrey, 2006). Social learning is said to occur during direct experience or observation of someone else modeling a behavior (Akers, 1977, Akers, Krohn, Lanza-Kaduce & Radosevich, 1979; Bandura, 1971). Participatory methods and reflection, as well as teaching methods encouraging co-learning, are central to social learning. A social learning environment is said to exist “...when a group of people talk about a new behavior, persuade one another of the value of the new behavior, or articulate plans to execute it (Papa et al., 2005). Change is facilitated as people share stories about challenges and how they might respond to them (Papa, Auwal, & Singhal, 1995, 1997). Social interaction is described as central to attitude formation and information dissemination and is linked to efficacy beliefs, as well as attitude sharing and formation more generally (Bandura, 1986; Valente, 2010). The process of change can be facilitated when people interact and share stories about how to respond to commonly experienced problems (Valente et al., 1996). The following illustration includes some of the dynamic processes involved in social learning theory:

**Figure 3: Social Learning Processes**



*(Muro & Jeffrey, 2006, p. 332)*

These theories helped to inform the design of curriculum and the following research questions guiding this study (RQs):

***RQ1: To what extent does exposure to the curriculum including narrative and drama influence engagement and social interaction?***

This question considers engagement levels during the training, as well as social interaction during and after the training. Findings include the nature and quality of social interactions around health, environmental, and social issues, including around sensitive topics such as household violence, HIV/AIDS, and alcoholism. This question seeks to answer the question of whether or

not narrative and drama have an influence on engagement and social interaction, as well as considering the “how so” and “why” of this influence.

***RQ2: To what extent does exposure to the curriculum including narrative and drama influence changes in attitudes?***

This question seeks to understand the extent of influence that narrative and drama have on changes in attitudes around health, environmental, and social issues, as well as the links between increased engagement, social interaction, and attitude change.

***RQ3: To what extent does exposure to the curriculum including narrative and drama influence self- and collective efficacy?***

This question considers the influence of narrative and drama on self- and collective efficacy around trying new innovations and ideas related to health, the environment, and social equity, as well as self- and collective efficacy around teaching and performing to share this information with others.

The above three questions were central to my inquiry into the influence of narrative and participatory drama on engagement and social interaction, attitudes, and efficacy. The interviews and quantitative survey also allowed me to explore the influence of these communication methods on knowledge and behaviors:

***RQ4: To what extent does exposure to the curriculum including narrative and drama influence knowledge of curriculum topics?***

***RQ5: To what extent does exposure to the curriculum including narrative and drama influence behaviors around curriculum topics?***

### **Study Design**

To answer these questions, the study used a quasi-experimental mixed-methods field study involving a sample of around 500 households in 40 villages in Malawi. Approximately 200 households in the Northern Region of Ekwendeni and 300 in the Central Region of Dedza participated in a two-week pilot training.

**Figure 4: Map of Malawi with Northern\* and Central Regions Marked**



*\*The area within Mzuzu where this research took place was Ekwendeni.*

A training day for all 500 farmers consisted of morning and afternoon lessons relating to the four curriculum topics. Lessons included information about the interrelationship among topics – for example how climate change impacts farming, which is further impacted by household health and planning.

Villages were selected by the lead team member in Malawi, Dakishoni Laifolo, with guidance from the project PI, Rachel Bezner Kerr, and were based on 1) lack of previous exposure to training on these topics; 2) high levels of food insecurity and malnutrition; and 3) village interest. The sample size was based on previous research testing significant differences in food security status and dietary diversity in these regions. The research was approved by the Cornell University Institutional Review Board (Protocol # 1507005688) for human subjects research in the United States and the National Commission for Science and Technology, National Committee for Research in the Social Sciences and Humanities (Protocol #11/15/63) in Malawi.

Research methods included in-depth interviews of participants ( $n = 38$ ) and facilitators ( $n = 9$ ); firsthand observations of the training for both the treatment (narrative and drama) and control (small group discussion) groups; and a quantitative baseline (December 2015) and follow-up (March 2016) survey ( $N = 520$ ). Interviews, observations, and surveys were carried out in Ekwendeni and Dedza. These two regions were selected for the study because they both have high levels of food insecurity and undernutrition but differ both in their agroecosystems, including rainfall and cropping patterns, and different land tenure systems which influence gender relations, offering valuable comparison. Because gender and other household relations were an important element of the training, the team wanted to evaluate potentially different

outcomes among the two regions – including attitudes and information sharing around gender equality issues.

The in-depth interviews asked 25 questions that were designed to capture demographic information, group size (for both narrative/drama and small group discussions), engagement (self and other), social interaction (during and after training), perceived value, knowledge and comprehension, attitudes, efficacy, perceived difference of stories in the classroom versus participatory drama, and general feedback. Interviews included both open-ended questions and questions that sought more specific feedback about the ways drama was influencing the variables of interest. Respondents spent approximately 1 – 1.5 hours with two research team members (myself and a translator). The interview guides were translated into Chichewa and Tumbuka and then backtranslated into English. Detailed findings from the qualitative interviews are included in Chapter Three. The full interview form is available in Appendix A.

The survey consisted of six sections: Part A. Household information, Part B. Agroecology and soil health, Part C. Information seeking and sharing, Part D. Climate change, Part E. Social support and gender relations, and Part F. Nutrition. The overall survey development was led by myself with team members contributing specific questions based on research and literature in their respective fields. I designed questions relating to information seeking and sharing. Surveys were translated into Chichewa and Tumbuka, and were carried out by trained Malawian enumerators who had worked with the project PI on similar surveys in the past. Questions were designed to capture changes in attitudes, efficacy, engagement, social interaction, knowledge, and behavior. Some questions related directly to behavioral changes, but this was not the main focus of the information that the team hoped to capture because of the relatively short time period between baseline and follow-up that would include only one growing

season. Quantitative findings were analyzed in SPSS to compare the treatment and control groups at Time 1 and Time 2. There were also questions that were only asked at baseline relating to prior training and general information seeking and sharing habits. Independent t-tests and univariate analyses were run to determine whether there were significant differences in change between the two groups between Time 1 and 2, as well as to explore correlations of change to age, gender, and education. Detailed findings are included in Chapter Four. The full survey at Time 1 and Time 2 is included in Appendix B.

The following tables show the breakdown of the qualitative sample excluding facilitators (Table 1.1) and quantitative sample (Table 1.2) by age, gender, farm size, household size, region, and treatment / control:

**Table 1: Qualitative Sample Characteristics (*n* = 38)**

Age in years	Mean:	39
	Range:	20 to 72
Gender	Female:	58 % (22)
	Male:	42% (16)
Farm size	Mean:	2.3 acres
	Range:	.75 to 5
Household size	Mean:	5
	Range:	3 to 7
Region	Ekwendeni:	20
	Dedza:	18
Treatment / Control	Treatment:	30 (13 Ekwendeni / 17 Dedza)
	Control:	8 (7 Ekwendeni / 1 Dedza)

**Table 2: Quantitative Sample Characteristics (From follow-up data, N =442)**

Age in years	Mean:	43
	St Dev:	13
Gender	Female:	276 (62%)
	Male:	166 (38%)
Farm size	Mean:	2.1
	St Dev:	1
Household size	Mean:	5
	Range:	1 to 8
Region	Ekwendeni:	173
	Dedza:	269
Treatment / Control	Treatment	230 (89 Ekwendeni / 141 Dedza)
	Control	212 (84 Ekwendeni / 128 Dedza)

## Outline of Chapters

This dissertation begins with additional introduction to the *Participatory Curriculum on Agroecology, Climate Change, Health & Nutrition, and Social Equity* and some of the core concepts guiding its development and implementation, as well as the key communication theories informing this project. Chapter Two argues for the importance of a sustainability communication framework that takes into consideration long-term environmental health and community participation, rather a top-down development framework. This chapter includes three case studies from Sub-Saharan Africa that help illustrate the sustainability communication paradigm. Chapters Three and Four present an in-depth discussion of the theories and research guiding this work, as well as the methods used. Chapters Five and Six present the principal quantitative and qualitative findings of the project. Finally, the Conclusion highlights results, lessons learned, and suggestion for next steps in relation to both theory building and application.

CHAPTER TWO:  
SUSTAINABILITY COMMUNICATION FRAMEWORK

## **Introduction**

The fields of development and development communication carry with them a long and loaded history, a history that has in some ways limited the approaches of both scholars and practitioners. By rethinking the paradigm of development, and the buzzword “development” itself, the field has seen new growth in a number of ways. Frameworks of equality, participation, and sustainability help those working in the field move away from problematic top-down approaches and help clarify the long-term goals of many working in this field; these goals relate less to the trajectory of modernization and industrialization and more to long-term environmental and human health and sustainability. This chapter briefly reviews the history of development communication and then discusses concepts relating to recent emergence of sustainability communication. Sustainability communication has at its core the goal of “responsible human interaction with the natural and social environment”—a goal that often runs counter to industrial and neoliberal agendas (Godemann & Michelsen, 2011, p. 3). The chapter includes case studies that help illustrate the role of a sustainability communication framework in stimulating collective action, social movements, and social change in the international context.

Environmental, science, health, and risk communication in the international context currently capture a broad range of efforts. These efforts include mass media communication at the global scale, as well as communication at the local scale – taking factors such as ecosystems, knowledge, traditions, norms, attitudes, and perspectives into consideration, and much in between. There are numerous examples of projects that are inclusive and interactive by nature – that blur the lines between “expert” and audience in an attempt to create improved environmental and human health outcomes. Many of these projects also aim to strengthen the sustainability of messages in relation to ongoing transmission and acceptance within the communities of those

that these campaigns' efforts hope to involve and impact (Rogers, 2003). The use of modern technologies and science alongside local knowledge and participation in campaigns represents a shift in the theoretical debate in international development communication that argued for or against Post-WWII models based on the ideals of modernization and more grassroots participatory approaches (McPhail, 2011). What was once a two-sided debate has taken on new dimensions in the face of current challenges such as climate change, with modern technology and science no longer leading the way, but often finding a role in serving, complementing, and inspiring local knowledge and innovations – a more equal, rather than top-down or bottom-up approach, or what many define as participatory development.

Participatory development aims to put the needs and desires of local communities first. It moves away from top-down approaches that equate development with modernity and attempt to mimic western societies. Local people are seen as the experts and help guide projects from their inception to their implementation and dissemination. This approach shifts political power structures and puts power and decision making into the hands of those whose lives are impacted by development interventions (Mohan, 2001). Hornik speaks to the ways in which participatory development is not a fix-all approach in and of itself. He states that the most successful experiences occur when communication technology acts as a complement to “a commitment to social change, to changing resources, to good instructional design, to other channels of communication, and to detailed knowledge about its users” (1980, p. 10). The goal of international development work for many has moved away from modernization as its goal, to having environmental sustainability, and the many human health implications that come along with it, as its goal. International organizations, such as the World Health Organization and the United Nations are now seeking and incorporating local, indigenous knowledge into their health

and the environmental work, helping equalize the flow and value of information between developed and developing nations.

### **Where We Have Been: From Colonization to Participation**

Development communication has been central — and some might say inseparable — from the process of development as far back as the 18<sup>th</sup> century. During this century, colonial empires began to break down and transform into developing countries. Yet, the systematic use of communication tools for development, and the formal academic study of development communication, did not begin until just after World War II.<sup>2</sup> During this period, development communication took different directions based on differing “geographic, cultural, social and economic contexts” (Dagron & Tufte, 2006, p. xv). A major theoretical debate arose in these early decades between modernization theories and more participatory, democratic theories for communication (Wilkins, 2000).

Cooper & Packard (1997) describe the transformation that took place after World War II as colonial empires began to collapse and become “less developed” or “third world” countries.<sup>3</sup> The relationship between industrialized nations and former colonies was changing, and a new conceptual framework was being created. Unlike colonization, development was a framework that was appealing not only to many in developed nations but also to leaders and citizens of developing countries, many who shared the belief that the problems of poverty would not be solved without the “intervention by the national governments of both poor and wealthy countries

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<sup>2</sup> Some scholars date the beginning of development communication as a field of study back to 1891 when St. Francis Xavier University in Eastern Canada began developing and disseminating printed materials to help the poor. For more see McPhail, 2011. For the purposes of this chapter, I begin my discussion post-WWII when field was recognized more broadly.

<sup>3</sup> Cooper describes the process of decolonization as beginning with the independence of India and Indonesia in 1946-47 and lasting through the independence of Algeria in 1962, the Portuguese colonies in 1975, and the last of the British colonies in 1979 (2004).

in cooperation with an emerging body of international aid and development organizations” (Cooper & Packard, 1997, p.1). Development, unlike colonization, carried with it a “humanitarian mystique” (Girardet, 1972, p.86 as translated from the French in Adas, 1989, p.200).

In his 1949 Inaugural Address, President Harry Truman stated, “...we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of under-developed areas” (McPhail, 2009, p.4). Cooper describes the shifting intellectual atmosphere in these early years as those in industrialized countries began to change their thinking about developing societies, once seen as “static and primitive” (2004, p.9). This moment of “possibility and uncertainty” was faced first, not by the academy, but by the bureaucracies working in these societies that were facing profound social and political changes (p.10). Scholars working in the field responded to the need for practical, applicable knowledge and also began bringing together and articulating new “visions of social change” for the newly formed political units around the world (Cooper, 2004, p.9).

The dominant paradigm to arise from that vision was that of modernization, which included beliefs in the essential role of industrialization, placing a high value on science and technology as the path to poverty reduction. During the 19<sup>th</sup> and early to mid-20<sup>th</sup> centuries, social progress and material success continued to be gauged primarily by these measures, which acted as “essential elements of the civilizing mission rhetoric that was pervasively deployed to justify Western colonial dominance” (Adas, 2003, p. 25). Advocates of expansion believed that technology would bring an end to “native passivity” by creating a new sense of “rationality, efficiency, and respect for empiricism” (Latham, 2003, p.3). Scholars describe the role of the

mass media in offering models of Western culture and a way out of traditional lifestyles into a more modern society (Lerner, 1958; Melkote, 2003). Western life in the media was often portrayed as superior to align with foreign policy agendas and issues of intellectual territory (Shah, 2010). Communication for modernization often followed models such as the Shannon and Weaver model (1949), which describes communication as the transmission of information from a source to a receiver without accounting for meaning and the more complex ways that communication might alter awareness and involvement, and Lasswell's (1948) outline, which is based on the guiding questions: Who? Says what? In which channel? To whom? With what effect? (Chaffee & Petrick, 1975; Cox, 2013). McPhail describes the long-term goal of modernization as making "the inhabitants of poorer nations in the South more like the wealthier peoples of the North" in a process that not only dismissed but often ridiculed indigenous ways (2009, p. 8). Research in the 1960s and 70s began to show the impact of mass media on modernization efforts and national development. Work by Rogers (1969) in Colombia, India, Kenya, and Brazil revealed that mass media impacted literacy and other measures of modernity (Melkote & Steeves, 2001).

Modernization and the communication methods employed to achieve it were not, however, without its critics. In 1979, one of the central proponents of mass media and modernization for development, Wilbur Shramm, expressed regret for his lack of skepticism in his earlier 1960s work around the notion of applying the Western model to the developing world, and his lack of integration of local activity with mass media (Shramm, 1979). For many, this topic became a source of debate and division, with differing values and goals surfacing as empirical evidence began to call into question the potentially harmful role of modernization in development (Latham, 2003). Researchers added to the debate by illuminating some of the

conflicts and complexities of the modernization approach, showing ways in which science and technology had created new forms of suffering in developing societies (Cooper, 2015; Engerman, 2009). On the ground, the “technocratic optimism” that motivated many of the development programs working under this paradigm “ran aground, dashing hopes and undermining the belief in the universal potential of modern, rational methods of socioeconomic progress” (Engerman, 2009, p. 376). McLennan-Dodd describes the introduction of electricity among the Kalahari bush men as one such example, describing how the introduction of electricity among the community led to an infestation of insects, with the women all continuing to cook outside on open fires because of the lack of money to buy electric stoves (2003). Quebral describes the ways in which native experience was out of sync with these conventional notions (2006). Philosophies set forth by modernization theory were at times highly problematic, and a shift occurred that would lead to what Rogers refers to as “the passing of the dominant paradigm” (1976).

By the 1950s and 1960s, a new paradigm of participatory development emerged that began to compete and eventually replace theories of modernization as the dominant paradigm for development – in rhetoric if not always in reality (Huesca, 2002; Muniz, 2010). In the early decades of this shift, development began to reflect ideals of equality but still have distinct traces of modernization and top-down approaches that seek to change and control communities in the Global South rather than enter into a dialogue of mutual learning. Schramm’s (1954) model marked a shift in the incorporation of audience feedback, and Berlo’s (1960) model, while founded on the idea of the linear movement of information from a source to a receiver (Source-Channel-Message-Receiver), accounted for attitudes and social systems, unlike earlier models which were criticized for their lack of consideration of context.

The concept of development communication as a field of study did not emerge until the 1960s (Moemeka, 1994). A decade later, Quebral defined development communication as "the art and science of human communication applied to the speedy transformation of a country and the mass of its people from poverty to a dynamic state of economic growth that makes possible greater social equality and the larger fulfillment of human potential" (p. 69). Until this point, behavior change was often viewed as a result of the transmission of persuasive messages, giving audiences the added knowledge that they need to adopt new behavior (Melkote, 2003; Rogers, 1973). During this decade, social marketing and behavior change models began being applied to development initiatives in an acknowledgement that behavior related to both values and knowledge, and not knowledge alone.

The addition of social marketing and behavior change stage models brought a more holistic approach to communication efforts and attention to the importance of understanding the complex nature of audiences through focus groups, surveys, and the pretesting of messages (Melkote, 2003). The concept of using social marketing for social change is said to have arisen in the context of the developing world in the late-1960s in India with the Norodh condom intervention (Hastings, Angus, and Bryant, 2011). This successful intervention included a number of communication methods aimed at creating behavior change, including audience segmentation, mass media (radio, television, and print), interpersonal communication (health workers), and strategic distribution methods (Donta, Begum, Nait, 2014; Hastings, Angus, and Bryant, 2011).

Despite the dominant paradigm of top-down communication approaches through the 1970s, there were examples of efforts as far back as the 1940s that sought to utilize and experiment with mutual learning and participatory approaches. Famous among these was India's

Farm Radio Forum. These forums were designed by UNESCO and led by the organization's 1945 Constitutional goal to "collaborate in the work of advancing the mutual knowledge and understanding of peoples through all means of mass communication" (Mathur & Neurath, 1959, p. 7). Farm Radio Forum was begun in Canada in 1941, and its success led to piloting of the program in rural France and Southeast Asia before the project was picked up by the Indian government. The project began in India in 1956 targeting 150 villages in Bombay State. Some listening clubs and farm forums had existed in India prior to the piloting of UNESCO's Farm Radio Forum, but none with the focused purpose of development that inspired this program (Mathur & Neurath, 1959). The program was aired daily and typically lasted 30 minutes; it often included news and market reports, informative talks and discussions, plays and skits, music, and content that might be of special interest to women and children. The shows were often led by four elders who would speak in different regional dialects and share knowledge and words of wisdom informally and introduce program features; government officials appeared as special guests and also provided content (Mathur & Neurath, 1959).

The show proved successful by a number of measures, including increases in knowledge among those who were both literate and illiterate. Evaluations showed participation in group discussions occurred at varying levels (about 20 percent active, 50 percent somewhat active, and 30 percent inactive, with women being less active overall). Knowledge held by those living in villages was found to come out into the open for sharing and discussion. Forums that developed around listening to the radio show became decision making bodies in the villages, aiding in village democracy (Mathur & Neurath, 1989).

Today, radio programs design aimed at enhancing communication among local stakeholders continue to prove successful and have built on the lessons of the past. If we jump

forward from 1956 to 2014, the case of Community Markets for Conservation (COMACO) in Zambia reveals the value of this model today for enhancing development efforts among rural communities. The pressures of climate change and population growth in Sub-Saharan Africa make the scaling up of sustainable development an important focus of initiatives hoping to reach as many people as possible with appropriate innovations (Young & McComas, 2016). In 2003, biologist Dale Lewis founded a limited-by-guarantee company, COMACO, with the goal of a scalable project centered on the long-term health of both wildlife and human populations around national parks in Zambia. His work began with the communication of national wildlife conservation policies to farmers. He quickly realized through dialogue and firsthand experiences that if farmers were expected to uphold the government's conservation policies, they had to be given viable alternatives livelihoods for their household income and food security. Conservation agriculture, bee keeping, and animal husbandry were quickly identified as appropriate alternatives (Lewis et al, 2011).

COMACO currently teaches conservation agriculture techniques alongside health and nutrition, sanitation, family planning, animal husbandry, bee keeping, wildlife conservation, and market strategy through multiple channels, including interpersonal channels, visual text, and radio. COMACO has established a network of 90 extension workers, 1,200 farmer leaders, and farmers groups with individual member totaling over 100,000 who communicate through interpersonal dialogue and observations. The company has also developed a highly visual teaching manual called the *Better Life Book* that farmers can refer to when they need to be reminded of what they've learned, especially around highly-detailed or more technical information. In addition to these two methods of communication, COMACO also produces a

radio show, *Farm Talk*, to share information that is timely, something that is often not possible because with the person-to-person network or the book.

*Farm Talk*, first aired in the fall of 2013 and helped COMACO increase its potential reach from around 60,000 farmers to over 200,000. Farmers who participated in an initial evaluation of the radio program described the value of having the *Farm Talk* show in addition to in-person training and the *Better Life Book* – with each playing an important and unique role. They described the importance of being able to talk, observe, and ask questions firsthand; the value of having the book that can be referred to at any time; and the value of the radio show that offers regular reminders about planting dates among other things. Farmers also described listening to the experiences of other farmers interviewed on the show and said that hearing other farmers gave them new ideas and reduced their sense of risk around trying new innovations.

The COMACO case illustrates the value of multiple communication channels in responding to farmer needs, inviting participation in the training, observations, dialogue, and on the radio program. The information that COMACO shares with farmers isn't primarily intended to move them along a trajectory towards modernization but rather to ensure the long-term health of their families and soils, while also protecting the long-term health of local wildlife populations.

While examples like that of COMACO are numerous today, in the mid- to late-1900s, they were still rare. But new participatory approaches continued to grow out of a greater understanding of the socioeconomic and political processes of development resulting from an increasing amount of shared experiences in the field, and these approaches were seen as being able to meet objectives of sustainability, as well as good governance and democracy (Bonvin, 1995). Unlike previous theoretical models, participatory development theories explain that

people should be involved throughout life of the project, from the early stages of design through the stages of monitoring and evaluation, with communication between stakeholders being central (Tufté & Mefalopulos, 2009). According to these theories, power dynamics should be given special attention and consideration (Freire, 1970). These approaches also require a degree of flexibility for both planning and organization so that people are allowed the opportunity to effectively participate. There must be a learning process involved with each stage (Korten, 1980).

Throughout the 1970s, attention to community-level variables and participation continued to gain attention and a handful of major theories emerged including cultural imperialism, dependency, and alternative development theories (Mody 2003, McPhail 2009). Cultural imperialism theory, while criticized as being too monolithic, calls attention to inequalities in the media, arguing that “communication flows, processes, and effects are permeated by power” (Kraidy, 2002). This theory suggests that “dominant sociopolitical groups influence and shape the culture of weaker groups, or nations through mass media” (McPhail, 2009, p. 24). Cultural imperialism suggests that media work from the top down, from the center to the periphery, and are based in a capitalist agenda (Rahman, 2011). It offers an implicit criticism of the use of media as a means to control and influence the audience for the benefit of dominant countries, reinforcing relations of production, both material and social (Huesca, 2002).

Lee defines "communication imperialism" as the process in which control over the hardware and software of mass media and other communication channels in one country are dominated by another country with negative effects on values and culture (1988). Lerner and Schramm discuss some of the counterarguments to this theory that claimed that agendas did not represent cultural imperialism if local leaders embraced them and if these agendas had the

potential of ultimately giving communities more sovereignty (1967). Schiller describes the use of international communication as “essential for ‘harmonizing’ the operations and routines of the world commercial economy” (1989 p.140). And he adds that, “The industries that manufacture the messages and imagery that create the national and international cultural atmosphere have grown greatly in size, breadth, and productive capability in the years since World War II. Expanding, merging, and transnationalizing, these industries now represent an awesome concentration of cultural power and influence, at home and in the world at large” (Schiller, 2002, p.135).

The UN system continues to be criticized today for its perceived lack of dedication to the “democratization of communication structures, processes, and environments” (Golding & Harris, 1996, p.177). Schiller asks, “What does it matter if a national movement has struggled for years to achieve liberation if that condition, once gained, is undercut by values and aspirations derived from the apparently vanquished dominator?” (1975, p. 1). One of the ways that the values and aspirations of an economically dominant culture made their way into the culture of post-colonial and developing societies was through film (and continues to be today). Movies made in the U.S., have historically made up around 50% of the screen time of the free world, in part because of the Motion Picture Export Association (MPEA), which makes it cheaper for movies to be imported to rather than produced in poorer countries.

While the use of film and other forms of media, often own and run by more developed countries, continues to undermine local values and voices in developing nations, there are examples of media control used for the benefit of local stakeholders, with communication methods and content guided and often developed by those stakeholders. SRI-Rice, with its Secretariat at Cornell University is one such example. The System of Rice Intensification (SRI)

became operational in the 1980s in Madagascar as Henri de Laulanié, a French Jesuit priest, worked alongside smallholder farmers throughout the 70s to develop its methods. Laulanié and the farmers he worked with sought to improve agricultural yield, while at the same time reducing dependence on external inputs, relying instead on those resources which farmers had or had access to. What resulted was the growing innovation, SRI, now used by over 10 million farmers in over 55 countries. The principles of SRI help farmers decrease dependence on water use and agrochemical input use, while helping to strengthen root systems for plants that can withstand the extreme weather caused by climate change. This innovation leads to yields that are often double or more the amount that farmers normally harvest.

While SRI is advantageous for farmers, answering the search for methods to increase food security and decrease inputs, many established agricultural research institutions failed to embrace the innovation. This may be due in part to the fact that SRI, being low-tech, does not look attractively modern and does not rely on modifications in genetic potential. No powerful commercial interests stand to benefit financially; the most immediate beneficiaries are the farmers who adopt the methods and who have little political clout. Yet, the lack of institutional, political, and economic support in both researching and communicating about SRI has not stopped the rapid spread of this innovation and in some ways may have aided the farmers in maintaining the methods and materials around SRI as open source (not controlled or having to be purchased by larger corporate interests).

Most of the global communication around SRI has occurred in the realm of civil society, rather than formal institutional channels, and through open-source online information channels relating to agriculture and the environment, something author David Bollier has called the "eco-digital commons." A central website maintained at Cornell University includes practical

information about farming with SRI principles that draws on experiences and information from smallholder farmers in nearly 50+ countries around the world. The website serves as a hub of open-information sharing, and includes progress, activities, archives, local and national websites, discussion groups, news, reports, and research articles, evaluations, and local conferences and events, among other things. The website also includes an enormous library of photos, PowerPoints, and videos as well as an open-source research database that contains over 1,000 research articles. The website also has links to over 35 online discussion groups, blogs, and other social networking sites spanning as far as Costa Rica, Nepal, and Mali.

This rich open and free source of online information serves to enhance the interpersonal, farmer-led initiatives to communicate SRI within their own households and villages, as well as with and within other countries. A specific example helps illustrate this point. In SRI's country of origin, Madagascar, Abeline Razanamamy, an elderly woman living in a small farming village, became widowed and began using SRI to avoid becoming a burden to her family. She began using SRI a few years ago and now has quadrupled her crop yield without having to purchase inputs that she cannot afford. This has given her food security as well as helped her earn additional income.

Razanamamy describes the challenges of passing along knowledge to other farmers, and the importance of farmers being able to see results with their own eyes before they are willing to try. She says that "Once they see it's worth it, you don't need to try and convince them anymore....They come to you and say 'How do you do it? We want to do the same thing'" (Uphoff, 2016). Information about SRI has spread from farmer-to-farmer within nations, to neighboring countries, and to other nations around the world, usually facilitated by non-governmental (NGO) or governmental programs, with information being supported and centrally

disseminated through the Cornell Secretariat. While the spread of SRI has been largely bottom-up and farmer-driven, nearly ideal from the perspective of participation in both its development and dissemination, the communication and adoption of this innovation has not been without its challenges. Many farmers in the country where the innovation originated have dis-adopted its use. Some believe this may be due to cultural metaphors within the society driving beliefs about one of the key practices involved in SRI. The innovation is based in part on planting one seed at a time with relatively large spacing to allow for root growth. In Madagascar, seeds are thought of like children – the more the better – so the idea of planting only one seed at a time has been met with resistance. Some farmers also face teasing around trying new practices, as well as challenges relating to an initial period of increased labor. As Hornik states, participatory methods do not offer a fix-all approach, but rather act as a complement (1980).

Despite the success of many organizations in shifting focus to long-term ecosystem health and local participation of stakeholders, critical perspectives around modernization and top-down approaches were still in their inception and awareness phase for many and rarely applied to campaigns during the late-20th century (Shah, 2010). Communication and new communication technologies and access to information (telephones, satellites, and computers) were often still focused on the increased modernization of developing countries (Shah, 2010). During this era, alternative development theories began to draw on the work of Freire (1970) and Foucault (1978) and sought to mobilize "critical consciousness and collective mobilization" (Mody, 2003, p. 152). These theories of development aimed at breaking down the power dynamics involved in development to think about complex problem solving in new ways. Wilkins and Waters (2000) describe the way that this perspective brings attention to interactive technologies, such as those developed by SRI-Rice, that help promote participation, and even

resistance to current power structures; the authors place the process of social change within the framework of different power levels, with social movements seen as a kind of act of resistance. Tackling oppression is central to alternative development theories, which instead attempt to upend privilege and highlight the diversity of both humankind and the strategies needed for problem solving (McPhail, 2009).

In 2006, The Communication Initiative of UNICEF, the FAO, and the World Bank held the first World Congress on Communication for Development as a forum for those working in the field of development communication to share approaches, data, and experiences (Müller, Mitchell, & Feek, 2007). It was noted that “Policy makers need to know how communities perceive their problems before they can develop solutions; policy makers and citizens need to have bidirectional communication...which may accompany processes of decentralization and democratization; communication should provide a space for people to speak and find a pathway for people's needs to be articulated by communities to relevant people and back to the communities” (Müller, Mitchell, & Feek, 2007, p. 64). There were also in-depth discussions about the challenges of including indigenous knowledge and whether this can be scaled up when, by definition, such knowledge is local (Müller, Mitchell, & Feek, 2007).

The United Nations defines Communication for Development as a process that “allows communities to speak out, express their aspirations and concerns, and participate in the decisions that relate to their development” (General Assembly resolution 51/172, article 6). This definition differs from those that equate “communication” with concepts such as “dissemination, information, messages, media, and persuasion;” and while Communication for Development includes these concepts, it represents a broader perspective “that views the people most affected by development change as being active participants in a social process, not only as receivers of

messages” and is “key in fostering communities’ participation by reflecting their views and priorities and strengthening local communication processes” making development initiatives more “successful and sustainable” (Müller, Mitchell, & Feek, 2007, p. x).

Building on the ideas of participatory development came Participatory Action Research (PAR) methods that seek to problem solve within local contexts using collaborative analysis strategies, with democratic inclusion being key (Fals Borda & Rahman, 1991; Whyte, 1991). This research approach includes the “conjunction of three elements: action, research, and participation” (Greenwood, 2007; Levin, & Greenwood, 2011). The typical steps involved in PAR, include research carried out by a professional researcher and local stakeholders who might be community members or members of local organizations. Together the researcher and local stakeholders define the problem to be addressed, collect relevant local knowledge around the issue, apply a variety of social research techniques, and then take action based on the information collected in these first phases. After action has been taken, results are evaluated and interpreted, and further action follows based on what was learned. This process is not thought of as a discrete research project but a continual process of learning, acting, evaluating, and re-calibrating for further action.

At the center of PAR is research with an agenda of social change, which represents a break from traditional research practice (Greenwood & Levin, 2007). While breaking from traditional practice, PAR still utilizes traditional methods and epistemologies as part of the research process and draws from a number of disciplines, but it is not limited to any one discipline. It may also draw from methods such as participatory storytelling through oral and written words (Coghlan & Brydon-Miller, 2014), photographs (Sutton-Brown, 2014), video (White, 2003) and drama and theatre, including Theatre for Development (Somers, 1996).

Regardless of the methods used to identify local challenges and knowledge, action is seen as the central route to understanding.

These concepts all reveal a fundamental shift away from the top-down modes of communication towards methods based in mutual learning, local knowledge and action, and the creation of space with the potential for bilateral knowledge transfer. Mefalopulos (2008) describes the role of development communication as efforts that "support sustainable change in development operations by engaging key stakeholders" and "establish conducive environments for assessing risks and opportunities; disseminate information; induce behavior and social change" (p. 5). These 21st century definitions and goals of development communication are consistent with broader theories of participatory development and "learning process" approaches, and what Quarry and Ramirez refer to as "learning before telling" (2009).

These and other theories of development communication that arose during these decades drew on fields including rural sociology, social marketing, economics, and the health sciences. In the decades leading up to the end of the Cold War as neoliberal thinking became more central, cultural imperialism theory was replaced by the concept of globalization (Tomlinson, 1991; Kraidy, 2002). As a broad concept, globalization can help us understand the way that communication and power relations are stretched across the globe, leading to new ways of viewing time, space, and social relationships (Mohammadi, 1997). Tehranian (2007) claims that the engine of globalization is modern capitalism, which has broken down racial and ethnic loyalties in favor of an international marketplace. Modern industrialization has reached some of the most remote places on the globe as a consequence of globalization, and Tehranian describes the ways in which it has also created growing gaps between the rich and poor, humans and the environment, and the center and peripheries. For many, the worldview of globalization is one of

science and technology, bringing the ideology of “developmentalism” to the entire world stage; others believe that globalization can strengthen attention to the local.

Asante, Miike, and Yin (2014) are among those who describe the world as becoming both more globalized and more localized. Issues relating to identity and community that arise from globalization, they believe, can be best addressed through the lens of intercultural communication as a way to “mitigate identity politics, social disintegration, religious conflicts, and ecological vulnerability,” with our ability to communicate across, and despite, our differences being key (p. i). In the framework of globalization, notions of the free flow of information internationally and access to technologies are juxtaposed against corporate mechanisms of control, issues of access, and growing technological inequalities, especially among the rural poor – tensions that continue into the present.

### **Where We’re Going: Sustainability Communication**

In recent years, theories, ideas, and practices around the role of communication in helping to create a more sustainable future have arisen. As with many participatory and related theories, notions of a sustainable future often runs counter to those of industrialization, modernization, globalization, and free-market capitalism. The Intergovernmental Panel on Climate Change (IPCC), the leading international body for the assessment of climate change, has stated that continued development of the kind we have seen since the industrial revolution is unsustainable for many of the Earth’s natural resources and will continue to have a negative and profound impact on life on the planet (Pachauri et al., 2014). In *Our Common Future*, commonly known as the *Brundtland Report*, sustainable development is defined as “development that meets the needs

of the present without compromising the ability of future generations to meet their own needs” (WCED 1987, p. 43).

Sustainability communication, with foundations in environmental, science, and risk communication, has developed alongside sustainability efforts more broadly and “is accompanied by the call for responsible human interaction with the natural and social environment” that includes critically evaluating and introducing this interaction into public discourse (Godemann & Michelsen, 2009, p. 3, 27). Sustainability communication must always take risk into consideration (Godemann & Michelsen, 2009, p. 8). The concept of sustainability communication includes the social and environmental elements of participation, democratic inclusion and equality, interdisciplinary and transdisciplinary research methods, food sovereignty, and attention to agroecological systems, and natural resource management and conservation, among other things.

Attempts to design theoretical framing for sustainability communication require multiple disciplines with their unique knowledge and ways of knowing; this includes “systems theory and the epistemology of constructivism, approaches in media theory and in communication theory, as well as psychology and sociology” (Godemann & Michelsen, 2009, p. 6). As with development communication, sustainability communication does not have a grand theoretical framework of its own. A number of concepts have contributed to the discourse around designing and evaluating sustainable development initiatives, including the sustainable livelihoods framework (Krantz, 2001), communication for social change (Figuerola, et al., 2002), and communication for another development (Ramírez, Österman, & Grönquist, 2013).

The sustainable livelihoods and communication for social change frameworks both offer models for assessing development processes and outcomes with sustainable environmental and social change as their goal. Chambers and Conway state that,

A livelihood comprises people, their capabilities and their means of living, including food, income and assets. A livelihood is environmentally sustainable which maintains or enhances the local and global assets on which livelihoods depend, and has net beneficial effects on other livelihoods. A livelihood is socially sustainable which can cope with and recover from stress and shocks, and provide for future generations.” (1991, p. 1).

The Sustainable Livelihoods framework considers livelihood from a systems view consisting of people’s assets (human, social, natural, physical, and financial capital), ways of making a living, context (social, economic, and political), and factors making livelihoods vulnerable to shocks and stresses (Scoones, 1998). At the center of this framework is the capacity for communities to maintain natural resource sustainability as they maintain, improve, or increase livelihoods.

Communication for Social Change is a model developed to aid in the assessment of both processes and outcomes. Ideally, within this framework, communities identify problems themselves, make decisions together, and plan the actions they would like to take in response. Collective action is central to this model, with people thinking together as a group about the challenges facing them and potential solutions. The process of thinking together is considered, in and of itself, a positive outcome, and the process is ongoing and iterative – not a “one off” taking in of outside information. Key elements of communication for social change include individuals and communities owning the process as well as the content of communication, empowerment of local stakeholders, horizontal versus top-down communication, and a focus on minority voices.

This represents a shift away from information transmission and persuasion towards making local actors the agents of their own change. This approach also focuses on “debate and negotiation on issues that resonate with members of the community” and an emphasis on outcomes that “go beyond individual behavior to social norms, policies, culture and the supporting environment;” this model demands qualitative assessment (Figueroa, Kincaid, Rani, & Lewis, 2002, p. ii).

As with these two frameworks, Communication for Another Development places community empowerment and participation at its center. The key element of Communication for Another Development is “listening before telling” (Quarry & Ramirez, 2009). By listening and learning before implementing, assumptions and biases may be uncovered, local knowledge, contexts, and needs better understood, and greater self-reliance created among individuals and communities. A central challenge to this approach is the amount of time that it takes to listen and learn before acting in contexts that may be culturally very different or logistically challenging to reach. The goal of this framework is a shift in institutional approaches led by participatory communication methods to help create a sustainable future and move away top-down development approaches that have spent trillions of dollars on many failed initiatives (Easterly & Easterly, 2006).

## **Conclusion**

Throughout the decades following WWII the fields of development and development communication have gone through a number of paradigm shifts: from early top-down transmission approaches often aimed at serving the agenda of the developed world, to experiments with mass media that included some local participation, to methods that are wholly participatory from project development to communication processes. Today, the focus on

sustainability research and application is acknowledged as necessary for helping to answer some of the pressing challenges facing us globally, and international sustainability communication is an essential part of this work. International sustainability communication as an overarching paradigm includes the philosophies of communication for development outlined by the UN and World Bank and other participatory communication methods, but where it differs is in its focus on sustainability. This includes a focus on the communication of innovations and their impact on the long-term health of the environment and communities, rather than a focus on the trajectory of modernization and industrialization without a consideration of long-term impacts. It also includes efforts to communicate the complex, interrelated issues and systems that work together to challenge or improve human and environmental health, often requiring creative methods rather than a reliance on traditional communication methods.

I also want to introduce the idea of information sustainability as an area for further exploration within the context of international sustainability communication. This term refers to the ability of communication messages to be sustained within local communities once the intervention has ended. The longevity, accuracy, and application of information depends on the active participation of local stakeholders. Messages developed in participation with local actors are more likely to be sustained over the long-term. The farmer-to-farmer sustainability curriculum in Malawi offers an example of international sustainability communication at work with all of its elements: a focus on innovations aimed at long-term environmental and human health, attention to the inter-relationship of these issues – including both the social and ecological, and the goal of making the information itself more sustainable within the local communities so that it continues to be shared and built upon after the intervention has ended. Central to this model is the use of participatory drama: Farmers were taught about interrelated

sustainability issues in the classroom and then broke into groups of 5-10 to create dramas illustrating how the adoption of new information might play out in their homes and villages.

The following chapter discusses the communication theories that helped guide the development and evaluation of the farmer-to-farmer curriculum project and creative international sustainability communication efforts. This chapter is followed by an explanation and rationale for the methods used in the evaluation, including the value of drawing on both qualitative and quantitative findings to answer the Research Questions. Finally, key findings are presented and discussed.

CHAPTER THREE:  
LINKING THEORIES OF NARRATIVE & PARTICIPATORY DRAMA  
TO SOCIAL INTERACTION, ATTITUDES, AND EFFICACY

## **Introduction**

This research draws on communication theories around narrative and participatory drama as they relate to social interaction, attitudes, and efficacy, especially around environmental and health issues. The next two sections define narrative and participatory drama and present an overview of theory around these two methods of communication. These sections are followed by a review of research that has linked narrative and participatory drama to dialogue and social interaction, attitude assessment and formation, and efficacy beliefs – both self and collective.

The research was inspired by the link that previous researchers have found between narrative and drama, and increased dialogue and social interaction around social and environmental issues. Similarly, it was inspired by the link found between narrative and drama and changes in attitudes – including perceived self and collective efficacy – especially around new ideas and innovations, including those involving risk. The project adds to the insights of previous studies through its unique context in two regions of Malawi and through the large scale of this experiment within this context, which was carried out among 500 farmers. The study also adds to previous work through its consideration of the complex interrelationships between a number of sustainability issues, including climate change, health and nutrition, social equity, agroecology, and soil health.

### *Narrative Communication*

Narrative is described as a central element of human life – from the early years of childhood through adulthood as individuals “attempt to understand their world and make sense of their lives” through the use of stories (Lippitt, 2007, p. 34). This form of communication has emerged as an important tool for health and environmental initiatives and can take a number of

forms, including, but not limited to, “entertainment education, journalism, literature, testimonials, and storytelling” (Kreuter, et al., 2007, p. 221). Narrative is defined as “symbolic actions – words and/or deeds – that have sequence and meaning for those who live, create, or interpret them....” with “relevance to real as well as fictive worlds, to stories of living and to stories of the imagination” (Fisher, 1984, p. 2). Narrative is often thought to include setting, character, and information about “goals, plans, actions, and outcomes” (Zebregs, van den Putte, de Graaf, Lammers, & Neijens, 2015, p. 1806), although the degree to which these elements are included might vary (Shen, Sheer, & Li, 2015). Narrative in the context of this project is differentiated from other “clear-cut inferential” and rhetorical strategies based in argumentation and explanation, such as didactic teaching and point-by-point discussions, and is thought of as “the creative and imaginative interpretation of events” (Fisher, 1984, p. 3-4). During the use of narrative communication, fictional themes arise “out of a recollection of something that happened to the group in the *past* or a dream of what a group might do in the *future*” (Bormann, 1972, p. 397).

Because narrative communication is thought to be fundamental to the way humans interact, it offers a comfortable way for people to exchange ideas and acquire new knowledge, including around complex issues (Fisher, 1984; Hinyard & Kreuter, 2007; Ricketts, Shanteau, McSpadden, & Fernandez-Medina, 2010). Narrative has been shown in recent qualitative studies to offer an effective format for integrating the many complex and interrelated determinants of health and environmental outcomes (Niederdeppe, Shapiro, Kim, Bartolo & Porticella, 2014). In relation to health behavior, these might include “biological predispositions, individual decisions about health behavior, and physical, economic, and social environments;” narrative can also help individuals incorporate beliefs about personal and external societal factors of causal

responsibility (Niederdeppe, Shapiro, Kim, Bartolo & Porticella, 2014, p. 431). Narrative has also been found to aid in understanding and interpreting new technologies because of its use of analogies and personal stories (Hornig, 1993).

### *Participatory Drama*

As a form of narrative, participatory drama has been found to impact health and environmental outcomes in a number of ways, including increased dialogue and social interaction, collaborative problem solving, community cohesion, increased engagement, and increased self-efficacy, among other things (Singhal, 2004; Sloman, 2011). The performing arts have been found to help people talk more easily about sensitive subjects (Kerr, 2005) – a quality that is important in the context of the Malawi curriculum project, which includes topics such as household violence, HIV/AIDS, and alcoholism. Drama also offers the benefit of modeling, which aids in social learning (Bandura, 1971). And as with narrative more generally, participatory drama can offer valuable insights for researchers and others involved in participatory methods of research (Sloman, 2011); these insights can include “perceptions of causation, attributions of responsibility, and potential solutions” (Lundell, Niederdeppe, & Clarke, 2013).

Participatory drama, also referred to as interactive drama and Theatre for Development (TfD), theatre for social change, and theatre of the oppressed, among other terms, breaks down traditional barriers of performer and audience and encourages community members to participate in addressing social change through participation in the process of creating works of performative storytelling and drama (Abah, 1996; Epskamp, 2006). Participatory drama differs from traditional theatre because of the interaction of the participants using their own language

and perspectives – either in contributing to a drama performed by others or in creating the drama themselves (Boal, 2000; Ahah, 2007). Sloman describes,

...two kinds of theatre exist – theatre that is observed (portrayed) and theatre that is involvement (participation). Both forms can be useful in development, but the second form has the additional advantage of a greater potential for a high level of participation in the theatre experience.” (2011, p. 43)

Participatory drama in the context of the Malawi curriculum project refers to dramas created by participants in small groups and performed in front of the full group of participants and facilitators. Abah describes participatory drama in the following description:

The drama that emerges in the end presents a picture and story put together by the community. When characters speak, we hear voices not of fictional persons but of members of the community. And to see members of their community in a performative definition and articulation of their society’s life, to hear voices of people they know is a celebration! It is a celebration, on the very first and mundane level, of their ability to perform and entertain. On another level, it is a celebration of new skills and new ways of seeing. The output or end-product of this is conscientization (2002, p. 74).

Conscientization is defined by Freire (2000) as the act of reflectiveness that results not only in consciousness of problems and needs but the actions to be taken in response to these issues. Participatory drama has been found to aid in creating “a social reality for groups of people,” as well as offering insights into a “group’s culture, motivation, emotional style, and cohesion (Bormann, 1972, p. 396). McCarthy and Hughes describes this process as helping

participants “express and explore their realities and feelings in ways which are pointed but not personal, and which often provoke laughter” (2004, p. vi). In indigenous contexts, drama is thought to draw on oral traditions and ritual performances (Dalrymple & Jaffe, 1996; Mosavel & Thomas, 2010). According to Dalrymple & Jaffe (1996) the use of drama increases engagement by holding audience attention and evoking emotion and, in turn, impacting both beliefs and skills. As norms and values are acted out, individuals gain new perspectives around issues embedded in tradition and cultural norms. Drama that includes discussions, role playing, teamwork, and self-evaluations have been used successfully in South Africa with the goal of influencing both individual-level behavior, as well as social norms in the community. Kalipeni and Kamlongera (1996) argue that participation and ownership are the most important elements in efforts relating to the improvement of health and social welfare; elements that are central to the methods of participatory drama (Kalipeni & Kamlongera, 1996).

### *Dialogue and Social Interaction*

Narrative has also been shown to stimulate dialogue and social interaction, which in turn impacts attitude assessment and formation in a number of ways. Heidegger described humans as “a conversation,” with “conversation and its utility” supporting our very existence (1949, p. 278 as quoted by Fisher, 1984). Freire states, “...I recognize the social and not merely the individualistic character of the process of knowing. In this sense, dialogue presents itself as an indispensable component of the process of both learning and knowing” (2014, p.6). Bandura’s social cognitive theory explains that learning takes place through both direct and indirect experiences (1986, 1998, 2002). At the center of this theory is the idea that adaptation and change take place within larger social systems. While direct pathways help to inform, enable,

motivate, and guide individuals, indirect socially-mediated pathways help connect individuals to networks and settings that might offer guidance and support. According to Bandura, most changes in behaviors and values take place within these social environments and interpersonal networks. The effectiveness of communication campaigns has been found to depend, in many cases, on the amount of interpersonal communication that these campaigns stimulate (Dunlop, Kashima, & Wakefield, 2010; Hornik & Yanovitzky, 2003).

Dialogue, unlike mass mediated messages, is “iterative, co-created, co-regulated, and co-modified; it also involves risking a position to consider new ways of thinking and acting” (Papa, Singhal, & Papa, 2006, p. 6). Because the adoption of new knowledge, innovations, and technologies involves risk, interpersonal communication and dialogue play an important role in revealing the challenges and tensions that arise and creating a space for trying on new ideas and ways of seeing ourselves in the world. Katz and Lazarsfeld (1955) describe the importance of interpersonal communication for the spread of campaign information and consider the elements of social interaction that might play an important role in positive campaign outcomes. They found that interpersonal communication acts an “anchor” for “opinions, attitudes, habits, and values” helping to “generate and maintain common ideas and behaviors,” and that it also acts as a means of spreading and reinforcing campaign information, including among those who may not have been directly exposed to messages (p. 45). Over five decades of research since has confirmed the importance of interpersonal communication to the spread of ideas and the formation of attitudes.

Specifically related to campaigns and communication interventions, Southwell and Yzer (2007) note that conversation may “facilitate, amplify, or dampen campaign effects” (p. 443). In other words, people may talk about messages in a way that may positively or negatively impact

campaign efforts, especially when there are high levels of attitude congruence (Southwell & Yzer, 2007; Visser & Mirabile, 2004). Janz et al. (1996) found that small group discussions among community members were the most effective intervention strategy around health issues, aiding in mutual learning and the development of group norms. Papa et al. (2000) explored the role of narrative in stimulating conversation and creating social learning and revealed the importance of considering the complex, non-linear processes that take place as audience members engage in new knowledge and practices and enter into the process of social change.

Papa, Singhal, and Papa (2006) found that the dialogue generated by an entertainment-education program in India led to novel discussions and considerations among listeners, and ultimately bold new actions around social issues. Conversations around gender and caste issues, inspired by the program, gave community members the chance to debate the issues and also rehearse what actions might be taken. Vaughn, Rogers, Singhal, and Swalehe (2000) looked at the effects of an entertainment-education program in Tanzania on knowledge, attitudes, and adoption of behaviors around issues of gender equality, family planning, and other health themes. Their study found that one of the primary effects of the program was an increase in dialogue among audience members around program messages.

Dunlop, Kashima, and Wakefield (2010) found conversations about health campaign messages led to greater alignment of attitudes, norms, and intentions, and that individual characteristics and conversation valence impact “normative perceptions, attitudes, and intentions” (p. 518). The researchers also found that dialogue increases long-term recall and positive intentions. De Groot and Zwaal (2007) describe the value of fictional storytelling around issues of conservation, where efforts are often local and supra-local. Stories can aid in the co-management of resources by creating space for ideas about use and value to be known. Stories

also help increase comprehension of new concepts, engagement around issues, and community members' comfort in expressing their views in a process of "eliciting rather than conveying," especially in situations where voices might go unheard due to issues of power (p. 52). Papa, Singhal, and Papa (2006) explored an entertainment-education radio program in India and stated that "Dialogues among audience members, sustained over a period of time, create an environment in which new decisions or actions may be considered, both individually and collectively. Often collective efficacy and collective actions emerge from such dialogic conversations" (p. 183).

Participatory drama embodies dialogue interactively, both in the creation of the drama's plot and character and in the formalized context of role playing or acting out specific story elements. Slachmuisjlder argues that for community change to occur, "it would not be triggered by outside ideas imported by a troupe of actors, but would happen only when a community was given a forum for sharing their own ideas, understanding one another, and developing ways of affecting change together" (2006, p. 8). Ahab (2007) describes the core elements of TfD as "respect, dialogue, inclusion and flexibility" (p. 435). Boal states that, participatory forms of theatre allow audience members "to dialogue together about the conflicts central to their community," motivating community members to actively participate in identifying problems and their solutions (1985, p. 46). In fact, he claims that the central mechanism of participatory theatre is dialogue, saying, "dialogue between characters in conflict, between the actors and the audience, between one member of the public and another. Through dialogues, participatory theatre encourages all parties to seek a common understanding" (p. 47). Sloman describes some of the outcomes of participatory drama and the dialogue it stimulates as including giving "voice to the marginalized, challenge power structures and be a powerful tool for advocacy," promoting

opportunities for positive dialogue,” and in relation to overall engagement, being “entertaining and accessible, so that people want to be involved” (2012, pp. 42-57).

### *Attitude Assessment and Formation*

Narrative has been shown to help impact attitudes, including through its stimulation of dialogue around complex issues (Ajzen & Fishbein, 1977, 1980). Research has shown that positive attitudes towards a behavior often indicate greater behavioral intentions and ultimately actions (Ajzen & Fishbein, 1977, 1980). Positive attitudes might be influenced by an individual’s perception of the norms around a behavior (Fishbein & Ajzen, 1975, 2010; Ajzen 1985, 1987), the perceived value of carrying out a suggested behavior, or alternatively, the risk in not carrying out a behavior (Becker, 1974; Rosenstock, 1990), or beliefs about individual and community-level capacity to carry out a behavior (Bandura, 1997; Ajzen, 2002). Kollmuss and Agyeman (2002) suggest that a number of factors come into play causing a gap between what individuals know and their attitudes – sometimes referred to as the knowledge attitude gap, or *KAP* (Patraglia, 2009). These factors include demographic factors, external factors, social and cultural norms, and internal factors, such as motivation, awareness, attitudes, and self-efficacy. This suggestion moves beyond earlier models that described behavior as following a linear progression of increased knowledge – awareness and concern (attitudes) – and behavior (Burgess et al, 1998). Despite knowing that these linear models often fail, NGOs and governments continue to develop projects based on the notion that increased knowledge will lead to positive behavioral change (Kollmuss & Agyeman, 2002).

Rajecki (1982) talks about some of the reasons for this gap between knowledge, attitudes, and behaviors, including direct versus indirect experience and normative influences. In relation to direct versus indirect experience, direct experiences have been found to have a stronger impact on behaviors than indirect experiences. Normative influence refers to the social and cultural norms that help define attitudes; while attitudes do not directly determine behavior, they have been found to impact behavioral intentions – and these intentions in turn shape action (Ajzen & Fishbein, 1980). Hines, Hungerford, and Tomera (1986) identified six variables that influenced behavior: knowledge of issues, knowledge of responding strategies, self-efficacy, attitudes, verbal commitment, and individual sense of responsibility. Blake (1999) discusses the “value-action” gap, and points out the importance of considering external (social and institutional) constraints – or *practicality* as he calls it – when considering the implementation of sustainability objectives (p. 257).

Narrative and drama serve a number of purposes in relation to gaps between attitudes and practices, including aiding in attitude formation and assessment. Shanahan, Pelstring, and McComas (1999) explore the role that narrative might play in helping to assess beliefs, attitudes, and behaviors around environmental issues. Commonly used measures, such as the “new environmental paradigm” (NEP), consider environmental attitudes and concerns, but often fail to account for the complex, multidimensional nature of these beliefs. The researchers point out that environmental beliefs, values, and behaviors are developed through “communicative processes,” with opinions often strongly depending upon the “context within which those ideas are assessed,” (Shanahan, Pelstring, & McComas, 1999, p. 406). Emotional communication may also be more common than “rational” communication as people engage in “persuasion,

argument, relationship building, and power demonstration” among other things (Shanahan, Pelstring, & McComas, 1999, p. 407).

Fisher describes narrative as symbolic, carrying meaning for those who participate in creating and interpreting them (1984); he suggests that the narrative paradigm offers a way to assess communication to help create space for critique, including whether or not “a given instance of discourse provides a reliable, trustworthy, and desirable guide to thought and action in the world” (1985, p. 351). The perspective treats meaning as something that is developed within the context of history and culture, as well as language and interaction, with narrative acting as a “master metaphor,” creating order and common ways of living (1984, p. 6).

Normative influence refers to the social and cultural norms that help define attitudes. And while attitudes do not directly determine behavior, they have been found to impact behavioral intentions – and these intentions in turn shape action (Ajzen & Fishbein, 1980). In relation to attitudes, narratives facilitate conversations and increased social interaction as people are able to consider new ideas and behaviors that are modeled in stories (in Bamburg & Moser, 2007). They are also able to talk through some of the ways in which a behavior may benefit them individually and as a community, and the challenges a new behavior might present.

Social norms can also be assessed in the interactions and dialogue around narrative and drama, and new norms imagined and developed. In relation to group drama participation, Bormann states that, “When group members respond emotionally to the dramatic situation they publicly proclaim some commitment to an attitude,” and adds that “improvising in spontaneous group dramatization is a powerful force for attitude change” (1972, p. 397). Motives and codes of social conduct and group norms are established through the symbolic terms of the drama as values and norms are legitimized (Bormann, 1972).

### *Self- and Collective Efficacy Beliefs*

Narrative has been found to influence perceived self- and collective efficacy by giving people an opportunity to “try on” ideas, among other things; one of the central goals of participatory approaches that utilize stories is the goal of increasing self- and collective efficacy (Melkote, 2003). Dialogues among audience members, sustained over a period of time, create an environment in which new decisions or actions may be considered, both individually and collectively. Often collective efficacy and collective actions emerge from such dialogic conversations (Papa, Singhal, & Papa, 2006, p. 183). Bandura (1977, 1982, 1997) defines self-efficacy as the most central mechanism of personal agency and action, stating that unless people perceive that they can produce the outcome they desire, they will have a low incentive to act (1977, 1982, 1997). Self-efficacy differs from empowerment because it is not something bestowed upon individuals but rather something that is enabled as people become better equipped and, therefore, more confident to act. Levels of self-efficacy can impact behavior in a number of ways, including what actions someone takes, how much time and energy they are willing to put into that action, and their emotional ability to deal with environmental demands.

Ajzen’s (1988, 1991) theory of planned behavior (TPB) includes beliefs about self-efficacy and controllability (control beliefs). These beliefs relate to both internal and external factors that influence perceived behavioral control, as well as the ease or difficulty of carrying out behaviors. Ajzen (2002) discusses how perceived and actual control come together to turn intentions into actions; when there is sufficient self-efficacy, as well as sufficient actual control over the behavior, people are expected to fulfill their intentions. In relation to self-efficacy in the context of climate change perceptions and adaptation in Sub-Saharan Africa, researchers have

found that socioeconomic and demographic features impacted farmers' self-efficacy around adaptation responses (Mertz, Mbow, Reenberg, & Diouf, 2009).

Moyer-Gusé, Chung, and Jain (2011) found that the use of narrative helped to increase self-efficacy among individuals. By asking participants about their confidence in carrying out behaviors modeled by the main characters in a health education show, the researchers found that greater character identification led to higher levels of self-efficacy. A study by Dunlop, Kashima, and Wakefield (2010) suggests that talking about narrative health messages might increase recall, as well as positive behavioral intentions due to an increase in self-efficacy and perceptions of social support. Vaughn, Rogers, Singhal, and Swalehe (2000) found that one of the primary effects of the entertainment-education radio program *Wakati* was increased self-efficacy among listeners.

Active participation in narrative through participatory drama has also been found to increase self-efficacy and ownership by giving communities voice and validation. In indigenous contexts, drama is thought to draw on oral traditions and ritual performances (Dalrymple & Jaffe, 1996; Mosavel & Thomas, 2010). According to Dalrymple and Jaffe (1996) the use of drama increases engagement by holding audience attention and evoking emotion and, in turn, impacting both beliefs and skills. As norms and values are acted out, individuals gain new perspectives around issues embedded in tradition and cultural norms. Drama that includes discussions, role playing, teamwork, and self-evaluations have been used successfully in South Africa with the goal of influencing both individual-level behavior, as well as social norms in the community. Evaluations of the program DramAidE (short for Drama AIDS Education) showed that participants felt higher levels of self-efficacy than non-participants (Singhal, 2004).

Because social issues often require collective, rather than individual action, it is also important to consider the role that narrative plays in increasing collective efficacy. Bandura (1997) states that the “strength of families, communities, school systems, business organizations, social institutions, and even nations lies partly in people’s sense of collective efficacy that they can solve the problems they face and improve their lives through a unified effort,” defining collective efficacy as “a group’s shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainment” (p. 477). While self- and collective efficacy have different units of agency, they share sources, functions, and processes (Bandura, 1997). Bandura describes two ways of measuring and evaluating perceived collective efficacy – through the aggregation of each individual’s perceptions of their ability to carry out the functions that they perform as part of the group, or through aggregating the members’ perceptions of the capacity of the group as a whole (1997, p. 478).

In a case study in India, Papa et al. (2000) considered the processes at work as communities make system-level changes due to exposure to educational programming utilizing narrative. The researchers point out that previous studies have reported changes in knowledge, attitudes, and behaviors due to exposure to entertainment education but have not offered any theoretical explanation for the social processes at work. The researchers’ overarching questions included: “When an entertainment-education program promotes interaction among audience members about the educational content, how do these conversations create a social learning environment that facilitates social change?” and “How is collective efficacy displayed by people who have been influenced by an entertainment-education program?” (p. 38). The research design included a survey, in-depth interviews, observations, and focus group discussions, with the survey serving as secondary support for the findings. Among the benefits of participatory drama,

Sloman includes its ability to build “the capacity of individuals, groups and communities, with the potential to empower, strengthen and energize,” and its ability to “strengthen community cohesion” (2012, pp. 42-57).

The Malawi curriculum study was informed by theories around narrative, drama, social interaction, and attitudes described above, with the following overarching research questions guiding the inquiry:

***RQ1: To what extent does exposure to the curriculum including narrative and drama influence engagement and social interaction?***

***RQ2: To what extent does exposure to the curriculum including narrative and drama influence changes in attitudes?***

***RQ3: To what extent does exposure to the curriculum including narrative and drama influence self- and collective efficacy?***

***RQ4: To what extent does exposure to the curriculum including narrative and drama influence knowledge of curriculum topics?***

***RQ5: To what extent does exposure to the curriculum including narrative and drama influence behaviors around curriculum topics?***

The following chapter describes the two-week curriculum pilot training in Malawi and further details the use of drama and small discussion groups within the training. The chapter then focuses on a detailed description of the study’s mixed methods design, including in-depth interviews, observations, and pre/post surveys. Within the discussion of the interviews and observations is a brief illustrative ethnography to help set the context of this work. The chapter ends with a discussion of the some of the key challenges posed during this evaluation.

**CHAPTER FOUR:**  
**STUDY DESIGN AND MIXED METHODS APPROACH**

## Introduction

This study used a mixed methods design that included qualitative in-depth interviews, firsthand observations, and a pre/post survey using a quasi-experimental design. To test the extent to which narrative and drama impacted the variables of interest, approximately half of all participants were assigned to the narrative and drama treatment group, and the other half were assigned to the control group. These two groups were assigned randomly at the village level. Training took place in the spring of 2016, led by six Malawian facilitators (three narrative, three non-narrative) and 19 farmer promoters (nine narrative, 10 non-narrative).

Facilitators were chosen based on their previous training and experience on the “Soils, Foods, and Healthy Communities” project (MAFFA for short), which began in 2012. Farmer promoters were trained by the project PI and the facilitators; an Associate Professor of Drama from the University of Malawi, Mufunanji Magalasi, provided additional training for facilitators and farmer promoters on the use of drama in participatory education. The two-week training included morning and afternoon sessions over the course of 14 days that rotated through the five modules of health and nutrition, climate change, social equality, soil health, and agroecology.

All facilitators and farmer promoters were given the following guiding principles for the education and communication approach of the curriculum:

### Table 3: Curriculum Overview for Community Mentors

<p>The overall goal of this curriculum is to help you as <b>community mentors</b> teach and encourage others in your community to share knowledge, skills, experiences, observations and ideas in order to <i>improve everyone’s abilities to have better livelihoods, health, nutrition, soil and land quality, <b>food security</b>, agricultural production and social relationships in the long term.</i> The curriculum will also teach some key ideas about <b>agroecology</b> and <b>climate change</b>, terms we will discuss later in the curriculum. Your role as mentors and teachers in educating and learning from others in your communities is <u>the most important part of this curriculum.</u></p>
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One key approach to this curriculum is using **participatory methods**, in other words, *community members teaching one another, learning from each other, and treating each other's knowledge and experience with respect*. This kind of teaching requires a different way of learning from the normal approach people might learn in schools, hospital clinics and from agricultural extension workers. It might also be called 'people-centered learning'.

**People-centered learning is aimed at helping those who are weakest become stronger and more self-reliant. This type of participatory education aims to help the poor and powerless gain greater control over their health and their lives.**

*How* something is taught is just as important – in some ways more important – than what is taught. And the most important part of *how* something is taught is the *caring, respect and shared concern* that go into it. How you teach can break down or build up people's self-confidence, willingness to try new things, share ideas, and community strength.

As community mentors, you will need to learn very different approaches from the way most of us have learned in school. In order to do so, you need to first think **critically** about different ways of teaching and learning, in order to help ordinary people to gain awareness and courage needed to improve their situation.

One of the main purposes of regular or **authoritarian** education is to teach students to obey and fit into the current social order. Sometimes called **information-transmission**, in this model the teacher provides the knowledge and the students receive it. The emptier a student's mind is the better the student according to this system. This approach to teaching does not teach students to memorize, not think. They are also not taught to think about their responsibilities to the community and to the poor.

### ***Education for Change***

There are other ways that build community members' confidence in their own abilities to observe, experiment, criticize, analyze and figure things out for themselves. These ways let people discover that they are just as good as their teachers and everyone else. They learn to cooperate rather than compete, and consider the whole situation that people are facing, and to look for imaginative and brave ways to address these problems.

This can be called education for change or people-centered learning. In this style of teaching, the focus is on learning rather than teaching. Participants are encouraged to give their ideas, to problem-solve, to talk about different viewpoints, to experiment and to analyse how to solve the bigger problems linked to poverty, land degradation and poor health and nutrition.

If a community mentor is to be a 'leader for change' helping people find ways to solve their biggest problems, then her training has to set an example.

**Good teaching is not about putting ideas into people's heads, but drawing ideas out.**

To help community mentors develop an understanding of why people-centered methods are important, they need to have time thinking critically about alternative ways that people learn and teach. The following discussion activities will explore the usual ways that people are taught, and a different, participatory approach that also encourages long-term social change.

The training of participants in the treatment group included the use of pre-written stories based on a fictional family and drama activities (acting out these stories) in the classroom as a large group. It also included time spent in small groups discussing lessons and creating stories and dramas themselves outside of the classroom to perform and discuss with the larger group. This included breaking into small groups with a range of ages and a mix of men and women. Each group would gather to discuss the lessons learned in the classroom, stories used during the course of the lesson, and stories and experiences from their own lives that arose in relation to the topics of the day's lesson. The group would then work together to create a skit based on what they had learned, as well as their own ideas, innovations, and experiences. The skits also included social and personal elements that illustrated how the lessons being taught in the classroom would play out in their homes and villages, for example challenges they might face from questioning neighbors when trying a new farming innovation, or challenges that might arise in the household as new ideas around gender equality were implemented.

Both men and women, and those of all ages, were encouraged to participate in some way. The following instructions were used for the narrative and drama group training, as well as guided work by Professor Magalasi and other facilitators on creating a unified story line/theme and practical skills such as voice projection:

**Table 4: Participatory Drama Prompts**

***Participatory Drama Prompts***

**Instructions in Learning Approaches**

Participatory Drama as a Learning and Teaching Method:

As part of helping the learners make the materials their own and apply what they learn to their own unique lives and situations, as well as to assess understanding and acceptance of the materials, time will be spent at the end of many of the morning and afternoon session for learners to create short drama skits.

Facilitators should set aside time to introduce each drama activity, allow the learners to work on creating their skits, perform the skits, and discuss the dramas afterwards. This will vary depending on your group. During the discussion, you might ask participants if they were acting as ‘themselves’ or acting out the behavior they believe someone else would carry out. If you notice in the skits that some concepts were misunderstood or seem to be unaccepted by the participants, you might spend time talking about this as a group for clarification and further understanding.

For the story of “Johnny and Mary” participants can volunteer or be assigned to play the various roles (and they can play different roles on different days if they’d like). For the group dramas, participants should be broken into groups of 5-10 (this is ideal, but you can be flexible based on the number of participants you have).

This should be fun and exciting and those involved may enjoy competing with each other’s skits. In addition to the drama skits that learners will create at the end of each session, there will be pre-written narratives or short role plays throughout the curriculum that can be used as needed for further learning and reflection.

*Drama Summary:* 30 minutes at the end of each session:

- 15 for creating and 20 for performing
- Groups of 5-10 people for each skit when possible
- Followed by discussion

The following is an example of the instructions one Day 2 of the training; it includes a sample pre-written narrative. These narratives were created by members of the curriculum team from the U.S. and Malawi and were tested among farmers in Malawi for accuracy, resonance, and cultural appropriateness. They were translated into Chichewa and Tumbuka, as was the whole curriculum:

**Day 2**

**Morning**

**Story of Johnny and Mary: Meeting**

[Assign roles for Johnny and Mary]

Johnny and Mary meet whilst farming, and they admire each other's nutritional status. Johnny calls out to Mary and tells her that she looks healthy. Mary answers saying that Johnny looks strong. They attribute their health to their farming, and discuss their approaches to farming. Johnny is crazy about agroecology, but Mary is skeptical at first. Johnny describes his intercropping and rotations of crops. Mary is concerned about not dedicating enough land to maize, and therefore ending up food insecure. Johnny says how some crops do better in dry seasons. Mary challenges Johnny by asking how the crops can grow without fertilizers, and Johnny explains how diverse crops build soil health. It turns out, Mary knows a lot about the changing climates and is actually starting to be concerned by it. Johnny excitedly shares that agroecology practices can help farmers adapt to changing climates, as well. They are intrigued by each other's knowledge. Mary admires Johnny's knowledge of agroecology, and Johnny admires Mary's wit and knowledge about climate change. They decide to continue getting to know each other better.

*Questions to Audience:*

- Do you think Mary should try out Agroecology techniques?
- If you were Mary, what would help convince you to try Agroecology techniques?
- Johnny told Mary that she looks healthy, and Mary told Johnny he looks strong. What do you think that being healthy and strong entails?

**Group Drama: Now that we've thought some about Johnny and Mary's situation, we'll think about our own farms and lives...**

- Break into groups of 5-10
- Act out a challenge (or challenges) on your farm and how mixed farming might help address that challenge. How might mixed farming benefit you and others? How might it create new problems (or what might be some of the challenges you'd face in using mixed farming)?
- Discuss (Did it appear that any of the curriculum information was misunderstood? Where there challenges acted out that you or others might suggest solutions for? Etc.)

**Afternoon**

- Break into groups of 5-10
- Ask the group to create a drama that describes some of their personal experiences, challenges and efforts to have better dietary diversity.
- Discuss (Did it appear that any of the curriculum information was misunderstood? Were there challenges acted out that you or others might suggest solutions for? Etc.)

After participants in the drama group created skits – whether based on the pre-written narratives, or created from their own lives and imaginations – the larger group would give feedback about the skit itself, both the content and the performance. This might include too many

storylines, making the message hard to follow, or inaccurate information. The larger group then had a time of discussion around questions that arose or other ideas those arose when watching the skit.

Those in the control group did not have pre-written stories or dramas used in the classroom and instead had pre-written prompts that encouraged them to share information and experiences in a more point-by-point manner. Farmers in this group also shared their small group discussions and the ideas arising from them with the larger training group. Group size for the control group was the same for those in the drama group (with an average size of 14). These small groups also had a purposeful mix of men and women, ranging from young to elderly. Both the treatment and control groups used music and song informally throughout the training to keep participants motivated, entertained, and engaged and to offer a break from the more didactic learning.

The treatment and control groups were trained separately. Despite this, the groups were trained within about a half of a mile from each other and came from neighboring villages, so some contamination was assumed. In assigning participants to the treatment and control groups, every attempt was made to have those in any single village assigned to one group or the other; however, there was a small amount of overlap (nine participants at baseline). It is also assumed that farmers in the control group might informally share stories about their own experiences or the experiences of others through the course of their discussions.

The curriculum training and the evaluation tools contained sensitive topics, including gender violence, as well as health issues such as HIV/AIDS and alcoholism. Risks identified prior to interviewing and surveying included probing for personal or sensitive information and identification of abuse. Informed consent was sought on a one-on-one basis at the location where

the interviews and surveys were carried out. For qualitative interviews, we asked open-ended questions relating to comprehension and information sharing and often asked if participants could recall specific examples, but we did not follow-up for more information on examples including domestic violence or alcoholism. Survey respondents were told they could refuse to answer questions or leave the study at any time; and individual questions offered the option to answer “Refused.” The research protocol (# 1507005688) received IRB approval on September 1, 2015, with an expiration date of August 31, 2018.

### **Qualitative Methods**

I used a mixed methods approach that included in-depth interviews, firsthand observations, and quantitative pre/post surveys in this dissertation research to help triangulate my findings. In-depth interviews were used to better understand the role of narrative and drama playing in influencing social interaction, attitudes, and efficacy at the level of perceptions and processes. These discussions helped me move beyond simply gathering measurable quantitative data to gathering layers of rich detail about farmers’ experiences in the training and the ways in which they saw narrative and drama playing a role in influencing their own and other’s learning, interactions, perceptions, attitudes, and ability to teach others. Interviews also gave farmers the chance to share about the more complex social dynamics and roles that they and others played throughout the course of the training in their group activities and throughout their experiences learning and teaching, as well as anecdotes to support these experiences.

Observations helped to both compliment and confirm farmers’ descriptions of the quality of dialogue, interaction, and engagement during the drama activities; they also helped me better understand the learning environment. Quantitative findings were carried out to help the team

assess the overall impact of the curriculum and the extent to which narrative and drama influenced that impact. These findings allowed me to identify specific variables that were more impacted by narrative and drama than others, which I hope will help inform future research and application.

I carried out 38 qualitative interviews with farmers, nine interviews with facilitators, and five days of observations in the summer of 2016. Interviews were done in Mzimba District, Northern Region of Malawi, 52 kilometers from Ekwendeni, and Dedza District in the Central Region, approximately 60 kilometers from the town of Dedza. These two regions were selected because they both have high levels of food insecurity and undernutrition, but they differ both in their agroecosystems, including rainfall and cropping patterns, and different land tenure systems which influence gender relations, providing for interesting comparisons. Because gender and other household relations were an important component of the curriculum training, the team wanted to evaluate potentially different outcomes among the two regions – including engagement, and attitudes and information sharing around gender equality issues. Interview participants were selected by the lead facilitator Dakishoni Laifolo by first randomly selecting a certain number of respondents from the complete list of participants and then using a purposive selection to ensure a mix of men, women, young, and elderly.

Penjani Kanyimbo worked as my interview translator. Kanyimbo is a Malawian who was trained by the project PI and had previous experience translating interviews relating to agroecology, health, and social issues from Chichewa and Tumbuka to English. It appeared that Kanyimbo's knowledge and sensitivity to the local culture and ways of communicating aided in the interview process and the rich feedback that came out of the interviews. One clue to this was his knowledge of the difference between the two languages and the amount of time taken for

those who speak Tumbuka to express themselves compared to those who speak Chichewa. He explained this to me after we had completed the Tumbuka interviews in the Northern Region and had begun interviewing farmers in the Central Region, and I noticed that the interviews were taking nearly half the time, but the amount of information we were gathering was equivalent. It was simply the way people explained, and re-explained things in Tumbuka, he told me, a cultural norm in that region of the country.

Kanyimbo and I spent approximately 1 – 1.5 hours with each interview participant. The interviewees were selected randomly from the complete list of curriculum participants. From this list there was purposive selection to ensure that men, women, youth, and elderly participants were interviewed (Table 1). Interviews took place at the two training locations (local buildings used for church and community meetings) or the farmers' homes. Firsthand observations during the final week of the curriculum training included observations of the classroom training, drama creation, performances, and discussion, and small group discussions.

Participants answered questions relating to demographics, such as age, gender, farm and household size; as well as question relating to perceived value and challenges of the training and the use of drama or small group discussions; engagement of self, and perceived engagement of others, during the training; comprehension of training material; attitudes; self- and collective efficacy; and information sharing both during and after training. The interview questions began with open-ended wording, with sub-questions available for probing for more information when needed. Farmers were encouraged to share specific examples whenever possible. I hoped to reduce response bias (participants giving the answers they perceived I wanted to hear as part of the curriculum team) by using careful, consistent wording and seeking anecdotal evidence to support feedback (Gray, 2004; Liamputtong, 2008).

Issues of researcher bias, such as interviewer/translator bias, reporting bias, affinity, value preferences and commitment, and personal qualities and experiences also come into play in this context (Gray, 2004; Maxwell, 1992). To reduce interviewer and translator bias, as with reducing forms of response bias, Kanyimbo and I sought to maintain clear and consistent wording throughout the days of interviewing, despite being in a less controlled environment. The risk of my own affinity for this population, my previous experiences in Africa, and my personal belief in the value of narrative and drama were also a risk in creating bias during the interview process. To help reduce these biases, I worked to maintain an awareness of my own perceptions and attitudes and to remain open to findings that ran counter to previous experiences and long-held ideas.

The context of interviews and observations was unique, with a number of tradeoffs. In order to travel to the interview location in the Northern Region, I was based in the town of Ekwendeni and was driven to the training location about an hour and a half away each day. The two lead facilitators, Dakishoni Laifolo and Esther Mupafya, drove me to the site each morning where the farmers were gathering for their second week of training at a small church made of red-mud brick and a metal roof. The building was one open room about 500 square feet with rows of worn wooden benches. It sat just on the edge of a small village that was part of a larger cluster of villages in the Mzimba District. A long dirt road connected the villages. On my first day at the site, I was invited to sit inside the building and watch one of the pre-written dramas acted out.

The farmers had ended the previous with a story and were beginning the morning with the acting out of the drama. I was impressed by how absorbed those acting in the drama were in their parts and by the level of attention paid by the other farmers. When the drama ended, there

was a time for discussing the techniques used in the acting and the content. The picture below illustrates the building and the farmers gathered outside to watch a drama and have a discussion.

**Figure 5: Image of Farmers Gathered for Training in Ekwendeni**



I was then introduced to the group before moving to my interview location behind the church. Kanyimbo and I sat behind the church on two small benches as Dakishoni sent the next farmer to be interviewed to us. Those being interviewed had to miss a portion of the training during their time talking with us, but most of them seemed happy to take the time to offer feedback. I read the interview questions out loud to Kanyimbo, and he translated them to the interviewee who answered and then had their answer translated to me. I typed verbatim what was translated in English on my laptop, using a small solar panel to keep the battery going.

Several farmers had never touched a computer and were fascinated by it. There was often some time doing introductions beforehand, an offer of a drink or snack, and some time talking

afterwards for those who were curious about me or the computer, or who wanted to thank me for what I was doing. I made sure to sit at an equal level with farmers, either on the bench or on the ground. Several times, female farmers would sit on the mat on the ground while I was on the bench, possibly out of habit of being subservient in the household or as a show of respect for me as a visitor; but before interviews began I made sure to invite them onto the bench, or join them on the ground.

There was a mix of personality types interviewed, with some farmers more shy than others, and some more talkative and explanatory in their answers. I made sure to tell farmers through Kanyimbo that their answers about both the successes and the challenges of the training would help future training efforts. Most of the time farmers gave examples to back up their feedback, both positive and negative, and farmers seemed willing to share challenges openly, which led me to believe we did not have any unusual issues with respondent bias.

When I needed to take a break or use the bathroom, I walked down a small path into a family compound and used their hole in the ground given privacy by a mud wall. I passed two little girls in their kitchen on my way there nearly every time. The pictures below shows what a village kitchen looks like, which helps to put into context issues of health and nutrition, and some of the limitations faced by rural farmers in Malawi (it was very similar to kitchens in Mali and Zambia).

**Figure 6: Exterior of a Village Kitchen in Ekwendeni, Malawi**



**Figure 7: Preparation of Nsima in Ekwendeni, Malawi**



When interviewing farmers in the control group, Kanyimbo and I walked down the dirt road connecting the villages about a half of a mile to a similar mud brick building. For these interviews, we also found a quiet spot behind the building where we would be close but not disturb the training, often a harvested corn field as pictured below.

**Figure 8: Interview Location in Ekwendeni, Malawi**



In Dedza, where the second week of interviews took place, the curriculum training had already ended. Interviews in this region were done at participants' homes. This was challenging because it meant that small children and animals were often around, which was both fun and distracting for all of us. During two interviews in this region, groups of children gathered to see the foreigner. Someone told me that these children had likely never seen a white person before. So time was taken to help everyone who was around feel comfortable and settled before starting the interview. Carrying out interviews at participant homes gave the advantage of observing some of the new behaviors learned during the curriculum relating to gender equality – specifically men cooking and women helping with tasks that were traditionally only carried out by men.

Along with the awareness of potential respondent and interview bias, there was attention paid to helping ensure reliability and validity of the research design. Issues of reliability and validity are often raised when using qualitative methods because of the lack of “standard”

measurements, controls for threats, and hypothesis testing typically applied to positivist research (Maxwell, 1992, p. 279). Some feel the concepts should be replaced by “authenticity” and other terms relating to trustworthiness when using qualitative methods (Guba & Lincoln, 1989, p. 245), and some are skeptical about the use of these terms at all in this type of inquiry (Wolcott, 1990). Others, however, argue for maintaining more traditional research terminology when determining rigor in qualitative work, rather than giving these backstage to concepts such as significance, impact, and applicability (Morse, et al., 2002). While this study takes the approach that reliability and validity in this context relate to the quality and integrity of research in relation to the context and purpose of the inquiry (Brinberg & McGrath, 1958), with understanding as the core goal of the chosen methods (Maxwell, 1992), it also takes a more traditional approach to validity.

Central to ensuring reliability and validity is “verification”; this relates to coherence among the methods used for evaluation, concurrent analysis and collection of data, an appropriate sample, and theoretical framing (Morse, et al, 2002, p. 17). For this study design, coherence between the research questions and the methods was established by maintaining a flexible and responsive approach. Some questions were altered or added as new information came to light early on in the interview process, and follow-up survey questions were added based on this new information not available during the design of the baseline survey. The sample was chosen carefully to include those who had participated regularly in the training, as well as a mix of men and women and participants of various ages. Interviews sought to reach a level of saturation and replication and probe for examples that differed from common trends. The study was based in theory and previous studies within the development context, including Sub-Saharan Africa (See Chapter 3 for more). There were also opportunities to interview multiple farmers

from the same drama or discussion group, which allowed me to corroborate some of their answers. Finally, interviewing facilitators also helped serve as a member check (Lofland et al., 2006).

I hoped to strengthen the external validity of the findings, despite a partially random sample for interviews and a non-random sample for surveys, by including a relatively large number of participants from regions that differed in a number of ways. I hoped that by not limiting the study to one region, and comparing findings between two regions with differences in their agroecology, as well as gender relations, the findings might be more likely to be applicable to other smallholder farmers with differences in their environments, both physical and social. I also tried to maintain an awareness of the context of these findings to other developing nations and cultures to strengthen the dependability of any suggestions made around their transferability (Trochim, 2006).

I used ATLAS.ti for qualitative data analysis of the interview transcripts. The analysis was structured around seven code families: overall perception of value, overall perception of challenges, social interaction and information sharing during training, comprehension, social interaction and information sharing after training, attitudes, and efficacy. Over a dozen sub-codes helped me further analyze the responses in each of these code families. Qualitative interview guides for the treatment and control groups, as well as the facilitators, are included in Appendix A.

**Table 5: Interview Participant Sample Description (*n* = 38)**

Age in years	Mean:	39
	Range:	20 to 72
Gender	Female:	58 % (22)
	Male:	42% (16)
Farm size	Mean:	2.3 acres
	Range:	.75 to 5
Household size	Mean:	5
	Range:	3 to 7
Region	Ekwendeni:	20
	Dedza:	18
Treatment / Control	Treatment:	30 (13 Ekwendeni / 17 Dedza)
	Control:	8 (7 Ekwendeni / 1 Dedza)

### Quantitative Methods

In addition to the qualitative data, I led the design of an extensive quantitative survey ( $N = 520$ ) with input and feedback from the larger curriculum team in order to gather baseline (December 2015) and follow-up data (March 2017) on all of the participants (the full survey is included in Appendix A). The survey was carried out by enumerators in Malawi trained and experienced in survey implementation through prior work with the Malawi Farmer-to-farmer Agroecology project (<http://soilandfood.org/malawi-farmer-to-farmer-agroecology-project>). All survey questions were translated into Tumbuka and Chichewa by professional translators with review by facilitators before pre-testing with farmers in Malawi. Two facilitators oversaw the pre-testing with the assistance of six enumerators, paying special attention to time, translations, overall clarity, and appropriateness of questions relating to sensitive issues. The survey design

includes six sections: Demographics, Agroecology and Soil Health, Information Sharing and Seeking, Climate Change, Social Support and Gender Relations, and Nutrition.

Demographic information collected focused on household information, such as gender, age, marital status, education level, employment status of all household members, household income, number of years farming, and amount of land farmed. Questions were based on the demographic and asset evaluation sections of the Malawi Farmer-to-Farmer Agroecology Baseline Survey (2012)<sup>4</sup> and the Malawi Farmer-to-Farmer Agroecology Gender (MAFFA) Time Use Survey (2014).

Agroecology and Soil Health included questions based on previous surveys on this topic in Malawi, including the Crop Diversity and Soil Health in Malawi Survey (2010), the Participatory Experiments Baseline Survey (2011), and the Malawi Farmer-to-Farmer Agroecology Baseline Survey (2012). This section included questions about previous or current training and organization membership relating to farming/agriculture; current growing practices<sup>5</sup>, including crops planted, knowledge and use of conservation agriculture practices (soil preparation, natural fertilizer use, weed and insect management, crop diversity, intercropping, etc.), as well as changes in soil health and challenges faced; experience trying new innovations. Questions also gauged attitudes by asking about perceptions relating to the importance and usefulness of specific practices.

Information Sharing and Seeking considered both direct and indirect exposure in relation to information (Bandura, 1986, 1998, 2002; Honik and Yanovitzky, 2003), and drew on previous assessments of information use, access, and sharing, including research in Zambia (Young &

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<sup>4</sup> R. Bezner Kerr, L. Classen, L. Shumba, E. Lupafya, M. Katundu, M. Magalasi, T. Beta, I. Luginaah, L. Dakishoni, R. Msachi

<sup>5</sup> For questions relating to current growing practices, farmers were asked a series of questions about their most and least fertile fields from the previous growing season.

McComas, 2016), as well as the Malawi Farmer-to-Farmer Agroecology Gender (MAFFA) Time Use Survey (2014). Questions related to social interactions around issues of farming, weather and climate, and health and nutrition, including who people typically talk to about these issues and how often, as well as the use of stories in these interactions (for example: How often do you and others in your community share information about farming through telling or acting out stories/dramas - real or imagined?). Questions also asked about information access, trust and frequency of use around these issues in relation to radio, television, mobile phone, printed materials, as well as the reasons for use (entertainment, education, both).

The section on Climate Change was developed in consultation with David Wolfe who oversaw the development of the climate change module of the curriculum and a previous survey he helped to develop in 2009 titled “Local Climate Change Challenges and Opportunities in the Northeast: Understanding Resource Scientist and Manager Perspectives.” This section of the survey also drew from the work of a number of other researchers assessing climate change perceptions and adaptations in Sub-Saharan Africa (Burton, 1997; Bryant, 2000; Grothmann & Patt, 2005; Patt & Schroter, 2008; Bryan et al. 2009; Habiba, Shaw, and Takeuchi, 2012; Yegbemey, 2012; Becken, Lama, and Espiner, 2013). Questions related to farmers’ observations of climate change and the impact of those changes at the farm-, household-, and community-levels; perceptions and knowledge of causes, adaptations, and mitigation techniques, as well as attitudes and perceptions relating to those most vulnerable and the perceived value of working as a community to respond to climate change.

Social Support and Gender Relations was developed based on previous surveys designed around these issues (Pandey et al. 2012; Bezner-Kerr, 2014). Questions related to household decision making around farming, economics (purchases, sale of crops), nutrition, social

involvement (with family, the community, or organizations such as banks or those offering training), household task allocation, and household conflict and alcohol. Questions also related to attitudes and perceptions around some of the household these issues (for example: Would you (or your husband) be comfortable with your wife being in a leadership position in an organization that led her to travel away from home? and Sometimes a husband can get irritated or annoyed by things that his wife does. Do you think a husband is justified in hitting or beating his wife in the following situations: (This can be from your personal beliefs or your experiences...)).

Finally, Nutrition was based on commonly used nutrition questions and previous surveys developed by Sera Young, Professor of Nutrition at Cornell and leader of the *Young Research Group for Maternal and Child Nutrition: A holistic, ecological approach to healthier mothers and children*. Questions gauged respondent knowledge about the relationship between soil health, climate change, nutrition and human health, as well as the relationship between human health, farming, and education, among other things. Questions also related to knowledge, attitudes, perceptions and norms around labor and pregnancy (for example: When should you wash your hands? At what age should a baby first start to receive foods in addition to breast milk? What is the best way to feed an under-6-months-child of a mother who has HIV? Pregnant woman should not do the same amount of work as non-pregnant woman (Likert scale measuring agreement); and If you have limited food in your household, are there certain people within the household who get more of that food? If yes, which household members? (Circle all that apply).

### **Key variables**

While the above paragraphs provide an overall summary of the entire survey, this dissertation project focused more narrowly on the questions that addressed the research questions

laid out in this study. Specifically, the following variable of interest were identified for the quantitative analysis (the full survey is available in Appendix C):

Variables in only the baseline survey:

***Current / previous training***

B1. Are you currently helping with or involved in any training, program, project or a member of an organization about farming/agriculture?

B2. Have you been involved in any training or program/project on farming/agriculture in the past?

Variables in only the follow up survey:

***Engagement/Social Interaction during training:***

C18. How engaged were you during the training (including being involved in discussions and sharing experiences and information with others)?

C19. How engaged were others during the training (including being involved in discussions and sharing experiences and information with others)?

C24. During the training, people were able to talk about sensitive or difficult topics, such as relationships in the household.

***Engagement/Social Interaction after training:***

C25. Approximately how many times have you shared information in curriculum since training?

C26. Approximately how many times have you repeated the information you learned during the training in your household?

C28. Approximately how many people have you repeated/shared the information you learned during the training with?

***Self-efficacy (“After the training...”)***

C29. I feel confident that I can deal with unexpected events.

C30. When confronted with a problem, I can usually find several solutions.

C31. I feel I am better able to handle unforeseen situations.

C32. I can solve most problems if I invest the necessary effort.

***Collective efficacy (“After the training...”)***

C33. My community is better able to work together successfully.

C34. People in the community can come together to solve problems.

C35. I feel more confident to work with others.

C36. People in the community are able to communicate more effectively.

***Other***

C37. I feel I have more knowledge than before the training.

C38. I feel I have more social skills than before the training.

Variables in both baseline and follow up:

### ***Collective efficacy***

D13. Do you see value in working as a community to respond to challenges relating to changes in the weather in the past few years that are different from the expected weather patterns?

D16. What challenges do you see in working as a community in responding to changes in the weather in the past few years that are different from the expected weather patterns?

### ***Attitudes***

E14. Would you (or your husband) be comfortable with your wife being in a leadership position in an organization that led her to travel away from home?

E17. Sometimes a husband can get irritated or annoyed by things that his wife does. Do you think a husband is justified in hitting or beating his wife in the following situations: a. Wife sells property, b. Wife burns food, c. Wife refuses sex. This can be from your personal beliefs or your experiences.

### ***Knowledge***

#### ***Health & Nutrition***

F1. Soil health can affect human health

F2. Climate change/weather can affect human health

F4. It is more important to choose foods that make you feel full than a range in types of foods, like vegetables and fruits

### ***Behaviors***

#### ***Agriculture***

B11g. In the past year, how many times have you tried a new innovation, technique or experiment on your farm?

B11h. Did you bury crop residue in the field before planting?

### **Reliability and Validity**

Reliability in quantitative research refers to the consistency and stability of the measurements used. In other words, would the survey instrument produce the same results if the study was repeated (Drost, 2011)? To strengthen this study's reliability, questions used in the pre/post surveys were based on items used in previous studies by team members or other researchers from the social and biological sciences. Questions on the survey were often asked in a variety of ways. For example, questions relating to self-efficacy included the following four measures: I feel confident that I can deal with unexpected events; when confronted with a problem, I can usually find several solutions; I feel I am better able to handle unforeseen

situations; I can solve most problems if I invest the necessary effort. These measures had a Cronbach's alpha of .77 showing their reliability in measuring the same concept. For many of the measures cutting across the topics of health, climate change, and agriculture, it was not appropriate to group variables because their subject matter was so different, but instead the survey attempted to gauge theoretical constructs from questions across each topic. For example, change in attitudes was explored by asking about attitudes in relation to information sharing, climate change adaptations, and social equality, among other things.

Because the survey was relatively long, taking one hour to complete, and carried out in the context of villages where there was little control over external distractions, there was a risk for enumerator error. To reduce this risk, enumerators who were chosen who were Malawian, and they were well trained. Questions were worded simply and clearly and were translated by professional translators from Malawi, with all translations checked by Malawian team members for clarity and accuracy.

Internal validity refers to whether or not changes that are observed in the dependent variables are caused by the independent variables being manipulated in a study. In other words, are the conclusions being drawn from the findings correct (Lucy, Asghar, Razavieh, & Soresen, 2010)? To help reduce the threat of external events impacting the findings, specifically exposure to other trainings and sources of similar information, the survey included questions that asked about prior and current trainings other than the curriculum. The quasi-experimental design of the survey also helped ensure that the changes from Time 1 to Time 2 for those in the drama group were unique to that group and different from the changes in the control group. The use of a control group was intended to help eliminate the threat of an external event or factor causing changes in participants' interactions, engagement, attitudes, efficacy, knowledge, and behaviors.

I hoped to strengthen the external validity of the findings by carrying out the survey among both the North Region and the Central Region of Malawi. As explained previously, these regions differ in their social and ecological environments. Testing farmers in both regions gave added confidence that these findings might be generalized to different populations of farmers from different environments in this region of Sub-Saharan Africa, and the inclusion of men and women of all ages also strengthened the external validity of the study as a test of moderation (Mark, Donaldson, & Campbell, 2011). The farmers who participated in the training were randomly selected by facilitators based on the identification of village clusters where the project would be carried out. These clusters were chosen for their location and their lack of previous training as part of the “Soils, Food, and Healthy Communities” project. Those invited to participate chose to accept this invitation to become farmer teachers, which might represent a certain personality type that could impact findings and affect generalizability to the broader population of farmers in Malawi.

### **Survey Challenges**

There were many challenges in the survey design and implementation. While I led the design of the survey, the nature of this project was a collaborative one. This meant that the large team spanning five countries and multiple disciplines including Communication, Development Sociology, Plant and Soil Sciences, Health and Nutrition, Health Administration, Horticulture, and Theatre were all given the chance to contribute input and give feedback. The goal was to create an evaluation tool that would not only serve to answer my research questions but also aid the rest of the team members in answering their own questions about the effectiveness of the modules and the training methods they helped develop.

Each field has evaluation methods and requirements for research validity, so the survey needed to meet as many of these needs as possible. Because it was the only quantitative evaluation that would take place around the curriculum piloting (due to timing and logistical constraints), there was a lot that needed to be covered in a single survey. The process of getting a final draft was time consuming and more complex than if it had been focused on one of two disciplines with a smaller team, but it had the added benefit of allowing me to assess variables of interest across multiple curriculum topics, while drawing on the knowledge and expertise of team members.

Space was limited, even within this very long survey, so the number of questions that I was able to include was limited but sufficient to help answer my research questions. Some of the questions were removed from the time 1 survey and not included in the follow-up to make room for other questions that I wanted to add after my in-depth interviews. The questions that were removed were chosen because I did not expect large changes in the responses due to the training (such as questions relating to previous training and general information access). This made room to add questions that were designed in response to the interview findings around drama.

Carrying out a survey of this length also created challenges for the enumerators and those tasked with data entry, as well as the respondents. One of the common themes of my in-depth interviews was that participants wanted more training and time with the curriculum project team, so I hope that the time spent reflecting on their own attitudes, knowledge, and experiences around these topics was seen as a good use of the time we asked of them. While I led the development of the survey, I was not part of the training and implementation. This created a challenge relating to the standard data entry procedure of create unique identifiers for participants at Time 1 and Time 2 for comparison. Because this was not done during data entry, I

had to spend time comparing names and creating these identifiers so that I could calculate the differences between the pre/post surveys. While this would typically be a straight-forward task, it was complicated by the fact that Chichewa and Tumbuka are not traditionally written languages, so there are multiple spellings for a single name. For example, the name Donaliya Mkandawire is also spelled Wonolia Mkandawire. In order to confirm that I was correctly matching names at Time 1 and 2, I used birthdates, gender, village, and spouse names to help with confirmation. Birthdates proved less useful because people often gave different dates for their birth year at Time 1 and Time 2. This is typically in the village setting where people do not use calendars and do not keep a close record of the year they were born; it is often an estimate.

### **Method of Analysis**

Quantitative analysis was done in SPSS. The first step was cleaning this very large data set by identifying missing data, such as demographic information, treatment or control group assignment, or missing responses. Sting values were assigned numerical values, and outliers were identified prior to analysis. There was also extensive work done to identify overlap of treatment and control participants within the same villages. As mentioned previously, the languages used in Malawi are not traditionally writing languages, so different spellings of village names and villages that shared the same name contributed to this challenge.

Of the 520 farmers who participated in the training, 487 were surveyed at baseline and 442 at follow-up. The reduction in numbers was due to the fact that some farmers were working and away from home during the survey period, and therefore unable to participate. Next, the data were cleaned, including making sure participants were accurately linked at Time 1 and 2, and following up with enumerators on missing data or questions about the spelling of certain words,

such as village names that have multiple written versions. Basic descriptive statistics were run on demographics and assets, and P values were calculated to ensure that there were no significant differences between the treatment and control group. This was also done for the two regions, helping me to identify differences between farmers in the Northern and Central Regions, such as marriage, education, or participation in other trainings that might account for different outcomes after the training.

Next, I isolated the variables of interest for each research question. Some of these variables were closely related conceptually. For these variables, Cronbach's alpha and component matrix were used to determine if the creation of overarching variables was appropriate. Frequencies and means were calculated to compare the treatment and control groups, with independent t-tests run to identify any significant differences between the two groups. Some of these variables were included at both baseline and follow-up, allowing me to compare the difference in change for the two groups at Time 1 and Time 2. To do this a difference variable was calculated ( $\text{Diff} = \text{Time 2} - \text{Time 1}$ ), and mean values determined, with t-tests and univariate analysis run to identify differences between the two groups, and between men and women, those of varying education, and those of varying age, within these groups. Some variables were added after the in-depth interviews, informed by the findings of these interviews, and included only at Time 2 for a comparison between treatment and control. Independent samples t-tests were run to identify differences between the two groups. The full survey at Time 2 with a list of changes made between Time 1 and 2 is available in Appendix C.

The following chapter, Chapter Five, provides the findings from the quantitative survey, and Chapter Six presents key qualitative findings of the in-depth interviews and observations. Findings are organized by the research questions that guided the evaluation.

CHAPTER FIVE:  
KEY QUANTITATIVE FINDINGS

## **Introduction**

In addition to in-depth qualitative interviews and firsthand observations, this study included a longitudinal quantitative survey to help me better understand the extent to which narrative and drama influenced curriculum outcomes. This survey included dependent variables relating to participants' engagement during the training, social interaction during and after the training, attitudes around the training topics, and perceived self- and collective efficacy. The survey also included variables relating to changes in knowledge and behavior around the curriculum topics to help gauge the impact of narrative and drama as compared to small group discussion, as well as the overall impact of the curriculum. The survey was also designed to help me better understand the role that gender traditions in different regions might play in influencing outcomes. Because of the novelty of this research – in relation to the participatory, multi-module design of the curriculum, as well as the nature of the field experiment and its physical context – these findings are meant to be exploratory in nature and not conclusive.

The survey included six overarching sections (below). Details on the design of questions for each section, sample selection, and challenges can be found in Chapter 4: Methods.

- I. Demographics
- II. Agroecology and Soil Health
- III. Information Sharing and Seeking
- IV. Climate Change
- V. Social Support and Gender Relations
- VI. Nutrition

The baseline survey was carried out in December 2015 and follow-up survey in March 2016 by enumerators in Malawi trained and experienced in survey implementation through prior work with the Malawi Farmer-to-farmer Agroecology project (<http://soilandfood.org/malawi-farmer-to-farmer-agroecology-project>). All survey questions were translated into Chichewa and

Tumbuka by paid professional translators with review by lead facilitators before pre-testing. Questions were pre-tested among a sample of participants in Malawi. Two facilitators oversaw the pre-testing with the assistance of six enumerators, paying special attention to time, translations, overall clarity, and appropriateness of questions relating to sensitive issues. The full survey can be found in Appendix C. This chapter begins with a review of the sample characteristics. I begin by including a description of the demographic characteristics of participants from the Northern Region of Ekwendeni and the Central Region of Dedza, including gender, age, education level, and marital status. I then compare the demographic characteristics of the treatment and control group to look for significant differences that might be confounding factors impacting the dependent variables. I also consider past and current training participation (other than the curriculum training) that might influence outcomes.

Following this descriptive analysis of the independent variables, I present findings for select dependent variables that help me explore my overarching research questions. Findings are organized by question and typically include the frequencies and means for treatment and control groups, as well as P values to see if there is a significant difference between the two groups. Independent t-tests are used to calculate P values for continuous variables, including Likert scale variables; Chi-Square tests are used to calculate P values for dichotomous variables, such as yes / no responses. Finally, I consider the amount of change from Time 1 and Time 2 for the treatment and control groups for select variables to compare the difference in differences to see if one group experienced more change than the other. I also examine select social equity variables, to see if one region saw a significant amount of change over the other (Ashenfelter & Card, 1985). The sample size for the follow-up survey, used to calculate demographic statistics and participation in previous or current trainings other than the Farmer-to-farmer Curriculum, is N =

442. The sample size for the analysis of difference is smaller, N = 335, as it includes only participants who I could confidently match at Time 1 and Time 2 after the initial data collection, which was done by hand and did not include unique identifiers. Matching participants by name was challenging because neither Chichewa nor Tumbuka are written languages, so participant names and village names often varied in their spelling. I used birth year, as well as the names of children and spouses, to help confirm that I was matching correctly, although these also presented challenges of recall (farmers often don't know their exact birth year) and spelling.

## Findings

### *Sample Demographics*

**Table 6: Region**

	<i>Frequency</i>	<i>Percent</i>
Ekwendeni	173	39.1
Dedza	269	60.9
Total	442	100.0

The Northern Region of Ekwendeni and the Central Region of Dedza were included in this research because of their high levels of malnutrition, as well as their differing agroecological environments and land inheritance traditions (Peters, 2010). The Central Region of Malawi represents a larger portion of the overall population of Malawi<sup>6</sup>. The sample in this region was larger than that in Ekwendeni because of different levels of variance in food security and dietary diversity in the two regions. Sample size calculations were based on the mean and

<sup>6</sup> According to the National Statistical Office in Malawi, the population in the Northern Region of Malawi was 1,708,930 and the Central Region 5,510,195 in 2008.

standard deviation of the *Household Food Insecurity Access Scale and Household Dietary Diversity*, key food security and nutrition indicators, from a previous survey in these areas.

**Table 7: Drama / No Drama by Region**

			<i>Frequency</i>	<i>Percent</i>
Ekwendeni	Valid	Drama	89	51.4
		No drama	84	48.6
		Total	173	100.0
Dedza	Valid	Drama	141	52.4
		No drama	128	47.6
		Total	269	100.0

There was an almost equal mix of drama and no drama in the two regions, with around 50% drama and 50% no drama for both areas.

**Table 8: Gender by Region**

			<i>Frequency</i>	<i>Percent</i>
Ekwendeni	Valid	Male	62	35.8
		Female	111	64.2
		Total	173	100.0
Dedza	Valid	Male	104	38.7
		Female	165	61.3
		Total	269	100.0

**Table 9: Gender by Drama / No Drama**

			<i>Frequency</i>	<i>Percent</i>
Drama	Valid	Male	85	37.0
		Female	145	63.0
		Total	230	100.0
No Drama	Valid	Male	81	38.2
		Female	131	61.8
		Total	212	100.0

One of the goals of the curriculum was the inclusion of both men and women in the training in order to address gender inequalities. Women have historically been on the periphery of international development efforts, yet in the past decade, the role of women in household decision making, including on the farm, has been recognized more and more (Nussbaum, 2000). An equal number of men and women were sought for the training, but, according to one of the lead facilitators in Malawi, Esther Lupafya, during the season when the training was held, circumstances dictated the makeup of the sample, with more women being present in their households than men. This was potentially due to an extended period of hunger in the country that caused many men to leave their homes in search of food in other areas (Kangmennaang, Bezner Kerr, & Luginaah, 2017). The Chi-Square test above shows that there was no significant difference in the number of women and men in the treatment versus control group with a  $P = .786 (> 0.05)$ .

**Table 10: Age by Region**

		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Drama	Age	230	23.00	85.00	44.30	13.21
	Valid N (listwise)	230				
No Drama	Age	212	19.00	86.00	42.65	13.42
	Valid N (listwise)	212				

While the curriculum had a particular focus on reaching women, and on the role of women during the training and teaching that followed, the team also aimed to pay special attention to inclusion of the elderly as an important minority group that holds knowledge of past traditions and climate, and an important role in passing on information to younger generations. The training included those as young as 20 and as old as 83 in Ekwedeni and 86 in Dedza. There was no significant difference in the ages of participants in the treatment and control groups with a  $P = .193 (>0.05)$ .

**Table 11: Marital Status by Region**

			<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Ekwendeni	Valid	1	109	63.0	63.0	63.0
		2	26	15.0	15.0	78.0
		3	2	1.2	1.2	79.2
		4	5	2.9	2.9	82.1
		5	5	2.9	2.9	85.0
		6	25	14.5	14.5	99.4
		7	1	.6	.6	100.0
		Total	173	100.0	100.0	
Dedza	Valid	1	212	78.8	78.8	78.8
		2	11	4.1	4.1	82.9
		3	2	.7	.7	83.6
		4	18	6.7	6.7	90.3
		5	10	3.7	3.7	94.1
		6	15	5.6	5.6	99.6
		7	1	.4	.4	100.0
		Total	269	100.0	100.0	

(1= Monogamous married and living with spouse; 2= Polygamous married and living with spouse; 3= Married and wife heading household; spouse works or lives elsewhere; 4= Separated/divorced and not living with spouse; 5= Separated/divorced and living with spouse; 6= Widowed; 7= Never married)

**Table 12: Marital Status by Drama / No Drama**

			<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Drama	Valid	1	164	71.3	71.3	71.3
		2	24	10.4	10.4	81.7
		3	1	.4	.4	82.2
		4	10	4.3	4.3	86.5
		5	8	3.5	3.5	90.0
		6	22	9.6	9.6	99.6
		7	1	.4	.4	100.0
		Total	230	100.0	100.0	
No drama	Valid	1	157	74.1	74.1	74.1
		2	13	6.1	6.1	80.2
		3	3	1.4	1.4	81.6
		4	13	6.1	6.1	87.7
		5	7	3.3	3.3	91.0
		6	18	8.5	8.5	99.5
		7	1	.5	.5	100.0
		Total	212	100.0	100.0	

The Northern Region of Malawi, including Ekwendeni, follows a largely patrilineal tradition, with women going to live in the husband's home after marriage; the Central Region, of which Dedza is a part, has a mostly matrilineal tradition with the man going to live in the wife's home after marriage. I believed that carrying out this experiment among these two regions with differing traditions might help us better understand the impact of the training and of participatory methods on gender relations in different cultural environments. In part, I hoped that this would help me and others better understand the importance of these traditions when designing trainings of this type. One of the curriculum participants said during an informal conversation that he didn't think there was a big difference between gender equality in the Northern and Central Regions despite different marriage traditions. He said that once people were married, regardless of which house they lived in, the man was typically in charge of decision making. I did however,

find some difference among the training outcomes in relation to region that I will discuss later in this chapter.

In Dedza, where men typically go to the wife's house after marriage, there is a larger portion (about 15%) of monogamous marriages with participants living with their spouse and a smaller number (11%) of polygamous marriages with participants living with their spouse. There are only about half as many households in the sample from Dedza with the wife heading the household and the spouse working elsewhere (.7% in Dedza, compared to 1.2% in Ekwendeni ). This number is surprising in that Dedza has the matrilineal tradition, but when thinking of this further, it may be because this question was framed not just as the wife being the head of the household, but as the wife being the head of the household with the spouse working or living elsewhere. In a society where the man goes the home of the wife, it may be less common for the man to need to seek outside employment. The number separations or divorces in Dedza with couples who were no longer living together was about twice as high as those in Ekwendeni, with only around a 1% difference between the areas of couples who had been separated or divorced but were still living together. The number of those widowed was much higher in the Northern Region, 14.5% versus 5.6% in Dedza. Those never married equaled about the same percentage of the sample in both regions.

**Table 13: Education by Region**

			<i>Frequency</i>	<i>Percent</i>
Ekwendeni	Valid	1	4	2.3
		2	70	40.5
		3	48	27.7
		4	35	20.2
		5	15	8.7
		6	1	.6
		Total	173	100.0
Dedza	Valid	1	78	29.0
		2	160	59.5
		3	12	4.5
		4	12	4.5
		5	7	2.6
		6	0	0
		Total	269	100.0

(1= No schooling; 2= Some primary school; 3= Completed primary school; 4= Some secondary school; 5= Completed secondary school; 6= Post-secondary)

**Table 14: Education by Region Independent t-test**

	<i>F</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
Education	25.10	11.14	440	.00
Equal variances		10.68	315.66	.00

There were significant differences in education levels for participants in the two regions ( $P = .00$ ). Participants in the North of the country with no schooling made up only about 2%, while participants in the Central Region of the country with no schooling made up nearly 30%.

The percentage of those completing some or all of primary school was much more similar, with 70% in the Northern Region as compared to 65% in the Central Region. But there was a large difference in between the percentage of those in the North who had completed some or all of secondary school as compared to those in the Central Region, with around 30% and 7% respectively. The relationship of education, and these educational differences, to the impact of the curriculum training and the use of drama is discussed later in this chapter. There were no significant differences in education between the treatment and control group as seen below, with a  $P = .992 (>0.05)$ .

**Table 15: Education by Drama / No Drama Independent t-test**

		<i>F</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
Education	Equal variances assumed	.08	.01	44	.99
	Equal variances not assumed		.01	44	.99

**Table 16: Years Farming and Farm Size by Region**

		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Ekwendeni	Years farming	173	8	78	31.65	14.50
	Farm size	173	.25	8.00	2.19	1.21
	Valid N (listwise)	173				
Dedza	Years farming	269	2	76	28.58	13.22
	Farm size	269	.50	10.00	2.13	1.14
	Valid N (listwise)	269				

Average years farming for those in both the Northern and the Central region was around 30, with an average farm size of 2 acres. The number of years farming and the farm size for participants in the treatment and control group were not found to be significantly different with P values of .580 ( $>0.05$ ) and .562 ( $>0.05$ ) respectively. Participants from each village were assigned to either the treatment or control group to minimize contamination. Table D.1 in Appendix D shows that some villages had a small number of participants in both the drama and the small group discussion groups, but this could potentially be an error in data entry, or due to participants going to the training they were not initially assigned.

Participants were asked at baseline if they had participated in any agricultural training previously. There was a significant difference between the two regions in relation to the number of participants who had participated in past training with a  $P = < .0001$  ( $<0.05$ ). More participants in the Northern Region of Ekwendeni had participated in this kind of training in the past, approximately 34% versus 17% in Dedza. There was no significant difference in the number of participants who had been a part of past trainings between the treatment and control groups,  $P = .355$  ( $>0.05$ ). When asked about current training, around 10% more participants in Dedza were participating in some kind of agricultural training. This difference between the two groups was found to be significant with a  $P = .017$  ( $<0.05$ ); although there was not a significant difference between the number of participants in the treatment and control groups currently participating in agricultural training with a  $P = .732$  ( $>0.05$ ).

## ***Engagement and Social Interaction***

To help answer RQ1, To what extent does exposure to the curriculum including narrative and drama influence engagement and social interaction? the follow-up survey included the following questions relating to engagement and social interaction during and after the training:

- How engaged were you during the training (including being involved in discussions and sharing experiences and information with others)?
- How engaged were others during the training (including being involved in discussions and sharing experiences and information with others)?
- During the training, people were able to talk about sensitive or difficult topics, such as relationships in the household.
- Approximately how many times have you shared information in curriculum since training?
- Approximately how many times have you repeated the information you learned during the training in your household?
- Approximately how many times have you repeated the information you learned during the training in your community?
- Approximately how many people have you repeated/shared the information you learned during the training with?

**Table 17: Engagement of Self and Others during Training**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Self engagement during	Drama	230	4.18	.81	.054	.79
	No drama	212	4.20	.74	.051	
Other engagement during	Drama	230	4.07	.79	.052	.81
	No drama	212	4.05	.78	.054	

*1= Never, 2= Rarely, 3= Sometimes, 4= Most of the time, 5= Always)*

Participants were asked about their own level of engagement, as well as the engagement of others, during the training (including being involved in discussions and sharing experiences and information with others). Engagement was measured with a Likert-type scale (Never = 1, Rarely = 2, Sometimes = 3, Often = 4, Always = 5). Table 6.29 shows that the mean response for both groups in relation to both their own engagement and the engagement of others was above 4, revealing a high level of engagement for all participants. While both those in the treatment and control group revealed a high level of engagement, there was no significant difference between the two groups on these measures. Engagement of self for the drama group had a  $P = .79$  and engagement of self for the no drama group a  $P = .79$ , both  $>0.05$ . Engagement of others for the drama group had a  $P = .81$ , with the same  $P$  value for engagement of others for the no drama group ( $>0.05$ ).

**Table 18: Gender: Engagement of Self during Training**

Drama- No Drama		Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Drama	Self engagement	Male	60	4.15	1.01	.13	.90
		Female	90	4.13	.69	.07	
No drama	Self engagement	Male	68	4.40	.67	.08	.00
		Female	107	4.06	.79	.08	

There were significant differences between the treatment and control groups in relation to participants' gender. A univariate analysis looking at self-engagement by gender within the two groups, however, revealed that for the drama group, there was not a significant difference between self engagement for men and women with a  $P = .90$  ( $>0.05$ ); but for the no drama group, men reported significantly higher levels of engagement than women with a mean of 4.40 as compared to the mean for women of 4.06,  $P = 0.00$  ( $<0.05$ ). These findings suggest that in

contexts where gender equality is not well established, communication and education efforts including narrative and participatory drama may help in creating more engagement among female participants. Although for men specifically, these findings reveal a significantly higher level of engagement for the control group, with a  $P = .00$  ( $<0.05$ ). This suggests that when interventions are targeting only men, small group discussions may be more effective in relation to engagement levels.

**Table 19: Education: Engagement of Self during Training Univariate Analysis**

			<i>Frequency</i>	<i>Sig.</i>
Drama	Education	1	23	<i>.07</i>
		2	71	
		3	30	
		4	15	
		5	11	
No drama	Education	1	28	<i>.01</i>
		2	96	
		3	24	
		4	20	
		5	7	

*1= no schooling; 2= some primary school; 3= completed primary school; 4= some secondary school; 5= completed secondary school*

The drama group did not differ on engagement according to education,  $P = 0.07$  ( $>0.05$ ); however, the no drama group showed significant variation in the engagement of those from different education levels with a  $P = 0.01$  ( $<0.05$ ), with those who had higher levels of education being more engaged. This finding is especially valuable for contexts such as rural Malawi where participants often have limited education, and many remain illiterate. In the Norther Region of Malawi only 17% of women have greater than a primary level of education (Leadersh, 2014).

Development efforts have often failed historically to reach the most vulnerable within developing nations, including those most poor and illiterate, despite these people often being the most in need, but this is beginning to change, at least in rhetoric<sup>7</sup>. This study also sought to understand the impact of narrative and drama on those of varying ages – especially the elderly. In this data, there was no significant difference in the reported level of self engagement between the drama and no drama group according to age >P = 0.05 (.832 and .806 respectively).

*Ability to Talk About Sensitive Subjects*

**Table 20: Sensitive or Difficult Subjects**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Sensitive subjects	Drama	230	3.89	.960	.063	.35
	No drama	211	3.97	.946	.065	

**Table 21: Sensitive or Difficult Subjects for both groups combined**

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
1	9	2.0	2.0	2.0
2	35	7.9	7.9	10.0
3	58	13.2	13.2	23.1
4	216	49.0	49.0	72.1
5	123	27.9	27.9	100.0
Total	441	100.0	100.0	

*1= Never, 2= Rarely, 3= Sometimes, 4= Most of the time, 5= Always)*

<sup>7</sup> For more, please see [“Ensuing that Noone Is Left Behind: Reaching the most vulnerable”](#) and Paragrah 23 of the [UN 2030 Sustainable Development Goals](#)

The training included lessons and participatory activities relating to HIV/AIDS, domestic violence, and alcoholism, as well as other sensitive information around gender equality within the household. To explore the influence of narrative and drama on participants' ability and talk about these sensitive and often difficult subjects, individuals were asked to rate their agreement with the following statement using a five-item Likert-type scale (Never = 1, Rarely = 2, Sometimes = 3, Often = 4, Always = 5): During the training, people were able to talk about sensitive or difficult topics, such as relationships in the household.

Both the treatment and control group had mean responses around 3.9, with 77% of all participants answering that they could talk about these subjects either "Most of the Time" or "Always." While there was not a significant difference between the treatment and control groups overall in relation to being able to talk about sensitive or difficult subjects during the training, both groups expressed a high level of ability to breach these subjects. This might suggest that small group participatory activities, both using narrative and drama, as well as using straight forward discussions, help participants feel more comfortable discussing these kinds of subjects.

**Table 22: Gender: Sensitive or Difficult Subjects Independent t-test**

Drama – No drama		Gender	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Drama	Sensitive subjects	Male	85	3.94	.93	.10	.51
		Female	145	3.86	.98	.08	
No drama	Sensitive subjects	Male	80	4.16	.82	.09	.02
		Female	131	3.85	1.00	.09	

While there was not a significant difference overall between the treatment and control group in relation to participants' ability to talk about sensitive or difficult subjects, there was a significant difference in the ability of men versus women to talk about these subjects within the

groups. The means for men and women in the drama group were 3.94 and 3.86 respectively, with a P value of  $P = .192 (>0.05)$ . For the no drama group, the mean for men was 4.16, and the mean for women 3.85, with a  $P = .036 (<0.05)$ , revealing a significant difference between the two, with men more likely to report talking about sensitive topics in the control group. This may have been due to men feeling more comfortable to lead discussions in general due to the culture. There was also a significant difference for men specifically between the two groups, with those in the control group reporting a significantly higher ability to talk about sensitive subjects with a  $P = 0.03 (<0.05)$ . Neither age nor education impacted this measure across the treatment and control groups.

*Number of Times Shared Information after Training*

**Table 6.21 Information Sharing after Training 1**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>
Times shared after	Drama	230	3.34	.96	.06
	No drama	212	3.45	1.03	.07

*1= Never, 2= Once or twice, 3= 2-5 times, 4= 6-12 times, 5= More than 12 times*

**Table 23: Information Sharing after Training 2**

Drama- No drama		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>	<i>Sig. (2-tailed)</i>
Drama	1	6	4.0	4.0	4.0	.27
	2	15	10.0	10.0	14.0	
	3	67	44.7	44.7	58.7	
	4	44	29.3	29.3	88.0	
	5	18	12.0	12.0	100.0	
	Total	150	100.0	100.0		
No drama	1	11	6.3	6.3	6.3	
	2	12	6.9	6.9	13.1	
	3	66	37.7	37.7	50.9	
	4	61	34.9	34.9	85.7	
	5	25	14.3	14.3	100.0	
	Total	175	100.0	100.0		

Participants were asked how often they had shared information that they learned during training by responding to the following prompt: Approximately how many times have you shared information in curriculum since training? (Never = 1; Once or twice = 2; 2 to 5 times = 3; 6 to 12 times = 4; More than 12 times = 5). While there was not a significant difference between the amount of sharing between the treatment and control groups, both groups revealed that over 86% of participants had shared information at least 2 to 5 times, with around 30% in both groups having shared between 6 and 12 times, and over 10% in both groups having shared more than 12 times. One of the overarching goals of the curriculum was empowering farmers to become teachers themselves, increasing farmer-to-farmer information sharing after the initial intervention. In this way, both the small group discussions and the use of narrative and drama aided in the overall success of the training.

**Table 24: Gender: Information Sharing after Training**

		<i>Gender</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Times shared after	Drama	Male	85	3.73	.96	.10	.00
		Female	145	3.12	.89	.07	
	No drama	Male	81	3.63	.93	.10	.04
		Female	131	3.34	1.07	.09	

When considering the number of times participants had shared information with others after the training, there were significant differences for both the treatment and control groups in relation to gender. Men shared information significantly more than women, with both the treatment group  $P = .00$  ( $<0.05$ ) and the control group  $P = 0.43$  ( $<0.05$ ). While all participants showed a high level of information sharing after the training, it would be valuable to explore further the difference found in gender on this item considering the importance of information sharing and the value of the role of women as teachers within the community. As with willingness to talk about sensitive subjects, this might be due to traditions around male versus female roles within society.

**Table 25: Education: Information Sharing after Training**

Education			<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>
1	Times shared after	Drama	45	3.00	.85	.13
		No drama	37	3.05	1.10	.18
2	Times shared after	Drama	113	3.47	.98	.09
		No drama	117	3.35	1.02	.09
3	Times shared after	Drama	37	3.30	.88	.14
		No drama	23	3.74	.86	.18
4	Times shared after	Drama	23	3.30	.97	.20
		No drama	24	4.08	.78	.16
5	Times shared after	Drama	12	3.67	1.16	.33
		No drama	10	3.70	.82	.26
6	Times shared after	Drama	0 <sup>a</sup>	.	.	.
		No drama	1	5.00	.	.

(1= No schooling; 2= Some primary school; 3= Completed primary school; 4= Some secondary school; 5= Completed secondary school; 6= Post-secondary)

**Table 26: Education: Information Sharing after Training Univariate Analysis**

<b>Drama</b>	<b>4</b>	<b>2.114</b>	<b>2.339</b>	<b>.06</b>
	1	1515.00	1675.82	.00
	4	2.11	2.34	.06
	225	.90		
	230			
	229			
<b>No drama</b>	<b>5</b>	<b>4.31</b>	<b>4.42</b>	<b>.00</b>
	1	430.60	441.55	.00
	5	4.31	4.42	.00
	206	.98		
	212			
	211			

One of the goals of the curriculum was to reach those of varying education levels, giving even those with little education the skills and confidence they needed to learn and engage, as well as to share information with other farmers and become teachers themselves. Within the treatment group, there was not a significant difference among those with varying levels of education in relation to information sharing after training, with a  $P = .06$  ( $>0.05$ ). For the control group, there was a significant difference in information sharing after the training, with a  $P = .00$  ( $<0.05$ ). Those with no schooling typically shared information around two to five times on average; those with only some primary schooling had a mean of 3.35 suggesting that, on average, those in this group shared information between 2 to five times and 6 to 12 times, with more falling on the lower end of that estimate. Those who had completed primary school, or some or all of secondary school, had mean scores of 3.7 or higher – showing a significant difference between those of low and high education within the control group with a  $P = .00$  ( $<0.05$ ). This difference suggests that the treatment group leads to greater equality within the group in relation to information sharing. But it is interesting to note that for all education groups except those with some primary school, those in the control group shared more times overall; so while there was less intra-group sharing in terms of number of times, there was more sharing overall.

**Table 27: Information Sharing after Training within Household**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Times repeated household	Drama	230	3.97	.915	.060	.55
	No drama	212	3.92	1.002	.069	

**Table 28: Information Sharing after Training within Community**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Times repeated community	Drama	230	3.64	1.02	.07	.33
	No drama	211	3.51	1.09	.08	

Participants were asked about the number of times they had shared information within their own households and communities. For these measures, participants were asked the following questions: Approximately how many times have you repeated the information you learned during the training in your household? Approximately how many times have you repeated the information you learned during the training in your community? (1= Never, 2= Rarely, 3= Sometimes, 4= Most of the time, and 5= Always.)

The mean for both groups in relation to sharing within their households revealed a high level of information sharing with an average of around 4 for both groups (“Most of the Time”). However, there was no significant difference between treatment and control, with P values of .55 and .56 (>0.05) respectively. The mean for information sharing within the community was 3.64 for the drama group and 3.51 for the no drama group, which was also not found to be significantly different between the two groups, P = .175 and .177 (>0.05) respectively.

**Table 29: No. of People Information Shared after Training**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
No. of people information shared	Drama	229	3.12	1.36	.09	.39
	No drama	212	2.97	1.25	.09	

*1 = None; 2 = 1-10; 3 = 11-20; 4 = 21-50; 5 = More than 50 people; 6 = More than 100*

Farmers were also asked approximately how many people they had repeated/shared curriculum information with since their training using the following measurements: None = 1; 1 to 10 = 2; 11 to 20 = 3; 21 to 50 = 4; More than 50 people = 5; More than 100 = 6. While there was not a significant difference between the two groups, around 19% of those in the drama group reported sharing information with more than 50 people, while 13% in the no drama group reported sharing information with this number of people since the training. During in-depth interviews, participants in the drama group revealed information sharing with very large groups of farmers in neighboring communities. They described village headmen announcing their arrival to come and teach the village, saying that often 100-150 people might show up; but they said that once they began the drama up to 200 more people might come. Future research might benefit from further exploring information sharing by comparing the numbers of people reached over 250-300 for both groups.

**Table 30: Gender: No. of People Information Shared after Training**

		<i>Gender</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>	<i>Sig. (2-tailed)</i>
Drama	No. of people information shared	Male	84	3.32	1.50	.16	.09
		Female	145	3.00	1.26	.11	
No drama	No. of people information shared	Male	81	3.36	1.30	.14	.00
		Female	131	2.73	1.17	.10	

The analysis also found a significant difference found between the treatment and control groups in relation to gender and the number of people with whom the information had been

shared. In the drama group, there was no significant difference between men and women on this measure,  $P = .09$  ( $<0.05$ ), but in the no drama group, there was a significant difference,  $P = .00$  ( $<0.05$ ) with men reporting sharing information with larger numbers of people than women after the training. There was not a significant inter-group difference for either gender. This finding and the above findings about men in the control group sharing more times than women, and sharing more about sensitive topics, many all be influenced by traditional male versus female roles as leaders in Malawi.

**Table 31: Education: No. of People Information Shared after Training Independent t-test**

	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Drama	4	3.72	2.05	.09
	1	1397.14	769.07	.00
	4	3.72	2.048	.09
	224	1.82		
	229			
	228			
No drama	5	5.28	3.56	.00
	1	328.87	221.82	.00
	5	5.28	3.56	.00
	206	1.48		
	212			
	211			

Education was also found to significantly impact the number of people information was shared with after training for the control group with  $P = .00$  ( $<0.05$ ). There was not significant difference for the treatment group,  $P = .09$  ( $>.05$ ), with those who had little or no schooling sharing with fewer people than those with some or all of the secondary schooling or post

secondary schooling. Age was not found to significantly impact the number of people information was shared with after the training.

### *Attitudes*

The following questions relating to social equity attitudes and information seeking preferences helped me further explore research RQ2, To what extent does exposure to the curriculum including narrative and drama influence changes in attitudes?

- Would you (or your husband) be comfortable with your wife being in a leadership position in an organization that led her to travel away from home?
- Sometimes a husband can get irritated or annoyed by things that his wife does. Do you think a husband is justified in hitting or beating his wife in the following situations? This can be from your personal beliefs or your experiences.
  - She sells something (like crops) without telling him? Yes/ No
  - She burns the food? Yes/ No
  - She refuses to have sex with him? Yes/ No
- What are your most preferred ways of getting information about farming?
- What are your most preferred ways of getting information about health and nutrition?

**Table 32: Attitudes towards Wife in Leadership Role Time 1 and 2 Chi-square tests**

		<i>df</i>	<i>Asymptotic Significance (2- sided)</i>	<i>Exact Sig. (2- sided)</i>
Drama	Pearson Chi-Square	1	.12	
	Continuity Correction <sup>b</sup>	1	.19	
	Likelihood Ratio	1	.13	
	Fisher's Exact Test			.14
	Linear-by-Linear Association	1	.12	
N of Valid Cases				
No drama	Pearson Chi-Square	1	.24	
	Continuity Correction <sup>b</sup>	1	.34	
	Likelihood Ratio	1	.25	
	Fisher's Exact Test			.26
	Linear-by-Linear Association	1	.24	
N of Valid Cases				

To better understand differences in attitudes between the treatment and control groups at Time 1 and Time 2 for the social equity measures (all nominal, yes or no questions), Chi-square tests were run comparing responses at Time 1 and Time 2. For the dependent variable measuring participant attitudes towards the wife being in a leadership role, there was not a significant change in attitudes before and after the training for either group, with the treatment group  $P = .12$  ( $>.05$ ) and the control group  $P = .24$  ( $>.05$ ).

**Table 33: Justification for Domestic Abuse Chi-square tests:****Wife Sells Property, Time 1 and 2**

		<i>df</i>	<i>Asymptotic Significance (2-sided)</i>	<i>Exact Sig. (2- sided)</i>	<i>Exact Sig. (1- sided)</i>
Drama	Pearson Chi-Square	1	.00		
	Continuity Correction <sup>b</sup>	1	.00		
	Likelihood Ratio	1	.01		
	Fisher's Exact Test			.01	.01
	Linear-by-Linear Association	1	.00		
	N of Valid Cases				
No drama	Pearson Chi-Square	1	.75		
	Continuity Correction <sup>b</sup>	1	1.00		
	Likelihood Ratio	1	.76		
	Fisher's Exact Test			.55	.55
	Linear-by-Linear Association	1	.75		
	N of Valid Cases				

The curriculum training specifically included information about the importance of shared responsibility within the household for making budgeting and other financial decisions. In the two regions where the training was carried out, there were different land inheritance traditions, with the Norther Region males inheriting land in the Northern Region and women in the Central Region. With these considerations in mind, it was important to pay attention to gender attitudes around buying and selling land, crops, or other property. When asked if a man was justified in beating his wife if she sold a piece of shared property (land or other), there was a significant difference in the attitudes of the treatment group between Time 1 and 2, with a  $P = .01$  ( $<.05$ ). Fisher's Exact test calculation was used for this analysis due to an invalid Chi-square test. At Time 1 around 93% of participants in the drama group said that selling property was not a

justification for domestic abuse, while 98% said it was not justification at Time 2. For the control, there was not a significant difference in attitudes before and after the training with  $P = .55 (>.05)$ .

**Table 34: Justification for Domestic Abuse Chi-square tests:**

**Wife Burns Food, Time 1 and Time 2**

		<i>df</i>	<i>Asymptotic Significance (2- sided)</i>	<i>Exact Sig. (2- sided)</i>
Drama	Pearson Chi-Square	1	.85	
	Continuity Correction <sup>b</sup>	1	1.00	
	Likelihood Ratio	1	.79	
	Fisher's Exact Test			1.00
	Linear-by-Linear Association	1	.85	
N of Valid Cases				
No Drama	Pearson Chi-Square	1	.65	
	Continuity Correction <sup>b</sup>	1	1.00	
	Likelihood Ratio	1	.53	
	Fisher's Exact Test			1.00
	Linear-by-Linear Association	1	.65	
N of Valid Cases				

Another important part of the curriculum was attention on gender relationships within the household around cooking and other everyday activities. When participants were asked if a man was justified in being hitting his wife if she burned the food, there was not a significant difference in responses for the treatment or control group before and after training, with  $P = .97 (>.05)$  and  $P = .82 (>.05)$  respectively. Fisher's exact test values were used because of an invalid Chi-square test.

**Table 35: Justification for Domestic Abuse Chi-square tests:****Wife Refuses Sex, Time 1 and Time 2**

		<i>df</i>	<i>Asymptotic Significance (2- sided)</i>	<i>Exact Sig. (2- sided)</i>
Drama	Pearson Chi-Square	1	.61	
	Continuity Correction <sup>b</sup>	1	1.00	
	Likelihood Ratio	1	.48	
	Fisher's Exact Test			1.00
	Linear-by-Linear Association	1	.61	
	N of Valid Cases			
No Drama	Pearson Chi-Square	1	.17	
	Continuity Correction <sup>b</sup>	1	.68	
	Likelihood Ratio	1	.27	
	Fisher's Exact Test			.26
	Linear-by-Linear Association	1	.17	
	N of Valid Cases			

An additional measure of gender relationships within the household was a question relating to the justification of a man hitting a woman if she refuses sex. For this dependent measure, there was no significant difference between Time 1 and Time 2 for either the treatment or the control group with  $P = .78 (>.05)$  and  $P = .26 (>.05)$  respectively using Fisher's exact test.

The next question analyzed in relation to changes in attitudes relates to participants' preferences for getting information about farming and health and nutrition. Participants were asked to list all of their preferred methods for getting information from the following list:

- 1=Family
- 2=Neighbors/Friends
- 3=People from other villages
- 4=Farmer's group
- 5=Other groups
- 6=Story telling
- 7=Drama
- 8=Radio
- 9=Television
- 10=Mobile phone
- 11=Printed material (newspaper, pamphlet, etc.)
- 12=Extension workers

The table below shows the percent change for each group between Time 1 and Time 2 for each communication method. The table also includes the percent difference in change between the two groups.

**Table 36: Farming Information Seeking Preferences**

<i>Variable</i>	<i>Drama % Change between Time 1 and 2</i>	<i>No Drama % Change between Time 1 and 2</i>	<i>Difference in % Change between Treatment and Control at Time 1 and 2</i>
Family	- 79.3%	-70.0%	9.3%
Neighbors/Friends	-53.7%	-29.3%	24.4%
People from other villages	+ 100.0%	0.0%	100%
Farmer's group	+ 90.6%	+90.5%	.10%
Other groups	+ 80.0%	+75.0%	15.0%
Story telling	+ 0.0%	+87.5	87.5%
Drama	+ 98.3%	+16.3%	82.0%
Radio	- 100.0%	-75.0%	25.0%
Television	+1.4%	+66.7%	65.37%
Mobile phone	-50.0%	-6.4%	43.6%
Printed material (newspaper, pamphlet, etc.)	0.0%	-60.0%	60.0%
Extension workers	+29.4%	+33.9%	4.5%

When participants were asked about their preferred sources of information for farming, there were a number of changes from Time 1 to Time 2 for both groups. Both those in the drama group and those in the drama group reported less preference for family (both groups reported

about 70% less preference at Time 2) and neighbors (the treatment group reported over 50% less preference for neighbors/friends and the control group around 30% less preference) as sources of information after the training. The treatment group saw a 100% increase in their preference for getting information about farming from people in other villages, while the control group saw no change on this measure. Both groups had around a 90% increase in preferring getting farming information from farmer's groups, and over 75% for both groups in getting farming information from other groups. This might be due to the positive experience reported by farmers during the curriculum training, which used group activities as a central part of the training.

Farmers in the treatment group saw no change in their preference for story telling, but those in the control group saw a 87.5% increase in preference for this information source. Those in the treatment group reported preferring drama as a source of farming information 98.3% more at Time 2, while the control group reported a 16.3% increase in preference for this source at Time 2. Both groups reported a decrease in their preference for radio as a source of farming information (but it is interesting to note that both groups reported a large increase in their preference for radio for health and nutrition information, which will be discussed more below). Both groups had an increase of around 30% after the training in their preference for getting farming information from extension workers. The percent difference between the two groups is discussed more in the conclusion in relation to suggestions for follow-up research.

**Table 37: Health and Nutrition Information Seeking Preferences**

<i>Variable</i>	<i>Drama % Change between Time 1 and 2</i>	<i>No Drama % Change between Time 1 and 2</i>	<i>Difference in % Change between Treatment and Control at Time 1 and 2</i>
Family	-63.6%	-28.0%	77.7%
Neighbors/Friends	-33.3%	+7.5%	126.4%
People from other villages	+61.5%	+44.4 %	32.3%
Farmer's group	+89.5%	+94.5%	5.4%
Other groups	+73.3%	+82.4%	11.7%
Story telling	-54.1%	-50.0%	7.9%
Drama	+94.7%	+85.7%	10.0%
Radio	+93.5%	+100.0%	6.7%
Television	-33.3%	+33.3%	0.0%
Mobile phone	-25.0%	-33.8%	29.9%
Printed material (newspaper, pamphlet, etc.)	0*	0*	n/a*
Extension workers	+74.1%	+61.3%	18.9%

*\*No one selected this option from either group at either time.*

When participants were asked about their preferred source of information about health and nutrition, there were also a number of notable changes between Time 1 and Time 2.

Participants in both groups reported family as less preferred as a source of health information after the training (the treatment group by around 64% and the control group by 28%). Those in the treatment group had a 33.3% reduction in their preference for neighbors/friends, while those in the control group had a slight increase of 7.5%. Both groups reported people from other villages as a more preferred source of health and nutrition information at Time 2 as compared to Time 1 (the treatment group by around 61% and the drama group around 44%). Participants in both group had a large percentage increase between Time 1 and Time 2 in their preference for farmer's group and other groups, with the treatment group increasing around 90% and 73% respectively, and the control group 95% and 82% respectively.

Both saw a decline in preference for story telling as a means of getting information about health and nutrition after the training, while they both saw a large increase in their preference for drama (the treatment group preferred drama by around 95% more and the control group by around 86% more after the training). Both reported preferring radio at Time 2 by around 90% more than they did at Time 1, which might suggest that there was a radio show airing in Malawi between the pre/post survey that dealt with health and nutrition issues. Both groups reported extension workers as a more preferred source of information after the training by over 60%.

### ***Self- and Collective Efficacy***

To explore RQ3, To what extent does exposure to the curriculum including narrative and drama influence self- and collective efficacy?, participants were asked to rate the following statements using five-point Likert scale (1= Strongly disagree, 2= Disagree, 3= Neither agree nor disagree, 4= Agree, 5= Strongly agree):

*Self-efficacy*

- I feel confident that I can deal with unexpected events.
- When confronted with a problem, I can usually find several solutions.
- I feel I am better able to handle unforeseen situations.
- I can solve most problems if I invest the necessary effort.

*Collective Efficacy*

- My community is better able to work together successfully.
- People in the community can come together to solve problems.
- I feel more confident to work with others.
- People in the community are able to communicate more effectively.

*Other*

- I feel I have more knowledge than before the training.
- I feel I have more social skills than before the training.

*Self-efficacy*

**Table 38: Self-efficacy Means for Individual Variables**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>
Confidence dealing with unexpected events	Drama	228	4.11	.58	.04
	No Drama	212	4.11	.62	.04
Confidence finding solutions	Drama	229	4.02	.59	.04
	No Drama	208	4.12	.54	.04
Better able to handle unforeseen events	Drama	225	3.97	.69	.05
	No Drama	212	4.01	.74	.05
Confidence solving problems with effort	Drama	227	4.26	.49	.03
	No Drama	208	4.23	.52	.04

**Table 39: Self-efficacy Independent t-test for Individual Variables**

		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
Confidence dealing with unexpected event	Equal variances assumed	.70	.40	.02	438	.98
	Equal variances not assumed			.02	430.01	.98
Confidence finding solutions	Equal variances assumed	1.12	.29	-1.80	435	.07
	Equal variances not assumed			-1.80	434.94	.07
Better able to handle unforeseen events	Equal variances assumed	.51	.47	-.53	435	.60
	Equal variances not assumed			-.53	428.17	.60
Confidence solving problems with effort	Equal variances assumed	.02	.89	.61	433	.55
	Equal variances not assumed			.61	424.34	.55

**Table 40: Self-efficacy Mean for Overall Variable**

		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Drama	Self-efficacy overall	230	9.00	202.00	20.67	22.80
	Valid N (listwise)	230				
No drama	Self-efficacy overall	212	11.00	206.00	20.00	21.90
	Valid N (listwise)	212				

**Table 41: Self-efficacy Overall Variable Independent t-test**

		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
Self-efficacy overall	Equal variances assumed	.48	.49	.31	440	.76
	Equal variances not assumed			.31	439.24	.76

This analysis looked at the four measures of self-efficacy separately and also in combination as an overall variable. The Cronbach's alpha for the overall variable is .74 (see table and a component matrix in Appendix D). Self-efficacy for both groups averaged 4 or higher, indicating high levels of confidence in dealing with unexpected events, finding solutions, and solving problems with the necessary effort. There was no significant difference between the groups on the individual measures or on the overarching variable with  $P = .77 (>.05)$ .

*Collective Efficacy*

**Table 42: Collective Efficacy**

		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>Sig. (2-tailed)</i>
Drama	Community better able to work together	230	1	5	4.11	.61	.07
	People come together to solve problems	229	2	5	4.09	.50	
	More confident to work with others	229	1	5	4.17	.47	
	People communicate more effectively	229	1	5	4.07	.65	
	Valid N (listwise)	228					
No drama	Community better able to work together	212	1	5	4.15	.56	.10
	People come together to solve problems	212	2	5	4.11	.51	
	More confident to work with others	210	2	5	4.17	.54	
	People communicate more effectively	212	2	5	4.08	.56	
	Valid N (listwise)	210					

Collective efficacy was analyzed by looking at the individual measures. An overall variable was not used for the analysis of this dependent variable because of a Cronbach's alpha <.7. As with self-efficacy, participants in both groups had average means of 4 or higher, indicating high levels of confidence in working together as a community, coming together to solve problems and to communicate effectively with others. There was no significant difference between the treatment and control group on this measure, with P values >.05 for all four measures.

**Table 43: Perceptions of Increased Knowledge and Social Skills**

		<i>N</i>	<i>M</i>	<i>SD</i>	<i>Std. Error Mean</i>
More knowledge	Drama	229	4.42	.554	.037
	No drama	212	4.39	.516	.035
More social skills	Drama	225	4.31	.535	.036
	No drama	212	4.35	.655	.045

**Table 44: Perceptions of Increased Knowledge and Social Skills Independent t-test**

		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
More knowledge	Equal variances assumed	.86	.35	.72	439	.47
	Equal variances not assumed			.72	438.97	.47
More social skills	Equal variances assumed	3.89	.05	-.75	435	.46
	Equal variances not assumed			-.74	408.06	.46

At Time 1 and Time 2 participants were asked three questions relating to their ability to work as a community around climate change issues specifically. These questions included:

- Do you see value in working as a community to respond to challenges relating to changes in the weather in the past few years that are different from the expected weather patterns?
- Does your community have strategies for responding to changes in the weather in the past few years that are different from the expected weather patterns?
- If yes, what strategies does your community have for responding to changes in the weather in the past few years that are different from the expected weather patterns?
  - 1= More communication among community members
  - 2= More sharing of information
  - 3= More sharing of resources
  - 4= Emergency planning
  - 5= Grain storage
  - 6= Seed storage
  - 7= Afforestation
  - 8= Community organizing
  - 9 = Other

- What challenges do you see in working as a community in responding to changes in the weather in the past few years that are different from the expected weather patterns?
  - 1= Not enough time for meetings
  - 2=Conflicts between community members
  - 3= No clear leadership or poor leadership?
  - 4= Lack of individual resources for sharing
  - 5= Other

After the training, both participants in the drama and the no drama group saw more value in working together as a community to help solve challenges relating to climate change than they saw before the training, with the drama group going from 87.5% to 97.4% saying they saw value in this, and the no drama group jumping from 83.8% to 99.4%. When asked if their community had strategies for combating climate change, participants in the drama group went from 25.3% saying yes at baseline to 80.8% saying yes at follow up; the no drama group went from 22.9% to 83.2%. Farmers who answered yes to this question were asked what kinds of strategies their communities had. The percent change from Time 1 to Time 2 for both groups is presented below, along with the percent difference between the two groups before and after the training.

**Table 45: Community Strategies for Responding to Climate Change**

<i>Variable</i>	<i>Drama % Change between Time 1 and 2</i>	<i>No Drama % Change between Time 1 and 2</i>	<i>Difference in % Change between Treatment and Control at Time 1 and 2</i>
More communication among community members	+92.0%	+90.1%	2.1% Treatment > Control
More sharing of information	+72.2%	+94.6%	22.4% Control > Treatment
More sharing of resources	+84.6%	+75.0%	9.6% Treatment > Control
Community organizing	+80.0%	+86.3%	6.3% Control > Treatment

Participants in both the treatment and control group reported large increases in the number of strategies they they had as a community in response to climate change. Both groups had an increase of around 90% change in relation to increased communication among community members, one of the central goals of the curriculum training and the use of participatory methods that increase engagement and collective efficacy. Participants in both groups also had an increase in the amount of information sharing, resource sharing and community organizing. The following tables report the percentage changes between Time 1 and Time 2 regarding the challenges that participants faced when working together with other community members on issues relating to climate change, including limited time for meetings, conflicts among members, lack of leadership, and lack of resources. This table also includes the percent difference in change between the two groups.

**Table 46: Community Challenges when Responding to Climate Change**

<i>Variable</i>	<i>Drama % Change between Time 1 and 2</i>	<i>No Drama % Change between Time 1 and 2</i>	<i>Difference in % Change between Treatment and Control at Time 1 and 2</i>
Not enough time for meetings	+71.0%	+92.5%	21.5%
Conflicts between community members	+11.6%	+36.4%	24.8%
No clear leadership or poor leadership	-38.4%	-68.6%	30.2%
Lack of individual resources for sharing	0%	+22.9%	22.9%

Farmers in both group reported in increased sense that there was a lack of time for meetings; this could be due to the fact that farmers reported an increased desire to learn through farmer's groups, and their increase desire to continue learning once the curriculum ended. Conflicts were more of a challenge for both groups at Time 2, possibly because community members were coming together more often to try to solve complex problems in relation to climate change. Farmers reported less lack of leadership at time (or more leadership), and only farmers in the control group reported less individual resources available for sharing. Other challenges described by the drama group in relation to working together on climate change issues described by farmers included coming to meetings late, greed, laziness, lack of interest. The no drama group added communication problems, jealousy, laziness, and lack of attendance.

## **Knowledge**

To understand the extent to which use of narrative and participatory drama as compared to small group discussions influenced changes in knowledge, specifically around the interrelationship of sustainability issues, participants were asked to rate the following statements using a Likert scale (1= Strongly disagree, 2= Disagree, 3= Neither agree nor disagree, 4= Agree, 5= Strongly agree):

- Soil health can affect human health
- Climate change/weather can affect human health
- It is more important to choose foods that make you feel full than a range in types of foods, like vegetables and fruits

**Table 47: Time 1 Knowledge of Interrelationship of Sustainability Issues**

		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Drama	Soil health and human health	152	2	5	4.39	.54
	Climate change and human health	152	1	5	4.23	.69
	Dietary diversity and health	152	1	5	2.36	1.32
	Valid N (listwise)	152				
No Drama	Soil health and human health	173	1	5	4.31	.69
	Climate change and human health	173	1	5	4.18	.86
	Dietary diversity and health	173	1	5	2.40	1.30
		173				

**Table 48: Time 2 Knowledge of Interrelationship of Sustainability Issues**

		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Drama	Soil health and human health	152	2	5	4.32	.57
	Climate change and human health	152	2	5	4.33	.54
	Dietary diversity and health	152	1	5	2.19	1.42
	Valid N (listwise)	152				
No Drama	Soil health and human health	173	4	5	4.43	.50
	Climate change and human health	173	2	5	4.25	.55
	Dietary diversity and health	173	1	5	1.94	1.35
	Valid N (listwise)	173				

**Table 49: Difference Time 1 and 2 Knowledge of Interrelationship of Sustainability Issues**

		<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Drama	Soil health and human health difference	152	-2.00	2.00	-.07	.74
	Climate change and human health difference	151	-2.00	4.00	.09	.81
	Dietary diversity and health difference	152	-4.00	4.00	-.17	1.75
	Valid N (listwise)	151				
No Drama	Soil health and human health difference	173	-1.00	3.00	.12	.83
	Climate change and human health difference	173	-3.00	4.00	.27	1.04
	Dietary diversity and health difference	173	-4.00	4.00	-.46	1.83
	Valid N (listwise)	173				

**Table 50: Difference Time 1 and 2 Knowledge of Interrelationship of Sustainability Issues****Independent t-test**

		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>
Soil health and human_diff	Equal variances assumed	1.81	.18	-2.13	323	.03
	Equal variances not assumed			-2.15	322.88	.03
Climate change and human_diff	Equal variances assumed	1.42	.24	.76	323	.45
	Equal variances not assumed			.71	155.84	.48
Dietary diversity and human_diff	Equal variances assumed	1.80	.18	1.46	323	.15
	Equal variances not assumed			1.466	320.97	.14

To explore knowledge around the interrelated issues of soil health and human health, climate change and human health, and dietary diversity and human health, I calculated the difference between Time 1 and Time 2 knowledge for both the drama and the no drama group and compared the means for this difference. There was a significant difference between the two groups on the measurement gauging knowledge of the relationship between soil health and human health with a  $P = .03$  ( $<0.05$ ). The control group showed a greater change in knowledge

on this measure. There were no significant differences between the two groups in relation to knowledge of the interactions between climate change with  $P = .45$  and human health, and dietary diversity and human health  $P = .15$ . When considering overall knowledge change for all participants, there was a significant difference on all three of these measures from Time 1 to Time 2, with the measure of soil and human health  $P = .00 (<.05)$ , climate change and human health  $P = .00 (<.05)$ , and dietary diversity and health  $P = .00 (<.05)$ . These findings supports the literature around the overall positive impact of participatory learning on knowledge and recall.

Finally, the survey data allowed me to explore changes in behavior among participants after the training around the curriculum topics and the adoption of new innovations. Behavioral changes, especially in the development context, can take time as I learned firsthand in Mali working as a development volunteer and from the experiences of others carrying out work in this area. Therefore, while these findings are interesting to consider, further follow-up on participant behavior change would be beneficial to better understand the impact of the curriculum on these changes.

In conservation agriculture and other sustainable farming practices, compost manure and the burning of crop residue are central methods that farmers can use to increase their soil health and fertility using available resources. Participants in both groups were asked about their use of compost manure before and after the training, and the percent change is presented in the table below.

**Table 51: Percent Change for Compost Use and Burning Crop Residue**

<i>Variable</i>	<i>Drama % Change between Time 1 and 2</i>	<i>No Drama % Change between Time 1 and 2</i>	<i>Difference in % Change between Treatment and Control at Time 1 and 2</i>
Compost use	Yes + 40.0%	Yes + 39.4%	.6% Treatment > Control
	No – 74.7%	No – 72.2%	2.5% Treatment > Control
Burning crop residue	Yes + 94.0%	Yes + 81.6%	12.4% Treatment > Control
	No – 51.8%	No – 50.2%	1.6% Treatment > Control

Both the treatment and control group showed a positive change in behavior around the use of compost and burning of crop residue to enhance soil fertility, two of the techniques taught during the curriculum training. The treatment group had higher levels of change for both practices, with 1.5% more change in yes's and 3.4% fewer no's between Time 1 and Time 2 for compost use, and 14.1% more yes's and 3.1% fewer no's between Time 1 and 2 for burning crop residue. These findings are only meant to describe change in behavior for two of the central agricultural practices learned during the curriculum after a single growing season, they are not meant to be definitive. Additional follow-up research would help in understanding behavior change among participants, and the difference in change between the two groups.

The following chapter, Chapter Six, presents key findings from the qualitative interviews and is followed by Chapter Seven, which synthesizes the key findings from the qualitative and quantitative analysis, including how these findings help support and extend previous research on participatory methods, and narrative and drama specifically. This chapter also includes suggestions for future research, as well as application.

CHAPTER SIX:  
IN-DEPTH INTERVIEWS WITH CURRICULUM  
FARMERS AND FACILITATORS

## **Introduction**

This chapter presents the key qualitative findings from the in-depth interviews carried out in Malawi in the summer of 2016. With these interviews I sought to better understand the experiences of farmers who participated in the pilot training, specifically the various ways that narrative and drama impacted that experience. Quantitative survey data allowed me to see, from a numerical perspective, the extent to which specific dependent variables were impacted by narrative and drama, as well as the relationship that demographic characteristics such as education, age, and gender, had on variables such as interaction, engagement, attitudes, and efficacy. But, these data did not allow me to better understand the experiences, kinds of information and stories shared, and the processes and perceptions at work leading to the various kinds of influence that narrative and drama might have on farmers.

I interviewed 30 farmers in the treatment group whose training included the use of narrative and participatory drama, and eight farmers in the control group whose training included small group discussions in place of stories and drama. I also interviewed nine curriculum facilitators. I received rich and valuable feedback, including a wealth of anecdotes, from those I interviewed. This qualitative interview feedback, as well as my own firsthand observations of the training and the activities around drama and discussion groups, helped me better understand the experiences of farmers and the ways in which narrative and drama impacted their social interactions, engagement, attitudes, and perceptions of self and collective confidence around their ability to try new ideas and innovations, as well as teach this information to others. The context of interviews and observations within the villages in Malawi presented a number of unique opportunities and challenges described in the previous chapter.

Findings from the interviews are presented and discussed here. Chapter Seven includes a table and discussion outlining the major findings in this and the following chapter (Chapter Six:

Key Quantitative Findings) in relation to the major findings overall, and the implications of these findings for the support and extension of current theory, as well as application. Full interview forms for the treatment group, control group, and facilitators are included in Appendix A.

## **Demographics**

The interviews took place in Malawi in the Northern Region of Ekwendeni and the Central Region of Dedza in June of 2016. The lead facilitator, Laifolo Dakishoni, chose the interview sample by first selecting a number of farmers randomly from the complete list of curriculum farmers and then using purposive selection to help ensure a mix of men, women, young, and elderly. Penjani Kamyimbo, a trained and experienced Malawian translator, worked with me on all farmer interviews. Facilitator interviews were carried out over email and in English after I returned to the U.S. and I was able to create an interview that was responsive to the findings I collected during the farmer interviews.

Of the 30 farmers interviewed who were in the narrative and drama training group, 13 were from the Northern Region of Ekwendeni and 17 from the Central Region of Dedza. From the control group, seven were from Ekwendeni and one from Dedza. The average age of those interviewed was 39, with the youngest being 20 and the oldest 72. Women made up 58% of the interviewees and men 42%. Those interviewed had an average farm size of 2.3 acres, with a range from .75 to five acres. Average household size of respondents was five members, with a range of from three to seven people. The average small group size for both the drama and the small group discussions was 14 people, with a range from six to 24 people. Of the facilitators interviewed ( $n = 9$ ), six worked with the treatment group and three with the control group.

## **Engagement & Social Interaction**

*RQ1: To what extent does exposure to the curriculum including narrative and drama influence engagement and social interaction?* To better understand the role of narrative and participatory drama in influencing engagement and social interaction around the curriculum topics, if at all, I began by asking farmers in the treatment group a number of questions relating to their own level of engagement with narrative and drama during the training, as well as their perceptions of the level of engagement of others. Farmers were prompted to describe the engagement of women, youth, the elderly, and those from differing socioeconomic groups if initial responses did not consider these groups. For the control group ( $n = 8$ ), farmers were asked to describe their level of engagement with the small group discussions and their perceptions of the level of engagement of others with the small group discussions. This group was also prompted to describe the engagement of women, youth, the elderly, and those from differing socioeconomic groups. Facilitators were also asked to describe the level of engagement of farmers with the drama or small group discussions during training, depending on which group they worked with. Observations of both the treatment and control group further strengthened the findings by allowing me to compare the two and by revealing areas where small group discussions might have greater impact on the variables of interest than narrative and drama.

I then asked farmers if they perceived that narrative and participatory drama helped them understand the curriculum material, including complex topics such as climate change, nutrition, and gender equality, and followed this up by asking them to describe the ways specifically. Farmers in the control group were similarly questioned, but interviews focused on the role of small group discussions in clarifying information. I followed this question by asking farmers if the use of stories and drama helped them share their own ideas and/or experiences, and if they

believed the use of stories and drama helped others share ideas and experiences. I prompted those who answered yes to give examples of how they perceived the drama aiding in this sharing and also for specific examples of the ideas and experiences they and others shared if they could recall any. I adapted these questions for the control group by replacing narrative and drama with small group discussions in the question wording.

### *Self Engagement: Narrative & Drama Treatment Group*

When asked to describe their own level of engagement, farmers were first prompted to rate their engagement on a scale of one to five, with one being the lowest level of engagement and five being highest level of engagement, followed by a more descriptive response of the quality of their engagement, including whether or not their engagement had increased or decreased during the course of the two week training. The mean response of farmers from the treatment group ( $n = 30$ ) to the scale was 4.14. When describing their level of engagement, nearly all farmers described themselves as feeling shy about participating at the beginning of the training but becoming more confident to engage during the course of the two weeks. The word “shy” was mentioned a total of 84 times by more than 30 of the farmers. A male farmer in his late 30s explained,

You don't just start and then you're perfect, there is some initial shyness. I felt sorry because as time went by we got used to doing the dramas – it was fun and educative. We were shy because it was new people meeting new people teaching them – but later when we got used to it, we were though, ‘What a short time!’ We got used to it, loved it, and wished it would continue. (Interview #1)

Another female farmer in her early 30s said, “I have been involved, after lectures I would know how to form a drama. I worried I might do it the wrong way, but later, I tried and everything was ok” (Interview #24). Another female farmer attributed the support of the group to her increased confidence around participating in the drama discussion and activities, saying, “At first I was shy, but after two or three times, I was good to go. The first day I was shy, the second day [because of] the confidence the group was giving me, I was becoming confident more by the day because I was supported by the group” (Interview #14). A 20-year old female farmer also described being shy at first but gaining confidence and feeling she was “used to it” by the second and third days of the training, adding, “I feel confident now to act in a drama in front of people. Back home, I explained to people what we had learned and then acted out a drama...[there was] a large audience more than 10. They were very happy” (Interview #13).

Despite the confidence gained by farmers during the course of the training, the element of shyness was seen as one of the greatest challenges to using participatory drama, as it took some people quite some time into the training to feel confident enough to participate fully. While all farmers described feeling confident and willing to participate fully by the end of the training, some expressed frustration about the time that they saw as being lost while people gained this confidence. This sentiment was shared by a number of farmers when discussing the overall challenges of using drama: “A lot of people were shy and that was challenging, although they came out by and by” (Interview #36).

When describing the engagement of those in the drama group, facilitators described a high level of engagement among men and women of all ages and socioeconomic groups. One facilitator described that, “Everyone tried to take part....The young and the old actively

participated in the drama. You could see the elder people acting and participating actively. The drama groups were composed of different age groups and roles in the drama were shared accordingly depending the roles one was comfortable with not necessarily age group,” adding that the entertainment helped hold farmers’ attention as they followed the progression of the drama (Interview #42). Another facilitator added,

The farmers’ level of engagement during the training with drama was very good because, when the dramas were being performed there was no age or gender difference. The social economic status was not even considered, but farmers really concentrated on the information sharing through dramas and they took the responsibility of training the whole community through drama. (Interview #44)

This facilitator added that the use of drama raised the level of engagement during the training because farmers knew they would be asked to create a skit after the classroom lesson, and so they needed to know the material in order to create their story.

While most of the facilitators described a high level of participation among all age groups, one of the challenges described by farmers came from the elderly who expressed physical limitations to their participation. A 68-year old farmer described feeling confident to participate in general, saying, “I very much want to participate as much as possible, but because of age, the youngsters can do more because they need to stand for a long time,” adding, “I am involved when a group of people need to sing, and I contribute to the information that will go into the drama” (Interview #20). Farmers also found creative ways to ensure a role for those who were older beyond their valuable contributions to discussions. To include the elderly this age group in the physical dramas, farmers developed the less demanding role for these members of creating the “stage” for the drama. Two of the elderly would stand with their arms outstretched

and hands touching to create an entrance that the other actors would walk through to indicate they were entering the acting stage.

*Self Engagement: Small Group Discussion Control Group*

Farmers in the control group ( $n = 8$ ) were also asked to rate their engagement on a scale of 1 to 5, followed by a more descriptive response of the quality of their engagement. The mean for these responses was 1 compared to the treatment group's response of 4.14. Because the groups were not sampled at an equal number, with 30 in the treatment sample, and only 8 in the control group sample, these means and other comparisons are presented for descriptive purposes, not for direct comparison; even so, the numbers present a stark contrast. The low mean for the control group also doesn't align with participant descriptions of high levels of engagement; this low number may be due to misunderstanding of the question, and quantitative ratings of engagement are further explored in the survey findings.

Some farmers in the small group discussions also described becoming more confident over time. One female farmer in her early 30s said that despite feeling shy in the beginning, she became more confident and was "responding" more over time (Interview #24). A male farmer in his mid-20s said that,

There's one guy who's much, much better. At the beginning everyone was anxious and didn't know what was going to happen [or] what this training was about, so we weren't too courageous and comfortable. But later when we were introduced and as things went on, we became more confident. The small group discussions is where we gained a lot of confidence (Interview #18).

A female farmer in her 40s who described herself as participating “a lot” said that she would often take notes about what was being discussed and that other groups were doing the same (Interview #16). Another farmer in her 50s from the Northern Region described herself as being “very inquisitive” and asking lots of questions, saying that she was,

Not shy – even at the beginning because I knew I was surrounded by other Malawians with a message for her. If I didn’t understand something, I would wait until the end of the lecture, and during the question time she would ask questions. In the classroom setting if the trainer asks a question they will answer the question in a straightforward way – they might clarify point by point- but back in the village they may tell story. (Interview #5)

When asked how she shared information back in her village, she said, “Point-by-point, for example if someone is found cutting down tress, we will explain to that person the usefulness of those trees and the need to re-plant so that the soil is conserved.” I followed up by asking her when a story would be used instead of point-by-point teaching, and she said,

Mostly about agricultural new technologies. Depends on whether it’s a group of people – then you might do the drama, and if it’s one or two people you just teach point by point. When it’s a group of people, I will tell them point by point, but it’s also necessary to use drama because this gives a lot of people the message at the same time, it’s not boring it’s entertaining. A lot of people can get the point at the same time. I think people understand better you use a drama because they are better able to see how you do things. (Interview #5).

While interview discussions highlighted some of the ways that both drama and small group discussions increased engagement of women, the elderly, and those with less education, it is

interesting to note that the quantitative findings revealed that men were significantly more engaged in the small group discussions.

### *Engagement of Others: Narrative & Drama Treatment Group*

Farmers in the narrative and drama group were asked to describe the engagement of others in the training and drama activities. Their responses highlighted some gender differences in relation to initial comfort level with the drama. Many farmers (76%) described women as being very shy at first but gaining confidence over time, with one 32-year old female farmer saying, “At first it was a male show, but later equal” (Interview #21). Another female farmer added, “At the beginning the women felt shy and were reserved, but as time went on they realized that some women were participating even more than the men” (Interview #12). A female farmer from Ekwendeni described her group of 11, with an equal mix of men and women, saying,

The first day women were a little shy, but after that they were very free. Before the training this is what was happening with women talking less, but after the training and dramas, it gave them an opportunity to be the head of the discussion. Yes and even the lecture was good because women were empowered, so the drama adds to their confidence. Acting in the drama helped men practice and accept equality. (Interview #13)

Another farmer added that,

The women were very shy at first, but as time went on they opened up and became more confident. One of the women in my group was very shy – even back in her village she was known as a shy person, but we made her feel confident and participate. The first

drama was performed in her village, and she took part and the people were amazed (Interview #27).

Some attributed this increased confidence, at least in part, to the encouragement of others in the group, with one young male farmer saying, “There are some who are shy, but we encourage them to try to participate; those who are shy participate more over time” (Interview #8). A 37-year old male farmer from Dedza described his group of 9, saying, “At first women were shy but they became more confident. The men encouraged the women to participate because they had learned about gender. Some accepted the gender equality idea, but some were still reserved.” When asked if the drama helped those that were more reserved accept the ideas more, he responded, “Yes, very much – it was working very well because when it was explained and then acted out – people were doing some real life experiences so it was getting to their heads, something they can not easily forget” (Interview #22). Others described being surprised at how much the women were able to contribute once they felt confident to fully participate with some describing women not only participating but leading discussions, and others describing women as stepping in when the men couldn’t remember information.

The findings also found some differences regarding age of participants. Nearly 40% of the farmers also described the elderly as being shy at first, but gaining more confidence throughout the course of the training. A female farmer in the drama group described her group of 12 that included 2 elderly, saying, “Some elderly were not as active as others. As time went by even the elderly gained confidence. Even back home the elders participated” (Interview #11). A 72-year old male from Ekwendeni who was the only elder in his drama group of 13, said, “The younger ones participated more than the older,” (Interview #19). And a 41-year old women from Dedza described her drama group of 12 as having a mix of men and women and ages, with two

elderly, who she said, "...did take part, but because they are elderly they could not be put into the parts that require more energy, so we would involve them in the simpler parts" (Interview #29).

Other general comments about the engagement of others included, "By getting them involved and giving them a role in the drama makes them engage" (Interview #4), with another farmer adding that the drama helped ensure that everyone was engaged, saying, "without the drama some would just sit and rest (Interview #3).

#### *Engagement of Others: Small Group Discussion Control Group*

Farmers in the control group were also asked to describe the level of engagement of others in the training and the small group discussions. One farmer from Dedza in a relatively large group of 24 said, "Because the group was learning about gender, the women participated. At first they were shy to the extent that women were sitting on their own row and men on their own row, but later they mixed up. The men, despite [the fact] that people came from different areas, they respected each other" (Interview #24). A 50-year old farmer in the control group described, "During smaller groups people were very active, although in the bigger group people did ask questions and comment. Smaller groups are very good, but in the larger group some are very quiet" (Interview #5). When asked if men and women participated equally in her group, she said that the men participated more than the women; but said that people of all ages participated nearly equally.

A 25-year old farmer who participated in a group of 30 people also described the elderly as contributing equally and feeling particularly valued because of how they could compare

experiences of the past to those of the present. He also described the engagement of women, saying,

At first men were dominating, but later on it was discovered that after women were empowered they came back and were in the forefront.....We never believed amongst a group where there was men and women that women could lead – or act as a leader telling people things. This was the job of men to inform women about what was transpiring in the community, but through the training and then seeing them [women] take part in the discussions made him believe they were equal and maybe even better in some cases.

(Interview #18).

Other comments from farmers in the control group included, “In the large group people act interested in all of it, but in the small group there’s more honesty and openness” (Interview # 6). A 62-year old male described,

In a group it’s not all the people who can talk and contribute- some will listen – some will talk just a little...smaller group helped a lot. People were coming in with their challenges, others were providing solutions. I feel the drama would really help a lot, but even just the small group discussions are also helpful because people will listen in the breakout smaller groups- there are very good discussions in those smaller group. (Interview # 9).

These findings reveal that small group discussions aided in engagement, including those from minority or at-risk groups, for both the control and treatment groups. Representative quotes from this and the following sections can be found in the Appendix.

*Social Interaction and Information Sharing During Training:*

*Narrative and Drama Treatment Group*

Beyond the level of engagement of farmers, it was important to understand the impact of narrative and drama on the quality of social interactions and information sharing around the social and environmental topics included in the curriculum. This included talking with farmers about their experiences both during and after training to better understand the nature and frequency of these interactions. To better understand the quality of social interaction and information sharing during training, I asked farmers whether or not the use of stories and drama helped them share their own experiences and ideas. I also asked them if the use of stories and drama aided in their knowledge and understanding of the experiences and ideas of others. I next asked them if the interactions and information sharing during the participatory drama activities aided in their comprehension of curriculum topics and if these activities presented information or ideas that were not learned during the more formal lessons.

One of the unique features of the use of participatory drama was the ease in which this form of communication allowed farmers to talk about sensitive issues, including gender violence in the household and alcoholism. Farmers attributed this to the ability of drama to help lighten up what are typically very difficult experiences to share with others. The element of humor was mentioned by a number of farmers in the treatment group, especially in relation to helping people interact and share information around sensitive subjects. A 26-year old female from Dedza said,

I felt entertained and at the same time I got the message, especially about gender-based violence. It's not a good thing the violence that takes place in families, but the message was coming, while being entertaining, so the message was lighter...people were laughing, but the way you got the message – I feel like it would be good if a lot of people got that message that way (Interview #34).

Another female farmer in her mid-30s said that she learned about gender relationships in the household, including traditional gender roles for work and gender-based violence during the training, and attributed the fact that people were discussing these sensitive topics to the use of drama. She said she would not have heard about these experiences of others without the drama, which she said, “makes things easier because it’s lighter, and those who did not get the message when someone was telling them, would easily get it.” When asked if she felt men might be more willing to accept new ideas around gender relationships through drama versus point-by-point discussions, she said, “Some were understanding during the lectures, but most understood better when it was dramatized, and they were actually seeing real life experiences. Little by little it helps people because they’re seeing it.” And she added that men were able to laugh about these topics, which she said, “Helps [them] accept it because it’s not so serious (Interview #15). Along these same lines, a 25-year old male from Ekwendeni, said,

I think people understand much better when you perform a drama...point by point, it’s different than when you tell them there will be drama – the drama entertains them and educates them. More and more come when you tell them a drama will be performed. I think laughter and making things light when you’re teaching is a very good idea. The drama entertains, but when you’re just teaching point by point some are listening and some busy talking and doing something else, but when there’s a drama everyone is attentive and watching you, wanting to learn what you are telling them. (Interview #18).

Despite the multiple examples of the ways in which drama helped participants talk about sensitive topics, it is interesting to note that men in the control group reported being significantly more able to talk about these subjects than men in the treatment group.

When asked if the use of drama helped farmers better understand some of the complex topics taught in the classroom, farmers often gave examples that included climate change and gender equality in the household. When asked about the benefit of stories and drama in helping understand the material in the curriculum, a 50-year old female with a family of six gave the example of gender, saying, “When explaining about types of gender based violence, sometimes it was not clear, but when it came to drama people were able to be clear and differentiate the different types of gender based violence (Interview #31). A 35-year old female said that while drama was often a repeat of what was learned in the classroom, it offered a format for including additional information. This same farmer added an example of how information sharing in the form of drama can clarify complex situations relating to social inequality:

There are times in the classroom when you can miss something, but when others act out a drama it became more clear. For example, a family that went out to farm somewhere or another man’s garden hoping to gain more money after the famine, but it turned out that the boss was abusing the family and not giving them enough food – so much so that after harvesting the tobacco [for the man] they were growing [their own food] to supplement their needs. They learned that to them it was bad to just go and do work for someone who just abuses them. The drama made this simpler. (Interview #33)

A female farmer said that drama helped most around gender issues and the “different roles that men and women play – including boy children and girl children,” saying that “When they were acting out, I felt I got to understand better” (Interview #36). A relatively young male of 30 said that the drama helped him most in understanding gender issues, saying that previously they hadn’t been thinking much about this, “but after the drama, I’ve even practicing back home...

especially the types of jobs that were considered men's that women can also do vice versa” (Interview #32).

A 64-year old male described the benefit of drama around issues of gender equality issues, saying that he and others could,

...learn from the message that others have to pass. Yes, things came out in the drama that you might not otherwise know in your day to day conversations. For example, we talk about gender issues – I learned in the drama specifically that in other villages men are given special parts of the relish that only belong to men, not for children or others. I was surprised to learn that this was still being done in other villages (Interview #3).

A female farmer added, “People get it all in the drama – in a lecture some people are teaching, but the drama shows the real life stories so people can understand. Very good to have the men around because they see that the drama tells them the best parts aren't just for them – everyone is equal – harvest together, budget together” (Interview #4).

One female farmer said that drama, “...really helps me relate messages about what I know and do in my day to day life to other people. You're having a good time and at the same time you're giving out a message so it makes things easier.” When asked what it would be like to try to talk about these topics without the use of drama, she explained:

When there's a number of people, like around 10, explaining to them using drama is much better. I would have problems explaining to just one or two people who wouldn't understand very well. The same as when you want to teach someone how to cook nsima [traditional staple food], you show them practically and they understand. It's easier to have a group of people because that helps reach a wider range of people.

She went on to say that she had shared her experiences with the group and had learned about practices she planned to apply, including making compost manure. She noted that the training and drama gave the farmers time to talk about actual experiences they've had with climate change and climate change responses, adding,

There was a challenge so they tackled it using the same drama. For example the man who doesn't want to listen to good advice and was hunger stricken- poses a challenge and [the group] finds ways to mitigate [this challenge]. If we tell people how to eat healthy and some say they can't afford to, we try to show them how they can make a good healthy meal and try to find a solution. (Interview #2)

Another 30-year old male farmer described an example of the role of drama in aiding in comprehension and information sharing relating around climate change,

The lessons became more clear when they were doing the drama. With climate change, when they were explaining in the classroom, it was difficult for people to understand, but when they were doing the drama a lot of people opened up. For example, there was talk about factories contributing fumes, and even locally they take part, but in a smaller percentage when they remove manure from underneath and bring somewhere what comes out of the manure is contributing. Some of the solutions were the planting of trees because the trees will help absorb those gases. Sometimes just explaining it was too hard but acting out others would understand better (Interview #35).

This farmer also described the act of dramatizing climate change as helping the farmers break down the local terms used for climate change: *kusinthu kwa nyengo* (climate change); *kusinthu* (change); *kwa nyengo* (time). Another farmer added, "When you explain to people about cutting

trees, making charcoal, seeing gas emissions people might not understand it, but in drama the meaning comes to them.” This farmer added,

Most farmers did not do well because of the rains and climate change. The rains were erratic, it was not a one man’s problem, so most were facing the same challenge. I was learning from them, they from me...despite those challenges you present them in a drama and people laugh about them and yet they are getting a message ‘it’s a challenge and yet we’re trying to solve it together.’ When you tell people there are plays about something, everyone would love to come –good way to meet the majority of people. Gives knowledge and helps them try to come to a solution about the challenges they’re facing (Interview #1).

A young 20-year old male from Dedza also described the benefit of drama in helping aid in the comprehension of climate change, saying,

When teaching [climate change] was hard for people to understand, but when being acted out in a drama it helped everyone understand...Those who understand climate change would come and explain to fellow drama members that this is what we need to put in this drama so that people understand better, and they would show their friends how to act it out...Someone would explain to them, ‘This is the message, the whole of this message should be put into the drama,’ [and] everyone else was attentive and would take part in acting it out and trying to practice that part (Interview #25).

A number of farmers brought up examples relating to agriculture and soil health when responding to the question about drama aiding in understanding complex material. One said that “What we saw in the drama about improving soils was presented differently from what we learned in the classroom, helping me understand the concepts much better” (Interview #37).

Another said that drama helped him most in relation to comprehension: “Mainly about the soil...I felt I understood better when we were doing the dramas. One who was modeling growing groundnuts on the type of soil where groundnuts would not do well; and soy and the type of soil where soy would not do well” (Interview #22). Another added that drama, “made things simpler so things could be understood because people were acting out so they would know this is how we do things,” adding the example of soil and the different types of soils where you can plant different types of crops, saying,

During training they would explain the different types of soils, and it was hard to understand, but when they came out [in the drama] they would show the different types of soil – if you plant ground nuts on this soil it may not be good, but it may be good for maize or pigeon peas, this made it clear for when they out into the fields (Interview #26).

A final quote from a male farmer in his late 30s directly addresses the benefit of drama in stimulating social interaction:

[Drama] very much helps share ideas. Some other people didn't know what I do, but through the dramas they got to know me. Some may have been thinking I am a quiet person who doesn't want to share with others, but they learned that ‘Wow he does have quite a bit of talent,’ and learned that I know a lot about agriculture. Some have even asked me to come and share my experiences, and have introduced me to others who I hadn't interacted with and we are now friends (Interview #1).

*Social Interaction and Information Sharing During Training:*

*Small Group Discussion Control Group*

Farmers in the control group also described their interactions and information sharing during their small group discussions as being helpful. As a group, farmers were able to come together to share experiences and figure out solutions (Interview #24), although specific examples were often limited. When asked if she learned anything in the small group discussions that was not in the larger lesson, one 50-year old farmer said that she had learned some additional things, especially around nutrition, but that she “still needed some practical demonstration” (Interview #5). One farmer who was also a minister said that the small group discussions did generate information sharing and mutual learning among the group, but this farmer didn’t give any specific examples (Interview #6).

A 64-year old male farmer described the benefit of his training using small group discussions for those who might have lower education and economic status, saying “There are villagers without money, so they are taught new technologies, manure [compost], budgeting, gender – it really helps them.” He added, “We gain a lot in the bigger group, but there is an advantage in the smaller group because you’re given time to explain yourself and problems and think about solutions to the problems – so smaller groups are ideal.” This farmer also said that issues of gender violence were discussed in the smaller groups,

Gender issues, we learned in the classroom, but now discussing in the smaller groups, the extent of problems caused by gender based violence was really coming out. We learned more about this issue than we did in the larger group (Interview #9).

A female farmer in her mid-30s said that she had shared with her group information about successfully growing different crops on small plots of land, which helps those with limited acreage and provides increased food security through crop diversity in light of the unpredictability of climate change (Interview #10).

This same farmer added that she learned about nutrition in the small group discussions from the examples of others, adding that

It's difficult to tell if someone has really grasped a point in the bigger group- a question might be posed and someone tries to answer it and everyone laughs but they don't know if everyone has gotten it really or not; in the smaller group you can identify if someone is lost and ask them and explain. In the smaller group, you come to one understanding and solution.

### *Social Interaction and Information Sharing after Training:*

#### *Narrative and Drama Treatment Group*

The curriculum was designed both to teach farmers the inter-relationship of multiple sustainability issues and train them on how to teach other farmers about these issues. Central to the training was the "farmer-to-farmer" teaching aspect. To evaluate the impact of narrative and drama on farmer-to-farmer teaching, interviews sought to understand how farmers had shared the information they learned with others outside of the context of their training. This included who they shared information with (their spouse, others in their household or village, farmers in neighboring villages), in what context (how many were gathered), and using what communication techniques (point-by-point discussions or dramas).

Nearly all farmers in the treatment group reported sharing information they learned after the training through the use of drama, with numbers reaching into the hundreds. One female farmer said that her group has shared the information through dramas three times. One time in her village and two times in other villages. She described 350 people coming one of the times and added that, "There wouldn't be as many without the drama because people like the

entertainment part and they get the message while they're entertained. More and more came [around 200] when the drama started" (Interview #34). Another farmer described that "When we started the drama more men, women, and children would come – the drama invites people by itself" (Interview #26).

Some reported traveling to up to 12 villages after training to teach others and perform skits around the information that they had created with their group in order to share this information with others using the drama skills they had learned. Farmers would notify the village headman that they were coming and often 50-100 people would be gathered; but once they started the drama, farmers described up to 200 people coming to watch. One farmer said that since the first day of the training, the group had gone around their own village and neighboring villages to teach others. This farmer described the experience, saying, "One group member will first give a talk point-by-point, and later the audience will be told that there will be a drama. They will inform the villagers in advance rather than on the spot to attract more people (on such and such a date they will have a meeting)." According to this farmer, some know there's a drama; however, some are surprised," adding, "The drama is entertaining, and so it gets the attention of people, so while they are entertained they are also educated" (Interview #21).

Another farmer added that she and her group had traveled to all of the 12 villages in their area, with no less than 50 people coming each time to watch the drama (Interview #31). This farmer felt that without the drama people would still come to learn. A male member of her drama group added that "More and more came once they started the drama. At one point there were just over 50 people, there but as things started up it got up to around 200. I think people understood the message, and I feel that people understand better than when you're just teaching them [point-by-point] (Interview #35).

A female farmer described her drama group performing in six villages (including her own, adding that,

In some instances more than 100 [people came]. More and more came as we started the drama. We would start with a smaller group of just over 30, but then as we started [the drama] more would come. When we were performing in the villages here, a lot of people would come – men, women, the young. I feel that they really got the message because a lot of farmers have started practicing what they taught. (Interview #36)

When asked if she thought as many people would understand without the drama she answered, “Some would but it would depend on the person – some may not.”

Farmers described the experience of teaching others the curriculum material through the use of drama as “a lot of fun” and something they “people enjoyed very much” (Interview #22). Another said that there was “lots of laughter” and that “people seemed to enjoy” (Interview #15).

A young female farmer described that,

The dramas helped them very much because not all of the people are in the training, so the dramas help them learn and then teach back in the village. They have tried to help other people from what they’ve learned. Even from the same group people don’t understand and back in the village they clarify what something meant. The drama helps with this very much because not all understand in the classroom but when you’re doing a drama everyone can understand. Drama is great because everyone is attentive and wants to listen to what you want to tell them – entertaining and educative – they want to be entertained and then the message sticks. (Interview #4)

Another farmer said that after traveling to neighboring villages with his drama group, “People asked us to continue coming to help people change because change is not automatic, it takes time....People enjoyed very much and other people and chiefs invited us to come to their villages. Closest villages came, but others heard about it and asked them to come (Interview #1). This farmer added that there were questions after the drama, not all of which his group could answer. He said when this happened, they would ask others and then come back later with the answer.

A male farmer in his 40s described the drama as “entertaining and at the same time educative – reaching to more people who were not part of the training would come listen watch laugh.” He gave the example of his own family of six, saying, “I am the only one attending training. If I go back home and just explain, some may not understand, but the whole family at some point will see the dramas and will recall what he said and then they will understand.” He added, “[I have] learned skills that were very helpful in doing drama (Interview #120). A female farmer added, “The drama helps a lot – despite just the lecture it’s beneficial to act out so that those who miss will get something from the drama.....sometimes the material is too difficult for everyone to understand – so even talking may not be enough you need to act out (Interview #13). A female farmer in her 50s said, “I have had never shared information like this before. I now have the information and the tool of drama” (Interview #11). When asked about information sharing after the training, one of the drama facilitators said,

Farmers shared the stories and dramas in their families and communities; this is so because in the follow up lessons, the farmers were coming up with more questions from whatever they discussed. Some drama groups were sharing the dramas in their own communities which helped to continue sharing the lessons through these community interaction (Interview #42).

*Social Interaction and Information Sharing after Training:*

*Small Group Discussion Control Group*

Farmers in the small group discussion control group also described sharing information after the training, although to much smaller groups of people. Interestingly, one female farmer described using stories to share information:

After training, I had time to talk to my friends to tell them what we were trained on – planting more crops, gender, and so on – family planning is under their control. There was a meeting that was set up by someone else and I was given the chance to speak and share information. I was telling in a story way and giving examples of a field nearby where people nearby had intercropped. Because everyone knew that field, it was easy for them to understand. (Interview #10)

When asked what the value was of teaching information by using a story, she said, “People easily understand because people differ in how they understand information. For example, you can teach someone how to cook nsima, but modeling in a practical way helps people understand. Another farmer said that she had shared information from the training with people from her village, adding, “There were times when there was a group of villagers and times I met people individually.” She described teaching “point-by-point,” and said “16 came to listen.” When then described that it was “Just me presenting the information. I met them and taught them something different from what I had learned” in the training. When asked if she would share what she learned during training, she said she would teach others in her village, going “family by family at their request.”

Another farmer in the control group said that she had shared what she learned in the training adding, “There’s a group of 15 women back home – after the training I went and

explained to that group, which is in turn explaining to others and modeling by making their own kitchen gardens. I taught point by point” (Interview #17). A male farmer in his mid-20s said that

We have been conducting small group discussions in the village where we share problems in the village and possible solutions to those problems that they learned during the training. Forty people come. A good deal of us from the training lead the discussions – about five of them (Interview #18).

One of the facilitators from the control group said that after the training, farmers, “shared all they learnt to their fellow farmers who did not attend the training,” adding that,

There is feedback that in some of the villages the trained farmers have formed clubs through which they are disseminating all what they learnt. For example they have taught their friends on how to make manure, contour marker ridging using A-frame, and through these clubs people have heaps of manure (Interview #46).

## **Attitudes**

*RQ2: To what extent does exposure to the curriculum including narrative and participatory drama influence attitudes?* To answer the second research question relating to the influence of narrative and participatory drama on positive changes in attitudes towards environmental, health, and social issues, I asked farmers if they had changed any of their own opinions or beliefs about how to do things relating to farming, the household, or anything else during the drama sessions. If farmers answered yes, I asked them to tell me more about the drama and/or opinion/belief that changed if they could. I asked farmers in the control group if they had changed any of their opinions or beliefs during their training and small group discussions; I also asked them for examples if they could recall them.

Farmers in both groups experienced positive changes in attitudes, including towards long-held beliefs around gender equality, as well as health and nutrition, and environmentally-friendly agricultural practices. Many farmers in the drama group attributed their attitude changes to participating in creating, watching, and discussion the dramas. Some described the ways in which this had occurred, including the modeling of behaviors and the comfort that the dramas brought to sensitive, more taboo subjects. Only one farmer in this group attributed their change in attitudes to the small group discussions rather than the overall training. Some of the attitude changes that occurred for farmers during the training had already led to behavioral changes at home. And while the interviews did not address behavior change directly, select examples of these changes that were shared in the context of attitude change are included in this section.

#### *Changes in Attitudes: Narrative and Drama Treatment Group*

One of the elements of stories and drama that was found to be most effective, to a surprising degree, was the ability of these communication methods to allow farmers a comfortable forum for sharing and discussing sensitive topics that are typically kept private. Beliefs around household relationships, gender equality, and even gender violence are often rooted in long-held traditions. Farmers – both men and women – described never having really thought about the gender roles they were playing or the challenges these roles were creating within the household, because it was just how it had been done for so long. The Malawian translator working with me, Penjani Kanyimbo, added that men previously weren't thinking about gender issues or paying attention to them because these attitudes towards women's and men's roles in the household were considered normal. A female farmer in her mid-30s gave an example of traditional gender roles, saying that in the past,

Women were regarded as almost like slaves back home...The husband would leave the hoe for the wife to carry and maybe she even carries a baby. They would get home and the husband would sit while the wife goes to get water and prepares food while the husband is sitting and doing nothing and maybe even asking, 'Where is the food?' even though they were together in the garden. This caused conflict and difficulties in the marriage and at home. (Interview #7)

And another female farmers in her 40s said that,

The dramas helped me change a lot. I have boys and girls, and it was always the girl who would wake up and sweep around, go to draw water, boil the water for the boy, and then feed the boy, and then they would go to school, and this was normal. But since the training, I am teaching my kids to work together, that there is no work that is only for girls. The boy can also cook and draw and boil water and do things for this sister as well. I didn't know it worked this way before the training (Interview #29).

A male farmer from Ekwendeni in his late-30s described the use of drama as "teaching him a lot of things," explaining,

We come from different backgrounds, there are things that you believe in and think are right, but when you come to a group...this one brings an input and this one brings an input....All along I thought if I was doing this to my wife, I was doing the right thing, but from what you see in the drama you realize you were wrong all along. (Interview #1).

And a 72-year old male farmer described, "Through dramas I have learned how to change bad behaviors...Men previously didn't know that they weren't treating women equally" (Interview #19).

A 27-year old female from Dedza explained that, “People believed the best part of the meal was for husbands, but have learned they should share equally and give to the children equally....an idea we inherited and didn’t know was wrong” (Interview #23). And a 36-year old male from the same region shared that, “Men would sit and wait for the wife to cook nsima, relish, stuff like that, but due to the training, they realize that they are all tired, so while the women are preparing nsima, the men could prepare the relish and that would make things easier.” When this farmer was asked if it was hard for men to accept these new ideas, he said,

At first it was hard, but they then understood – through explaining and then acting, they could see that they overworked the ladies, which is why they may have poor health from overworking...when they were acting out their work, the men realized they were overlooking the women (Interview #27)..

When asked if he had changed any of his attitudes or beliefs due to the stories and drama, a young male from Dedza described not only a change in attitudes but also changes in behaviors for himself and other farmers in his training group, saying “Some of us have already started doing things back home,” relating to gender roles. He gave examples of how he is now helping his wife with some of the tasks that he wasn’t doing in the past. He described that previously when he and his wife went to the garden together, on the way back, his wife would carry the baby, the firewood, and the hoes, but now he’s discovered this is wrong and he’s helping her with these loads. He added that “We are living happily. I now see that she was overworking and overstressed, and now I can see that she is living a happy life” (Interview #35).

A 26-year old female from Dedza also described a change in attitudes that had already led to behavior change within her household, saying,

I thought that the kitchen was mine alone, but now after this training, I know my husband can also go in there and cook me something...I have now eaten nsima that he has cooked. And it was ok, good. He made it just like I do it. He observes me and learns with a little instruction. (Interview #34)

She added that women are now doing tasks that they did not do before the training, including things like "...making the grainery or the house for livestock," which she said was "previously thought of as a man's job, but we learned through training that even the woman can do it (Interview #34). Another woman from Dedza said that,

It was regarded that making the roof was a man's job, but now I can do it, and making of toilet was man's – cooking was a woman's job. Women are very happy about these gender equality ideas. When I ask other women they say they are seeing the change (Interview #36).

A 34-year old man from Dedza explained that he "learned that no job is a woman's and no job is a man's – they should be sharing," and added that he learned that he "should teach his children that a boy can be in the kitchen maybe boiling something while a girl is sweeping or vice versa before school – they should grow up knowing that a man can do a woman's job and vice versa (Interview #28). These new ideas impacted both young farmers, and older farmers for whom these beliefs were long-held. One 68-year old farmer told me that this was the first time she had ever learned about gender equality issues, adding that she planned to change her behavior once she returned home (Interview #20).

While issues of gender equality were the most common ones shared in relation to attitude changes, farmers also shared a number of examples relating to health and nutrition. A 54-year old female farmer from Ekwendeni explained that she had learned how to prepare a nutritious

meal, saying, “In the past we might think nsima and beans, and that would be eating well, not understanding that vegetables are important and good, which we didn’t believe in the past” (Interview #11). And a 37-year old male from Dedza described that, “In the past, we had the belief that when a child was not feeling better and looked malnourished, we would believe that it was because of infidelity in the house. But since the training, we now know that poor diet leads to malnutrition. The drama helped with this very much. I changed easily because I understood exactly what happens” (Interview #22).

In addition to changes in attitudes around gender issues and health and nutrition, a number of farmers reported changes in attitudes relating to agroecology and soil health practices that secure the long-term health of fields, helping farmers better respond to the impacts of climate change. Farmers often mentioned practices and beliefs around traditional ways of farming – sometimes affirming and sometimes changing beliefs held by their parents and grandparents. A 50-year old female farmer from Dedza told me that,

In the past, parents were growing crops without fertilizer, but my generation has been using fertilizer. Due to the training, we are able to harvest without using fertilizers....I am happy because most of us can’t manage fertilizer prices, so we were so happy to learn that there olden ways were matching what we were learning. (Interview #31).

And another farmer added that, “...now we’re confident to use locally available things to improve our famine without using chemicals” (Interview# 38). One woman from Dedza explained that, “She believed in the traditional way of farming – clearing the land and burning it. But now she knows you bury crop residues as early as possible to improve the soil” (Interview #33).

Another farmer from Dedza explained to me that what he learned from his parents was, “slash and burn to help kill weeds,” but said that,

When I came, I learned that what I had been believing was wrong – including that the soil needed shade, crop residue needed to be buried. My parents said to grow one crop in a field, and not use intercropping – everything changed at once. I was believing something for a long time which was the wrong thing. (Interview #1)

A 68-year old farmer from Ekwendeni said that she had changed some of her beliefs, telling me that, “Whatever I believed at first about agricultural practices, what I have been doing, that is the traditional way of farming. I intend to change this growing season” (Interview #20). Another female farmer added,

What I have been believing in the past is that tilling and growing a single crop is good, but after the training, I was explained about top soil and that this is the one good for growing crops and doesn't need to be disturbed to avoid runoff [or you will] you lose the nutrients. Also intercropping – I didn't know this should be done before the training – soil keeps moisture this way (Interview #5).

#### *Changes in Attitudes: Small Group Discussion Control Group*

Farmers in the control group also described changes in attitudes relating to gender equality, health and nutrition, and environmentally-friendly farming practices. Only one farmer in this group attributed these changes to the small group discussions, however; all others spoke of the training more generally in relation to these changes.

A 64-year old male described the change in his attitudes towards gender relationships, saying,

There are some things that I believed, but now I think are wrong. I am Ngoni, and we traditionally did not want a woman to go to the front of something – directing, organizing

– but now I know that’s all wrong, that they are equal and might know something I don’t know. It was hard to change my mind because we grew up with this – hearing this is what women are supposed to do...my wife is [now] able to do things freely, she is enjoying her life. It was our culture, but we weren’t educated about new things. (Interview #9)

This farmer also added that additional information was learned during their small group discussions that helped change his attitudes, saying,

The gender topic, bordered more on men doing violence because it’s common here, but when we broke to smaller groups we highlighted that we should be careful, it’s not always men who are always violent there are times when even a woman can do something that might be violent.

A female farmer from Dedza in her 30s described attitude changes towards gender issues, saying, “Men thought cooking, sweeping, and cleaning was only for women, now they know men can do – she previously thought men couldn’t do” (Interview #10). One farmer said that her attitude change had occurred mostly around “home management issues,” saying, “I have learned that budgeting and healthy meals are something that was being thought of traditionally – that nsima was enough. But now I can prepare a good meal without using too many resources. In the past [we were] eating a lot of the same thing (Interview #7).

Farmers in the control group also described attitude changes around agricultural issues. The following example described believing something new after “seeing” the behavior. This farmer is most likely describing the experiential learning activities used during the training in which farmers would go to a nearby field to observe farming practices firsthand,

Before the training we did the traditional way of farming – growing one crop on one field – but now we can grow several crops in one field. I was surprised that in one field you

could grow all these crops. It was easily to believe it because we had seen it. (Interview #24)

Another farmer in her early 40s described,

There is one great change which I have noted since the training started – the farm agricultural practices we were used to...[we] believed that every crop should be grown on its own piece of land. We inherited this belief from parents. Now I know about intercropping – on one piece of land you can grow multiple plants rather than needing a very big piece of land. I believed and grew up with this idea. (Interview #16)

### **Self- and Collective Efficacy**

*RQ3: To what extent does exposure to the curriculum including narrative and drama influence self- and collective efficacy?* Farmers from both the treatment and control groups talked consistently about feeling more confident throughout the course of the curriculum training. This included feeling confident to try out new ideas and innovations on their own around curriculum topics, as well as feeling more confident to teach others the information they had learned. Farmers also described feeling better equipped to work collectively to problem solve and face challenges as a group. Farmers in both the treatment and control group described an increase in self- and collective efficacy. Those in the treatment group repeatedly attributed this increased confidence in both themselves and in teaching others to the use of participatory drama, describing the elements of the drama that helped build their confidence. Three farmers in the control group attributed their increased confidence to their small group discussions, with others speaking more generally about the training as a whole as helping them feel more confident. Farmers in the treatment group also described feeling more confident because they had learned a

new tool for teaching others that helped most of them go from being “shy” members of the community to performers and teachers of hundreds of others farmers. There was an element of entertainment, and often laughter, described around learning from and performing in the dramas that farmers described as helping them feel more confident to participate and to teach others using this method. This element was very apparent during my firsthand observations. Below, I offer some specific illustrations as evidence.

### *Self-efficacy: Narrative and Drama Treatment Group*

I asked farmers about whether or not the use of stories and drama helped them feel better equipped to try new ways of doing things on their own. If they answered yes, I asked them to explain how they felt stories and drama had helped them feel this way. Every farmer interviewed in the treatment group said that they felt more confident at the end of the training than at the beginning. For example, when asked if she felt better equipped after the training to try new things on her own, one female farmer in her 20s answered, “Very much, it’s like it opened me up and gave me confidence. Now I am trying to do things on my own and can also tell an audience something confidently” (Interview #34). One farmer said that she has already started trying out new ideas on her farm, and another added that the drama has helped her to try things that she knows will help her (Interview #31). A 22-year old female farmer told me that the use of drama, “Changed me completely,” adding,

I am different from how I was before. I feel very confident now to speak in front of others. Drama helped with this very much. At first I was wondering who is around me who is watching me, but later everything was ok. Unlike in the classroom, the drama has made me very confident (Interview #4).

Another female farmer described the drama as helping her realize that the issue of gender violence wasn't just related to her: "You think it's just you – but then I realized my friends also have the same experiences. And I realized, I also have the same problems. This gives us a lot of confidence (Interview #7). Another farmer told me, "I would like to try out the new agricultural practices, at the same time, I want to use the same experiences I have gained from the dramas to reach out to others" (Interview #21). With another saying, "It was good because it was removing all of the fear from you and gave you the confidence to entertain and educate" (Interview #32). A young male from Ekwendeni told me that, "The drama has taught me and opened me up," adding, "I am now capable of making a drama by myself, and I know when I'm not giving the right messages" (Interview #35). A female farmer around the same age said that, "It [drama] made me confident, and I used to be shy, and I'm no longer shy and am interacting with people without problems" (Interview #36). Another female farmer said that,

Being part of the drama group brought a lot of confidence to me – unlike in the past I didn't know I would ever talk in front of a group of people, but being part of the drama group made it simpler, I gained confidence, now I know I can stand in front of a group of people and share whatever I want to share. (Interview #37)

A male farmer in his 30s said that, "Because the drama gave me an opportunity to feel confident, I've been confident ever since. And now I'm able to share the information from the training. In the past, I have performed dramas, but this sharpened my skills and confidence" (Interview #23). And another male farmer in his 30s explained that, "When I was performing, I was feeling much better and confident...I would not have shared information with this many people without the drama (Interview #28).

A female farmer in her mid-30s described,

Lots of laughter and people seemed to enjoy. I think it's easier using the drama and [it] attracts attention. I had never done anything like that before teaching in front of others. The drama helped give me confidence to go back to my village and share information with others in this way (Interview #15).

Another added, "There are some lessons when they ask questions and people are shy to answer, but when it comes to the drama everyone laughs and gets the message" (Interview #11).

Facilitators were also asked about farmers' levels of self-confidence, with all facilitators saying that farmers gained confidence throughout the course of the training. Facilitators who worked with the treatment group described farmers as gaining self-efficacy through the act of identifying their own solutions, thinking of numerous ideas to create the dramas, and exhibiting strong recall of curriculum information, all of which these facilitators attributed specifically to the use of drama. Other responses similarly mentioned the sharing of ideas and the increased recall of farmers, as well as the new ability of farmers to disseminate information better in the drama group. One facilitator said,

Some people are "naturally" actors while others were shy at first. The dramas helped the farmers to be more confident in what they were doing and were very equipped with information and confidently displayed this in the acting...The training helped to explain [and] "unlock" some of the talents the farmers had. This experience is what encouraged many farmers to actively take part in the dramas (Facilitator Interview #42).

Facilitators were also asked if they thought the dramas helped participants feel or become better equipped to try new ways of doing things on their own. All of the facilitators for the treatment group answered yes, with some having ideas about the reasons for this added confidence. One facilitator said that, "Through the drama they were able to identify solutions

own their own,” adding, “When they are performing drama, participants try to think lots of ideas and are able to remember it very well” (Interview #39).

Another attributed this change in confidence among the drama group to the fact that “People gathered a lot of knowledge,” and said that, “When they were performing the drama, a lot of ideas stuck in their minds” (Interview #41). Another facilitator said, “The dramas helped the participants to be more confident in what they were doing and were very equipped with information and confidently displayed this in the acting,” adding,

Some people are “naturally” actors, while others were shy at first. The training helped to ‘unlock’ some of the talents the participants had. This experience is what encouraged many participants to actively take part in the dramas (Interview #42).

And one of the facilitators described that, “They are now creative and able to think how they can translate a lesson into a drama and make people learn, laugh, and appreciate the performance too” (Interview #44).

#### *Self-efficacy: Small Group Discussion Control Group*

Farmers in the control group also described feeling more confident around trying new things and teaching others, with some directly attributing this confidence to the small group discussions. One female farmer said that she felt confident enough to try making compost for the first time on her own (Interview #24). When another farmer was asked if she felt more confident after the training, she answered, “Very much,” adding that she was “eager to do and share,” saying that, “the training has sharpened my skills, and things I may have tried, I better understands now and have more confidence to try” (Interview #5).

One female farmer described creating a story from what she had learned to teach others, saying the training “gave me the confidence, and I know the people of my village have confidence in me” (Interview #10). A 50-year old female farmer added that, “Women are much more confident to teach now after the training. After the training they gained confidence in talking about these issues. The small groups helped with this confidence (Interview #5).

Facilitators of the control group also noted an increase in confidence among farmers in that group. One facilitator described,

Through small group discussions, participants were able to discover and learn new ways of doing things from each other, and some participants promised that they will try whatever they have learnt in their fields (Interview #45).

And another one of the control group facilitators added that confidence increased, “Because from the small group discussions there were lots of solutions coming out from the participants, which farmers said they would experiment [with]” (Interview #46).

#### *Collective Efficacy: Narrative and Drama Treatment Group*

In addition to talking about increases in perceived self-efficacy, I also asked farmers about their collective efficacy, or perceived confidence around their capacity to work together and problem solve as a group. Farmers were asked if they felt the use of participatory drama activities helped them think together with others about current behaviors and/or imagine new ways of doing things. Similarly, I asked them if these methods helped their group identify common challenges and think about ways to overcome them, and if the drama activities helped them feel better equipped to work together with others. In all cases, farmers said yes, and I asked them to elaborate on how they felt the drama activities had increased their collective efficacy.

All of the farmers interviewed described the use of drama as increasing collective efficacy by helping them think through common challenges and identify solutions around a number of issues, including sensitive subjects. One farmer described, “When we think together about what will happen in the future and about what we can do to help this, we come to a solution together” (Interview #10). Another explained that, “We were able to come up with common solutions,” adding, “This made me more confident to work with others....Together we were coming up with lots of solutions, like how to feed their children nutritious foods” (Interview #21). And another farmer said that,

Sometimes a man can come home and the wife is not there, and he needs something very badly, and she’s not around. This is one of the challenges we discussed as a group together and came up with a common solution....The group resolved that dialogue is very important rather than resorting to beating one another....Both men and women shared these experiences. Sharing these experiences as a group made us, as a group, feel more able to change these things for the future very much. (Interview #22)

Another farmer described the role of drama, saying, “It helps give confidence to the whole group and even the onlookers feel that in oneness there is power and good decision making. Even when you’re acting you become confident because you have a friend there” (Interview #1). Another farmer described drama as making her group

...very confident to the point that a group of farmers from my village said whatever we are learning here, we should not just leave everyone to do by themselves. So we don’t forget what we’re learning, we should go to one farmer’s garden as a demonstration and then go to another farmer’s garden (Interview #5).

And a male farmer in his 40s from Ekwendeni responded by saying that drama was, “very, very helpful,” adding,

We are born different....[the] group acting drama helps them understand what we’re talking about and doing, and this helps the whole village be in one line...The advantage of the drama is that it attracts a lot of people – so we use the drama to entertain. The drama helps reach a lot of people at one time, in that way they also have the chance to talk about the challenges they have at the same time. Helps people feel more confident (Interview #12).

One farmer recognized the benefit of working collectively as a group by saying simply, “on my own I had ideas that were incorrect” (Interview #33). A female farmer described that the group spent most of their time sharing common challenges, giving the following example of a challenge faced by her neighbor who is a farmer, saying,

There was a time when there was heavy rain, so running water washed away most of the garden of this neighbor. So I was called to see what had happened. We were sharing this challenge as a group. We talked together about possible solutions (Interview #16).

Another added that, “We were sharing some problems that several had so when posed other farmers might say ‘this is exactly what happens with me’ – [it’s] so very nice sharing challenges and looking for solutions together” (Interview #18).

I also asked facilitators if they felt like the activity of creating and acting out stories as a group helped the group think about current behaviors and/or imagine new ways of doing things, identify common challenges and think about ways to overcome, and help them feel or become better equipped to work together with others. One of the facilitators responded, “The participants

were able to learn the importance of working together because they were able to share ideas and learn from each other” (Interview #43). Another explained that,

The drama helped farmers to be more equipped and do things, which they did not think they could do...They became well equipped to work with others very well...It is so because in many cases like this in this case a drama needs team work in order to disseminate information better. (Facilitator interview #44)

Another facilitator added, “The acting out of stories helped the group to think of the old ways and how to adopt the new ways learnt in the lessons. It was interesting to see how clearly this was coming out. The creativity displayed in acting out these stories was extremely nice and appreciated” (Interview #42).

#### *Collective Efficacy: Small Group Discussion Control Group*

When asked if they felt more confident to work with others after the training, farmers in the control group all said yes. One farmer responded, “Yes, so much so that even those who did not participate, I am comfortable to work with them,” and gave the following example, “There’s a weed which chokes the maize, and we talked about this problem together. Together in the classroom after sharing with the small group we were able to come up with solutions.”

Facilitators working with the control group also found that the sharing of ideas gave farmers confidence. One described,

Through small group discussions, farmers were able to discover and learn new ways of doing things from each other, and some farmers promised that they will try whatever they have learnt in their fields... the farmers learnt a lot from each other because there was a lot of sharing of ideas and experiences amongst the farmers (Facilitator interview #45).

And finally, one of the facilitators of the control group said, “The participants learned from each other through sharing ideas and through this process they feel equipped and develop a spirit of working together because they share ideas” (Interview #49).

The final chapter of the dissertation, Chapter Seven, synthesizes the findings across methods where appropriate and discuss how this research contributes to theory and application, as well as future research around the use of narrative and participatory drama in teaching inter-related sustainability issues.

## CHAPTER SEVEN: CONCLUSIONS

## **Introduction**

In a comprehensive assessment of the impacts of climate change, scientists have suggested that there will be “critical impact asymmetries due to both climate and socio-economic structures” that will potentially widen existing gaps between the developed and developing world (Fischer, Shah, Tubiello, & Velhuizen, 2005, p. 2067). This study also suggested that agricultural adaptation will be central to reducing the damages caused by climate change. Yet agricultural adaptation in the developing world does not happen in isolation. Farmers’ understanding and perceptions of climate change are often “filtered through personal experience and pre-existing cultural worldviews and value systems” (Wolfe, 2013, p. 13; Wolfe & Moser, 2011). Farming systems are part of larger socio-ecological systems that interact with cultural norms, values, perceptions of risk, information access, self- and community confidence and capacity, as well as health and nutrition issues and issues of social equality (Bezner Kerr & Chirwa, 2004; Palomo et al., 2016; Peterman 2011). Research has found that education around these inter-related sustainability efforts is strengthened by approaches using local participation and that draw on multiple disciplines (Godemann & Michelsen, 2011).

The Malawi farmer-to-farmer curriculum was developed in response to the need for information that considers the multiple, linked issues impacting climate change adaptation and sustained human and environmental health. The farmer-led approach of the curriculum design and implementation was transdisciplinary, working across not only disciplines but also ways of knowing, integrating knowledge from both within and outside of academia (Godemann, 2008). Local knowledge and social contexts were integrated with institutional knowledge about climate change, health and nutrition, and agroecology, as well the impacts of social inequality. The design was meant to encourage information sharing around local ideas, challenges, and innovations through the use of participatory methods and experiential learning. The design also

aimed to empower farmers to become teachers, increasing their knowledge, confidence, and skills for sharing information with others within their households, communities, and neighboring villages. The participatory methods, putting farmers' knowledge and engagement at the center of learning, also sought to positively impact attitudes, participant self- and collective efficacy around curriculum topics, and knowledge of the inter-relationship of sustainability issues, among other things. The methods used in the curriculum training included narrative, participatory drama, and small group discussions.

The use of participatory drama in development began in the 1970s in Sub-Saharan Africa, and its use has expanded in the past four decades, yet many continue to ignore its use, or view it with skepticism (Epskamp, 2006; Abah, 2007). And while there is a wealth of evidence around the benefits of participatory approaches more generally (Fals-Borda & Rahman, 1991; Lewis, Reason & Bradbury, 2006), Sloman (2011) suggests that one of the factors limiting the use of participatory drama is the lack of evaluation considering the use, design, and impacts of these methods, as well as the challenges inherent in measuring and observing its impacts. By using a mixed-methods approach drawing on communication theories around narrative, drama, social interaction, attitudes, and efficacy, this study was able to evaluate the value of participatory methods – and narrative and drama specifically – within the context of learning around the many complex factors influencing long-term human and environmental health in the development context.

### **Summary of Findings**

Both the qualitative and the quantitative findings of this research support previous studies and theory around engagement and social interaction, including theories that draw on the fields

of sociology and anthropology, such as those relating to participatory and experiential learning, and those that inspired the study from the field of communication, specifically around the use of narrative and participatory drama as creative methods for enhancing individual and community-level outcomes. These findings also help extend current knowledge by applying and evaluating these methods in the context of Malawi among a relatively large sample of participants. The findings also help extend current knowledge by applying and evaluating these methods for communication and education around the inter-relationship of complex and linked sustainability issues, rather than in the communication of each subject in isolation. Key findings are summarized in Table 7.1.

### ***Engagement & Social Interaction***

#### *Engagement of Self and Others*

This dissertation sought to better understand the extent to which participatory methods – narrative and participatory drama specifically – influenced engagement and social interaction (RQ1). These dependent variables were measured both qualitatively and quantitatively. Qualitative interviews, which I carried out in Malawi in the summer of 2016, asked participants to describe their own level of engagement during the training, as well as the level of engagement of others during the training. Participants were asked to describe the engagement of women, the elderly, and those of varying educational levels. Facilitators were also asked to describe the engagement of participants during the training in both the treatment and control groups. The quantitative survey further explored this variable by asking participants to rate their own engagement and the engagement of others using a five-item Likert scale.

All farmers within the treatment group described high levels of engagement overall during the training. On an informal scale of one to five, farmers averaged above four. Farmers described the laughter and enjoyment of the drama activities and the ways in which it helped build their confidence; this was especially true for women. During this portion of the qualitative interviews, more than 30 farmers used the Chichewa or Tumbuka word meaning “shy,” for a total of 84 instances. Many farmers in the treatment group described the time it took to become comfortable fully participating in the drama. While many felt shy at first, worrying that they might “do it the wrong way,” all participants described becoming more confident to participate in the drama and seeing value in the use of stories and drama within their training group.

Some farmers described feeling regret that it took so long to get used to the drama activities because once they got used to it, they found it fun and educative, with one farmer saying they “loved it, and wished it would continue.” Other farmers found the time it took for others to warm up to the drama activities to be a source of frustration, and one of the central challenges of this communication method. Another challenge for the treatment group was the inclusion of the elderly in the physical drama. While the elderly described themselves as playing an important role in sharing information about past weather and practices, their physical limitations required attention. Participants rose to the occasion and came up with a creative solution to this challenge by having the elderly serve as the “stage entrance” by forming an arch with their arms that the actors would pass through, indicating the story was about to begin. Farmers also described those of varying educational levels as being engaged with the stories and acting as a way to reach even those who are illiterate. In the words of one farmer,

“...when the dramas were being performed there was no age or gender difference. The social economic status was not even considered, but farmers really concentrated on the

information sharing through dramas.” Another farmer described the activity of participating in the drama as helping everyone be engaged, saying “without the drama some would just sit and rest.”

Farmers in the control group also described feeling shy at the beginning of the training but becoming more confident to participate in discussions as the days passed; this was especially true for women in the control group, as with the treatment group. The engagement of women in both groups was often actively encouraged by the men as they learned more about gender equality in the classroom. The combination of classroom learning about equality and participatory activities, where these ideas could be tested and explored, worked well for both groups. The participatory activities allowed men to see the value of having women participate equally and even lead in some cases, and several men expressed surprise at how well the women did, never having seen women in this kind of role before. One farmer in the treatment group described the training at the beginning as “...a male show,” but said that as time went on some of the women were participating more than the men. One of the participants in the control group described men and women sitting on different rows at the beginning of the training but mixing by the end, adding that despite the fact that “people came from different backgrounds, they respected each other.”

To further explore the level of engagement of participants, the quantitative survey included two statements that asked participants to rate their own level of engagement: How engaged were you during the training (including being involved in discussions and sharing experiences and information with others)? And, How engaged were others during the training (including being involved in discussions and sharing experiences and information with others)? While there was not a significant difference overall between the two groups in how farmers

reported their own engagement or the engagement of others, there were significant differences found in relation to gender within the groups.

While men and women in the treatment group both felt highly engaged, there was a significant difference between the level of engagement of men and the level of engagement of women in the control group, with men reporting being more engaged than women. Men in the control group were also significantly more engaged than men in the treatment group. Similarly, for those with varying education levels, there was no significant difference in the treatment group. There was, however, a significant difference among different education levels in the control group, with those having more education reporting being significantly more engaged than those with less education.

### *Social Interactions during Training*

In addition to seeking to understand the impact of stories and participatory drama on engagement, this project also intended to investigate the impact of narrative and drama on the quality of social interactions and information sharing around the social and environmental topics included in the curriculum, both during and after training. Qualitative interviews included a number of questions relating to social interactions and information sharing during the training. These included questions relating to participants' ability to share their own ideas and experiences during training, as well as how the use of stories and drama or small group discussion aided in their understanding and knowledge of others' ideas and experiences. Farmers were asked to give examples of the ideas and experiences that they or others shared if they could. I also asked farmers if the participatory activities helped them comprehend the curriculum information better,

especially topics that farmers described as being particularly sensitive or complex, such as gender relations and climate change.

Farmers in the treatment group described the use of drama, with its ability to make light of difficult subjects, as helping them breach subjects often thought to be taboo or too sensitive to talk about with others, such as HIV/AIDS, alcoholism, and gender violence. A number of farmers mentioned the humor of the stories and drama as helping people get the message about these difficult topics, being entertained and learning at the same time. One farmer said that without drama people would not have been talking about these subjects at all, adding that it “makes things easier because it’s lighter.” Another farmer said that while some understood the information about gender relationships during the lecture, most understood when the information was dramatized because “they were actually seeing real life experiences,” adding that the drama helps people accept the ideas because “it’s not so serious.”

Other farmers described information that was difficult to understand in the classroom being clarified during the drama, saying that the drama makes the information “simpler” to understand; another added that things come out in the drama that would not come out in everyday conversations. One female farmer gave the analogy of trying to teach someone to cook, saying that they will learn best when you model the technique, rather than just explaining it. In relating to climate change, one farmer described, “Sometimes just explaining it was too hard, but acting out others would understand better.” Farmers in the treatment group also described drama as gaining and holding people’s attention, as compared to teaching point by point, and people becoming easily distracted by other things.

Farmers in the control group also described their small group discussions as helping them share ideas and better comprehend curriculum information. While farmers reported sharing ideas

and experiences during their small group activities, specific examples were limited, as opposed to the drama group that had high recall of anecdotes relating to information that had been shared. One female farmer said that she had learned additional things in relation to nutrition during the small group discussions, but she felt that she “still needed some practical demonstration.” Others described the small group discussions as giving people a chance to talk about their specific challenges. Gender violence was discussed in the small groups, with these discussions aiding in comprehension around this topic. One farmer described the importance of small group discussions, saying that it is difficult to tell if someone has really understood a point in the larger classroom, but “in the smaller group you can identify if someone is lost and ask them and explain.”

The quantitative survey also included items to further explore participants’ information sharing during the training. When asked to if the use of stories and drama and small group discussions aided in talking about sensitive or difficult subjects, there was not a significant difference between the two groups. Both groups reported being able to talk about these kinds of subjects in their small group participatory activities, with over 75% of all participants reporting being able to talk about these subjects “Most of the Time” or “Always.” This suggests that participatory methods, both stories and drama, and small group discussions, aided in talking about sensitive subjects. The element of humor and of “lightening up” difficult topics described in the treatment group would be valuable to explore further because it was one of the main characteristics described by farmers that differentiates these two participatory approaches. When considering the ability of men and women within the two groups to talk about sensitive or difficult subjects, there was a significant difference. Men and women in the treatment group did not report significantly different responses on this measure, but men in the control group were

significantly higher than women in this group, suggesting some inequality among men and women in their ability to breach these subjects during small group discussions. Gender equality was one of the central goals of the curriculum, so the ability of women and men to talk relatively equally about sensitive and difficult subjects during the story and drama creation activities is important to note. Men in the control group reported being significantly more able to talk about sensitive subjects than men in the treatment, which has implications for training focused on men and changing attitudes around difficult topics, suggesting that small group discussions may be more effective than drama for this type of effort.

### *Social Interactions after Training*

The qualitative interviews and survey both included a number of questions relating to participants' information sharing after the training. In the interviews, I asked participants if they had shared any of the information they learned with others after training. I also asked them to describe who they shared with, as well as the context (in the household, another village, etc.). Nearly all of the farmers in the treatment group reported sharing information with others after the training. This was often done with their drama group from training. The most common scenario farmers described was that they would notify the headman in a neighboring village, who would then let the people in the village know that others were coming to share information with them. Once the drama group arrived in the village, there would often be around 50 to 100 people gathered to learn. The group would begin by introducing themselves and stating the points they planned to cover; they would then begin acting out the lesson in a drama. Farmers described that, once the drama began, more people came, often 100 to 200 more. It was not uncommon for farmers to teach groups of around 300 using the dramas they had created. These farmers

described being able to draw and hold the attention of those watching with their dramas, entertaining them while teaching them, with one farmer saying, “The drama is entertaining, and so it gets the attention of people,” and another adding, “...the drama invites people by itself.” Another farmer added with regard to teaching, “I feel that people understand better than when you’re just teaching them.” Some farmers in the treatment group had traveled to up to 12 villages to share information with others. Another farmer said that others had already started practicing what she and her drama group members taught; another said described drama helping everyone be attentive and listen, adding, “they want to be entertained and then the message sticks.” Others had been asked to come back to teach again or invited to come to other neighboring villages, which had heard about their educational dramas. Another farmer said she had never shared information like this before, adding that she now has both the information “and the tool of drama.”

Farmers in the control group also described information sharing, with one female farmer describing her use of stories to teach about agriculture. Despite not being a part of the training using stories and drama, she found that people could more easily understand the information if told a story, especially considering how people differ in how they understand information. This same farmer also talked about the value of modeling behaviors to help increase comprehension. Another farmer said that she planned to teach other families at their request, and another described a women’s group of 15 in her village that taught others through explanations and also modeling. Facilitators said that some farmers had formed clubs to aid in sharing information.

The quantitative survey included a question asking farmers how many times they had shared information with others since the training. There was not a significant difference between the groups on this measure. There were, however, significant differences for both groups in

relation to gender and the number of times information had been shared after the training, with men in both groups sharing significantly more times than women. This might be due to the traditional roles of men and women within the villages, with men typically taking leadership roles in the community. While women were empowered to become teachers and leaders within the context of the training, it may take time for larger-scale social changes to take place. A follow-up survey would be beneficial in better understanding the long-term impact of the curriculum on gender equality around information sharing, among other things.

When considering the relationship between education and number of times information was shared since the training, there was not significant difference among participants in the treatment group, but there was a significant difference among those in the control group: Those who had no schooling or only some primary school shared information significantly less than those with more schooling. Farmers in the treatment group described the benefits of drama for even those who are illiterate. This finding is important when considering information sharing among those most vulnerable.

Participants in both groups had high levels of sharing in their own households and communities and did not differ significantly on this measure. When asked about the number of people they had shared information with, participants in both groups did not differ significantly overall, but they did differ within groups in relation to gender and education. For those in the treatment group, there was no significant difference between men and women on this measure; however, in the control group, there was a significant difference, with men reporting sharing information with larger numbers of people than women after the training. Education also significantly related to the number of people information was shared with after training for the control group (though not for the treatment group), with those who had little or no schooling

sharing with fewer people than those with some or all of the secondary schooling or post secondary schooling. Age did not significantly relate to the number of people information was shared with after the training.

These findings around RQ 1 support Fisher (1984), Hinyard & Kreuter (2007), and Ricketts, Shanteau, McSpadden, & Fernandez-Medina, (2010) in describing narrative as a comfortable way for people to exchange ideas and acquire new knowledge, including around complex issues, as well as Kerr (2005) who found that the performing arts help people talk more easily about sensitive subjects. This research extends previous findings in considering the use of narrative within the format of participatory drama and within the context of rural farming villages in Malawi, suggesting that the use of narrative in the form of participatory drama can be an effective way for people to share and gain knowledge, including around the complex relationship among the linked issues of climate, social equity, agriculture, and health.

These findings support those of Hornig (1993), stating that narrative has been found to aid in understanding and interpreting new technologies because of its use of analogies and personal stories to the use of participatory. This study also supports Bandura (1971), who stated that drama offers the benefit of modeling, which aids in social learning. This research helps build on the work of Niederdeppe, Shapiro, Kim, Bartolo & Porticella (2014), who found that narrative offers an effective format for integrating the many complex and interrelated determinants of health and environmental outcomes. The findings also support Dalrymple & Jaffe (1996) who found that the use of drama increases engagement by holding audience attention. These findings support Singhal, 2004 and Sloman, 2011, who found that participatory drama impacts health and environmental outcomes in a number of ways, including increased dialogue and social interaction, collaborative problem solving, community cohesion, increased engagement, and

increased self-efficacy, among other things (the following section will present findings relating to drama and increased self- and collective efficacy).

Papa et al. (2000) explored the role of narrative in stimulating conversation and creating social learning and revealed the importance of considering the complex, non-linear processes that take place as audience members engage in new knowledge and practices and enter into the process of social change, findings which were further explored in this dissertation around engagement, dialogue, social learning, and the processes that participants experienced as they learned new skills and came to accept new ideas around social behaviors. Dunlop, Kashima, and Wakefield (2010) found conversations about health campaign messages led to greater alignment of attitudes, norms, and intentions, and that individual characteristics and conversation valence impact perceptions of social norms, attitudes, and ultimately behavioral intentions. These findings are supported and extended in this study to conversations around gender equality, as both men and women reported new norms and practices through the use of participatory activities stimulating dialogue. Previous research also found that dialogue increased long-term recall and positive intentions. Sloman (2011) describes participatory drama and the dialogue it stimulates as giving voice to those who are marginalized, as well as being both entertaining and accessible so that people want to be involved, a feature described by farmers in this study.

The findings of this dissertation in relation to RQ1 also support Dalrymple and Jaffe (1996) who found that the use of drama increases engagement by holding audience attention and evoking emotion and, in turn, impacting both beliefs and skills. Papa, Singhal, and Papa (2006) found that the dialogue generated by narrative led to novel discussions and considerations among listeners of an entertainment-education show in India, ultimately leading to bold new actions around social issues, with conversations around gender and other issues giving community

members the chance to discuss and rehearse what actions might be taken. The current project also found this tendency in Malawi among curriculum participants, some of whom were already taking on new roles within the household despite long-held traditions. Dunlop, Kashima, & Wakefield (2010) and Hornik & Yanovitzky (2003) both found that the effectiveness of communication campaigns depends, in many cases, on its stimulation of interpersonal communication; by this measure, the curriculum effort was a success.

### *Attitudes*

My second research question (RQ2) sought to understand the extent to which narrative and participatory drama influenced attitudes around the curriculum topics. During my in-depth interviews, I asked participants if they had changed any of their opinions or beliefs during the training and participatory activities (drama or small group discussions). If participants answered yes, I asked them to tell me more about the opinion or belief that changed if they could. Participants in both groups described positive changes in their attitudes towards gender equality (including long-held traditional beliefs), health and nutrition, and environmentally-friendly farming practices. A number of participants in the treatment group attributed these changes to creating, watching, and participating in the drama activities, and they described the modeling of behaviors and the comfort level that the drama brought to conversations about sensitive, taboo subjects. Only one farmer in the control group attributed their change in attitudes to the small group discussions. The attitude changes that took place for participants in both groups had already led to some behavioral changes within the household and on the farm.

Participants in the drama group described the deeply-rooted nature of beliefs about gender roles within their society. Some described never having thought about or questioned their

behaviors around gender and gender inequality because these attitudes were considered normal. Women described being considered almost like slaves within the household in the past – with expectations that they will farm, raise the children, fetch the water, and make the food, among their many other daily tasks. This led to conflicts and other problems within households.

Participants gave many examples of the ways in which attitudes had changed, with one mother saying that through the drama, she had changed, and she was now having her son and daughter share the workload at home. She added that she didn't know it could work this way until the training. A male farmer described coming together with farmers from different backgrounds and beliefs, saying that the input each person brings helps enlighten the group; he added that what they created in the drama helped him realize that his treatment of his wife, which he previously thought was fine, had been wrong all along. Many other participants described changes in attitudes around gender relationships, including an elderly man who said that he did not realize that he had previously treated women unequally, and women who described previously believed things such as the best part of the meal was for the man.

Men described changes in attitudes around household duties such as cooking, with one farmer saying that at first it was hard to accept these new ideas, but through the combination of explaining and acting, the men realized that they were causing poor health in women from overworking them. One farmer described new attitudes around traditional beliefs about health, saying that it was previously thought if a child looked malnourished, there must be infidelity in the home. This farmer added, "...since the training, we now know that poor diet leads to malnutrition. The drama helped with this very much. I changed easily because I understood exactly what happens." Farmers in the treatment group also described changes in attitudes towards farming practices and what one called the "olden ways," which in some cases were more

environmentally-friendly and less dependent on chemicals. Other farmers described believing in certain farming practices for a long time, which they now felt were wrong.

Farmers in the control group also described changes in attitudes towards gender relationships, health and nutrition, and agriculture. One described his tribe, the Ngoni, as traditionally believing that women could not take a leadership role but said he now understands that this belief he grew up with was wrong. Small group discussions helped illuminate a common attitude that gender violence was only carried out by men. One female farmer described changes in attitudes around multiple household management and gender issues, including budgeting, cooking, and cleaning, saying she had previously believed men could not cook or clean and women could not help with budgeting. Farmers in this group also described changes in attitudes around long-held traditional farming practices that they “believed and grew up with.” One said of the new practices, “It was easy to believe it because we had seen it,” possibly referring to the experiential activities on the farm used during training, where farmers were taken to view examples in local fields.

A number of measures on the quantitative survey also helped to further explore the role of participatory activities, and narrative and drama specifically, on participants’ attitudes. When asked if they would feel comfortable with the wife being in a leadership role, over 60% of participants in both groups at Time 2 said yes, with no significant difference between the groups in relation to their change in attitudes between Time 1 and Time 2. When asked about attitudes towards domestic violence, only participants in the treatment group showed a significant change in attitudes between Time 1 and Time 2. Specifically, when exploring beliefs around violence and justifications for violence in relation to the wife selling property, participants in the

treatment group had a positive change in attitudes at Time 2, whereas those in the control group did not have a significant change in attitudes around this issue.

Attitudes around information seeking behaviors were also explored in the quantitative survey. It asked participants about their preferred ways of getting information about farming and about health and nutrition. Farmers in both groups had a decrease in their preference for getting information about farming from family by more than 70% and an increase in their preference for getting information from farmer's groups by more than 90%. The drama group had a 98% increase in their preference for getting farming information through drama, and the control group about a 16% increase on this measure. Both groups had around a 30% increase in their preference for getting information from extension workers.

When asked about their preferences for getting information about health and nutrition, both those in the treatment and control group had a decrease in their preference for family. Both groups had an increase in their preference for getting information from farmers' groups of around 90% and other groups also by around 90%.

Both groups had a decrease in their preference for story telling as a way of getting information about health and nutrition (by around 50% for both treatment group and control). This result is unexpected, given the generally positive increases in interest related to drama and may have been due to the way the question was translated, with farmers thinking this was referring to fictional story telling, rather than experience-based stories. The treatment group had around a nearly 95% increase in their preference for drama as a way of getting information about health and nutrition, and the control group a more than 85% increase. Both had a more than 90% increase in radio as a source of information about health and nutrition between Time 1 and 2, which may indicate new radio programming in the area between the pre/post survey periods.

Both groups had a large percentage increase in their preference of extension workers as sources of health and nutrition information (treatment nearly 75% and control 61%). These findings suggest a willingness on the part of farmers, and it would be valuable to learn more about extension resources in Malawi that might be connected to these areas.

Findings in this study that relate to attitude change support a number of previous studies, including Ajzen & Fishbein (1977) who found that narrative can impact attitudes through its stimulation of dialogue around complex issues. The findings also support Papa, Singhal, & Papa (2006) who described the use of dialogue as “iterative, co-created, co-regulated, and co-modified,” involving “risking a position to consider new ways of thinking and acting” (p. 6). Because the adoption of new knowledge, innovations, and technologies involves risk, interpersonal communication and dialogue play an important role in revealing the challenges and tensions that arise and creating a space for trying on new ideas and ways of seeing ourselves in the world. Farmers described this process in relation to both the narrative and participatory drama activities and the small group discussions, as group members brought differing perspectives to light and participants grappled with long-held beliefs. This research also helps build on the work of Papa, Singhal, and Papa (2006) by suggesting that participatory drama has the potential to stimulate dialogue, while having the added benefits of creating an ease around difficult subjects and also modeling practices.

Slachmuis (2006) stated that community change will occur “when a community was given a forum for sharing their own ideas, understanding one another, and developing ways of affecting change together”; the findings in this dissertation supports his claim and build on his work by illustrating the ways in which participatory drama provide such a forum. Freire (2000) describes conscientization as the act of reflectiveness that results in both consciousness of

problems, as well as actions to be taken in response, and Abah (2002) found that participatory drama aids in conscientization by helping participants celebrate new skills and ways of seeing. This study supports these findings and those of Bormann (1972), who found that participatory drama aids in creating new social realities, as well as offering insights about culture and motivations. This occurs as participants respond emotionally to dramatic situations, publicly committing to attitudes, with motives and codes of social conduct and group norms being established through the symbolic terms of the drama as values and norms are legitimized.

The findings here also support Hungerford, and Tomera (1986) who found that narrative facilitates conversations and increased social interaction, giving participants the chance to consider and “try on” new ideas and behaviors that are modeled in stories. Within the participatory dramas used during training, farmers described doing just that, and the storylines in the dramas often hinged around the inherent challenges that would arise as new behaviors were enacted in the household and community. As participants worked together to create scenarios in which they were able to carry out new behaviors successfully, despite challenges, positive attitudes were formed, supporting the findings of Bandura (1997) and Ajzen (2002) who found that attitudes might be influenced by beliefs about individual and community-level capacity to carry out a behavior.

### *Self-efficacy*

My third research question (RQ3) sought to better understand the extent to which narrative and drama influence self- and collective efficacy. Qualitative interviews asked farmers about the extent to which the drama activities or small group discussions helped them feel better equipped to try new ways of doing things on their own. Farmers from both groups described feeling more confident throughout the course of their training, both to try out new ideas and

innovations and to teach others what they had learned. Those in the treatment group regularly attributed this added confidence to the drama activities, describing the elements of drama that helped them build confidence. Three participants in the control group attributed their increase in confidence to their small group discussions and the training more generally.

One of the elements of drama that farmers attributed to their increase in confidence was that it gave them a new skill and tool to use in teaching others. Nearly all of the participants in the treatment group went from feeling shy about teaching to being willing and able to teach in front of hundreds of other farmers, many who had done so in the short time since training. Farmers also described the element of laughter in the dramas as helping them to feel more confident about participating. Participants in the treatment group also described feeling more equipped to try new things on their own, including women in this group, with one woman saying that the drama “opened her up” and gave her confidence to try new things and confidently teach others. Another female farmer told me, “I am different from how I was before,” saying that the act of participating in a drama helped her feel confident, and in this way the drama was different from the classroom. Another farmer said the drama removed all fear, helping him to entertain and educate others. One female farmer said that the information sharing in the drama helped her feel more confident because she realized that issues around gender weren’t just related to her but to everyone. Another described the light tone of drama as helping increase information sharing during the training, saying that in the classroom people are too shy to speak up, but when there’s a drama and laughter, more learning occurs by breaking down these barriers.

Participants in the control group also described becoming more confident throughout the course of the training, with one female farmer saying she felt confident enough to make compost

by herself for the first time and another saying she was now “eager to do and share,” now that she had “sharpened” her skills. Another participant said that the time spent in small group discussions had helped women to become more confident. Facilitators also described those in the control group as gaining confidence through the discovery of new ideas and ways of doing things learned from one another.

A number of measures on the quantitative survey helped further explore self-efficacy. These included the following four questions: I feel confident that I can deal with unexpected events; When confronted with a problem, I can usually find several solutions; I feel I am better able to handle unforeseen situations; I can solve most problems if I invest the necessary effort. These measures were combined to create an overall variable for self-efficacy. There was no significant difference found between the treatment and control groups on the individual measures or overarching variable: Both groups reported high levels of self-efficacy, with an average of 4 on a five-item Likert-type scale.

Kollmuss and Agyeman (2002) found self-efficacy as a factor influencing turning knowledge into behavior; Hines, Hungerford, and Tomera (1986) identified six variables that influenced behavior: knowledge of issues, knowledge of responding strategies, self-efficacy, attitudes, verbal commitment, and individual sense of responsibility. The findings presented here, from both the in-depth interviews and the survey, illustrate the impact of the participatory methods of drama and small group discussions on self-efficacy. They also suggest some of the mechanisms at work in participatory drama that strengthen self-efficacy among participants. These include work by Melkote (2003) who stated that one of the central goals of participatory approaches that utilize stories is the goal of increasing self- and collective efficacy, and Moyer-Gusé, Chung, and Jain (2011) who found that the use of narrative helped to increase self-efficacy

among individuals. These findings also support Vaughn, Rogers, Singhal, and Swalehe (2000) who found that one of the primary effects of narrative with entertainment-education radio programming was increased self-efficacy among listeners. And McCarthy (2004) describes participatory drama as helping participants “express and explore their realities and feelings in ways which are pointed but not personal, and which often provoke laughter” (p. vi), which was supported in this study. While Mertz, Mbow, Reenberg, & Diouf (2009) found that socioeconomic and demographic features impacted farmers’ self-efficacy around adaptation responses, the findings presented here did not find a self-reported, or a statistically significant, difference in levels of self-efficacy based on gender, education, or region.

### *Collective Efficacy*

To better understand the influence of narrative and participatory drama and small group discussions on collective efficacy in the in-depth interviews, farmers were asked if the dramas or small group discussion helped them feel better equipped to work with others. I also asked farmers if they felt the use of participatory drama or small group discussion activities helped them think together with others about current behaviors and/or imagine new ways of doing things. And similarly, I asked them if these methods helped their group identify common challenges and think about ways to overcome these challenges.

All of the farmers in the treatment group described the use of drama as helping them think through current behaviors and challenges as a group and consider new ways of doing things. One farmer said, “We were able to come to common solutions,” and many others echoed this sentiment. Farmers said they felt more confident to work with others after doing so successfully during the training, giving examples of common solutions they had come to,

including feeding children more nutritious foods. Through the process of successful dialogue during training, some found themselves encouraging greater levels of dialogue among family members at home for problem solving, rather than resorting to violence. One farmer said that sharing experiences as a group made the group "...feel more able to change these things for the future." Another participant added that, "...in oneness there is power and good decision making," and added, "Even when you're acting you become confident because you have a friend there."

Another farmer described the differences among farmers and said that the drama helped them understand the practices of one another and helped the whole village "be in one line." Another described realizing that on his own, some of his ideas had been incorrect, but this came to light when he was able to discuss them with the group. Farmers described sharing ideas around solutions to climate change challenges, such as flooding, and the positive feeling they got from realizing that they weren't alone in facing these challenges. One of the facilitators felt that drama helped farmers become more equipped to do new things, including things they once believed they couldn't do, adding, "They became well equipped to work with others very well...It is so because in many cases like this in this case a drama needs team work in order to disseminate information better." Another facilitator said, "The acting out of stories helped the group to think of the old ways and how to adopt the new ways learnt in the lessons. It was interesting to see how clearly this was coming out. The creativity displayed in acting out these stories was extremely nice and appreciated."

Participants in the control group also reported feeling higher levels of collective efficacy after the training. One farmer described the combination of classroom learning and small group discussions as helping her group come up with common solutions. One farmer said that he was even confident to work with those who had not been a part of the training. This farmer shared the

following example: “There’s a weed which chokes the maize, and we talked about this problem together. Together in the classroom after sharing with the small group we were able to come up with solutions.” Facilitators working with the control group also found that the sharing of ideas gave farmers confidence.

Through small group discussions, farmers were able to discover and learn new ways of doing things from each other, and some farmers promised that they will try whatever they have learnt in their fields. Another facilitator working with the control group added that “participants learned from each other through sharing ideas and through this process they feel equipped and develop a spirit of working together because they share ideas.”

The quantitative survey contained a number of questions at Time 2 relating to collective efficacy, including: My community is better able to work together successfully; People in the community can come together to solve problems; I feel more confident to work with others; and People in the community are able to communicate more effectively. It also included three items relating to climate change responses as a community at Time 1 and Time 2: Do you see value in working as a community to respond to challenges relating to changes in the weather in the past few years that are different from the expected weather patterns? Does your community have strategies for responding to changes in the weather in the past few years that are different from the expected weather patterns? and If yes, what strategies does your community have for responding to changes in the weather in the past few years that are different from the expected weather patterns? What challenges do you see in working as a community in responding to changes in the weather in the past few years that are different from the expected weather patterns?

Farmers in both groups had mean scores > 4 on a five-point Likert-type scale for all of the items included at Time 2, showing high levels of perceived collective efficacy. There was not a significant difference between the two groups on these measures. Participants in both the treatment and control groups perceived more value in working collectively to solve challenges relating to climate change than they saw before the training, with the drama group going from around 87% to 97% saying they saw value in this approach and the no drama group jumping from around 83% to 99%. When asked if their community had strategies for combating climate change, the drama group went from around 25% saying yes at baseline to 80% saying yes at follow up; the no drama group went from around 22% to 83%.

Farmers who answered yes to this question were asked what kind of strategies their communities had; their responses relating to collective efficacy included increased communication by around 90% for both groups, sharing of information (an increase of around 72% for the treatment and 95% for the control group), sharing of resources, and community organizing, which had increases of over 75% for both groups. Farmers also reported an increased amount of clear leadership around community responses to climate change; but at the same time, an increased lack of time for meetings and conflict among community members. These findings about time for meetings and conflict may be due to an increased desire to continue meeting after the training, and increased conflict due to increased amounts of interaction around complex community challenges; both of these findings would be valuable to explore further through follow-up research.

The findings in this study around collective efficacy support Bandura (1997) who found that the “strength of families, communities, school systems, business organizations, social institutions, and even nations lies partly in people’s sense of collective efficacy that they can

solve the problems they face and improve their lives through a unified effort” (p. 477). These findings also support Fisher (1985) who suggests that the narrative paradigm offers a way to access communication to help create space for critique, including whether or not “a given instance of discourse provides a reliable, trustworthy, and desirable guide to thought and action in the world.” The findings also support Papa, Singhal, & Papa (2006) who state that collective efficacy and collective actions emerge from dialogic conversations, and they also build on their findings by expanding them to the context of participatory drama and dialogue around climate change adaptation. Support is also present for Sloman’s (2011) findings that narrative has the ability to build “the capacity of individuals, groups and communities, with the potential to empower, strengthen and energize,” and its ability to “strengthen community cohesion” (pp. 42-57); as well as Boal (1985) who states that participatory forms of theatre allow audience members “to dialogue together about the conflicts central to their community,” motivating community members to actively participate in identifying problems and their solutions (p. 46). These findings also suggest support for Wakefield (2010) who found that talking about narrative health messages might increase recall, as well as positive behavioral intentions due to an increase in self-efficacy and perceptions of social support. This will be discussed further in the following section in relation to knowledge.

### *Knowledge & Behavior*

Finally, this dissertation explored the extent to which narrative and participatory drama influenced knowledge (RQ4) and behavior (RQ5) in the quantities survey. Three measures were analyzed in relation to participants knowledge of the inter-relationships of human health, soil health, climate change, and dietary diversity using the following statements with five-point

Likert-scale responses: Soil health can affect human health; Climate change/weather can affect human health; It is more important to choose foods that make you feel full than a range in types of foods, like vegetables and fruits

In exploring knowledge around these interrelated issues of soil health and human health, climate change and human health, and dietary diversity and human health, I calculated the difference between the two groups in relation to changes in knowledge between Time 1 and Time 2. I found a significant difference between the two groups on the measurement gauging knowledge of the relationship between soil health and human health with control group showing a significant change in knowledge as compared to the treatment group ( $P = .03$ ). On the other two measures, there was not significant differences between the two groups (knowledge of the interactions between climate change with  $P = .45$  and human health, and dietary diversity and human health  $P = .15$ ). When considering overall knowledge change for all participants, there was a significant difference on all three of these measures from Time 1 to Time 2, with the measure of soil and human health  $P = .00$  ( $<.05$ ), climate change and human health  $P = .00$  ( $<.05$ ), and dietary diversity and health  $P = .00$  ( $<.05$ ). These findings supports the literature around the overall positive impact of participatory learning on knowledge and recall.

The survey data also allowed me to explore changes in behavior among participants after the training around the curriculum topics and the adoption of new innovations. When participants were asked about their use of compost manure, a central practice in environmentally-friendly farming, before and after the training, around 40% more of those in both the treatment group and control group reported using this practice after the training. Burying crop residue is another common practice of farmers hoping to improve long-term soil health. When participants were asked about their behaviors around burying crop residue after the training, both groups showed

positive changes in this behaviors with the treatment group increasing use by 94% and the control group around 82%.

These positive findings support Bandura’s social cognitive theory (1986, 1998, 2002), which states learning takes place through both direct and indirect experiences, and builds on Papa et al.’s (2000) findings on education and learning environments that consider the value of both individual level change, as well as the social processes at work. This research helps extend these findings to the unique, and challenging context of participatory methods used for improved health and environmental sustainability in Malawi.

**Table 52: Major Findings, Theoretical implications (with citations), and Implications for Application in Future Development Projects**

	Key Findings	Theoretical Implications	Application
<b>Engagement &amp; Social Interaction</b>	Participatory methods of drama and small group discussions both led to high levels of engagement and social interaction, both during and after the training, with farmers describing drama as aiding in comprehension, especially around complex topics of climate change and gender equality.	Supports Hinyard & Kreuter (2007), and Ricketts, Shanteau, McSpadden, & Fernandez-Medina, (2010) narrative as a comfortable way to exchange ideas and acquire new knowledge, around complex issues.	Narrative and participatory drama have the potential to strengthen education and communication campaigns by aiding in comprehension of complex material and new technologies, such as information about the impacts of climate change and the techniques of conservation agriculture as a response.
	Narrative and drama aid in comprehension of complex interrelated health and environmental issues, including internal (attitudes and behaviors) and external (climate change and resource limitations) causes, as well as new ideas and	Supports Niederdeppe, Shapiro, Kim, Bartolo & Porticella (2014) narrative offers format for integrating complex and interrelated determinants, and extends these findings to sustainability issues and the context of rural Malawi.	Challenges faced by smallholder farmers in sub-Saharan Africa are complex and inter-related, but teaching these linkages between factors and causes can be complicated and limited by siloed thinking. Narrative and drama offers a

	<p>innovations, through the use of modeling, among other things.</p> <p>Narrative and drama increased sharing around sensitive subjects, such as alcoholism and violence in the household by making these subjects “lighter” and easier to talk about with others. For men specifically, small group discussions proved more helpful in aiding in discussion of sensitive topics.</p> <p>Narrative and drama were unique in lessening the gap between men and women and those with varying levels of education, both during and after the training in relation to engagement and social interaction.</p> <p>Narrative and drama strengthened information sharing after training through its unique ability to attract the attention of large groups of farmers from varying socioeconomic groups, and by holding audience attention.</p>	<p>Supports Bandura (1971) drama offers the benefit of modeling, which aids in social learning.</p> <p>Partially supports Kerr (2005) showing that performing arts help people talk more easily about sensitive subjects.</p> <p>Supports Hornig (1993), narrative aids in understanding and interpreting new technologies because of use of analogies and personal stories.</p> <p>Supports Dalrymple &amp; Jaffe (1996) drama increases engagement by holding audience attention and extends this work to sustainability issues and the context of rural Malawi.</p>	<p>way of communication complex relationships among external and internal factors impacting health.</p> <p>Narrative and participatory drama can strengthen the ability of individuals and communities to talk about sensitive and difficult subjects such as HIV/AIDS, alcoholism, and violence in the households, subjects that are often taboo, but that need to be addressed for improved health. But for efforts focused solely on men, small group discussions may aid in education efforts around sensitive topics.</p> <p>Narrative and participatory drama include the benefits of small group discussion, as well as modeling and experiential learning, with the potential to aid in comprehension, as well as engagement.</p> <p>Narrative and drama can strengthen information sharing among vulnerable groups, specifically women and those with little or no education, and has the potential to empower those groups to teach others who might not be reached by campaign information or extension efforts. Participatory drama offers a tool with the ability to gain and hold the attention of large groups of people.</p>
Attitudes	Both the treatment and control group described positive changes in attitudes	Supports Papa, Singhal, & Papa (2006) dialogue involves risking a position,	In campaigns that hope to shift long-held attitudes, which are often rooted in

	<p>towards gender roles, health and nutrition, and agricultural practices in the in-depth interviews.</p> <p>Those in the treatment group described the act of watching, creating, and participating in dramas, including the dialogue that followed the presentation, as helping them reflect on unbeneficial, often habitual practices.</p> <p>Only those in the treatment group showed a significant change between Time 1 and Time 2 in relation to attitudes around gender relationships on the measure considered here.</p> <p>Both groups had changes in their attitudes towards information preferences between Time 1 and Time 2, showing a decrease in preference for family and an increase in preference for farmer's groups and extension, as well as drama, for both groups.</p>	<p>considering new ways of thinking around adaption of new knowledge and innovations.</p> <p>Supports Fishbein (1977) narrative impacts attitudes through stimulation of dialogue around complex issues, and extends this work to suggest that narrative also offers a means for increasing dialogue around sensitive and engrained practices.</p> <p>Supports Abah (2002) participatory drama impacts conscientization and Bormann (1972) participatory drama aids in creating new social realities, and offers new insights about culture.</p> <p>Supports Bandura (1997) and Ajzen (2002) attitudes might be influenced by beliefs about individual and community-level capacity to carry out a behavior.</p>	<p>traditional beliefs passed down from generations in the development context, participatory methods that stimulate dialogue play a central role.</p> <p>Both participatory drama and small group discussion can lead to positive outcomes around attitudes because of their use of dialogue, but drama has the added benefit of aiding in discussions about sensitive topics, and of modeling behaviors; as well as shifting beliefs negatively impacting households and communities.</p> <p>Participatory drama may have greater potential than small group discussions for shifting attitudes around sensitive, long-held beliefs, such as those around gender equality in Malawi.</p> <p>Participatory communication and education activities would benefit from being followed by the formation of farmer's learning groups for sustained information sharing.</p>
Self-efficacy	<p>Participants in the narrative and participatory drama group and in the small group discussion group had an increase in self-efficacy during the training in relation to trying new ideas and innovations. Those in the drama group attributed</p>	<p>Support Melkote (2003) central goal of participatory approaches using stories is increasing self; and Moyer-Gusé, Chung, and Jain (2011) narrative helps increase self-efficacy; and Support Vaughn, Rogers, Singhal, and Swalehe (2000)</p>	<p>Because self-efficacy is central to individuals' willingness to adopt new behaviors, it needs to be a central consideration of campaign design. In order to strengthen outcomes around self-efficacy, participatory methods have shown to be</p>

	<p>their increase in confidence to the use of drama specifically.</p> <p>Drama was unique in building self-efficacy around teaching others. Participants described becoming more confident to stand up in front of others and become teachers after participating in the drama activities. They attributed this in part to the laughter that helped make these activities easier, despite many of them feeling shy about participating initially.</p>	<p>effect of narrative is increased self-efficacy. builds on the work of these scholars in relation to the value of participatory drama for increasing self-efficacy around information dissemination.</p> <p>Supports McCarthy (2004) participatory drama helps participants “express and explore their realities and feelings in ways which are pointed but not personal, and which often provoke laughter.</p>	<p>effective – including the use of narrative and participatory drama and the use of small group discussions. These methods increase farmers’ willingness to try new adaptation responses.</p> <p>Participatory drama is unique in its ability to generate higher levels of self-confidence around teaching others, by giving farmers both a tool to use, and the practice of using it. Participatory drama is also unique in its ability to break down barriers between students and teachers through its use of humor.</p>
<p>Collective efficacy</p>	<p>Participants in both groups described increased levels of collective efficacy across a number of measures. Those in the control group attributed this to combination of the training overall and the small group discussions.</p> <p>Many participants in the treatment group attributed this increase in collective efficacy to drama specifically, describing the support gained during the process of acting together, as well as the ability of drama to bring those of different backgrounds into “one line.”</p> <p>Facilitators attributed increased collective efficacy in the treatment group to the</p>	<p>Supports Bandura (1997) “strength of families, communities... lies partly in people’s sense of collective efficacy that they can solve the problems they face and improve their lives through a unified effort” (p.477), expanding these findings to the context of Malawi.</p> <p>Supports Papa, Singhal, &amp; Papa (2006) collective efficacy and actions emerge from conversations, and expands these findings to the context of participatory drama and dialogue around climate change adaptation.</p> <p>Supports Sloman’s (2011) findings that narrative has the ability to build “the</p>	<p>Efforts can be strengthened by focusing on shared beliefs, and norms, as well as social networks, rather than the traditional focus on economics and technology in relation to adaptation (Thaker et al., 2016).</p> <p>Participatory methods, and participatory drama in particular, can play a role in increasing the collective confidence and capacity of communities in reflecting on current behaviors and determining adaptive responses.</p> <p>Drama can play a unique role in giving community members from different</p>

	<p>use of team work required during the creation and acting of the dramas, which helped farmers become better equipped to work together; and also to the process of acting out stories, which helped farmers think about old ways and how to adopt new ways of doing things.</p>	<p>capacity of individuals, groups and communities, with the potential to empower, strengthen and energize,” and its ability to “strengthen community cohesion” (42-57); as well as Boal (1985) who states that participatory forms of theatre allow audience members “to dialogue together about the conflicts central to their community,” motivating community members to actively participate in identifying problems and their solutions (p. 46).</p>	<p>backgrounds the change to work together and support one another, increasing their collective efficacy.</p>
<p>Knowledge &amp; Behavior</p>	<p>Participants in both the treatment and control group showed positive changes in knowledge around inter-related sustainability issues. Participants in both groups also showed positive changes in behaviors around agricultural practices and willingness to try new innovations.</p> <p>Future follow-up research is needed to better understand the impact of the curriculum and the different participatory methods over time on these measures.</p>	<p>Supports Bandura’s social cognitive theory (1986, 1998, 2002) learning takes place through both direct and indirect experiences. Builds on Papa et al. (2000) around societal processes at work in education, and facilitation of learning environment, by considering both individual level change as well as the social processes at work in the context of participatory methods in Malawi.</p>	<p>The participatory methods used in the curriculum training – both the drama and the small group discussions – had a positive impact on knowledge and behavior at this early point in time.</p> <p>Programs such as this one would benefit from longer-term longitudinal research (or M&amp;E for non-profit and government organizations) to better understand the impact, and especially the sustained impact, of participatory methods.</p>

**Table 53: Benefits of Small Group Discussions and Narrative/Drama in Application**

	Small Group Discussion	Participatory Drama
Additional time required		x
Some training required		x
Social behaviors practiced	x	x
New information modeled		x
Increase in confidence	x	x
Synthesis of multiple issues		x
Sensitive subjects	x	x
Elderly engaged		x
Men engaged	x	
Women engaged		x
Less-educated engaged		x
Intra-group equality		x
Information diffusion	x	x
Information diffusion/large numbers		x

## **Future Research**

This project would benefit from a follow up survey with items relating to information sharing, knowledge, and behaviors. Because of the relatively short time span between the training and the follow up survey (only one growing season), it is hard to gauge the sustainability of the farmers' information sharing, recall, and new behaviors, both at home and in the fields. Follow-up research investigating the difference in percentage change among farmers in the two groups in relation to preferred information sources would also be useful. For example, better understanding the decline in storytelling, but incline in drama, as well as the differences in preference around people from other villages, and family. The spike in preference for radio at Time 2 for getting information about health and nutrition would also be useful to understand. If there are radio programming efforts in the area, these might be coupled with trainings by extension workers to strengthen outcomes for farmers.

Farmers in both groups reported trying significantly more new innovations techniques in the past year, and it would be valuable to understand what these were, and if they related to the curriculum topics, or other things. Another dimension of this study that would be valuable to follow up on is the impact of information sharing with other farmers from the perspective of those who came to watch the dramas after the training, but who did not participate in the training. This would help determine whether teaching with this method is aiding in learning, including the comprehension of complex topics, among those who may not have been exposed to these subjects before; or if drama is serving more as entertainment than a combination of entertainment and education. I would be especially interested to talk to those with less education

who came to watch the dramas. It would also be valuable to see if the new feelings of confidence and behaviors around gender equality are being sustained.

Because this curriculum hoped to reach as many farmers as possible with what the curriculum team believed to be effective communication methods, it was not possible to compare the participatory methods with a group of farmers trained without the use of participatory methods; although this kind of study would be useful. Content analysis of the small group discussions would also be helpful in understanding if stories are used in these discussions, even though unprompted, since narrative is believed to be a comfortable and natural way that people communicate and gain knowledge (Fisher, 1984; Hinyard & Kreuter, 2007). There was also evidence that those in the control group shared information after the training through the use of narrative – it would be beneficial to understand how often this was done, and to know more about the nature of the teaching done by those in the control group. An attempt at quantifying the number of farmers reached, and the networks created from the initial 520 farmers would be useful for future programs in designing campaigns that enhance information diffusion. And the question of whether or not the drama and the drama groups are sustained without ongoing support would be a valuable one to explore, as one of the issues that is common with the use of drama as a tool for development has been setting up theatre groups in communities with the expectation that they will be sustained without offering ongoing support (Slowman, 2011).

## **Summary**

In sum, this study advances empirical knowledge around the value of participatory methods, and narrative and drama specifically, for teaching complex inter-related health and environmental issues in the context of Sub-Saharan Africa. The findings have valuable

implications for both theory and application. For those working in the development context who are tackling some of the complex challenges faced by smallholder farmers in relation to long-term human and environmental health, narrative and participatory drama can help strengthen these efforts.

Both the participatory activities of narrative and drama, as well as small group discussions, led to a number of positive outcomes. These included high levels of engagement and social interaction around social issues, increased self- and collective efficacy, increased ability to talk about sensitive subjects, increased comprehension, and high levels of information sharing with other farmers after the training. Participants from both groups also showed increases in knowledge around linked health issues and an increase in the use of environmentally-friendly farming practices taught during the training. While both the treatment and control group benefited from participatory methods, there were unique and important benefits found in the use of narrative and drama specifically.

These benefits include the ability of narrative and participatory drama to aid in farmers' comprehension of complex issues, in part, through its use of stories and modeling. Farmers found the use of stories and drama particularly useful in helping them to understand climate change and issues around gender equality. Farmers said that explaining often wasn't enough; and those in the control group also talked about the need for stories for helping in comprehension, as well as their own use of stories in sharing information with others. Those in the treatment group also described ways that narrative and drama strengthened their ability to talk about sensitive and difficult subjects because it helped to lighten these topics enough that they could be comfortably discussed. The survey findings showed that men and women in the treatment group did not differ

significantly in their ability to talk about these subjects, although within the control group there was a significant difference, with women feeling less ability to talk about these subjects.

In relation to overall engagement and social interaction during the training, the use of narrative and drama helped reduce the gap between men and women, and also between those of different educational backgrounds. These findings are particularly important when considering development efforts aimed at reaching the most vulnerable. Both women and those with little or no education in the treatment group reported levels of engagement and information sharing – both during and after the training – that were not significantly different from that of men and those with higher levels of education; although in the control group there was a significant difference between these groups on these measures. For those in the treatment group, there was not a significant difference between men and women in relation to the number of people information was shared with, and men and women and those of lower and higher education levels in relation to both the number of times information had been shared, and also the number of people information had been shared with. Those in the narrative and drama group also described the value of drama as a teaching tool, with its unique ability to attract and hold the attention of very large groups of other farmers (often >200).

In relation to attitudes, only participants in the treatment group had a significant positive change on the measures analyzed here (specifically, justifications for domestic violence in relation to decisions around property). Both groups had large changes in their attitudes towards information seeking preferences for farming and health and nutrition information after the training, with a decreased preference for family as a source of information, and an increased preference for farmer's groups and extension workers. In exploring knowledge and behavioral change, both groups showed positive changes in knowledge around the relationship between

human health and the factors of climate change, soil health, and dietary diversity; although the control group had a significantly higher change in knowledge than the treatment group between Time 1 and 2 on the measure of soil health and human health. Both groups had an increase in their use of compost, with the treatment group having around a positive 14% difference in their use of the practice of burying crop residue for improved soil health.

While narrative and participatory drama proved to serve a number of unique and valuable functions in the curriculum training, these methods were not without their challenges. These included the difficulty that the elderly had in participating because of physical limitations, and the amount of time it took some farmers to get comfortable with getting up in front of others and acting, without fearing they might make a mistake. Yet these challenges seemed to be turned into opportunities that further strengthened the narrative and drama groups' experience in some cases, as participants came up with creative ways to respond to them. The elderly became the stage entrance, and those who were shy were encouraged by the rest of the group, and over time gained confidence. And along the way, while farmers gained valuable information about climate change, agroecology, health and nutrition, and social equality, many found laughter and great enjoyment in the processes.

## APPENDIX A

### QUALITATIVE INTERVIEW FORM: TREATMENT/DRAMA GROUP

#### **Narrative & Sustainability Communication in Malawi**

*Narrative Interview Form, June 2016*

Date:
Interviewer:
Location of training:
Facilitator:

#### Demographics

1. Name:
2. Village:
3. Gender:
4. Approximate age:
5. Household size:
6. Size of farm (acres):

#### Narrative Dialogue & Engagement

7. How many days of the sustainability curriculum training have you participated in?
8. Has your training involved the use of drama? (If no, use non-narrative interview form.)
9. Do you feel like the use of drama was an important/valuable part of the curriculum? In what ways?
10. How would you describe your level of engagement with the drama during the training? (on a scale of 1 to 5 with 5 being the highest level of engagement; also please describe)
11. How would you describe the level of engagement of others in your training group with the drama during training? (some more than others / age, gender, socioeconomic groups)?
12. Did the dramas help you learn about things that you did not learn about during the curriculum lessons?
13. Do you think the drama helped you understand the material in the curriculum (complex topics such as climate change, nutrition)? In what ways? (how was it hearing the material during the lesson and then again with the drama?)
14. Do you feel that the use of drama helped you share ideas and/or experiences?
  - a. If yes, how so (being able to be less formal, more playful, imaginative)?
  - b. What kind of ideas and/or experiences were you able to share?
15. Do you feel that the use of drama helped you better understand the ideas and experiences of others in your group?
  - a. In what ways?
16. Do you feel like the activity of creating and acting out stories as a group helped the group think about current behaviors and/or imagine new ways of doing things?
  - a. If so, can you tell me about any specific examples?
17. Did the use of dramas help your group identify common challenges and think about ways to overcome them? If yes, how so?

18. Did you change any of your own opinions/beliefs about how to do things (relating to farming, the household, or anything else) during the drama sessions? If yes, please tell me more about the drama and/or opinion/belief that changed if you can.
19. To what extent did the dramas help you feel better equipped to try new ways of doing things on your own? How so?
20. Did the dramas help you feel better equipped to work together with others? How so?

#### Information Sharing & Narrative after Training

21. Did you repeat any of the stories/dramas that you had heard or participated in during the training?
22. Was there any differences between the pre-written stories and story prompts and the drama in your opinion? If so, what kinds of differences?
23. In general, what did you find most valuable about the use of dramas in the training?
24. In general, what did you find most challenges and/or frustrating about the use of drama in the training?
25. Do you have any other feedback about the curriculum training that you would like to share?

QUALITATIVE INTERVIEW FORM: CONTROL/NO DRAMA GROUP

**Narrative & Sustainability Communication in Malawi**

*Non-narrative Interview Form, June 2016*

Date:
Interviewer:
Location of training:
Facilitator:

Demographics

26. Name:
27. Village:
28. Gender:
29. Approximate age:
30. Household size:
31. Size of farm (acres):

Dialogue & Engagement

1. How many days of the sustainability curriculum training have you participated in?
2. Did the curriculum training generate discussions or other interactions among the group?  
If yes, can you tell me a little about these?
3. How would you describe your level of engagement with the curriculum?  
(On a scale of 1 to 5 with 5 being the highest level of engagement; also please describe)
4. How would you describe the level of engagement of others in your training group with the curriculum training? (some more than others / based on age, gender, socioeconomic groups)?
5. Do you feel that the curriculum training helped you share your own ideas and/or experiences?
  - a. If yes, how so?
  - b. What kind of ideas and/or experiences were you able to share?
6. Do you feel that the curriculum training helped you better understand the ideas and experiences of others in your group?
  - a. In what ways?
7. Did the curriculum training help reveal where there were misunderstandings or confusion about the material/topics that were being learned?
8. Do you feel like the curriculum training helped the group think about current behaviors and/or imagine new ways of doing things?
  - a. If so, can you tell me about any specific examples?
9. Did the curriculum training help your group identify common challenges and think about ways to overcome them? If yes, how so?
10. Did you change any of your own opinions/beliefs about how to do things (relating to farming, the household, or anything else) during the curriculum training? If yes, how so?
11. Did you learn about things during the curriculum training that you did not learn during the curriculum lessons? Can you recall any specific examples?

12. Did the curriculum training help you feel better equipped to try new ways of doing things on your own? How so?

13. Did the curriculum training help you feel better equipped to work together with others? How so?

**Information Sharing & Narrative after Training**

14. During your training week, did you talk about the information you were learning in the evenings/morning when you were away from the formal training?

a. Who did you talk with? What were these interactions like?

15. Since training ended, have you repeated any of the information from the curriculum training with others?

a. If so, what information? What was the context (where/with you?)

16. Since training ended, have you heard others repeating any of the information from the curriculum training?

a. If so, what information? What was the context (where/with you?)

**Wrap up:**

17. In general, what did you find most valuable about the curriculum training?

18. In general, what did you find most challenges and/or frustrating about the curriculum training?

19. Do you have any other feedback about the curriculum training or anything thing else that you would like to share?

QUALITATIVE INTERVIEW FORM:  
FACILITATORS TREATMENT/DRAMA GROUP

**Narrative & Sustainability Communication in Malawi**  
*Facilitator Interview DRAMA Form: August 2016*

1. Name:
2. Area where training took place:
3. Drama or no drama group?

Narrative Dialogue & Engagement

4. Do you feel like the use of drama was an important/valuable part of the curriculum? In what ways?
5. How would you describe participants' level of engagement with the drama during the training? (some more than others / age, gender, socioeconomic groups)?
6. Did the dramas help participants learn about things that they did not learn about during the curriculum lessons?
7. Do you think the drama helped participants understand the material in the curriculum (complex topics such as climate change, nutrition)? In what ways?
8. Do you feel that the use of drama helped you better understand the ideas and experiences of the participants?
  - a. In what ways? Did this aid in the training?
9. Do you feel like the activity of creating and acting out stories as a group helped the group think about current behaviors and/or imagine new ways of doing things?
10. Did the use of dramas help your group identify common challenges and think about ways to overcome them? If yes, how so?
11. Do you think the dramas help participants feel or become better equipped to try new ways of doing things on their own? How so?
12. Did the dramas help participants feel or become better equipped to work together with others? How so?

Information Sharing & Narrative after Training

13. Do you know if participants repeated any of the stories/dramas that they saw or participated in during the training? If so, with who?
14. Was there any differences between the pre-written stories and story prompts and the drama in your opinion? If so, what kinds of differences?
15. In general, what did you find most valuable about the use of dramas in the training?
16. In general, what did you find most challenges and/or frustrating about the use of drama in the training?
17. Do you have any other feedback about the curriculum training that you would like to share?

QUALITATIVE INTERVIEW FORM:  
FACILITATORS CONTROL/NO DRAMA GROUP

**Narrative & Sustainability Communication in Malawi**  
*Non-narrative Interview Form, June 2016*

Date:
Interviewer:
Location of training:
Facilitator:

Demographics

- 32. Name:
- 33. Village:
- 34. Gender:
- 35. Approximate age:
- 36. Household size:
- 37. Size of farm (acres):

Dialogue & Engagement

- 20. How many days of the sustainability curriculum training have you participated in?
- 21. Did the curriculum training generate discussions or other interactions among the group?  
If yes, can you tell me a little about these?
- 22. How would you describe your level of engagement with the curriculum?  
(On a scale of 1 to 5 with 5 being the highest level of engagement; also please describe)
- 23. How would you describe the level of engagement of others in your training group with the curriculum training? (some more than others / based on age, gender, socioeconomic groups)?
- 24. Do you feel that the curriculum training helped you share your own ideas and/or experiences?
  - a. If yes, how so?
  - b. What kind of ideas and/or experiences were you able to share?
- 25. Do you feel that the curriculum training helped you better understand the ideas and experiences of others in your group?
  - a. In what ways?
- 26. Did the curriculum training help reveal where there were misunderstandings or confusion about the material/topics that were being learned?
  
- 27. Do you feel like the curriculum training helped the group think about current behaviors and/or imagine new ways of doing things?
  - a. If so, can you tell me about any specific examples?
- 28. Did the curriculum training help your group identify common challenges and think about ways to overcome them? If yes, how so?
- 29. Did you change any of your own opinions/beliefs about how to do things (relating to farming, the household, or anything else) during the curriculum training? If yes, how so?

30. Did you learn about things during the curriculum training that you did not learn during the curriculum lessons? Can you recall any specific examples?
31. Did the curriculum training help you feel better equipped to try new ways of doing things on your own? How so?
32. Did the curriculum training help you feel better equipped to work together with others? How so?

#### Information Sharing & Narrative after Training

33. During your training week, did you talk about the information you were learning in the evenings/morning when you were away from the formal training?
  - a. Who did you talk with? What were these interactions like?
34. Since training ended, have you repeated any of the information from the curriculum training with others?
  - a. If so, what information? What was the context (where/with you?)
35. Since training ended, have you heard others repeating any of the information from the curriculum training?
  - a. If so, what information? What was the context (where/with you?)

#### **Wrap up:**

36. In general, what did you find most valuable about the curriculum training?
37. In general, what did you find most challenges and/or frustrating about the curriculum training?
38. Do you have any other feedback about the curriculum training or anything thing else that you would like to share?

## APPENDIX B

### REPRESENTATIVE QUOTES FROM QUALITATIVE ANALYSIS

#### Appendix

#### Representative Quotes from Qualitative Interviews

#### *Engagement of Self and Others*

#### Theme

#### Representative Quotations

Theme	Representative Quotations
Engagement of Self: Treatment Group	<p>You don't just start and then you're perfect, there is some initial shyness. I felt sorry because as time went by we got used to doing the dramas – it was fun and educative. We were shy because it was new people meeting new people teaching them – but later when we got used to it, we were though, 'What a short time!' We got used to it, loved it, and wished it would continue. (Interview #1)</p> <p>I have been involved, after lectures I would know how to form a drama. I worried I might do it the wrong way, but later, I tried and everything was ok. (Interview #24)</p> <p>I very much want to participate as much as possible, but because of age, the youngsters can do more because they need to stand for a long time...I am involved when a group of people need to sing, and I contribute to the information that will go into the drama. (Interview #20)</p> <p>At first I was shy, but after two or three times, I was good to go. The first day I was shy, the second day [because of] the confidence the group was giving me, I was becoming confident more by the day because I was supported by the group. (Interview #14)</p> <p>I feel confident now to act in a drama in front of people. Back home, I explained to people what we had learned and then acted out a drama...[there was] a large audience more than 10. They were very happy. (Interview #13)</p> <p>A lot of people were shy and that was challenging, although they came out by and by. (Interview #36).</p>

	<p>Everyone tried to take part....The young and the old actively participated in the drama. You could see the elder people acting and participating actively. The drama groups were composed of different age groups and roles in the drama were shared accordingly depending the roles one was comfortable with not necessarily age group.” Adding that the entertainment helped hold farmers’ attention as the followed the progression of the drama. (Interview #42)</p> <p>The farmer’s level of engagement during the training with drama was very good because, when the dramas were being performed there was no age or gender difference. The social economic status was not even considered, but farmers really concentrated on the information sharing through dramas and they took the responsibility of training the whole community through drama. (Interview #44)</p> <p>Everyone tried to take part....The young and the old actively participated in the drama. You could see the elder people acting and participating actively. The drama groups were composed of different age groups and roles in the drama were shared accordingly depending the roles one was comfortable with not necessarily age group....the entertainment helped hold farmers’ attention as the followed the progression of the drama. (Interview #42)</p> <p>The farmer’s level of engagement during the training with drama was very good because, when the dramas were being performed there was no age or gender difference. The social economic status was not even considered, but farmers really concentrated on the information sharing through dramas and they took the responsibility of training the whole community through drama. (Interview #44)</p>
<p>Engagement of Self: Control Group</p>	<p>[I was] shy at first, but became more confident. With time I got used to it and was responding. (Interview #24)</p> <p>There’s one guy who’s much much better. At the beginning everyone was anxious and didn’t know what was going to happen [or] what this training was about, so we weren’t too courageous and comfortable. But later when we were introduced and as things went on, we became more confident. The small group discussions is where we gained a lot of confidence (Interview #18).</p> <p>[I] participate a lot and note down what we’re talking about. Some groups have note takers. (Interview #16)</p> <p>[If] it’s a group of people – then you might do the drama, and if it’s one or two people you just teach point by point. When it’s a group of</p>

	<p>people, I will tell them point by point, but it's also necessary to use drama because this gives a lot of people the message at the same time, it's not boring, it's entertaining. A lot of people can get the point at the same time. I think people understand better you use a drama because they are better able to see how you do things. (Interview #5)</p>
<p>Engagement of Others: Treatment Group</p>	<p>At first it was a male show, but later equal. (Interview #21)</p> <p>There are some who are shy, but we encourage them to try to participate; those who are shy participate more over time. (Interview #8)</p> <p>At the beginning the women felt shy and were reserved, but as time went on they realized that some women were participating even more than the men. (Interview #12)</p> <p>The first day women were a little shy, but after that they were very free. Before the training this is what was happening with women talking less, but after the training and dramas, it gave them an opportunity to be the head of the discussion...and even the lecture was good because women were empowered, so the drama adds to their confidence. Acting in the drama helped men practice and accept equality. (Interview #13)</p> <p>The women were very shy at first, but as time went on they opened up and became more confident. One of the women in my group was very shy – even back in her village she was known as a shy person, but we made her feel confident and participate. The first drama was performed in her village, and she took part and the people were amazed. (Interview #27)</p> <p>Some elderly were not as active as others. As time went by even the elderly gained confidence. Even back home the elders participated. (Interview #11)</p> <p>[The elderly] did take part, but because they are elderly they could not be put into the parts that require more energy, so we would involve them in the simpler parts” (Interview #29).</p> <p>By getting them [others in the group] involved and giving them a role in the drama makes them engage. (Interview #4)</p>
<p>Engagement of Others: Control Group</p>	<p>Because the group was learning about gender, the women participated. At first they were shy to the extent that women were sitting on their own row and men on their own row, but later they</p>



	<p>educates them. More and more come when you tell them a drama will be performed. I think laughter and making things light when you're teaching is a very good idea. The drama entertains, but when you're just teaching point by point some are listening and some busy talking and doing something else, but when there's a drama everyone is attentive and watching you, wanting to learn what you are telling them. (Interview #18)</p> <p>When explaining about types of gender based violence, sometimes it was not clear, but when it came to drama people were able to be clear and differentiate the different types of gender based violence (Interview #31)</p> <p>There are times in the classroom when you can miss something, but when others act out a drama it became more clear. For example, a family that went out to farm somewhere or another man's garden hoping to gain more money after the famine...drama made this [lesson] simpler. (Interview #33)</p> <p>...things came out in the drama that you might not otherwise know in your day-to-day conversations...we talk about gender issues – I learned in the drama specifically that in other villages men are given special parts of the relish that only belong to men, not for children or others. I was surprised to learn that this was still being done in other villages. (Interview #3)</p> <p>People get it all in the drama – in a lecture some people are teaching, but the drama shows the real life stories so people can understand. Very good to have the men around because they see that the drama tells them the best parts aren't just for them – everyone is equal – harvest together, budget together. (Interview #4)</p> <p>The lessons became more clear when we were doing the drama. With climate change, when they were explaining in the classroom, it was difficult for people to understand, but when we were doing the drama a lot of people opened up....Sometimes just explaining it was too hard but acting out others would understand better. (Interview #35)</p>
<p>Social Interaction &amp; Information Sharing During Training: Control Group</p>	<p>[Learned a lot] but still needed some practical demonstration. (Interview #5)</p> <p>We gain a lot in the bigger group, but there is an advantage in the smaller group because you're given time to explain yourself and problems and think about solutions to the problems – so smaller groups are ideal....Gender issues, we learned in the classroom, but</p>

	<p>now discussing in the smaller groups, the extent of problems caused by gender based violence was really coming out. We learned more about this issue than we did in the larger group. (Interview #9)</p> <p>It's difficult to tell if someone has really grasped a point in the bigger group- a question might be posed and someone tries to answer it and everyone laughs but they don't know if everyone has gotten it really or not; in the smaller group you can identify if someone is lost and ask them and explain. In the smaller group, you come to one understanding and solution. (Interview #10)</p>
<p>Social Interaction &amp; Information Sharing After Training: Treatment Group</p>	<p>There wouldn't be as many without the drama because people like the entertainment part and they get the message while they're entertained. More and more came [around 200] when the drama started. (Interview #34)</p> <p>When we started the drama more men, women, and children would come – the drama invites people by itself. (Interview #26)</p> <p>The drama is entertaining, and so it gets the attention of people, so while they are entertained they are also educated. (Interview #21)</p> <p>More and more came once they started the drama. At one point there were just over 50 people, there but as things started up it got up to around 200. I think people understood the message, and I feel that people understand better than when you're just teaching them [point-by-point]. (Interview #35)</p> <p>In some instances more than 100 [people came]...We would start with a smaller group of just over 30, but then as we started [the drama] more would come. When we were performing in the villages here, a lot of people would come – men, women, the young. I feel that they really got the message because a lot of farmers have started practicing what they taught. (Interview #36)</p> <p>Lots of laughter; people seemed to enjoy. (Interview #15)</p> <p>...not all understand in the classroom but when you're doing a drama everyone can understand Drama is great because everyone is attentive and wants to listen to what you want to tell them – entertaining and educative – they want to be entertained and then the message sticks. (Interview #4)</p>



	<p>Men would sit and wait for the wife to cook nsima, relish, stuff like that, but due to the training, they realize that they are all tired, so while the women are preparing nsima, the men could prepare the relish and that would make things easier.” When this farmer was asked if it was hard for men to accept these new ideas, he said, “At first it was hard, but they then understood – through explaining and then acting, they could see that they overworked the ladies, which is why they may have poor health from overworking...when they were acting out their work, the men realized they were overlooking the women. (Interview #27)</p> <p>In the past, we had the belief that when a child was not feeling better and looked malnourished, we would believe that it was because of infidelity in the house. But since the training, we now know that poor diet leads to malnutrition. The drama helped with this very much. I changed easily because I understood exactly what happens. (Interview #22).</p> <p>When I came, I learned that what I had been believing was wrong – including that the soil needed shade, crop residue needed to be buried, my parents said to grow one crop in a field, and not use intercropping – everything changed at once. I was believing something for a long time which was the wrong thing. (Interview #1)</p>
<p>Changes in Attitudes: Control Group</p>	<p>There are some things that I believed, but now I think are wrong. I am Ngoni, and we traditionally did not want a woman to go to the front of something...now I know...they are equal ...It was hard to change my mind because they grew up with this....When we broke to smaller groups we highlighted that we should be careful, it’s not always men who are always violent there are times when even a woman can do something that might be violent. (Interview #9)</p> <p>Men thought cooking, sweeping, and cleaning was only for women, now they know men can do – she previously thought men couldn’t do. (Interview #10)</p> <p>I have learned that budgeting and healthy meals are something that was being thought of traditionally – that nsima was enough. But now I can prepare a good meal without using too many resources. In the past [we were] eating a lot of the same thing. (Interview #7)</p> <p>Before the training we did the traditional way of farming – growing one crop on one field – but now we can grow several crops in one</p>



	<p>that before teaching in front of others. The drama helped give me confidence to go back to my village and share information with others in this way. (Interview #15)</p>
<p>Self-efficacy: Control Group</p>	<p>...the training has sharpened my skills, and things I may have tried, I better understands now and have more confidence to try. (Interview #5).</p> <p>Women are much more confident to teach now after the training. After the training they gained confidence in talking about these issues. The small groups helped with this confidence. (Interview #5)</p> <p>Through small group discussions, participants were able to discover and learn new ways of doing things from each other, and some participants promised that they will try whatever they have learnt in their fields. (Interview #45)</p>
<p>Collective Efficacy: Treatment Group</p>	<p>When we think together about what will happen in the future and about what we can do to help this, we come to a solution together. (Interview #10)</p> <p>We were able to come up with common solutions,” adding, “This made me more confident to work with others....Together we were coming up with lots of solutions, like how to feed their children nutritious foods. (Interview #21)</p> <p>Sometimes a man can come home and the wife is not there, and he needs something very badly, and she’s not around. This is one of the challenges we discussed as a group together and came up with a common solution....The group resolved that dialogue is very important rather than resorting to beating one another....Both men and women shared these experiences. Sharing these experiences as a group made us, as a group, feel more able to change these things for the future very much. (Interview #22)</p> <p>It helps give confidence to the whole group and even the onlookers feel that in oneness there is power and good decision making. Even when you’re acting you become confident because you have a friend there. (Interview #1)</p> <p>We were sharing some problems that several had so when posed other farmers might say ‘this is exactly what happens with me’ – [it’s] so very nice sharing challenges and looking for solutions together. (Interview #18)</p>

	<p>The drama helped farmers to be more equipped and do things, which they did not think they could do...They became well equipped to work with others very well...It is so because in many cases like this in this case a drama needs team work in order to disseminate information better. (Facilitator interview #44)</p>
<p>Collective Efficacy: Control Group</p>	<p>...even those who did not participate, I am comfortable to work with them,” giving the following example, “There’s a weed which chokes the maize, and we talked about this problem together. Together in the classroom after sharing with the small group we were able to come up with solutions. (Interview #24)</p> <p>Very confident to the point that a group of farmers from her village said ‘whatever we are learning here, we should not just leave everyone to do by themselves – so we don’t forget what we’re learning, we should go to one farmer’s garden as a demonstration and then go to another farmer’s garden.... [adding that the training] has helped [us] try to plan and think about the future. In the past, we didn’t have this kind of training and didn’t know how to plan...The smaller groups were very effective because if a challenge is posed everyone was asked to try to find a solution – rather than in a bigger group where you just sit and someone might try to explain about a solution to a problem – you might not listen, but I the smaller groups you’re more involved. (Interview #5)</p> <p>Through small group discussions, farmers were able to discover and learn new ways of doing things from each other, and some farmers promised that they will try whatever they have learnt in their fields... the farmers learnt a lot from each other because there was a lot of sharing of ideas and experiences amongst the farmers. (Facilitator interview #45)</p> <p>The participants learned from each other through sharing ideas and through this process they feel equipped and develop a spirit of working together because they share ideas. (Interview #49)</p>

## APPENDIX C

### SURVEY TIME 2, CHICHEWA

#### INFORMED CONSENT

*Enumerator, please read the following to the respondent:*

***Moni, dzina langa ndine \_\_\_\_\_. Zikomo kwambiri chifukwa chovomela kuti ndicheze nanu.***

Hi, my name is \_\_\_\_\_. Thank you so much for taking the time to talk with me.

***Ndikugwira ntchito limodzi ndi anthu ochita kafukufuku ochokela ku Amereka ndi ku Canada, komanso ndi a ku Malawi konkuno omwe akukonza zipangizo zakuphunzitsirara okhokha pankhani za ulimi, zaumoyo ndikadyedwe kabwino. Kuti zipangizozo zikhale zothandiza, tikufuna timvetsetse momwe inu mumapangira ulimi wanu, momwe mumakhalira pakhomo panu, komwe mumapeza ulangizi pankhani zaulimi, umoyo, za nyengo ndi zina.***

I am working in collaboration with researchers in the United States and Canada, as well as local partners in Malawi on a project to develop teaching materials for farmers to teach one another. In order to strengthen these materials, we would like to better understand your farming and household practices, as well as where you get information relating to farming, weather, and health among other things.

***Ndimafuna kupempha ngati ndingacheze nanu. Chonde khalani omasuka kufunsa mafunso nthawi ina ili yonse pomwe tikucheza. Zotsatira zakafukufuku ameneyu zidzathandiza powunikira ndondomeko zina zamtsogolo zothandiza kuti alimi akhale ndi chakudya chokwanira komanso moyo wathanzi.***

I would like to ask you if I might interview you, and I'd like to explain more about what will be involved. Please feel free to ask me questions at any time. The results from this study will be used to inform future initiatives aimed at improving farmers' food security and health.

***Mukavomera kutenga nawo mbali pakafukufukuyu, tikhala tikucheza kwapafupifupi maola awiri. Tili ndichiyembekezo choti titha kuzacheza nanunsomtsogolomu khalani omasuka popeleka maganizo anu chifukwa palibe yankho lolondola kapena lolakwa. Mayankho anu onse adzasungidwa mwachinsinsi. Dziwaninso kuti simulandira chilichonse potenga nawo mbali pakafukufukuyu. Kuwonjedzera apo, zotsatira zomwe kafukufuku uyu apedze zizakhala zothandiza kupititsa patsogolo chonde mminda ya alimi ang'ono ang'ono, zaumoyo komanso kuti alimi azikhala ndi chakudya chokwanira.***

If you agree to participate, we may visit you in the future to request a second interview. There is no right or wrong answers, and all of your answers will remain confidential. While there is no direct compensation for your participation, you will have the chance to talk about your concerns as a farmer, and other household concerns you might have so that our resources can better address these concerns. Additionally, the information gained in this study will benefit your community indirectly. We will share what we learn from you with local, national and international institutions so that it can also inform their initiatives for improving food security, health, and farms for smallholder farmers.

**Dziwani kuti mukutenga mbali mukafukufuku mosakakamizidwa ndipo mutha kutha kunena kuti ndisiye kufunsa mafunso nthawi ina iliyonse. Mukasankha kuti tilekezele panjira kapena kuti simukufuna kutenga nawo mbali pakafukufukuyi palibe vuto kapena mulandu ulionse. Tikamaliza kafukufuku ameneyu, mapepala onse omwe talembapo mayankho anu akasungidwa mosamalika ndi motetezedwa.**

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study it will not result in any penalty or loss of benefits to which you are otherwise entitled. Your name will only be recorded to document that you have agreed to participate in this research. It will not be put in any of the project documents to be prepared from this research. Only the research team will have access to the data provided and records will be kept safely in a locked cabinet to which only the research team will have a key, to ensure no one apart from the study investigators can have access to them.

**Kodi mukuvomera kuti ndikufunseni mafunso? EYA AYI**

Do you agree to continue with the survey?  YES  NO

[For interviewers] **Kodi muli omasuka kuti ndijambule zokambirana zathu? EYA AYI**

[For interviews] Is it ok with you if I record our conversation?  YES  NO

**Ngati muli ndi mafunso, chonde yimbirani foni a Esther Lupafya pa 0995 965 902 kapena a Rachel Bezner-Kerr pa nambala iyi +16072804574.**

If you have any questions, please call Mufunanji Magalasi at 0995-397-899 or Rachel Bezner Kerr at +16072804574.

	Day/Month/Year	Name	Signature
Interviewer			
Data Check			
Data Entry			

**PART A: HOUSEHOLD INFORMATION**

Dera/Village Area: Dera \_\_\_\_\_ Mudzi/Village: \_\_\_\_\_

No.	Question (Instructions)		Response
A1	Name / Dzina Lanu?		
A2	Gender		Mwamuna <input type="checkbox"/> Mkazi <input type="checkbox"/>
A3	<b>Munabadwa liti?</b> What year were you born? <i>(If don't know, probe using main events e.g. Banda came 1959)</i>		
A4	<b>Kodi muli pa banja?</b> What is your marital status?  <input type="checkbox"/> YES <input type="checkbox"/> NO  <i>(Circle the code that corresponds to the response given.)</i>	<b>Ndinakwatiwa ndi mamuna mmodzi/ndinakwatira mkazi mmodzi ndipo ndikukhala ndi mamuna/mkazi wanga</b>  Monogamous married and living with spouse	1
		<b>Ndinakwatiwa ndi amuna opitirira mmodzi/ndinakwatira akazi opitirira mmodzi ndipo ndikukhala ndi amuna/akazi anga</b>  Polygamous married and living with spouse	2
		<b>Ndinakwatira ndipo utsogoleri wabanja lathu uli mmanja mwa mkazi wanga; mkazi/mamuna wanga amagwira ntchito kapena amakhala kwina</b>  Married and wife heading household; spouse works or lives elsewhere	3
		Separated/divorced and <b>not</b> living with spouse	4
		Separated/divorced and living with spouse	5
		Widowed	6

		<b><i>Sindinakwatiwepo/sindinakwatirepo</i></b> Never married	7
		Other (specify)	97
		Refused	99
A5	Name of spouse (s) <i>Dzina la amuna anu/ akazi anu ndi ndani?</i>		
A6	<b><i>Kodi sukulu munafika nayo pati?</i></b> What is your level of education?	<b><i>Sindinaphunzirepo</i></b> No schooling	1
		<b><i>Ndinaphunzirako pang'ono maphunziro akusukulu ya pulayimale</i></b> Some primary school	2
		<b><i>Ndinamaliza standard 8</i></b> Completed primary school	3
		<b><i>Ndinafika folomu 2</i></b> Some secondary school	4
		<b><i>Ndinamaliza folomu 4</i></b> Completed secondary school	5
		<b><i>Ndinachitapo maphunziro ena nditafika folomu 4</i></b> Post-secondary	6
		Other (specify)	97
		Don't know	98

		Refused	99
A6a.	<p><b><i>Kodi amuna/akazi anu sukulu anafika nayo pati?</i></b></p> <p>What is your level of spouse's education?</p> <p>(For polygamous marriages, please put spouse name next to education selection.)</p>	<p><b><i>Sanaphunzirepo</i></b></p> <p>No schooling</p>	1
		<p><b><i>Anaphunzirako pang'ono maphunziro akusukulu ya pulayimale</i></b></p> <p>Some primary school</p>	2
		<p><b><i>Anamaliza standard 8</i></b></p> <p>Completed primary school</p>	3
		<p><b><i>Ndinafika folomu 2</i></b></p> <p>Some secondary school</p>	4
		<p><b><i>Anamaliza maphunziro akusukulu ya sekondale</i></b></p> <p>Completed secondary school</p>	5
		<p><b><i>Anachitapo maphunziro ena atamaliza folomu 4</i></b></p> <p>Post-secondary</p>	6
		Other (specify)	97
		Don't know	98
		Refused	99
		A6b	Did your training include the use of DRAMA or SMALL GROUP DISCUSSIONS?
Small Group Discussions	2		

***A7. Read to respondent: Tsopano ndikufunsani mafunso okhudzanandi anthu onse amene mumakhala nawo pakhomo pano makamaka amene mumadyera limodzi/amene inu mumawasamala kapena kudyera kuchokela m'poto mmodzi. Ndikufunanso ndidziwe ngakhale za omwe sakhala pakhomo pano nthawi zonse chifukwa akugwilila ntchito olo bizinesi kutali koma amabwela nthawi ndi nthawi komanso amathandiza kugula ndi kapezedwe ka zakudya pakhomopa.*** We now will ask a number of questions about your household as a whole. When we say household we mean "one or more people related or unrelated, who live together and make

common provision for food. They regularly take all their food from the same pot, and/or share the same grain store or incomes for the purposes of purchasing food” (NSO 1998:120.)”

[For Enumerator:] Include everyone who eats and sleeps here; also include ‘part time’ residents’ ie family members who work away for part of the year but contribute to household income. Record each person's relationship to household head. Ask current school grade (children); grade on leaving school or never attended school. Ask if any of the adults in the household are not able to work. Ask why? (eg too old, blind, chronically sick etc) (from Zomba survey, Kambewa).

\*The respondent does not need to include themselves in this chart.

**Kodi pakhomo pano, mumakhala anthu angati amene mumadyera Mnkhali imodzi? - \_\_\_\_\_**

Name	Sex	Age	Relationship to the interviewee 1 = spouse 2 = child 3 = brother/sister 4 = parent 5 = uncle/aunt 6 = grandparent 7 = other	Full time (FT) or part time (PT) resident  (okhala pompo(FT) kapena obwera ndi kupita(PT))	If part time(PT), approx how many weeks present/yr?	For those under 18: Current grade / grade upon leaving school / or never attended	Adults/youth: If unable to work, why? (e.g. too old, often sick,etc) [put NA if able to work]

Name	Sex	Age	Relationship to the interviewee 1 = spouse 2 = child 3 = brother/sister 4 = parent 5 = uncle/aunt 6 = grandparent 7 = other	Full time (FT) or part time (PT) resident  (okhala pompo(FT) kapena obwera ndi kupita(PT))	If part time(PT), approx how many weeks present/yr?	For those under 18: Current grade / grade upon leaving school / or never attended	Adults/youth: If unable to work, why? (e.g. too old, often sick,etc) [put NA if able to work]

A8	Number of years farming including time farming with your parents: <b><i>mwalima zaka zingati?</i></b>	
A8	Number of years farming as an adult: <b><i>mwalima zaka zingati?</i></b>	
A9	Amount of land farmed <b><i>last growing season? Kodi chaka chathachi munalima malo akulu bwanji?</i></b>	

**A10 Njira zomwe mumapezera ndalama.** (Chonde nenani njira zosiyanasiyana zomwe zimakupezetsani ndalama pakhomo panu, muyambe ndi njira zomwe zimakupezetsani ndalama zambiri ndipo mumalizire njira zomwe zimakupezetsani ndalama zochepesetsa.)

**Sources of livelihood.** Please indicate the different sources of income for your household, listing from the source

that provides the most income to the least income and put a check by the most important source (choose only one for this).

<b>Njira yopezera ndalama</b> Livelihood type	<b>Ndi ndani yemwe amapeza ndalama kudzera njira imeneyi pa khomo pano</b> Who in household is involved in this livelihood activity, from above table (List names of all that are involved).	Please rank from 1-9 in order of greatest source of income with 1 being the greatest and 9 being the least.
<b>Ulimi wa Fodya</b> Farming - Tobacco sales		
<b>Ulimi wa mbewu zina zones</b> Farming – all other crops		
<b>Ganyu yolima</b> Casual on-farm labor		
<b>Kugulitsa zinthu zachilengedwe (monga nkhuni, miyala)</b> Selling natural resources (e.g. fuelwood, stones)		
<b>Bizinesi yaying'ono (fotokozani)</b> _____ Small business (specify)		
<b>Kugwira Ntchito yolembedwa</b> Formal employment		
<b>Ndalama zomwe mumalandira ngati thandizo</b> Remittances		
<b>Njira zina (fotokozani)</b> Other (specify)		

A10b	<b>ASSETS Does anyone in your household have the following?</b> <b>Kodi pakhomo pano pali amene ali ndizinthu izi?</b>	Yes	No	#	Don't Know	refused
	Hoe/ Khasu	1	2		98	99
	Radio /wailesi	1	2		98	99
	Iron sheets for the roof/malata	1	2		98	99
	Cellular phone/foni	1	2		98	99
	Sofa set/mpando wa sofa	1	2		98	99
	Refrigerator/fuligi	1	2		98	99
	Plough/plawo	1	2		98	99

Bicycle/njinga	1	2		98	99
Tobacco press/	1	2		98	99
Ox-cart /ngolo	1	2		98	99
Motorcycle or car/mnthuthuthu, galimoto	1	2		98	99
Wheel barrow/wilibala	1	2		98	99
Solar electricity/magetsi a sola	1	2		98	99
ESCOM electricity/magetsi	1	2		98	99
Sewing machine/mashini yosokela Malaya	1	2		98	99
Other asset (ask and observe) specifyZina: _____	1	2		98	99
Cattle/Ng'ombe [enter #]	1	2		98	99
Pigs/Nkhumba [enter #]	1	2		98	99
Poultry (chicken, doves and/or guinea fowl)/ Nkhuku, nkhang, nkunda, abakha[enter #]	1	2		98	99
Sheep/Nkhosa [enter #]	1	2		98	99
Rabbits/Kalulu,Mbira [enter #]	1	2		98	99
Goats /Mbuzi[enter#]	1	2		98	99

[Enumerators: there are a number of scale questions, please see the last page of the survey for a visual tool you can use to help respondents with these questions]

## PART B. AGROECOLOGY AND SOIL HEALTH

*Read to the participant:*

In this section of the survey, we will be asking you a number of questions relating to your gardens and farming.  
*Mu gawo lotsatilali tizifunsa mafunso okhuzana ndi malo anu olimapo komanso ulimi wanu.*

<p>B1</p> <p>Are you currently helping with or involved in any training, program, project or a member of an organization about farming/agriculture besides the 2 week Farmer-to-Farmer Curriculum training? <i>Kodi pakadali pano mukuthandizira kapena mukutengapo nawo gawo mu bungwe kapena maphunziro ena aliwonse a za ulimi?</i></p> <p>If no, skip to B2</p>	Yes	No
<p>B1a.</p> <p>If so, what kind of training? <i>Mwa awa mumapanga maphunziro ati?</i></p> <p>(Circle all that apply)</p>	Crop selection (crop variety) <i>kusankha mitundu ya mbewu</i>	1
	Crop diversity <i>kusankha mitundu ya mbewu zosiyanasiyana</i>	2
	Land preparation and soil conservation <i>kukhonza malo olima ndi ulimi wa mlera nthaka</i>	3
	Soil fertility improvement <i>kubwenzeretsa chonde mu nthaka</i>	4
	Seed saving <i>kusunga mbewu</i>	5
	Other (specify)	97
	Don't know	98
	Refused	99

Skip:

B1b

B1c

B2

B2a

B2b

B2c

<p>B3</p> <p>What crops did you plant last year in your fields? (<i>Circle all that apply</i>). List all crops that you grew last year. <i>Ndi mbeu zanzi zomwe munadzala mu munda wanu chaka chatha?</i></p>	Local maize	1
	Hybrid Maize	2
	Tobacco	3
	Cotton	4
	Pigeonpea	5
	Groundnut	6
	Soya Bean	7
	Velvet bean <i>kalongonda</i>	8
	Common Bean Phaseolis type like the popular red ones	9
	Cassava	10
	Bambaranut <i>Nzama</i>	11
	Sorghum <i>mapira</i>	12

	Sweetpotato	13
	Irish potato	14
	Cowpea <i>khobwe/</i>	15
	Pearl Millet <i>mchewere</i>	16
	Finger Millet <i>mawere</i>	17
	Tomato	18
	Pumpkin	19
	Paprika	20
	Rice	21
	Green leafy vegs	22
	Other (specify)	97
B4 Are there crops you would like to grow, but that you do not have access to? <i>Kodi pali mbeu zina zomwe mumafuna mutadzala koma mbeu zo mulibe?</i>  If no, skip to B5	Yes	1
	No	2
B4a. If yes, which ones? <i>Ngati eya, mbeu zANJI?</i>	Crop 1: _____  Reason(s): _____	

	<p>Crop 2: _____</p> <p>Reason(s) <i>chifukwa</i>: _____</p> <p>Crop 3: _____</p> <p>Reason(s): _____</p> <p>Others / reasons:</p>	
<p>B5</p> <p>Have you stopped growing a crop that you used to grow?  <i>Kodi pali mbewu zomwe munasiya kudzala pano zomwe munkadzala kale?</i></p> <p>If no, skip to B6</p>	<p>Yes</p> <p>No</p>	<p>1</p> <p>2</p>
<p>B5a. If yes, which ones, and why? <i>Ndi mbeu zANJI komanso chifukwa chani?</i></p>	<p>Crop 1: _____</p> <p>Reason(s): _____</p> <p>Crop 2: _____</p> <p>Reason(s): _____</p> <p>Crop 3: _____</p>	

	Reason(s): _____  Others / reasons:	
<p>B6</p> <p>Have you learned any conservation agriculture practices? <i>Kodi munaphunzirapo za njira iliyonse ya mlera nthaka?</i></p>	Yes (specify)	1
	No	2
	Don't know	9 8
	Refused	9 9
<p>B7.</p> <p>How important do you think it is to have different types of crops? <i>Kodi nkofunika bwanji kukhala ndi mbeu za mitundu yosiyanasiyana?</i></p> <p>(If 1-useless or 2-not very, skip to B8)</p>	Useless	1
	Not very important	2
	Somewhat important	3
	Very important	4
	Extremely important	5
	Don't know	9 8
	Refused	9 9

<p>B7a. Why do you think it is important to have different types of crops? <i>Nchifukwa chiyani kuli kofunika kukhala ndi mitundu yosiyanasiyana ya mbeu?</i></p>		
<p>B8Do you think it is useful to intercrop some plants on a field? <i>Kodi mukuona ngati ndikofuna kudzala mbweu zosiyanasiyana pa munda umodzi?</i></p>	Yes	1
	No	2
<p>B8a. If yes, why / If no, why not? <i>Chifukwa chani? Ngati ayi, chifukwa chani?</i></p>		
<p>B9 How many fields did you plant last year? <i>Munadzala minda yingati chaka chatha?</i></p>		
<p>B10 In the past year, how many times have your tried a new innovation, technique or experiment on your farm?</p>	None	1
	1-2 times	2
	3-5 times	3

	5 times or more	4
	Other (specify)	9 7
	Don't know	9 8
	Refused	9 9

Say to the participant: **B11**

Take a moment to think of your most fertile field from the last growing season. **Lingalirani mozama za munda wanu omwe munaona kuti unali ndi chonde chokwanira bwino chaka chatha .**

B11a. What was the size of the field? <i>Mundawu unali waukulu bwanji?</i>		
B11b. How many years has your household farmed this garden? <i>Banja lanu lakhala likuulima kwa zaka zingati munda umenewu?</i>		
B11c. Describe the area where this garden is located: <i>(check all that apply and add additional qualities named) Fotokozani malo omwe munda umenewu uli?</i>	Hilly or steep	1
	Flat	2
	Very sandy	3
	Very loamy, rich soil	4
	Very rocky/stony	5
	By a river or water source	6
	By a forest/bush area/	7
	Near a large estate	8
	Near other smallholder farmers' fields	9

	Refused	98
<p>B11d.</p> <p>What soil preparation method did you use before planting this garden last season? Or how did you prepare the garden for planting last season? <i>Kodi munawukonza bwanji munda umenewu musanauzale chaka chathachi?</i></p>	Burned residue, hoed ridges before planting	1
	Buried residue early, soon after harvest, hoed ridges before planting	2
	Buried residue just before planting hoed ridges before planting	3
	Prepared pits during dry season	4
	Don't know	98
	Refused	99
<p>B11e.</p> <p>What were the crop(s) grown in this field? (probe them to list ALL crops that were planted) <i>Ndi mbeu zANJI zomwe zinadzalidwa mu munda umenewu?</i></p>		

B11f. What was the planting pattern? <i>(for a sub-set we might draw the field planting pattern)</i> / <i>Kodi mbeu zimenezi zinadzalidwa motani?</i>	Intercropped	1
	Each crop grown on own in part of the field/	2
	Mixture of some crops intercropped and some grown on own	3
	Other (specify):	97
B11g. Did you apply compost manure? If so, what kind and how much? <i>Kodi munathira manyowa? Ngati zili choncho, ndi mtundu wanji wa manyowa komanso ochuluka bwanji?</i>	Yes	1
	No	2
	Kind/amount:	
B11h. Did you bury crop residue in the field before planting? <i>Kodi munakwilira zinyalala za mbeu mmunda musanadzale mbeu zanu?</i>	Yes	1
	No	2

(If no, skip to B11k.)		
B11hh. If yes, what kind of residue? <i>Ngati eya, munakwilira zinyalala zanzi?</i>		
B11hhh. When did you bury the residue? <i>Munakwilira nyengo zanzi zinyalalazi?</i>	Just after harvest	1
	Just before planting	2
	Other (specify)	3
	Don't know	98
B11i. How did you manage weeds? ( <i>select all that apply</i> )/ <i>Kodi tchire munathana nalo bwani?</i>	Weeded by hand	1
	Applied herbicide	2
	Mulched	3
	Other (specify)	97
B11j. How did you manage insects? ( <i>select all that apply</i> )/ <i>Kodi tizilombo towononga mbeu munathana nato bwani?</i>	Picked by hand	1
	Intercropped	2
	Planted other plants that scared or attracted the insects	3
	Applied pesticides	4
	Applied botanicals e.g. Tephrosia or neem	5
	Other (specify):	97

<p>B11k.</p> <p>Are there other soil conservation methods that you use on this field? <i>Kodi pali njira zina za mlera nthaka zomwe mumagwiritsa ntchito pa munda umenewu (wachonde kwambiriwu)?</i></p>	Pit planting	1
	Contour planting	2
	Box ridges	3
	Bunds	4
	Planted vetiver grass at top of ridge...	5
	Others (specify):	97
<p>B11l. Did you save seeds or cuttings from this field? Yes/No/ <i>kodi munasungako mbeu kuchokera mu munda umenewu?</i></p>	Yes	1
	No	2
	Yes	1

B11m. Has the soil fertility of this field changed in the past 10 years? <i>Kodi mwaonako kusingha kwa chonde mmunda umenewu kwa khumi zapitazo?</i>	No	2
B11n. If yes, how has it changed? <i>Ngati pali kusingha, zasingha motani?</i>	Improved a lot	1
	Improved a little	2
	Declined a little	3
	Declined a lote	4
	Other (specify):	97

Say to the participant: **B12**

Take a moment to think of your least fertile field from the last growing season. ***Lingalirani mozama za munda wanu omwe unali ndi chonde chochepa kwambiri mu chaka chatha?***

*\*If farmers only have one field they should answer these questions for B12 and skip B13.*

*If farmers have two fields they can answer B12 for the more fertile one and B13 for the less fertile one.*

B12a. What was the size of the field? <i>Mundawu unali waukulu bwanji?</i>		
B12b.		

<p>How many years has your household farmed this garden?  <i>Banja lanu lakhala likuulima kwa zaka zingati munda umenewu?</i></p>		
<p>B12c.</p> <p>Describe the area where this garden is located: <i>(check all that apply and add additional qualities named) Fotokozani malo omwe munda umenewu uli?</i></p>	Hilly or steep	1
	Flat	2
	Very sandy	3
	Very loamy, rich soil	4
	Very rocky/stony	5
	By a river or water source	6
	By a forest/bush area/	7
	Near a large estate	8
	Near other smallholder farmers' fields	9
	Refused	98
<p>B12d.</p> <p>What soil preparation method did you use before planting this garden last season? Or how did you prepare the garden for planting last season? <i>Kodi munawukonza bwanji munda umenewu musanauzale chaka chathachi?</i></p>	Burned residue, hoed ridges before planting	1
	Buried residue early, soon after harvest, hoed ridges before planting	2
	Buried residue just before planting hoed ridges before planting	3
	Prepared pits during dry season	4
	Don't know	98
	Refused	99
<p>B12e.</p>		

<p>What were the crop(s) grown in this field? (probe them to list ALL crops that were planted) <i>Ndi mbeu zANJI zomwe zinadzalidwa mu munda umenewu?</i></p>		
<p>B12f. What was the planting pattern? (<i>for a sub-set we might draw the field planting pattern</i>)/ <i>Kodi mbeu zimenezi zinadzalidwa motani?</i></p>	Intercropped	1
	Each crop grown on own in part of the field/	2
	Mixture of some crops intercropped and some grown on own	3
	Other (specify):	97
<p>B12g. Did you apply compost manure? If so, what kind and how much? <i>Kodi munathira manyowa? Ngati zili choncho, ndi mtundu wanji wa manyowa komanso ochuluka bwanji?</i></p>	Yes	1
	No	2
	Kind/amount:	

<p>B12h. Did you bury crop residue in the field before planting? <i>Kodi munakwilira zinyalala za mbeu mmunda musanadzale mbeu zanu?</i></p> <p>(If no, skip to B12k.)</p>	Yes	1
	No	2
<p>B12hh.</p> <p>If yes, what kind of residue? <i>Ngati eya, munakwilira zinyalala zANJI?</i></p>		
<p>B12hhh.</p> <p>When did you bury the residue? <i>Munakwilira nthawi yanji zinyalalazi?</i></p>	Just after harvest	1
	Just before planting	2
	Other (specify)	3
	Don't know	98
<p>B12i.</p> <p>How did you manage weeds? (<i>select all that apply</i>)/ <i>Kodi tchire munathana nalo bwanji?</i></p>	Weeded by hand	1
	Applied herbicide	2
	Mulched	3

	Other (specify)	97
<p>B12j.</p> <p>How did you manage insects? (<i>select all that apply</i>)/ <i>Kodi tizilombo towononga mbeu munathana nato bwanji?</i></p>	Picked by hand	1
	Intercropped	2
	Planted other plants that scared or attracted the insects	3
	Applied pesticides	4
	Applied botanicals e.g. Tephrosia or neem	5
	Other (specify):	97
<p>B12k.</p> <p>Are there other soil conservation methods that you use on this field? <i>Kodi pali njira zina za mlera nthaka zomwe mumagwiritsa Ntchito pa munda umenewu (wopanda chondewu)?</i></p>	Pit planting	1
	Contour planting	2
	Box ridges	3
	Bunds	4
	Planted vetiver grass at top of ridge...	5
	Others (specify):	97

B12l. Did you save seeds or cuttings from this field? Yes/No/ <i>kodi munasungako mbeu kuchokera mu munda umenewu?</i>	Yes	1
	No	2
B12m. Has the soil fertility of this field changed in the past 10 years? <i>Kodi mwaonako kusintha kwa chonde mumunda umenewu kwa khumi zapitazo?</i>	Yes	1
	No	2
B12n. If yes, how has it changed? <i>Ngati pali kusintha, zasintha motani?</i>	Improved a lot	1
	Improved a little	2
	Declined a little	3
	Declined a lote	4
	Other (specify):	97

<p>B13 Can you tell me what trees you have on your homestead and their use? <i>(List all named and uses)</i> [probe for trees used for firewood, to improve soils etc] <i>kodi mungandiuzeke mitundu ya mitengo yomwe yili pakhomo pano ndi ntchito zake?</i></p>	<p>Trees:</p>	<p>Uses:</p>
	<p>1</p>	<p>1</p>
	<p>2</p>	<p>2</p>
	<p>3</p>	<p>3</p>
	<p>Others:</p>	<p>Others:</p>

**PART C: INFORMATION SHARING AND SEEKING**

*I am now going to ask you a set of questions relating to how you get and share information about farming, the weather, and health. (Tsopano ndifunsa mafunso okhudza mmene mumapezera ndi kugawana mauthenga a za ulimi, zanyengo ndi za umoyo)*

No	QUESTION (Instructions)	POSSIBLE RESPONSES	Code
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C1	<p><b><i>Ndi nthawi zochuluka bwanji zomwe mumalankhula ndi anthu ena nkhani za ulimi?</i></b></p> <p>How often do you talk with others about <u>farming</u>?</p> <p>(Circle only one - <b><i>musankhe chimodzi mwa izi</i></b>)</p> <p>If never, skip to C5 (<b><i>Ngati sanapangepo, dumphani kupita ku funso C5</i></b>)</p>	<p><b><i>Sindinapangepo</i></b></p> <p>Never</p>	1
		<p><b><i>Mwa apo ndi apo</i></b></p> <p>Rarely</p>	2
		<p><b><i>Nthawi zina</i></b></p> <p>Sometimes</p>	3
		<p><b><i>Nthawi zambiri</i></b></p> <p>Most of the time</p>	4
		<p><b><i>Nthawi zonse</i></b></p> <p>Always</p>	5
		<p><b><i>Sindikudziwa</i></b></p> <p>Don't know</p>	98
		<p>Refused 99</p>	99
C2 – C4	Skip		
C5	<p><b><i>Ndi nthawi zochuluka bwanji zomwe inu mumayankhula ndi ena zokhudzana ndi zanyengo?</i></b></p> <p>In general, how often do you talk with others about the <u>weather and/or climate</u>?</p>	<p><b><i>Sindinapangepo</i></b></p> <p>Never</p>	1
		<p><b><i>Mwa apo ndi apo</i></b></p> <p>Rarely</p>	2
		<p><b><i>Nthawi zina</i></b></p> <p>Sometimes</p>	3

		<b><i>Nthawi zambiri</i></b> Most of the time	4
		<b><i>Nthawi zonse</i></b> Always	5
		<b><i>Sindikudziwa</i></b> Don't know	98
C6	Skip		
C7	<p><b><i>Ndi nthawi zochuluka bwanji zomwe inu mumayankhula ndi ena zokhudzana ndi zaumoyo ndi madyedwe abwino?</i></b></p> <p>In general, how often do you talk with others about human <u>health and nutrition</u>?</p> <p>(Please circle only one)</p>	<b><i>Sindinapangepo</i></b> Never	1
		<b><i>Mwa apo ndi apo</i></b> Rarely	2
		<b><i>Nthawi zina</i></b> Sometimes	3
		<b><i>Nthawi zambiri</i></b> Most of the time	4
		<b><i>Nthawi zones</i></b> Always	5
		<b><i>Sindikudziwa</i></b> Don't know	98
		Refused	99
C8 – C11	Skip		
C12	<b><i>Kodi ndi njira ziti zomwe inu mumakonda kupedza mauthenga okhudzana ndi za ulimi?</i></b>	Family ( <b><i>a pabanja</i></b> )	1
		Neighbors/Friends ( <b><i>okhala nawo pafupi</i></b> )	2

	<p>What are your most preferred ways of getting information about <u>farming</u>?</p> <p>(Circle all that apply)</p>	People from other villages ( <i>anthu a mmidzi ina</i> )	3
		Farmer's group ( <i>magulu a alimi</i> )	4
		Other groups( <i>magulu ena</i> )	5
		Story telling ( <i>Nthano</i> )	6
		Drama ( <i>masewero</i> )	7
		Radio ( <i>wailesi</i> )	8
		Television ( <i>wailesi ya kanema</i> )	9
		Mobile phone	10
		Printed material (newspaper, pamphlet, etc.) ( <i>ma nyuzi kapena mmabuku</i> )	11
		Extension workers ( <i>alangizi</i> )	12
		Other (specify) <i>Njira zina – tchulani</i>	97
		Don't know	98
		Refused	99
C13	<p><b><i>Kodi njira zomwe inu mumakonda zopedzera mauthenga okhudzana ndi nyengo ndi ziti?</i></b></p> <p>What are your most preferred ways of getting information about the <u>weather and/or climate</u>?</p> <p>(Circle all that apply)</p>	Family ( <i>a pabanja</i> )	1
		Neighbors/Friends ( <i>okhala nawo pafupi</i> )	2
		People from other villages ( <i>anthu a mmidzi ina</i> )	3
		Farmer's group ( <i>magulu a alimi</i> )	4
		Other groups( <i>magulu ena</i> )	5
		Story telling ( <i>Nthano</i> )	6
		Drama ( <i>masewero</i> )	7
		Radio ( <i>wailesi</i> )	8
		Television ( <i>wailesi ya kanema</i> )	9

		Mobile phone	10
		Printed material (newspaper, pamphlet, etc.) ( <i>ma nyuzi kapena mmabuku</i> )	11
		Extension workers ( <i>alangizi</i> )	12
		Other (specify) <i>Njira zina – tchulani</i>	97
		Don't know	98
		Refused	99
C14	<p><b><i>Kodi njira zomwe inu mumakonda zopedzera uthenga ndi zaumoyo komanso madyedwe abwino ndi ziti?</i></b></p> <p>What are your most preferred ways of getting information about <u>health and nutrition</u>?</p> <p>(Circle all that apply)</p>	Family ( <i>a pabanja</i> )	1
		Neighbors/Friends ( <i>okhala nawo pafupi</i> )	2
		People from other villages ( <i>anthu a mmidzi ina</i> )	3
		Farmer's group ( <i>magulu a alimi</i> )	4
		Other groups ( <i>magulu ena</i> )	5
		Story telling ( <i>Nthano</i> )	6
		Drama ( <i>masewero</i> )	7
		Radio ( <i>wailesi</i> )	8
		Television ( <i>wailesi ya kanema</i> )	9
		Mobile phone	10
		Printed material (newspaper, pamphlet, etc.) ( <i>ma nyuzi kapena mmabuku</i> )	11
		Extension workers ( <i>alangizi</i> )	12
		Other (specify) <i>Njira zina – tchulani</i>	97

		Don't know	98
		Refused	99
C15- C17	Skip		
C18	How engaged were you during the training (including being involved in discussions and sharing experiences and information with others)?	Never	1
		Rarely	2
		Sometimes	3
		Often	4
		Always	5
		Don't know	98
		Refused	99
C19	How engaged were others during the training (including being involved in discussions and sharing experiences and information with others)?	Never	1
		Rarely	2
		Sometimes	3
		Often	4
		Always	5
		Don't know	98
		Refused	99

***For the following questions, you will ask either about the drama or the small group discussions depending on which of the training groups the respondent participated in:***

C20	How useful/valuable was the [drama OR small group discussions] during the training?	Not at all usefull	1
		Not very useful	2
		Somewhat useful	3
		Very useful	4
		Extremely useful	5
		Don't know	98
		Refused	99
C21	How useful/valuable was [drama OR small group discussions] in helping you understand the curriculum material?	Not at all usefull	1
		Not very useful	2
		Somewhat useful	3
		Very useful	4
		Extremely useful	5
		Don't know	98
		Refused	99
C22	How useful/valuable was [drama OR small group discussions] in helping you and others in your group share your own experiences and/or ideas?	Not at all usefull	1
		Not very useful	2
		Somewhat useful	3
		Very useful	4
		Extremely useful	5
		Don't know	98
		Refused	99

C23	How useful/valuable was [drama OR small group discussions] during the curriculum training in preparing you to teach others after the training?	Not at all usefull	1
		Not very useful	2
		Somewhat useful	3
		Very useful	4
		Extremely useful	5
		Don't know	98
		Refused	99
C24	During the training, people were able to talk about sensitive or difficult topics, such as relationships in the household.	<b>Sindinapangepo</b> Never	1
		<b>Mwa apo ndi apo</b> Rarely	2
		<b>Nthawi zina</b> Sometimes	3
		<b>Nthawi zambiri</b> Most of the time	4
		<b>Nthawi zonse</b> Always	5
		<b>Sindikudziwa</b> Don't know	98
		Refused 99	99
C25	Approximately how many times have you shared information in curriculum since training? (please select only one)	Never	1
		Once or twice	2
		2-5 times	3
		6-12 times	4
		More than 12 times	5

		Don't know	98
		Refused	99
C26	Approximately how many times have you repeated the information you learned during the training in your household?	<b>Sindinapangepo</b> Never	1
		<b>Mwa apo ndi apo</b> Rarely	2
		<b>Nthawi zina</b> Sometimes	3
		<b>Nthawi zambiri</b> Most of the time	4
		<b>Nthawi zonse</b> Always	5
		<b>Sindikudziwa</b> Don't know	98
		Refused	99
C27	Approximately how many times have you repeated the information you learned during the training in your community?	<b>Sindinapangepo</b> Never	1
		<b>Mwa apo ndi apo</b> Rarely	2
		<b>Nthawi zina</b> Sometimes	3
		<b>Nthawi zambiri</b> Most of the time	4
		<b>Nthawi zonse</b> Always	5
		<b>Sindikudziwa</b>	98

		Don't know	
		Refused 99	99
C28	Approximately how many people have you repeated/shared the information you learned during the training with? (please select only one)	None	
		1-10	
		11-20	
		21-50	
		More than 50 people	
		More than 100	
		Don't know	
		Refused	
<b>Please tell the respondents that the following 8 questions all relate to their experience <i>after</i> the training:</b>			
C29	I feel confident that I can deal with unexpected events.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99
C30	When confronted with a problem, I can usually find several solutions.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3

		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99
C31	I feel I am better able to handle unforeseen situations.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99
C32	I can solve most problems if I invest the necessary effort.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99

C33	My community is better able to work together successfully.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99
C34	People in the community can come together to solve problems.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99
C35	I feel more confident to work with others.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98

		Refused	99
C36	People in the community are able to communicate more effectively.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99
C37	I feel I have more knowledge than before the training.	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5
		Don't know	98
		Refused	99
C38	I feel I have more social skills than before the training. (For example feeling more confident talking with others and/or working with others)	Strongly disagree	1
		Disagree	2
		Neither agree nor disagree	3
		Agree	4
		Strongly agree	5

		Don't know	98
		Refused	99

#### **PART D: CLIMATE CHANGE**

*I am now going to ask you a series of questions relating to changes in the weather. Panopa ndikufunsani mafunso okhuzana ndi za kusintha kwa nyengo.*

No	QUESTION (Instructions)	POSSIBLE RESPONSES	Code
D1	<p><b><i>Muzaka zapitazi, mwaonapo kusintha kuli konse kwa nyengo komwe kuli kosiyana ndi mmene nyengo imakhalira kale?</i></b></p> <p>In the past few years, have you observed any changes in the weather that are different from the expected weather patterns?</p>	Yes	1
		No	2
		Don't know	98
		Refused	99
D2	<p><b><i>Mwaonapo kusintha kotani?</i></b></p> <p><b>If yes, what changes have you observed?</b></p> <p>(Circle all that apply)</p> <p>If no, skip to D3</p>	<p><b><i>Kusefukira kwamadzi</i></b></p> <p>Flooding</p>	1
		<p><b><i>Chilala</i></b></p> <p>Drought</p>	2
		<p><b><i>Kusintha kwa kagwedwe kamvula</i></b></p> <p>Changes in Rainfall Patterns</p>	3
		<p><b><i>Kuchuluka kwatizilombo towononga mbewu</i></b></p> <p>Increased pests</p>	4

		<b>Kudwala chifukwa chakuwotcha kwambiri kwathupi</b> Heat stress	5
		<b>Kusintha kwina (fotokozani)</b> Other (specify)	97
		Don't know	98
		Refused	99
D3	<b>Kodi ndi zinthu zANJI zimene mukuganiza kuti zimapangitsa nyengo kusintha chaka ndi chaka?</b>  What factors if any do you think cause change in weather and climate from year to year?  (Circle all that apply)	<b>Kuwotcha mpweya</b> Burning gas	1
		<b>Kuwotcha malasha</b> Burning coal	2
		<b>Mafakitale</b> Factories	3
		<b>Magalimoto</b> Cars	4
		<b>Kupanga mphamvu zamaGETSI pogwiritsa ntchito mafuta</b> Oil for energy	5
		<b>Kugwetsa mitengo mwachisawawa ndi kuyeretsa nkhalango</b> Deforestation	7
		<b>Kutipula/kugalawuza dothi mopitirira</b> Over tilling the soil	8
		<b>Ulimi wafodya</b> Tobacco farming	9
		<b>Kuwotcha makhusu/khunkha/tsotsa(zotsalira za mbewu)</b> Burning off crop residue	10

		<b>Kuchulukana kwa anthu</b> Overpopulation	11
		<b>Kuswa miyambo yamakolo</b> Transgressing cultural values	12
		<b>Chifuniro cha Mulungu</b> God's will	13
		Other factors natural or human (specify)	97
		Don't know	98
		Refused	99
D4	<p><b>Kodi munayamba mwaonako zinthu mu dera lanu zomwe zimatha kukupatsani chithunzithunzi cha mmene nyengo yilili kapena mmene ikhalire?</b></p> <p>Do you ever observe things in your environment that give you information about recent/current weather?</p> <p>If no, skip to B6</p>	<p><b>Eya</b> Yes</p> <p><b>AYI</b> No</p> <p>Don't Know</p> <p>Refused</p>	<p>1</p> <p>2</p> <p>98</p> <p>99</p>
D5	<b>Ndi zinthu zANJI zomwe mumaonera kuti kwasintha?</b>	<b>Zomera</b> Plants	1
		<b>Tizilombo</b> Insects	2

	<p>If yes, what kind of things do you observe?</p> <p>(Circle all that apply)</p>	<b>Mitsinje kapena Nyanja</b> Streams and/or lakes	3
		<b>Mbalame</b> Birds	4
		<b>Zinthu zina (fotokozani)</b> Other (specify)	97
		Don't know	98
		Refused	99
D6	<p><b>Kodi mwaonapo kusingha kwa nyengo kosiyana ndi nyengo yomwe imayembekedzedwa komwe kwachitika zaka zingapo zapitazi komwe kwabweretsa vuto lina lili lonse pa munda wanu?</b></p> <p>Have you observed changes in the weather or climate in the past few years that are different from the expected weather patterns that had impact on your <u>farm/fields</u>?</p> <p>(If no, skip to D8)</p>	<b>EYA</b> Yes	1
		<b>AYI</b> No	2
		Don't know	98
		Refused	99

D7	<p><b>Ndi kusingha kwanji komwe kwachitika pa munda wanu?</b></p> <p>If yes, what impact have these changes had on your <u>farm/fields</u>?</p> <p>(Circle all that apply)</p> <p>(This questions is continued on the next page)</p>	<p><b>Mtundu wa mbewu zomwe zinadzalidwa</b></p> <p>Crops/varieties grown</p>	1
		<p><b>Nthawi yodalira mbewu</b>When crops are planted</p>	2
		<p><b>Kuthirira</b> Irrigation</p>	3
		<p><b>Tizilombo towononga mbewu</b>Pests</p>	4
		<p><b>Mbewu kugwidwa ndi matenda</b>Crop disease</p>	5
		<p><b>Zomera zosafunika mmunda</b>Weeds</p>	6
		<p><b>Kusingha kwa kachulukidwe ka zokolola</b></p> <p>Changes in yield</p>	7
		<p><b>Nthawi yozakololera</b>Timing of harvest</p>	8
		<p><b>Nthaka ya dothi</b>Soil quality</p>	
		<p><b>Masungidwe a chimanga chosola/tirigu wopuntha</b>Grain/storage</p>	9
		<p><b>Mavuto ena (fotokozani)</b></p> <p>Other (specify)</p>	97
			Don't know
	Refused	99	
D8	<p><b>Kodi kusingha kwanyengo kosiyana ndi nyengo yomwe imayembekedzedwa komwe kwachitika zaka zingapo zapitazi kwabweretsa vuto lina lili lonse pakhomo panu?</b></p> <p>Have you observed changes in the weather or climate in the past few</p>	Yes	1
		No	2
		Don't know	98
		Refused	99

	years that are different from the expected weather patterns that had impact on your <u>household</u> ?  (If no, skip to D10)		
D9	<p><b><i>Ndi vuto lanji lomwe kusintha kwa nyengo kosiyana ndi nyengo yomwe imayembekedzedwa komwe kwachitika zaka zingapo zapitazi kunabweretsa pakhomo panu?</i></b></p> <p>If yes, what impact have these changes had on your <u>household</u>?</p> <p>(Circle all that apply)</p>	<b><i>Kuchepa kwa chakudya</i></b> Reduced food security	1
		<b><i>Kuchepa kwa mitundu ya zakudya</i></b> Reduced food diversity	2
		<b><i>Mavuto a madzi</i></b> Water challenges	3
		<b><i>Kuchepa kwa ndalama zomwe timapeza</i></b> Reduced income	4
		<b><i>Kuchuluka kwa ntchito</i></b> Increased workload	5
		<b><i>Kujomba kwa ana kusukulu</i></b> Lower school attendance	6
		<b><i>Kuchuluka kwa matenda</i></b> Increased disease	7
		Other (specify)	97
		Don't know	98
Refused	99		
D10	<p><b><i>Kodi mwaonapo vuto kapena kusintha kulikonse mu dera lanu komwe kwadza kamba ka kusintha kwa nyengo kuyerekeza ndi momwe inkakhalira mzaka za mmbuyozi?</i></b></p>	Yes	1
		No	2
		Don't know	98
		Refused	99

	<p>Have you observed changes in the weather or climate in the past few years that are different from the expected weather patterns that had any impact on your <u>community</u>?</p> <p>(If no, skip to D12)</p>		
D11	<p><b><i>Ndi vuto lanji lomwe kusingha kwa nyengoku kwabweretsa mu dera lanu?</i></b></p> <p>If yes, what impact have these changes had on your <u>community</u>?</p> <p>(Circle all that apply)</p>	<p><b><i>Umbava ndi umbanda wamitundu yina</i></b></p> <p>Theft and other crimes</p>	1
		<p><b><i>Kukanganirana madzi</i></b></p> <p>Conflict over water</p>	2
		<p><b><i>Kukanganirana chakudya</i></b></p> <p>Conflict over food</p>	3
		<p><b><i>Khalidwe logawana chakudya linachepa</i></b></p> <p>Less food sharing</p>	4
		<p><b><i>Khalidwe logawana mbewu linachuluka</i></b></p> <p>Increased sharing seeds</p>	5
		<p><b><i>Khalidwe lowuzana zolengedzedwa/chidziwitso linachuluka</i></b></p>	

		Increased sharing of information	
		<b>Khalidwe</b> <b>logawana/lobwerekanazinthu</b> <b>ndi zipangidzo zina za ulimi</b> <b>linachuluka</b>  Increased sharing of other farm resources	6
		Other (specify)	97
		Don't know	98
		Refused	99
D12	<b>Kodi mukudziwa njira ina yili yonse yothandizira kupitisa patsogolo ulimi pamene kwapezeka mavuto omwe amabwera chifukwa chakusinthwa kwa nyengo?</b>  Do you know of any other strategies for improving farming when you are faced with challenges, such as unexpected or extreme weather?	Yes (specify)	1
		No	2
		Don't know	98
		Refused	99

D13	<p><b><i>Kodi mumawona kufunika kogwilira ntchito limodzi ana ndi mabvuto obwera chifukwa cha kusintha kwa nyengo?</i></b></p> <p>Do you see value in working as a community to respond to challenges relating to changes in the weather in the past few years that are different from the expected weather patterns?</p>	Yes	1
		No	2
		Don't know	98
		Refused	99
D14	<p><b><i>Kodi anthu akuno ali ndi njira zothetsera mavuto omwe abwera chifukwa chakusintha kwanyengo m'dera lanuli mu zaka zingapo zapitazi?</i></b></p> <p>Does your community have strategies for responding to changes in the weather in the past few years that are different from the expected weather patterns?</p> <p>(If no, skip to question D16)</p>	Yes	1
		No	2
		Don't know	98
		Refused	99
D15	<p>If yes, what strategies does your community have for responding to changes in the weather in the past few years that are different from the expected weather patterns?</p>		
		<p><b><i>Timakambirana/kufotokozerana pafupipafupi</i></b></p> <p>More communication among community members</p>	1
		<p><b><i>Khalidwe lowuzana zomwe zalengedzedwa/chidziwitso linachuluka</i></b></p> <p>More sharing of information</p>	2

		<b>Khalidwe logawana/lobwerekana zinthu ndi zipangizo linachuluka</b> More sharing of resources	3
		<b>Kupanga madongosolo apangozi</b> Emergency planning	4
		<b>Kusunga chimanga chosola/tirigu wophuntha</b> Grain storage	5
		<b>Kusunga mbewu yodzala</b> Seed storage	6
		<b>Kudzala mitengo mmalo momwe munalibe mitengo</b> Afforestation	7
		<b>Kubwera pamodzi kwa anthu kuti apange zigamulo zokomera/zothandidza anthu onse</b> Community organizing	8
		Other (specify)	97
		Don't know	98
		Refused	99
D16	<b>Kodi ndimavuto anji omwe mungakumane nawo anthu nonse mutamagwira ntchito limodzi polimbana ndi mavuto omwe abwera chifukwa chakusinthwa kwanyengo komwe kwachitika zaka zingapo zapitazi?</b>  What challenges do you see in working as a community in	<b>Kusowa kwa nthawi yopangira msonkhano</b> Not enough time for meetings	1
		<b>Mikangano pakati pa anthu</b> Conflicts between community members	2
		<b>Kusowa utsogoleri weniweni</b> No clear leadership or poor leadership?	3

	<p>responding to changes in the weather in the past few years that are different from the expected weather patterns?</p> <p>(Circle all that apply)</p>	<p><b>Kusowa kwa zinthu ndi zipangizo zoti kugawirana kapena nkubwerekana</b></p> <p>Lack of individual resources for sharing</p>	4
		Other (specify)	97
		Don't know	98
		Refused	99
D17	<p><b>Kodi mudera lanu muli anthu ena omwe ali pachiwopsezo kwambiri kuposa ena chifukwa chakusinthwa kwa nyengo?</b> Are certain people in your community more vulnerable than others to changes in the climate/weather?</p> <p>(No, skip to D 19)</p>	Yes	1
		No	2
		Don't know	98
		Refused	99
D18	<p><b>Ngati yankho lanu lili ee, ali pachiwopsezo kwambiri ndi ndani?</b></p> <p>If yes, who are the most vulnerable?</p> <p>(Circle all that apply)</p>	<p><b>Azibambo omwe ali ndi kachilombo koyambitsa Edzi</b></p> <p>HIV positive men</p>	1
		<p><b>Azimayi omwe ali ndi kachilombo koyambitsa Edzi</b></p> <p>HIV positive women</p>	2
		<p><b>Matenanti a amuna</b></p> <p>Male tenants</p>	3
		<p><b>Matenanti a akazi</b></p> <p>Female tenants</p>	4
		<p><b>Azibambo achikulire</b></p> <p>Elderly men</p>	5

		<b>Azimayi achikulire</b> Elderly women	6	
		<b>Achinyamata a amuna</b> Male youth	7	
		<b>Achinyamata a akazi</b> Female youth	8	
		<b>Chokolo chachimuna (bambo yemwe mkazi wake anamwalira)</b> Widowers (men whose wives have died)	9	
		<b>Chokolo (mayi yemwe mamuna wake anamwalira)</b> Widows (women whose husbands have died)	10	
		<b>Mwana wamasiye wamwamuna</b> Male orphans	11	
		<b>Mwana wamasiye wamkazi</b> Female orphans	12	
		Other (specify)	97	
		Don't know	98	
		Refused	99	
D19		<b>a. Mbaula zosunga nkhuni</b>	<b>Sindikuyidziwa</b>	1

<p><b><i>Kodi mumazidziwa njira izi zimene anthu amagwiritsa ntchito pothandiza kuchepetsa mabvuto a kusintha kwa nyengo?</i></b></p> <p>How familiar are you with the following ways that people might help slow the pace of changes in the weather that are different from the expected weather patterns?</p> <p>(Circle one rating per topic)</p> <p>(This question continues on the following page)</p>	<p><b><i>zogwiritsa ntchito nkhuni pang'ono</i></b></p> <p>More efficient cook stoves</p>	Not familiar		
		<b><i>Ndikuyidziwa pang'ono</i></b>	2	
		Slightly familiar		
		<b><i>Ndikuyidziwa</i></b>	3	
		Familiar		
		Somewhat familiar	4	
		<b><i>Ndikuyidziwa kwambiri</i></b>	5	
		Very familiar		
		<b><i>Sindikudziwa</i></b>	98	
		Don't know		
		Refused	99	
		<p><b><i>b. Mitundu yakalimidwe yopanga dothi kukhala lachonde</i></b></p> <p>Farming approaches that build soil organic matter</p>		1
		<b><i>Sindikuyidziwa</i></b>	Not familiar	
		<b><i>Ndikuyidziwa pang'ono</i></b>	2	
	Slightly familiar			
	<b><i>Ndikuyidziwa</i></b>	3		
	Familiar			
	Somewhat familiar	4		
	<b><i>Ndikuyidziwa kwambiri</i></b>	5		
	Very familiar			
	<b><i>Sindikudziwa</i></b>	98		

			Don't know	
			Refused	99
		<b><i>c. Kuchepetsa kuthira mmunda zinthu zopangidwa ndi mankhwala</i></b>	<b><i>Sindikuyidziwa</i></b>	1
		Minimizing chemical inputs	Not familiar	
			<b><i>Ndikuyidziwa pang'ono</i></b>	2
			Slightly familiar	
			<b><i>Ndikuyidziwa</i></b>	3
			Familiar	
			Somewhat familiar	4
			<b><i>Ndikuyidziwa kwambiri</i></b>	5
			Very familiar	
			<b><i>Sindikudziwa</i></b>	98
			Don't know	
			Refused	99
		<b><i>d. Mbewu zamugulu lanyemba zopangitsa dothi kukhala lanthaka</i></b>	<b><i>Sindikuyidziwa</i></b>	1
		Legumes for increasing soil health	Not familiar	
			<b><i>Ndikuyidziwa pang'ono</i></b>	2
			Slightly familiar	
			<b><i>Ndikuyidziwa</i></b>	3
			Familiar	
			Somewhat familiar	4
			<b><i>Ndikuyidziwa kwambiri</i></b>	5
			Very familiar	

			<b>Sindikudziwa</b>	98
			Don't know	
			Refused	99
		<b>e. Kudzala mitengo modzungulira mbewu</b>		
		Agroforestry (tree planting)	<b>Sindikuyidziwa</b>	1
			Not familiar	
			<b>Ndikuyidziwa pang'ono</b>	2
			Slightly familiar	
			<b>Ndikuyidziwa</b>	3
			Familiar	
			Somewhat familiar	4
			<b>Ndikuyidziwa kwambiri</b>	5
			Very familiar	
			Other (specify)	97
			<b>Sindikudziwa</b>	98
			Don't know	
			Refused	99
D20	<b>Kodi kulandira mauthenga a zanyengo pafupipafupi angakuthandidzeni bwanji kuti muthane ndi mavuto omwe amabwera chifukwa chakusintha kwa nyengo?</b>	Useless	1	
		Not very useful	2	
		Somewhat useful	3	
	How useful would more access to weather information, such as	Very useful	4	

forecasts be in helping you respond to changes in the weather/climate?  (Circle only one)		
	Extremely useful	5
	Don't know	98
	Refused	99

#### **SECTION E: SOCIAL SUPPORT and GENDER RELATIONS**

**Note to enumerator: the following questions are quite sensitive. Please assure the respondent that all identities are kept confidential and will not be shared with anyone. Please say to respondent: *Tsopano ndikufunsani mafunso okhudzana ndi pakhomu panu pano (kapena pabanja lanu). Ndikutsimikizileni kuti zomwe tikambilane pano ndizachinsinsi ndipo palibe amene adziwe zazokambilana zathu kupatulako anzathu tikupanga nawo kafukufukuyu.* (I am now going to ask you about household issues. Please remember that all questions are confidential and will not be shared with anyone beyond the research team.)**

<b>E1 (Read the following to the respondent): Pali nthawi zina zomwe munthu umafuna munthu wina kuti akuthandizeko nzeru, maganizo kapena kumudandaulira kumene. Mungandiwuzeko kuti ndikangati kamene munapezako chithandizo chotere?</b> People sometimes look to others for companionship, guidance, assistance, or other types of support. Could you tell me how often each of the following kinds of support is available to you when you need it?							
<b>E1a. Kodi ndi kangati kamene mumapeza munthu amene mumakhala ndi nthawi yocheza kapena kupanga zinthu zomwe inu mumakondwa nazo, mwachitsanzo</b>	<b>Sandinapan gepo 1</b>  Never	<b>Mwa apo ndi apo 2</b>  Rarely	<b>Nthawi zina 3</b>  Sometimes	<b>Nthawi zambiri 4</b>  Most of the time	<b>Nthawi zones 5</b>  Always	<b>Sindikud ziwa 98</b>  Don't know	Refused  99

<p><b><i>kutiwa tsitsi?</i></b> How often do you have someone to have a good time or do something enjoyable with?</p>							
<p>E1b. <b><i>Kodi ndi nthawi zochulukwa bwanji zomwe mumapeza munthu okamba naye za mavuto anu kapena omukhuthulira zakukhosi ndikupeza malangizo?</i></b> How often do you have someone to confide in, talk with about yourself or your problems, and get advice?</p>	<p><b><i>Sandinapan gepo 1</i></b> Never</p>	<p><b><i>Mwa apo ndi apo 2</i></b> Rarely</p>	<p><b><i>Nthawi zina 3</i></b> Sometimes</p>	<p><b><i>Nthawi zambiri 4</i></b> Most of the time</p>	<p><b><i>Nthawi zones 5</i></b> Always</p>	<p><b><i>Sindikud ziwa 98</i></b> Don't know</p>	<p>Refused 99</p>
<p>E1c. <b><i>Kodi ndi nthawi zochulukwa bwanji zomwe mumapeza munthu okutengelani kuchipatala mukadwala, kukupatsani ndalama kapena chakudya mukachepekedwa??</i></b> How often do you have someone to take you to the hospital or give you money or food if you need it?</p>	<p><b><i>Sandinapan gepo 1</i></b> Never</p>	<p><b><i>Mwa apo ndi apo 2</i></b> Rarely</p>	<p><b><i>Nthawi zina 3</i></b> Sometimes</p>	<p><b><i>Nthawi zambiri 4</i></b> Most of the time</p>	<p><b><i>Nthawi zones 5</i></b> Always</p>	<p><b><i>Sindikud ziwa 98</i></b> Don't know</p>	<p>Refused 99</p>

E1d. <b>Kodi ndi nthawi zochuluka bwanji zimene mumakhala ndi amene amakukondani?</b> How often are you in the company of someone who shows you love and affection?	<b>Sandinapan gepo 1</b> Never	<b>Mwa apo ndi apo 2</b> Rarely	<b>Nthawi zina 3</b> Sometimes	<b>Nthawi zambiri 4</b> Most of the time	<b>Nthawi zones 5</b> Always	<b>Sindikud ziwa 98</b> Don't know	Refused  99
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How many close relatives (those who will readily help you when you need help) live in your community?

How many close friends (those who will readily help you when you need help) live in your community?

*Tsopano ndikufunsani za mmene mumangira nfuno zosiyana siyana pa banja lanu. Now I'd like to ask you about decision-making in your household.*

**E2Kodi amene amapanga ganizo kapena kukhala ndi ulamuliro pa za mbewu zimene zilimidwe ndi komwe zidzalidwe pabanja pano ndi ndani?**

Who usually decides what and where to plant?

- 1= self
- 2 = spouse
- 3= Both
- 4= Sons
- 5=Daughters
- 6= Other family members
- 7= Other (specify)

**E3 Ndindani amalamulira pazokolola zomwe mungagulitse?**

Who usually decides what farm products to sell?

- 1= self
- 2 = spouse
- 3= Both

	<p>4= Sons</p> <p>5=Daughters</p> <p>6= Other family members</p> <p>7= Other (specify)</p>
<p><b>E4 Kodi ndindani amene amalamulira pa nkhani yogula zinthu zikuluzikulu (monga njinga, wailesi, cell phone, feteleza, malata) pakomo pano?</b></p> <p>Who usually makes decisions about major household purchases (e.g. fertilizer)?</p>	<p>1= self</p> <p>2 = spouse</p> <p>3= Both</p> <p>4= Sons</p> <p>5=Daughters</p> <p>6= Other family members</p> <p>7= Other (specify)</p>
<p><b>E5 Kodi ndindani amene amalamulira pa nkhani yogula zinthu zomwe mumagwiritsa ntchito tsiku ndi tsiku pakomo pano (monga sopo)?</b></p> <p>Who usually makes decisions about purchases for daily household needs (e.g. soap)?</p>	<p>1= self</p> <p>2 = spouse</p> <p>3= Both</p> <p>4= Sons</p> <p>5=Daughters</p> <p>6= Other family members</p> <p>7= Other (specify)</p>
<p><b>E6 Kodi ndindani amene amalamulira pa nkhani yoti mukachezere achibale ndi anansi?</b></p> <p>Who usually decides about visits to your family or relatives?</p>	<p>1= self</p> <p>2 = spouse</p> <p>3= Both</p> <p>4= Sons</p> <p>5=Daughters</p> <p>6= Other family members</p> <p>7= Other (specify)</p>
<p><b>E7 Kodi ndi ndani amene amalamulira pa nkhani yoti muzitengapo mbali ndi kulowa m'magulu osiyana siyana kaya a zaulimi, azosunga ndalama, zachitukuko, zaumoyo?</b></p>	<p>1= self</p> <p>2 = spouse</p> <p>3= Both</p>

<p>Who usually decides whether you can participate in different local organizations?</p>	<p>4= Sons 5=Daughters 6= Other family members 7= Other (specify)</p>	
<p>E8 <b>Kodi ndi ndani amene amalamulira pa nkhani nkhanu ya maphunziro a ana anu?</b> Who usually decides about your children's education?</p>	<p>1= self 2 = spouse 3= Both 4= Sons 5=Daughters 6= Other family members 7= Other (specify)</p>	
<p>E9 <b>Kodi akazi anu angaganize mwaokha za mbewu zomwe zidzalidwe ku munda?</b> Can your wife (or you if it is woman) ever decide on her own to plant crops?</p>	<p>Yes</p>	<p>No</p>
<p>E10 <b>Kodi akazi anu angaganize mwaokha kugulisa zokolola?</b> Can your wife (or you if it is the woman) ever decide on her own to sell crops?</p>	<p>Yes</p>	<p>No</p>
<p>E11 <b>Kodi akazi anu angaganize mwaokha zolowa nawo mu gulu losunga ndalama (Bank ya mmudzi).</b> Can your wife (or you if it is the woman) ever decide on her own to join an organization such as a village bank?</p>	<p>Yes</p>	<p>No</p>
<p>E12 <b>Kodi akazi anu angaganize mwaokha kukayendera achibale omwe sakhala mmudzi mwanumo</b> mopanga okha chiganizo? Can</p>	<p>Yes</p>	<p>No</p>

your wife (or you, if it is the woman) ever decide on her own to visit family or friends outside the village?									
E13 <b>Kodi abambo amathandiza kusamalira ana pakhomo pano?</b> Does the <i>husband</i> ever help with child care?		Yes		No					
E13a. [If yes], kangati <b>pa mwezi?</b> How often per month?	Daily	Frequently (3-5 times)	Sometimes (1-2 times)	Rarely	Never	Don't know	Refused		
E14 <b>Kodi abambo, mungakhale opanda vuto lirironse akazi anu atakhala pa udindo mu bungwe lomwe ali membala limene lingamathe kuwatengela kumaulendo akumadera ena?</b> Would you (or your husband) be comfortable with your wife being in a leadership position in an organization that led her to travel away from home?		Yes		No					
E15 If you are married, do you (or your husband) ever help with food preparation?		Yes		No					
E15a. [If yes], <b>Ngati ndi choncho, ndikangati pamwezi?</b> How often per month?	Daily	Frequently (3-5 times)	Sometimes (1-2 times)	Rarely	Never	Don't know	Refused		
E16 <b>Kodi amuna anu amachapa zovala?</b> Do you (or your husband) ever do the laundry?		Yes	No						
E16a. [If yes], <b>Ngati ndi choncho, ndikochuluka bwanji pamwezi?</b> How often per month? (write any details provided):	Daily	Frequently (3-5 times)	Sometimes (1-2 times)	Rarely	Never	Don't know	Refused		
E17 <b>Nthawi zina mwamuna amakwiya kapena kunyansidwa chifukwa cha zomwe mkazi wake wachita. Kodi mukuganiza kuti ndi kololedwa kuti mwamuna amenye mkazi wake zinthu ngati izi zikachitika (zili munsizi)?</b> Sometimes a husband can get irritated or annoyed by things that his wife does. Do you think a husband is justified in hitting or beating his wife in the following situations: (adapted from Pandey et al. 2012). This can be from your personal beliefs or your experiences.									

E17a. <b>Akagulitsa zokolola mwayekha osamuwuza mwamuna wake?</b> She sells something (like crops) without telling him?	Yes	No					
E17b. <b>Akapseleletsa ndiwo?</b> She burns the food?	Yes	No					
E17c. <b>Akakana kugonana ndi mwamuna wake?</b> She refuses to have sex with him?	Yes	No					
E18 Did you beat your spouse, or did your spouse beat you, in the last four weeks?	Yes	No					
E18a. <b>Ngati ndi choncho, chinachitika ndi chani kuti akumenyeni/muwamenye?</b> If yes, can you tell me more about the situation?							
E19 <b>Kodi pali amene amamwa mowa pakhomopano?</b> Does anyone in the household drink alcohol? If so, who?  <b>Ngati choncho ndi ndani?</b>	Yes					No [if no, skip to section E.]	
E20 <b>Amamwa mowa kangati pa sabata</b> [If someone drinks] Can you estimate how often per week this person usually drinks?	Daily	Frequently	Sometimes	Rarely	Never	Don't know	Refused
E21 Would you say in the last 3 years this person's alcohol consumption has increased or decreased or remained the same?	Increased		Decreased		Stayed the same		

E22 **Ngati pali kusintha mukuwona ngati ndi chifukwa chani?** If so, why do you suppose it has changed?

#### **PART F: NUTRITION BASELINE SURVEY QUESTIONS**

*I will now ask you a series of questions relating to health and nutrition in your household.*

***Tsopano ndikufunsani mafunso okhuzana ndi zaumoyo ndi kadyedwe kabwino.***

*These questions are for those both with and without children under five.*

IF THERE IS A CHILDREN UNDER 3 YEARS OLD, PLEASE ASK THE FOLLOWING QUESTIONS:

**F1 INFANT DIET HISTORY *zakudya zomwe mwana anadya dzulo*** *(Please ask the participant: "In the past 24 hours, (for example from midnight of the previous day to midnight tonight) how often was your baby fed each food listed below?" Include feedings by everyone who feeds the baby and include snacks, feeding by hand and nighttime feedings.)* ***Chonde funsani kuti mumawola 24 adutsa ( dzulo) mwana anadya chakudya chanji ndipo mwana wanuyo anadya kangati zakudya zimenezi***

Food type /Mtundu wachakudya	Number of feedings/ Nambala ya kadyedwe
Breast milk/ Mkaka wa mawere	
Infant formula/ Mkaka waufa wogula	
Milks (of any non-human animal)/ Mkaka wuliwose	
Water (including water with sugar or just plain water)/ Madzi	
Thin porridge/ Bala la ufa woyera	

Food type /Mtundu wachakudya	Number of feedings/ Nambala ya kadyedwe
Any other liquids such as juice, mzuwula, soup or other liquids?/ <b>Zakudya zamadzi madzi ngati juwisi</b>	
Any food such as Nsima, porridge, bread, spaghetti, scones, biscuits, rice, boiled whole maize grain, sweetbeer, boiled samp, milk scone, doughnuts, maize- banana cake, or any food made from finger millet, sorghum, bullrush millet, maize or wheat? <b>Chakudya chilichose ngati: nsima,phala, buledi, supageti, nkhoŵe, mabisiketi, thobwa, mpunga, chikondamoyo, mandazi, zitumbuwa, kapena zakudya zilivose zochokera ku mapira, chimanga, mpunga, ndi tiligu?</b>	
Any fruits like papaya (pawpaw)? <b>Zipatso zili zonse ngati: papaya, mango papaya, mango.</b>	
Any food such as: pumpkins, carrots or sweet potatoes having yellow pigment, including local yellow maize? <b>Chakudya chilichose monga izi: mawungu, karoti, kapena mbatata za mtundu wachikasu/ or chimanga chachikasu:</b>	
Any food in the group of: white sweet potatoes, cocoyams, cassava, irish potatoes, yams or any white roots and tubers? <b>Chakudya chilichose mwa izi mbatata zoyera, chinangwa,mbatatesi, kapena chakudya chilichose chochokera ku mizu</b>	
Relish of dark green leafy vegetables as well as the indgenous vegetables including, Cat's whiskers leaves, Amaranthus, cassava leaves, sweet potato leaves, mastard, rape, local rape, pumpkin leaves, cow peas leaves, bean leaves, denje, black jack leaves <b>Ndiwo zamasamba obiriwira, kuphatikiza za kutchire ngati izi: chigwada, luni, mpiru, kanganje, lepu, khwanya</b>	
Any kind of relish from leafy vegetables e.g Chinese cabbage, okra, cabbage, egg plants,tomatoes, onions, green pepper and green beans? <b>Kapena ndiwo zili zose za masamba ngati: Chinese, thelele lobala, kabichi, mabilinganya, tomato, anyezi, tsabola wobiliŵila ndi nyemba za zitheba.</b>	
Any other fruits including the indigenous wild fruits e.g oranges, tangerines, lemons, tamarind, elephant fruits, <i>masawo</i> , avocado pears, bananas and baobab fruits? <b>Zipatso zili zonse kuphatikizako za muthengo ngati izi: ma olenji, mandimu, matanjalini, mapeyala, ntochi, masuku, maviru, matowo, makanamajaha na ndi zina</b>	
Any meat e.g beef, lanb, pork, goat meat, rabbit meat, mice, wild game, poultry duck, flying insects e.g nkhunguni, guinea fowl or any other bird, liver, kidney, heart, offals or	

Food type /Mtundu wachakudya	Number of feedings/ Nambala ya kadyedwe
any other meat. <b>Nyama yiliyose ngati iyi: nyama ya ngombe, ya nkhusa, ya nkhumba, ya mbuzi, ya kalulu, mbeŵa, nkukhu, bakha, nkhang kapena mbalame, chiwindi, mtima, kapena nyama yiliyose ya mkati olo chakudya chilichose cha nyama.</b>	
Eggs of any kind?/ <b>Mazira a mtundu wuli wose?</b>	
Fresh or dried fish?/ <b>Somba zaziwisi kapena zowuma ?</b>	
Any type of beans and peas e.g beans, cow peas, pigeon peas, nkhangudzu, peas, ground beans, soya beans, ground nuts, green gram, custard apple, Nseula, chick peas? <b>Mtundu uliwose wa magulu a nyemba ngati: nyemba, zama, nandolo, ndozi, khobwe, mtedza, soya</b>	
Milk and Food made from milk e.g yoghurt, sour milk? <b>Zakudya ngati: mkaka wokama kuchoka ku ngombe, yogati, chambiko</b>	
Any type of fats or oils e.g. cooking oil, animal fats and margarine used for cooking or added to food? <b>Mafuta aliwose ngati: mafuta, ophikira, mafuta ochokera ku nyama, majalini</b>	
Any sweet, sugar, honey, soft drinks such as fanta, fizzes, cocacola, sprite cocopina, drinks to which sugar was added or sugary foods e.g chocolate, sweets? <b>Chakudya chilichose chotsekemera ngati: shuga, wuchi, zakumwa zosaledzeletsa ngati: Fanta, fizesi, kokakola, sprite, kokopina, zakudya zothilako shuga ngati chokoleti, maswiti</b>	
Any tea or coffee? <b>Tiyi aliyese, kapena khofi</b>	

INDIVIDUAL DIETARY DIVERSITY (IDD): ASK IF NO UNDER 3 CHILD IN THE HOME

F2. Now I am going to ask you questions about the food stuffs or drinks that you took yesterday during the day or night here at home or elsewhere. **Ndikufusani zakudya zomwe munadya ndi kumwa dzulo**

#	Type of food	Examples	Yes/ Eya (1)	No/ Ayi (0)
	<b>Gulu la chakudya</b>	<b>Zitsanzo</b>		

1	Cereals <b>Chakudya cha mugulu la chimanga</b>	Any food such as Nsima, porridge, bread, spaghetti, scones, biscuits, rice, boiled whole maize grain, sweetbeer, boiled samp, milk scone, doughnuts, maize- banana pan cake, or any food made from finger millet, sorghum, bullrush millet, maize and wheat?  <b>Chakurya chili chose ngati: sima, phala, buledi, supageti, nkhoŵe, mabisiketi, chindongwa, mupunga, chikondamoyo, mandazi, vitumbuwa, mabisiketi, thobwa, mpunga, chikondamoyo, mandazi, zitumbuwa, panji zakudya zilizose zochokera ku mapira, chimanga, mpunga, mbatatesi ndi tiligu</b>		
2	Fruits with Vitamin A Zipatso zomwe ziri ndi vitamin A	Any fruits like papaya (pawpaw)? (Vitamin A rich fruits). Zipatso zili zose ngati izi: mapapaya, mango? ( zipatso za vitamin A)		
3	(Vitamin A rich tubers & vegetables) <b>Chakurya cha kufumila ku mphangwe na Vitamin A</b>	. Any food such as: pumpkins, carrots or sweet potatoes having yellow pigment, including local yellow maize? <b>Chakudya chilichose ngati izi: karoti, kapena mbatata za mtundu wofira ndi chikasu</b>  <i>[please check here if they indicate that they ate local yellow maize]</i>  <input type="checkbox"/>	..	.
4	(White tubers and roots)  Mbatata ndi chakudya chilichose cha mizu yoyera	Any food in the group of: white sweet potatoes, coco yams, cassava, irish potatoes, yams or any white roots and tubers?  <b>Chakudya chilichose mwa izi; mbatata zoyera, chinangwa,, mbatatesi, kapena chakudya chilichose chochokera ku misisi.</b>	..	.
5	(Dark greenleafy vegetables) .. <b>Masamba obiliwira</b>	Relish of dark green leafy vegetables as well as the indgenous vegetables including, Cat's whiskers leaves, Amaranthus, cassava leaves, sweet potato leaves, mastard, rape, local rape, pumpkin leaves, cow peas leaves, bean leaves, denje, black jack leaves  <b>Masamba obiliwira kuphatikizapo amtchire ngati awa: chigwada, luni, mpiru, kaganje, repu, khwanya</b>		
6	(any other vegetables) <b>Ndiwo zili zose za masamba</b>	Any kind of relish from leafy vegetables e.g Chinese cabbage, okra, cabbage, egg plants ,tomatoes, onions, green pepper and green beans? <b>Kapena ndiwo zili zose za masamba ngati izi: chinizi, thelele lobala, kabichi, mabilinganya, anyezi,tomato, tsabola wa gilini ndi nyemba za zitheba</b>		
7	(Other fruits) <b>Zipatso zili zose</b>	Any other fruits including the indigenous wild fruits e.g oranges, tangerines, lemons, tamarind, elephant fruits, <i>masawo</i> , avocado pears, bananas and baobab fruits? <b>Zipatso zili zose kuphatikizapo za mtchire ngati iziz; ma orenji, mandimu, matanjalini,mapeyala, nthochi, masuku, maye,matowo ndi zina.?</b>		
8	(Meat) <b>Nyama</b>	Any meat e.g beef, lanb, pork, goat meat, rabbit meat, mice, wild game, poultry duck, flying insects e.g nkhunguni, guinea fowl or any other bird, liver, kidney, heart, or any other meat.		

		<i>Nyama yiliyose ngati iyi: nyama ya ng'ombe, ya nkhosa ya nkhumba, ya mbuzi, ya kalulu, mbeŵa, nkhuku, bahka, nkhang kapena mbalame, chiwindi, mtima, kapena nyama yiliyose ya mkati olo chakudya chilichose cha nyama.</i>		
9	Eggs <i>Mazira</i>	Eggs of any kind?/ <i>Mazira amtundu uli wose?</i>		
10	(Fish) <i>Somba</i>	Fresh or dried fish?/ <i>Somba zaziwisi kapena zowuma?</i>		
11	(Legumes, nuts & seeds) <i>Chakudya cha mu gulu la nyemba</i>	Any type of beans and peas e.g beans, cow peas, pigeon peas, nkhangudzu, peas, ground beans, soya beans, ground nuts, green gram, custard apple, Nseula, chick peas? <i>Mutundu uli wose wa mugulu la nyemba ngati: nyemba, zama, nandolo, ndozi, nkhubwe, mtedza?</i>		
12	(Milk milk products) <i>Mkaka</i>	Milk and Food made from milk e.g yoghurt, sour milk? <i>Zakudya zochokera ku mkaka ngati izi: mkaka , yogati, chambiko?</i>		
13	(Oils and Fats) <i>Mafuta wophikira ndi anyama</i>	Any type of fats or oils e.g. cooking oil, animal fats and margarine used for cooking or added to food? <i>Mafuta aliwose ngati: mafuta, wophikira, mafuta ochokera ku nyama, majalini?</i>		
14	(Sweets) <i>Zakudya zokoma</i>	Any sweet, sugar, honey, soft drinks such as fanta, fizzes, cocacola, sprite cocopina, drinks to which sugar was added or sugary foods e.g chocolate, sweets? <i>Chakudya chilichose chokoma ngati: shuga, uchi, zakumwa zosaledzeletsa ngati: Fanta , fizesi, kokakola, sprite, kokopina, zakudya zothirako shuga ngati chokoleti, maswiti.</i>		
15	(coffee/tea) <i>Khofi/tyi</i>	Any tea or coffee? <i>Tiyi aliyese, kapena khofi?</i>		
16	Alcohol <i>mowa</i>	Any alcoholic drinks? <i>Munamwapo mowa?</i>		
17. INDIVIDUAL DIETARY DIVERSITY SCORE (IDDS) Please ADD all the YESs and put total here: -> IDDS = _____				

***Ndi nthawi zochulukwa bwanji zomwe inu mukugwiridzana ndi zakambidwa munsizi?***

How often do you agree with the following statements?

#	Question (Check only one response)	Sindikugwir idzana nazo kwambiri	Sindikugwir idzana nazo	Sindikugwir idzana nazo komanso sindikusuts ana nazo	Ndikugwiri dzana nzo Agree 4	Ndikugwiri dzana nazo kwambiri	Don't know 98	99
F1	<b><i>Nthaka yadothi itha kukhala ndi chochita pa umoyo wa anthu</i></b>  Soil health can affect human health	1	2	3	4	5	98	99
F2	<b><i>Kusintha kwa nyengo kutha kuyambitsa mavuto pa umoyo wa anthu</i></b>  Climate change/weather can affect human health	1	2	3	4	5	98	99
F3	<b><i>Kadyedwe kosayenera kutha kuyambitsa matenda</i></b>  Poor nutrition can cause sickness	1	2	3	4	5	98	99

#	Question (Check only one response)	Sindikugwir idzana nazo kwambiri	Sindikugwir idzana nazo	Sindikugwir idzana nazo komanso sindikusuts ana nazo	Ndikugwiri dzana nzao Agree 4	Ndikugwiri dzana nazo kwambiri	Don't know 98
F4	<p><b><i>Ndizofunikira kwambiri kuti usankhe chakudya chokhutitsa kusiyana ndikusankha mitundu ingapo yazakudya, monga masamba ndi zipatso</i></b></p> <p>It is more important to choose foods that make you feel full than a range in types of foods, like vegetables and fruits</p>	1	2	3	4	5	98 99
F5	<p><b><i>Mwana akakhala ndi mimba yaikulu ndiye kuti ndiwathanzi/ sakudwala</i></b></p> <p>When a child has a bloated stomach it means they are healthy</p>	1	2	3	4	5	98 99
F6	<p><b><i>Kunyenchera kupangitsa</i></b></p>						

#	Question (Check only one response)	Sindikugwir idzana nazo kwambiri	Sindikugwir idzana nazo	Sindikugwir idzana nazo komanso sindikusuts ana nazo	Ndikugwiri dzana nazo Agree 4	Ndikugwiri dzana nazo kwambiri	Don't know 98	99
	<p><b><i>mwana kusachita bwino kusukulu</i></b></p> <p>Poor health can affect how a child performs in school</p>	1	2	3	4	5	98	99
F7	<p><b><i>Kunyenchera kungapangise munthu kulephera kugwira bwino ntchito</i></b></p> <p>Poor health can affect a person's ability to work</p>	1	2	3	4	5	98	99
F8	<p><b><i>Ukakhala onyenchera uli mwana umazabvutika ukakula</i></b></p> <p>Poor nutrition when you are a</p>							

#	Question (Check only one response)	Sindikugwir idzana nazo kwambiri	Sindikugwir idzana nazo	Sindikugwir idzana nazo komanso sindikusuts ana nazo	Ndikugwiri dzana nzao	Agree 4	Ndikugwiri dzana nazo kwambiri	Don't know 98
	child can affect your health when you are an adult							

Now please answer with whether you disagree, agree, or neither agree nor disagree with the following statements: [ ]  
Do you (dis)agree with the statement a little or strongly?"

#	Question (Check only one response)	Sindikugwir idzana nazo kwambiri	Sindikugwir idzana nazo	Sindikugwir idzana nazo komanso sindikusuts ana nazo	Ndikugwiri dzana nzao	Agree 4	Ndikugwiri dzana nazo kwambiri	Don't know 98
F9	<p><b><i>Mzimayi woyembekedzera asamagwire ntchito zochuluka ngati zomwe amagwira mzimayi woti sakuyembekedzera</i></b></p> <p>Pregnant woman should not do the same amount of work as non-pregnant woman</p>	1	2	3	4	5		



	<b>Kodi mwana wongobadwa kumene azimwa kangati mkaka patsiku?</b>		1
	In the first few days after a baby was born, how many times a day should baby drink milk?	<b>Mwana akangolira</b> Whenever baby cries	2
		Other (specify)	97
		Don't know	98
		Refused	99
F12	<b>Mayi akawona kuti mwana wake sakulandira mkaka wokwanira wammawere, achite chani?</b>	<b>Amuyamwitse mowirikidza/pafupipafupi</b> Breastfeed more often/more frequently	1
	If a mother thinks her baby is not getting enough breast milk, what should she do?	<b>Amupatse zinthu zina za madzimadzi/zakudya</b> Give other liquids/foods	2
		<b>Mayi akuyenera kumwa madzi ambiri</b> Mother needs to drink more water	3
		<b>Mayi akuyenera kudya chakudya chambiri</b> Mother needs to eat more food	4
		<b>Zina zoti achite: Fotokozani</b> Other; specify	97
		Don't know	98
		Refused	99
F13	<b>Kodi mwana apatsidwe madzi ndi zakumwa zina ali ndi miyezi ingati, kuphatikizirapo mkaka wa mmawere?</b>	Age:	
	At what age should a baby first start to receive liquids (including water) other than breast milk?	Don't know	98
		Refused	99

F14	<p><b>Kodi mwana apatsidwe zakudya zolimba ali ndi miyezi ingati?</b></p> <p>At what age should a baby first start to receive foods in addition to breast milk?</p>	Age:	
		Don't know	98
		Refused	99
F15	<p><b>Kodi njira yabwino yodyetsera mwana wochepera miyezi 6, yemwe mayi wake ali ndi kachilombo koyambitsa Edzi, ndi chani?</b></p> <p>What is the best way to feed an under 6 months child of mother who has HIV+</p>	<p><b>Kumumwetsa mkaka wopangidwa kufakitale wa ana</b></p> <p>Formula feeding</p>	1
		<p><b>Kumumwetsa mkaka wammawere</b></p> <p>Breast feeding</p>	2
		<p><b>Kumumwetsa pang'ono mkaka wamitundu yonse iwiri</b></p> <p>A little of both</p>	3
		<p><b>Mkaka wina; Fotokozani</b></p> <p>Other; specify</p>	97

F16	<p><b><i>Kodi mukuyenera kuchita chani mwana wanu akatsegula mmimba?</i></b></p> <p>What should you do when your child has diarrhea?</p> <p>Mark all responses (options continued on the next page)</p>	<p><b><i>Kumupatsa ORS</i></b> Oral Rehydration Solution</p> <p><b><i>Kumudyetsa chakudya chochepa kuposa chamasiku onse</i></b> Feed less than usual</p> <p><b><i>Kumudyetsa chakudya chokwanira ngati mwamasiku onse</i></b> Feed as much food as usual</p> <p><b><i>Kumudyetsa chakudya chochuluka kuposa chamasiku onse</i></b> Feed more than usual</p> <p><b><i>Kumumwetsa zakumwa za madzimadzi zochepa kuposa zamasiku onse</i></b> Give less liquids than usual</p> <p><b><i>Kumumwetsa zakumwa za madzimadzi zochuluka ngati zamasiku onse</i></b> Give as much liquids as usual</p> <p><b><i>Kumumwetsa zakumwa za madzimadzi zochuluka kuposa zamasiku onse</i></b> Give more liquids than usual</p> <p><b><i>Kupitiriza kumuyamitsa mkaka wa mmawere</i></b></p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p>

		Continue breastfeeding	
		<b><i>Kumuyamwitsa mkaka wa mmawere pafupipafupi/mowirikiza</i></b> Breastfeed more often	9
		<b><i>Kumumwetsa mankhwala a ana amadzimadzi opangidwa ku fakitale</i></b> Give syrups	10
		<b><i>Kumumwetsa mankhwala achikuda</i></b> Give traditional medicine	11
		<b><i>Kumumwetsa madzi otetedzedwa</i></b> Give treated water	12
		<b><i>Kumumwetsa madzi a karoti kapena a mpunga</i></b> Give carrot juice or rice water	13
		<b><i>Kumumwetsa Zinki</i></b> Give Zinc	14
		<b><i>Kumumwetsa zinthu zina; Fotokozani</i></b> Other; specify	97
		Don't know	98
		Refused	99

F17	<b><i>Kodi ndi nthawi yanji yomwe mukuyenera kusamba mmanja?</i></b> <b>Yikani chizindikiro mayankho onse</b>	<b><i>Musanayambe kudya</i></b> Before eating	1
		<b><i>Mukamachokera kuchimbudzi</i></b>	2

<p>When should you wash your hands?</p> <p>Mark all responses</p>	After using the toilet	
	<b><i>Musanayambe kudyetsa mwana</i></b>	3
	Before feeding the child	
	<b><i>Musanayambe kuphika</i></b>	4
	Before cooking	
	<b><i>Mukatha kutsuka mwana yemwe wabibidwa/wanyeredwa</i></b>	5
	After cleaning a child who has defecated	
Other; <i>specify</i>	97	
Don't know	9	
Refused	99	

F18	<p><b><i>Mzimayi akakhala woyembekedzera adzidya mochuluka bwanji kusiyanita ndi umo asali ndi pakati?</i></b></p> <p>When a women became pregnant, how much should she eat compared to before she was pregnant?</p>	<p><b><i>Chakudya chochepa</i></b></p> <p>fewer meals</p>	1
		<p><b><i>Chakudya chochuluka ngati chomwe amadya asanakhale woyembekedzera</i></b></p> <p>the same</p>	2
		<p><b><i>Chakudya chochuluka kuposa chomwe amadya asanakhale woyembekedzera</i></b></p> <p>more meals</p>	3
		Don't know	98
		Refused	99
F19	<p><b><i>Mwana wadya kangati dzulo?</i></b> In total, How many meals did [CHILD] have yesterday?</p> <p>(For up to 3 children in the household, give name and number of meals.)</p>	Name:	#:
		Name:	#:
		Name:	#:
F20	<p><b><i>Kodi mwana anadyanso chiyani kupatulapo nsima dzulo?</i></b></p> <p>In total, how many snacks did [CHILD] have yesterday?</p> <p>(For up to 3 children in the household, give name and number of meals.)</p>	Name:	#:
		Name:	#:
		Name:	#:

F21	<b><i>Kodi [mayi] ndi oyembekedzera?</i></b>  Are you (or for husband, is your wife) pregnant?	Yes	1
		No	2
		Don't Know	98
		Refused	99
F22	<b><i>Kodi [mayi] amayamwisa?</i></b>  Are you (or for husband, is your wife) lactating?	Yes	1
		No	2
		Don't Know	98
		Refused	99
F23	<b><i>Ngati muli ndi chakudya chochepa pakhomo panu, kodi pali anthu ena pabanja panupo omwe amadya chakudya chochuluka kuposa ena pachakudya chilipocho?</i></b>  If you have limited food in your household, are there certain people within the household who get more of that food?	Yes	1
		No	2
		Don't Know	98
		Refused	99
F24	<b><i>Ngati yankho lanu lili eya, ndi anthu ake ati amubanjamo omwe amadya chakudya chambiri? (Zungulitsa mayankho onse omwe akufotokoza za banja lanu)</i></b>	Self	1
		Spouse	2
		Both	3

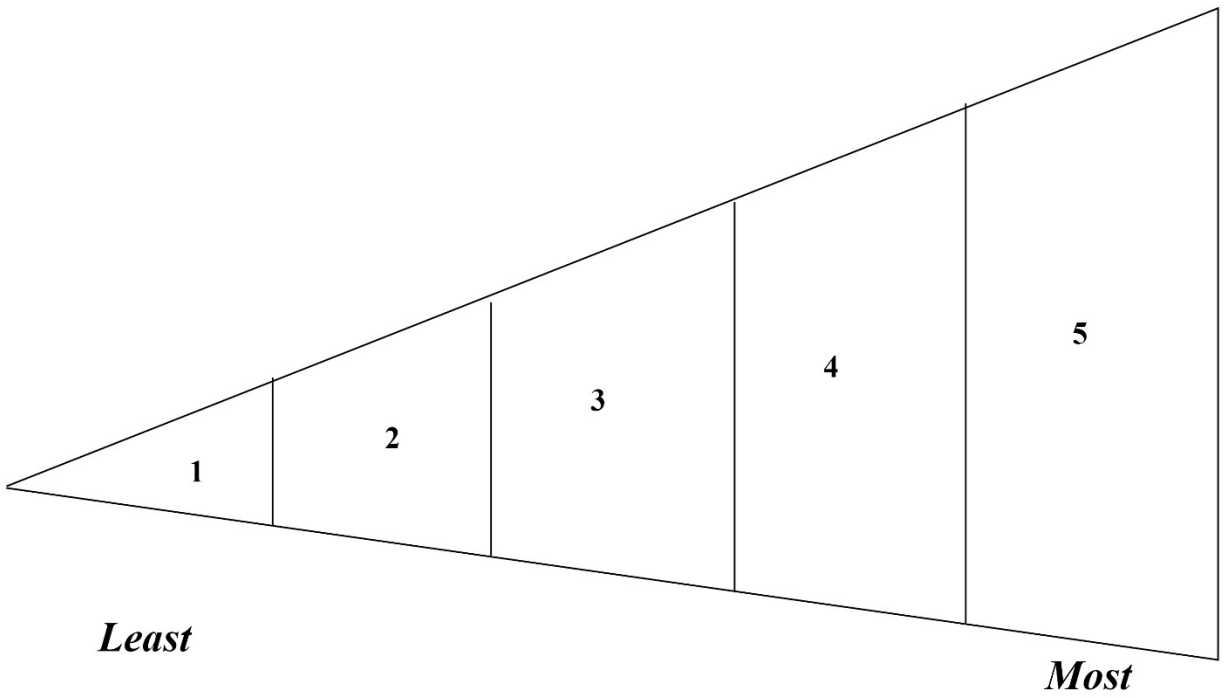
	If yes, which household members? (Circle all that apply)	Sons	4
		Daughters	5
		Grandmother	6
		Grandfather	7
		Other (specify)	97
F25	<p><b><i>Ngati muli ndi chakudya chapamwamba pakhomo panu, monga nyama, kodi pali anthu ena pabanja panupo omwe amadya chakudya chochulu kakuposa ena pachakudya chopambanacho?</i></b></p> <p>If you have special foods in your household, such as meat, are there certain people within the household who get more of that food?</p>	Yes	1
		No	2
		Don't know	98
		Refused	99
F26	<p><b><i>Ngati yankho lanu lili eya, ndi anthu ake ati amubanjamo omwe amadya chakudya chambiri? (Zungulitsa mayankho onse omwe akufotokoza za banja lanu)</i></b></p> <p>If yes, which household members? (Circle all that apply)</p>	Self	1
		Spouse	2
		Both	3
		Sons	4
		Daughters	5
		Grandmother	6
		Grandfather	7

		Other (specify)	97
F27	<b><i>Pali mitu yina ya za umoyo mungafune kuphunzirapo?</i></b> Are there any specific health related topics you would like to learn more about?	Yes	1
		No	2
		Specify:	

*We have now reached the end of the interview. Thank you so very much for all of your time!*

*Your answers will help us improve our efforts to strengthen the lives and livelihoods of farmers and families in Malawi.*

*Comments:*



## APPENDIX C

### SURVEY REVISIONS BETWEEN TIME 1 AND TIME 2

- Full list of household assets included (some items had been combined at Time 1)
- 22 questions not requiring follow-up deleted
- 22 new questions informed by qualitative findings added

#### *Questions deleted:*

#### **PART B. AGROECOLOGY AND SOIL HEALTH**

B1. Are you currently helping with or involved in any training, program, project or a member of an organization about farming/agriculture? B1a. – B1c.

B2. Have you been involved in any training or program/project on farming/agriculture in the past? B2a. – B2c.

#### **PART C: INFORMATION SHARING AND SEEKING**

C2. In general, how often do you talk about successes (in your farming) on the farm?

C3. In general, how often do you talk about challenges on the farm?

C4. How often do you get information about farming from the following sources?

C6. How often do get information about the weather and/or climate from the following sources?

C8. How often do get information about health and nutrition from the following sources?

C9. How often do you and others in your community share information about farming through telling or acting out stories/dramas (real or imagined)?

(Circle only one)

C10. How often do you and others in your community share information about weather and/or climate through telling or acting out stories/dramas (real or imagined)?

C11. How often do you and others in your community share information about health and nutrition through telling or acting out stories/dramas (real or imagined)?

C12. What are your most preferred ways of getting information about farming.

C13. What are your most preferred ways of getting information about the weather and/or climate?

C14. What are your most preferred ways of getting information about health and nutrition?

C15. How often do you use the following sources for entertainment?

C16. How often do you use the following sources for learning?

C17. How much do you trust the following sources for information about farming, the weather, climate and/or health?

***Questions added:***

(Likert scale)

Engagement:

How involved/engaged were you during the training?

How involved/engaged were others during the training?

Perceived value:

How useful/valuable was the drama during the training?

How valuable was the use of [drama / small group discussions] in helping you understand the curriculum material?

How valuable was the use of [drama / small group discussions] in helping you and others in your group share your own experiences and/or ideas?

How would you rate the overall usefulness of [drama/small group discussions] during the curriculum training in preparing you to teach others after the training?

Information sharing:

During the training, people were able to talk about sensitive or difficult topics, such as relationships in the household?

Approximately how many times have you shared info in curriculum since training? (approx. # / scale) never, once or twice, 2-5, 6-12, more than 12 [using drama]

I have repeated the information I learned during the training in my household.

I have repeated the information I learned during the training in my community.

I have repeated the information I learned during the training with approximately (# people)

\*Using drama specifically

Self-efficacy:

*After the training...*

I felt confident that I could deal with unexpected events.

When confronted with a problem, I could usually find several solutions.

I feel I am better able to handle unforeseen situations.

I can solve most problems if I invest the necessary effort.

Collective-efficacy:

*After the training...*

My community is better able to work together successfully.

People in the community are able to communicate about the challenges they face.

People in the community are able to talk about solutions to challenges.

People in the community can come together to solve a problem.

## APPENDIX D

### QUANTITATIVE TABLES NOT INCLUDED IN CHAPTER 6

**Table Appendix D.1 Drama / No Drama by Village**

		Drama	No Drama	
Village	Chakujuma	9	1	10
	Chamang'anga	8	0	8
	Chikoya	0	4	4
	Chikumukumu	0	1	1
	Chimukumu	0	1	1
	Chimzimu	3	18	21
	Chiuza	0	3	3
	Chiuza Chisi	0	2	2
	Chizonga	0	9	9
	Dang'ando	5	0	5
	Geza	17	1	18
	Hezekiya	30	6	36
	Kalinde	5	22	27
	Kaluhungwa Nyirenda	0	3	3
	Kamlipe Kaunda	5	0	5
	Kanyukuta	1	0	1
	Kapitapita	25	1	26
	Kaunde	3	23	26
	Kazenga	2	0	2
	Kazuwa	6	0	6
	Kuusa	4	0	4
	Laudeni	1	0	1
	M'Banya	6	0	6
	Mahekeya	0	6	6
	Makala	19	3	22
	Maqandigolo	0	5	5
	Mateyo Singini	8	0	8
	Mjiuzge	8	0	8
	Mlowoka	6	0	6
	Musekanawana	0	5	5

Mzewe	2	7	9
Nkhomawanthu I	3	34	37
Nkhomawanthu II	15	2	17
Nyenyera	0	16	16
Palato	0	3	3
Reuben Manda	0	13	13
Reuben Mithi	0	3	3
Sadalaki	8	0	8
Sadrack	1	0	1
Sayisoni	4	0	4
Simon Guza	2	0	2
Thumani	0	6	6
Timote	0	1	1
Timote Nyirenda	0	4	4
Tondoli Gama	0	2	2
Tukwawire	0	7	7
Vipichi	10	0	10
Yakobe Singini	11	0	11
Zimema	0	3	3
<b>Total</b>	<b>227</b>	<b>215</b>	<b>442</b>

**Table Appendix D.2 Participation in Past Training Agricultural Training by Region**

			Past training		Total
			No	Yes	
Region	Ekwendeni	Count	135	68	203
		% within Region	66.5%	33.5%	100.0%
		% within Past training	35.3%	56.7%	40.4%
	Dedza	Count	247	52	299
		% within Region	82.6%	17.4%	100.0%
		% within Past Training	64.7%	43.3%	59.6%
Total		Count	382	120	502
		% within Region	76.1%	23.9%	100.0%
		% within Past Training	100.0%	100.0%	100.0%

**Table Appendix D.3**

**Participation in Past Training Agricultural Training by Region Chi-Square**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	17.243 <sup>a</sup>	1	.000		
Continuity Correction <sup>b</sup>	16.369	1	.000		
Likelihood Ratio	16.993	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	502				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 48.53.					
b. Computed only for a 2x2 table					

**Table Appendix D.4**

**Participation in Past Training Agricultural Training by Drama / No Drama**

			Past training		Total
			No	Yes	
	Drama	Count	178	61	239
		% within Drama	74.5%	25.5%	100.0%
		% within Past training	46.6%	50.8%	47.6%
	No drama	Count	166	52	218
		% within Drama	76.1%	23.9%	100.0%
		% within Past training	43.5%	43.3%	43.4%
Total	Count	382	120	502	
	% within Drama	76.1%	23.9%	100.0%	
	% within Past training	100.0%	100.0%	100.0%	

**Table Appendix D.5****Participation in Past Training Agricultural Training by Drama / No Drama Chi-Square**

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.069 <sup>a</sup>	2	.355
Likelihood Ratio	2.236	2	.327
N of Valid Cases	502		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.76.

**Table Appendix D.6****Current Participation in Other Agricultural Training by Region**

			Agriculture training		Total
			Yes	No	
Region	Ekwendeni	Count	43	130	173
		Expected Count	54.4	118.6	173.0
		% within Region	24.9%	75.1%	100.0%
		% within Agriculture training	30.9%	42.9%	39.1%
	Dedza	Count	96	173	269
		Expected Count	84.6	184.4	269.0
		% within Region	35.7%	64.3%	100.0%
		% within Agriculture training	69.1%	57.1%	60.9%
Total	Count	139	303	442	
	Expected Count	139.0	303.0	442.0	
	% within Region	31.4%	68.6%	100.0%	
	% within Agriculture training	100.0%	100.0%	100.0%	

**Table Appendix D.7****Current Participation in Other Agricultural Training by Region Chi-Square**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.731 <sup>a</sup>	1	.017		
Continuity Correction <sup>b</sup>	5.239	1	.022		
Likelihood Ratio	5.834	1	.016		
Fisher's Exact Test				.021	.011
N of Valid Cases	442				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 54.40.					
b. Computed only for a 2x2 table					

**Table Appendix D.8**

**Current Participation in Other Agricultural Training by Drama / No Drama**

			Agriculture training		Total
			Yes	No	
Drama / No drama	Drama	Count	74	156	230
		Expected Count	72.3	157.7	230.0
		% within Drama	32.2%	67.8%	100.0%
		% within Agriculture training	53.2%	51.5%	52.0%
	No Drama	Count	65	147	212
		Expected Count	66.7	145.3	212.0
		% within No drama	30.7%	69.3%	100.0%
		% within Agriculture training	46.8%	48.5%	48.0%
Total		Count	139	303	442
		Expected Count	139.0	303.0	442.0
		% within Drama / No drama	31.4%	68.6%	100.0%
		% within Agriculture training	100.0%	100.0%	100.0%

**Table Appendix D.9**

**Current Participation in Other Agricultural Training by Drama / No Drama Chi-Square**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.117 <sup>a</sup>	1	.732		
Continuity Correction <sup>b</sup>	.058	1	.810		
Likelihood Ratio	.117	1	.732		
Fisher's Exact Test				.759	.405
Linear-by-Linear Association	.117	1	.732		
N of Valid Cases	442				
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 66.67.					
b. Computed only for a 2x2 table					

**Table D.10 Self-efficacy Reliability: Overall Variable**

Reliability Statistics	
Cronbach's Alpha	N of Items
.774	4

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.405	60.134	60.134	2.405	60.134	60.134
2	.683	17.081	77.214			
3	.491	12.284	89.498			
4	.420	10.502	100.000			
Extraction Method: Principal Component Analysis.						

Component Matrix <sup>a</sup>	
	Component
	1
c29_confidence_unexpectedevents	.824
c30_problem_findsolutions	.801
c31_handleunforeseensituations	.800

c32_solveproblems_neceffort	.667
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

**Table D.11 Collective Efficacy Reliability: Overall Variable**

Reliability Statistics	
Cronbach's Alpha	N of Items
.621	4

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.937	48.416	48.416	1.937	48.416	48.416
2	.918	22.938	71.354			
3	.613	15.333	86.687			
4	.533	13.313	100.000			
Extraction Method: Principal Component Analysis.						

Component Matrix <sup>a</sup>	
	Component
	1
c33_communityworktogether	.787

c34_peopleincommunitycometogether	.788
c35_confidenttoworkwithothers	.686
c36_community_communicateeffectively	.474
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

**Table D.12 Domestic Abuse Reliability: Overall Variable**

Reliability Statistics	
Cronbach's Alpha	N of Items
.756	3

	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.105	70.160	70.160	2.105	70.160	70.160
2	.603	20.091	90.250			
3	.292	9.750	100.000			
Extraction Method: Principal Component Analysis.						

e17a_T2_wifebeaten_proptysale	.750
e17b_T2_wifebeaten_foodburns	.892
e17c_T2_wifebeaten_refusesex	.864
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

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