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**Agricultural Information on Air: Analysing Farm Radio
Through Contemporary Models of Science
Communication.
A Comparison of Three Cases in Rural Kenya.**

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Statement of Authorship

I hereby declare that I, Fabian Oswald, am the sole author of this master thesis and have not used sources or means without declaration in the text. Any thoughts from others or literal quotations are clearly marked and I have followed the KITs' statutes for good scientific practice in the currently valid version. The master thesis was not used in the same or in a similar version to achieve an academic grading or is being published elsewhere.

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List of Acronyms

AFRRI: African Farm Radio Research Initiative

FAO: Food and Agriculture Organization of the United Nations

FFS: Farmers Field School

GFRAS: Global Forum for Rural Advisory Services

ICTs: Information and Communication Technologies

KALRO: Kenya Agricultural and Livestock Research Organization

KIMI: Kilimo Media International

MOA: Ministry of Agriculture (Kenya)

NGO: Non-Governmental Organization

RLG: Radio Listening Group

T&V: Training and Visit

1. Introduction

In recent years, the use of radio for rural development has received much interest from practitioners and scholars, who agree on the great potential of this medium for increasing food security of smallholder farmers (Gilberds & Myers, 2012; Myers, 2010; Nakabugu, 2001; Perkins et al., 2015). Especially in the case of sub-Saharan Africa, this has been made possible through the liberalization of media in many parts of the continent during the last decades, which led to a significant growth of community-based radio stations (Myers, 2010, p.1). Some advantages of radio in rural environments are fairly obvious: radio does not require an expensive infrastructure, covers vast geographic areas and can also reach an illiterate audience (Myers, 2010, p.1). Additionally, the use of radio gained a new dimension through the emergence of Information and Communication Technologies (ICTs), especially mobile phones, which can be used by the audience to interact with the broadcaster (Chapman & Slaymaker, 2002, p.31; Gilberds & Myers, 2012, p.78). Scholars in agricultural extension have long identified the need to turn to two-way communication formats (Leeuwis & Aarts, 2011, p.3) because participation of farmers is needed for initiating a sustainable development process (Davis & Place, 2003, p.753). Interactive, locally - based radio stations therefore seem to be the medium of choice for these approaches and have sparked the interest of non-governmental initiatives. The most prominent among these is Farm Radio International, which maintains radio projects in various countries and produces resource packages for farm radio practitioners¹. In Kenya, the NGO Kilimo Media International (KIMI) has recently concluded a project that provided farmers with agricultural information through radio programs broadcast in local language and with the support of local agricultural extension officers (Kilimo Media, 2017, p.1.). In 2018 a second project was launched with the same objective in seven different Kenyan counties. This project will be the research object of this thesis. KIMI is funded by the Syngenta Foundation for Sustainable Agriculture, who also provided financial and logistical support for the field studies conducted. Nonetheless, the

¹ <http://www.farmradio.org/>

foundation guaranteed full academic independence and did not push own research interests at any moment.

There are several reasons that make agricultural radio projects an interesting object for science communication research: The basic ideas behind farm radio imply that there is an involvement of media, natural sciences, a non-scientific audience and different forms of knowledge and expertise. These are elements that can often be found in science communication studies. Especially the relationship between farmers and experts has been an intensively discussed issue in this field (Wynne, 1992). The implementation of two-way communication methods in agricultural extension could be a good example for the shift from linear to dialogue-based communication models in the natural sciences, which is a central topic of science communication (Burns et al. 2003; Schäfer et al. 2015). An initial assumption of this thesis is that analysing the practice of farm radio using models of science communication can be of benefit to both disciplines: Agricultural extension practitioners could profit from the experiences that science communication has made with the complicated relationships of experts, society and media, while science communication could broaden its perspective towards developments occurring outside of westernized societies with a strong media infrastructure. This will be approached through two research questions:

Q1: How is the information flow through agricultural radio programs in local languages structured?

And based on the findings on this question:

Q2: Are contemporary theories of science communication observable in the practice of farm radio?

To address these explorative research questions, a cross-case study approach was used and three county radio stations and farming communities in rural Kenya were visited. Through qualitative interviews with local actors and group discussions with farmers, three case studies were made and then compared. This cross-case analysis formed the basis for a description of the information flow and an analysis through contemporary theories of science communication.

The thesis is divided into seven chapters, which will be briefly described.

The introduction provides an overview over the structure and background of the thesis. Chapter 2 will address theories of agricultural extension and science communication and give examples from the current state of research. This chapter is divided into two parts. The first part will describe the development of models and definitions of science communication and specifically address the role of media in science communication. The second part discusses the development of agricultural extension and issues of communication within this field. It will then present the potential of farm radio and local languages to address these communication issues and describe the work of Kilimo Media International. Throughout the chapter, similarities between developments in agricultural extension and science communication might be observed, which will be summarized at the end of the chapter in order to present some assumptions on how the practice of farm radio can be analysed using science communication theory. Chapter 3 will describe the research questions in more detail, based on the theory section. In Chapter 4, the methodological approach to the research questions will be explained. Chapter 5 will present the results of the field study. The chapter is divided in three sections, each showing results of the interviews and concluding with a summary of the specific case study. Chapter 6 will compare all three case studies and provide a general interpretation in a cross-case analysis. Chapter 7 discusses the results, the limitations of the study, presents an outlook for further research and concludes with a summary of the thesis' findings.

The objective of this thesis is to:

- 1: Describe the information flow through farm radio by the example of the Kilimo Media International project. This description includes sources of agricultural information, actors involved in the communication process and feedback mechanisms.
- 2: Analyse which elements of science communication can be found in farm radio and how it can be of interest to science communication research.

The thesis will not provide an evaluation of the impact of the KIMI Project on farmers' livelihoods.

Terminology describing agricultural radios is varied. Not all radio programs described in the literature exclusively broadcast agricultural content, not all are based in rural areas, not all have interactive programs. Therefore, terms like "interactive radio", "rural radio" and "farm

radio” describe similar but not identical approaches. This study predominantly uses the term “farm radio” to describe broadcasting programs as they are implemented by Farm Radio International and KIMI: community based, rural, with interactive elements and mainly communicating agricultural information for smallholder farmers.

2. Theory and Current State of Research

The first section of this chapter will provide an overview of important terms and definitions of science communication and especially describe past and contemporary communication models. The second section will then outline issues of agricultural extension, the use of radio combined with ICTs and local languages and describe the work of Kilimo Media International.

2.2. Science Communication

2.1.1. Definitions and Models of Science Communication

Discussions in science communication start at the very basic question of how this term should be defined. Some offer a very detailed description of models and terminologies and are focused on the effects of science communication by defining it as “the use of appropriate skills, media, activities, and dialogue to produce one or more of the following personal responses to science [...]: Awareness, Enjoyment, Interest, Opinion-forming, and Understanding (Burns et al. 2003, p.183).” A more recent definition chooses a broader approach: here, science communication is defined as all forms of communication that are focused on scientific knowledge or scientific work inside and outside of institutional science including its production, content, usage and effects (Schäfer et al., 2015, p.13). With this definition at hand the next step is to take a closer look at some central models of science communication and the historical context which brought them forth.

When discussing one-way communication, the first model that needs to be mentioned is the deficit model. Its underlying assumption is that ignorance is the reason for public unacceptance towards science and therefore science media should educate the public (Nisbet & Scheufele, 2009, p.1767). The essence of the deficit model is found in its hierarchical order and linear approach:

“This model adopted a one-way, top-down communication process, in which scientists—with all the required information—filled the knowledge vacuum in the scientifically illiterate general public as they saw fit. There was a flow

of knowledge, from the “pure” source of science in the laboratory to a [...] variety that was fit for public consumption and was usually disseminated through the mass media (Miller, 2001, p. 116”).

Since its origins, the efforts to disprove the deficit model have been numerous to say the least. One argument is that the deficit model is a product of many historical factors during the cold war era and was mainly used for the popularization of basic research (Schiele, 2008, p.95). This historical context, especially the space race, is also used as example to revoke the basic assumptions of the deficit model: while studies show that scientific literacy² in the public was very low during this era, the acceptance of science was at a very high level. This leads to the assumption that cultural factors like the cold war and international competition were of much greater importance to the social appreciation of science than the level of scientific literacy in society (Nisbet & Scheufele, 2009, p.1768-1769).

One well-known study on scientific miscommunication, interestingly on a case involving scientists and farmers, was made by Wynne (1992). After the 1987 Chernobyl catastrophe, scientists investigated the consequences of nuclear fallout on sheep and pastures in Cumbria in Northern England. During their investigation they completely ignored the expertise and culture of the Cumbrian sheep farmers, which led farmers to ultimately question the scientists’ competence. In this case, it was cultural factors and a one-directional communication style which led to misunderstanding and mistrust of a specific social group towards scientific experts, not factual ignorance (Wynne, 1992, p.299).

Communication issues and the relationship between farmers and scientists have been subject to various studies, these however mostly come from the area of agricultural extension and will be described in the corresponding chapter (2.2.1). From the perspective of science communication, this relationship has been dominated by the deficit model, but is nowadays shifting towards a more interactive dialogue-based model for the mutual benefit of the involved parties (Clarke, 2003, p.198).

The case of the Cumbrian sheep farmers shows that expert-lay relationships are often defined by power structures, with the status of an expert often meaning authority and status as non-

² It should be noted that the term “scientific literacy” or “science literacy” is a term with numerous definitions, which range from the ability to understand scientific articles to the ability to apply scientific knowledge in everyday life (Burns et al., 2003, 187-188). Nisbet & Scheufele (2009) use the term in the sense of having basic scientific education.

expert meaning dependence on the expert (Carr, 2010, p.18; Wynne, 1992, p. 299). A society that is dependent on expertise from a certain party is unlikely to openly challenge it, even if critical opinions on experts do exist. Consequently, when expertise is openly challenged, this does not necessarily mean that there has been a sudden shift towards a public mistrust in expert knowledge. This mistrust might have always been there and the only thing that has changed are factors that enabled the mistrust to be expressed in public (Wynne, 1998, p.4).

Fundamental critique and the lack of empirical evidence to support the deficit model (Nisbet & Scheufele, 2009; see also Scheufele, 2013) led to the origin of the “contextual approach” (Miller, 2001, p.117; also Burns et al., 2003, p.190):

“This approach sees the generation of new public knowledge about science much more as a dialogue in which, while scientists may have scientific facts at their disposal, the members of the public concerned have local knowledge and an understanding of, and personal interest in, the problems to be solved (Miller, 2001, p.117).”

This approach acknowledges that, while scientific facts remain facts, their meaning is subject of negotiation with society: “personal significance of these facts is influenced by the social, cultural and political conditions in which they were produced and promoted (Burns et al., 2003, p.196)”. In other words, social contexts must be considered as factors that influence knowledge. A fundamental critique on the contextual approach is that only acknowledging these social contexts does not automatically mean that communicators do not act with a mind-set that is still rooted in the deficit model:

“The Contextual Model has been criticized for being merely a more sophisticated version of the Deficit Model: it acknowledges that audiences are not mere empty vessels but nonetheless conceptualizes a “problem” in which individuals respond to information in ways that seem inappropriate to scientific experts (Wynne, 1995, as cited by Brossard & Lewenstein, 2010, p.14).”

Two further models with a stronger focus on the role of society in communication emerged from these concerns. The lay expertise model took into account the importance of acknowledging local expertise, “such as detailed local farming or agricultural practices

(Brossard & Lewenstein, 2010, p.15)”. This approach was also used to criticize older models of science- society relationships and explanations of risk dimensions:

“The vernacular, informal knowledge which lay people may well have about the validity of expert assumptions about real-world conditions – say, about the production, use or maintenance of a technology – is also an important general category of lay knowledge that is usually systematically under-recognised (Wynne, 1998, p.14).“

Criticism on previous definitions of expertise observes a “lack of reflexive attention (Wynne, 1998, p.4)” and claims that it is not possible to make a clear distinction between lay and expert knowledge. The distinction between rational scientific knowledge that describes nature “as it is” and local knowledge that is based on cultural context and is therefore partly irrational, is wrong. Scientific knowledge as such is also a product of its cultural context, therefore, knowledge about nature is negotiable (Wynne, 1998, p.26-28). This is supported by views that attest the lay public own fields of expertise:

“Conversely, it is crucial to stress that if scientists are definitely not universal experts, non-scientists are not universal non-experts. Any active member of a complex technical society such as ours, must develop a large degree of expertise in many areas (Lévy-Leblond, 1992, p.17).”

This is easily applicable to the area of rural agriculture, because farmers hold their own kind of expertise, which is a complex combination of experience and contextual knowledge (Leeuwis, 2004, p.86). Collins & Evans (2002) completely reject the term of lay expertise as “oxymoron” and argue that this term does not describe a layperson, but an expert in a certain field without any formal accreditation. Instead they propose the term “experience-based experts” (Collins & Evans, 2002, p.238), which may indeed be a better description of farmers’ form of expertise. Further criticism on the lay expertise model states that it favours local knowledge over scientifically generated knowledge and is lacking neutrality because of political motivation towards empowering communities (Brossard & Lewenstein, 2010, p.15).

Finally, the public engagement model, also known as the dialogue model, aims to integrate public participation as part of the communication process (Brossard & Lewenstein, 2010, p.16). Instead of simply disseminating scientific information through mass media as the deficit model proposes, public engagement approaches search for more experimental,

interactive formats, which include “consensus conferences, citizen juries, deliberative technology assessments, science shops, deliberative polling, and other techniques (Brossard & Lewenstein, 2010, p.16)”. One problem of these approaches is to achieve the participation of a diverse public and not to only address those that are already interested in science. Communicating with a diverse audience requires the right choice of media platforms and packaging the message in a way that explains its’ social relevance, also referred to as “framing” (Nisbet & Scheufele, 2009, p.1770).

Brossard & Lewenstein (2010) analyse their four summarized models of deficit, context, lay expertise and public engagement in a case study of the human genome project comparing science communication practice with the underlying theory. Their findings show that although the models are incompatible in theory, practical science communication projects are “likely to be more pragmatic, with projects adopting parts of each model to suit different contexts (Brossard & Lewenstein, 2010, p.31-32).” All projects analysed in the case study “tended to use the Deficit Model approach as a backbone, even if they seemed to follow other theoretical approaches” and “shared the goal of communicating accurate scientific information to an audience [...], even when lay expertise or public engagement were put forward as the focus of the project“ (Brossard & Lewenstein, 2010, p.32).

This inconsistency of theory and practice is observed by various researchers, criticizing that “many communication efforts continue to be based on ad-hoc, intuition- driven approaches, paying little attention to several decades of interdisciplinary research on what makes for effective public engagement (Nisbet & Scheufele, 2009, p.1767)” or questioning that there has been a large scale shift from the deficit to the dialogue model at all (Trench, 2008, p.119). Trench (2008) argues that deficit and dialogue models coexist among other models and that a two-way communication model used by science may still have the main objective to efficiently target an audience instead of learning from it and therefore still is a linear communication model in its core. This means that linear and non-linear models of science communication do not exclude each other and “continue to have their uses in particular circumstances (Trench, 2008, p.132).”

In conclusion, revising the literature on different definitions and models of science communication shows that this rather new research area is subject to constant debate and development and that the gaps between theory and practice are significant. It would

therefore be very limiting to select a single model of science communication and compare it to the reality of farm radio in the field. It is rather necessary to compare single elements of farm radio with the partly contradicting models presented in this section. As the research of Brossard & Lewenstein (2010) indicates, the reality tends to be far more pragmatic than theory. It is therefore possible that the actors of farm radio are employing elements of different models according to their practical needs instead of a rigid single model approach.

2.1.2. Science communication and media

Since the use of media as a communication instrument is such a central aspect of farm radio, it deserves to be looked at separately. The use of media and choice of the medium is strongly present in every aspect of science communication described in the segment above. Historically, the way science was presented through media has always been connected to the prevailing model. In the deficit approach, media is used by science to educate the public with factual knowledge (Nisbet & Scheufele, 2009, 1767). Mass media therefore served as an instrument for one-way knowledge flow of information from the laboratory to the lay public in a form that was simpler to understand (Miller, 2001, p.116).

Since then the meaning of media for science has significantly changed. The term “medialization” describes the adaption of science to selection criteria of media in order to gain stronger public resonance. The existence of this effect and its consequences on politics, media and science have been thoroughly discussed (Peters et al., 2008; Schäfer, 2008).

One of the currently discussed issues concerning the use of media in science communication is the great shift towards new media technologies and media consumption behaviour in the public, especially of online media (Schäfer, 2016, p.275). Although this seemingly does not affect the reality of farmers that have no access to the internet, it is nonetheless interesting to observe the effect of new media: these “new forms of user-centered and user-controlled digital media such as blogs, online video, and social media sites (Nisbet & Scheufele, 2009, p. 1771)” allow the independent exchange of users and are therefore far more convenient for a bottom-up communication process (Nisbet & Scheufele, 2009, p.1771). This view is supported by the observation that scientists are reluctant to communicate scientific messages through online media and that this is increasingly done by NGOs as emerging actors in science communication (Schäfer, 2017, p.275). It would therefore also be interesting to observe if the

combination of radio and new ICTs do indeed form an interactive “new medium” and allow a more decentralized communication process.

2.1. Farm Radio in Agricultural Extension

2.2.1. Issues of Communication for Agricultural Extension

The definition of “extension” has been subject to many changes. While in its initial sense it described the teaching of innovations, mostly in the area of research and technology, from an expert to a student, modern definitions have shifted towards a meaning that implies much more complex social and communicative processes (Leeuwis, 2004, p.22,23). Extension, as used in this thesis, can be defined as

“A series of embedded communicative interventions that are meant, among others, to develop and/or induce innovations which supposedly help to resolve (usually multi-actor) problems (Leeuwis, 2004, p.27)”

The term “agricultural extension” also needs to be defined as it will be used frequently in the following chapters. Agricultural extension can be described as the “delivery of information inputs to farmers” (Anderson and Feder, as cited by Aker, 2011, p.631), with the goal of “reducing the information asymmetries related to technology adoption in both developed and developing countries (Aker, 2011, p. 633)”. One important characteristic of agricultural extension is the involvement of multiple disciplines and methods:

“It combines educational methodologies, communication and group techniques in promoting agricultural and rural development. It includes technology transfer, facilitation, and advisory services as well as information services and adult education (Chapota, 2009, p.5).”

Many of the problems that agricultural extension faces are related to communication and miscommunication between the involved actors, especially farmers and researchers. This is also one of the few areas in which concepts of science studies have been integrated in agricultural extension studies. For example, Leeuwis (2004) describes the miscommunication between farmers and researchers based on the concept of epistemic cultures of Knorr-Cetina (1999). This perspective recognizes the expertise of farmers and agricultural researchers as two distinct knowledge systems that differ in many aspects and must be aware of these differences to avoid miscommunication (Leeuwis, 2004, pp.105-106). An example that illustrates the epistemic differences between scientists and farmers is the generation of

knowledge. While agricultural scientists mostly rely on experiments under controlled conditions, farmers conduct their own kind of experiments, often by improvisation and reaction to environmental conditions instead of planning in advance. (Leeuwis, 2004, p. 234 also Bentley, 1994, p.141). Ignoring the differences between these epistemic cultures can lead to severe misunderstandings, which in the worst-case can affect farmers' livelihood and damage the trust in scientists, as shown through the case of the Cumbrian sheep farmers described by Wynne (1992).

To bridge the gap between different epistemic cultures, science studies have brought forth the idea of the “boundary object”, which proposes searching for tangible objects that exist in different epistemic worlds and can be interpreted by different kinds of knowledge, but still maintain a stable identity (Star & Griesemer, 1989, p. 412). This idea has also been picked up by scholars discussing communication between farmers and researchers (Carr & Wilkinson, 2005), who propose establishing “boundary organizations” as platforms where knowledge between farmers and scientists can be exchanged and discussed on a neutral level and draw understanding from their similarities: both epistemic cultures rely on experiments, use trial and error, produce and apply agricultural knowledge, rely on an own set of rules and use feedback mechanisms among their peers (Carr & Wilkinson, 2005, p. 260). An example for boundary objects in agriculture is the use of “design process outputs”, such as animations and scale models, to illustrate an innovative poultry husbandry system. This project found that design process outputs offered enough flexibility to help “mutual understanding among diverse actors involved in the implementation of a novel agricultural production system concept (Klerkx et al., 2012. P.39)”.

This is part of a general call in the field of agricultural extension for a shift from linear models of communication towards models that are characterized by interactivity (Leeuwis & Aarts, 2011, p.3). Contemporary perspectives strongly criticise the basic assumptions of one-way communication:

“This reflects that the early conceptions of extension were somewhat paternalistic in nature; that is, the relationship between the extensionist and their clients was essentially looked at as being similar to the teacher/student [...] relationship, placing the extension agent in an “expert”

and “sending” position and their audience in a “receiving” and “listening” role (Leeuwis, 2004, p.23)”

There is an emphasis that this definition is “a product of its time (Leeuwis, 2004, p.23)” and dates from an era where it was thought that “by adopting science-based innovations [...] farmers and agriculture would benefit almost automatically (Leeuwis, 2004, p.23-24).” This indicates that communication following the deficit model has been very present in agricultural sciences and agricultural extension, as has been also observed by Carr(2003).

While linear approaches viewed communication as a mere delivery system to get a message from A to B, newer perspectives view communication as the construction of meaning in complex contexts (Leeuwis & Aarts, 2011, p.1). This shift to contextual communication matches theories of science communication, where various studies and reviews describe (or question) the change from a deficit model to a contextual approach (Brossard & Lewenstein, 2010; Nisbet & Scheufele, 2009), as was discussed in section 2.1.1.

Ideas to establish a more two-sided communication between farmers and researchers include farmer participatory research. This method has received much academic attention since its inception in the 1980s but is also criticised for having led to few results (Bentley, 1994, p.140). Essentially, participatory research states that farmers have own methods of research and that joint research and development with scientists can lead to a mutual benefit (Bentley, 1994, p.140; Leeuwis, 2004, p.236). However, there are several barriers that prevent farmers and scientists from perceiving each other as colleagues, of which some are rooted in the epistemic differences:

“Seven basic problems limit scientists' ability to collaborate with farmers: poor access, different observation and experimental styles, time constraints, environmental mosaics, and social distance (Bentley, 1994, p.143).”

This critical view on participatory research aims towards an empowerment of farmers in the research process and emphasizes the importance of farmers to “set [the] research agenda (Aboyade, 1991, as cited by Bentley, 1994, p. 145)”.

Issues of agricultural extension do not affect only researchers and farmers but involve a great variety of stakeholders, such as governmental actors, NGOs and the economic sector. This is shown by a study which describes various approaches that have been used for agricultural

extension in Kenya during several decades (Davis & Place, 2003). This study is particularly interesting for this thesis because it not only shows examples of communication issues and other problems of different agricultural extension methods, but also gives a short overview over agricultural extension in Kenya specifically, giving context to the cross-case study conducted in this thesis.

Agriculture is an essential basis of Kenya's economy and accounts for "80% of informal employment in rural areas (Kenyan Ministry of Agriculture, Livestock & Fisheries, 2017, p.3)." As of the first years of the 21st century, the landscape of agricultural extension in Kenya was marked by a variety of governmental and non-governmental actors and a mix of different extension strategies with a trend towards bottom-up approaches centred on farmers (Davis & Place, 2003, p. 754). This was the result of several decades of change:

"The government has tried a number of extension styles, including progressive or model farmer approach, integrated agricultural rural development approach, farm management, training and visit (T&V), attachment of officers to organizations, farming systems approaches and farmer field schools (FFS) (GFRAS, 2018, p.1)."

In the extension services provided by the public sector, extension officers play an important role in communicating agricultural information on the field level. These agents are tasked with implementing extension strategies and have direct contact with farmers. In 2011, Kenya's' public extension sector counted 5470 staff members. Senior Management Staff mostly hold Bachelor of Science and in some cases Master of Science degrees, while extension officers at field level all hold a 2-3-year agricultural diploma (GFRAS, 2018).

Kenya has been no exception from the one-way to two-way communication shift, "the initial approach to extension in Kenya was top-down; information started at the Ministry of Agriculture and filtered down to farmers through extension agents (Davis & Place, 2003, p.746)", an approach that "began during the colonial era and continued into the 1980s (Davis & Place, 2003, p.747, see also GFRAS, 2018, p.1)." One of the methods used was Training and Visit: "In the T&V approach, specialists and field staff provide technical information and village visits to selected communities (Aker, 2011, S.633)". It is a top-down method which "attempted to professionalize the extension service and reach more small-scale farmers (Davis & Place, 2003, p.747)". However, it turned out to be highly expensive and could not be

sustained by the government (Davis & Place, 2003, p.747). Following this, in the 1990s, various new actors entered agricultural extension.

“Thus the major players in extension today are the government, non-governmental organizations, private companies, bilateral organizations, donors, and international research organizations, and farmers and farmers’ groups or community-based organizations (Davis & Place, 2003, p.748).”

Among these actors, some organizations do not see themselves as providers of extension services, but as facilitators that enable others to disseminate agricultural information (Davis & Place, 2003, p.749). Lack of communication and coordination among different actors did also lead to “duplication and wastage of resources (Davis & Place, 2003, p.750)”. Newer approaches to extension included “Farmer Field Schools, Demand-Driven Extension and Farmer-to-Farmer Extension (Davis & Place, 2003, p.752)”. Farmer field schools (FFS) are a participatory approach promoted by the Food and Agriculture Organization of the United Nations (FAO), where extension officers are trained in participatory methodology and form farmer groups around a specific agricultural topic like vegetable production (Davis & Place, 2003, p.752, also see Aker, 2011, p. 633). These FFS groups then

“hold field days for other FFS groups and neighboring farmers. This is a chance for each participant to teach others what they have learned. At the end of the FFS cycle, certain farmers are chosen by the group to be farmer facilitators. They can then lead their own farmer field school the next season (Davis & Place, 2003, p.752).”

The problem of FFS however is that they are difficult to sustain once external funds are withdrawn (Davis & Place, 2003, p.752). The further approach called Demand-Driven Extension or Fee-For-Service proposed the idea of farmer groups requesting extension services when needed. However, this approach also showed problems of sustainability as it was subsidized from third parties and was hard to afford for smallholder farmers (Davis & Place, 2003, p.753.; Aker, 2011, p.633). Farmer-to-Farmer Extension is a bottom-up approach, which states that farmers “are the key to development, and must be involved in every aspect of technology development and dissemination (Davis & Place, 2003, p.753).” The benefits of Farmer-to-Farmer Extension are, among others, a “rapid information flow and awareness among farmers, and enhancement of farmer participation and innovation (Noordin et al.,

2001, as cited by Davis & Place, 2003, p.753)". The "farmers first" mentality of this approach can also contribute to its sustainability, as it does not depend on projects or other organizations (Davis & Place, 2003, p.753). Another study on Farmer-to-Farmer Extension in Kenya (Kiptot et al., 2006) found that farmers mainly share information among friends and relatives, which was a much more important criterion than "physical proximity" (Kiptot et al., 2006, p. 175,176). It also showed that information disseminated from farmer to farmer was not always very reliable (Kiptot et al., 2006, p. 177). This counters the idea that an information flow can work independently among farmers without other actors being involved: "Farmers indeed need support from institutions that have the expertise. This information does not need to come from high-cost sources such as extension; it can often be effectively communicated at much lower cost mechanisms such as radio (Kiptot et al., 2006, 177)". The study identified a need for "simplification of technical information by development professionals in order to help support farmers' understanding and communication of complex principles (Kiptot et al., 2006, p.267)." This mix of extension services is still prevailing in Kenya, however, so are the problems of lack of coordination between single actors and missing funds (Kenyan Ministry of Agriculture, Livestock & Fisheries, 2017, p.1).

While there are many problems that have been identified, few can be said about the efficiency of these extension methods: "Despite decades of investment in agricultural extension systems, there are surprisingly few rigorous impact evaluations of these services in developing countries (Aker, 2011, p.634)." Results of these evaluations also tend to be contradictory (Aker, 2011, p.634). There is a variety of issues that weaken the impact of classical methods of agricultural extension: "Beyond problems of measurement error and endogeneity, another potential reason for the seemingly weak impacts of these programs could simply be the quality of the agricultural systems themselves (Aker, 2011, p.635)." These issues include geographic dispersity of farms, weak linkages between researchers and agricultural extension systems, lack of monitoring of extension staff and high costs of the extension methods (Aker, 2011, p.635).

The examples and theories presented in this section show that past attempts of communicating agricultural information, especially in rural regions of developing countries, have all faced problems in function and sustainability. Some of these issues are based on social differences and miscommunication. Other sources of problems are issues of

geographical accessibility and the lack of financial sustainability. All these factors show the need for a low-cost, bottom-up communication mechanism (Kiptot et al., 2006, p. 176, 177). This need is currently met by the surge of new ICTs, which offer a large variety of opportunities for agricultural extension. These technologies allow the use of radio, a relatively old medium, in a new fashion (Chapman & Slaymaker, 2002, p.31). The following sections will take a closer look at the possibilities that are generated by the combination of local radio stations, ICTs and local languages.

2.2.2. Using Farm Radios in Agricultural Extension

To fully grasp the significance that radio is currently showing for agricultural extension in Africa, it is important to mention that, in terms of audience numbers and geographical reach, radio is the dominant mass medium of this continent (Chapota, 2009, p.7; Myers, 2008, p.5), with first rural radio programs starting in the 1960's (Nakabugu, 2001, p.1). This trend has only been increased through the liberalization of the media throughout Africa (Myers, 2010, p.1; Perkins et al., 2015, p.9) which has led to a boom of small radio stations. Between 2000 and 2006, the number increased by 1386% (Myers, 2010, p.1).

Radio has a long tradition of serving as an informational medium on topics such as health, gender, peace and agriculture in rural areas (Gilberds & Myers, 2012, p.76; Myers, 2010, p.3-5). There are various advantages that make it the medium of choice in these environments. On the forefront stands the affordability. For a broadcaster, it is affordable to install a radio station and for the audience, it is affordable to buy a battery or even a solar-powered radio set, which can be shared among various listeners. Television and Internet require a costly infrastructure, especially access to electricity on side of the audience, which radio does not. It can therefore cover a large area with little financial effort. Adding to the geographic reach comes the social reach. Radio tackles the problem of illiteracy, which is still wide spread in rural Africa. (Chapota, 2009, p.7; Myers, 2008, p.22; Myers, 2010, p.1). Broadcasting agricultural radio programs from community- centred radio stations and not on a national mass media level has multiple benefits: on a technical level, it ensures that local communities are better reached through radio signals. On a social level, a local program can be tailored to the exact needs of a certain group. Local relevance of a program can encourage the community to get involved in its creation, which in turn makes the content even more relevant to the community. This positive feedback loop is not possible with the top-down

approach of mass media radio (Nakabugu, 2001, p.1). For radio stations in rural settings, agricultural topics are of paramount importance. According to estimates of the FAO, undernourishment is currently affecting 23.2% of the population in Sub-Saharan Africa (FAO, 2018, p.4). This especially affects rural populations. Radio broadcasting in rural areas should therefore address matters of food security to increase its relevance for the target audience. (Chapota, 2009, p.8). This is why rural radio is seen as the medium of choice to communicate “information on better farming methods, improved seeds, timely planting, agro-forestry, better harvesting methods, soil conservation, marketing, post- harvest handling and diversification (Nakabugu, 2001, p.1)”.

However, some problems of agricultural extension in rural areas cannot be solved by radio alone. There is the issue of one- sidedness in the communication through radio broadcast. Information can be disseminated through a program, but this does not offer the possibility of discussion or other forms of exchange with the target audience, which is especially important for development issues. Another problem is the short durability of a radio broadcast. If it is missed by a listener or part of the content cannot be recalled, the information is probably lost (Perkins et al., 2015, p.10).

In recent years, there has been a major change in the use of radio through the emerging new ICTs, especially mobile phones, which offer a whole new set of opportunities in rural areas. (Chapman & Slaymaker, 2002, p.31). These are defined as “technologies that can be used to interlink information technology devices such as personal computers with communication technologies such as telephones and their telecommunication networks (ibid., p.1)” and include “devices such as digital cameras, digital video cameras and players, personal digital assistants, slide projectors (ibid., p.1)”. It is the combination of broadcasting stations and cell phones owned by farmers that could turn radio into a two-way communication medium in rural areas and offers various possibilities for interactive use and formats that conventional radio does not have (Gilberds & Myers, 2012, p.78; Myers, 2008, p.28). These can include methods such as interactive voice response (IVR) systems, SMS services, and missed call voting to allow two-way communication (Perkins et al., 2015, p.20). Further methods of interactive radio that will be of greater relevance to this thesis are call-ins and facilitated listening, as a “toolkit for practitioners” explains (Woodward, 2012). Call-ins are the most common method of listener interaction with radio and can be done by anyone owning a cell

phone. This allows listeners to ask questions or give feedback in real time during formats such as expert interviews and to get an immediate response (Woodward, 2012, p.105). The second method, facilitated listening, is often implemented in the form of radio listening groups (RLGs). These are “groups of people who generally meet on a set schedule to listen to a radio program. They tend to be facilitated by a group leader and include discussion and questions after the program finishes (Woodward, 2012, p.116)”. Interactivity does not only include interaction of the listeners with the radio station, but also of listeners with other listeners (Woodward, 2012, p.100). Accordingly, farm radio employs several formats that are tailored for the communication of agricultural information. The NGO Farm Radio International identifies and describes mini-drama, panel discussions, interviews and short, catchy spots among others (Cuddeford, 2012a, p.1).

Empirical evidence shows that cell phones and radio are widely used in rural parts of Africa (Asenso-Okyere & Mekonnen, 2012, p.2-6; see also Hailu et al. 2017). Various studies have examined the use of radio and ICTs for agricultural extension and have either found a positive impact for the adoption of agricultural practices or acknowledge a high potential for these projects (Hailu et al. 2017; Kaipanyama, 2013; Lwoga, 2010; Perkins et al., 2011; Sullivan, 2011; to name some). It should be noted that many of these findings are not based on the research of neutral observers. Most of them are active either in agricultural extension or in NGOs that conduct their own farm radio projects, namely the African Farm Radio Research Initiative (AFRRI), which was initiated by Farm Radio International. This limitation should be considered when reviewing much of the literature on the potential impact of farm radio.

Nakabugu (2001) makes the case for radio as a medium to especially link farmers and researchers. Agricultural research faces significant problems reaching farmers, as already mentioned in section 2.2.1. Two basic difficulties are of a rather technical nature, where radio can offer a solution:

“Research information on improved seed varieties, better farming techniques, post-harvest handling and marketing are not used by farmers either because the information did not reach them, either [sic] because the implementation of the received information is not clear (Nakabugu, 2001, p.1). “

Farm radio can bridge this gap by distributing research findings either to NGOs in direct contact with farmers, to extension workers or to farmers themselves. It can also connect researchers with extension officers, who have more experience in contacting farmers and can explain how information needs to be passed on and help researchers in collecting feedback from farmers (Nakabugu, 2001, p.1). Radio also helps communicating scientific information in a way that serves farmers: “Radio demystifies the scientific jargon. It is able to explain the research in simpler and ordinary language that people understand (Nakabugu, 2001, p.1)”. The core functions of radio when communicating research results to farmers are linking the involved actors, creating awareness among farmers, mobilizing them towards the practice and simplifying and translating the findings (Nakabugu, 2001, p.1). Projects mentioned in this section do not communicate “pure” science to farmers, since their primary goal is mostly to improve food and financial security among farmers. Scientific findings are always part of applicable agricultural information on topics such as climate change (Perkins et al. 2015), cocoa farming (Baah & Anchirinah, 2011) or forest landscape restoration (Farm Radio International, 2015).

In practice farm radio faces a number of obstacles. “Lack of collaboration between researchers, extension staff and communicators may hinder the smooth operation of rural radios (Nakabugu, 2001, p.1).” Other issues of communication are the translation of material into various languages or the need to simplify scientific jargon (Nakabugu, 2001, p.1). Financial problems can also affect the content and independence of a radio station. Although affordability is described as one of the main advantages of farm radio (Myers 2010, p.1), especially when comparing it to other extension methods (Kiptot et al., 2006, p.177), the reality can be different for practitioners. Financial issues can be the greatest obstacle for small scale operations, which have to afford investments such as hardware and employing and training staff (Nakabugu, 2001, p.1.).

Despite the liberalization of media in many parts of Africa, independent media institutions can still be affected “by many structural and political frustrations which often include overt, and not always benign, intervention from local and national authorities [...] and outdated laws which often penalise rather than incentivise community radio (Gilberds & Meyers, 2012, p.80).” The guidelines for agricultural extension services issued by the Kenyan Ministry of

Agriculture, Livestock and Fisheries show little awareness of farm radio, as in 22 pages, only three rather vague sentences are dedicated to radio:

“Radio programs can be an effective tool for communicating with clients. One successful example is Bio-vision international radio programs used to reach clients (producers) with target messages on enterprises production. Radio programs have a wide reach and are gender neutral (Kenyan Ministry of Agriculture, Livestock and Fisheries, 2017, p.13)”

Apart from being very brief, this description does not consider the work of researchers that find problems of gender inequality to be still very present in the use of radio. Women have significantly less access to radio than men, which also leads to less participation by women (Myers, 2008, pp.32-33; Nabusoba, 2014, pp.50-52). This lack of interest from governmental side is surprising given the high enthusiasm of NGOs for use of farm radios in Africa. It could be a further indication for insufficient communication between actors.

Since much of rural radio is donor funded, finances are often a delicate issue and there is always the risk of suddenly losing financial support (Nakabugu, 2001, p.1). There are also warnings from an “NGO-ification” of farm radio (Manyozo, 2010, as cited by Gilberds & Meyers, 2012, p. 80-81). While receiving financial support from NGOs can certainly help an emerging radio station, problems start when the dependence on the donated money is too strong. This can lead to an abrupt end of a radio program when funds are withdrawn for some reason, or to a situation where broadcast programs of the radio station are so busy fulfilling the agenda of supporting organizations that there are no more resources left to create any original content, thus jeopardizing the journalistic independence of the station (Gilberds & Meyers, 2012, p.81).

The present section should have given a rough overview over the development, advantages and challenges of farm radio in rural Africa. One aspect of farm radio is especially important to the topic of this study and will therefore be discussed separately in the following section. This is the use of local languages.

2.2.3. Using Local Languages in Agricultural Extension

The literature found on the use of local languages rarely addresses agricultural extension specifically, but rather sustainable development of rural areas in general (Bearth, 2007; Bearth, 2008; Bearth et al., 2017; Fan, 2007; Nercissians & Fremerey, 2008). In a globalized

perspective, the ethnic and linguistic diversity of African countries has been perceived as an obstacle to communication and therefore, development (Bearth, 2007, p.182). Additionally, the perception of African languages as simplistic or underdeveloped, still rooting from the colonial era (Bearth, 2007, p.182), is a strong prejudice still present even in the African educational elite. This hinders African languages to be recognized as instruments for knowledge production and knowledge dissemination (Bearth, 2007, p.183), which in turn leads to the marginalization of their main users and them being perceived as underdeveloped (Bearth, 2007, p.183). Bearth et al. (2014) identify the language barrier as a reason why communication practitioners often fall back to linear communication models despite contemporary theories favouring two-way communication. The problem is that these modern approaches do often not propose what to do when, in a dialogue-centred model, both ends of the dialogue speak different languages with a perceived status difference. This situation raises the question if a true, non-deficit dialogue can only occur when the languages involved are also perceived as equal (Bearth et al., 2014, p. 6).

New perspectives especially from the area of sustainable development state that bottom-up approaches are only possible by inclusion of local cultures and their language (Bearth, 2007, Nercissians & Fremerey, 2008). A case study illustrates the obstacles faced by an agricultural extension officer who is familiar with neither of those: they include dependency from the interpreter, who decides beforehand which information is relevant enough for translation without the expert having any influence on this decision process, missing out on micro conflicts or, as an outsider, not being able to establish trust with the target community (Fan, 2007, p.201- 203). Language is described as the key to social processes and the creation of sense. Actions can only be sustainable if they make sense in the eye of the actors, therefore, explaining sustainable or non-sustainable actions without a local language would face strong epistemic barriers (Bearth, 2007, p.185). Local language, even if on a subconscious level, reflects local culture and mind-set, an information that is lost if the language is not considered while communicating (Nercissians & Fremerey, 2008, p.81, see also Castle, 2014, p.8). This is also one of the reasons why the endangerment of small languages and global language loss holds a much greater damage than just a loss of variety (Castle, 2014, pp.6-7). The term “Communicative sustainability” is also used to describe a concept in which inclusion of local language is seen as the basis for any form of development:

“More than elsewhere, the question of language inclusion in sub-Saharan Africa is, rather than “merely” one of recognition of cultural diversity and identity at some constitutional level, one of social cohesion as a prerequisite to development; linguistic difference and diversity are questions at the heart of society which, be it at the individual or collective level, directly affect issues of identity, participation in public life, political debate and economic change, and even more so if one also takes the gender divide into consideration (Bearth, 2008, pp.25-26).

The use of local languages can be added to the epistemic conflicts already mentioned in section 2.2.1.: “the bottom-up formula of participation will not easily marry the essentially top-down framework of development and modernization. It will lead to a confrontation of social actors with different epistemologies (Nercissians & Fremerey, 2008, p.80)”.

Acknowledging that the inclusion of local languages is a necessary step towards sustainable communication, farm radio can be an appropriate instrument for this goal. One of the strengths that is attributed to rural radios and has been described in section 2.2.2 is the capability of directly engaging a local, rather small audience and tailoring the program to their need. In a highly multilingual environment, like most African countries are, this also means that radio must choose the language that is best suited to reach people in a certain area.

“Since rural radio targets a specific community, geographical area or interest, then the language of choice can be used to ensure that the message is clearly understood. Therefore rural radio gives you the option of using the prevalent language (Nakabugu, 2001, p.1).”

“Furthermore, community-based radio has demonstrated a remarkable potential to facilitate development and social change agendas given that it speaks in the languages and dialects of its community and its programming reflects local interests and voices. (Gilberds & Myers, 2012, p.77)”

The strength of farm radio is not only that it can reach illiterate farmers and provide them with information in a language they can understand, it can do so specifically in the language which they understand *best*, that is to say, their mother tongue. This is also observed by

Chapman et al. (2003) in a case study of radio programs on soil and water conservation in Ghana. The study showed increased knowledge on soil and water conservation by the listeners of the program and found the use of local language to be very important for the farmers, as “this aspect made the programme immediately acceptable (Chapman et al., 2003, p.10).” Also, a combination with local acting groups performing a drama format proved as especially popular among farmers (Chapman et al, 2003, p.10.).

Farm radio and local languages can even benefit from each other. The underlying idea is that, while receiving information in their mother tongue is very likely to benefit the farmers, as has been discussed above, it could also be an efficient instrument to confront language loss. If farmers benefit economically *because* of information in their local language, then there is a stronger incentive for future generations to continue farming and staying in the area, therefore keeping the language alive (Castle, 2014, pp.24-25). While there are strong indications that this mutual benefit does indeed occur, providing empirical evidence is difficult, since establishing a control group- such as a neighbouring community- that does not receive agricultural information via radio would be ethically questionable (Castle, 2014, p.25).

In the specific case of Kenya, radio has been “historically dominated by English and Swahili (Okoth, 2015, p.2).” It is just in recent years that radio stations broadcasting in local language have begun to emerge, a practice which seems to bear the potential of strongly benefitting the target audience. However, there is also a need to increase professionalism in these radio stations through adequate training of the staff (Okoth, 2015, p.31). This is a task that falls right under the work of Kilimo Media International, an NGO whose activities will be the focus point of this study and will be briefly explained in the following section.

2.2.4. A Description of Kilimo Media International

The previous sections addressed agricultural extension, farm radio and the use of local languages in development to describe the context in which Kilimo Media International (KIMI) operates. KIMI is a non- governmental organization focused on the use of farm radio for agricultural development in Kenya and is funded by the Syngenta Foundation for Sustainable Agriculture. The information on this organization provided in this section is mainly a self-description, with information retrieved from the KIMI Website (Kilimo Media International, 2018a), a project report (Kilimo Media International, 2017) and an interview with Kilimo

Media staff (Interview KIMI³). On its website, the organization describes itself as „farmer centred, media based agricultural advisory service provider (Kilimo Media International, 2018a).“ First, it is important to clarify that KIMI is not by itself a radio station (Interview KIMI, l. 24-26). Their activity as an organization is focused on supporting and training radio staff and connecting radio stations with extension officers, as the interview partner states: “bringing extension officers and radio producers together and training them in one forum helps to enrich the model and helps to show each of the parties the importance of radio (Interview KIMI, l.28-30)”. The goal is to provide farmers with agricultural information through “radio and other ICTS” (Interview KIMI, l. 23). According to the interview partner, the agricultural extension model practiced by KIMI is very centred on extension officers assuming a role as expert (Interview KIMI, l. 27-28).

“[W]e know that radio producers are not experts in agriculture. So, most of time you actually need agriculture experts to come on radio and respond to issues. That also makes the programs more credible in terms of putting out information that is credible, that is believable, even for farmers to call and ask questions and receive responses from the experts. (Interview KIMI, l. 14-18)”

The agricultural programs that KIMI supports are all broadcast in local languages. This is an essential part of KIMI's strategy for agricultural extension (Kilimo Media International, 2017, p.3). It should also be noted that the radio stations are not exclusively community-managed radio stations and can also be managed as commercial stations. (Interview KIMI, l. 59-70.). What they have in common is their reach: all radio stations supported by KIMI broadcast on a county level, that is to say, their reach is usually limited to the area of the Kenyan county in which they operate. This allows them to create content that is specific to the region (Interview KIMI, l. 74-77).

In a first project, radio stations supported by KIMI aired farm radio programs in five counties.

“The two year project aimed to increase agricultural productivity in the counties and beyond (as some of the radio stations have listenership beyond the counties they broadcast from) by enhancing

³ The full interview transcript can be found in the appendix p. 178-180.

access to agricultural information through radio with the involvement of the local extension service providers to disseminate information as well as actual on-the-ground follow up of farming practices to listeners (Kilimo Media International, 2017, p.1).”

The final project report found the most popular sources for agricultural information among farmers to be radio programs (96%) and extension officers (56%) (Kilimo Media International, 2017, p.1, p.9). It also observed a high rate of implementation of practices by the listeners: „Towards the end of the Project, some 84% of respondents had listened and understood the practices as broadcast, and had actually adopted practices as they heard them in the programmes. This was up from 9.3% at baseline (Kilimo Media International, 2017, p.2).” There was also a significant increase of radio listenership for agricultural information compared to the baseline survey (Kilimo Media International, 2017, p.11).

Despite these positive results, KIMI identified various challenges, such as the need to better adapt broadcasting hours to the farmers daily schedule (Kilimo Media International, 2017, p.19.), lack of radios in households (Kilimo Media International, 2017, p.18) or issues of gender equality when accessing information, where “the challenge was that most women could not call the radio station to ask questions or seek clarification as most of them had no mobile phones. This was a barrier to gaining more knowledge for women (Kilimo Media International, 2017, p.8). Other challenges are deep rooted cultural perceptions and the unwillingness of many farmers to adapt uncommon practices. This is best handled by showing them examples of farmers that had success implementing the new techniques (Kilimo Media International, 2017, p. 19). Also, it was found that farmers always preferred contacting the extension officer during or after air time and were more reluctant to contact guest agricultural experts. “From our discussions with the farmers, this is because the farmers trusted the extension officers more (Kilimo Media International, 2017, p.19).

Radio Listening Groups (RLGs) were identified as a strategy to face some of these challenges, with a successful case of a woman group practicing urban vegetable farming in Masarbit (Kilimo Media International, 2017, p.18). However, problems like lack of radios, unsuitable air times and partly lack of support from the extension officers affected a successful implementation of RLGs during the project (Kilimo Media International, 2017, pp.18-19).

In early 2018, KIMI initiated a second project in seven other Kenyan counties, in partnership with local radio stations and the county agricultural ministries. Three cases that are part of this project will be the subject of analysis of this thesis.

2.3 Integrating farm radio in science communication research

Many of the issues that science communication describes can be found in the field of agricultural extension, such as the relationship of farmers and experts, perceptions of trust and risk and the divergence of communication theory and practice. Where could the practice of agricultural extension through farm radio feature in science communication theory? Which actors are involved in the communication process? Who are the experts and how does information flow in this system? One problem of using models of science communication is that they might divert too far from the realities of agricultural extension. It is questionable that agricultural extension includes the communication of “pure science”, as its main focus is to address farmers’ most urgent needs: food and income security. Another problem is that the models and theories presented in this section seem to strongly focus on western societies that have a high level of literacy, are reached by mass media and whose concerns on experts and science are problems such as the consequences of GMOs and nuclear technology (Nisbet & Scheufele, 2009; Wynne, 1998), rather than food security. On the other hand, these gaps in existing theories make the subject of this study interesting and relevant. While contemporary perspectives on the future of science communication research focus on innovations such as internet and social media (Schäfer, 2016, p.275) or political and economic shifts affecting the scientific world (Rhomborg, 2016, p.407) a great part of the contemporary reality is neglected if theories ignore the parts of society where basic education, infrastructure and food security are still amiss. This thesis explores the structure of a communication system based on rural radio in Kenya and analyses its potential for further research in the field of science communication.

3. Research Questions

The literature presented in chapter 2 shows that the interaction of different forms of expertise is a central part of agricultural extension. The combination of ICTs and radio programs adds a new dimension to this communication process in the form of electronic media. These factors indicate that farm radio could be a suitable research subject for science communication. To determine whether this is the case requires an extensive analysis of the

actors involved, the communication process and the knowledge that is communicated. This means that the research questions for this thesis need to allow an open, explorative approach and that there will be no formulation of hypotheses. Two research questions are formulated to describe the structures of farm radio and to link these findings to science communication:

Q1: How is the information flow through agricultural radio programs in local languages structured?

Q2: Are contemporary theories of science communication observable in the practice of farm radio?

Q1 is descriptive. Its objective is to characterize the communication that is occurring through farm radio. In the theory section, the ideal role of farm radio has been described as an independent, accessible medium that can facilitate two-way communication between broadcasters and listeners. The description of communication through farm radio as it is implemented by Kilimo Media should analyse if these characteristics are present.

Q2 is based on the analysis of Q1 and will extend the analysis using the definitions and models presented in the theory section on science communication. The objective of this question is to determine whether and how science communication is occurring in farm radio practice and if it can be considered a suitable research subject for science communication. This should also make it possible to propose questions and topics for further research.

4. Methods

This chapter will describe the methods chosen for this study and the decision process that led to the choice of these methods. The cross-case analysis method was chosen, since this method is suited to approach questions of a descriptive nature (Yin, 2012, p.5). Comparing various cases would also offer the possibility to gain a broader insight into the KIMI project. Field notes, guided interviews and focus group discussions were employed to generate data for the cross-case analysis.

KIMI offered logistic and organizational support for the studies, organizing transport, interpreters and accommodation in the case of Masarbit and scheduling meetings with radio staff, extension officers and farmers. Air travel from Germany to Kenya was financed by the Syngenta Foundation for Sustainable Agriculture. The Syngenta Foundation expressed their

interest in a master thesis studying the KIMI project, especially considering the use of local languages. However, they assured to not interfere in any aspect of the study and guaranteed full academic independence of the research.

4.1. Preparation and Method Finding

Informal conversations with the Syngenta Foundation for Sustainable Agriculture and KIMI staff through phone calls and E-Mail correspondence started several months before the actual research in preparation for this thesis. The informal conversations helped to gain insight into KIMI's work and the organizational structure of the farm radio programs.

Conducting a single case study was considered initially. KIMI's project is being implemented in seven counties with one sub-project each. This structure made a cross-case approach appear more suitable. In each county, a radio station is broadcasting an agricultural program once a week in cooperation with local extension officers from the Kenyan Ministry of Agriculture (MOA). The program is broadcast in a local language directed towards farmers that live in the area and speak the language. A cross-case approach would allow to compare differences and similarities between the sub-projects in different counties and offer a broader insight. A comparison of three single cases was considered a reasonable amount for the time that was available. Since the project structure and the informal exchange with KIMI suggested radio staff, extension officers and farmers to be key figures in every sub-project, these three actor groups were chosen to conduct qualitative interviews and focus group discussions to generate data for the cross-case analysis. To conduct the comparative research, KIMI offered the opportunity to accompany office staff during field visits to three local radio stations and farming communities in the counties of Kajiado, Masarbit and Kitui.

4.2. Collecting Data

4.2.1. Semi-Structured Interviews

Interviews are a common method to collect data for case studies (Hancock & Algozzine, 2006, p.39). Several additional factors supported the choice of guided interviews with radio staff and extension officers. These participants were actors described as central figures of the communication process by KIMI and therefore, in-depth conversations with these actors could generate valuable information for the case studies. The explorative approach used in this study required a method that would offer maximum flexibility and the ability to adapt to different settings, unexpected situations and unexpected findings. Field visits were only

scheduled for several hours and radio staff, extension officers and farmers could only spare little time during their work day. Uncertainties concerning the feasibility of the planned interviews were always present. Possible and unpredictable inconveniences could include sudden changes in the work schedule of the interview partners or inaccessibility of farming communities due to road damage or flooding. The limited time available to conduct the interviews also required a certain structure as orientation. Pre-formulated interview questions served as guideline, while maintaining the option to improvise and asking follow-up questions according to answers of the interview partners. (Helfferich, 2014, p.560). Semi-structured interviews were therefore considered the most adequate method to generate findings. This type of interview offers the required flexibility while also allowing pre-formulated questions as guidelines and gives interviewees the opportunity “to express themselves openly and freely and to define the world from their own perspectives, not solely from the perspective of the researcher (Hancock & Algozzine, 2006, p.40)”. This was considered particularly important to obtain a detailed description of the farm radio practice.

The design of guideline questions beforehand was a difficult task, because there was limited knowledge about the actual structure of the radio stations and the farm radio program. The necessity to adapt questions to findings of the first interviews was considered beforehand, as well as the necessity to react to new information received during the interview itself. Therefore, interviews were designed as open as possible, centred around key questions and keywords, which were used as orientation to create themes during the analysis of the material, as will be explained in section 4.4. These interview questions were designed to generate information to answer both research questions and should therefore provide:

- 1) a description of information flow in a system involving farm radio, farmers and extension officers.
- 2) Information regarding the involvement of researchers, research institutions or scientific knowledge in the communication process or other information that could relate to the field of science communication.

As interview partners, one radio operator and one extension officer from each of the three counties of Kajiado, Kitui and Masarbit were selected. The selection of the individual interview partners was based on recommendations made by Kilimo Media International. This selection criteria bears the risk of affecting the neutrality of the study, since KIMI is an

important stakeholder in the farm radio project and may have had a bias towards proposing individuals that are especially approving of their work. However, the study required interview partners that could provide extensive information on the issues discussed. Since KIMI was familiar with the individuals involved in the project, relying on their evaluation of which interview partner would be fitting for an interview was considered the most reasonable decision.

The interviews for the extension officers consisted of seven key questions and the interviews for the radio operators of eight.⁴ These questions had to be modified during the research process as findings indicated that some questions originally intended for the radio staff were more suitable for the extension officers. A better understanding of the role of extension officers and radio staff in the farm radio system led to further adjustments of key questions⁵. Questions for the radio staff asked the interviewees to describe their cooperation with extension officers, selection of topics, formats that were used in the radio program and the effects of broadcasting in a local language. The questions for the extension officer included asking for a description of his or her work in the radio program, of radio listening groups, interaction of farmers with the broadcaster, sources of information, topic selection and the effects of broadcasting in local language.

The radio operators and extension officers were then interviewed, resulting in six interviews with a maximal duration of 45 minutes, depending on the level of participation of the interview partner. This and the interview settings varied between the interview partners as will be explained in detail for the individual cases. Ideally, a neutral setting would have been chosen (Hancock & Algozzine, 2006, p.40). However, this proved difficult in practice. In most cases, the interviews had to be adapted to last-minute changes in the visiting schedule and short windows of opportunity had to be used. Interview settings often included external individuals participating with own answers and questions as can be read in the transcripts.⁶ . The goal of the interviews was to create an in-depth image of the KIMI project. This is why these interjections were included in the analysis: although they were not strictly part of the interview, they were all related to farm radio and the project. This additional data was

⁴ The full set of questions is attached in the appendix, p. 181-182.

⁵ The full set of edited questions is attached in the appendix, p. 184-185.

⁶ Appendix, Page 87-177.

considered as a useful source of information. While the interviews were held, questions were adapted to the answers of the interview partners and therefore vary from case to case.

4.2.2. Focus Group Discussions

Conducting a group discussion offers the possibility to generate findings through interactions of group members (Vogl, 2014). This is why focus group discussions are a popular method to conduct research in farming communities, in agricultural extension as well as in farm radio audience monitoring (Cuddeford, 2012b, p.1). This is one reason why it made more sense to focus on a larger group rather than on individuals in the case of the farmers. Furthermore, the radio listening groups which were organized in the community represented a target audience of the agricultural programme and provided an appropriate focus group.

Observation of interactions was limited by the fact that the focus group discussions were held in the language of the farmers and were facilitated by an interpreter. This was the only option, as most farmers did not speak English. The interpreter also had the role of the discussion leader and could redirect the conversation if it was going off topic. The interpreter would mostly bundle the information of various answers during the discussion, this had the effect that the transcript rather resembled an interview than a discussion.

Eight guiding questions were formulated with the objective to generate a description of the radio-based information flow in local language from the point of view of the farmers⁷. The first group discussion showed that questions had to be modified and formulated in a more specific manner, because this was better understood by farmers. The modified questions were then used in the following group discussions⁸. The use of examples also improved the response to the questions. The settings of the group discussions had to be adapted to the schedule of the farmers and were mostly held shortly after or before other discussions with the extension officer or KIMI staff. Farmers were asked to describe their reactions towards new information, examples of when they decided to implement or *not* to implement a new technique, methods of gathering information, communication with the broadcaster and the effects of listening to a program in their mother tongue.

⁷ The full set of questions is attached in the appendix p.183.

⁸ The full set of edited questions is attached in the appendix p. 186.

4.2.3. Fieldnotes

Fieldnotes are an ethnographic method that is used to transform observation into data. This includes taking notes on site and processing impressions gained during the research later on (de Sardan, 2015, pp.28-30). The interviews and group discussions conducted for the study were set in the work environment of the interview partners: radio stations and farming communities. In these settings, fieldnotes were used to generate further findings, especially in order to describe the social context for each case. During the visits of the farming communities, it was possible to observe and take hand written notes on the interaction of the extension officers and radio staff with the farmers and in some cases, witness a radio listening session. Hand written notes were also made on general observations and further informal conversations with KIMI staff, locals and the interview partners. This was done on site when possible or written down from memory in the evening of the same day.

4.4. Single Case Studies and Cross Case-Analysis

In total, six interviews and three focus group discussions were conducted in three Kenyan counties in June 2018. This generated data for three individual cases, each one covering one sub-project in a different Kenyan county. In all cases, the conversations were recorded with a portable recorder and transcribed shortly after the field visits.

The text of the transcripts was then analysed and reviewed several times to generate themes in which it could be divided. (Hancock & Algozzine, 2006, p.59, p.61; Lune & Berg, 2017, p.90). The themes were then used to summarize the generated transcript text (DiCicco-Bloom & Crabtree, 2006, p 318; Lune & Berg, 2017, p.90) and create a condensed description of the findings for the three single case studies. The findings generated through fieldnotes were described at the beginning of each case to introduce the setting. Then, the findings of the interviews with radio staff and extension officers and the focus group discussion with farmers were presented in this order. These findings were then summarized in a concluding case study. This provided a total of three single case studies which were then compared in a final cross-case analysis. This was done to find differences and similarities between the cases (Baxter & Jack, 2008, p.550) and to generate a cross-case report that could be used to answer the research questions. For the discussion in chapter 6, the results summarized in the cross-case report were analysed based on the theories discussed in chapter 2 (Hering & Schmidt,

2014, p.536), namely the models of science communication and issues of agricultural extension.

The summaries of the interviews and group discussions only reproduced the statements made by the corresponding interview partner or focus group during the conversation. Sometimes these included statements made about other actors. To avoid confusion, it should be clear that if, for example, in an interview with radio staff the function of extension officers is described, this is an observation made by the interview partner and not by the researcher.

5. Results

The following section will present the findings generated through qualitative interviews, focus group discussions and fieldnotes taken during the studies in the Kenyan counties of Kajiado, Masarbit and Kitui. The structure of the result chapter has been explained in the methods chapter: first, a summary of notes taken will present the setting of the case. Then, findings of interviews and group discussions are organized by themes. The entire case will conclude with a summary on the single case study. This is repeated for every single case. A final cross-case report will compare the three case studies.

The themes that were defined through analysis of the transcripts and that will be used in the results section are:

- 1) For radio staff: Topic Selection, Cooperation with Extension Officer, Sources of Information, Use of Formats, Knowledge Exchange and Interactivity, Use of Local Language, Other.
- 2) For extension officers: Description of Work, Topic Selection, Description of Radio Listening Groups, Knowledge Exchange and Interactivity, Sources of Information, Use of Local Language.
- 3) For farmers: Handling new Information, Use of Local Language and Preferred Formats.

5.1. Case 1: Kajiado

5.1.1 General Observations and Setting

The radio station visited in the first case is a small, community driven station that broadcasts from the town of Kajiado, the capital of Kajiado county. Its programs include

various topics that are relevant to the community, such as peace and gender equality. The rural areas around the town of Kajiado are habited mostly by Maasai people. Maasai are herders by tradition and cattle are important cultural indicators of wealth and status. Kajiado has a semi-arid climate. Droughts in the past years and the surge of *Ipomoea* weed on the grazing areas have heavily affected the livelihood of the Maasai in Kajiado. Government incentives are trying to motivate Maasai to vary their income through adopting agricultural practices. The radio station broadcasts an agricultural program in Maa language once a week in cooperation with local extension officers. The topics address the needs of the local farmers. For example, from February to April 2018 they included pasture production, clean milk production, fighting *Ipomoea* weed and soil preparation for planting.

The Kajiado radio station faces the problem of limited resources and a limited geographical reach. Topological features such as a hill can prevent the airwaves from reaching listeners. This also affected the farming community that was visited for this study: farmers were not able to listen to the agricultural program because they were not reached by the station. To solve this problem, the station and the extension officer apply a method that has been described in the interactive radio handbook (Woodward,2012, p.116-117): The farm radio program is recorded during air time and then brought to the farming community by the extension officer on a portable speaker with an USB port. The farmer group listens to the recording and then discusses the content with the extension officer, as was observed during the visit at the Maasai village.

The interview partner coming from the radio station, a journalist, showed a very positive attitude towards the interview and was eager to describe his work. The interview very quickly reached a friendly and open tone.

On the other hand, the extension officer seemed very sceptical towards the interview and asked to see the questions in advance. This scepticism continued throughout the interview and questions on his sources of information were answered in a defensive manner. It is possible that these were interpreted as questioning his own expertise. The guided structure of the interview proved very useful to redirect the conversation, as the extension officer showed a strong tendency to derive from topic and talk about specific farming methods rather than general characteristics of his work.

5.1.2. Interview 1.1.: Radio Staff

The following section summarizes the interview with the radio staff member and divides it into themes. The statements in this section were all statements made by the interview partner and reflect his point of view.

Topics

The selection of the topics that are broadcast by the station is oriented on a program schedule emitted by the county government. Another way to decide which topics to broadcast is through the extension officer, who visits villages and takes notes of the problems affecting farmers and which topics are of most interest. Topics frequently broadcasted by the station are pasture production, milk production, market prices and pest control according to the interview partner (Interview 1.1, l.18-35)⁹. The extension officer was named as the main contributor of program topics, which are chosen by him and are discussed by the radio staff. The most important factor for the selection of the topic is the interest of the farmers. (83-84) For example, during the research visit to the radio listening group, the chairwoman of the group asked to receive more information about pasture production, which was then taken into consideration as a topic for the next program by radio staff (393-398). Another important selection factor is timeliness of the topic, for example a pest currently affecting farmers (65-72).

Cooperation with extension officer

The interview partner was asked to describe his interaction and working relationship with the extension officer. He explained that the extension officer is a county official. The status of the extension officer as an employee of the county government offers credibility to the information that is broadcast. The exact role of the extension officer was described the following way: during the radio program, the presenter and extension officer will both be on air. While the presenter asks questions, the extension officer will answer these questions. The fact that they are listening to an extension officer should reassure the farmers that they are listening to the right person about their issues and that the information they receive is timely, credible and in real-time (39-52). The presence of the extension officer is important because he is the one contributing the expertise. The radio staff has some knowledge about agricultural topics, but not at a level that allows them to respond to the farmers' questions

⁹ All quotes in this section refer to the line number in Interview 1.1., appendix p. 87-101.

(170-173). However, they assume the role of breaking down the answers of the extension officer into simplified information (177-180). Apart from being on air, the extension officer also has to visit the farming communities, in order to talk with farmers, ask them about their problems and provide answers in person. In the case of not knowing the answer, the extension officer will refer the farmers to another expert (56-61). It is also the task of the extension officer to identify farming communities that can be visited by the radio operators and presented as examples to other farmers (242-247).

Sources of information

As sources of information for the radio programs, the interview partner mentioned extension officers, farmers and NGOs that work in related areas. Information from the NGOs is mostly gathered beforehand while preparing the topic for the program (77-86). The interview partner informs himself on agricultural topics through internet research (138-142). Other information, such as detailed descriptions of agricultural issues affecting farmers, are gathered from farmers (146-155).

Formats

The total duration of the agricultural program is one hour (Interview 1, 378), it is broadcast once a week. When asked about formats used by the agricultural program, the interview partner named interviews, agtips (agricultural tips), drama and “studio machinani”, translated as “studio in the grassroot”. The latter format was described as a radio show with live audience: the presenter and the extension officer perform the program in the community, with farmers asking direct questions instead of calling (Interview 1, 90-97). This format also has the positive effect of showing farmers how a radio session is done. The interaction with presenter and extension officer also occurs on a one-on-one level (101-114). Farmers described interviews and dramas as their preferred formats, drama makes it easier to understand the content (288-291). Interview is preferred because it gives them an “opportunity to engage with the guest or with the extension officer” (297-298), while through drama “the information comes out lively and treats them well” (296). Another method of receiving information that is preferred by farmers is practical demonstration, for example the uprooting of a weed (299-301). In later follow-up questions, the drama format was discussed more thoroughly.

However, the number of incoming SMS and calls does not depend as much on the used format as on the topic discussed. Incoming messages are most frequent when the topic relates to an issue many farmers are dealing with at the time, such as a new pest (314-319). An important factor for the drama format is the use of local entertainment groups. These groups are chosen to perform the drama script in Maa. They are well known in the area and therefore the farmers are familiar with their voices. The drama script is first developed by the radio director in Swahili, since he is not fluent in Maa, then translated by the extension officer and performed by the entertainment group (330-341). Humour is described as an important element of these dramas (354-358) and their length is between five and ten minutes. If the topic has a high importance, the drama can take up to fifteen minutes (362-364). “You give them information in details. But in a simplified way. With humour. Something short and precise that they will remember (369-370).” The editing of the information occurs in joint work of radio staff and extension officer: together they decide which information about a topic is essential and enters the drama in order to keep it as short as possible. The interview partner describes this as finding the “priority” (403-412) To illustrate the way drama works in the agricultural program, the interview partner gave the example of a drama about milk pasture production: two farmers discuss the topic, both claiming to be the expert, until the extension officer enters as the true expert and shows them the right way of milk production (382-389).

Choosing the format for a topic is based on the topic’s relevance. If a topic is considered very important, it is addressed through multiple formats, like agtip, drama and interview. The interview partner explained that drama kits are chosen when they want a topic to be broadcast repeatedly and be disseminated through repetition and simplified presentation. For example, this was done with the current *Ipomoea* weed pest (119-132):

“dramas mostly work when we are trying to create certain awareness. Maybe if there’s an outbreak of...disease outbreak or maybe there’s something that is very crucial, that they want to, they should know. Or maybe something that the county government is trying to introduce to the farmers. That is where we tend to use agricultural tips or where we tend to use dramas. (345- 349)”

Knowledge exchange and interactivity

In terms of interactivity, farmers call the station, send SMS or ask the questions one on one while being recorded during the “grassroots” studio sessions. (177-189). Farmers exchange knowledge between communities. This is one reason why the radio staff chooses different areas and communities for their visits: the goal is that these communities communicate the knowledge to others (159-136). “The reason why we are reaching to them on the ground is because we want them to be ambassadors for others” (159-160). Farmers also exchange knowledge via the radio program. “When they have a challenge or when they have suggestion or when they have a solution, they always share (167-168)”. Through their calls, farmers will also present their solutions for wide-spread problems among communities (314-319). Farmers communicate issues such as new products on the market or threats and methods to deal with them (184-189).

Local languages

The program is broadcast in Maa language. Sometimes, farmers who do not speak Maa as their mother tongue will listen and ask for clarification in Swahili, this will then later be translated to Maa by the extension officer, who also speaks Swahili (202-209). The interview partner described positive effects of broadcasting in Maa:

“It’s easier for them to understand the content that we are trying to send out there. It’s easier for them also to respond to the content that they listen to. And also, to give ideas. Because, when we broadcast in their language, it goes to their heart. It’s something that is familiar to them. So, they have no objection with it (218-221)”.

The extension officer and radio presenter have both received praise from farmers for the use of local language (228-232). The interview partner did think that listeners are more eager to implement information because it is presented in their mother tongue, however emphasizes that the willingness to put agricultural methods into practice has various reasons, for example bad experiences in the past due to the drought affecting pastures and cattle 261-269).

Other

Apart from the use of local language, the interview partner mentions other motivations for listeners to adapt the broadcast information. The new county government, through new

policies and the radio stations, tries to motivate the Maasai to adopt farming methods. Maasai have strongly preserved their traditional culture, which often impedes the introduction of new methods. This is now changing, as Maasai are becoming more eager to adapt new farming and livestock practices for their own benefit (247-253). Agriculture is being introduced as a way of achieving food security. Recent events like a prolonged drought have motivated Maasai to implement plant production as an additional source of food and income (261-269).

5.1.3. Interview 1.2.: Extension Officer

The following segment summarizes the interview with the extension officer and divides it into themes. The statements in this section reflect the opinion of the extension officer.

Description of Work

The extension officer explains that he used to teach farmers through groups. Now he is using the radio program for extension work, which also allows him to reach farmers he could not reach before (Interview 1.2., l. 7-17)¹⁰.

“The farmers I was not getting through groups, I am now getting them through radio. Because in terms of reaching every farmer, it’s not easy. But through a radio program, I have been able to get to many farmers compared to [...] the previous time before I was having a radio program (13-17)”

Radio highly increases the amount of reached farmers, because the number of extension officers is very low in relation to the geographical area they need to cover (193-200).

Description of radio listening groups:

Radio listening groups are seen as an “avenue for teaching farmers” (33). When the extension officer plans to visit a farming community, he announces his arrival to the listening group beforehand. The listening group then agrees to meet at the date of his visit. Listening groups are organized once a week, usually with different farmers. Farmers are often impressed by listening to other farmers on the radio and gain confidence by listening to their success stories (33- 47).

¹⁰ All quotes in this section refer to the line number in Interview 1.2, appendix page 102-108.

Knowledge Exchange and Interactivity:

The extension officer encourages knowledge exchange between farmers. This happens in person, when attending listening groups. The extension officer picks farmers who show certain expertise in a topic and encourages them to teach other farmers. Doing so builds up the confidence of the teaching farmer (52-62). In the opinion of the extension officers, farm radio also helps identifying skilled farmers (8).

Sources of Information

The extension officer mentioned the county farming calendar. This is the standard calendar used for farmer training programs (67-76). The extension officer also refers to his own expertise and work experience and that of colleagues specialized in different areas of agriculture as a source of information. There is an information exchange among extension officers which helps them to connect farmers with those officers that can provide specific information required by farmers (81-93). During this part of the interview, the interview partner describes various farming techniques in detail as they are taught to the farmers by the extension officers. These “pastoral field schools” rely on physical presence of the extension officer, practical demonstration is a training method (95-130). The extension officer also mentions scientific studies as source of information, however only as affirmation to a direct question and does not elaborate any further. The extension officer emphasizes practical demonstrations as training method, which do not require scientific studies for background information. There is also use and exchange of methods and technologies developed by farmers successfully (134-147).

Language:

The extension officer communicates with the farmers in Maa (151-153), which is also his own mother tongue and which he speaks fluently (204-207). Sometimes he explains topics in Swahili to farmers who do not speak Maa (156-162). The extension officer does not see translation of terminology as a problem because most techniques are shown through practical demonstrations. Again, teaching by doing is identified as a “key point” (167-172). Broadcasting in Maa makes farmers feel as “part of the program (178-179)”. Not only are they able to understand the content, but also feel capable of asking questions and some feel able to go on the air to teach other farmers (178-189) The farmers “are part of the team. They feel they are in that program.” (188-189).

Other

The interview partner has observed adoption of the methods taught on the radio through farmers (193-195). The extension officer also mentions the prolonged drought as an important reason why the Maasai are adopting plant farming methods (127- 130).

He also offers a closer description of the program: the agricultural program airs from eight to nine p.m. on Saturdays. Different extension officers go on air to talk about agricultural topics. Sometimes, programs are presented to the farmers on site. The response has been very positive. (21-28)

5.1.4. Focus Group Discussion 1: Radio Listening Group.

The focus group discussion took place in a village outside of Kajiado town. Five women were present. The farmers told us that the men had all gone to the market to sell cattle that day. During our visit, the extension officer held a listening session with the farmers and played a segment on clean milk production on the portable speaker. The extension officer was accompanied by a radio staff member, who then recorded questions and feedback from the farmers. KIMI staff was also present to ask questions to the farmers.

The session started with a prayer. Then, KIMI staff was introduced to the farmer group in Swahili. After the introduction, the extension officer played a 15-minute segment of a radio program on clean milk production on the portable speaker. After this part of the session, the radio operator approached the farmers with a field recorder and recorded their questions. The extension officer then directly answered the questions of the farmers and was recorded by the radio operator. These were the “questions from the ground” as the radio operator called them and would later be edited in cooperation with the extension officer at the studio and then broadcast. After this session, the group discussion began. The extension officer was the interpreter during the discussion. Most of the time, one farmer answered the questions and the others agreed. Questions related to their radio listening habits could not be asked because of the situation mentioned above: the farmers in this area do not listen to radio because the station cannot broadcast beyond the hills. The questions were adapted to fit the situation. The following themes summarize the results of the focus group discussion:

Reaction to new information:

The normal reaction of farmers to new information they consider interesting is to implement it (Focus Group Discussion 1, l.19-24)¹¹. Teaching is done in the groups, but implementation occurs on an individual level. Sometimes, implementation is initiated by a single farmer and then other farmers follow the example once they see success (32-37). This is contradicted by another farmer who says that implementation is more of a competition in which they as farmers wants to see who gets results first (43-44). They teach each other in groups on what they heard in the radio program. This is also done by farmers who had success applying the methods. Other information comes from agro dealers who do extension work (51-58).

Use of local language:

The farmers state that using Maa, they can get first-hand information, directly from the source. They do not need translation, they can listen and know what is being talked about. This even gives them the possibility to call the extension officer (64-68). The use of Maa also allows them to communicate with other farmers about the program and teach them without any translation (75-77, 98-102).

Preferred formats:

When asked about a preferred format for receiving information, farmers stated to prefer the practical demonstration (116-119). They would prefer to receive a demonstration after listening to the program, instead of listening to the program again (123-127).

5.1.5. Case Analysis 1

The interviews and field study in Kajiado showed that the local radio station faces technical and financial issues which affect the reach of the agricultural program. It is interesting to observe that while in theory, radio is praised for its affordability and great reach, this proves not always to be the case in practice, when topological features such as a hill can cut entire communities off radio reception. In spite of these technical issues radio staff shows a high motivation and creative approaches, such as providing farmers with radio content through visits of the extension officer with recorded programs.

Extension officers play a key role in selecting the topics for the agricultural program. Topic selection is based either on the farming calendar, emerging problems or demand by the

¹¹ All quotes in this section refer to the line number in Focus Group Discussion 1, appendix page 109-113.

farmers. They also either provide the information for the program or present it in person, depending on the format. Extension officers are referred to as experts and therefore take the expert role in the information network. The extension officers' expertise seems to be the main source of information and there is active exchange between extension officers of different specializations. However, successful farmers can also provide information on their farming methods. There also appears to be an exchange with NGOs, but no significant interaction with agricultural researchers. The extension officer expert status among the farmers is also seen as an important factor to validate the information broadcast by the radio.

Farmers can interact with the radio station through phone calls and SMS. They use these calls to ask questions and also may offer solutions to questions asked by other farmers. In this sense, the radio program also facilitates knowledge exchange between farmers. However, since the farmer group examined in this case did not have direct access to radio, their possibilities of interactivity are rather limited. Farmers can interact with the extension officer directly during visits. However, this does not seem to bear any of the advantages that farm radio promises, as the farmers are still dependent on the physical presence of the extension officer. Farmers also expressed a preference for hands-on demonstration and identified this as their preferred format, while radio staff mentions drama instead. These listening sessions are also used to record question and answer sessions of farmers with the extension officer, which are then integrated into the program. Farmers voices are therefore also present on the radio, however, there is no indication that farmers actively participate in the creation of the content apart from requesting topics or asking the extension officer questions.

The use of local acting groups to present agricultural drama formats on the radio seemed especially interesting. This is because it employs local actors that possess a cultural bond and popularity with the target audience and thus are a promising approach to increase the popularity of the agricultural program.

The use of Maa as a broadcasting language appears to benefit both the extension officer and the farmers, who both speak Maa as their mother tongue. While the extension officer states that the use of local language makes farmers feel included in the program, farmers emphasize they are content receiving first-hand information and not losing any details through

translation. This also provides them with a feeling of independence, as they can understand the information without any further help.

5.2. Case 2: Masarbit

5.11. General Observations and Setting

The original questions were modified for the second set of interviews. This was due to the fact that during the first interviews, the questions about topic selection designed for the radio staff were found to be more suitable for the extension officer. The questions for the farmers seemed to be difficult to understand, so the form of the questions was edited to be of a less abstract nature. The radio station in case 2 is located in the town of Masarbit. Unlike the Kajiado station, the station in Masarbit is set in a large building with various studios, conference rooms and offices. This is due to the funding by the catholic church. The reach of the station therefore is significantly wider and the programs are broadcast over the entire region of Masarbit county, even reaching parts of Samburu county in the south and regions of southern Ethiopia to the north. The agricultural program is broadcast in Borana, the language of the Borana people. This ethnic group is widespread in the area of Masarbit and southern Ethiopia. Among the main problems the Borana face are lack of water, a problem that is increasing due to climate change, conflicts with neighbouring groups and conflicts with protected wildlife, especially elephants, which can cause severe damage to crops. Topics broadcast by the agricultural program include weather forecasts, soil and water preservation, agro forestry, vegetable planting and pest and disease management.

5.1.2. Interview 2.1.: Radio Staff

The following segment summarizes the interview with the radio staff member and divides it into themes. The statements in this section were made by the interview partner and reflect his point of view.

Topics

The interview partner named examples of topics discussed during different shows, among them gender and food security (Interview 2.1., l.154-161) ¹², youth, empowerment and agriculture and the relation of human security and food security. This combination of topics shows the co-dependency of agricultural and social issues. For example, the radio presenter

¹² All quotes in this section refer to the line number in Interview 2.1., appendix page 114-127.

explains human security to be the basis for food security (169-173). “If there is no peace, definitely, farmers cannot get enough yield (170-171).” This is especially important since in Masarbit and the border regions with Ethiopia, conflict because of land is very common. (181-182)

Cooperation with Extension Officer

The interview partner explains his role as radio presenter of the agricultural program. He is on the air together with the extension officer and receives the incoming phone calls from farmers. He also selects phone calls by deciding which are relevant to the show and which ones are not (198-201). If the questions or comments of farmers are far off topic, the radio presenter acts as moderator and tells them so (205-210). The extension officer is described as the main link between radio station and farmers (37-38). Usually, he selects the topic of the program and informs the radio presenter one day in advance which topic is going to be discussed on the radio. These can be discussed with the extension officer. The radio presenter describes himself as the person with expertise on radio, but the extension officer is the one who visits the villages and knows the farmers and understands which problems and topics are important. If the radio presenter wants to change a topic for some reason, he discusses this with the extension officer first (148-156).

Sources of information

The extension officer is the main expert on the show (23-24). Other talk show guests with expertise on topics like livestock or climate change are other extension officers or other colleagues of the extension officer. Others work with organizations (33-40). Some of the experts that are invited to the station are consultants with scientific background. The interview partner also mentioned an agriculture student speaking about climate change on the radio (44-46). According to the interview partner, the selection of these experts depends on the benefit they can bring to the community when on air (214-216). Funding also seems to be a relevant factor in expert selection: in the case of the program on climate change, which was funded by Caritas, the expert was chosen by Caritas:

“You know, here now for the experts, for example that one of climate change, we got a funding from Caritas Masarbit, which is a catholic organization. So, Caritas Masarbit, it is upon them, to look for the expert.

And then we the radio, we only, we shall be only told "this is the expert, who will be coming for thirty days to your radio" (221-225)."

However, if the topic presented by the program is about agriculture, the extension officer must be involved (229-230).

Formats

The agricultural program mostly uses live talk shows (19). These are held with the extension officer and other experts (23-25). These mostly come from another field of expertise. The mentioned extension officer talks about agriculture, while other guests of the talk show talk about their specific area of expertise like livestock or climate change (28-29) as already mentioned in the theme "sources of information". As an example, the radio operator describes the case of a radio program on livestock sponsored by an external organization, where an expert of said organization appeared on air together with the extension officer (37-40). Another format used by the agricultural program are Agtips, which is a short information about a certain practice broadcast to the farmers (54-57). In some cases, when the extension officer is travelling and cannot attend the radio show, he sends recorded messages, or the radio operator pulls other recordings from the archive and plays them during the program (66-68). According to the radio presenter, farmers prefer live talk shows because they can interact with the extension officer directly through text messages or phone calls (72-77). The structure of the live talk show was described in more detail: the show takes the entire length of the program, one hour from eight p.m. to nine pm. The first 15 minutes are a recap of the topics that were discussed on the show before, so that the farmers remember. After the 15 minutes recap, the radio presenter asks the extension officers some of the questions that were asked on this topic during the week. During the next 15 minutes, this weeks' topic is discussed and the radio presenter asks the extension officer more questions. At the 30-minute mark, there is a two- minute break where agtips or a signature tune are played. The next 30 minutes are free for incoming calls and SMS from the farmers (82-96).

Knowledge Exchange and Interactivity

Farmers communicate with the radio station through phone calls and SMS (105). However, since many farmers in Masarbit are illiterate, the station mostly receives phone calls and few SMS (109-110). Farmers usually do not call the station outside of the program hour. They do call the radio presenter during the program, in which case he forwards the questions to the

extension officer (122-126). The extension officer receives many calls from farmers to his cell phone during the entire week. The questions of these phone calls are then integrated into the recap at the beginning of the show by the radio presenter (130-138). It is also the case that farmers answer other farmers' questions during the show. Some farmers show a more advanced level than others. These are actively congratulated by the extension officer. These farmers can call to help other farmers with their questions. The extension officer then can correct parts of the answer if necessary or confirm the answer of the farmer (235-243).

The interview partner mentions an example where a farmer called to describe an unknown fly he or she was having problems with. This fly would bite donkeys and cattle, causing their hair to fall out around the bite mark (295-300). The bite also caused bleeding in animals and humans. The radio presenter then asked for the location of the farmer making the call and asked for farmers who were facing similar problems. He then received around seven calls from different areas (304-309). Among those seven callers having the same problem, one was able to recall the appearance of the fly in 1982 or 1983. He was able to recall the Borana name of the fly, which is "Tite-Buko" (313-320). When the problem of Tite-Buko was then discussed again during the agricultural program, the extension officer mentioned a medicine against this type of fly, but could not remember the name. They then received a phone call from a herder who also worked together with a veterinary as a social worker. This herder was able to name the medicine called "Ektopod", which the extension officer then remembered and confirmed. This case illustrates an example where information that was unknown to radio presenter and extension officer could be exchanged between a herder and a farmer, the herder being familiar with livestock pests that the farmer could not identify (324-338).

Interactivity is partly limited by technical issues. Farmers living in southern Ethiopia receive the program and understand Borana but cannot call the station because they use a different mobile network (343-346). The radio station uses the Kenyan Safaricom network (356). Farmers using other mobile networks in Kenya can communicate with the station (360-362), but the interview partner says he has never received messages from Ethiopia (371-372).

Local Language

Borana, the language in which the program is broadcast, is the mother tongue of the radio presenter (247). He describes the feeling of presenting in his mother tongue as "fantastic", the language feels "closer" to him (255 - 257). Agricultural terms sometimes have to be

described in detail to farmers (263-264). The radio presenter always tries to present technical terms in a way that is understandable to the farmers (284-287). Borana is a language that strongly varies depending on the region, he describes Borana spoken in Kenya as “shallow” while the Oromo in Ethiopia speak the “deep” Borana (272-275), in which words are “weighty” (274) but all the farmers in the region are able to understand him (274-275).

5.2.3. Interview 2.2.: Extension Officer

The following segment summarizes the interview with the extension officer and divides it into themes. The statements in this section were all statements made by the interview partner and reflect his point of view.

Description of his work:

As the extension officer describes, the concept of using radio for agricultural extension is fairly new, based on the program concept and the local reach of FM stations. Before that, extension officers tried to reach farmers on foot and on motorbikes, which was not very successful due to the vastness of the land. Using a radio program has “given us a platform or an opportunity to reach as many farmers as possible (Interview 2.2., l.22-23)¹³”, in Masarbit and the surrounding regions. Technology has given extension officers the opportunity to reach further areas just by sitting behind a microphone. Farmers have cheap access to radio, own mobile phones and have the choice to listen to different radio stations and programs within their reach. The agricultural program initially started at another radio station and then moved to the current station, where they have better coverage and listenership (15-32).

Topic Selection

Topic selection is part of the extension officers work, it is oriented on the farming calendar. This type of selection is “automatic” and goes from one rainy season to the next (127-129). He later on also describes this factor as “timely” (366).

“This information is so systematic, that we go with the scissor. We don't talk of planting, when actually it is weeding. We go with a calendar, agricultural calendar. During planting we talk of plant preparation, during planting we talk of planting we talk of seed selection [...], this information has been

¹³ All quotes in this section refer to the line number in Interview 2.2., appendix page 128-146.

circulating now and it's like every individual farmer has at least this information (42- 46).”

A second criterium for topic selection are important changes of mainly external conditions, such as an emergence of diseases or changing market prices (127- 139). This can also lead to expanding the range of topics discussed. An example is the case where, in order to describe the urgent matter of the fall armyworm pest, the extension officer explained the stages of metamorphosis to the farmers in order for them to connect the appearance of the fall armyworm with that of the corresponding butterfly (471-486). Another criterium for selection is a combination of topics the extension officer finds important to be addressed, as further explained in the section “sources of information” (107-110). Topics can also be proposed by other extension officers:

“If an extension officer or agricultural officer from any field feels that, this information is important to be on the radio, then it can go either as agricultural, an agtip, we call it agricultural tip, it can go as news, because we gather also for news, it can be information that is need to be out there, in case of let's say emergency response in doubt of disease, just an outbreak of a disease, you don't have to wait for this program to go on as scheduled, we turn in, broadcast, give information, call expert, what our herders need to do or our farmers need to do (146-151).”

The radio program serves as follow up or complementary information to the normal extension work of the extension officers (46-47). The progress through the radio program is so good that it receives support from the departmental agricultural office and other organizations. The extension officer emphasises that one of the strengths of the program is its systematic nature and the fact that it is delivered by an extension officer or other expert (50-56) that has been “deemed fit for the program (55-56).” The extension officer also selects farmers that appear on the program (56-58, 62-66). This is further elaborated in the section “knowledge exchange and interactivity”.

Description of Radio Listening Groups

In the case of Masarbit, there seem to be no official organized farmer listening groups. The way how farmers use radio is variable.

“So, either farmers listening this program at their own places, or they come together and listen, they discuss, during their meetings, so I think the way the information is flowing is a bit systematic, farmers exactly know where to get this information and at what time of the week (47-50).”

This is one of the great advantages of radio according to the extension officer: the reach is wide, and farmers are free to choose where they want to listen to the program: out in the field or in their house. This is especially significant for farmers who cannot be reached by extension officers in person (240-244).

Knowledge exchange and interactivity:

During the interview the extension officer explained how ICTs allow for an increased interactivity.

“[T]he technology has easend also this opportunity, because people have got phones, people have got very cheap radios, and it's like almost 80 to 85% have access to radio. And a farmer or a herder can choose whichever station he can use. And people have gone a step further, that they want a radio, as consistent radio program (28-31).”

As already mentioned in the section describing the tasks of the extension officer, farmers are also selected by the extension officer to make an appearance on the agricultural program (56-58). This brings certain logistical difficulties. Since the program airs at night, from eight to nine, farmers must be willing to take this time and need to be provided with safe transport and food (62-66). The farmers picked for the program are so-called “lead farmers”, innovators who listened to the radio program and implemented the techniques advised by the extension officer successfully. By talking to them, the extension officer can see if the farmers talk in a comprehensive way. This are the main criteria for choosing a farmer that will appear on the radio program (70-75).

“[T]here is no politics in, in our work. We don't want to mix anything. So, the moment I see that you are fit to be on the radio, that you can give as much information as possible on food security, then you are on board. You are qualified (73-75).

There is one lead farmer for 99 farmers in the work area of the extension officer (81), usually per sublocation or ward, the smallest territorial unit of a county. The farmers there choose a

particular farmer as their chairperson. This farmer must show leadership and initiative (89-102). However, the opportunity of appearance on the radio is not limited to the lead farmer (82-85). “I can even pick any other farmer who is doing very well. It is one way of motivating them. So, the moment they appear here, they feel that it's a privilege. They are recognized (84-85).”

The extension officer measures the success of the radio program by two factors: the amount of consultation that is demanded from him during his fieldwork, which shows him that there is a lot of new development, and the number of incoming calls he receives. During the outbreak of a fall army worm plague, he received 112 calls from farmers in one week (240-248).

Sources of information

Mostly, the expert on air is the extension officer himself. In other cases, he invites other extension officers (100-102), or “[a]ny expert that is related to food security (106-107)”, which can also include lead farmers as was just shown. He considers extension officers to be the “prime source” of information of the agricultural radio program (144). As already mentioned by the radio presenter, one important task is not only to gather information related to food security but to combine it with other relevant topics like forestry, wildlife, nutrition and home management. Addressing these on the radio is supposed to make farmers aware of the relationships these topics have with food security, for example to settle conflicts with the wildlife conservation department (106-117)¹⁴. The extension officer has contacts to experts in a large variety of food security related topics and states that is very important to be able to react to emerging issues and bring the needed expert to the radio program as soon as possible (135-139).

Researchers are also sources of information, often indirectly through print media or other communication issued by a research institution. This information is then communicated to the farmers in the “simplest language possible” (157-163). However, the experience of having

¹⁴ This refers to the issue of elephants invading the fields of farmers in Masarbit. As a response and under the advice of the extension officer, they have started planting pepper, which is not eaten by elephants (Kilimo Media International, 2018b, p.1).

researchers on air was rather negative because of their demands (167), as the extension officer elaborates in an example: The extension officer wanted an expert from the Kenya Agricultural Research Institute to talk to farmers about a new cross-breed of poultry called Kari Kienyeji on the radio. However, the expert demanded 5000 KES (about 50 US\$) for one hour on air. The extension officer answered that all he could offer was a taxi to and from the station, so, in the end, he had to look up the information himself (171-183).

Breaking down the information for farmers is based on the extension officers work experience (199-200). Information should not be too technical. New information that is relevant for farmers is also often discussed with other extension officers to find the right way to communicate it (204-212). This editing of information is important, because purely technical information will lead to farmers listening but not necessarily comprehending the intended message. This starts by emphasizing the relevance that the information has for the farmers (217-224). If the information the extension officer is working with is too technical, he looks for the sources of this information. He searches for information in books and other print media and via internet research (228-236). This constant research of information has also improved the personal skills of the extension officer (315-316). During the radio show, the extension officer gives farmers the numbers of all other extension officers in the ward, which even lead to colleagues complaining that he brought them too much work due to the high number of incoming calls from farmers (252-261).

The extension officer describes the interactive part of the radio program: this is when the microphone is open to questions from farmers. He describes his listenership as very disciplined and going off topic is not allowed. The extension officer has prepared the topic and is ready to give instant answers to the farmer's questions. Emergencies are an exception, for example if a farmer asks about a rabies bite during a program on water conservation, the extension officer will address the problem by consulting with the corresponding expert (320-332).

Local language

Using Borana language offers a great advantage to the extension officer. From his experience, even communicating in Kiswahili results in farmers having problems with understanding information (222-224). Using the local language gives the extension officer the possibility of "creating a picture in the farmers mind" (411-412). Since radio lacks visual communication,

information describing visual elements such as an animal or an object must be as clear and as imaginable as possible. The extension officer is able to do this in Borana because it is also his mother language (391-414).

There are examples where official names clash with traditional names in Borana. This is illustrated by the example of a new pest known as the “fall armyworm”. Masarbit farmers falsely identify this as a well-known pest named “stalk borer” or “stem borer”. According to the extension officer, it has taken some effort to convince farmers that stalk borer is not identical with the fall armyworm and that information relating to the fall army worm, such as which pesticide to use, does not apply to stalk borer. If this is not understood, the extension officer relies on describing the new pest visually (422-432). The extension officer explains that Borana is a very descriptive language. This is why he uses the word “Bukata” to describe the fall armyworm (436-445), Bukata being the Borana word for “caterpillar” (449). This is enough information for the farmers, since other caterpillars are not found in maize (454-458). Answering to a specific question, the extension officer stated that he does not combine characteristics of unknown pests to create new words in Borana (464-465).

During feedback sessions, farmers congratulated him about presenting a program in Borana. The extension officer noticed their interest through the way they look for more information or invited him to their farm (491-495). The agricultural program has given them an alternative, since programs in Borana used to be mainly for entertainment. Attention has shifted towards the local, informative programs. Farmers feel as part of the program, as partners that have to contribute. This is shown by the fact that they charge their phones with money to call the program (499-510). A further advantage of Kiborana is that it is easy to learn and is also spoken by various farming communities in the area that have other mother tongues. This further increases the reach of the program (515-522). There is a disadvantage of understanding for farmers that do not speak Kiborana as their first language. There was an attempt to establish a program in Rendile language, another language spoken in the area, but not enough Rendile-speaking extension officers were found. Some Rendile-speaking extension officers refused to air a program in their mother tongue because they considered it to be embarrassing (527-541).

Other:

Although the radio program claims to be apolitical (73-74), political actors are strongly involved in the implementation of the radio program. While the current county agricultural minister is very positive towards using radio, others might not be. County ministers are appointed, not elected (266-274). Because of this, ministers are being transferred to other regions on a regular basis, there is a constant politically motivated reshuffling of positions, which makes long-term planning and reliance on political institutions difficult for farm radio, especially in terms of fund raising (278-282, 287-306).

The program has brought personal benefits to the extension officer. Apart from gaining more knowledge through his work and knowing more farmers (333-334), the extension officer has also gained a fair amount of respect through his appearance on the agricultural program. Appearing on the radio has helped him to be recognized locally as an expert on food security and has led to a cooperation with the Red Cross. Working on radio programs for the Red Cross has given the extension officer an additional income (342- 352), there are also various other radio stations and organizations like Caritas soliciting his work (356-362). However, the extension officer states that his main motivation for the appearance on various radio programs is passion and the “urge of giving information to farmer (350).”

5.2.4. Focus Group Discussion 2: Farming Group

The Borana farmers visited in Masarbit do not attend radio listening groups. As explained during the visit, most of them listen to radio in their homes and discuss the content later on. The focus group discussion therefore was not held with an actual radio listening group, but with a farming group where members listened to radio individually and were regularly visited by the extension officer. The most recent program that had been broadcast was on pest control. At the beginning of the visit, we attended a meeting where the farmer group displayed various crops that were grown by their village. The group consisted of about twenty farmers, both men and women and of various ages. The chairman of the group, who spoke English, held a presentation about their work. They were asked questions in Swahili and English by the extension officer and KIMI staff, with the extension officer and the chairman interpreting to Borana. Afterwards, the focus group discussion began. As in the previous case, only few farmers answered to the questions, with two of them answering most of the time and the chairman translating the answers. Since the program only works with one format,

questions about different perceptions of information depending on format could not be asked. In this case, an attempt was made to use more examples to make the questions more understandable. The following themes summarize the results of the focus group discussion:

Reaction to new Information

The decision to implement new information is made on an individual level and in groups. There is a demonstration farm where crops are grown cooperatively and a recent water pan has been dug in group work. At the same time, farmers work on their farms individually (Focus Group Discussion 2, l.18-22)¹⁵. When asked for an example when they did not implement a new technique, farmers stated that this was only because of the lack of work capacity (33-34). As an example, they explained that they could not dig as much water pans as recommended because they did not have enough workforce (40-42). Water access is the main challenge in the region, so the urge to have water pans is very strong (56-61). The farmers explained that they only learned through the radio that certain crops could also grow in their area. Instead of buying them from other communities as they used to, they now grow these plants themselves. They gain pride from this achievement and they want to pass this message on to other farmers (95-106).

When asked how they “pass the message” to other farmers, the farmers answered that they do this through the radio or through the extension officer, whom they refer to as “teacher” (112-115). This is faster than passing on the information personally. When the farmers gathered for a “chiefs meeting”, they could directly discuss the issue of water pans because other farmers had already been informed by the extension officer (121-124).

Use of local language

The attitude of the farmers towards a program in their mothers’ tongue is positive (140). For most of them, listening to a program in Borana is the only option because many farmers do not speak any other language (146-148). Information in other languages takes a long time to reach the farmers. Using local languages allows it to reach the right people at the right time (162-166).

Crops that are not originally from Masarbit sometimes have adapted names from English or Swahili, like “Spinachi” for Spinach (171-173, 183). When new pests appear, these sometimes

¹⁵ All quotes in this section refer to the line number in Focus Group Discussion 2., appendix page 147-155.

lack a name. The name can be crafted from the behaviour of the pest, for example the Borana word for “sucking” to describe a sucking aphid (209-212). Again, the case of the fall armyworm is mentioned, which was falsely identified as stalk borer by the farmers (216-219).

5.2.5. Case Analysis 2

In the case of Masarbit, extension officers again play a central role in the information system and link farmers to the radio program. Extension officers provide the information for the program, interact with the farmers through radio, cell phone and in person and select the topics based on the farming calendar, demand of the farmers and emerging issues. Although there are various extension officers that appear on the radio program depending on their area of expertise, the agricultural program in Masarbit seems to be centred around the figure of the interviewed extension officer, who through the program seems to have gained a certain “celebrity status” and also makes appearances on informative radio programs of other organizations. This is also reflected by the format of the agricultural program, which is mainly an interactive interview with the extension officer. The interview of the extension officer gave the impression of an expert who is very familiar with the logic of media and knows how to use his media presence to convey messages. This raises questions on the sustainability of the program, as it seems to be very centred on the presence and popularity of a single person. The role of the radio presenter seems to be mainly technical and as a moderator who monitors incoming calls and messages.

Other agricultural experts who are featured in the agricultural program are mainly extension officers of different specializations. There seems to be no significant contact to researchers or research institutions. Agricultural research does form a source of information of the program, however this information mostly reaches the program through the ministry of agriculture or through information material of research institutions and NGOs. The main source of information is the extension officers’ own expertise, work experience and personal research on topics that will be featured during the program. The extension officer also “translates” the information into a form that he sees as suited for the farmers. The interviews also described the necessity to communicate agricultural information in combination with other topics such as peace, gender and climate, that is to say, in the social contexts of the target audience. The extension officer holds a respected status among farmers and is referred to as “teacher”.

Interaction with farmers occurs through call-ins, SMS and field visits. The program draws benefits from its great reach, as it gives farmers the possibility to exchange similar problems experienced in different areas and to communicate solutions in some cases. The interaction from farmer to farmer over the radio also offers the advantage of drawing from a large pool of experience, as shown by the example of the “Tite-Buko” fly and the “Ektopod” medicine, in which case a herder could help out a farmer due to his specialized experience on animal pests. Farmers also have the possibility to share their experience on the radio, however, they have to be selected by the extension officer first. This is seen as an appreciation of their work and expertise. Farmers have also shown to gain pride and confidence through teaching other farmers about their success or being recognized by the extension officer as successful farmers.

The case also shows that radio is not used as only extension method but is combined with conventional agricultural extension practiced by the extension officer. Use of the agricultural program is seen as a support for on-site extension methods and as a way to reach farmers that are excluded from on-site visits due to lack of resources or accessibility.

Use of local language is received very positive by the farmers. It also is the only way for them to receive information through a medium, since many farmers only speak Borana. The case of the extension officer who did not want to establish a radio program in his mother tongue because he considered it to be embarrassing is a strong illustration of the problematic status of local languages described in section 2.2.3.

This case also illustrates the political issues that a farm radio program can face, as political backing of the program depends strongly on local ministers that can be exchanged very often and rapidly.

5.3. Case 3: Kitui

5.3.1. General Observations and Setting

The third radio station, visited in Kitui, is a commercial radio station and therefore has a different structure than those in Kajiado and Masarbit. The farm radio program is broadcast together with commercial breaks for local agro-dealers and the radio station has a marketing team that discusses placement and format of the programs. The agricultural program is aimed at the Kamba people that live in Kitui and therefore is broadcast in Kikamba language.

Topics broadcast during the agricultural program include clean milk production, record keeping, pest and disease control in pigeon peas, pasture seed harvesting and mango production.

5.3.2. Interview 3.1.: Radio Staff

The following segment summarizes the interview with the radio staff member and divides it into themes. The statements in this section were all statements made by the interview partner and reflect his point of view.

Topics:

The topics are chosen by the extension officer. Also, the extension officer decides which communities will be visited to do recordings (Interview 3.1., 1.57-59¹⁶).

Cooperation with Extension Officer

The role of the interview partner is that of a presenter who interviews the extension officer during the radio program (14-15). While the extension officer decides about the content, the radio presenter introduces the extension officer and his field of expertise and encourages listeners to ask questions (65-64). Another role of the interview partner is to record questions and remarks of farmers in the field, while accompanying the extension officer (23-26).

Sources of information

When asked about the types of experts that contribute to the show, the interview partner explained that experts mostly give advice on how to handle disease outbreaks (162-163). The experts mostly come from the office of agriculture or companies like Syngenta (167-169). If agricultural companies have products that control certain diseases, they might use air time to promote their products and explain how to use them (173-175). The radio program does not favour a company and is open to anyone (185). Contributors to the program are invited by the office of agriculture (189), which also employs the extension officer (193-194). The radio station works with various extension officers, the important aspect being the knowledge the officers can offer (203-204). Researchers may also be invited to the radio program, for example to discuss a topic with the extension officer and then reach a conclusion at the end of the program (208-211)

¹⁶ All quotes in this section refer to the line number in Interview 3.1., appendix page 156-164.

Formats

As formats, the interview partner identified drama and radio listening groups (75-76). In drama formats, two or three people discuss a problem. The interview partner mentions the example of raising poultry. While one drama actor or actress will talk about raising poultry, the second will declare this to be a waste of time and initiate a discussion. At the end of the drama, a third person will explain the financial benefits of raising poultry (80-87). The drama is usually written by the radio presenter (91,95). He also mostly speaks as character of a drama, assisted by other members of the radio staff (99-100), mostly other presenters. The drama is underlined by background sounds recorded during farm visits (108-111). The radio listening groups will be summarized in the section “knowledge exchange and interactivity”.

Knowledge Exchange and Interactivity

Interactivity with the radio station is made possible through physical visits of radio staff and through incoming calls and messages from farmers. Visiting the farming communities and recording questions that are later played during the radio program are a way of attending to farmers needs and questions (30-33). As for the facilitation of the radio listening groups, the radio program is recorded while it is broadcast. Then the extension officer brings the recording to the farm and plays it for the radio group. Some of the attending farmers may have missed the program while it was on air. After listening to the program together, farmers will ask questions and the extension officer will give answers (115-121). This description matches the observed radio listening session. As already mentioned, calling and sending SMS is the main way for the farmers to ask questions during the program. These are then answered by the extension officer (125-127). The questions asked by SMS are read by the radio presenter. He will also decide if this question is related to agriculture or the topic that is being discussed at the moment, which is a condition for the question to be heard (143-145). Farmers voices are broadcast mostly through recordings. The interview partner gives the example of a farmer that was recorded for three minutes and talked about her success raising poultry to encourage other farmers to do the same (150-154).

Local language

In the opinion of the interview partner, broadcasting in Kikamba benefits the local communities. It offers the opportunity to reach many people in the area and ensures that

they understand the topic (222-227). Also, on a personal level, the radio presenter enjoys broadcasting in Kikamba and knowing that he is well understood by the listeners (231-234).

Other

The goal of the radio presenter is to encourage people to practice agriculture and farming (9-10)

5.3.3. Interview 3.2.: Extension Officer

The following segment summarizes the interview with the extension officer and divides it into themes. The statements in this section were all statements made by the interview partner and reflect his point of view.

Description of his work

One of the tasks of the extension officer and his colleagues is to “mobilize” farmers to listen to the radio program (Interview 3.2., l.15)¹⁷. Extension officers also facilitate the radio listening groups to answer the questions of farmers. There are different extension officers available for this task, depending on the topic that is being discussed on the radio. The interview partner is specialized in livestock and therefore will speak about issues concerning livestock (24-26). He is known by many farmers personally and in some cases gives them his personal phone number to be available at all times (158-162).

Topic Selection

According to the interview partner, the topics for the program are selected by the county agricultural office. Topics also are adapted to the demand from farmers or if there is a certain pest or issue that needs to be addressed urgently. The interview partner describes this as “intervention” (37-42).

Description of radio listening groups

Farmers listen to the radio at their homes. The program airs from 8 to 9 p.m. on Fridays. They then meet on Tuesdays to discuss the topics they heard on the radio. During this meeting, they can ask the extension officer questions. Questions and answers are recorded by radio staff (15-20). The group can be visited by different extension officers depending on the topic (24-26).

¹⁷ All quotes in this section refer to the line number in Interview 3.2., appendix page 165-171.

Knowledge exchange and interactivity

Before implementing new practices, farmers usually consult with the extension officer to gather information about risks or details they did not understand. This mostly happens with complex innovations, but more comprehensive ones like following hygiene advice are implemented directly (52-56). Financial constraints are a main reason for not implementing new practices (61-62). The extension officer mentioned a silage making technique that requires special, expensive paper that must be acquired in places as far as Nairobi, thus leaving many farmers financially unable to implement the technique (66-69).

Farmers may call or send SMS during the program for more information. Some of the questions are answered directly during the program, in some cases the extension officer calls the farmers after the program to answer their questions (120-121). When asked if farmers also call the program to answer questions asked by other farmers the interview partner said:

“In studio, it is always us who normally answer the question. Because some of the questions are technical, like when you talk about livestock or diseases, they are very technical. Farmers are not able to reach up to the required level of answering (126-128).”

Sources of information

As sources of information, the extension officer refers to his own experience in the field, magazines, agriculture and livestock books and internet research (91-93). When asked about contacts to researchers, the interview partner confirms to sometimes contact researchers from the Kenya Agricultural & Livestock Research Organization (KALRO) and Katumani (an agricultural research centre under KALRO) (101-103). “We talk to them on new innovations. And updates. Because they continuously do research (107)”. The researchers sometimes speak on radio, for example to talk about new disease outbreaks (111-114).

Local language

Only in few cases do farmers not completely understand the content of the radio program (74-76). According to the interview partner “we normally use the simplest language, the simplest local language they [the farmers] are able to understand (81-82)”. English words are only used when there is no equivalent in Kikamba and are then explained during the program (81-86). The extension officer does not see any challenges in explaining technical terms in Kikamba. He mentions illiteracy among the listeners as a challenge, but this is not a problem

when listening to the radio program (132-135). Broadcasting in Kikamba has had a positive impact on the farmers (140), especially in terms of pasture conservation and fodder production (149-153). Farmers calling him to his cell phone have also stated that the program is helping them (158-162).

5.3.4. Focus Group Discussion 3: Radio Listening Group

While visiting the radio listening group, our visit coincidentally overlapped with a visit of a team from the FAO. The visit interrupted the ongoing radio listening session and led to a time limited interview and group discussion. As later explained by the extension officer, the farmers usually listen to the radio program at home. Then, they gather in groups the following week to listen to a recording of the program once again and discuss the content with the extension officer. During our visit, we could witness one of those listening group sessions. The farmers, a group of approximately eight women, sat together with the extension officer and the radio presenter to listen to a recording of the previous radio program. After the recording finished, the farmers started discussing under guidance of a group leader. The group leader took a moderating role and tried to encourage all present farmers to participate in the discussion. After the discussion, the extension officer started answering questions of the farmers. This dialogue was recorded by the radio presenter. The following focus group discussion lacked a formal character and could not be strictly divided in participants, moderator and interpreter, since many of the farmers also spoke Swahili and the group leader spoke English, which led to the discussion being a mix of English, Swahili and Kikamba, with farmers sometimes answering directly in English or Swahili. This added some confusion to the group discussion, since some questions were first translated, and others answered directly in English by the chairwoman. While the farmers listened to the recorded program, I noticed that many technical terms were in English and decided to adapt the first questions to this fact. The program aired that day should inform farmers on record keeping. The following themes summarize the results of the focus group discussion:

Reaction to new Information

When asked about what they had learned during the listening session, farmers stated that through the agricultural program they had learned how to hold different records on crops and livestock (Focus Group Discussion 3, l.10, 16)¹⁸. One farmer stated that she planned to

¹⁸ All quotes in this section refer to the line number in Focus Group Discussion 2., appendix page 172-177.

implement this new technique immediately for poultry but had to wait until harvesting to implement it for crops (23-24, 28). When needing more information on a certain topic, farmers contact the extension officer (36-37) or farmers in the region that have more experience (41-42). They also gather information from other radio programs (46) in Kikamba language (54). Farmers also tell other farmers that did not listen to the program about the content. One farmer describes this as helping the community (69-70). As an example, the farmer mentions to have talked to her neighbour (74) and to other farmers during field days (78-79).

Use of local language

Listening to programs in Kikamba enables farmers to better understand what they are taught (64, 132-134). There are many terms in English that are used during the program, but these are understood because they are always explained (94-97). Farmers appreciate listening to a program in their language (114-115). Especially elder members of the community only understand Kikamba and can understand all the information of the program. The chairwoman confirmed this by asking some elder members to explain the content of the program, which they could do (119-121). Another advantage is that information is understood faster (142). The radio program does not use any Kikamba words that are unknown to the farmers. The only unknown terms are in English (150).

5.3.5. Case Analysis 3

This case shows a commercial radio station in which the agricultural program is partly financed by commercials of local agro- dealers. These may also promote products as a response to disease outbreaks or other emerging issues.

The extension officer is the main link between radio program and farmers. Topic selection is said to be done by the agricultural office, which implies that it is also oriented on the farming calendar. Another selection factor are emerging problems such as pests. The program uses different formats such as agricultural tips, interviews and dramas. Drama seems to be still in development, as radio staff is searching for actors to play different roles on air. Visits to the community are integrated into the creation of the agricultural program through recording of question and answer sessions of farmers with the extension officer. These sessions are held similar to case 1. The extension officer provides a recording of the program and the farmers listen to it in a group. However, in this case the farmers are reached by the program, so they

usually have already listened to it beforehand and have prepared questions for the extension officer.

They may also interact with the extension officer through calls and SMS during interview formats. However, in the interview the extension officer stated that farmers are often not able to answer the questions of other farmers and that this is best done by the extension officers. Knowledge exchange among farmers occurs mostly in person, for example among neighbours or during field days. Farmers also inform other farmers who were not able to listen to the agricultural program. The interactivity through ICTs in this case seems to occur mostly between farmers and extension officer in form of farmers asking questions and the extension officer providing the answer.

The radio program may also feature other experts than extension officers, such as researchers or experts of commercial organizations, but this is not the norm. It is mostly the extension officer that provides information for the program through his own experience and research, which also includes contact to research institutions in order to keep up to date on developments in the agricultural research. Different extension officers are featured in the program, depending on their specialization and the topic that is being discussed.

The use of Kikamba as broadcasting language is appreciated by farmers and also by the radio presenter. Both feel a strong connection to the program through the use of their mother tongue. Although the farmers in this case seem to be mostly multilingual with the exception of older generations, they state that use of local language enables them to understand the information better and faster.

6. Cross-Case Analysis

Since all three projects were implemented through the support and training of Kilimo Media International, it is not surprising that they show several similarities in their structure. The basic design of each agricultural program is the same in all three cases: a regional radio station broadcasts a program with agricultural information once a week for the duration of one hour. Various extension officers participate in the agricultural program with varying intensity and mobilize farming communities to listen to the program. Farmers communicate with the extension officer through phone calls or SMS during the program, after the program

or when the extension officer visits the community. In addition to the agricultural program, on-site extension methods are still employed.

The differences across the cases are found mainly in details and the nature of the broadcasting stations. Case 1 shows the example of a very small community radio station that has limited reach and thus resorts to recording programs and playing them in the communities to reach farmers. The radio station in case 2 has solid funding and a broadcast radius across the country borders. In case 3, the radio station is commercial and generates income. Other general differences are the cultural backgrounds of the radio audience. While in case 1 and case 3, Maasai and Kamba rely strongly on livestock, the Borana of case 2 are farmers, but have to deal with a much greater problem of water shortage.

The agricultural extension services in all three cases are provided by the public sector. The selection of featured topics is done either by the county agricultural office or by the extension officer, who is a direct employee of the agricultural office. Extension officers mention the farming calendar as an important item of orientation for topic selection, other criteria are demand by farmers or emerging issues that need to be addressed quickly. The outbreak of a disease is an example mentioned in all three cases, in case 2, change of market prices is also used as an example. Farmers' demand and emerging issues are identified by the extension officer, who visits the farmers and makes inquiries. Interview partners in all cases also emphasized this as an important strength of farm radio: the ability to react quickly to issues that are affecting farmers. Case 2 also mentions the necessity to combine agricultural issues with social issues. This is especially important because of land conflicts in the Masarbit region.

In all three cases, extension officers were found to be the central figure of the information flow. Topic selection, contacting of external sources, presentation of the information and communication with the farmers all occur through the extension officers. They play an active role during the radio program, accompanied by a presenter who works as moderator and asks questions, while the extension officer answers them assuming the role of an expert of the topic. The role of the presenter was found to be mostly related to tasks such as moderation, handling of the radio equipment and recording on site. Radio staff handles and edits information when creating scripts for drama, often including the advice of the extension officer. According to radio staff in case 1, the status of the extension officer and his

employment by the county government gives the information credibility. In all three cases, the extension officer is the main link between farmers and radio station. The extension officer identifies communities that can be used as examples for other communities and that are visited together with radio staff to make recordings. The personal relationship of the extension officers with many farmers and the trust of farmers in his expertise is of great importance to the program. In case 2 and 3, extension officers mention giving their personal cell phone numbers to farmers to be available at all times. In all three cases extension officers emphasize that working with radio has greatly improved their reach and allows them to communicate with far more communities than if they had to visit them personally. However, these visits are still included in the extension officers work, for example to conduct radio listening groups. This is done additionally to extension through radio, for example to facilitate radio listening sessions and gather feedback from farmers on a personal level. Farmers in case 1 also stated to prefer observing practical demonstration than only listening to recorded information.

In all three cases, radio staff had experience in media practice and lacked expertise in agricultural matters. They all showed a strong interest in agricultural matters, but mainly relied on the expertise of the extension officer for the program content.

All three extension officers that were interviewed refer to their own experience and knowledge as main source of information and rely on their own expert network, which consists mostly of other extension officers, but can also include researchers and experts from other institutions. In case 2 and 3, extension officers mention doing own research by using books, internet and other media when preparing a topic for the radio. Case 3 is the only one in which experts from companies appear on the radio program promoting products as reaction to disease outbreak or other issues. This makes sense as case 3 is the only commercial radio station among the three.

When asked about the involvement of researchers in the program, the answers differed. In case 1, the extension officer admitted to also contact researchers but emphasized his own work experience and the importance of manual demonstration, scientific sources being secondary as information sources. In case 2, the involvement of experts with scientific background was mentioned. Furthermore, the extension officer mentioned working with material from research institutions, however the cooperation with researchers resulted in a

negative experience due to the researcher demanding payment. In case 3, the extension officer confirms to gather information from national research centres to maintain his information up to date. Overall, the involvement of researchers with the extension program seems to be limited. There was no mention of regular appearance on air or involvement in the creation of the program.

In case 2, lead farmers may also be considered as experts and provide information during the show and in all cases, success stories of farmers are used to motivate other farmers to adopt innovations. Farmers may share their own knowledge and experiences through radio, however this does not seem to occur on a systematic level.

Formats are very similar throughout the programs. All three cases identify agtips and interviews as important formats of the agricultural program. Agtips have the same structure in the three programs: A short, informative format addressing one practical issue, not taking longer than a few minutes and used as intermission between parts of the program. Interviews form part of the program in case 1. In case 2 and case 3, interviews seem to be the main format, the other formats serving as intermissions or extras during the agricultural program.

Case 1 and 3 also identify drama as a popular format among farmers, although the scale on which it is applied varies. Use of drama seems most developed in case 1, where the local culture of entertainment groups greatly benefits the program and gives agricultural drama the opportunity to employ popular local actors that are fluent in Maa. In case 3, drama is mostly performed by radio staff and acting groups are still being searched for. When designing formats or preparing information for broadcast, it is considered very important to present new information in a clear and simple language so that is understood by farmers and they are able to put it into practice.

Interactivity with the radio station is primarily given by farmers calling the radio station or sending SMS with questions and comments in all three cases. Another method of bringing farmers voices on air is through recordings in the field, done by radio staff and extension officers visiting farming communities. While case 1 and 3 rely more on recordings to present farmers voices, case 2 also mentioned actively bringing successful farmers to the radio station to speak to other farmers from the studio. Being selected for this task is also thought to increase the confidence and reward the farmers as role models. Case 1 shows that the confidence of farmers is boosted through teaching others. Farmers in case 2 and 3 also

mentioned talking to other farmers about new information during field days or meetings. Case 1 and 2 mentioned knowledge exchange among farmers through farmers using the phone calls to answer questions and share their experience. Interactivity is also given by the direct contact to the extension officer through visit or phone calls.

Farmers participate in the design of the radio program by asking for specific topics to be discussed or explained. If many farmers ask the extension officer about a certain topic, it is likely to be integrated in the program. However, there is no evidence of farmers actively participating in content creation of the radio program, as recorded questions are only aired if selected by radio staff or the extension officer. While all radio programs do recordings in the field and integrate them into their program, only radio staff in case 1 additionally shows interest in demonstrating to farmers how radio is made.

Interactivity may be limited by technical issues. In case 1, many farming communities are not able to listen to live radio. In case 2, different network providers in Ethiopia keep farmers across the border from calling. Illiteracy is an issue that limits interactivity through SMS.

The form of radio listening groups varies from case to case. Case 2 does not seem to use officially organized radio listening groups, farmers listen to the radio individually and later gather to discuss the content. In case 1, the radio listening group consists of various farmers gathering and listening to a recording together with the extension officer, who then answers their questions. In case 3, farmers listen to radio individually and then gather to listen to the recorded program once again later in the week while the extension officer is present. Questions are then asked and answered. The approach of radio listening groups in case 3 are relatively close to radio listening groups as described in the theory section. Farmers state that after hearing about new techniques on the radio, they immediately try to implement them. This happens on an individual level (case 1) or individually and in groups (case 2). To gather more information on a new topic, farmers rely on the extension officer. Only in case 3 farmers also mentioned contacting more experienced farmers and listening to other informative radio programs. In all cases, farmers pass on the information they heard to other farmers that were not able to listen to the program.

The use of local language is viewed positively by all interview partners. Radio staff has a positive attitude towards spreading knowledge using their mother tongue. An exception is interview partner 1, who is not a presenter and is not a fluent Maa speaker. The extension

officers which were interviewed all speak the local language as their mother tongue and see many benefits in using this language when communicating with the farmers. Information is not lost through translation and the information is far easier for farmers to understand. In the group discussions, farmers stated that information broadcast in their mother tongue is understood completely, much quicker and is also easier to reproduce. The use of local language also creates a feeling of inclusion among the farmer. They feel as part of the program, gain confidence and want to contribute to the program. While in case 3, many farmers spoke Swahili and even English besides their local language, in case 1 and especially case 2 many farmers spoke only the local language. A radio program in the local language was therefore their only possibility to be reached by new agricultural information other than through the extension officer visiting the community in person.

Statements about motivation were only gathered from case 1 and 2. While the main motivation in both cases is to “promote agriculture”, the particular context of Maasai culture must be considered in case 1. Kenyan government is trying to promote farming among Maasai people. Since they are traditionally herders, this faces many cultural obstacles. Agricultural radio programming is apparently proving successful in promoting agricultural practices. This is also due to recent droughts which have motivated Maasai to implement alternative methods.

In conclusion, the cases show mainly differences that are determined by their setting- that is to say, the environmental and cultural context, the language employed etc.- and show similarities in their organizational structure, which is not surprising given the fact that they are part of the same project. In the following section, it will be discussed what the overall findings of these case studies imply about nature of information flow through farm radio and their potential meaning for science communication studies.

7. Discussion and Conclusion

The cross-case analysis shows that all three cases are similar in their organizational structure, the involved actors and in the communication of knowledge. The information network that has been described by multiple interview partners can be depicted best by a simplified visualization.

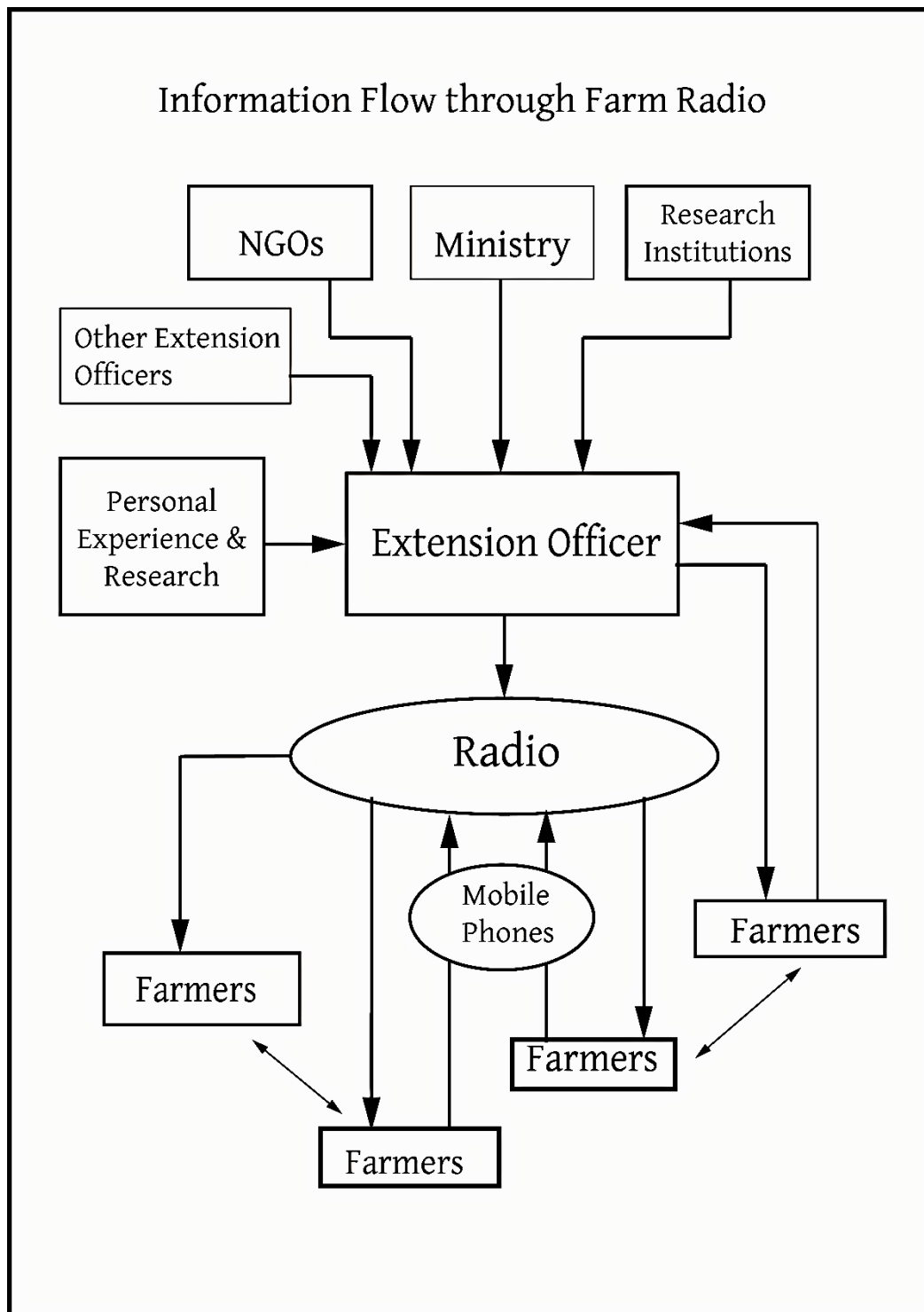


Figure 1: Visualisation of the information flow through farm radio.

This visualisation also provides an answer for Q1: *How is the information flow through agricultural radio programs in local languages structured?* Shortly summarized, local radio stations design an

agricultural format in cooperation with one or various extension officers, who identify the crucial topics to be tackled with the radio shows. During interview sessions, the extension officer elaborates on timely issues on the radio. Farmers listen to the program individually or in groups and ask questions or relate their own experiences by call-ins or SMS. They may also request topics that are relevant to them. In addition to the broadcast program, the extension officer also continues doing classical extension work and visits farming communities. The visualisation shows that extension officers, radio operators and farming communities are central actors of the information network, however several other governmental and non- governmental institutions are also involved in the information flow. The extension officer is at the centre of this network and channels the information received from all other parties.

The theoretical expectations and ideas behind farm radio were described in chapter two and can now be used to discuss the information network visualized in this section. Farm radio was designed to be an independent and interactive communication channel that provides farmers with cheap and timely information and use a two-way communication approach in which farmers' voices are heard. The results show that these expectations towards farm radio are met by the KIMI projects. It is the element of interactivity and two-way communication that needs to be discussed in detail.

Interactivity is a substantial part of farm radio in all three cases. Farmers can interact with the agricultural radio program through use of mobile phones or address the extension officer directly through calling his number or during farm visits. The latter is the only option in case 1 but has to be viewed as an exception. This is because this specific limitation is not caused by organizational reasons, but because of the technical issue that radio airwaves are not reaching the community. If anything, it can be considered an example for the flexibility of farm radio, since the radio program is made accessible to farmers despite the technical limitations.

Through call ins, farmers can also relate their own experiences and solutions to issues discussed on the program, or even be invited to participate in a program and be heard on a radio. The combination of radio, ICTs and local languages is the only combination that allows farmers to communicate on a larger scale than the personal level at all. This makes the use of local language the element of farm radio that, alongside mobile phones, is essential to enable

dialogue. It allows farmers to apply their full knowledge in the dialogue by using familiar terms or names of plants and pests. The use of local language is key to communicating knowledge under acknowledgement of local cultural and social contexts, which is a fundamental aspect of sustainable development in rural areas (FAO, 2011, p.12) and is highly appreciated by farmers.

Although this shows that farmers voices are definitely heard through radio, there are some limitations to the two-sidedness of this dialogue. The main limitation is found in the predominant and central role of the extension officer. The extension officer selects topics, provides and edits information and holds an expert status. The interaction with farmers during the program and field visits consists mainly of farmers asking questions and the extension officer answering. The extension officer also selects farmers who may talk about their experiences on the radio. This relationship shows many parallels to that of teacher and students, which is underlined by farmers often referring to the extension officer as “teacher” and extension officers referring to their activities as “teaching”.

This central position of the extension officer offers several advantages, as explained in the interviews. The extension officer has knowledge about farmers and their culture and can therefore help the radio station to develop a program that appeals to their target audience. In exchange, the radio station allows extension officers to significantly improve their reach and eases their work by reducing the need to travel to remote areas. This “symbiosis” is one of the declared goals of Kilimo Media International and according to the project reports is showing a positive effect in terms of adoption of farming methods (Kilimo Media International, 2017, p.2)

The central role of the extension officer offers many advantages but can also lead to problems of dependence. First, it has to be acknowledged that the extension officer is a governmental agent and therefore aims to implement the county agricultural extension agenda. Since the agricultural programs rely so strongly on the contribution of the extension officer, this also makes the content of the agricultural program dependant on local and national policies, which may be a problem in a political environment that is constantly changing as was described in the case of Masarbit.

Another dependence issue is that the agricultural radio program still strongly includes extension work which needs the physical presence of the extension officer in farming

communities to follow up on the agricultural program, monitor listening groups or gather information on timely issues. The interviews all showed communication systems which included physical travel and hands-on-demonstrations. This interferes with some of the advantages that are attributed to farm radio, especially its cost-effectiveness and wide reach. It also reveals that while radio offers many advantages, the lack of a visual component can be a problem when explaining applicable methods. The question is if farm radio can function as a truly independent extension channel that no longer requires other costly extension methods. It could be considered to establish monitoring programs through radio that are specifically designed to gather feedback from farmers and reduce the need for physical presence.

Despite being the target audience, farmers have limited influence on the content of the program. Their feedback is taken seriously and demand for certain topics does influence the topic selection but the case studies have shown no indication that farmers also participate in program and content creation.

This form of participation would also benefit one objective of KIMI, which is to create sustainable extension channels through agricultural radio programs that are able to function without the organizations financial support. The findings of this study indicate that not only financial sustainability, but also the sustainability of information sources should be considered. Radio staff could take a more active role in gathering agricultural information through journalistic research and diversify the sources that are used in the radio program. This would also mean that the program is less dependent from individual actors.

There was also no exchange between radio staff of different stations that could be observed during this study. Establishing a knowledge exchange platform for broadcasters acting in different parts of the country, possibly online, could not only provide further information sources, but also help the development of radio stations.

A factor that remains unclear is the extent of the involvement of external organizations. The interviews indicate that extension officers draw information from research institutions or non-governmental organizations and experts from these organizations may also be invited to participate during a radio session. The information from these organizations, channelled through the extension officer and radio, reaches the farmers. There was no indication that feedback or questions from farmers might reach these institutions through the radio,

although farmers' questions and solutions presented during the show might provide valuable information. This is an area in which farm radio could still develop and prove as a valuable feedback channel for agricultural science.

This leads to the discussion of **Q2**: "Are contemporary theories of science communication observable in the practice of farm radio?" As shown in the description of the information flow, the presence of scientists and scientific networks is not prominent. The interviews showed that researchers and research institutions are barely involved in the communication process. Extension officer might draw information from research institutions and scientists may be invited to an interview session on radio on a certain topic, but these cases are exceptions. The extension officer, who has received a formal academic education, is the main link to the scientific world, researchers or research institutions are only involved in the project through the extension officer. Interview partners have affirmed that the agricultural information aired on the program is scientifically backed and that scientific sources are used as validation. This indicates that although researchers do not usually participate in the program, there is much knowledge generated by agricultural sciences that is being broadcast by agricultural radio programs. KIMIs main objective is to improve food and financial security of farmers through the use of radio information, which is primarily done by communicating practical, applicable knowledge. This may be information about basic hygiene when milking a cow, how to control a certain weed or an update on market prices of vegetables. It is difficult to determine which part exactly of these knowledge "packages" are based on scientific findings.

Information that has been generated by scientific research is finding its way to farmers through the medium of radio and this opens the entire concept up to science communication studies. Two definitions of science communication were presented in the theory section. The definition set by Burns et al. (2003, p.183), which describes science communication as a method to generate "Awareness, Enjoyment, Interest, Opinion-forming, and Understanding" of science (The AEIO-response), is not very useful in the context of this study. In the case of farm radio, the communication of scientific information occurs in the form of applicable knowledge. There is no emphasis on declaring knowledge as scientific or non-scientific. The AEIO-response can indeed be observed towards radio and agricultural information, as farmers state to feel included and motivated to implement new methods. This response

however is not generated towards science itself, as the definition suggests. The definition of Schäfer (2015, p.13) is much more suited. As reminder: it defines science communication as all forms of communication that are focused on scientific knowledge or scientific work inside and outside of institutional science including its production, content, usage and effects. This would then also include farm radio, since it communicates scientific knowledge among other forms of information and operates outside of institutional science.

It is interesting to observe the similarities between discussions in science communication and agricultural extension per se. This can be observed when authors such as Leeuwis (2004) describe a shift from one-way dissemination of knowledge to two-way dialogue in agricultural extension, while in science communication, debates were held around the shift from the deficit model to other, dialogue-based approaches. The last decades of the 20th century brought up voices making the case to an inclusive approach to knowledge in both disciplines (Leeuwis, 2004; Wynne, 1992; Wynne, 1998). It is therefore not surprising that the similarities continue, with both agricultural extension and science communication experimenting with methods to involve target audiences into dialogues through the use of media. It has been shown that models of science communication such as the deficit model, the contextual approach, the lay expertise model or the public engagement model describe similar theories found in the top-down and bottom-up approaches of agricultural extension for rural development. The farm radio cases described in this thesis showed elements of all these models present in different aspects of the communication system. Literature of science communication implies that the deficit model cannot be considered contemporary (Scheufele, 2013; Schiele, 2008). However, disproved as it may be, the deficit approach is still found in science communication practice (Brossard & Lewenstein, 2010; Trench, 2008). This implies that it should be included when analysing farm radio practice.

Characteristics of the deficit model, such as top-down tendencies and the objective to convince the audience of innovations, are found in the linear dissemination of information through the extension officer. The extension officer, who in the farm radio communication system takes the role of an expert on a certain agricultural topic, addresses farmers, who in this case are the “public”- through a medium- the radio. As was already discussed, this resembles a teacher-student relationship and communication mainly consists of a question-answer scheme.

However, it is in this relationship that elements of the contextual approach can be found: the extension officer is part of the local culture and speaks the local language. The case studies confirm that KIMIs projects are based on integrating the social contexts of farmers into their strategy of knowledge communication, as is very clearly illustrated by case 2, where agricultural topics are always combined with social issues such as peace or gender equality, or case 1, where locally well-known acting groups communicate knowledge through drama.

Applying the lay expertise model to farm radio opens up a basic discussion on definitions. Farmers cannot be defined as “lay people” when it comes to agricultural extension or even agricultural science. The term “experience-based experts” by Colins & Evans (2002, p.238) appears to be more suitable. However, it can be argued that experience is not the only basis for farmer knowledge and that methods of knowledge production are used, since Leeuwis (2004, p. 234) describes that farmers practice their own experimentation methods. The experts, in this case the extension officers, are not scientists and in interviews mostly refer to their experience as source of knowledge. They have often received a formal education (GFRAS, 2018, p.1), which also excludes them from being seen as purely “experienced-based” experts. Concluding, the lay expertise model cannot be applied to agricultural extension because the audience consists of agricultural practitioners with specific expertise and the definitions are not applicable in this case. If we analyse farm radio under the aspect of how the *audiences’* knowledge is used, excluding the terms “lay” and “expert”, then this model is present, as farmers’ knowledge is integrated into the radio program by self- initiated call-ins that relate own experiences and successful farmers may appear on the radio to encourage other farmers, which in turn increases their self-esteem.

The public engagement or dialogue model is a key part of a participatory approach. Again, the definitions of this model are problematic when applied to farm radio. As described in the theory section, the public engagement model seeks to achieve the participation of society as a whole, and not of a single social group. In the case of farm radio, farmers are the only social group that is addressed. It should however be considered that the greater majority of the population in rural Kenya is at least part- time farming. This implies that by addressing farmers, farm radio programs reach a majority of rural society as audience. The case studies indeed show that audience engagement has an important presence in the project. Farmer interaction with the extension officer is encouraged through mobile phones and radio

listening groups and can influence the programs topic schedule through requests. The use of local language is an extremely important factor. It enables farmers to participate actively, it also helps them to participate under full use of their knowledge, without language difficulties that may diminish confidence or knowledge through lack of words. As already mentioned, the farmers that were interviewed recognize and highly appreciate this. However, as already mentioned above, the possibilities for interaction still maintains elements of the deficit model through the teacher-student relationship of farmers and extension officers.

It is interesting to note that this linear role of extension officers in the communication of agricultural science has also been noted by Carr & Wilkinson (2005):

“Extension officers had a powerful role under the linear diffusion model, because they interpreted the jargon of scientists into farmer language. Through their monopoly of this role they provided the only officially sanctioned link between scientists and farmers. Some scientists had direct connections with farmers, and some farmers sought information directly from scientists, but such bypassing of the extension officer link was not common. One could even argue that extension officers had an incentive to actively maintain the boundary between scientists and farmers (Carr & Wilkinson, 2005, p.258)”

This can still be observed in the communication through farm radio, although it gives actors from the non- governmental or economic sector the opportunity to use the same communication channels as the public sector and is thus weakening this monopoly. This study shows that there is still a need of balancing power in the communication through farm radio.

There are several limitations to this study that must be taken into consideration. The most obvious one is the language barrier. Group discussions have all been held with the help of an interpreter and sometimes in a mix of various languages. Since this work is of qualitative nature and depends more on the interpretation of answers and situations than on statistics and quantitative facts, not being able to analyse answers in the language they were given, represented a limitation to the available material. Mostly, the interpreters were extension officers or radio staff and therefore cannot be considered completely neutral participants in the conversation. This is another explanation why the approach with multiple interviews and

discussions was considered the most reasonable: it offered the possibility to observe the cases from different perspectives and find contradictions or similarities between these points of view.

As the research for this thesis progressed, it became clear that communication through farm radio is practiced in a context which is influenced by a large number of factors. These include local culture, national and regional politics, use of local language, agricultural issues, diffusion of innovations, indigenous knowledge, use of community media, issues of gender equality etc. A holistic approach to examine the entire context and meaning of farm radio would need to include interdisciplinary research with elements of media studies, political science, linguistics, agronomy, gender studies and communication studies and certainly exceeds the scope of a master thesis.

Especially issues of gender equality should be considered more strongly when analysing the interactivity of farm radio and could be a topic for future research. KIMI reports cases in which women were found to have little access to cell phones and therefore were not able to call the station (Kilimo Media International, 2017, p.8). On the other hand, the radio listening groups interviewed during the field visits were found to consist mostly of women. This indicates that it would have been important not to treat “farmers” as a homogeneous group, but also observe if the information flow is altered depending on the gender of the radio audience.

Science communication literature describes issues and developments that generally apply to the social contexts of an industrialized country with high educational standards and a stable access to most forms of electronic media. This proved as a challenge while analysing farm radio using science communication theory, because discussions about public understanding of science and medialization of research cannot be easily related to the realities of African smallholder farmers whose main concern is to be able to grow enough food to survive. This might be seen as an indicator that science communication has not focused enough on these realities and is mainly concerned with social issues that directly affect the public backing of science, that is to say, social groups that are economically relevant to science. This is the main point of Trench (2008) when he writes about the persistence of the deficit model: a dialogue with the public is still deficient in its core when the main objective by the initiators of this

dialogue is to generate acceptance of their agenda (Trench, 2008, p.131). This can also be said of dialogue-based approaches to agricultural extension.

In order to address new phenomena such as farm radio, science communication should broaden its scope into the areas of rural development. Not only does the communication of technical and scientific innovations play an important role in this area, but agricultural research itself could also benefit by developing models of participative research through combinations of radio and ICTs. The information network visualized at the beginning of this section showed that there is probably little information flow from farmers back to research institutions through radio, the farm radio in these cases does not promote a direct dialogue between farmers and researchers. However, this medium could be a valuable source of feedback and participation platform of farmers and provide researchers with first-hand information on farmers' needs and contextual knowledge that can be used as basis for further research. Picking up on Carr & Wilkinson (2005) call for boundary organizations, the observation of farm radio through this study indicates that radio could indeed be a platform that bridges the epistemic cultures of farmers and researchers and as a medium could facilitate conversations and further the equality between both epistemic cultures. This would however also require breaking up elements of linear communication still found within radio formats.

As already mentioned, the interviews did not give a clear insight into external sources of information and to what extent research findings are integrated into the agricultural information that is communicated. A possibility to gain insight into this matter through further research would be a content analysis of the actual broadcast or radio scripts to identify elements of scientific knowledge and then follow up with questions on the sources of these specific pieces of information. This however would also require knowledge of the local language to understand the program or read radio scripts.

Studies indicate that science communication practitioners tend to employ the communication approaches that they assume suits their objectives best, which results in a mix of deficit and dialogue methods (Brossard & Lewenstein, 2010). In conclusion, the cross-case study showed a similar result for farm radio: It shows aspects both of linear top-down communication and two-way bottom-up communication. Elements like the use of local language, feedback mechanisms and knowledge exchange between farmers are elements that

indicate a dialogue-based communication. The programs also acknowledge local culture and social contexts in their presentation of knowledge. On the other hand, channelling of information through a central figure of authority, communication consisting mostly of Q & A and the overall goal to achieve the implementation of predefined methods are elements found in classical one-way dissemination approaches. However, there has to be a distinction between theoretical, normative expectations of modern communication methods and their actual application in the field. If the objective is to improve farmers livelihood in the long-term, then the *results* should determine the aptness of the communication methods used, not their accordance to theoretical models. The approach of farm radio in Kenya shows success in adoption rates of farming methods (Kilimo Media International, 2017, p.2). The final question is if this improves farmers' livelihoods in the long term, without being in need of financial support from donor organizations and if an independent and participatory communication channel can be established.

In conclusion, the cross-case study of three farm radio projects in rural Kenya shows a communication network that involves various actors but is centred around extension officers. They fulfil key functions in selecting topics, identifying model farmers, presenting the agricultural information on air and interacting with farmers, mostly by answering questions. The radio station may be community driven or commercial, the deciding factor is its location in the region and that it produces content relevant to the local population. Radio staff assists in the technical facilitation of the radio program and contributes with their expertise on media formats. The general impression is that extension officers see radio as a tool that improves many difficulties of their work, reaching many farmers at the same time and with little financial and physical effort. Their relationship towards farmers can be compared to that of a teacher towards students, it is common that extension officers are referred to as experts. The extension officer is responsible for selecting and packaging agricultural information from his own experience and various sources. Thus, the information flow is channelled through the extension officer first and is then distributed by the agricultural radio program. Farmers can then give feedback or ask questions which reach the extension officer, radio operators and other farmers that are listening to the program. Farm radio therefore also is a medium that facilitates farmer-to- farmer communication that would otherwise not be possible due to geographical distance and lack of other media. Although the farm radio practice does not easily fit the definition of science communication as it is found

in literature and there is no direct interaction between institutional science and a public to be observed, there are many parallels and elements of science communication that can be identified. Since the agricultural information communicated through farm radio has scientific sources, it can be argued that scientific information is communicated to an audience, the farmers, through a medium, radio. This means that science communication is occurring, even if scientists are not directly involved. The information flow observed is a mix of linear and two-way science communication models. Therefore, farm radio is not found to be a purely one-way or two-way communication medium, but to employ a mix of these communication models. The use of local language can be described as a key to farmer participation and to a communication approach that considers the cultural context in which the communication takes place.

Farm radio offers great potential for a direct approach to science communication by connecting farmers and researchers. It is probable that this could create a communication platform for mutual benefit. As already shown by the agricultural radio programs in the case studies, farmers could be easily reached by agricultural information. On the other hand, researchers could profit from feedback and farmer knowledge. Designing such a platform for participatory research could be a task for science communication practitioners.

As already stated in section 4.5., farm radio is determined by a large number of contextual factors and is a research subject which can be considered by a variety of academic disciplines. Among those are media studies, political science, sustainable development, linguistics and gender studies to name some, which also means that farm radio is a very interesting topic for interdisciplinary approaches. So far, much of the research seems to be focussed on the impact that farm radio shows in terms of improved food and income security. While this is unarguably the prime objective, these additional academic perspectives should be taken into consideration to better understand the mechanisms that underly communication for rural development through local radio stations.

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Appendix

Transcripts Case1: Kajiado

Case 1, Interview 1.1.: Radio Staff, 08/06/2018

I (Interviewer) P1(Participant) Ext (External Participants)

I: So, you take this out to uhm, to show the farmers some show that you recorded before?

P1: Yes, yes. Yes, so this gadget here, every time we go for a field work, we always go with recorded programs. So that we play for the farmers that we are going to meet on the ground. Maybe we are talking about pasture production or we are talking about clean milk production and maybe some of them didn't get it on the last program or maybe they didn't tune in to get the program or the content of the last program. We always take for them on the ground. So, we use this gadget to record the program, uh, to play the program. Yes.

I: and you talked about milk and pasture production and what other topics or so do you broadcast in this program?

P1: Uhm, now, in this kind of program, it's very unique because the county government always avail what we call a program schedule of uh, like an annual program schedule, what they do on the ground, the kind of uhm trainings that they are conducting on the ground, so with the extension officer, it's easier for us to know what is happening on the ground or what the county government is discussing with the farmers, so the same topic we bring it on radio. When we bring it radio now, we understand that this the issue which is affecting people. Now, for the past few months that we've been doing the program, mostly it has been on pasture production and clean milk production because those are the issues that affect the farmers on the ground, especially after the long drought last year. Now, apart from pasture production and clean milk production, we're also coming up with prices of livestock, market prices for

28 livestock. For (???) in Kajiado County we have like, a popular markets, around five of them in
29 different sub counties. So, if there is a new price in the market, through the program we
30 mention to farmers that when you go to this market to buy a livestock or a cattle or whatever
31 you want to buy, this is the price on the ground. So, we give them such kind of information
32 prior to. Another kind of topic that we discussed was on pest control. You find farmers who
33 are doing agriculture, but they didn't know how to prepare soil and also how to control the
34 pest. So, with the extension officer, it's, it's, uhm, it's effective, because he will always respond
35 to the questions coming from the farmers on matters "pest control". So to speak.

36

37 I: So how exactly does this work, uhm, with the extension officer, how is your work linked?

38

39 P1: Now, the work of an extension officer first of all, he must be someone credible and
40 someone who is...who comes from the county government. Because the moment we want...
41 we work with someone from the county government it means we are giving credible
42 information to the farmers. We are not just giving information, but timely information,
43 credible information and real-time information. So (...) the work of extension officer is to
44 respond to the questions that the farmers are asking on the radio. So here in a setup of a
45 program we will have a presenter on one end and we have the extension officer who is also
46 doubling up as an expert on the other end. So, the presenter will do her or his normal duties
47 of asking questions. Then the extension officer who doubles up as the... uh... expert responds
48 the questions. Whenever there are calls from farmers on radio and they are asking the
49 extension officer questions, the extension officer will respond to them directly. So, you find
50 that the farmers will benefit because the kind of question they are asking, they are asking the
51 right person and getting the right answer. Okay? From the right person. So, with that. The
52 farmers are benefitting.

53

54 I: But at the same time, the extension officer will also go to the field and...

55

56 P1: Most of the time. Not also at this... uh... few times, but most of the time, because for the
57 extension officer also to be well informed or to get what is happening on the ground or what
58 is affecting the farmers he must be on the ground himself. Talk to the farmers. Ask them

59 questions. Bring them good news. Share with them, uhm, you know, the challenges that they
60 are facing, he can answer what he can answer and what he cannot, he can refer them to a
61 different expert. Yes.

62

63 I: So, he also...so the topics that you broadcast, the extension officer is the one who uh...

64

65 P1: Yes. When he comes up with a topic we always deliberate over it. As in why the topic? Is
66 it timely? How effective is it? Uhm... how is it affecting the farmers? Like Ipomoea Weed, you
67 have heard about Ipomoea Weed? It's a plant which is uh.. it's just growing anonymously
68 across the...you will see them, as we go, as we...as we pass around. When we talk about
69 Ipomoea Weed, the farmers will be like: how can we control Ipomoea Weed in our farms?
70 Then [the extension officer], who is the extension officer, will give them a practical way of
71 uprooting Ipomoea Weed. You know? So, of the work of the extension officer is very critical,
72 especially when giving a real time feedback. Yeah.

73

74 I: And the information that you broadcast, do you get it from the extension officer or other
75 sources?

76

77 P1: Also from the farmers. Also from the farmers. And also, we tend to work close with the
78 non-government organizations that are working close...which has interest. Or have in
79 invested in agriculture and livestock farming, you know? We...we tend to bring them on
80 board and we tend to ask them questions as in "what kind of experience have they faced on
81 the ground, uhm, what is ailing farmers on the ground, what are the challenges from their
82 own perspective. So, when we gather this information, by the time we are coming up with
83 the final decision of going on air, already we have known that this topic is what the farmers
84 want to hear on the ground. Ya. So, most information we get from the extension officer, most
85 of them we get from the research by asking the, the available NGOs that works close, that
86 invest in agriculture and livestock people.

87

88 I: And do you broadcast in different formats?

89

90 P1: Yeah yeah yeah, we have different formats of doing the program, we have the interview
91 format, we have the agtips, the agricultural tips format, we have the drama, the dramas' kit
92 format. Currently we have identified a new format or a new uh, version of doing it, we are
93 calling it "studio machinani". "Studio in the interior", or "studio in the grassroot". Whereby
94 here, we have a normal setup of a studio, with a presenter and an extension officer, but we
95 are now doing it on the ground. We have the farmers who doubles up as the audience, ok? So
96 instead of calling, just the way that we do the normal calling on radio, but this one they do it
97 practically on the ground. Asking the extension officer 1 on 1 questions.

98

99 I: While the program is being broadcast?

100

101 P1: Yes, on the ground, yes. On the ground. Which works very well them. So, with that, the
102 farmers also get the experience of how a normal session in a radio session happens. Yeah.
103 How a presenter presents a program, how an extension officers responds to programs, how
104 even them as the audience who are also the farmers, when they ask questions, how their
105 questions are being responded to.

106

107 (Ext: How effective is that method, compared to the studio and...)

108

109 P1: Uhm, this one is good because uhm, they get timely information and you address a
110 targeted audience. Because these are targeted groups that we go and visit them. So, if they
111 have certain challenge that is facing them, if some of them can't access the radio, this one is
112 effective because we are meeting them one on one. They are getting information instantly.
113 And it's something that they can have opportunity to interact with the presenter and the
114 extension officer on a, on a, on a different level. Yeah.

115

116 I: And how do you decide which format you choose for the information that you want to
117 broadcast?

118

119 P1: Good question. Uh, it depends on how we'd like to package the question, for instance, if
120 we are talking about Ipomoea Weed we have done an agritip. That Ipomoea Weed with the
121 flowers, you see them? Those are the Ipomoea Weed. So, you see, when they are there, it
122 affects the grass from growing, you know? So, you can see they are slashing some, some out
123 and not uprooting them. So, for instance, like Ipomoea Weed, we have done an ag... a dramas'
124 kit. About it. Simply because we didn't just want to inform them once and that's it. We wanted
125 an information that will be played over and over. So that it can linger in their minds. Ok? Uh,
126 another way of identifying how we come up with formats is, when we sit down with the
127 producers and uh, the team, you know? We always ask ourselves "how do we want the farmer
128 to... to... to get the concept, to understand the content?" If I was a farmer, so I put myself in
129 the farmers shoe, if I was a farmer, and I wanted to know the effects of Ipomoea Weed and
130 how to uproot them, how will it be, how will I...how will I...how would I like to get that
131 information. So, we tried to simplify the content and also channel of disseminating it, so it
132 can reach the farmer on a... on a simple and friendly way. Yeah.

133

134

135 I: And, following this example of the Ipomoea weed, do you know if uh, there were any studies
136 or other sources about the weed that your information is based on?

137

138 P1: Uhm... going with what I googled on Google, on what I asked professor Google about
139 Ipomoea weed, of course it's a, it's a wild wild plant, which affects uhm, crops and, you know?
140 It grows in a place where it's fertile, ok? But from what I understand, with what the extension
141 officer explained to us, uhm, Ipomoea weed is a plant that cannot be consumed, in a nutshell,
142 it's not useful. It has no value to the farmer. Yeah.

143

144 I: Yes, but I mean, in that case, where, where did you get your information on Ipomoea weed?

145

146 P1: From the farmers. Because for instance, when you are on the radio, you find out a farmer
147 will be like "I want to pose a question about something which is affecting my crops. And there

148 is this flower which is affecting” ... you know, they call it a flower because they didn’t know
149 its name or how to refer to it. So that is where [the extension officer], the extension officer,
150 comes in and tells the farmer: “no, it’s not a flower, we call it Ipomoea weed. And this is the
151 effect of Ipomoea weed”. So, some information we get from the farmers. Actually, they are
152 the ones who raise them, on the radio. So, by the time we are coming up with the next forum,
153 the next topic, already, we will have got that information from what the farmers raised on
154 the last program and what is the extension officer proposing for the next program. So, with
155 that, both side of information, now we have a constructive way of getting the next topic.

156

157 I: And the farmers, do they also give themselves tips about the weed?

158

159 P1: Within themselves? Yes, yes. The reason why we are reaching to them on the ground is
160 because we want them to be ambassadors for others. So that they can share the information
161 to other groups. That’s why you find out today we are going to this group, and next week we
162 go to a different group, another week we go to a different group from different areas. So that
163 at least we can take this information, you know, to the majority on the ground. Yes.

164

165 I: And they exchange their knowledge over radio?

166

167 P1: Yes, they do. Yes, they do. When they have a challenge or when they have suggestion or
168 when they have a solution, they always share. They will be like, you know, “in a modern
169 farming, this is the methods of doing farming and what have you...there is something called
170 organic farming”. So, you will find out, it’s themselves who will be talking about somethings,
171 maybe even me as a journalist, I didn’t know about. You know? But because the extension
172 officer is in the studio it makes things work out, because he is well aware of the kind of
173 questions the farmers are asking.

174

175 I: And how do they do that, on the radio, do they call in or do they...?

176

177 P1: Yes. They call in, with SMS, or when we go on the ground, just the way we say, I was
178 talking about, studio machinani, studio in the grassroot, whenever they raise those issues, we
179 always capture them, we always write them down. When the extension officer answer them,
180 we always also try to simplify the answers to them. So, whenever they have questions- this is
181 the last time we were here, the last time when we, we were communicating, we were here,
182 actually, [name of the community] so here there is a group called [name of the group], they
183 are doing more milk production, you know? And they are doing very well. They have done so
184 much in terms of uprooting Ipomoea from their farms. So uhm, as I was saying, the farmers
185 themselves, they have a way of communicating to each other, especially when they are, when
186 they have identified a certain threat or when they have a certain solution, they will always
187 be like “and by the way, there is this new method of doing this”, or, “by the way, there is this
188 new product in town for farmers”, so there is a way they always share the information. On
189 the ground and also sometimes on the radio. Yeah.

190

191 I: And about the language, (...) in what language do you get the information that you
192 broadcast?

193

194 P1: Because we have understood that most farmers and most pastoralists are the Maasais,
195 who double up as majority from where we come from. So, we find it easier to give...to
196 disseminate that information in their mother tongue. That is Maa language. And it's easier
197 for them to consume or to understand in their own language. So, the program is always in
198 Maasai. Yes.

199

200 I: Yes, but...do you also need to do translation of the information that you have to Maasai?

201

202 P1: Uhm, sometimes, when we have listeners who are calling and talking in Swahili, maybe
203 they wanted to understand something, the extension officer also doubles up as the
204 Interpreter, ok? If we are talking about Ipomoea weed and maybe there was a farmer who
205 wanted to know more about Ipomoea weed, but because the extension officer was talking in
206 Maa and he didn't understood, he will call in or he will send a text message asking a question
207 on matters Ipomoea weed. And maybe asking that that information can be translated or

208 disseminated in Swahili, so he can understand. So, yeah, it's a win win situation for farmers,
209 yeah.

210

211 I: So...and...is there any effect that you can see, that broadcasting in their language has on the
212 farmers?

213

214 P1: Pardon?

215

216 I: Uhm... so, what effect do you think does it have on the farmers to broadcast in their...

217

218 P1: ...in their language. It's easier for them to understand the content that we are trying to
219 send out there. It's easier for them also to respond to the content that they listen to. And also,
220 to give ideas. Because, when we broadcast in their language, it goes to their heart. It's
221 something that is familiar to them. So, they have no objection with it. But if we do it in a
222 different language, for them to understand it and also translate it or interpret it, then respond
223 to it, takes time. So, the easiest one is, just give them information in the language that will
224 suit them more. And that is the Maa. Yes.

225

226 I: So, do you have...have they told you anything like this in the time you work?

227

228 P1: Yeah, what, what I have heard from [the extension officer] and [a presenter], who is a
229 presenter, is they are appreciating the fact that we have considered to bring such kind of a
230 program on air and also the fact that we are bringing, that we are, we are packaging that
231 program in the local language, that suits them well. So, we've received appreciation from
232 different farmers. The only challenge is the terrain of the county, you can see they have hills
233 here, hills there, so it's challenging to...for this signal to...no? To reach to the better part of
234 the county. But some of them have been requesting as "when will you reach the furthest part
235 of Kajiado, like Namanga, Loitokitok", now, these parts of the county. So those we are telling
236 them: "as time goes by, we are working on something, but in the meantime, we have a website

237 whereby you can get this information. Or, we have a social media pages, where we always
238 share this information in case that you want to get more in-depth view, so to speak. Yeah.

239

240 I: And so, what do you do with the communities that you don't reach directly by radio?

241

242 P1: We do...that's why we introduced Studio Machinani. We normally travel. Like what we are
243 doing now. We travel, we go and meet a certain group. So, it's the extension officer who
244 identifies the groups that are vibrant and, you know? Functional on the ground. So, we will
245 like today, say: "oh, today, we are going to Kumpa to meet certain group", so when we go
246 there, we go there well prepared with the concept of the content that we are going to share
247 with them. Yeah. Uh... and also at the same time, we are just trying to encourage them to you
248 know, to adapt. The only problem with the community we are coming from is the culture.
249 They have preserved their culture in a way that adapting new methods is becoming a
250 challenge. But I (???) with the new county government and the new policies that have been
251 put in place, there are now shaping up. They have adjusted so to speak. So, you find out if
252 there is a new technology in agriculture, they'll adapt it. If there's a new technology in
253 livestock keeping and what have you...they'll adapt it. For their own benefit. Yeah.

254

255 I: Do you think that they are more eager to adapt it because of...

256

257 P1: The challenges...

258

259 I: ...because they hear the information in their own language?

260

261 P1: Uh... yes. One, it's because the information, uh, they have received the information in a
262 language they understand and also, because of the past challenges that they have gone
263 through. For instance, in last year we had like almost eight months of drought. And Kajiado
264 was affected and most the pastoralist communities, they were mostly effected. So, they find
265 out now, when we came up with the idea of introducing agriculture as an alternative towards

266 food security, they embraced it because they felt it. No, they went through their hard times
267 to understand that if we also embrace agriculture, during a tough times or drought, we will,
268 we will still have food on our table. So yes, they are adjusting. Not really fast, but little by
269 little. Yeah. Step by step. Yes.

270

271 I: Yeah well! (laughs) thank you very much...

272

273 P1: Karibu.

274

275 I: ...if I come up with more questions, I will tell you.

276

277 P1: ...Thank you so much. Thank you so much.

278

279 **Case 1, Interview 1.1. (Follow up): Radio Staff, 08/06/2018**

280

281 I: Follow up question...

282

283 P1: One follow up question, yes.

284

285 I: Uhm, because we were talking about formats before. And in your opinion, what formats do
286 the farmers prefer?

287

288 P1: Uhm, according to the last interview that we had, majority of farmers were proposing
289 that the best way to disseminate information is through drama. Or interviews. This makes it
290 easier for them also to participate. And also, to understand. Those are the two main ones.
291 Drama and interviews.

292

293 I: This is what the farmers told you?

294

295 P1: Yes, yes, the place where we went with [Kilimo Media Staff]. Majority were saying that
296 through dramas the information comes out lively and treats them well and also through
297 interview, interview gives them opportunity to engage with the guest or with the extension
298 officer. So here today we have had another format they prefer, is uh doing things practically.
299 If you are talking about uprooting Ipomoea weed, they prefer we come, we show them how,
300 yeah? If we are talking about pest control, we come with those anti pest diseases, anti pest...
301 what do you call them?

302

303 Ext: (Crop protection products)

304

305 P1: Yeah, pesticides. Coming with them, practically. Then we show them how to do it. So,
306 another format they are saying, is the practical aspect of it. Yeah.

307

308 I: Is there a format where you get the most calls?

309

310 P1: Pardon?

311

312 I: Is there a format where you get more calls?

313

314 P1: And SMS, yeah. Uhm, mostly when we are talking about an issue which is affecting
315 majority of farmers, like when we did a program on Ipomoea weed, the weed that you see,
316 because it is everywhere. So, when we discuss such kind of an issue, we'll find out people
317 calling from different areas, people also sending text messages from different areas. And even
318 other people giving some of the practical solutions that they've done from their areas of
319 jurisdiction.

320

321 Ext: (So that depends more on the topic than the format?)

322

323 P1: Yeah, yeah, the topic, what are we discussing.

324

325 Ext: (But if you went for drama, how easy would it be here, for example, to find enough actors
326 who could do the drama on the radio in Maa, Maa that sounds like local Maa. It has to be
327 credible, it can't be some who has lived in Nairobi for twenty years, so how easy would that
328 be to find people?

329

330 P1: Uh, one, in Kajiado of course we have entertainment groups, we have entertainment
331 groups that normally entertain people in different events. Uh, somehow we have managed
332 to identify some entertainment groups, whereby when we now want to do a drama in Maa,
333 what I do, I tell, my team and I develop a script in Swahili, then we give the extension officer
334 to translate it in Maasai, then after he has translated in Maasai, that is where we now identify
335 characters within the entertainment groups. The entertainment groups, they are vibrant and
336 effective because they are familiar. People are familiar with them. Those who've heard them,
337 those who have seen them. We tend to use familiar voices so that people don't think that "is
338 it strange or is it that something that we are just listening to", but when they hear it from
339 someone they are familiar to their voice, they will take with value, so to speak. Yeah. So, when
340 we want to do a drama, first we identify the characters from entertainment group within
341 Kajiado.

342

343 Ext: (Right, ok.)

344

345 P1: With that, the information will trickle down in a clear way. Yes. (...). And dramas mostly
346 work when we are trying to create certain awareness. Maybe if there's an outbreak
347 of...disease outbreak or maybe there's something that is very crucial, that they want to, they
348 should know. Or maybe something that the county government is trying to introduce to the
349 farmers. That is where we tend to use agricultural tips or where we tend to use dramas.

350

351 Ext: (And in drama, how important is humour? Or does it, does it have to be very serious?
352 Because you are talking about disease...)

353

354 P1: No, no, no, no. It must have some humour in it. Because with drama, you can be talking
355 about serious issue, but the way you are breaking it down or the way you have packaged it,
356 you let people, you make people even laugh, even when it's a serious issue. And that laughing
357 also become more of soothing the pain or helping them to understand deeper. Because you
358 are talking in a language that they understand. Yeah.

359

360 I: How long can these dramas be?

361

362 P1: Five to ten minutes...or maybe if it is something which is a serious issue, we can give it
363 fifteen minutes. Eight minutes, no seven minutes, seven minutes and one more, one minute
364 of little bit of advertisement or mentions. Yeah.

365

366 I: Is that the, the amount of attention that you can get for a piece?

367

368 P1: Yeah, yes, for a certain drama. You know, the beauty of drama, the shorter, the better.
369 The shorter with full details. You give them information in details. But in a simplified way.
370 With humour. Something short and precise that they will remember. You know, somehow,
371 in Kenya, we have another disease called "forgetting things". Yeah? We tend to forget a lot. I
372 don't know what kind of products we are consuming to make us forget a lot, but we tend
373 to...(laughs) we tend to use a simpler way of doing dramas that will make someone remember
374 or, you know, will trigger something, will light a bulb in their minds so to speak.

375

376 Ext: (and how long is your total program?)

377

378 P1: One hour, sixty minutes.

379

380 Ext: (Right, so about a quarter of that is drama? If you have a serious topic.)

381

382 P1: Yes, yes. Like now, I was talking to [extension officer] and he's telling me we should do a
383 drama on quality milk production. So here we can have "informed farmer" and "uninformed"
384 farmer on matters of milk production. So, we can create a scenario where they are arguing:
385 "No, I', the expert on this." And the other one is saying: "no, I'm the expert on this." So, as
386 that one goes as they debate, as they debate, then [extension officer] comes in as expert.
387 "Ohhh, listen guys. Both of you might be right or wrong. But this is the right way to do it. You
388 know? So, we are thinking of how can we do the milk, uhm, a drama on milk production.
389 Shorter, precise and on point.

390

391 I: So, are the things that work best in drama, like familiar issues or modern themes...

392

393 P1: Yeah. Because, for now, when we were on the ground, the chair lady was requesting us to
394 next time when we come, we train them on pasture harvesting. Now that we've, we've heard
395 from them we'll take that to consideration. So, the next time we are coming to train them on
396 pasture production we can either choose to do an interview format or drama format on that
397 issue. Something that will grab their attention, because at the end of the day, is ensuring that
398 the information reaches them on time.

399

400 I: and when you say that you, uhm, that you simplify the information to put it into drama,
401 how do you decide what to cut away and what to use?

402

403 P1: Yeah. That is when now what we call professionalism comes on board. When we are with
404 [extension officer], we always record, like what you saw me doing, recording their voices.
405 Then, as we listen to their voices, their recorded voices, [the extension officer] will be taking
406 notes. And the presenter also will be taking notes. On the most important things that they
407 mentioned. And also, the challenges that is really affecting them. So, we'll take what we call
408 "priority" out of what they've mentioned. Get the priority out of it, then we make content

409 out of what is really, really affecting them. Yeah. So, when we are coming up with what to
410 add and what to remove, it's up to [extension officer] and [presenter] to sit together and
411 translate what has been said in Swahili, so that we can also understand, so that we also give
412 our views. Yeah.

413

414 I: Okay...Yes. Thank you!

415

416 P1: That's ok?

417

418 I: (laughs) yes!

419

1 **Case 1, Interview 1.2.: Extension Officer, 08/06/2018**

2 **I (Interviewer) P2(Participant) Ext (External Participants)**

3

4 I: Ok. Uhm. Yes, so, can you tell me about your work with farm radio and listening groups,
5 how your work is?

6

7 P2: Uh well, my work is related to this farm radio with the farmers, ok. We have been teaching
8 farmers through groups, uh intelligent farmers are also coming up very clearly through
9 radios, because as an extension officer, ok, we started my work of teaching farmers. Through
10 groups. And for those farmers who are not having groups, they have been listening to my
11 program [name of the program]. So, for those who are not having groups, they are well kept
12 in forms of reaching them at home and they ask questions basing on the program, so I am
13 getting them, through the radio. The farmers I was not getting through groups, I am now
14 getting them through radio. Because in terms of reaching every farmer, it's not easy. But
15 through a radio program, I have been able to get to many farmers compared to...those farmers
16 have been moving, uh, in terms of groups and teaching them. So, I have been able to reach
17 more farmers, compared to the previous time before I was having a radio program.

18

19 I: Ok. Uh, and these radio listening groups, how is the procedure, how do they work?

20

21 P2: Uh, usually, we have a common program on Saturdays in the evening from eight to nine
22 p.m. and we have been having farmers teaching other farmers, we have been having an
23 extension officer, different extension officers coming to program and teaching the farmers
24 through the same program [name of the program]. Uh, sometimes also we were able to take
25 the program to the farmers on the ground and they have been responding very well and most
26 of them are adopting. At once, we started with the pasture production and many farmers now
27 are coming up with that initiative of on serving pasture in terms of medicating the trot (???).
28 So, farmers are coming up and listening to the program very well. Yes

29

30 I: But, for example, I have never seen a radio listening group, so I don't know how it works,
31 how it starts, how it ends, could you describe that a little bit?

32

33 P2: Ok. For a radio listening groups, we see it as an avenue for teaching farmers, we can take
34 a farmer from a different ward or from a different group to go and teach other farmers. So as
35 a program or listening group, usually start with coordinating group, mentioning to them that
36 we are coming next week or coming to their venue. We have various different venues for
37 teaching them. So usually we sensitize them and tell them that we are coming next week for
38 certain program. And they wait for us upon arrival at that place, ok. Farmers sometimes are
39 very anticipating concerning listening to radio, ok, listening also their voices to radio or
40 sending their counterparts teaching through a radio (???). So, radio listening groups, usually
41 we do it once a week for a different group every week. And we saw it as an avenue for teaching
42 farmers as well. Because maybe last week, we taught farmers on pasture production and
43 grazing management on a different ward. Ok and previously, before last week I mean, we took
44 this radio program to certain group and they were very impressed to listen to other farmers
45 they know teaching them. So, I saw it as a way, farmers are... and in terms of confidence,
46 farmers sometimes get some confidence when they listen from other successful farmers. So
47 that is part of our listening group.

48

49 I: And so how do farmers, when farmers hear some information they are interested in, what
50 is their reaction, how, what do they do with this information?

51

52 P2: Exactly for that one we have been having farmers, ok, in terms of that listening group, a
53 farmer might be asking a question and maybe from the same same group, certain farmers
54 know how to answer that same question. So, we encourage sometimes participation to
55 different farmers. Like for instance last week we were doing milk production. And we were
56 teaching them on how to...to...to milk a cow, squeezing compared to pulling the udder of that
57 animal. So, I was having a farmer describing to other farmers "this is how it is done". So, I
58 usually encourage participation from the farmers, proactive farmers, so, farmers teach other
59 farmers. And successful farmers teach those other farmers. So, once I see a farmer answering
60 other farmers I also encourage them "ok, now you also have to listen from this other farmer."

61 We can be going to that farmer, he sees, he describes to us what is being, what he has been
62 doing. So, I saw it, farmers getting some confidence in teaching other farmers. So.

63

64 I: And apart from this knowledge that comes from farmers, what other sources do you have
65 for the information that you broadcast on the radio?

66

67 P2: On the radio; usually I have a program depending on the calendar, county calendar
68 program, so what the county is teaching farmers and we go and teach them as well in the
69 program. So usually we use that calendar, we use that normal calendar we have for teaching
70 farmers. Maybe we have five sub counties, Kajiado Central, West, and the other ones. So, the
71 program we are using is teaching farmers on Kajiado Central and teaching also from the other
72 few sub counties. So, we have that program, we have that calendar to follow up with them
73 and at the same time we see the needs from the farmers. Whenever I hear a need for farmer
74 maybe there is a program they like to be taught, they like to listen. I prepare program for
75 them, I go and teach them. So, uh, we started that program very well and farmers are very
76 much concerned about, very happy indeed.

77

78 I: Okay, but, but when for example, you are talking about this weed or about other issues of
79 agriculture, uhm, where, where do you gather the information, where...

80

81 P2: Okay, okay, in terms of gathering this information, being an extension officer, ok, at a
82 point, we started first to give an example in pasture production. We told them we are coming
83 as county government extension officers to teach them, okay, maybe, my line of profession,
84 maybe I am conversant with a kind, certain line, in terms of maybe production, pasture
85 conservation, so, at one point we came as a group extension officers, in the county we have
86 those who are specialized in range management, we have those who are specialized in dairy
87 technology, we have veterinary officers so maybe if there's a certain program or maybe
88 there's a certain challenge farmers are facing on the ground, and maybe I am expert in that
89 ground, I can teach them. So, if they (???) kind of program maybe challenge farmers in terms
90 of range, degradation (???) and management I have an expert there, within the same same
91 ministry. (???) we have those extension officers for crop production. So, in terms of getting

92 information I have been teaching farmers, to other experts also in the office, in the
93 departments, and in the sub counties. In terms of preparing the land at first, we started by
94 mentioning and sensitizing the need for having these groups. So, the first point was having
95 these groups. Because we can not teach an individual farmer maybe. So, we started by
96 forming groups, by forming those pastoral field schools. We sensitized farmers, we have this
97 program, basing on the lineage of need. So, at some point we started pasture. We started by
98 identifying part of land, by identifying that land. After identifying that land, we taught them
99 they need to fence that land. Either by using these shrubs, by use of live fence, by use of any
100 other material at least a kind of a differed grazing. After teaching them the need for that
101 differed grazing, uh, we came up now and teach them now anything that is not edible by an
102 animal, which is not grass, which is not...any shrub, any weed that is not edible by an animal.
103 They should uproot, they should clear from their pasture lands. And after paddocking some
104 of them have been able to clear the land, some of them have been able to weed those, uh,
105 inedible, some things which are not edible by this animal, and some of them now are
106 harvesting their grass. We also teaching them on harvesting methods, we are teaching them
107 as well in terms of grazing management. Initially farmers who were using open grazing
108 compared to now paddocking, some of them are just continuously grazing animals on a
109 pasture land. And you mind that...ok, an animal might not be understanding where to graze
110 as well, they can be (???). So, we have come with a program on teaching them how they can
111 be grazing their animals. And in terms of even stocking the number carrying capacity of that
112 land, and stocking (???) on that parcel of land. So, we have been able to teach some of them,
113 either through these groups, through this radio program, we have been able to reach. And
114 some of them now are coming up uh, with that pace. Some of them have already stocked their
115 animals, some of them have already harvested their grass. In terms of harvesting that grass,
116 we have those farmers who have not much in terms of capital, so we encourage them, they
117 can as well be doing them, we have manual balers, we have that methods, ok, like brush
118 cutters, they have small machines for cutting those grass, compared to the tractor. Because
119 some of them are expensive. So, I saw it and we have been teaching them. They, we have also
120 other ways of baling this grass, we can even dig a pit for them and we demonstrate manual.
121 So, farmers, at least every farmer can be able now to harvest grass and conserve. In terms of
122 storage, we have a hay-house for those who are able to have some maybe capital to start with
123 a small haybarn. For storing that grass. And at the same time, for those who are not able to,
124 to, construct a small hay-house or a hay barn, they can use manila papers for those, put it in
125 bags, small, or maybe kind of green house bags and prevent their grasses from maybe, from

126 rainfall and the rest. So, farmers are coming up. They are also adopting the methods we are
127 teaching them. Because for the last years, four years, they have been having a very prolonged
128 drought. Which also swept all their animals. So, at least for those this program now, we are
129 confident that farmers are doing at least, so that at least the problem they were having the
130 last five years, the last three years, will not find them again.

131

132 I: And so, these methods that you teach, are they sometimes based on scientific studies, or...

133

134 P2: Yes, they are based on scientific studies, some of them, we demonstrate to them
135 manually, like for instance uprooting that weed. It will not need any kind of chemical control
136 or maybe any other scientific way. We usually teach them manual approach by use of their
137 own hands, they can use jembes, at least some sharp objects, to uproot the weed. And we tell
138 them that before they flower, that at least they should uproot the weed. So, some of them I
139 not need any scientific study in terms of controlling. And in fact, in terms of controlling this
140 soil erosion, soil degradation, we, we, usually teach them by use of small crescent shape
141 like...uh...small holes, ok, we can call them, uhm, uh, soil control, control the soil erosion. It
142 does not need any scientific part of it. We usually teach them manual, ok, traditional ways
143 they can dig terraces, they can reach pits, crescent kind of pit, so at least there is minimal,
144 there is reduced run-off. So, depend on the kind of program we teaching them. Some of them
145 might not need any scientific kind of it. So, we usually use methods which we have seen
146 successful farmers also doing. And farmers are at least, they can understand by doing. So
147 usually we teach them. And the little they can adopt, we can, we be with them.

148

149 I: And in which language do you communicate with the farmers?

150

151 P2: Mh, being a Maa speaker person, I have very, this a cosmopolitan county, this a place
152 where any language can teach them. But the larger Maa group I usually teach them through
153 Maasai language.

154 I: So, it's also your mother tongue?

155

156 P2: This is my mother tongue, so I usually teach them through my mother tongue. And I
157 usually also get responses through that mother tongue. So, for those who might not be
158 listening to the program in terms of Maa, I have also been meeting them and I can teach
159 through Kiswahili, which is at least understandable by all, and when it is coming to those
160 interior places, people are not understanding the language, I usually speak Maasai. And
161 friendly, farmers will get it very right. Ok, in terms of language adaption, I saw it very
162 important in teaching them through my language. Yes.

163

164 I: And...do you see that there...are there sometimes problems or challenges translating certain
165 type of terms or...

166

167 P2: Ok, in terms of translating it has not been a major problem, because we teach farmers by
168 doing. So sometimes, anything we, we teach them through that language we also do that
169 practically. So, we are not able to use some other scientific terms which are not
170 understandable, or which are not translate, which can not be translated to this Maa language.
171 The moment I use any term, I usually practice on the ground. So, we have been doing manual
172 work directly, teaching them by doing. That is a key point.

173

174 I: Okay. And, how do you feel, what effect does the broadcasting in local language have on the
175 farmers? (...) How do you, do you see that they feel a certain way about listening to a program
176 in their own language?

177

178 P2: Ok, in terms of listening to their own language I saw them being part of the, being part of
179 the program. Once you teach them through that language, through their Maa, through their
180 own mother tongue language, I saw them very interesting with the language as well. Some of
181 them they will be able to answer questions, they will be able to, to even question some other
182 they have not understood. And interestingly some of them also will like to be heard in the
183 radio, teaching other farmers. So, is also a kind of a program for them they can be listening
184 and teaching other farmers. So, I saw it instead of using Kiswahili language, most of them will
185 not be able to be fluent in terms of speaking that language. So, I just proposed them they can
186 be using that language, Maa speaking, personally I can translate directly to Kiswahili, can

187 translate in terms of writing the report. So, in terms of teaching, I saw them being part of the
188 team. They, they feel, they are part of the team. They feel they are in that program. So that's
189 main point of it.

190

191 I: Ok. And you see any other advantages?

192

193 P2: In terms of advantages, teaching that language, I saw them coming up as well, and doing
194 what we have been teaching them through that radio, so it's an advantage even to them, as
195 well as reaching many farmers. You see now, compare, ok, you compare maybe the number
196 of extension officers to vast Maa land. It's not easy to get everybody on face to face, at least
197 teaching. But in terms of teaching them through that language, through that radio program,
198 I am getting very many farmers now. Instead of going to teach them in their own homesteads.
199 I'm now teaching them using the same same language in the radio, so I saw it it's an
200 advantage.

201

202 I: And uh, do see any challenges or problems with using the language?

203

204 P2: In terms of using Maa language I have no any problem. That one I'm very conversant in
205 it, I have no any problem basing on answering questions, basing on teaching them, basing on
206 inviting them as well to teach other farmers, so that one, I'm very fluent in it and I have no
207 any challenge in talking to them and teaching as well.

208

209 I: Ok. Yeah well, those were my questions. Thank you very much for this interview.

210

211 P2: Ok, ok.

1 **Case 1, Focus Group Discussion 1: Radio Listening Group, 08/06/2018**

2 **I (Interviewer) T(Interpreter) Ext (External Participants)**

3

4 I: Well, I am Fabian as I said, and I want you to ask you a few questions about how you listen
5 to the radio programs and what you do when you are interested in the information that you
6 hear on the radio.

7

8 (Interpreter speaks)

9

10 Ext: (I hope you are aware first, that these people are not reached by the station. That is why
11 they bring the programs, you know?

12

13 I: Yes, yes. So, uhm, when in the listening group you hear a piece of content that interests
14 you, what is what is what you do, to remember what you heard or to talk about what you just
15 heard?

16

17 (Interpreter speaks. Farmer1 answers.)

18

19 T: She says, what we usually do after this (???) listening to this program, we implement what
20 we have listened to on the program. Maybe like for the program we have listened to clean
21 milk production. Now for them to be in that program, they will go and implement that what
22 we have discussed through the radio. For instance, washing the udder of the udder of the
23 animal, cleaning their ok, handling equipment's very clean. So, it's kind of implementing
24 what they have listened to.

25

26 I: And how, how do you decide that you want to implement something that you heard on the
27 radio, do you discuss it first, or do you just do it, maybe, just describe what you do before you
28 do that.

29

30 (Interpreter speaks. Farmer 1 answers.)

31

32 T: She is saying, we are taught in a group like this one. Now, implementation is on an
33 individual level. Personally, maybe have been using a different kind of method. But individual
34 basis, I usually go and make it on myself. After seeing a success of it, maybe follow up from
35 the group. So, implementation they usually do it on an individual basis after getting
36 information with the same group. Maybe we have taught them now as a group. But coming
37 to implementing it, that is an individual person. Going and doing it myself.

38

39 I: So then do you sometimes wait until someone else has implemented to see how it works?

40

41 (Interpreter speaks. Farmer 1 answers. Farmer 2 answers.)

42

43 T: We compete. She is saying we usually compete. So, I am not waiting for a person to do it
44 fast. We compete who will start first.

45

46 I: Ok. And when you are interested in a certain topic, what do you do to gather more
47 information about it?

48

49 (Interpreter speaks. Farmer 1 answers.)

50

51 T: Okay, getting more information from maybe what she has listened to on the radio, she's
52 saying we usually have groups, we teach others, basing on what we have listened to. And
53 maybe we have a success in the farmer basing on the same line. So that a successful farmer
54 teaches them again. We have also other agro dealers who are doing extension work. So, they
55 can also bring information to them, basing on a certain topic. For instance, she is talking
56 about pasture production and, uh, diseases and milk. She's relating all of them and she's

57 talking of, without pasture, we have no milk. Without pasture, we have no animals. So, we get
58 from other extension people. Through other media. Yeah.

59

60 I: And, uh, how do you feel about listening to radio programs in your own language? In Maa?

61

62 (Interpreter speaks. Farmer 1 answers.)

63

64 I: Teaching them through Maa language, she is saying, I'll not need any other translation and
65 I'll get it from the source. So, I get first-hand information. So maybe she is saying I do not
66 need translation. I listen, and I know what the person is talking about. And for instance,
67 maybe even call, she knows what I'm talking about. She's very interested compared to other
68 translations.

69

70 Ext: (What about the others?)

71

72 (Interpreter speaks. Farmer 2 answers. Farmer 3 answers. Laughing. Interpreter speaks.
73 Farmer 2 answers.)

74

75 T: She's talking about, I like listening to Maa because I can respond without assistance from
76 any other person. I talk and teach other farmers directly without any translation. She is even
77 referring to you, she is saying, because you like English, because you understand it very,

78

79 Ext: (she also likes her Maa language)

80

81 T: Exactly, she also likes her Maa language. So that is what she was talking about. English.

82

83 I: So, so are there other situations where you need to translate first, or someone has to
84 translate for you, so that you get the farming information that you need?

85

86 T: Yes?

87

88 Ext: (Are there times where they had to be translated?)

89

90 I: Were there times...

91

92 (Interpreter speaks. Farmers discuss. Laughing).

93

94 Ext: (They say they want to continue talking to. Ask them more questions. (Laughing)).

95

96 I: (laughing.) But have you asked them the question? Did they answer something?

97

98 T: Yeah. Ok. They have answered that they were saying that they prefer teaching in Maa
99 because they are not liking, they do not have any translation. And teaching in those
100 terminologies for Maasai, for Maa language, it's very clear for them. They understand it. They
101 will not be having any other person to translate to them. They understand it from the first
102 one.

103

104 I: Ok. And uh, one last question, uh, from the radio formats that you hear, is there some kind
105 of format that you prefer, like drama or interviews, something?

106

107 Ext: ((To Interpreter) Don't give them examples, eh? Just ask them whether there's another
108 way they like it.)

109

110 (Interpreter speaks. Farmer 1 answers.)

111

112 Ext: (Tell the rest to participate also.)

113

114 (Interpreter speaks. Farmer 2 answers. Discussion. Laughing)

115

116 T: One thing she has mentioned, she has said, we like to be taught by, maybe, if it is control
117 of this weed, we do it practically. So, it is conserving that pasture, we do them practically. So
118 that one, I have taken it very positively from them, that we be teaching them as well by doing.
119 So, that is also a different view she is saying.

120

121 I: Ok. Uhm, But, she didn't say anything about the formats?

122

123 T: That is the kind of format. She's saying: we have been listening. Ok. Instead of listening
124 again, maybe twenty minutes program, we can be doing it practically. If it is clean milk
125 production, we demonstrate. If it is uprooting that Ipomoea we do it the same. That is also
126 teaching them. By doing. Instead of teaching them in another way, maybe we come with
127 jembes and we demonstrate on how we can uproot that Ipomoea.

128

129 Ext: (They are proposing instead of more theory, we do more practical. Yeah.)

130

131 I: Ok. Uh. Yes. I am ready then. Asante.

132

133 T: Ashe Olong.

134

135 I: Ashe Olong.

1 **Transcripts Case 2: Masarbit**

2

3 **Case 2, Interview 2.1.: Radio Staff, 11/06/2018**

4 **I (Interviewer) P3(Participant) Ext (External Participants)**

5

6 I: Okay, as I already mentioned to [extension officer], I am making a study on how the
7 information flow works between farmer, extension officer, radio and the sources. Uhm, so I
8 will be asking you a few questions and recording them, if that is ok.

9

10 P3: It's ok

11

12 I: Ok. Uhm, yes. Then, my first question would be: could you please describe the formats
13 which you broadcast here in the radio station?

14

15 P3: The formats for the agricultural program?

16

17 I: Yes, for the agricultural program.

18

19 P3: The formats we use for agriculture program is, uh, most of the time, we use live talk show.

20

21 I: Live talk show.

22

23 P3: Talk show. With the experts. And when we say expert, alongside [extension officer], we
24 also have other experts.

25

26 I: Uhm, for example, which kind of experts do you have?

27

28 P3: Experts in, uh, those who are, you know, [extension officer] is expert on the side of crops.
29 We also have experts on the side of livestock. Others on the issue of climate change.

30

31 I: So, these are also extension officers, or do they have other...

32

33 P3: Some are extension officers, others are friends, some are colleagues who work with
34 [extension officer] and others are just uh, they would work with organizations. There was a
35 time for like two months, together with [extension officer] I, here at [radio station] we had a
36 program. Livestock show program. Which run for one hour. Every Monday. And Friday. On
37 climate change. [Extension officer] has to be there, because [extension officer] is one the man
38 we depend on, when we are talking to our farmers, and then, the other person now, is the
39 person who is engaged by the organization which has now given us that, that work. You see?
40 That talk shows. Now that is kind of a program that is paid to the radio.

41

42 I: Are some of these experts on the air researchers?

43

44 P3: Some, yeah, they are consultants. They have consultancy. So, like the one I had for climate
45 change, he is a student of agriculture, he has master's in agriculture, currently working with
46 county government of Masarbit also.

47

48 I: Sorry, he was a student you said?

49

50 P3: Yeah, yeah, the university studied agriculture, and graduated with master's in agriculture.

51

52 I: Ah, ok, mhm. And what other formats do you use?

53

54 P3: Other formats that we use alongside live talk shows, we use formats like Agtips,
55 agriculture tips, which contains, you know, it is short, so...let' me close this (the door) Agtip
56 is the second format. It is a short format, with the information to the farmers. So, farmers get
57 the information through this short message of agtips, agriculture, agriculture tips. And then
58 the other format that you can still use, and most of the time when, in case [extension officer]
59 is so engaged, you know there are times where [extension officer] was been used by (???) to
60 go and facilitate at an educations scheme, which is 100+ kilometres from here, from this town,
61 so it can't be easy for him to appear on here. On Fridays. So, in such scenario, what I do is, he
62 sends me the recorded...

63

64 I: Mhm. Oh, he records?

65

66 P3: Yes. Or else, or again, I still can go back to my archive and get the recorded, the voices
67 have already occurred prior, in our talk show, which are relevant to the farmers. Which is
68 consultation. So, the format which we use is live talk show, agtips, recorded voices.

69

70 I: Mhm. And, is there one of these formats that the farmers prefer?

71

72 P3: Yeah. Yeah, they prefer. But they farm...they most...they prefer live talk shows to others.

73

74 I: They prefer live talk shows?

75

76 P3: Yes, because in this one, they can engage [extension officer] well. Especially on some of
77 the topics, they can engage him one on one. Using text messages, using phone calls.

78

79 I: So, can you describe the structure of these live talk shows, can they phone in at any time,
80 or is there a schedule?

81

82 P3: What we do, for live talk shows, live talk show only goes for only one hour, so eight p.m.
83 to nine p.m. So, for the first fifteen minutes, we do a recap of the program, of the topic that
84 we discussed before. This is, today is Friday, last Friday, a recap to just make them remember.
85 So, after making them remember, we get to this topic, what is today's topic now. That is the
86 part fifteen minutes, we make a recap, and then I also ask him some of the questions that we
87 were asked, and he answered and then, after this now, we go the second fifteen minutes now,
88 we go to today's topic, I pose some questions on him. That is now the first thirty minutes and
89 so, after thirty minutes, I give him break between, like for two minutes, and then play the
90 agtips, or we have the signature tune songs, which is known to all our listeners and farmers,
91 that even a listener who is not a farmer or who is not interested in farming, knows that when
92 this song is at in [radio station], always [extension officer] is in the studio. So now, after the
93 last thirty minutes now, I start giving, sorry, the first thirty minutes I have told you what I
94 do, then, between the last thirty minutes now I start to give them time to call us from outside.
95 They call him for the first fifteen minutes, uh, for the second fifteen minutes again, and then
96 SMS later on.

97

98 I: Ah, the SMS later on?

99

100 P3: Yes, later on. At the end. [Extension officer] responds. Before the last thirty minutes
101 collapse.

102

103 I: Mhm. Uhm, is there, so the farmers can communicate with you with phone calls and SMS?

104

105 P3: Yes. Yes.

106

107 I: Do they prefer one of those?

108

109 P3: Yeah. Anyone that they prefer, they can do. But in most of the cases also in Masarbit, the
110 farmers they are illiterate. So, we, we, get many calls, then SMS. SMS are few. Yes.

111

112 I: And, well, [Extension Officer] mentioned that the farmers can also call him outside of the
113 times of the radio show, do the farmers also communicate with you outside of the time of the
114 program?

115

116 P3: With me?

117

118 Ext: (maybe they call the station)

119

120 I: With the station, in general?

121

122 P3: With the station, they know for agriculture, agriculture talk show, or for the topic of
123 agriculture, they know it's only Friday. So, they don't call during the other programs. They
124 don't call. Ok, ME, they call me, during my program. In Kiborana, they call me. But in case
125 they have question, I take down, I put down those questions and make a follow up with
126 [extension officer] and then give back, give the feedback. So, they call...

127

128 Ext:(So, that's outside the program?)

129

130 P3: Outside the program, during the program, they call, they call me. But [extension officer]
131 as he said, he gets a lots of calls after the program and during the whole week. So that's why,
132 even, I always, before we start the program, before we start discussing the topic, I start asking
133 him, what do you have for us, concerning the past topics that we discussed, you know, they
134 are number of callers who...

135

136 Ext: (that's part of the recap.)

137

138 P3: Yes, the recap.

139

140 I: And, do you have influence on the content of the radio show?

141

142 P3: Yes.

143

144 I: Uhm, because, [extension officer] said that he brings the, the content of the show is very
145 dependent on the farming calendar and that he brings you the information that you
146 broadcast, but, do you also have the possibility to edit the information.

147

148 P3: Yeah, you know, for the content, he informs me a day before. A day earlier. If the program
149 is supposed to be on Friday, he calls me Thursday. So, by Thursday I have the topic. So, I look
150 at the topic. And there was a time, there some times, mostly not all the time, You know
151 [extension officer] is an extension officer who works with the locals, the communities, and
152 me, for sure, I know, on air, I may be perfect on air, than him, but down in the communities,
153 he understand the problems and topics which are favourable to the listeners or the farmers.
154 So, but, it happened for some few days or, you know, that we decided to exchange some topics
155 that, "this topic is supposed to be...is it ok if we discuss this" - with consultation then, we
156 bring in another one then. Like (???) said, on the issue of women and gender, typical of...

157

158 Ext: (Gender and food security.)

159

160 P3: ...and food security. And then other day I, I challenged him that we need to bring topic on
161 youth, empowerment and agriculture. So, with another topic which, which, uhm, which is a
162 kind of another topic encouraged you to give us calls. The felt that this the program that fits
163 them. Yeah. Not all them, but at the time, I look at the topic and then just tell them. That,
164 why you can bring a change is, or bringing a topic in between, like, on eleventh, like this
165 morning now, I had to change to recorded programs that we had with [extension officer].
166 One was human and food security, human security and food security, so that was a topic

167 which we discussed, you know, after we had discussed the issue of pasture and disease, so
168 farmers, they have now...they have now advised. What next? They are expecting to getting
169 the, the good products. The good yield out of the farm. So now, what do they need? The
170 human security is the most priority. And then food security is most priority. If there is no
171 peace, definitely, farmers cannot get enough yield from the...so that time, there was a lot of
172 tension on the side of (???), tension on the side of (???), so [extension officer] touched them,
173 you know, this, "oh, it's true..."

174

175 Ext: (So you talked about conflict within the community?)

176

177 P3: Yes, yes. We talked...

178

179 Ext: (What is the source of conflict?)

180

181 P3: The source of conflict, you know, the side of the (???) and the side of (???), it comes from
182 Ethiopia, so that also seems to be about land.

183

184 Ext: (Is it political? Oh, so it's land issue)

185

186 P3: It's land. Yes. So sometimes, topics like such we can bring in.

187

188 Ext: (So you talk about the importance of peace for there to be food security.)

189

190 I: And what is your role during the talk show, what do you do? (Pause) Well, the experts are
191 talking, and you? What do you do during the talk show? Are you on the air, that's the part I
192 don't...

193

194 P3: I'm on the air, yes

195

196 Ext: (the presenter. So, you ask the questions.)

197

198 P3: Yes. I'm the person who receives the phone. And then [Extension officer] will be here also
199 live, just with me, but I'm the person who receives the phones. And then there are some
200 questions which comes, irrelevant to what we discuss. No? It's me who knows how to deal
201 with.

202

203 Ext: (So you are the moderator.)

204

205 P3: Yeah. We don't need, you know? And then sometimes, so, this is a, so to say, this is a
206 county which we have a lot of primitive people, so they don't understand about using the
207 radio, so sometimes they only think about talking about politics, so, such kind of questions
208 they ask that is so much, it is even far from what we are discussing, so it is not [extension
209 officer], it is me who is supposed to, to tell them "no, your question is not right" and we go
210 (???) and bring it back.

211

212 I: And, uh, again about the experts, who decides which experts are invited to the show?

213

214 P3: The experts, these are the experts, the experts we invite to the show are the experts
215 which, when we bring them on air and discuss or talk with them, community benefits from
216 whatever they say.

217

218 I: But I mean, does the radio station decide who to invite, or does [extension officer] decide
219 who to invite?

220

221 P3: Err, it depends on the program that we get. You know, here now for the experts, for
222 example that one of climate change, we got a funding from Caritas Masarbit, which is a
223 catholic organization. So, Caritas Masarbit, it is upon them, to look for the expert. And then
224 we the radio, we only, we shall be only told "this is the expert, who will be coming for thirty
225 days to your radio."

226

227 Ext: (So, you offered [extension officer] also?)

228

229 P3: We offered [extension officer] another one. On our side, if the matter is agriculture, we
230 must involve [extension officer]. Yes.

231

232 I: And when farmers call, with their questions or comments, does it sometimes happen that
233 later another farmer calls to respond to something a farmer said?

234

235 P3: It happens, it happens. You know, there some farmers who are advandcer than the others.
236 Like now, for the (???), what we have been doing, we have been congratulating the farmers.
237 There are other farmers which [extension officer] mentioned their names, that they have
238 planted in their farm's different varieties of crops. You see...you know, others some have
239 planted in a large plantation, so they are in a position to answer questions, posed on
240 [extension officer]. So, they call, and they tell them "let me try to help you that question."
241 And then [extension officer], if there is a matter of rectification, he can rectify. Even how he
242 or she has answered was perfect, you just tell them "the question has already been answered
243 by that farmer" and they do that.

244

245 I: Uhm, okay. And is, Kiborana, is this your first language?

246

247 P3: Yeah. For me, it is my first language, is Borana

248

249 Ext: (It's his mother tongue)

250

251 P3: Yeah.

252

253 I: And how do you feel about having a program in your mother tongue?

254

255 P3: For me it's closer. I feel, I feel, so fantastic, eh? Talking Kiborana. But in a very rightful
256 way. For me, I feel good. I feel good conversing with the people, with the language, the
257 language which they understand, the language I understand, so, I feel good.

258

259 I: Mhm. Do you, uhm, think that it has changed? The way you speak the language, to host this
260 program?

261

262 P3: The way we speak the language it has not changed. In most of the cases. But you know, it
263 depends with it, sometimes. For agriculture, you know, words has its own ways to be
264 described and different terms has to be described in its own way. So, for me, as far as I know,
265 myself and just listeners here you know, they get some words from eh, what, you know, the
266 Kiborana we are talking cannot be compared to the Kiborana in Ethiopia. The Kiborana in
267 Kenya is just, you know, the shallow one. The deeper Kiborana, that is Oromo language, they
268 are Oromo.

269

270 Ext: (They are Oromo people)

271

272 P3: Yeah in fact Oromo people is a nine tribe, Borana included. So, they call it Oromo language
273 there, in Ethiopia. So, even when you go there you know, there are some words which are so
274 weighty, deep, and then it has weight more than we have in Kenya. So, but, I feel okay.
275 Completing in our language to the farmers. And they understand me. They get me right.

276

277 I: Are there sometimes difficulties with certain terms? Are there sometimes problems with
278 communicating certain terms? For you?

279

280 P3: Mh. I have never studied. Until now.

281

282 Ext: (Maybe because agriculture is a technical, it is technical...)

283

284 I: Yes, technical words, that are difficult to...

285

286 P3: But, but there is a way we can frame it and put it. Yes. By all means, I have tried to put it
287 in a way that it can, that they can comprehend it, that they can understand it. But eh...

288

289 I: Do you have an example that just comes to your mind?

290

291 P3: (Pause) There are several to decide from, we should tell [extension officer] (laughing).

292

293 Ext: (like maybe the diseases...)

294

295 P3: Yeah, in fact, was it three weeks ago? Actually that, you know, they ask, this people they
296 don't ask [extension officer] specifically on agriculture only. Sometimes they even ask on
297 (???) livestock. So, there was a time, there is a kind of fly, which they started describing to
298 us, to me and [extension officer]. So, they started explaining, initially before, it was on Tues...
299 Wednesday, when I was on air. Somebody started complaining about a type of fly, which when
300 it bites, a donkey or a cattle, then they start removing the hair.

301

302 Ext: (Oh, ok, the hair falls of.)

303

304 P3: Even the, even the skin. And then it starts bleeding, the animals are bleeding. The same
305 happens to humans when they bite. They start bleeding. So, I was alone, it is a dangerous
306 question (laughs), coming from a listener, somebody not farmer, herder... so, okay now, what
307 I did, I started telling this person, I asked him: "where are you getting in, tell me? Which
308 ward? Or which subcounty? I started now, I asked others: do you have the same problem? So,
309 I received like seven calls from different areas.

310

311 Ext: (So did they tell you what it was?)

312

313 P3: They, they told me, they have the same problem. And then, fortunately, in the seven calls
314 I received, one is from down here. This subcounty. So, that person described to me that the
315 same type of fly was seen or appeared, sometimes back in early 1982 or 1983. And then he
316 mentioned the name. In Kiborana. You see? "You know, we call fly "Tite". So, he explained,
317 Tite-Buko. So, he said Tite-Buko, they bite, but, for the places which are called, like this area,
318 it has no impact on human beings. But animals, they do. By that time, he was telling me, so
319 only three donkeys had died. You see? So. He started exchanging the different names, but
320 later on, among the seven calls, one started telling me that...

321

322 Ext: (So sometimes you get answers from the farmers themselves.)

323

324 P3: I get answers from them! So, when I was with [extension officer] now, later on I hosted
325 [extension officer] Friday now, that was Wednesday, we started talking about this animal,
326 about this fly, you know, [extension officer] started explaining "it is maybe because of this
327 rain", So [extension officer] started now telling them a kind of a, you know, dawa, that they
328 are supposed to, I mean, ehm, medicine they are supposed to apply on that animal. Eh, where
329 they bite, where those flies bite. So, at which is the name (???) he forgot it. So, what
330 happened? When somebody mentioned, [extension officer] will know the exact name. So,
331 another person, who is a herder, and who worked with a veterinary as a social worker, you
332 see, animal head worker, animal home, yeah, animal head worker. He called from Moyale and
333 started naming the type, the name of the medicine. Ektopod. Something like that, Ektopod.
334 Is it? I wrote it somewhere. Ektopod. So [extension officer] said "yes! that's the name now!"

335 So now, it was really hard for us in that scenario to know the disease. What type of disease,
336 what type of insect or fly is this. So sometimes we get challenge like that. And these people
337 they know, they can explain. If it's a fly. Is it a kind of fly which has ever appeared? To them.
338 They are herders, they know all type of fly. With its characteristics, on how it bites. Yes.

339

340 I: And, just again to have it recorded, can you tell me how far the station reaches? The reach
341 of the broadcasting station? How far can you send your program?

342

343 P3: Our station? Uhm, we cover the whole county. Masarbit county has four sub counties. So,
344 we cover the whole county and the neighbouring counties also. And including the
345 neighbouring country now. Not county. Ethiopia. Southern part of Ethiopia. They listen to us.
346 But unfortunately, they don't have Safaricom network, to get us.

347

348 I: Ah, so you don't receive communication from them?

349

350 P3: Yeah. They are some places I can receive past Moyale, which is called Idilola, I can receive
351 from there. But there some places like a village called Magado, they can, they listen to
352 Janguani, every day. But they can't call.

353

354 I: Mh. Can they only call you if they have Safaricom?

355

356 P3: Yes, Safaricom. The one that we are using is Safaricom.

357

358 I: So, if the farmers have another network in Kenya...

359

360 P3: Okay, farmers, farmers can use different types of numbers, like, Airtel, they can use and
361 call it, you can receive the number, but our number, is Safaricom. As for Ethiopians, I don't
362 know, what kind of network they use.

363

364 Ext:(But do they send messages from their languages?)

365

366 P3: They don't.

367

368 Ext: (Because sometimes, like for KBC, you would receive calls for even from Tanzania. You'd
369 notice this is a number from Tanzania.

370

371 P3: But, I haven't received any messages from Ethiopia. For those who are, who are reached
372 by Safaricom, most are from Moyale, and they can, I even know their names.

373

374 I: Okay, yes, those were my questions. Thank you very much for the interview.

Case 2, Interview 2.2.: Extension Officer, 11/06/2018

I (Interviewer) P4(Participant) Ext (External Participants)

I: Okay, so, as I said before, I am doing some investigation in how, uhm, well the information flows between farmers, radio station and extension officers, and uhm, so I'm going to be asking you a few questions about your work with the farmers and the radio station and I will be recording them if this is okay with you...

P4: It is okay.

I: ... and yes, if there is a question that you don't want to answer then just say and then it's no problem. So, uhm, well my first question would be how, could you tell me how your work with the radio listening group and the farm radio programs works? How it relates to...

P4: You know, in the department of agriculture, the concept of using the radio program is fairly a new concept, that is since the inception of this radio program, and the margins of FM stations, that is local, conventional local radio. So, we used to also, initially we used to move around on our motorbikes, on foot, to our farmers, and given the, you know, the extent, the vastness of the land. And vis a vis how few few the extension officers are, it was almost not successful to reach each individual farmer in the 20 wards within the county. So, this idea of using radio program, courtesy of Kilimo Media International, funded by Syngenta Foundation, we started the radio program. So, in my view, uhm, it is actually given us a platform or an opportunity to reach as many farmers as possible, inside, you now, within (???) county and the entire region of Masarbit county and outside. So, it is one way of sitting behind the microphone and giving a lot of information, this program initially runs with one of the media houses, called FM star, then we moved now to Jangwani, where the coverage is, is, I think, is good, and the listenership is crazy. Why extension officers now don't, where extension officers cannot reach further areas, the technology has eased also this opportunity, because people have got phones, people have got very cheap radios, and it's like almost 80 to 85% have access to radio. And a farmer or a herder can choose whichever station he can use.

31 And people have gone a step further, that they want a radio, as consistent radio program.
32 That is where we got a very good plus. Interactive.

33

34 I: And how often do you air?

35

36 P4: Pardon?

37

38 I: How often do you air normally?

39

40 P4: Jangwani is every Friday. At eight. Up to nine. Sometimes it goes even beyond that,
41 because it's an organized program, one hour seems to be very brief, but we pump in a lot of
42 information. This information is so systematic, that we go with the scissor. We don't talk of
43 planting, when actually it is weeding. We go with a calendar, agricultural calendar. During
44 planting we talk of plant preparation, during planting we talk of planting, we talk of seed
45 selection and uh, this information has been circulating now and it's like every individual
46 farmer has at least this information. So, coupled with the, with our other other extension
47 work and extension officers, from radio we do follow up. So, either farmers listening this
48 program at their own places, or they come together and listen, they discuss, during their
49 meetings, so I think the way the information is flowing is a bit systematic, farmers exactly
50 know where to get this information and at what time of the week. So, the progress I think, is
51 so good. It's also attracting support from departmental office, that is agriculture office, uh
52 other organizations, so I think the way we are moving, we are moving in the right direction.
53 During this very short period. Because the project is started around 2015. I think late 2015.
54 From one radio station to another. The one good thing with the program, it's so systematic.
55 And delivered either by extension officer or any other expert. Which has deemed fit for the
56 program. Sometimes we even brought on board, bring on board, even farmers themselves.
57 KWS. KFS. Health. Where we think that there is linkage, we bring them on board during that
58 time, so we discuss.

59

60 I: So, you select the farmers that go on the air.

61

62 P4: Exactly. I do that. Because you cannot just bring anybody. Because it's at night. Eh, that
63 particular person must be a willing person. Because from eight to nine, you bring a farmer all
64 the way from, you know, those places. They demand, you know, the security, at night, ok.
65 They want transport back, they want at least to eat supper, you know, that kind of thing. But
66 with the little that we have, we support the experts.

67

68 I: But how do you decide which farmer to choose?

69

70 P4: Of course, we have our lead farmers. We don't just pick farmers. We have lead farmers.
71 Innovators. They listen to radio. They do what we are advising them to do. So, have, five
72 minutes with them, interview, then you see that this man, this particular person, it can be a
73 male or a female, he can talk sense, there is no politics in, in our work. We don't want to mix
74 anything. So, the moment I see that you are fit to be on the radio, that you can give as much
75 information as possible on food security, then you are on board. You are qualified.

76

77 I: So, you just said innovators, is there, do you feel that some farmers are more keen to act
78 out what they hear on the radio and some less?

79

80 P4: Yes, these innovators are the lead farmers, they lead 99 farmers everywhere. In our
81 location. For every 99 farmers, we have one lead farmer. So, the moment I see that this farmer
82 can do very well and also the followers can do very well, it is not necessary that I pick the
83 lead farmer. I can even pick any other farmer who is doing very well. It is one way of
84 motivating them. So, the moment they appear here, they feel that it's a privilege. They are
85 recognized.

86

87 I: But I don't quite understand this concept of the lead farmer, how, is he chosen, or...

88

89 P4: The lead farmer, let's say from one sublocation, a sublocation is a small, small unit of the
90 county. The smallest unit is called a sublocation. But these days is called "ward", the smallest
91 unit. Eh, they sit together, choose a particular farmer. As for example like their chairman. Or
92 chairperson. The choose that particular farmer. They sit together, the moment they give me
93 a lady or a man, I don't care, this must show a sort of leadership in him or her. It is not
94 anybody that you can pick. He must show that. Number two, he must show, that, or she, has
95 initiative. To do what extension officers, or you know, even me in extension, if I'm in
96 livestock, not necessarily crop production, it can be livestock. So, because we also bring some
97 experts on livestock, on board, both health and production. The moment they see there's
98 some good development in that particular person, then automatically that person qualifies.
99 So, because of some constraints and some challenges of course I don't do it so frequently.
100 Most of the time I'm the one who is on board, or we go when we are not there, I invite other
101 extension officers if they are willing to do it, at night, that way we do it. Of course, there are
102 a lot of challenges here and there.

103

104 I: So, you mentioned the experts, what kind of experts do you have on the air then?

105

106 P4: Yes. Any expert that is related to food security. Like let's say, we are talking of forestry
107 and food security. We are talking of wildlife and food security. You know, there are so much
108 related. We are talking of nutrition and food security. We are talking of home management
109 and food security. These are all expert, we are related, we are one family, in one way or
110 another, this information has to reach. You know, people, our farmers sometimes don't know
111 the relationship between health department and livestock department. "We produce, and
112 they talk of nutrition". You see, the relationship there. "We produce, and Kenya Wildlife
113 Department comes with their elephant." (Laughs) It brings conflict! You see that? So, people
114 require compensation. So that relationship: food security and water department. We cannot
115 do without water. So, if I see that these programs are related, our farmers must understand
116 all this. So, the situation is either dictated with what is on the ground, or if I see that it is fit
117 to do that, I think about liberty to do it.

118

119 I: And the information that you broadcast on the radio, who gathers it, from whom dose the
120 information come?

121

122 P4: Pardon?

123

124 I: Uhm, so when you make a radio program, and you decide, who decides which information
 125 you want to broadcast in this particular program.

126

127 P4: Uh, as I've earlier stated, we have two things here. One, is, we go as per farming calendar.
 128 It's automatic. It's a farming calendar. From January, to...from one rainy season to another
 129 rainy season. That does not, that does also include dry spell. When the soil conservation is
 130 done. So, this one is automatic. Number two, when there is an emerging issue. When there is
 131 an important issue coming up. For example, we are talking of market diversity, market
 132 change. The wind comes, changes the market and then all of a sudden, there's something
 133 new. We update. These comes as by the way, but our prime, uh, our prime, our prime program
 134 is led by the activities on the ground, that is the farming calendar. But when it comes to
 135 gender, when it comes to, you know, all these programs are related. So, I do it myself, I consult
 136 our extension officers in the field, from the twenty wards, I consult, I have all the contacts,
 137 what is so important that we need to bring it up. It can be even livestock. Vaccination.
 138 Imagine diseases. We need to allow our farmers immediately that will now make us invite for
 139 the following week and expert in animal health. So, we move that way.

140

141 I: So, does all the information come from other extension officers or are there also other
 142 sources?

143

144 P4: Extension officers are our prime source. Other sources... that means agriculture, livestock,
 145 it can be even fisheries. From the other end also, about 700 Kilometres away, it can be from
 146 that end. If an extension officer or agricultural officer from any field feels that, this
 147 information is important to be on the radio, then it can go either as agricultural, an agtip, we
 148 call it agricultural tip, it can go as news, because we gather also for news, it can be information
 149 that is need to be out there, in case of let's say emergency response in doubt of disease, just
 150 an outbreak of a disease, you don't have to wait for this program to go on as scheduled, we

151 turn in, broadcast, give information, call expert, what our herders need to do or our farmers
152 need to do. So, that is it. And of course, from our partners, the stakeholders, very important
153 the stakeholders, I have mentioned the health, the water, these are, we are all related.

154

155 I: Do you also communicate with agricultural researchers?

156

157 P4: So much. Uh for the research, basically an extension officer does exactly, you know, the
158 moment you get information from such station, through the pamphlet, it can be through
159 print media, it can be through any other technology, uh, not necessarily from our station
160 here, it can be from any other station. Through, you know, phones. Uh, we go deeply into it.
161 Digest it for the farmers. Then, take it to the farmers in the simplest language possible to
162 them. So, there's no way we leave research out. That's why we are alive in fact. Research.
163 Very important.

164

165 I: And do researchers, are there sometimes also researchers on the air?

166

167 P4: I did it once. But they demanded a lot (Laughing).

168

169 I: (Laughing) Ah, ok. Can you tell me about that, uh, experience?

170

171 P4: Yes, yes. It was on, it was on, this Kari Kienyeji poultry. Kari Kienyeji poultry is sort of a
172 new concept here. Kari Kienyeji is a breed of poultry, is a breed between the local and
173 improved breed. So, I wanted that particular person to come and say what Kari Kienyeji
174 means. Kari is, now it's called Kalro, but it used to be Kenya Agricultural Research Institute.
175 Right? So, I wanted them to come on board and explain what this is, you know the Kari
176 Kienyeji means that crosses, that's cross-breed now of poultry. It's good enough yes, a
177 technical person can have information, but I wanted that information to reach our farmers,
178 so I invited. To come and explain. Somebody demanded 5000. 5000! 5000 [about 50 US\$], from
179 eight to nine! I told him, "please! My friend! There is commitment here" (I. laughs). I'll give

180 you a taxi to and fro and then forget about it. And it was "yaaai", so in the end of the day the
181 information was everywhere. So, I had to consult, make my effort, and give information to
182 the farmers. Big challenge. With some people. Big one. I come here with my motorbike, I don't
183 drive here myself, by night. So, you take risk, there's commitment there also...

184

185 Ext1:(So you take the motorbike also, when you come here to this studio for the program?)

186

187 P4: I have a motorbike.

188

189 Ext1: (Ah, and that's how you come here.)

190

191 P4: Departmental motorbike. If there's breakdown I call for a taxi. But standing here, waiting
192 for me, around that time...it's good amount of money. So, challenges are there, despite all
193 that we have to, you know, move. That's how we are surviving. Since 05. Up to...15 I mean. Up
194 to now.

195

196 I: You said that you break down information for the farmers in the simplest way possible. Do
197 you have a certain method or approach to do this?

198

199 P4: From my experience. You know, sometimes, from the experience, by now I have worked
200 in the department from 1989. July. Where were you, 89?

201

202 I: 89? Uh, still not born (laughs).

203

204 P4: So that is the level of experience that I have. Of course, with the farmers, you know, the
205 information, for our farmers, are not the same information. You know the level, you know,
206 of giving out information, is not as much as those in Western or even Nyanza. These
207 information are simple information. It can be too technical, but it has to be broken down to

208 that level. Right? So, the moment I get information that is relevant for my people, I consult.
209 That is the first thing. With other extension officers. So, put it this way, this way, this way.
210 Give them, they give me some points, I add some points. Digest it for them. So, they get the
211 finest, the finest, uh and the simplest information from us. So, we are going down to that
212 level.

213

214 Ext2: (What difference has radio brought in terms of communicating that information to the
215 farmers?)

216

217 P4: Yes. You know, with the farmers, you know, with either research, or information from
218 outside, is sometimes so technical, it is so technical in that giving the same information the
219 way it is, raw as it is to the farmer, it becomes so difficult. Because with the end of the day,
220 they will just listen. They will say "ok, ok, ok, we get this information, but we don't know
221 where to start from." So, the relevance, we make it as relevant to our farmers as much as
222 possible. As relevant, and knowing the background of our farmers, we have seen that even
223 expressing in Kiswahili becomes a problem. So, the advantage is this language. The
224 advantage.

225

226 I: Kiborana.

227

228 P4: Although sometimes we have our vocabularies for our language. We have the vocabulary
229 for our language. The moment you're close Ethiopia, huh, the same language becomes a
230 vocabulary. Right? So as a person who is, I mean, I am an indigenous of this place. So, I know
231 the level of information for the language our people require. If it is too technical, I go a step
232 higher. The source of this information. I google, go to internet, do this. In fact, from 2015, I've
233 never been engaged as much as I am doing now. I am going deeper into books. To get
234 information. These print media, especially sometimes there's advantage with the Nation,
235 Standard, those pages. So, I get a lot of information from that. So, breaking that information
236 from the experience is not a big deal for me.

237

238 Ext2: (But how has radio helped to communicate the extension information to the farmer?)

239

240 P4: Uh, definitely because of the wide coverage. Those who don't have access, those extension
241 officers who don't reach because of one or two challenges, this information is at their
242 households. They get this information from the radios. If you are herding, you get it from the
243 field, if you are in your house, you get it from your bedroom. So, I think it has helped a lot,
244 because, how do we assess this? One, as you move around, there is a lot of consultation now.
245 Not only me, but for even other extension officers. That means, there's a lot of things going
246 on. Number two: a lot of calls now. I tell you what, one time, I recorded 112 calls, especially
247 around, when farmers are about to weed. There's that outbreak. 112 calls in a week! Just
248 inquiring on the fall army worm, what is this fall army worm that we are talking about?

249

250 Ext1: (That's all the result of hearing you on the radio?)

251

252 P4: Exactly. Because, you know, that is one way of access. Assessing now, ok, people are now,
253 uh, they are aware of the program that is going on. This thing is touching them directly, you
254 see? So, uh, at one time even the extension officers are complaining. That people are really
255 calling them, from Moyale from (???), everywhere. That they inquire about this information
256 a lot. So, because we are giving them this information, a lot of this information. So, we are
257 calling, we are not seeing our extension officers. Then, the information is there. On the radio,
258 I give numbers of all extension officers in that particular ward. Ward is the smallest unit. So,
259 you see, sometimes they blame me that I've brought them a lot of work. "This is too much
260 [extension officer], what are you doing!" Now I am trying to cover it. Sometimes. So, I think,
261 what we are doing, what radio is doing, it's fantastic. I am enjoying it.

262

263 Ext2: (Has this been recognized by the leadership within the agriculture setup, extension
264 setup, by your bosses?)

265

266 P4: Yes. You know, that now depends on the individual. Individuals. Like, the madame that we
267 have seen in that particular office [the minister of agriculture of Masarbit]. She is much, she

268 is very positive about the radio, very positive. Unlike the past regime. You know, these are
269 political, what do you call? Not elected. These are political appointed people. Politically
270 appointed people. So, this development, there is very good development. I talked to the
271 director, I talked to chief officer of livestock, I talked to the minister, herself. She is also a
272 lady. This chief officer. But this one seems to be a bit active in terms of moving to the field,
273 see exactly what we are doing, listen to this radio. So, eh, on the big challenge with these
274 people: They are here tomorrow. You go to (???) ...

275

276 Ext1: (And then they get transferred to some other department.)

277

278 P4: They get transferred. Like this July. There will be big reshuffle. We lost our chief officer
279 to other department. Just because of politics. This one is new. Probability is, the minister is
280 also going. So, you see, if you are, if you keep on relying on these people... I mean...you lose
281 track. So, the only person I'm relying on, who doesn't have much power, and who is also
282 permanent, is the director.

283

284 Ext2: (And for you now to be able to use radio, uhm, to its maximum. What kind of support
285 do you need from the agriculture office?)

286

287 P4: Eh, it's obvious that this radio does not run without funds. I've negotiated more than
288 twice, more than, I think three, four times, that they need to support this radio program. Put
289 funding into their budget. It is now that they are recognizing this. The chief officer is now
290 recognizing this. The CEC is also showing some improvement. So, the moment you negotiate
291 with this one, after three four months, this one is gone, you start fresh. Right? We had three
292 ministers. In the last, in less than (???) years. Three ministers! This one, comes, go. This one,
293 comes, go. Because they are not on good terms with this, this one is transferred. You see? The
294 only problem: minister is not permanent. Chief officer is not permanent. These are political
295 appointees. You see? The director who doesn't have much, just as, he doesn't have a lot of
296 say, but we need funding from them. Not only the department, but even organization. I tried
297 to talk to...there is guy called [...] who is in charge of, it's a new program, called Climate Smart
298 Agriculture. He promised that he'll inject some fund into the program, because, this radio

299 program is very important. I talked to ASDSP, Agricultural Secretary Development Program,
300 but they are not forthcoming. Because from the word "go", you are not involved in the
301 planning. So, towards the end, or in the midway, that's when you are told that we do not
302 facture in, because somebody was not there. If you are not there during planning... three
303 weeks ago, we did some sector plan. Courtesy of GIZ. So, I told them, we need to do radio
304 program. Inject some fund for the radio program. I was there, I did it. But they are yet to sit
305 down with their bosses and convince them, that this thing is important. But I keep on
306 repeating, every now and then.

307

308 Ext2: (So you keep on bringing it up?)

309

310 P4: Yes.

311

312 Ext2: (And for you personally, as an, at your own personal level, how has the use of radio
313 helped you? As a person? As an extension officer?)

314

315 P4: Uh, I think, ok, for one, for one, I am actually going back to books. It is refreshing my
316 mind. It's sharpening up my skills.

317

318 Ext2:(And why is that?)

319

320 P4: Because, you know, the good thing with the radio program, eh, I don't give chances for
321 any failure. Or for not give answer to any farmer. I don't give that chance. So, the good thing
322 is, when you are on the radio, and then, your first 25 minutes of talk show is gone, and you
323 open the mic for the farmers, they will ask you anything. Our farmers, you know, listeners
324 are so disciplined, in that we don't accept anything outside this program. Not much. Don't
325 differ. I mean, don't egress outside this program. So, we are talking of, when I talked of, let's
326 say, soil and water conservation. I'm ready to tackle and give instant answer on soil and water
327 conservation. Right? Why is this done, how is it done, the type of terrace, the type of you

328 know, water pans, what we need to have, why it is done this time. I'm sure, it, no question
329 will go outside that package. So, we give them instant answer. That is the good thing with
330 this program. In case there is one question that is outside this, this soil and water
331 conservation and then somebody asks about, eh, rabies, that is for another day. But when it
332 is an emergency, I have to consult the expert, because I don't know about rabies. Right? So,
333 for me, I've gone to the books, for me, I'm becoming more sharper, for me, I'm becoming
334 friends of so many farmers, so many of them, eh, and then I think I've gone also places. Places
335 like, I've gone to southern part of Ethiopia. Consultation. That how I do this radio program
336 for Oromo, Oromo, eh, Oromo radio program. It covers the southern Sudan, I was there for a
337 week. Doing program. And then I'm becoming focus. For all other...in fact, most of the
338 organization. Even in terms of matter of food security, I'm the focus. If I'm not doing it, then
339 I have to attach somebody to do it for them, right? And then, of course, it goes without saying,
340 sometimes it boosts our, our pocket. Because we are doing too much program, to run this
341 program, and then you organize for your program "do it", "give them that report". It's
342 wonderful. And of course, I'm partly also attached to red cross. Simply because of the radio.
343 Some of them thought that, "that particular person, who is always on that radio, can give
344 some information" They are doing an irrigation, irrigation scheme. So, we negotiated with
345 the office, they told me, "ok, you can do your program, but also, help us in irrigation farming
346 in Moyale. So, three days out of seven I'm there, come back do the program, go back on
347 Tuesday until Thursday, come back on Friday, so they cater for my small need. And of course,
348 I think, the thing behind all this, is, I think is not a matter of motivation, is not a matter of
349 money, the priority is, I think, I don't know for others, but it's in my heart. I want to do it.
350 Right? I want to do it. That passion, that urge of giving information to farmer, I think even
351 god will bless you in a way. Just give it, and then god will just bless you, without you knowing.
352 So, that's it.

353

354 Ext2:(You are able to do other programs, the caritas programs?)

355

356 P4: Yeah, with the Caritas I did the, I did, climate, Kenya climate smart technology with them.
357 I did it for two months. And of course, there are other radios who are so much interested in
358 me. This Star FM which wants me to go back to that place. The Sifa Radio who wants me to
359 broadcast... you know the good thing with this program, it's so systematic. What farmers

360 want to hear, just around this time, you know? We are talking about the first harvest of (???)
361 is going on. So, when we inject that information for that particular farmer, at its... what do
362 you call it, time like?

363

364 Ext2:(Timely)

365

366 P4: It's so timely. So, the interest is, I mean, I am becoming another, another focal person for
367 these radios.

368

369 I: And in your opinion, is it possible to make a program, an information so understandable for
370 the farmers that you don't need to demonstrate?

371

372 P4: Uh, demonstration in terms of?

373

374 I: A practical demonstration.

375

376 P4: Look at what I did with them, with that group. That small pan, and that small place is a
377 demo site for me. It's a demonstration site for me. The moment...there are several. There are
378 others with only soil and... I mean water pan. Only water pan. Conservation. For domestic
379 use. There are others for small micro irrigation. There are others at the borehole site.
380 Borehole. And it's far, my friend. At the borehole site. At the moment that you see what that
381 particular farmer can do very well...sometimes I feel like, now, buy a seed for that, that is the
382 seed and that I bought. For that particular group. I bought it. Myself. But what I...

383

384 Ext: (I guess the question is: radio is blind media. How are you able to convince the farmer,
385 that what they are not seeing (laughs) how are you able... is that?)

386

387 I: Uh, more or less, no, I meant more...they listen to something on the radio and, uhm, are
388 they able to put into practice what they heard without you going there and showing them an
389 example?

390

391 P4: Yes of course. You know there's two aspects to our farmers. One, is, uh, enhancing the
392 little information that they have. The information that they have is not very clear. Uh, they
393 have that kind of information. This information that is (???) from our side is so technical that
394 we need to break it down. So, to do that, you know, when you are behind microphone, I can
395 describe this camera for a farmer, just in form of words. And make them see this, "oh, that
396 thing is black, eh? Oh, that thing has got a nose up here, eh? Then there is somewhere that
397 you can look through, eh? That you can do this." You explain it in such a way that a farmer
398 can almost see, you can do that, and uh, without leave it at that point, you do follow up. What
399 do you see in Moyale? Moyale is 267 Kilometres from here. We have a lot of us explaining
400 something. And the farmer asking questions about salinity of water. And that's the only
401 source of water. And you can't tell that to a farmer, "no, this saline water cannot do. Just
402 move from that place to another..." You cannot tell a farmer like that. Sure, you bring an
403 element of ok, what is available there? Ok what is there? That water is in plenty. To reduce
404 the salinity, you have to do a lot of water, because it is available, you have to do a lot of
405 watering, so that there is (???). You see? So that particular farmer feels that, "ok, that's, this
406 is where I was born, this is saline water, I cannot move from this, so I can try this, oh. There
407 are some crops which can withstand the salinity." Describe that one for him. Take his contact.
408 Then talk to him. Because this. Now the communication these days is so simple. Call. "[..] what
409 do you want? I want this and this and this. Then, through MPesa, bring your money. They
410 have vehicles there, put it the following day, the farmer will tell: thank you very much. I've
411 never expected even that. So, there are so many ways of doing it, creating a picture in the
412 farmers mind. Let that particular farmer see. That is the good thing with, you know, it is not
413 English, it is your own local language and you know exactly where to hit.

414

415 I: So, uhm, because you also said that you read a lot in books, this also means that you also
416 translate the information that you want to give to Kiborana?

417

418 P4: Yes.

419

420 I: Yes? And are there challenges doing that, or advantages even?

421

422 P4: Yeah, eh, sometimes when you are, when you are trying to translate a particular
423 information, for example: The change of, you know, the organization and research. These
424 people are so intelligent that they can change a particular thing, let's say, we used to call it,
425 a particular pest that seriously attacks maize. We used to call it stalk borer. Or sometimes we
426 call it stem borer. Right? The same pest, of the same character, of the same shape, of the same
427 dots, they are now calling it fall armyworm. For you to convince that particular farmer that
428 that is not stalk borer, it is fall armyworm, you need to convince that particular farmer. Right?
429 Sometimes I am forced to describe it on the radio, have a group meeting, take the same pest
430 and describe it, "this is what is called fall armyworm. It has got four dots at the end, inverted
431 "V" in front. It's so devastating, it cannot respond through this chemical or this one. So, you
432 use this".

433

434 I: But do you use the word then? Fall armyworm then? Or a translation?

435

436 P4: There is translation for that. I told you, you know, in Kiborana, someone doesn't know
437 you will call you Nah-ari(?). A white person. He doesn't know this one is Paul. That is
438 description of your colour. Right? Or a short person. It's a description of your height. So, when
439 I'm talking of fall armyworm, there are two characters here. Those who listen and know
440 English and those who doesn't. Right? For the benefit of those who know English, I call it fall
441 armyworm. For those who don't know, I call it ("Bukata?"). Bukata is now the translation for:
442 the same pest, you know, the same bora, now called fall armyworm, but it doesn't change in
443 our language. In our language it's the same as, that Bukata, that Bukata has been there and it
444 has been there. So, then you have to describe, go around it, describe, you know, you are also
445 trying to beat the time.

446

447 I: What does Bukata mean?"

448

449 P4: Bukata means now, that a, a caterpillar. You know a caterpillar is a general name. A farmer
450 who doesn't know Kiswahili and English doesn't need to know the fall army worm. He needs
451 to know one thing: It's a caterpillar. Caterpillars is sort of a general name. Is sort of a general
452 name. So how to describe it now: go around it, for the sake of those who know English, just
453 call it, call it fall armyworm, describe it. For those who don't know, just call it a caterpillar.
454 Or a Bukata in a general name. Because, you know, that particular pest is so specific to maize,
455 very specific. There is no any other caterpillar there if it is not fall armyworm. Right? Any
456 other caterpillar is not there on maize. Because fall armyworm is so particular on that
457 particular farmer. When the stage changes. You know, from the field to the store. Then
458 there's another pest coming now. So, we describe it for them. That is the issue that I'm talking
459 about.

460

461 I: So, are there sometimes also descriptions where you have to combine more characteristics
462 and you sort of have to create a new word to describe something?

463

464 P4: I've never at any one time tried to change the language. Like describing that Bukata, that
465 caterpillar to another name.

466

467 I: No, I mean, for example, you just call it caterpillar, but you said that it has four dots, so, for
468 example, calling it "caterpillar with four dots", joining two different term to describe
469 something better. Do you do that sometimes?

470

471 P4: Yeah for those who understand English I describe all that. But for those who don't
472 understand I describe with so many words. Just as describing that that particular, the so-
473 called fall armyworm is like this and like this and like this. Right? One time, I was forced to,
474 you know, our farmers, some of them, even most of them, thought that these caterpillars are
475 from the moon. Just from the rain. I had to describe the metamorphosis. That if you see
476 butterflies, know that they are laying eggs. Know that those eggs turn into small caterpillars.
477 From there, they go into cocoons. And then...the circles. Describing the complete
478 metamorphosis for these people. They think that caterpillars are different...it was born like
479 that. Sometimes they thought that it's not from the egg. Sometimes they thought that "these

480 butterflies, these are beautiful butterflies flying around". You have to describe that, let's say
481 the stage of that metamorphosis, there's the egg, the larva and the pupa. Pupa, for our people,
482 is a small thing, that is meant for, just a small thing, that is found on the plant, for kids to play
483 with. The call it bomboi. Because the moment you do it, you place it like this, it does like that,
484 eh, "bomboi, bomboi, where am I from?" So, it's like that (laughing). Little did they know that,
485 that stage of, is a stage of metamorphosis (from the life circle), yeah, life circle. So sometimes
486 I'm forced to do that. Now, ok...

487

488 I: And uhm, in general terms, have you, have farmers ever told you about their feeling of
489 listening to a program in their own language.

490

491 P4: During...our feedbacks are during call-backs. After program there's, radio, phone calls and
492 then the follow ups. And all this is three stages. The way they congratulate you or the way
493 they look for more information or they will tell you just to visit us, to visit that particular
494 farm. And when I'm here and someone calls from Moyale, I will connect that person an
495 extension officer in that particular place. Ok?

496

497 I: Yes, no, what I meant is, how do the farmers feel about having a program in their language.

498

499 P4: Yeah because of this community radio. Because it is their own language. They feel that
500 they need not listen to any other thing, apart from (laughing). In fact, if you go, you know
501 after work, that is after four. If you go to the field, everybody under the shed, in their houses,
502 this, I mean, the local radio is on. And like the other time, there was only one option. You
503 either listen to KBC, or you shut it. And this program comes at nine. And say that most of it is
504 entertainment. So, they have seen, "oh, there's a lot of information in these local stations
505 now." Because the program is now there, they know that on Friday, at eight, because you see
506 this used to be on Saturday at eight, with the Star. Now it is Friday at eight. They know that
507 the program is on air. They feel that they part and person of this program. That is why you
508 put your money in, I mean, top up your phone and then call. Feeling that, you know, you are
509 their partner person, they have to contribute, they have to ask. So, I think generally, the
510 feeling is good.

511

512 I: Because in the group discussion, they mentioned that many of them only speak Kiborana.
513 So, are those many, that only speak Kiborana?

514

515 P4: Kiborana is one community. There's so many other communities. The good thing is that
516 other communities can speak Kiborana. Other communities can speak Kiborana. When the
517 program is on air it's like it's covering even other communities, other farming communities.
518 Let's say like (???) is a farming community, but they have their language. But almost 98%
519 speak Kiborana. (???), they speak Kiborana. Samburu's around this place, they know
520 Kiborana. Even stay here for sometimes, you can easily adapt to this language because it is
521 very easy to speak. So, there's that advantage, that it's a common language that can you
522 know, bring the farmers together.

523

524 I: So those farmers who don't have Kiborana as their first language, do they also appreciate
525 it, or do they ask why...

526

527 P4: Eh, some of them they are disadvantaged. Because this program runs strictly on Kiborana.
528 We tried to run this program sometimes in Kirendile. But unfortunately, we had only two
529 Rendile speaking extension officers there. I tried to approach them. That give us the program,
530 we are going to do a program in your language. I tried, my friend, I tried several times to
531 convince them, that "you know, we need very simple, Kirendile, very simple, because you are
532 technical officers. We need s... they are telling us: "tsss, ah my friend, no no no, you know
533 Rendile is embarrassing. You know, you can speak and blunt a bit, (???) a bit in your own
534 language. Then people also will tell you: "don't spoil our language." I tried several times. [...] is my witness. So, I said, now, what do I do? They refuse to come on board, I don't know
535 Kirendile...what do I do? I told myself, "uh [extension officer], just do it in your language!"
536 With the extension officers which are of course, every area has got an extension officer. So, I
537 advise them, "do this. Just help our community. When you go there, give as much information
538 as possible. Otherwise, this...I mean, I could not help. But otherwise, because, you know, the
539 Rendile is on the other side of the forest, the other side of the forest. So, I don't know. I don't
540 know, I can't tell you. I can't help, I wish I knew that language.

542

543 I: Okay, well, those were my questions. So, thank you very much for this interview.

544

545 P4: Mhh, okay.

546

547 I: Thank you a lot.

1 **Case 2, Focus Group Discussion 2: Radio Listening Group, 11/06/2018**

2 **I (Interviewer) T (Interpreter) Ext (External Participants)**

3

4 I: Then, what I would like to ask is: when you hear something on the radio that is interesting
5 to you and you want to put it into action, what are the steps before you actually put it into
6 action, what do you do before that?

7

8 (Interpreter speaks, farmer1 answers)

9

10 T: She says we can try, sometimes we try on our own and see whether it will work, after
11 hearing.

12

13 I: And do you sometimes decide to do it in a group or is it an individual...an individual
14 decision?

15

16 (Interpreter speaks, farmer1 answers, farmer2 answers)

17

18 T: We work both in groups and also at individual level. We already have a group
19 demonstration farm here and a water pan that we've dug, actually the mamas dug by their
20 own hands to, for water, you know, catchment, so we have a group project and also an
21 individual project. The same crop we have the group project and personal project at, for our
22 farm level.

23

24 I: So, is there also an example from when you heard something new but decided not to do it?

25

26 T: Not to do it?

27

28 I: When you heard something, something new, but then you took the decision rather not to
29 do it. Is there an example for this?

30

31 (Interpreter speaks, farmer1 answers, farmer2 answers, farmer3 answers)

32

33 T: He says there are some things that we've heard from the radio and we don't do it because
34 we are not capable.

35

36 Ext:(Like what?)

37

38 (Interpreter speaks, farmer3 answers)

39

40 T: Uh, he says, water is important, and we are supposed to have water at household level. We
41 are supposed to have water for agriculture. And because we need effort to have more water
42 pans and it's because we are not able, that's why we are few. You see.

43

44 Ext1: (So when they don't implement it's because it's the capacity?)

45

46 T: It's the capacity, yeah. Capacity.

47

48 (Farmer3 speaks)

49

50 T: He is saying, our intention, our vision is to have the water pan at household level so that
51 every mama is going to have a mboga at their home. But we have few pans. That is not enough
52 for the, for the group.

53

54 (Farmer2 speaks)

55

56 T: He is also saying; our challenge is water. And when the water, when the rain comes, the
57 water disappears. But when you do cat...when you do water catchment, then you will have a
58 way of handling (cell phone rings, T answers phone). So, he is saying, water is a problem here.
59 It is only that this time we got enough rain but when, when rain comes and then it disappears
60 our problem to manage the mboga or the crops is because of water, so the most challenges is
61 water, he is saying.

62

63 (Farmer 2 speaks)

64

65 T: He is saying, when it dries up, the water will help to keep this Mboga running.

66

67 Ext1: (How many, like damns have you put within the group?)

68

69 T: Uhh, it's now three. We've put up three of them already that has water.

70

71 Ext1:(What's the capacity of the three?)

72

73 T: The capacity is around uhm, 100...120 000 litre. 120 000 litres.

74

75 Ext1: (How long will that take? The whole group?)

76

77 T: Uhm, because the household here is around 32 members, so we are many. Each and every
78 person has to use that water at their home level. So, because it's a new program we do not
79 know how long it will take us. This is now like, we are trying. It's a trying program. So, when

80 we see how long this one will take us, then we shall know. But our intention is to have this
81 capacity of water at household level.

82

83 (Farmer2 speaks)

84

85 T: He says, our place, when it rains, at night, then this time like all the water disappears,
86 because we are on the mountain and the water goes. That is why we have begun this project.
87 (Farmer2 speaks). He says these crops and these kind of things, they all need water. For
88 sustainability. This is how we are going to help each other. If we could have enough water,
89 we are going to perform more than this one.

90

91 Ext2:(So in other words, if you know some helping hands somewhere...)

92

93 T: Agent. An agent. (Farmer2 speaks.)

94

95 T: Mh. Like farmers, what we now request... (farmer2 speaks) Yeah, we are saying one thing:
96 these products are all from [name of community]. We did not know that this product is going
97 to be found here, that we got from the knowledge of the radio and of our teacher. That these
98 crops is going to grow here. (Farmer 2 speaks). Here before, this kind of crops come from
99 Meru. We go to buy sukuma from Meru, the spinach, the tomatoes, this kind of beans, we get
100 from Meru. But this time we have seen and we have worked with our hands that it's possible
101 and that this kind of products is going to become out of [name of community]. (farmer2
102 speaks). We have worked with our hands and we've experienced that it is possible. (farmer2
103 speaks). That our land is fertile enough to produce these kinds of crops. And we want to pass
104 this message to the rest of the farmers. Our land has good food in it. It produces much.
105 (farmer2 speaks). These crops is of twelve kinds here. (farmer 2 speaks). We have more which
106 remains in the farm still.

107

108 I: And how do you pass this message? If you want to pass it, how do you do that?

109

110 (Interpreter speaks, farmer2 answers)

111

112 T: He says it's good that Jangwani is here. Then through radio program and through our
113 teacher, because he is an extension officer, who goes from one farm from one group to
114 another, and also through radio program. Through extension officer, agriculture officer, we
115 pass this message.

116

117 I: Mhm. But also, personally?

118

119 (Interpreter hesitates, speaks, farmer2 answers)

120

121 T: He says, when they are going to chiefs meeting in all the area, we've already passed on,
122 actually, we were with the teacher, when we were at the meeting, the location of meeting.
123 We talked about how every village is going to come up with a water pan and have a (cell
124 phone rings)

125

126 Ext2: (Just to help them do this, we are negotiating with the county government to have a
127 (???) a lot of these small ones. So, we can do a lot of these pans. Within very short time within
128 this farm. How do I subsidise price or even compete? The county government has a lot of
129 money.)

130

131 T: After seeing the fruitful work of this pan, we have already begun that to pass message to
132 the locational meetings.

133

134 I: And I have a few more questions about... (T answers cell phone) ... about listening to the
135 program in Borana. Because uhm, I would want to know, in general, how do you feel about
136 listening to an agricultural program in your mother language?

137

138 (Interpreter speaks, farmer1, farmer 2 answers)

139

140 T: It's good.

141

142 I: (laughs) Ok. Uhm, so, do you sometimes listen to radio programs that are not in Borana?

143

144 (Interpreter speaks, farmer2 answers)

145

146 T: Most of them are not learned. He says, for some of us who do not, who are not educated, is
147 impossible for us to listen to other programs. It's only, we only understand properly with our
148 mother tongue.

149

150 I: Ok. So, before this program in Borana was there, there was no other program that you could
151 listen to?

152

153 (Interpreter speaks)

154

155 T: KBC program also before, long time ago I think. Is it? KBC? (farmers agree) You also worked
156 with [name of program?]

157

158 Ext: (That one was on the radio, sometimes back. The national radio broadcaster. So, because
159 of this FM station now, community radio stations emerging everywhere. It's like they are not
160 even (???)

161

162 Ext3: (But the one challenge we have from that one before, there's that language barrier. Even
163 the information that has been passed, reaches the communities at late. But now, when it is...
164 (it has come locally)

165

166 T: The messages comes at the right time. To the right people.

167

168 I: Ok. And does it sometimes happen, like, you mentioned the spinach, the spinachi, that you
169 hear words in Borana that you did not know before, through the radio?

170

171 T: Does it? Yeah there are the spinach and some crops that we do not have it in Borana, but
172 when they mention it in English, we understand because, you know, because it has been in
173 the market and at least you can hear what people say, so...

174

175 Ext3: But in Kiborana (it has been localized. Localized.) it can be a new word for the farmers.
176 (speaks in Kiborana. Interpreter answers in Kiborana. Laughing.)

177

178 T: It is an English word which has been actually put in Borana. (Yes, assimilated in Borana)
179 (Laughing).

180

181 I: So, there's like the spinach where you take the sound of the word in English.

182

183 T: Yeah! Every mama who is not learned knows spinach. She says spinach. And it is English.
184 And Sukuma. (Sukuma is Kiswahili.) (Chatter, discussion) So, this one also, nyanya, we have
185 it in Kiswahili. (No, nyanya is Bantu) Is it Bantu? (More discussion about the origin of the
186 word) Actually, rafu is the only crop, rafu and [word in Kiborana], the maize and beans, are
187 the ones (more discussion in the background, farmers talking).

188

189 I: So this is an example where you take the name (Interpreter calls farmers attention) and
190 you put it into your language, but are there also examples where you, where you translate
191 something else, like the look of the plant, or the use it has to you, so that it makes a new
192 word? That is Borana, but not from the other language?

193

194 T: Yes, we have crop like that here. We have [name of crop] which is not adopted from
195 anybody, and then we have [name of other crop] which has not been adopted to... and [name
196 of crop], the pepper! The [name of crop]. And maize also [name of crop]. It has not been
197 adopted to any other language.

198

199 Ext1:(What about when it comes to pests and diseases, in terms of language?)

200

201 T: Eh, just a minute! We are in two classes.

202

203 Ext1: (What about when it comes to pests and diseases, in terms of use of language. Are there
204 times when uh, like now the army fall worm, that is probably new, do they have a name for
205 it, have they adapted?

206

207 (Interpreter speaks, farmer3 answers)

208

209 Ext2:(Most of these pests, we have our Borana name. But sometimes the name is, you know,
210 crafted from the behaviour of that particular pest. Let's say a sucking pest. Like aphids. We
211 call it tuto. Or this green one, a sucking pest. So tuto means "they suck it". So that's the name?
212 It's given from that name.

213

214 I: But do you also do that with new pests? So once...

215

216 Ext2:(With the new pests! Especially. You know, the names keep on changing, eh? Like the
217 fall army worm. We normally call it stalk borer. It is stalk borer. But scientists decided that
218 "let them call it a fall army worm, not stalk borer." Right? But we know that this one is [name
219 in Borana]. (we have that one) We put it in a group of names. You know?

220

221 Ext3: (You know there is a way they can also explain that it is a harmful, a harmful worm,
222 [name in Borana].

223

224 Ext2: That is the exaggeration. That it is really harmful.

225

226 Ext1: (I am asking this because uhm, because when there was this aphid, at one time the
227 farmers were calling it "skad". Or "Osama". From the terrorist guy. (laughing)

228

229 T: Because it is the worst! (laughing).

230

231 Ext1: (Yes! they called it Osama.) (laughing) I'm trying to remember who came up with it.

232

233 T: With us I don't think whether we have new name from other language with our names.

234

235 Ext1: (Yes. I was just giving an example.)

236

237 T: Although we call it in group, you know, [name in Borana], we call it [name in Borana], a
238 group of armyworms. We don't classify it. But other, the flying ones we call it with other
239 names, but it is from Borana. We have our names.

240

241

1 **Transcripts Case 3: Kitui**

2

3 **Case 3, Interview 3.1.: Radio Staff, 09/06/2018**

4 **I (Interviewer) P5(Participant) Ext (External Participants)**

5

6 I: Ehm, I'll start with a longer question maybe. You, tell me about your work in the radio
7 station, what is it exactly that you do?

8

9 P5: Eh, we do program, many programs, you know, radio station, eh, encouraging people to
10 do agriculture and more, so, do farming. And poultry. Yeah.

11

12 I: Eh, but, you, yourself, what do you do during the program?

13

14 P5: Me on my side, I do eh, program. Eh, we interview the extension officers, they come in
15 and tell the farmers more of, about agriculture.

16

17 I: So, you are an interviewer?

18

19 P5: Yeah. True.

20

21 I: Do you also do something else during the presentation of the program?

22

23 P5: We do, yeah. We do many. Like, we do listen to the groups. We come and record. And then
24 we go to the studio, we play. And then, the extension officer then comes in. We discuss. Then
25 she, she, he or she, he come up with the program and then send them to the group. So, we do
26 [shuffling sounds]

27

28 I: You can also... [sit on the more comfortable stairs]

29

30 P5: We can also, we do, I mean, we do like vice-versa. The listeners, the program we are
31 discuss, let's say we are discussing about poultry. First of all, we go to the groups or to the
32 field and then we record. If there is something which he or she, she could understood, the
33 listeners may call while we have the extension officer at the station. Yeah.

34

35 I: And the program, how often do you air it?

36

37 P5: We air. We air.

38

39 I: No, I mean, do you have a certain day and a certain time where you make your program?
40 Your agricultural program?

41

42 P5: Yeah. I have a time, we are locate previously, before the time we are going to the
43 interview. Our extension officer most our program has done on Wednesday...

44

45 I: Wednesday.

46

47 P5: Wednesday. On around 8:20 to 9:00

48

49 I: 8:20 to 9:00.

50

51 P5: Eh, p.m. So, I can decide, today is on Monday, I go to the groups and record. So, for me and
52 the extension officer, we do more engaging one another which topic we are going to discuss.
53 Earlier. Before the program.

54

55 I: And how do you decide which topics you are going to discuss?

56

57 P5: Ok, no, for, for, extension officer usually calls me, at say: "see, we are going to have this
58 and this, this week. Yeah. So, He decide where to go and record. So that the listeners who are
59 listening us, they understood more. Yeah.

60

61 I: So, the extension officer decides about the content?

62

63 P5: He decides about the content, my work is to, to, to encourage, to, to ask the question. That
64 the listeners, they ask him.

65

66 I: You ask the questions that the listeners are asking?

67

68 P5: Yeah, for example, you can say: "today, I have an extension officer, we are discussing
69 about this and this, so, who are, you are listening, can you tune, dial one-one-one, SMS us, on
70 this number", you know, that four, so I welcome the extension officer. "You said we are
71 discussing about poultry. Poultry uh, eh, chickens, no? Or this, chicken growers". You see?

72

73 I: And which formats do you use in your program?

74

75 P5: Formats. We use only two format we can use: drama. We can use groups. For now, there
76 are those two.

77

78 I: Can you describe those two formats?

79

80 P5: Eh, for drama, we encourage two people or three people, so that they, they dramatize.
81 The theme. One may ask anyone: "Hey, I have done, I have a few weeds, while..." Eh for

82 example, she can say: "I have no work to do. But I am keeping the, the poultry in the house.
83 So, I've, I have, I gone have a problem." You see, and the other one, played there, she say: "not
84 good to, eh, it's a waste of time", you see. But at the end of the drama, you, you come and say:
85 when you are keeping the poultry, one, you can earn a lot of money, second, eh, you can
86 generate, or you can have eggs for your home, you can sell and get something. Yeah. It means
87 so. The other one...uh... are groups.

88

89 I: ...Uh, a moment, before you explain the groups, can you tell me who writes the drama?

90

91 P5: Mhh, for studio, it's me.

92

93 I: You write the drama?

94

95 P5: I, I write the points, the way it should be followed.

96

97 I: And who speaks it?

98

99 P5: Uh, I speak, I can, generally, [name of radio staff] in the drama and do some assist them,
100 so that he can add us a flow.

101

102 I: Yeah but you said, for example there's a drama with three characters.

103

104 P5: Yeah, three characters.

105

106 I: So, who, who speaks the characters in the radio?

107

108 P5: (Laughs) Generally we have another presenters there, I chose one as a good character.
109 And we usually, eh, choose the background. So, we encourage people we are not at the studio.
110 We are like, home. Somewhere. Background, chicks are: "cocooo", that sound, eh? You see?
111 The cows mooing, you see? We choose that background.

112

113 I: Ok. So. And the listening groups then?

114

115 P5: Yeah in the listening groups is where the extension officer came see. Most probably.
116 Because she came to studio. She discuss about one topic about poultry, or livestock, or
117 farming. And then we record the program. After we record, she carry that program with the
118 hard disc. Or eh, USB, those. She come to the group and see: if, if there's one who missed the
119 program, she listen to the group, or, he has a question, he asked the group. If she don't
120 understood the question, we go there. She tells: listen to next program, you will be answered
121 this and this. Yeah.

122

123 I: And do farmers sometimes call during these programs?

124

125 P5: Obvious they call. You know, radio, we reach a longest, largest areas, like interior, you see,
126 some would call and ask: "I have this and this problem. What the solution?" And then the
127 extension officer comes in and answer.

128

129 I: And are there any other ways how farmers interact with the radio station?

130

131 P5: Obvious, true. They do listen, because when they meet at the group, the extension officer
132 tells them to prepare on Wednesday. And ask the question, while at the studio.

133

134 I: Ah, ok. And you mentioned something about SMS?

135

136 P5: SMS, yeah. They SMS, for instance, if you are far away and you have no, you have no
137 enough money to call. You can SMS. And immediately, when you SMS, I read the, your
138 question, and extension officer is there, answering for you.

139

140 I: Ok. Are there sometimes so much SMS that you have to decide which one to read? Or can
141 you always read all?

142

143 P5: No, no, no. As long as we have the, we are in a content of agriculture. I must. In content
144 of agriculture. For one, we go to, eh, to the program. You can' say, this studio and you say: "I
145 am just greeting so and so and so", I wouldn't read your SMS.

146

147 I: So, and, what, what people do you have on the air sometimes? So, do you have farmers?
148 That speak in your program?

149

150 P5: They speak, yeah, true. For instance, we have, last Wednesday, we recorded a farmer,
151 poultry. And she, I asked me myself, introduce her name. Like it's a program, three minutes.
152 Only three minutes. She tells how she has been doing this program explain more. So that she
153 encourages the other outsiders who does, the farmer, the farmer, who doesn't know more
154 about poultry.

155

156 I: And how about other experts, what other kind of experts do you have in your program.

157

158 P5: Experts. They generally, hmmm... come again?

159

160 I: Uhm, on your program. You said that you sometimes have experts there.

161

162 P5: Experts! Yeah, they speak, experts who are there speaks, they tell people more, if there's
163 an outbreak for, for a something, like a disease. They tell: prevent by using this and this.

164

165 I: And who are these experts?

166

167 P5: They come from office of agriculture, most of them. Others, they come from companies
168 like Syngenta, experts from Syngenta, farm. They come and tell people: "this disease is this
169 kind of disease."

170

171 I: Ah ok. So, do they, do they also promote their products, or...?

172

173 P5: Uh, for one, they have promote, cause, you find here in [name of area] there is many
174 disease, we find, there is one, for Syngenta, disease which kills by drugs used by Syngenta.
175 You understand?

176

177 I: Which is killed by drugs that Syngenta...

178

179 P5: Drugs that Syngenta produced, yeah. Then, you find, there is another company here. You
180 have gone there several and buy your medicine and it come and spray your...and nothing has
181 changed. But Syngenta they come and introduce a new medicine, or drug. Yeah.

182

183 I: And do you choose to invite these, the Syngenta? Or who chooses...

184

185 P5: It is general for anyone.

186

187 I: Who invites the people who come to your program to talk?

188

189 P5: Agriculture, from the office of agriculture.

190

191 I: The office of agriculture decides who speaks in the radio program?

192

193 P5: Yeah. Cause for one, she has supposed to be done by agriculture officer. They did more
194 about this disease which you are, which is affecting the people in the, in the society. Yeah.

195

196 I: And so, the extension officer, he also, he works for the office of agriculture?

197

198 P5: Yeah yeah. Cause for one, we, she brings, the extension officer, the officer from Syngenta
199 he's the one who knows: "this is good or bad".

200

201 I: And do you only work with one extension officer or with various?

202

203 P5: Many. Various, various. As long as you have the, the good content, what you are speaking
204 about what you are telling people is good, they welcome you. They welcome you.

205

206 I: And do you sometimes invite researches on a certain topic into the program?

207

208 P5: Yeah, we invite. For instance, we can have a research and extension officer. And they
209 discuss, if one is saying, "it's good", other one is saying "not good", you see, that's kind of
210 discussion. Then, the listeners there, we, at the end of the program we conclude in one thing.
211 Between extension officer and the researcher.

212

213 I: And do the farmers listen more to one of those?

214

215 P5: Mh, you might, eh, I've not yet gone for, I've not yet had the one as done by the
216 extension officer and the research, but there is in groups, but in the studio, they come, and
217 they discuss. Yeah.

218

219 I: Ehm, so, and about Kikamba. What could you say is the effect of broadcasting in Kikamba?
220 On your audience?

221

222 P5: Mh, I can see, I can say, broadcasting in Kikamba, mh, challenges. For one, in our studio,
223 I've not yet experienced one. But in our society, let's say in our society, it reaches many
224 people. Who listen and who likes (???). They do understand. Very clearly. So, the effect areas
225 I can tell you is when a, a married a Kikuyu, so he can't hear Kikamba while in at Kitui. So, uh,
226 but for now it's good. And it's, in fact, improving lives of the societies there. People have
227 encouraged and more so on farming.

228

229 I: And what is your personal feeling about broadcasting in Kikamba?

230

231 P5: Mh, it's good. For me, it's good. So that eh, broadcasting in Kikamba is good and I like it.
232 For one, we, I usually tell the people what I know in Kikamba. And I am very happy when
233 listen to me broadcasting in Kikamba, so that they understand each point very clearly and I
234 can also use some, like, also in Kikamba [speaks in Kikamba] (laughing).

235

236 I: Have there been any knowledge... [we are called back to the listening group] ah ok, then,
237 thank you for the interview!

238

239 P5: Ok, thank you!

240

1 **Case 3, Interview 3.2.: Extension Officer, 09/06/2018**

2 **I (Interviewer) P6(Participant) Ext (External Participants)**

3

4 I: Okay, as I already said, I would like to ask you a few questions about how you work together
5 with the radio stations, so these questions would be anonymous, if you don't want to answer
6 something that's ok, just tell me, and uh, I'll be recording the questions if that's ok with you.
7 Uhm, I'll just close the door a bit. Thanks. Uhm, so my first question is just about how do you
8 work together with the radio listening groups and the radio stations, if you could describe
9 that?

10

11 P6: What do you mean, radio groups eh?

12

13 I: Uhuh, exactly. How...could you please describe your work?

14

15 P6: Ok. What we normally do is that we mobilize the groups for the program. The program is
16 in the evening, they know and they listen at their homestead, after listening between 8 p.m.
17 to nine p.m. uh, they have a meeting, group meeting, Tuesdays, especially them who we are
18 deal with, they normally meet once per week. Once they come they discuss what was taught
19 on the radio and they ask the recorder questions. During the meeting, they normally record,
20 for some questions.

21

22 I: And uh, you are, are you, do you participate in the radio program, do you talk on the radio?

23

24 P6: In sight of livestock, I participate. We have quite several officers of livestock who normally
25 go to the meeting. One will go this week, the other one will go the other week. So, we have
26 one of them who participate in giving the information to the farmers.

27

28 I: Uhm, are these other livestock officers, is everyone here specialized in another area, or why
29 aren't you always on the radio?

30

31 P6: Uh, mostly, to the side of livestock, specifically we have specialized on livestock, there is
32 a time, some people for crops, they go, on their term, they are specialized in crops. But ours,
33 we are normally specialized in livestock issues only.

34

35 I: And how do you decide which topics are going to be broadcast today or this week?

36

37 P6: That one is done by the county management office, the extension office, uh, we normally
38 do this according to the demand on the environment, we do it as a way of interventions, for
39 example, when there are some problems with crops, there were so many programs dealing
40 crop protection, during this time, we have an intervention of livestock, of feeds preservation
41 (???), which is normally determined by the situation. Some might have more demand than
42 the other, like crops, crops normally, take so many weeks. (Phone rings)

43

44 I: Okay. And when farmers hear something they find interesting on the program, what is the
45 first thing they do?

46

47 P6: When they get interest with some issues?

48

49 I: Yes. When they are interested, before implementing them. Do they just do it or do they
50 discuss it? How do they react?

51

52 P6: Uh, first of all, when they are interested they come in the group, they raise it, and in most
53 of the cases they consult the offices where there is, there are difficulties. Where there are no
54 difficulties, they can implement direct. Something like, if we are talking about disease

55 control, hygiene, those one they can implement, but if some need a process or some further
56 taking qualifies, they consult the office.

57

58 I: And do you know an example of a situation where the farmers decided not to implement
59 something new, because of some reasons?

60

61 P6: Mh, some of the things which are not implemented is due to financial constraint, for
62 example, there is a day we are training on silage making...

63

64 I: Silage making.

65

66 P6: In the pastures. Silage. The one which is usually prepared, you see, they put it in papers.
67 Those papers, farmers who are highly interested in implementing, but they were unable to
68 access those particular papers, they are expensive, the only place we can get them is at (???)
69 or Nairobi. So financial constraint can impar them from implementing.

70

71 I: And was there a situation where they had problems because they did not know enough
72 about something? Or where not sure about the outcome?

73

74 P6: Sometimes they might fail to implement because of a, they might not understand the
75 program fully. Even if there is a gap of fully understanding, some of them, about 1% of the
76 group, they might have (???) ignorance. And they fail to implement because of the ignorance.

77

78 I: Uhm, ok, but what are the things that they don't understand? Because the program is in
79 Kikamba? So, they understand the language, but what do they not understand, mostly?

80

81 P6: Mostly... we normally use the simplest language, the simplest local language they are able
82 to understand. Some of the, this, like the ones we were talking about, records, we don't have

83 a Kikamba name for records. So, uh, advantage is that every farmer at the farm level they
84 know what are the records, although it is an English name. So, we use the simplest English,
85 eh, the simplest language, sometimes we put English ones like "records" when there is none
86 substitute in Kikamba, but we explain during the lesson.

87

88 I: Uhm, so, how do you, where do you get the information that you want to broadcast on the
89 radio? What are your common sources?

90

91 P6: Uh, mostly...some of the information is from our experience in the field, sometimes we
92 refer from the Kilimo magazines, uh, we also have agriculture and livestock books and uh, to
93 be more comprehensive we google from the internet, get more details.

94

95 I: Do you sometimes contact researchers on a topic?

96

97 P6: We also contact researchers like people from Katumani (?)

98

99 I: From what, sorry?

100

101 P6: Katumani. We have Katumani. And we have Kari. Katumani, they do research on crops.
102 Kari, Kenya Agricultural Research Institute, nowadays it is called Kalro, they deal with
103 livestock and research and crops. Yeah. They are within the (???)

104

105 I: So, you talk to them?

106

107 P6: We talk to them on new innovations. And updates. Because they continuously do research.

108

109 I: Ok. And do these researchers, do they sometimes also get invited to the program?

110

111 P6: Uh, those in research, some of them come to the program. If we are talking about, let's
112 say a new disease. Some of the diseases they keep on mutating eh? And they do research on
113 the same transmission, I consult them, they tell me a bit of update of that particular livestock
114 disease, then they come and give the information to the farmers. On the updates of the same.

115

116 I: Uhm, and, so, the farmers they send SMS or they call the radio station, but do they also
117 share knowledge with each other through the radio? So, does one farmer talk and the other
118 farmer...

119

120 P6: During the program, some, some farmers they do SMS, and once they SMS, we answer
121 them direct. Through the media. Some of, others, we call. Direct. We answer them direct.

122

123 I: But, does sometimes also a farmer call to answer a question that another farmer asked? Or
124 is it always you who answers the questions?

125

126 P6: In studio, it is always us who normally answer the question. Because some of the questions
127 are technical, like when you talk about livestock or diseases, they are very technical. Farmers
128 are not able to reach up to the required level of answering.

129

130 I: Are there special challenges to explain technical terms in Kikamba?

131

132 P6: Actually, there are no challenges. Most of the language we normally simplify. If we use
133 technical terms, we explain a bit. So, the only challenge is, some of them may be unable to
134 read and write, but when we talk about, when we talk to them formally, they understand. But
135 some are unable to read and write.

136

137 I: Ok. And what effect would you say does broadcasting in their local language have on the
138 farmers?

139

140 P6: Uh, there is an impact, especially on the side of pastures. It has improved.

141

142 I: Uh, could you repeat that please?

143

144 P6: Pastures. Pasture establishment and conservation. Pasture and fodder. For the crop. I
145 mean, for the livestock.

146

147 I: Do you mean pastures? For the grazing?

148

149 P6: Pastures. Pasture. Livestock feeds. Pastures. And fodder. For the livestock. It has improved
150 because of that local media. Some of them, the farmers who are unable to conserve pastures,
151 like the fodder which is on the farm, uh, our intervention previously was about how a farmer
152 can preserve those pastures before they are destroyed by the heat. So most of them, they
153 have collected their pasture feeds and they have stored. So, there is that improvement. Yeah.

154

155 I: And do farmers talk to you about how they feel about listening to a program in their own
156 language?

157

158 P6: Well, I do talk to many farmers. Most of the farmers they know me. They call me. There is
159 a time I gave them my number. I've been called by people even from back there in Machakos.
160 And here within Kitui there are many who normally call. They normally say that the program
161 is helping them, and they are put it on their schedule. Every Wednesday, 8 to 9, they are ready
162 to listen on... either crops or livestock. Yeah.

163

164 I: Okay. Uhm... I think that those are all my questions. So, thank you very much!

165

166 P6: Okay, welcome.

1 **Case 3, Focus Group Discussion 3, 09/06/2018**

2 **I (Interviewer) T(Interpreter) Ext (External Participants)**

3

4 I: So, I would like to ask you a few questions about what you just listened to, because as I did
5 not understand the program, could you maybe tell me, just short, what interested you most
6 in what you just heard?

7

8 (Interpreter speaks. Farmer1 answers.)

9

10 T2: She says that she is now able to separate records of crops or livestock or crops...

11

12 T1: And for each crop.

13

14 T2: For each crop.

15

16 T1: For each crop. And keep them in Order.

17

18 I: So, now that you know how to do that, are you going to put this into action immediately,
19 or do you first discuss it or think more about it before starting to do it?

20

21 (T2 speaks. Farmer1 answers).

22

23 T2: She says that for the crop, for the poultry, she is going to keep records immediately. For
24 the crops, she will start a bit later.

25

26 T1: When the rain starts. The next season.

27

28 Farmer2: Because we must harvest fast.

29

30 T2: The next crop.

31

32 I: Uhm, and what do you do when you want to know more about a certain topic?

33

34 (T2 speaks. Farmers 1, 2 & 3 answer)

35

36 T2: They speak to extension officers. Are they available? When you say, "from extension
37 officers", are they available when you want them?

38

39 (T2 speaks, Farmer 1 answers. T1 speaks. Farmer 1 answers, Farmer 2 answers.)

40

41 T1: She says that they also consult the experienced farmers for more knowledge and
42 experience.

43

44 (T2 speaks. Farmer1 answers.)

45

46 T1: They also get information from radios, different stations.

47

48 I: Ok, so you also listen to other radio programs?

49

50 T1: Yeah. We have quite several.

51

52 I: And are they all in Kikamba or also other languages?

53

54 Farmer2: In our mother tongue. In Kikamba.

55

56 T2: They prefer their mother tongue.

57

58 I: So, the programs that you listen to, also the other programs, they are all in Kikamba?

59

60 Farmer2: Yeah, they are in Kikamba.

61

62 T2: They prefer Kikamba.

63

64 Farmer2: To better farmers know what they are taught.

65

66 I: And uh, and do you sometimes also contact farmers that don't listen to the radio and tell
67 them about things that you heard on the program?

68

69 Farmer2: Yes. Yeah, we help community. For those who don't come in the group and who
70 does not listen to the radio. We help them.

71

72 T2: How? Where have you done that? Have you done that?

73

74 Farmer2: Yeah, we have done. In our area. That woman. She is my neighbour.

75

76 T2: What have you done? (Laughing)

77

78 Farmer2: And also, during the field day. During field days. We call more people in the
79 community.

80

81 I: Uhm, and I have another question, because when I was listening to the program, I didn't
82 understand it, but there were always some words in English that I picked up, like "farm
83 budgeting" and "records" and "ready to manage", "profit"...those were some English words I
84 heard on the program. Are there no Kikamba words for this?

85

86 (Laughing)

87

88 Farmer2: Yeah, there is! Record keeping. In Kikamba, we say (word in Kikamba).

89

90 T2: When he says that, usually he qualifies.

91

92 I: huh?

93

94 T2: But when he says record keeping, he adds in Kikamba, he explains what it is. (Speaks in
95 Swahili. Farmer2 answers). When he says "record keeping" he explains in Kikamba what it is.
96 Bu it is easier, sometimes you just say these words and then you realize you need to explain.
97 But they say, yeah. When he mentions English, he explains. Interesting.

98

99 (Farmer2 speaks in Swahili)

100

101 Farmer2: Loans, when you want loans during record keeping.

102

103 T2: You must have your record to be able to get a loan.

104
105
106
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129

I: Ah, ok.

T2: A loan from the bank or from an institution.

I: And one more question, can you just tell me in general, how has it affected you to listen to a radio program that is in your mother tongue?

(T2 speaks.)

Farmer2: Listening in our mother tongue, it is nice. Because nobody does not understand the words spoken there.

T2: Everybody understands, eh?

Farmer2: Because we have the old one, who does not understand. In Kikamba they understand. Because when the, they finished to explain...when I told them to explain what they have heard, they explained it, in Kikamba.

T2: Just ask them in Kikamba, that question, eh? So that the others can also respond, somebody else can respond, not just her.

(T1 speaks. T2 speaks. Farmer1 speaks. Farmer3 speaks.)

T2: Ok, what has she said?

130 (T1 speaks. Laughing.)

131

132 T2: It's important because everybody understands. Yeah. Even the things we don't know,
133 explained in our mother tongue, now we are able to know. Yeah. We are able to get
134 information. (Speaks in Swahili).

135

136 (T1 speaks. Farmer3 answers. T1 speaks).

137

138 T1: In groups, let's say almost half of the members, half of them might not understand the
139 foreign languages. So, you know, when you use that local, everybody is on the safe side, will
140 understand what has been taught.

141

142 T2: And she said, quickly. It's understood faster. Yeah. She said so. She understand faster.

143

144 T1: Very fast.

145

146 I: And do you sometimes hear new words in Kikamba? A word you didn't know before?

147

148 (T1 speaks. Farmer1, 2 & 3 answer).

149

150 T2: No. Only the foreign language like English. Not new words in Kikamba.

151

152 I: Ok, well thank you, thank you very much!

153

154 T2: Righto! Sawa sawa.

Transcript: Kilimo Media International Staff Interview

I(Interviewer) P1(Participant1) P2(Participant 2)

I: So, it's actually just a one question interview...if you could please briefly describe the work of Kilimo Media? What is it that you do, especially for radio stations and extension officers?

P1: Ok. Kilimo Media is... has been supporting radio stations, local radio stations. Especially out in the counties. We started out with the mainstream media, together with the community stations, but now we've veered out mainly county media stations, building their capacity in communicating agriculture programs. So we have mainly supported them in terms of training, to, on radio techniques, in different radio formats, in communicating agriculture information, agtips, those are spot, radio spots, features, radio features, magazine programs, which are mainly also like shows and, yes, those are the main, and also in terms of building partnerships with the county ministries of agriculture, so that, because we know that radio producers are not experts in agriculture. So, most of time you actually need agriculture experts to come on radio and respond to issues. That also makes the programs more credible in terms of putting out information that is credible, that is believable, even for farmers to call and ask questions and receive responses from the experts. You want to add?

P2: So, in summary, what [NAME] says, is, we as KIMI use radio as an extension tool. So, it's a different model, mainly because the extension officers in Kenya are not so many... the ratio is very small of extension officers to farmers, so now we are bridging the gap, we are using radio and other ICTs to reach farmers and using what [NAME] has talked about, building the capacity of radio stations. So, we are not a radio station per se, many people are calling to, even call our line thinking we are a radio station, we are not a radio station, but we have a model of extension that is used to help reach many many small-scale farmers in Kenya. So, so far, it's been working well, and because we, as we have pointed out, extension officers are very central to this model, so bringing extension officers and radio producers together and training them in one forum helps to enrich the model and helps to show each of the parties the importance of radio. In extension work.

32 P1: And we've done this since 2009. Uh, initially, with the, with the farmer voice radio project.
33 With funding from Bill and Melinda Gates. Through AIR, the American Institutes for Research.
34 So, after the end of that project we rebranded into Kilimo Media International, so, in terms
35 of bringing farmers, I mean, the extension and the, and the radio personnel together, that
36 has been quite a success. And we've worked with the stations KBC, the state broadcaster, the,
37 with five stations and more than ten community stations to date, uh, a report from one of the
38 extension officers of previous radio station, [Name of radio station], that's out in Samburu,
39 after working with the Samburu station, as the main extension officer, she actually called us
40 later and told us, after the project ended, and [Name of radio station] was not able to sustain
41 her, she was called by catholic radio in the area to do the same. So today she does that. So,
42 the work continues, maybe not with [Name of radio station], but with another different
43 station. But with the same same model. Yes.

44

45 I: Is that your goal, that the model can continue on without Kilimo Media?

46

47 P1: Yes. Yeah. So, it continues, we are not with [Name of radio station] any more, and we are
48 not in Samburu anymore. But the extension officer goes to the catholic radio station to do
49 the same on a weekly basis. And she's supported by the, I think, the catholic NGO, what's it
50 called? (...) Uhh...what is it called? Not Caris.

51

52 I: Caritas?

53

54 P1: Caritas!

55

56 I: Just one more thing, uh, because you a distinction between community radio and you
57 mentioned county radios, is that right? How do you define the county radio?

58

59 P1: Ok. At the county, at the counties, since the devolved, the political arrangement that we
60 have in the country in terms of administrative arrangement, there is the devolved system.

61 So, within the counties we have stations which are community stations. And then we have
62 commercial stations. The commercial stations are exactly that, they are run on a commercial
63 basis. Now, the community stations are owned by the community, and run by the community,
64 that's the difference. And they do not engage in commercial, they are not run on commercial
65 purposes per se, and that is why you will find the commercial stations, uh, the community
66 stations, are struggling in terms of resources. Where the commercial stations are, maybe have
67 certain resources at their disposal. Maybe that is the kind of distinction you might find
68 between [radio station in Kajiado], which is community, in comparison to [radio station in
69 Kitui], which is also, which we visited, which is in the county, but is a commercial station.
70 Yes.

71

72 I: So, by county radio you mean that the reach is...

73

74 P1: Yes. (At county level) All media that are within that, within the county. Yes. That are not
75 necessarily on a national, they don't broadcast on a national basis, but within, only within
76 their counties, yes. But the good thing about the local is that they are then able to broadcast
77 information and messages that are, are unique to that county.

78

79 I: Ok, thank you very much.

Interview Questions, First Version

Interview: Radio Staff
<i>Part 1: Information</i>
Q: What subjects do you broadcast?
Goals: Opener, self-description of the broadcaster. Possible follow up:
Q: How do you select the subjects?
Goals: Gain insight into the work methods of the broadcaster. Possible follow up:
Q: What are the most common sources of the information you broadcast?
Goals: Identify scientific information and the broadcaster's understanding of the information. Possible follow up: <i>source's sources. Does the information you broadcast have a scientific background (based on research results, etc.)</i>
Q: Please describe the formats in which you broadcast.
Goals: Gain insight into the work methods of the broadcaster. Possible follow up:
Q: How is the editing process before the information is broadcast?
Goals: Further identify modifications or other steps the information undergoes on the way from its source to the farmer, depending on format. Possible follow up:
Q: How do you decide about which format to choose for the information you want to broadcast?
Goals: Gain insight into the work methods of the broadcaster. Possible follow up: Certain format for certain information?
<i>Part 2: local language</i>
Q: <i>(If sources are in English)</i> Do you do the translations yourself?
Goals: Further identify modifications or other steps the information undergoes on the way from its source to the farmer. Possible follow up: <i>If yes:</i> <i>Is (X) your first language?</i> <i>Do you sometimes encounter terms that can't be directly translated and how do you translate them? (examples)</i> <i>(Do you encounter certain difficulties translating the information to (X)?)</i> <i>Do you encounter certain advantages by translating the information to (X)?</i>
Q: What effect does broadcasting in a local language have on the farmers?
Goals: Point of view of the broadcaster on the use of local language. Possible follow up:

Interview: Extension Officer <i>Questions depend highly on the nature of the work of the extension officer (explained in question 1 or beforehand).</i>
Q: Please tell me how your work relates to the radio listening groups and the farm radio programs.
Goals: Opener. Gain insight into the tasks and work routine of an extension officer. Possible follow up:
Q: How do farmers process the information they receive through radio?
Goals: Key question, information processing of Radio Listening Groups from a close Outsiders point of view. Possible follow up:
Q: Do members of the Radio Listening Groups come to you with questions about information they heard on the radio?
Goals: Explore interactivity of farm radio. Possible follow up:
Q: What are the most common sources of the information that is broadcast?
Goals: Key question. Identify sources of the broadcast information. Possible follow up: <i>Follow up questions should try to identify scientific sources.</i>
Q: Please describe if farmers contribute to discussions with their own knowledge.
Goals: Explore interactivity of farm radio Possible follow up:
<i>Language</i> Q: In which language do you communicate with farmers?
Goals: Identify communication and possible use of local language with the extension officer. Possible follow up:
Q: What effect does broadcasting in a local language have on the farmers?
Goals: Point of view from a close outsider. Possible follow up:

Focus Group Discussion
<i>Opening, Introduction (to be discussed)</i>
<i>Part 1: Listening habits</i>
Q: How is the procedure of your radio listening sessions?
Goals: Open the discussion, obtain a description of Radio Listening Groups from the farmer's perspective and a better understanding of the group mechanisms.
Possible follow up:
Q: What type of program do you prefer listening to?
Goals: Better understanding of radio listening habits, identifying formats that are most likely to gain farmer's attention.
Possible follow up:
<i>Part 2: information reception</i>
Q: When you hear an interesting piece of information, what do you do?
Goals: Understand how the Radio Listening Group processes new information.
Possible follow up: <i>How do you lead a discussion about what you heard?</i>
Q: How do you know when a piece of information is important?
Goals: identify criteria that define the type of information that farmers deem important.
Possible follow up: <i>what kind of information is most important to you?</i>
Q: How do you decide that you want to carry out something you heard on the radio?
Goals: Gain insight into the procedure the information undergoes before actual implementation.
Possible follow up: <i>What do you do once it is decided?</i>
Q: Do you try to gather more information about the topic you are interested in? How?
Goals: Gain insight into the procedure the information undergoes before actual implementation. Methods of knowledge exchange and communication among farmers. Is there interactivity?
Possible follow up: <i>Do you communicate with the broadcasters? How?</i>
<i>Part 3: local language</i>
Q: In the Radio Listening Group, do you only listen to programs in (X: name of local language)?
Goals: Gather information about the importance of hearing information in their mother's tongue
Possible follow up: If no, which language/ program? Is there a difference to the programs in (X)?
Q: What is your feeling about listening to programs in (X)?
Goals: Gather information about the importance of hearing information in their mother's tongue. It is difficult to formulate a non-biased question.
Possible follow up:
End

Interview Questions, Second Version

Interview: Radio Staff V2
<i>Part 1: Information</i>
Q: What subjects do you broadcast?
Goals: Opener, self-description of the broadcaster. Possible follow up:
Q: How is your work linked with the extension officer?
Goals: Identify the link between extension officer and radio station Possible follow up: How is the work of KiMI related to this?
Q: How do you select the Topics?
Goals: Gain insight into the work methods of the broadcaster. Possible follow up:
Q: What are the most common sources of the information you broadcast?
Goals: Identify scientific information and the broadcaster's understanding of the information. Possible follow up: <i>source's sources. Does the information you broadcast have a scientific background (based on research results, etc.)</i>
Q: Please describe the formats in which you broadcast.
Goals: Gain insight into the work methods of the broadcaster. Possible follow up:
Q: How is the editing process before the information is broadcast?
Goals: Further identify modifications or other steps the information undergoes on the way from its source to the farmer, depending on format. Possible follow up:
Q: How do you decide about which format to choose for the information you want to broadcast?
Goals: Gain insight into the work methods of the broadcaster. Possible follow up: Certain format for certain information?
Q: Do farmers communicate with you directly? How?
Goals: Interactiveness
<i>Part 2: local language</i>
Q: Are there difficulties translating certain terms to the farmers?
Goals: Further identify modifications or other steps the information undergoes on the way from its source to the farmer. Possible follow up: <i>Challenge/ Suc</i>
Q: What effect does broadcasting in a local language have on the farmers?
Goals: Point of view of the broadcaster on the use of local language. Possible follow up:

Interview: Extension Officer V2 <i>Questions depend highly on the nature of the work of the extension officer (explained in question 1 or beforehand).</i>
Q: Please tell me how your work relates to the radio listening groups and the farm radio programs.
Goals: Opener. Gain insight into the tasks and work routine of an extension officer. Possible follow up:
Q: How is the procedure of your radio listening sessions?
Goals: Open the discussion, obtain a description of Radio Listening Groups from the farmer's perspective and a better understanding of the group mechanisms.
Q: How do farmers process the information they receive through radio?
Goals: Key question, information processing of Radio Listening Groups from a close Outsiders point of view. Possible follow up:
Q: How do farmers interact with the radio station?
Goals: Explore interactivity of farm radio. Possible follow up:
Q: What are the sources of the information that is broadcast? (Where do you get the information for the radio stations?
Goals: Key question. Identify sources of the broadcast information. If the radio station receives information from the extension officer, where does the extension officer get the information? Possible follow up: <i>Follow up questions should try to identify scientific sources.</i>
Q: Please describe if farmers contribute to discussions with their own knowledge.
Goals: Explore interactivity of farm radio Possible follow up:
<i>Language</i> Q: In which language do you communicate with the farmers? Are there difficulties translating scientific terms to the farmers?
Goals: Identify communication and possible use of local language with the extension officer. Possible follow up: Are there advantages of communicating certain information in (X)?
Q: What effect does broadcasting in a local language have on the farmers?
Goals: Point of view of the extension officer on the topic. Possible follow up:

Focus Group Discussion V2
<i>Opening, Introduction (to be discussed)</i>
Q: Who of you owns a radio?
Goals: opening question Follow up depending on result: what do you do when you want to listen to radio then?
Q: In the radio listening group, what type of program do you prefer listening to? (Drama, Tips..)
Goals: Better understanding of radio listening habits, identifying formats that are most likely to gain farmer's attention. Possible follow up:
<i>Part 2: information reception</i> Q: When you hear an interesting piece of content, what do you do? (follow up: What do you do to remember the information?)
Goals: Understand how the Radio Listening Group processes new/relevant information. Other possible follow up: How do you lead a discussion about what you heard?
Q: How do you know when a piece of information is important?
Goals: identify criteria that define the type of information that farmers deem important. Possible follow up: what kind of information is most important to you?
Q: How do you decide that you want to put into action something you heard on the radio? Follow up: can you give me an example of something you put into action after hearing about it on the radio?
Goals: Gain insight into the procedure the information undergoes before actual implementation.
Q: Do you try to gather more information about the topic you are interested in? How?
Goals: Gain insight into the procedure the information undergoes before actual implementation. Methods of knowledge exchange and communication among farmers. Is there interactivity? Possible follow up: Do you communicate with the broadcasters? How?
Q: What does the extension officer do for your radio listening group?
Goals: Identify the role of the extension officer from the farmers point of view
<i>Part 3: local language</i> Q: In the Radio Listening Group, do you only listen to programs in (X: name of local language)?
Goals: Gather information about the importance of hearing information in their mother's tongue Possible follow up: If no, which language/ program? Is there a difference to the programs in (X)?
Q: What is your feeling about listening to programs in (X)?
Goals: Gather information about the importance of hearing information in their mother's tongue. It is difficult to formulate a non-biased question. Possible follow up:
End

INFORMED CONSENT FORM (to be signed by interview partners)

PRINCIPAL INVESTIGATOR: Fabian Oswald
PROJECT TITLE: Agricultural Information on Air: Analysing Farm Radio Through Contemporary Models of Science Communication. A Comparison of Three Cases in Rural Kenya
SCHOOL: Karlsruhe Institute of Technology

I understand the aim of this research study is to investigate the use of radio to communicate agricultural information to farmers and how this information is processed by them. I consent to participate in this project, the details of which have been explained to me. The interview will take about half an hour.

I acknowledge that:

- taking part in this study is voluntary and I am aware that I can stop taking part in it at any time without explanation or prejudice and withdraw any unprocessed data I have provided;
- that any information I give will be kept strictly confidential and that no names will be used to identify me with this study without my approval;

*(Please
tick to
indicate
consent)*

I consent to be interviewed

<input type="checkbox"/>	Yes	<input type="checkbox"/>	N
<input type="checkbox"/>	Yes	<input type="checkbox"/>	N

I consent to the interview being audio taped

Name: <i>(printed)</i>	
Signature:	Date:

VERBAL INFORMED CONSENT FORM

PRINCIPAL INVESTIGATOR: Fabian Oswald
PROJECT TITLE: Agricultural Information on Air: Analysing Farm Radio Through Contemporary Models of Science Communication. A Comparison of Three Cases in Rural Kenya
Karlsruhe Institute of Technology

Hello. My name is Fabian Oswald. I am conducting a study on the use of radio to communicate agricultural information to farmers and how this information is processed by them. This interview will take about one hour. All information collected in this study is confidential. Your answers will be grouped with the answers of other people like you and I will not make any reference to your name. This study may include taking photographs, audio or video recordings during the interview process for use during thesis analysis and write up. If you do not wish to be photographed, audio or videotaped, please tell me and I will comply with your wishes. There are no known risks associated with participating in this research. You are free to participate only if you wish.