Getting on the Same Wavelength
Convergence and the Communication of Livelihoods Information in Rural Uganda

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Drawing on the concept of innovation systems and the role of media in agricultural development, this paper explores the intersections between the needs and information sources of farmers, the role of radio, and the promise of new information communication technologies (ICTs) in relation to livelihoods issues in rural Uganda. Utilising focus groups, in-depth interviews, and content analysis of radio programming, the research evidences a gap between farmers' preferred sources of livelihood information and where they actually get information from. It finds that radio programming does not effectively cover livelihood issues. A number of reasons for this are identified, including: media practitioners' limited knowledge of the subject matter, their minimal engagement with farmers' preferred information sources, strained relations between policymakers and livelihoods researchers, and commercial pressures. Our findings

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suggest that despite the proliferation of mobile telephony, most farmers do not use new ICTs to access or share livelihoods information. The study points to the need for a more coordinated effort on the part of government, civil society, livelihoods researchers, agricultural extension agents and the media to improve how livelihoods information is communicated. It also demonstrates that the challenges facing farmers are vast and cannot be resolved by the media or ICTs alone.

— "Technology and the village are two hard things."
Anette Bogere, AppLab Uganda, Grameen Foundation

As mobile telephony proliferates across sub-Saharan Africa, the opportunities offered by media and information communication technologies (ICTs) as means of providing livelihoods information to rural Africans have yet to be fully realised. In June 2010, BBC Media Action's Research & Learning Group, funded by the Radio Convergence and Development in Africa (RCDA) program and supported by Carleton University's Centre for Media and Transitional Societies, conducted *Getting on the Same Wavelength,* a research project that examined the role media and ICTs play in the communication of livelihoods information in rural Uganda.

Getting on the Same Wavelength seeks to answer three main questions:

- How have media and ICTs been used to communicate livelihoods information to audiences in Africa?
- Where do media and ICTs fit within the livelihoods communication landscape in rural Uganda?
- How can the media and ICTs be used to impact the livelihoods of audiences in developing countries?

The first of these questions is examined through a review of the available literature.

Rural Radio in Africa: From Independence to ICTs

Despite rapid urbanization, most Africans still make their living off the land, removed from the broadcast media centres and broadband

connections of Africa's capital cities (*World Urbanization Prospects*, 2012). While development and communications experts continue to point to the growth of new technologies and their potential to deliver information to rural citizens, radio remains the dominant medium of communication for most Africans (Myers, 2008). One of the reasons for this, Myers (2008) states, is that radio has long been recognised for its ability to reach poor and more marginalised communities and to allow for consumption of its content at the same time as the user participates in other activities.

Rural radio broadcasting in Africa developed in the 1950s in tandem with independence movements (Girard, 2003; Ilboudo, 2003). The content of such broadcasts included information relating to health, agriculture and wealth creation (Girard, 2003; Ilboudo, 2003). Radio programming for rural livelihoods developed differently in different countries, and has long been connected to promoting economic development (Eicher, 1999). Rural radio is also somewhat of an anomaly in the communication field; its differentiator is its geographic basis. As Chapman et al. state, presumptions of rural isolation and information poverty are often understood as "providing a *raison d'être* for a radio intervention" (2003: 1). To date, the model for rural radio in Africa has been decidedly paternalistic (Manyozo, 2008). Content was often pre-packaged and produced without consulting the communities to which it was broadcast (Manyozo, 2008). It tended to be produced in the capital city and broadcast to the countryside (Girard, 2003). Most of the time, programming came from the government itself, and was often produced by a radio station operated out of Ministries of Agriculture or by the state broadcaster (Girard, 2003; Ilboudo, 2003)

The initial shift away from a top-down approach to rural radio came with the advent of listening clubs (Girard, 2003; Ilboudo, 2003). According to Ilboudo (2003), in the late 1960s various state-based initiatives, particularly in West Africa, recognised the importance of collective listening and engagement with rural radio con-

tent. This mirrored the development of rural radio in North America, where in the 1940s, radio forums were developed to promote the discussion and implementation of development information (Manyozo, 2008). These forums were demand driven and enabled farmers to shape the content of programming and to decide what actions to take (Manyozo, 2008). The promulgation of these forums reflected a growing realization that improving information uptake required radio content to be mediated and contextualised by the target audiences. Despite these changes, the impact of rural radio programming was marginal because content production continued to be largely centralised and the concerns of local audiences not sufficiently addressed (Ilbuodo 2003).

The next stage of development of rural radio came with the loosening of developing countries' broadcasting regulations (Girard, 2003; Ilbuodo & Castello, 2003). Such changes also marked the beginning of the international community's push to promote agricultural development in Africa, Asia and Latin America (Stephenson, 2003). Chapman (2003) explains that this shift in legal regimes was often preceded by democratization and a general relinquishment of state control of the airwaves. The result was that radio frequencies were opened up to commercial actors, religious organizations and other civil society groups. These changes also led to the international community becoming more involved in the production of rural radio content. The UN's Food and Agriculture Organization, which began a strategic engagement on behalf of the development community to support rural radio in the 1970s, was a leading player in this regard (Girard, 2003; Ilbuodo & Castello, 2003).

The shift also coincided with the tenets of agricultural extension theory starting to drive and shape the content of rural radio programming. Early approaches drew heavily on Rogers' diffusion of innovation model, with extension workers and national agricultural research systems seen as creators and providers of knowledge, and farmers as adopters (Rogers, 1962; Hall et. al, 2010; Ballantyne,

2009) This approach reached its peak with the Training and Visit methodology, popularised by the World Bank from the 1970s to 1990s (Aker, 2011). Yet as the production of content shifted from national governments to development experts and researchers, the paternalistic nature of its production and flow of information remained (Swanson, 1997).

Since then, approaches to agricultural extension have become more participatory and localised (Anandajayasekeram, et al., 2008). A key element of this change was the realization by development practitioners, researchers and agricultural extension workers that a top-down approach to providing rural livelihoods information through radio, or otherwise, was ineffective. In its place various community-driven approaches have emerged that draw on systems theory, and which recognise that the livelihoods information landscape is shaped by multiple actors through a variety of communication channels (Castello & Braun, 2006; Hall, 2007). In these approaches, information transfer and innovation are viewed as an evolutionary and interactive process involving a flow of knowledge among many different actors (Hall, 2006). It is the relationships between actors, their social setting and the nature and intensity of their interactions that are seen to be the primary determinants of the innovation process (Ballantyne, 2009). Within this system, communication helps diffuse knowledge, build networks, support social learning and improve the governance of livelihoods policies and interventions (Leeuwis, 2010).

More recently, rural radio has been transformed by the growth of ICTs. Mobile phones, in particular, have transformed radio into a more 'horizontal' medium (Myers, 2008). The influence that the fast-developing ICT sector has had on the livelihoods information landscape goes beyond its convergence with traditional broadcast media. It has opened up another platform for communication, and the desire to re-imagine the ways in which livelihoods information is communicated. Efforts to categorise such new ICT-based interven-

tions can be broken down into four categories: voice information delivery services; radio: dial up and regular broadcasting; extension services on mobiles and database monitoring; e-learning and video based approaches (Gakuru, 2009).

Heeks (2009) characterises the use of ICTs and particularly mobile phones as dependant on 'passive diffusion' because they rely on market-based approaches and an active pursuit of value on behalf of consumers. This means that like other initiatives aimed at improving rural livelihoods, the structures and mechanisms used to transfer such information can breed inequalities (Duncombe, 2012). To date, the lesson to be learned from recent interventions have been poorly documented. One exception to this is the African Farm Radio Research Initiative, which provides insights regarding the use of ICTs in radio-based interventions across several countries (Sullivan, 2011). While it is often claimed that bringing ICTs into a more coordinated process of information and knowledge building is more effective, evidence of how such an approach would work when scaled up is still very much lacking (Duncombe, 2012). *Getting on the Same Wavelength* attempts to add to this evidence base by understanding how mass media and ICTs fit within the information ecosystem of rural Uganda.

Methodology

The *Getting on the Same Wavelength* project drew on the innovation systems model as a basis for its methodology and analysis. It comprised a mix of both qualitative and quantitative research, including:

- 16 focus groups with farmers;
- 27 in-depth interviews with opinion formers; and
- Content analysis of one month of livelihoods programming from four rural radio stations.

The research began by conducting informal consultations with experts working on livelihoods issues in Uganda (see Appendix 1). The

objective of these meetings was to understand the major livelihoods issues affecting Ugandans and the role of the media and ICTs in communication about such issues. The information gathered from these consultations informed research design and implementation. Focus groups and in-depth interviews were conducted in the capital, Kampala, and four rural regions. Regions were selected to provide a geographic spread across the country and include a number of different livelihoods groups. Each region also included a rural radio station known to broadcast livelihoods programming. The following four stations were selected based on their broadcast area and their willingness to participate in the study:

- Open Gate FM – based in Mbale District, Eastern Uganda
- Unity FM – based in Lira District, Northern Uganda
- Radio Pacis – based in Arua District, West Nile
- Kagadi-Kibaale Community Radio – based in Kibaale District, Western Uganda

Focus group discussions

A total of 16 focus groups were conducted in local languages[10] across rural Uganda (two male and two female groups in each region). Each focus group was comprised of approximately 10 participants, all of whom engaged in farming and a variety of other rural livelihood activities (such as livestock keeping and various small business activities). Each participant also listened to a variety of programming on the radio. Groups were split by age – 18-30, and 31 and higher – to facilitate conversation between group members.

Opinion former interviews

To understand where media and ICTs fit within the livelihoods communication landscape in rural Uganda, research was conducted

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10   Translators were used where moderators were unable to speak local languages.

with each of the major groups thought to take a leading role in shaping livelihoods communication. Twenty-seven in-depth interviews were conducted with opinion formers representing the following:

- Government policymakers (3)
- Civil society representatives (3)
- Livelihoods researchers (4)
- Extension workers (4)
- Local government officials (4)
- Heads of farming associations (2)
- Media practitioners (7)

Despite efforts to have balanced gender representation, the majority of opinion formers interviewed were male. A list of all opinion formers interviewed can be found in Appendix 2.

Media content analysis

In addition to interviews and discussions with rural citizens and opinion formers, a content analysis was conducted of one month of livelihoods programming from each of the four participating rural radio stations. To collect such data, each station was asked to provide a month's worth of their leading livelihoods programmes.

The selected programmes analysed were broadcast between 1 October and 1 November 2010 and recorded by station staff. Each programme was transcribed verbatim and translated into English. A content analysis of the transcripts was conducted by hand using a standardised code frame that was piloted on programme transcripts before usage. Representatives from the African Farm Radio Research Initiative and the International Network for the Availability of Scientific Publications provided feedback on the construction of the code frame.

Research Limitations

The focus of this research on the role of media and ICTs came at the expense of understanding the intricacies of other actors' roles. The role of the local private sector and regional actors, in particular, should be explored further. Efficiencies in research design also meant that focus groups were conducted in areas known to have radio stations broadcasting livelihoods information and that the views of farmers living in areas where rural radio may have had less of an influence were not gathered. In addition, despite efforts to have balanced gender representation throughout the research, the majority of opinion formers interviewed were male. Finally, some fieldwork was conducted preceding the national elections, which may have affected the views of participants.

Research Findings

The discussion in this section sets out the insights gathered from farmers, other opinion formers, and media practitioners. It concludes with a presentation of the findings emerging from the media content analysis.

Farmers

Farmers across Uganda raise crops and livestock for their own subsistence and commercial purposes. Their efforts are confounded by a number of problems, particularly pests and diseases, changing weather patterns and a lack of stable markets for commercial products. The farmers who participated in this study expressed a desire and need for more information about each of these issues.

There are a variety of governmental ministries and non-governmental organisations working on livelihoods issues across the country. However, the participant farmers reported that local government officials are an important source of livelihoods information

and there was relatively little discussion among farmers or local government officials about inter-community exchanges. The government's National Agricultural Advisory Services (NAADS) is the most visible to Uganda's farmers. The farmers reported that NAADS extension workers are one of their main face-to-face sources for livelihoods information, and expect programmes run by the government, such as NAADS, to provide information, and inputs, to them. Yet despite this desire for support and the visibility of NAADS, most farmers claimed that they did not actively engage with the service, or have contact with NAADS workers on a regular basis. In the words of one older female farmer, "They just introduce it to you and leave you on your own."

Those who were involved with NAADS said it supported them through trainings, community sensitisations, and the provision of agricultural inputs such as seeds and tools. They also acknowledged that NAADS benefits relatively few farmers given the imbalance between the number of NAADS workers and the many farmers who need support. Others claimed that while NAADS provides them with seeds for new crops, it fails to provide pesticides or resources to protect them. The result is that the innovations and inputs provided by extension workers often fail to take hold among the farmers actively engaged with the service, or more widely.

Civil society organisations (CSOs) are the other main source for farmers of face-to-face livelihoods information. CSOs usually engage farmers through seminars and in-field trainings. Some farmers reported, however, that CSO training is not sufficiently practical.

Most farmers are not in close contact with livelihoods researchers. When they are, it is usually linked to fieldwork by researchers. The farmers in the sample reported that they did not have difficulty communicating with researchers, in part because the researchers are usually accompanied by translators who can communicate in local languages. They also pointed out that researchers rarely communicated the results of their work directly to farmers.

Although local businesses were not included in the research design, the participant farmers noted that these entities play an important, though not necessarily positive, role in providing them with livelihoods information. Farmers require information about agricultural inputs, particularly pesticides. However, according to some farmers, individuals selling such inputs in their communities often are ill-equipped or uninterested in informing farmers about their products. Nonetheless, farmers often find themselves having to rely on the advice provided by these individuals.

Farmers exchange livelihoods information with their fellow farmers. Female farmers in particular emphasised the value of oral communication, noting that information is passed down orally through the generations, with older people in the communities teaching younger ones how to manage their crops and livestock.

Along with NAADS, CSOs and their fellow farmers, the radio is the other major source of livelihoods information for farmers. The participant farmers reported having greater access to radio than any other media and pointed out that local radio stations are an important and trusted source of information about their crops and livestock. They also viewed radio as a means for providing feedback to the government about livelihoods issues. Yet the farmers also reported that radio stations need to do a better job of informing their listeners about when livelihoods shows are broadcast.

There was also a sense among the participant farmers that the livelihoods information transmitted via radio is not sufficiently comprehensive. Many claimed that while weather reports and descriptions of pests and diseases are useful, they often have difficulty implementing what they hear. Some female farmers reported being too busy to listen to the radio. It was not clear, however, whether this reflected a perceived lack of value in what the stations broadcast. Overall, the participant farmers were of the view that the information supplied by radio would be more useful if the programmes

were longer and there were more opportunities to call in to get questions answered.

The farmers viewed face-to-face engagement as critical. In the words of one participant from Arua, "The issue of information on the radio is that on the radio we only receive. The radio people are not the ones to implement it." To this end, they expressed a desire for radio content to be coordinated with the government and CSO-supported 'experts' working in the communities so that the information provided by one supports the efforts of the other. A younger male farmer from Kibaale echoed the call of many farmers to coordinate radio broadcasting with face-to-face training and livelihoods interventions stating,

> If they [extension workers] go through the radio, even if we don't know their faces, but whenever we hear the voice, we know that it's our man and whatever he is going to say there I will get it because he will have taught it in the language I understand.

Unsurprisingly, the participant farmers reported having greater access to mobile phones than to other ICTs such as the Internet. Many noted that it would be useful to access agricultural information via their mobile phones, but that they did not generally use their mobile phones to access or share such information. Unreliable network connectivity and the high cost of air time further limits the usefulness of mobiles. Some claimed to use their phones to share livelihoods information with their fellow farmers, while only a handful said they used them to access information about local markets. Among these farmers, however, distrust in the content received on their phones was expressed. Though some did not specify why they doubted what they received on their phones, others commented that the commodity prices on their phones do not match what they find at market. Also noteworthy is the finding that female farmers have far less access to mobile phones than their male counterparts.

The livelihoods information landscape of the participant farmers is populated with three primary actors: NAADS extension work-

ers, radio programming and fellow farmers. It is face-to-face sources, not electronic ones, which dominate their criticism. The participants' experience with NAADS and other opinion formers was seen as far from satisfactory, yet it is likely because it's from such face-to-face sources that farmers derive the most value that they are more critical. Likewise, radio programming is seen as a useful and important mechanism for receiving livelihoods information, but its value diminishes when content is not integrated into the wider information landscape of farmers. Despite their rapid proliferation, mobile phones are viewed by farmers as a potentially useful platform, but at the moment they remain peripheral and are not seen as a major source of livelihoods information.

Opinion Formers

The following section outlines the perspectives of opinion formers from government, civil society and the research community on the role they play and how media and ICTs are used in Uganda's livelihoods information landscape.

Government Policymakers

Government policymakers bring together different stakeholders, including CSOs, local government officials and the research community to shape Uganda's livelihoods policies and related interventions. The three participating government policymakers in this study suggested that CSOs inform policy, evaluate interventions and provide feedback between citizens and policymaking institutions.

Research is vital to providing the government with technical expertise on livelihoods innovations. Yet engagement between policymakers and the research community tends to vary. Policy and research are most coordinated when policymaking institutions, such as the Ministry of Agriculture, have affiliated research organisations

devoted to their field. In such cases, research is embedded within the policymaking process.

In contrast with what most farmers described, the policymaker interviewees emphasised the role local government institutions play in ensuring livelihoods information is shared between different communities around the country. They also viewed the media as a means for delivering livelihoods information to citizens and raising awareness about the government's work. However, engaging with the media, they claimed, presents many challenges including the failure of telecommunications companies and media houses (even those based in rural areas) to prioritise livelihoods issues. Consequently, the government must pay for the livelihoods coverage it wants. The result, they say, is that livelihoods issues do not appear frequently in the media. The interviewees further claimed that when the media do report about livelihoods issues, it is mostly in reaction to a specific news event or crisis. At these times, the media helps to ensure that citizens' concerns are heard by the government. The more prosaic, day-to-day livelihoods challenges faced by rural farmers get less coverage. While interviewees supported the idea of media playing a more sustained role in addressing livelihoods issues, they suggested that stronger links between the media and policymakers may be required before such a change can be effected.

Like many in the livelihoods sector, this group of interviewees were excited about the role that ICTs can play but equally cognizant of its infrastructural challenges. Current efforts to inform farmers about how to recognise new crop diseases through mobile phone messaging were mentioned within the context of the government's resource constraints. Specifically, there are impediments to incorporating ICTs as part of the interventions they support resulting from the costs charged by mobile network providers. They also acknowledged that limited energy supply and a lack of familiarity with new technologies can make the use of ICTs a challenge for farmers. In their view, ICT-based interventions must be mindful of these limita-

tions and implemented in concert with local broadcasters and agricultural extension worker.

Local government officials

The chief role of local government officials is to facilitate the national government's livelihoods interventions by disseminating livelihoods information to citizens and providing citizen feedback to the government. Local leaders work with a variety of government institutions on livelihoods issues, with NAADS being the most high-profile.

The respondents from this group claimed that NAADS has made a positive impact on their communities. Some noted that NAADS' effectiveness is hampered by the fact that it works with only a small percentage of the local population. Another major challenge according to this group of interviewees is the lack of trust NAADS garners among local farmers who "see these government programmes…as politics."

Local government officials reported that while the media plays an important role in providing livelihoods information to farmers, radio programming *alone* has only a limited impact on farmers' livelihoods. In their view, the information provided by radio can only be implemented when it is followed up by face-to-face support. As for mobile phones, these were seen as providing tips, prices and other small amounts of information. While each of the latter are important, they claimed that farmers often need more. In addition, accessibility, the cost of airtime and illiteracy are barriers to their increased uptake and usage.

Extension workers

NAADS extension workers disseminate information and inputs through farmer groups. Aside from other local farmers, extension workers often are farmers' first points of contact when livelihoods

problems arise. The extension workers interviewed say that farmer engagement with NAADS has been inconsistent. According to these interviewees, their main challenge is one of scale. There are simply too few of them, and they are poorly resourced. Consequently, they struggle to get even the farmers who are engaged with NAADS to implement the information they receive. According to one extension worker,

> Copying rates are low and it is still a challenge to many of us to know why they don't adopt these good practices which don't require money, just a change in the way you are doing things…It is surprising that many of them do not take up the innovations.

The participant extension workers reported seeing themselves as a link between the many groups providing livelihoods information and local farmers. They work closely with researchers, particularly those embedded in the Ministry of Agriculture. Some claimed that government officials, especially elected ones, can politicise livelihoods issues in ways that are unhelpful.[11]

The extension workers interviewed maintained radio can help them to reach more farmers and claimed to frequently use it to communicate with farmers in their districts. They emphasised that radio is a useful way for farmers to hold NAADS to account and that working with the media could lead to increased demand by farmers for NAADS inputs and information. Yet among the four extension workers interviewed, there was a sense that their work could be better coordinated and supported by the media and others in the sector. For instance, the cost of airtime on commercial radio stations limits the number of farmers that can be reached.

The interviewees reported rarely using ICTs to provide information to farmers, noting that it is CSOs in their areas that are pio-

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[11]   Fieldwork was conducted in the months preceding the 2011 general election. This may have had an impact on extension workers' views of policymaker engagement with livelihoods issues.

neering their use. Some use ICTs to look up information for themselves, but such usage has not been institutionalised.

Civil society representatives

Civil society organisations play a variety of roles in Uganda's livelihoods information landscape including collaborating with the government in formulating and implementing its livelihoods policies. The three interviewees from the CSOs that participated in the study reported working closely with researchers and using their research to inform their own interventions.

The interviewees felt strongly that citizens should be more engaged in the governance of livelihoods issues. They noted that, at present, citizens have few opportunities to feed into the policymaking process. This lack of familiarity with the policymaking process, they assert, limits citizens' ability to lobby for their concerns.

Like policymakers and extension workers, CSO representatives recognised the ability of media to help in reaching rural audiences with livelihoods information. In the participants' view, however, the media is not doing enough to support citizen engagement in governance around livelihoods issues. By highlighting their concerns and engaging policymakers in discussions around these issues, they say the media can "champion peoples' voices." They also stated that greater media engagement with livelihoods issues can increase citizens' influence on government policy and help them to hold their leaders to account.

The individuals representing the CSOs that participated in this study reported rarely using mobile phones or the Internet to communicate livelihoods information to citizens. While this is not necessarily indicative of the sector as a whole, it is a telling reminder of how new and relatively un-integrated such technologies remain.

Farming association heads

Throughout Uganda, local farmers come together to form various associations which enable them to access information and services provided by the government and CSOs. The heads of two such associations were interviewed for this study. Each claimed that even with these structures in place farmers still do not have access to enough livelihoods information.

They suggested that local farming associations have little impact in how government livelihoods policies are formed and implemented, stating that farmers are "hardly consulted." The result, they say, is a lack of ownership by local farmers which means that government interventions suffer from a lack of engagement and uptake.

Both interviewees reported that illiteracy is a barrier to farmers understanding and implementing the information provided. Seen in this light, they viewed rural radio as an important tool, asserting that more stations need to have programming dedicated to the issue. In their view, interactive programmes broadcast at consistent times, the topics of which are communicated to farmers beforehand, would make the radio an even more useful forum for farmers to get their livelihoods questions answered. Echoing the comments of other actors, these two individuals were adamant about the need for radio output to be complemented with other sources of information, particularly face-to-face interaction. They also suggested that while farmers use mobile phones to share livelihoods information with other farmers, their usefulness in connecting farmers with experts, on the radio or otherwise, is limited by the cost of airtime and farmers not feeling they are getting value for their money.

One association head described how a Grameen Foundation initiative in his area was successfully integrating ICTs through combining technology and on-the-ground support. He explained,

> …we have extension workers who are sent into the villages and we have these CKWs [Community Knowledge Workers] who use the phones with us. By using a phone, there is no way they can tell you that they do not

have transport because you just walk and go to them and then they give you the information unlike looking for an extension worker.

Livelihoods researchers

The research community supports other opinion formers, particularly in government and civil society, by providing technical advice and helping to identify solutions to Uganda's livelihoods challenges. The researchers interviewed for this study said they interact with farmers when they are conducting their fieldwork, but are not in close contact with them on a daily basis. They rarely communicate their findings directly to citizens because they are generally not funded to do so.

Researchers said their engagement with other opinion formers was limited, with policymakers consulting published reports in lieu of directly engaging with the authors of the works. This dynamic changes in emergency situations when contact between researchers and policymakers becomes more frequent. Some researcher participants viewed increased engagement with policymakers as entailing risks such as elected officials potentially interfering with the communicating of research, especially if the work is seen to be politically sensitive.

The interviewees all reported that their engagement with the media is limited and, at times, fraught with distrust. They rarely approach the media to disseminate their work and media practitioners rarely approach them. Echoing the comments of policymakers, the participant researchers claimed that the media focuses on livelihoods issues mostly during emergencies, while citizens need information *before* a crisis hits. They further claimed that when they are in contact with the media, journalists' lack of understanding of scientific issues leads to inaccurate reporting about research findings. In the words of one interviewee, "Sometimes you say something and when you see it in the newspaper it's not what you told them."

Media practitioners

Seven media practitioners participated in this study, with most ac-
knowledging that livelihoods issues are not a priority for their re-
spective media outlets. The reporters from rural radio stations stated
that despite their employer's limited resources their stations were
trying to provide livelihoods information to farmers and to ensure
that farmer's concerns are heard. They did, however, believe that few
stations are prioritizing livelihoods programming. As one interview-
ee from this group put it, "One story is like one grain in a basket….
If this one radio station runs a story on climate change once in a
week, I think it can't do much, but if it is done collectively, I think it
can create an impact."

The interviewees from this group identified numerous reasons
for the media's failure to adequately cover livelihoods issues. Accord-
ing to some of the interviewees, reporters find the topic overly tech-
nical, resulting in stories that tend to politicise livelihoods issues and
not explain enough about their causes and implications.

They also suggested that government officials are often an unre-
liable source for such information. There was a sense that in the light
of their lack of technical expertise on livelihoods issues, government
officials either provide the media with inaccurate information or
simply refuse to speak about these matters. In the words of one in-
terviewee, "These people treat the media with a lot of suspicion.
They think the media will manipulate that information to work
against them or to get them into trouble. So they don't give it when
the media approaches them."

The participant media practitioners also reported that their rela-
tionship with the research community is limited by researchers' fear
of how their findings will be reported. When they do meet, media
practitioners say researchers speak in overly-technical language
which they struggle to make useful and understandable to their au-
dience.

Radio content

To better understand how rural media communicates livelihoods information, a content analysis was conducted on one month's livelihoods programming from each of the four participant rural radio stations: Open Gate FM, Unity FM, Radio Pacis and Kagadi-Kibaale Community Radio (KKCR). A total of 25 episodes of livelihoods programming was received from the participating stations. Each programme averaged approximately 32 minutes in length and most featured multiple formats. Table 1 below lists the specific programmes recorded from each station:

Table 1: Programmes analysed

Station	Programme Title	Number of Recordings
Radio Pacis	Farmers Talk	5
	News Journal - Environment Programme	2
Open Gate FM	Agriculture Programme	4
KKCR	Urban Farming	3
	Sponsored Agriculture Programme	1
	Environment Programme	2
	Water Integrity Programme	2
Unity FM	Sponsored Agriculture Programme	3
	Business Forum	3

Topics Covered

The topics covered by each programme were determined using three different measures. First, the main topic of each programme was assessed by reviewing the proportion of time spent on a given subject. Second, topics were coded as having received 'extensive discussion' if

they were covered substantively but were not the main topic. Finally, topics were coded as having received a 'brief mention' if they were covered in programming to a lesser extent.

The main topics of livelihoods programmes are grounded in the needs of local citizens. Programmes focus on a range of issues that concern farmers. Within our sample the two most frequently raised main topics were agricultural and income-generation (see Table 2 below).

Table 2: Main topics of programmes

Main topic *[Base = all livelihoods programmes (25)]*	Frequency in programming
How to grow a specific crop	24%
Livestock keeping	16%
Business issues (inc. general income-generating activities)	12%
Other	12%
Corruption	8%
Tree cutting, planting, preservation	8%
Cleanliness/hygiene of community and environment	8%
Water provision for human use/consumption	4%
Crop health	4%
Market information	4%

Despite being the main topic of only one programme, information about local markets including the prices of goods for purchase and sale, was found to be frequently present in the programming that was analysed. An analysis of the topics that receive 'extensive discussion' or a 'brief mention' demonstrates that market information is included in 40 percent of all programmes.

Comprehension

Programmes are broadcast predominantly in the local language of the communities where they are based: in eastern Uganda, Open Gate FM output is mainly in Lugisu; in northern Uganda, Unity FM is mostly in Luo; in West Nile, Radio Pacis is mostly in Lugbara; and in western Uganda, KKCR output is mostly in Runyoro. Nearly all (92 percent) programmes in the sample also included some English, which is used mainly by programme hosts or guests.

Content analysis assessed the amount of technical information in programming and whether the topics covered could be understood by an average listener. Approximately two thirds (64 percent) of programmes were considered free from technical information. In each instance that technical language was used, it was done so by a programme guest or interviewee. Despite the occasional use of technical jargon, nearly all (92 percent) programmes cover livelihoods topics in a way that average people presumably could understand.

Contributors to Programming

The content analysis also examined the range of people who appear as hosts, guests or are otherwise present or heard in the programming. Each programme in the sample has a host and nearly half (44 percent) have in-studio guests. Programme hosts and guests were overwhelmingly male: 92 percent of all programme hosts are male as are approximately three quarters (76 percent) of in-studio guests.

Farmers' preferred sources of livelihoods information (e.g., perceived experts such as NAADS representatives) do not appear frequently as guests on stations' livelihoods programmes (see Table 3 below). Within the sample, CSO representatives appeared more than other opinion formers, NAADS representatives only rarely, and livelihoods researchers not at all.

In addition to in-studio guests, programmes engage contributors in a variety of ways, including live call-ins and pre-recorded interviews. Table 4 below presents the different categories of contributors present in programming, regardless of their method of engagement.

Table 3: Types of guests in programmes

Types of guests *[Base = programmes with in-studio guests (11)]*	Frequency in programming
CSO representative	27%
Regular citizen	18%
District government personnel	18%
Representative of local business	18%
Local councillor	9%
Parish chief/personnel	9%
National government personnel	9%
Local farming organization representative	9%
NAADS representative	9%

The information presented in Table 4 reveals that regular citizens appear in programming more frequently than any other type of contributor. Farmers' primary face-to-face sources for livelihoods information appear much less frequently. Within the sample analysed, CSO representatives appeared in only three programmes (twice as guests) and NAADS representatives in only two. Conspicuous by their absence are livelihoods researchers, who did not appear in programming at all.

Table 4: Types of contributors in programmes

Category of contributor *[Base = all programming (25)]*	Frequency in programming
Regular citizen/Audience member	60%
Local business representative	12%
CSO representative	12%
NAADS model farmer	8%
NAADS representative	8%
District government personnel	8%
Local councillor	8%
Parish chief/personnel	4%
National government personnel	4%
Political candidate	4%
Local farming organisation	4%

Apart from audience members who call in to programmes, most contributors take part in programming through in-studio discussions or pre-recorded interviews. Unlike audience call-ins, they also tend to speak for extended periods. Farmers thus have few opportunities to tune into livelihoods programming and hear one of their preferred sources for livelihoods information.

Audience Engagement

More than one third (38 percent) of all programmes in the sample featured live phone-ins from audience members, with each programme that had a call-in segment featuring at least three calls. In most instances, audience members call in to ask questions, make comments or share their experience regarding the topics discussed. Audience members frequently ask for information about market prices and advice on how to grow crops. Across all programmes a

total of 70 audience members are heard, of which the vast majority (84 percent) are male.

Discussion

The findings of this study suggest that farmers are not getting enough livelihoods information to meet their many needs. In Uganda, farmers receive information about livelihoods issues mainly from four sources: government agricultural extension workers, CSO representatives, local radio stations and their fellow farmers. Most farmers that participated in this study indicated that they value most highly the information they receive from livelihoods experts external to their community. Yet their preferred sources for such information – government extension workers and civil society representatives – are relatively few in number. They also indicated that they view it as a duty of the government, not CSOs, to provide them with livelihoods support. Hence, they expect more from government representatives, including extension workers, policymakers and others.

While policymakers coordinate the government's livelihoods work they are rarely in contact with rural farmers and do not appear frequently in livelihoods radio programming. The result is that the media does not fulfil its role in providing citizens with information about government livelihoods policies. Nor does it act as a platform for holding government officials accountable for livelihoods-related policies.

In the development sector, livelihoods researchers were traditionally looked to as an important source for innovations. The findings from our research reinforce the importance of moving away from this paternalistic, expert-driven view. Researchers rarely disseminate their work directly to the public and have an uneasy relationship with the media, which makes them unlikely to feature in the broadcast media. Local business owners are an important presence

in rural communities but are seen by farmers as an unreliable source of information about livelihoods issues.

Radio provides an important platform for livelihoods information, but farmers who participated in this study are adamant that the media can do more. They want information on air about the weather and local market prices, but many need more than this. Many rural Ugandans are resource-poor and need to know how to get the most from their land and how to protect crops and livestock. It is the media's coverage of these more technical issues that appears to be particularly inadequate. The sources for livelihoods information that farmers know, trust and find the most useful are rarely on the air. While the lack of experts on air could be seen as a positive step toward a less paternalistic and more inclusive approach to livelihoods communication that prioritises indigenous knowledge as well as advances driven by the research community, it is precisely from these 'experts' that farmers most want to hear. With face-to-face engagement between farmers and their preferred information sources infrequent, it is in this gap that farmers and opinion formers see the media playing a critical role. They say the media can help amplify farmers' voices, call greater attention to citizens' concerns and provide a platform for citizens to hold their leaders to account. Yet at present, this role largely goes unfulfilled.

Compared to the broadcast media, mobile phones play a less significant role in the livelihoods communication landscape. Aside from select government and civil society interventions, ICTs are generally not used to deliver livelihoods information to farmers. While some farmers have access to mobile phones, their widespread use to access livelihoods information is limited by the cost of airtime, lack of network coverage, and a perception that what they receive via their phones is not of much value.

That some farmers who have used ICTs to access livelihoods information do not trust the information they provide should also serve as a warning. Farmers need to derive a value from whatever

content ICTs provide if they are going to play a greater role in the livelihoods communication landscape. Additionally, given the infrastructural and financial barriers to scaling up their usage, relying on ICTs to fill the gaps in farmers' communication landscape –to connect them to information sources or provide them directly with the information they need – may risk leaving behind the individuals and communities that need the information the most.

Ultimately, the impact that ICTs have on farmers' livelihoods mimics that of the traditional media. Both offer opportunities for farmers to receive and share livelihoods information and provide a platform to hold their leaders accountable. Yet Uganda's current livelihoods communication landscape is still one that is largely built on old technologies: power lines and phone masts, and most importantly, people. For the media and ICTs to play a more effective role in helping farmers access information and shape policies, the barriers to ICT access and lack of coordination between farmers' preferred information sources and the media must be addressed.

Appendix 1 - Informal Advisory Group Members

Consolata Acayo, *Ministry of Agriculture, Animal Industry & Fisheries*
Joyce Adupa, *National Agricultural Research Laboratories*
Emily Arayo, *Farm Radio International*
Sudi Bamulesewa, *United States Agency for International Development*
Paul Isabirye, *Climate Change Unit, Government of Uganda*
Geoffrey Kamese, *National Association of Professional Environmentalists*
Richard Kimbowa, *Uganda Coalition for Sustainable Development*
Anthony Mugenyi, *National Agricultural Advisory Services*
Augustine Mwendya, *Uganda National Farmers Federation*
Bernard Namanya, *Climate Change Concern*
Mike Segawa, *The Daily Monitor*
Gerald Tenywa, *The New Vision*

Appendix 2 - Opinion Formers Interviewed

Government policymakers

Eng. Gilbert Kimanzi, Ministry of Water & Environment

Mr. Okasai Opolot, Ministry of Agriculture, Animal Industry & Fisheries

Mr. Dickson Baguma, National Agricultural Research Organisation

Livelihoods researchers

Dr. Leena Tripathi, International Institute of Tropical Agriculture Uganda

Dr. Josephine Namaganda, National Banana Research Program

Dr. J. O. Okumu, Institute of Environment & Natural Resources, Makerere University

Dr. Charles Wana-Etyem, Warner Consultants Uganda

Civil society representatives

Mr. Davis Ddamulira, Water Aid Uganda

Ms. Dorothy Baziwe, Uganda Rainwater Association

Ms. Agnes Kirabo, Volunteer Efforts for Development Concerns

Media

Mr. Patrick Luganda, Network of Climate Journalists for the Greater Horn of Africa

Mr. Andrew Ndaula Kalema, The New Vision

Ms. Annette Bogere, Applab Uganda, Grameen Foundation

Mr. Francis Cadri, Radio Pacis

Mr. Patrick Ebong, Unity FM

Mr. Wilfred Masaba, Open Gate FM

Mr. Ismael Kasoha, Kagadi-Kibaale Community Radio

Local leaders

Mr. Lawrence Alisiku, Local Councillor, Kijomoro sub-county, Maracha District

Ms. Catherine Akullo, Local Councillor, Amach sub-county, Lira District

Mr. Ahmed Washak, Local Councillor, Bungokho sub-county, Mbale District

Ms. Josephine Nakato, Local Councillor, Kagadi sub-county, Kibaale District

Extension workers

Ms. Jema Oleru, NAADS Coordinator, Arua District

Dr. Benda Kirungi Katali, NAADS Coordinator, Kibaale District

Mr. Godfrey Acuti Ojuka, NAADS Coordinator, Lira District
Mr. Paul Mwambu, NAADS Coordinator, Mbale District

Farming association heads
Mr. Fred Musinguzi, District Farming Association, Kibaale
Mr. Patrick Kibete, Farmers Forum, Mbale District

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