Climate Airwaves:
Community Radio, Action Research, and Advocacy
for Climate Justice in Ghana

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Community radio is well recognized as a powerful vehicle for advocacy and social change in Africa, but its use in the field of climate change has remained very limited, and then largely for top-down transmission of information to communities. This article discusses lessons learned to date from the Climate Airwaves, an initiative aimed at developing new approaches for supporting community radio broadcasters to investigate, communicate, and engage in broader debates on the impacts of climate change on vulnerable communities in Ghana. It also discusses in depth the central role that action research aimed at effecting social change plays in this particular initiative, and in climate justice initiatives more broadly. Lessons learned to date have highlighted the challenges of addressing complexity and uncertainty appropriately, the importance of framing climate change in the context of rights and responsibilities, the role of sustainable partnership models, and how this work can contribute to broadcasters' and communities' longer-term visions of change.

Background and Justification for the Study
Climate Change and Development in Africa:
Dimensions of Local Engagement

According to the Intergovernmental Panel on Climate Change (2007), by 2020, between 75 and 250 million people in Africa could be exposed to increased water stress, and agricultural yields in some areas of the continent could be reduced by up to 50% as a result of climate change, resulting in widespread loss of lives and livelihoods across the continent. These and other impacts are already being

felt and will continue to worsen for the foreseeable future. For vulnerable communities in Africa, the emerging local-level impacts of climate change compound the already-existing challenges of persistent poverty, HIV/AIDS, and social vulnerability. As a result, increasing levels of attention and funding are being directed toward helping vulnerable communities, particularly in developing and least-developing countries, build strategies to adapt, although current funding flows are still widely viewed as grossly insufficient (Brown, Nanasta, & Bird, 2009).

Despite the increased international attention on the projected socio-ecological impacts of climate change on Africa, studies suggest that research uptake at the local level has been limited, partly due to the challenges involved with communicating scientific research in ways that are appropriate to local stakeholder needs (Gauthier, 2005), as well as failure to meaningfully engage existing local institutions (Agrawal & Perrin, 2009) and local cultural practices (Ensor & Berger, 2009). Alongside these challenges, numerous studies have called for increased scientific engagement with local or indigenous ecological knowledge as a valuable source of adaptive practice and a pathway to integrating new approaches to adaptation (Berkes, Colding, & Folke, 2000).

One of the key barriers to meeting these challenges, this study agues, has been a failure to harness effective local-level forums that allow for dialogue and exchange between researchers, community members, intermediaries (individual or institutional), and policy makers. Much of what has been termed "knowledge sharing" or "research communication" in climate change adaptation has relied on institutionally-managed online databases and "knowledge portals," periodic workshops for climate change focal points, or occasional meetings to coincide with particular projects being implemented in a given community or district. These approaches tend either to engage those already "in the know" and familiar with the discourse and institutional processes around climate change, or to engage with those at the margins of this discourse as passive or uninformed *targets* of information. As a result, these initiatives have frequently failed to span the "last mile": to engage vulnerable communities in ways that address barriers presented by technology, language, and power relations; to link with the existing channels of communication that communities rely on; or to build upon ongoing activities and social spheres of vulnerable groups. They fail to capitalize on the important role that local culture and ways of knowing must play within community-based climate change adaptation (see Figure 1), and thus, they limit the potential for lasting change.
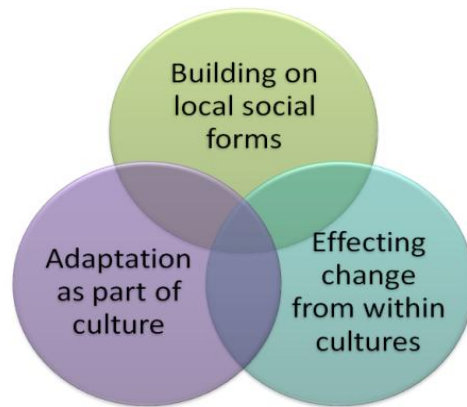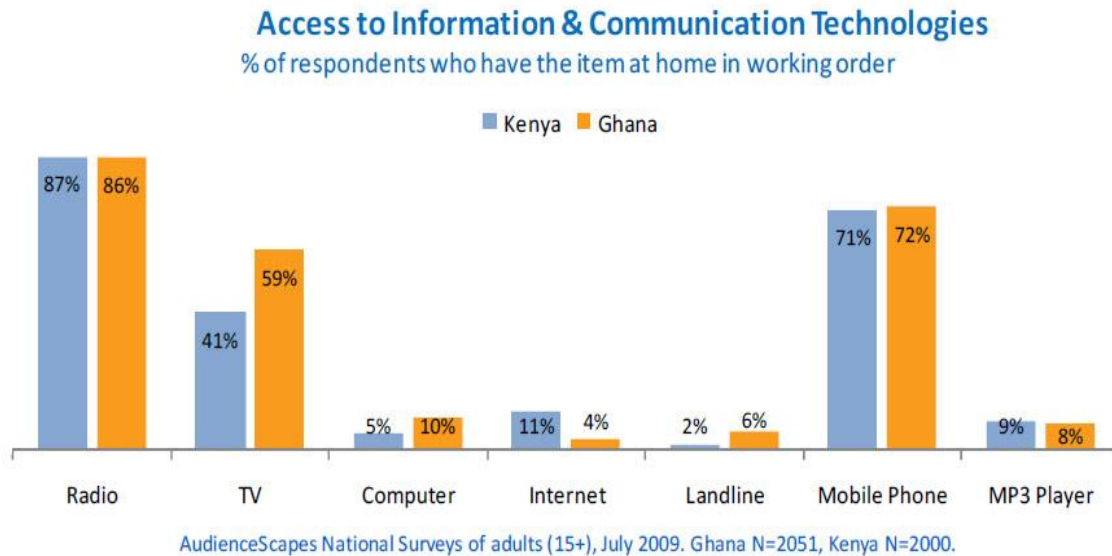
Figure 1. Multiple Roles of Culture in Community-based Adaptation.
(Adapted from Ensor & Berger, 2009)

The failure to effectively employ appropriate communication channels to involve local stakeholders in sustained discussion on climate change has prompted a series of reflections on needs and recommendations for both researchers and journalists (Fahn, 2009; Godfrey, Pauker, & Nwoke, 2008; Ochieng, 2009). In general, these recommendations have highlighted the urgent need for spaces for interaction between research, policy, and media actors throughout the research and implementation of adaptation actions. This interaction must be supported, they argue, by strengthening the capacity of media actors to understand the fundamentals of climate change and how it relates to local-level concerns, how research is conducted, and how to investigate climate change locally. These studies also recommend that research institutions link with media actors to provide them with relevant and up-to-date scientific information.

Literature/Document Review
Community Radio as a Tool for Advocacy and Social Change in Africa

Despite the attention given to the exponential growth in access to new ICTs in Africa, radio remains the continent's dominant mass-medium. Radio has the widest geographical reach and the highest audiences when compared with television, printed press, or other ICTs, such as the Internet (Balancing Act, 2008; Myers, 2008; Panos Institute of West Africa, 2008). Recent surveys conducted by InterMedia in Ghana and Kenya (comparatively well-connected countries by sub-Saharan African standards) reveal that only mobile telephones approach the level of popular use enjoyed by radio (see Figure 2).

Access to Information & Communication Technologies
% of respondents who have the item at home in working order

■ Kenya ■ Ghana

Category	Kenya	Ghana
Radio	87%	86%
TV	41%	59%
Computer	5%	10%
Internet	11%	4%
Landline	2%	6%
Mobile Phone	71%	72%
MP3 Player	9%	8%

AudienceScapes National Surveys of adults (15+), July 2009. Ghana N=2051, Kenya N=2000.

Figure 2. Access to ICTs in Kenya and Ghana (Bowen & Goldstein 2010).

Studies from elsewhere in sub-Saharan Africa (cited above) suggest equal or still-greater dominance of radio as a communications medium, with the exception of some parts of southern Africa where television is in wide use.

Radio station ownership in Africa tends to fall under three categories: state-controlled public radio, privately owned commercial radio, and community-controlled radio, though distinctions between the categories can be somewhat unclear in certain cases. Community radio, in particular, has been recognized as having great potential as a tool for popular expression and advocacy, with a democratization of content. Myers observes that "Radio seems to have proven itself as a developmental tool, particularly with the rise of community and local radios, which have facilitated a far more participatory and horizontal type of communication" (2008, p. 5). This said, Myers also notes that community radio is not uniformly or uniquely beneficial, as

> . . . there are some radios with a community license that can be appropriated by negative political forces and, at worst, can turn into "hate radio." Many commercial radio stations have impressive development content. So, "community" is not necessarily "good," and "commercial" is not necessarily "bad" and many community radios are semi-commercial anyway. (ibid., p. 13)

Community radio also faces significant and persistent capacity challenges in terms of formal training and education (on the issues, on conducting research, and on broadcast production) of broadcasters, insufficient human and financial resources, and a heavy existing agenda of issues to cover amid these challenges. These are particularly important when stations are moving into new and complex issues to cover, such as climate change, as will be discussed below.

With these reservations in mind, community radio seems to offer a potentially valuable medium for engaging in local discussions of the political, environmental, and social dimensions of climate change adaptation, especially in the African context, where access to other communication channels is often limited. Current research suggests that community radio programming which is developed with the participation of communities and complemented with the use of organized listening groups and other channels of communication (such as new ICTs) can provide a very effective means of learning and influencing behavior (AFFRI, 2008). Beyond this role, community radio is able to provide a compelling platform for community voice in areas where language, transportation, and poverty present major barriers to popular expression. Gauthier notes that,

> . . . with its lower production costs and extreme versatility, radio lends itself just as well to rapid interventions as to the broadcasting of in-depth reports, and is just as suitable for the dissemination of information as it is for entertainment or educational purposes. Radio allows villagers to make their voices heard directly, regardless of their level of education or social standing. (2005, p. 1)

This facility is due not only to the technological appropriateness and accessibility of radio in the context of rural Africa, but to the mandate that community radio is expected to fulfill "as the voice of the voiceless, the mouthpiece of oppressed people (be it on racial, gender, or class grounds) and generally as a tool for development" (AMARC Africa and Panos Southern Africa, 1998).

To date, however, the majority of initiatives linking community radio and climate change have been focused on the top-down delivery of messages informing listeners about strategies for adapting, preparing them for such anticipated climate-induced events as floods and droughts, and influencing decision-making at the household level (Godfrey et al., 2008). While this is, indeed, a valuable role in the context of climate change adaptation, it fails to capitalize on the much greater potential of community radio to strengthen citizens' voices, and even to fundamentally challenge existing sociopolitical power structures, by helping people to "define, claim, and give meaning to their citizenship, and re-create the social and political openings and alternative spaces where their voices might be heard" (Pettit, Salazar, & Dagron, 2009, p. 445). Doing so, as I describe in the following section, involves moving radio beyond the role of information transmission, into the process of *knowledge production.*

Community Radio *as* Action Research

This paper has highlighted the growing recognition of the importance of involving communities and their knowledge in assessing, prioritizing, communicating, and implementing research and action on

adaptation to climate change (Jennings, 2009). This invokes similar discussions around the value and forms of participation in international development cooperation, and the potential pitfalls of certain framings or deployments of participation (Cooke & Kothari, 2001) and North-South research collaboration (Bradley, 2006). Participatory forms of inquiry share a common political and ethical interest in "sharing in the way research is conceptualized, practiced, and brought to bear on the life-world" (McTaggart, 1991, p. 171). This includes shifting both the *aims* and the *ownership* of research findings away from the researcher and toward the participating people, with the ultimate goal of achieving community action that challenges hegemonic structures and practices (Fals-Borda, 1988; Kemmis & McTaggart, 2000). These ambitions resonate closely with the stated potential of community radio as a vehicle for social and structural change. However, the degree to which any of these shifts toward community participation and action occur within the context of participatory research can vary from case to case, depending on the particular approach adopted. Also, what research actually qualifies as "participatory" is frequently debated (Jordan, 2003). For instance, there is often disagreement about how the notion of "meaningful" participation should be interpreted. Peet and Hartwick underscore these variations, noting the

> . . . real differences between institutional views of participation (in which local populations serve only as 'extras' or 'human resources') and the more radical views of PAR theorists, who admit that their knowledge is irrelevant if local people do not regard it as useful and believe in full participation. (1999, p. 141)

There are, therefore, strong parallels in the concern over voice, ownership, and representation of knowledge (and ways of knowing) voiced by proponents of participatory action research and those evoked by community media, including community radio. Cornish and Dunn highlight some of these overlaps:

> Citizen-led approaches to communication as means of both creating and expressing knowledge . . . have the power to complement and enhance more formalized and analytical research findings, because of their ability to access and convey other ways of knowing, which may be intuitive, tacit, embodied, artistic, cultural, symbolic, or spiritual in nature. They also have potential to contribute to a broader empowerment process within communities; to allow people who are traditionally the "researched" to have a sense of ownership over the research process and potentially take action on their own behalf. (2009, p. 670)

Indeed, as I have argued, community radio can and should be an active participant in action research on climate change adaptation within communities. It has a strategic position, as the actors are permanently embedded within and working alongside communities, and may well have a clearer understanding of stakeholder groups, local history, and community needs than researchers or other practitioners coming from outside. Its abilities to convene community representatives, ensure democratic representation within the community, keep communities appraised of work being conducted, and collect local testimonies are all important principles of action research which are often overlooked in conventional research. Also important is its mandate for challenging existing systems by transmitting *upward* to duty-bearers (elected and appointed officials who bear responsibilities vis-à-vis the community) and power-brokers (see Figure 3). This role is not greatly different from the one that many community radio stations

or networks have already defined for themselves (White, 2007). In Ghana, where the pilot study discussed in this paper is being implemented, Alex Quarmyne, founder of the Ghana Community Radio Network (GCRN), describes the challenge that confronts these broadcasters to

> . . . ensure that listening communities are not only consumers of information, however rich and appropriate. Rather, to be consistent with its objective of promoting indigenous knowledge, the station will need to work . . . to enable the listening communities, especially the most disadvantaged groups, to upload and grow their own knowledge. (ibid., para. 22)
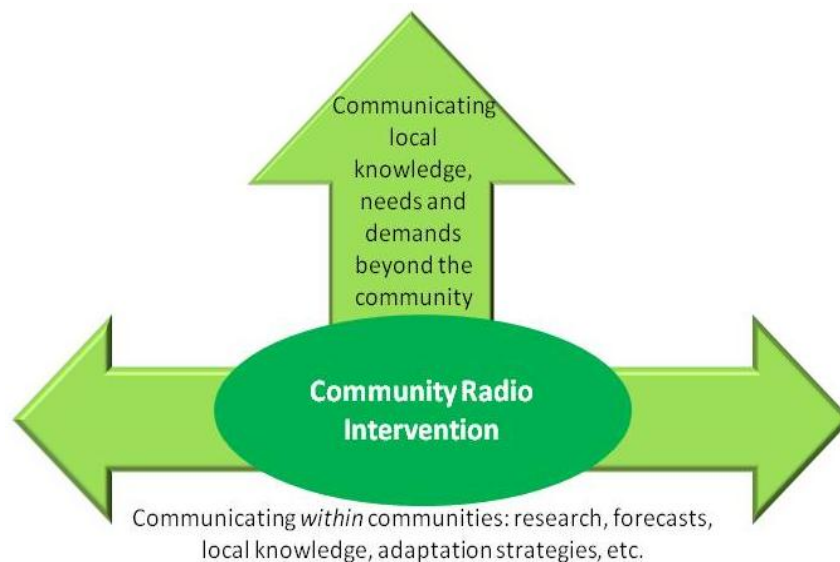
Figure 3. Information Sharing and Advocacy Intervention Model.

Scope and Objectives of the Research
Climate Airwaves:
Linking Climate Change and Advocacy Through African Community Radio

The Climate Airwaves initiative is a pilot project aimed at testing many of the theoretical assumptions outlined above through a network of community radio broadcasters in Ghana. It was launched in June 2010 with the aim of piloting and validating a methodology for strengthening community radio capacity to draw upon ICTs and intermediary networks to engage in action research and advocacy

on climate change adaptation and climate justice.[2] The methodology was designed to help community radio strengthen local knowledge and voices on climate change impacts and adaptation by increasing their input into local research and policy dialogue, and sharing their experiences of and responses to climate change. The initiative therefore sees community radio as playing a convening, knowledge-brokering, and advocacy role among community members, decision makers, and researchers. It sees action research as a key to both building broadcasters' capacities to perform this role and strengthening their engagement with local communities.

The project is being implemented through a partnership of networks working on climate change and community radio in Africa. These are the Ghana Community Radio Network (GCRN), the AfricaAdapt Knowledge Sharing Network on adaptation to climate change, and AMARC (the World Association of Community Radio Broadcasters). Another core partner in the initiative is the Institute of Development Studies at the University of Sussex, UK (IDS), which works extensively on climate change and participatory development.

Ghana, like many countries in West Africa, faces significant vulnerability to the projected impacts of climate change, particularly in terms of water-stress, land degradation, and coastal zone erosion, which are expected to lead to drops in agricultural productivity, power shortages (nearly 80% of Ghana's electricity is from hydroelectric generation), and loss of key coastal land, among other impacts (Dazé, 2007; McSweeney, New, & Lizcano, 2008). There is also concern that these projected impacts could prompt internal (north-to-south) and cross-border migration and conflict (BBC World Service Trust, 2009; Dazé, 2007).

The three GCRN member stations participating in the project—*Radio Ada*, *Radio Afram Plains,* and *Radio Tongu*—all lie on the Volta River. *Radio Ada* has been on the air for 12 years and is the effective forerunner and living laboratory for many of the participatory methodologies applied by GCRN. *Radio Afram Plains* went on the air in 2001 following a participatory design process facilitated by GCRN. *Radio Tongu* is the youngest GCRN member-station, having gone on the air in mid-February 2010, but it has benefitted from the full range of GCRN participatory training programs. Communities served by the three stations have all had their lives and livelihoods significantly diminished by the damming of the Volta River. The impact of climate change on the ebb and flow of the river has made them even more vulnerable. The harm is most evident in communities in Ada, at the estuary of the Volta and the Atlantic Ocean, where entire communities are being displaced by the silting of the river and coastal erosion. Although they are 18 km inland from the sea, the other communities are seeing their future mirrored in Ada, particularly as fishing activities have increasingly had to be replaced by alternative livelihoods, such as petty trading. Afram Plains, an island created by the dam, is host to migrants displaced by the same dam. The communities of *Radio Ada* are Dangme-speaking, but they feel a kinship to the Ewes on the other side of the river. The Tongu language is part of Ewe, which is also the native language of many of the migrants in

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[2] The term "climate justice" links climate change to broader ethical and legal dimensions of social and environmental justice. It involves both procedural (people's participation in decision making) and distributive (the distribution of climate impacts and response measures) dimensions of justice (see Paavola, Adger, & Huq, 2006).

Afram Plains. In all three communities, women bear the brunt of sustaining the day-to-day economy, and their empowerment is a focus of their Community Radio stations' programming.
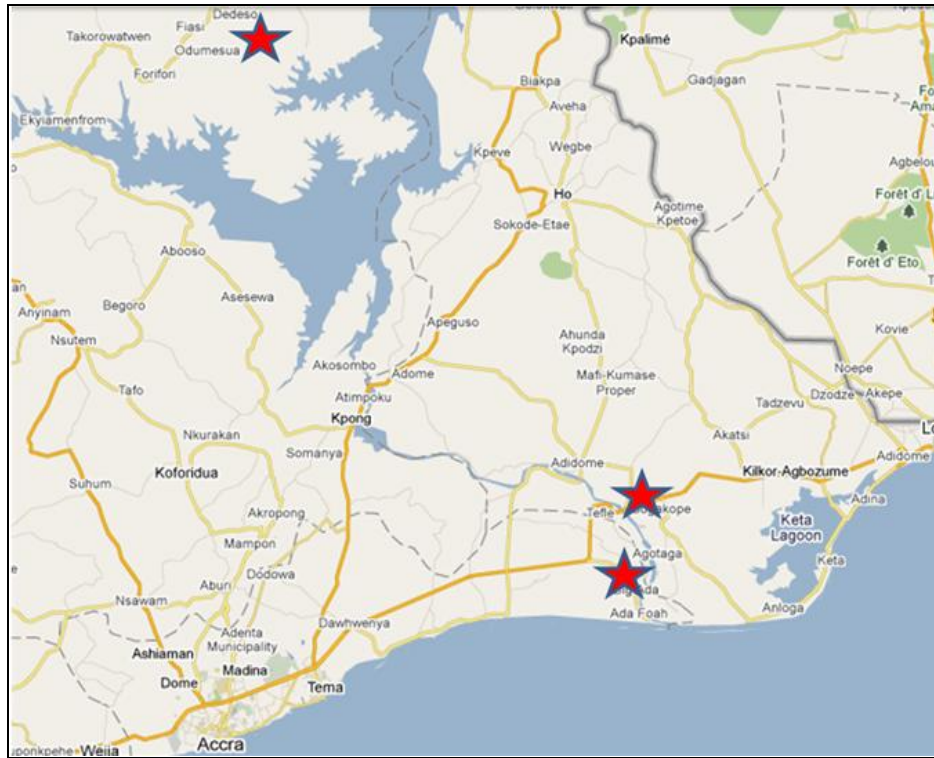
Figure 4. Map with Location of the Three Station Areas (adapted from Google).

The partnership and capacity strengthening model that has been piloted in the Climate Airwaves initiative was collaboratively developed between 2008 and 2010. One of the aims of the model was to build on the existing strength of Ghana's community radio stations by convening local stakeholders and creating a space to share knowledge on the causes, impacts, and responses to climate change. However, it is also recognized that climate change presents a complex challenge which spans spatial, temporal, and jurisdictional scales, and which therefore extends beyond the knowledge or influence of singular institutions or actors (Cash et al., 2006). Thus, in order to achieve the full potential posited above, there is also a need for access to and understanding of information, political processes, and actor-networks which extend beyond the local community level. As a result, the engagement model being piloted here contains a strong focus on capacity and network strengthening, where capacity is understood as the capability to act intentionally amid complex constraints, to generate desired development results, to relate to other actors, to adapt and self-renew, and to bring things together and achieve greater coherence (Morgan, 2006).

Methodology and Tools Used
Methodology: The Value of Action Research

It is important to emphasize that the pilot study and the questions that frame it were conceived around participatory, action-oriented methodology, reflecting the belief that, "if you choose to regard your subjects as self-directing agents, whose creative thinking determines their actions, then you cannot do research on them or about them, but only with them" (Heron, 1996, p. 202). As such, the validity and usefulness of its findings should, first and foremost, be confirmed by those engaging directly in the study's activities, particularly local broadcasters and community members. The choice of approach for the study was fundamentally important given that the model of practice piloted with radio stations is, itself, built upon the same principles of the benefits of participation and co-production of knowledge. Thus there are two levels of action research at play: the overarching collective testing and validation of the action research method, and the inquiries led by community radio broadcasters at community level as a part of the process.

The initiative had three implementation phases. During each of these phases, there was a strong emphasis on documenting the reflections, processes, and outcomes of engagement through the production of radio broadcasts which could then be aired in the communities to keep community members informed about work that was being undertaken. The first phase consisted of a baseline assessment of the existing experience and knowledge on climate change and participatory research approaches within the radio stations and the communities they serve, followed by capacity-building activities to address the knowledge gaps identified by participants. The assessments were designed by IDS and GCRN, carried out by the station members themselves, and analyzed collectively at a workshop in Ghana. On the basis of these assessments, workshops on "understanding and communicating climate change" and "conducting and communicating community-based action research on climate change" were developed collaboratively by GCRN and IDS. They were implemented over the course of several months by members of IDS, as well as in-country experts from international and civil society organizations who, wherever possible, had existing ties to the network. This approach was used to strengthen the stations' ties to resources which will continue to be available to them beyond the life of the Climate Airwaves initiative and may, therefore, continue to contribute to their investigation and interpretation of climate impacts in the future.

The second phase involved piloting the engagement process between the radio stations, their broadcast communities, applied climate research taking place in the region, and local authorities and power-holders. Broadcasters conducted inquiries into community experiences and understanding of climate change using a *systemic action research* approach (Burns, 2007), engaging with researchers working on climate-related issues in their regions to understand what *they* were prioritizing and finding, and finally, bringing these groups together with decision makers to collectively reflect on what communities are experiencing, what research is revealing, and whether or how this is being translated into policy and action.

The systemic action research approach is a multi-step process where teams of investigators (the broadcasters themselves in this case) first identify a broad set of community members with whom they

then conduct open-ended interviews aimed at first listening to the members' stories and their concerns. The stories gathered are shared among investigators and mapped (as quotes and storylines) onto a series of boards where all team members can analyze and contribute to them. From this initial inquiry, areas of focus where common or key issues have emerged are identified, and a series of follow-up questions and targeted interviews are developed to deepen the investigation. Once these additional inquiries have been conducted, the mapping is revisited, this time with participants drawing links between different community members' experiences, the policies or practices that bear influence on them, and the other actors who intervene into the system within which the experience unfolds. The focus here is on revealing, with increasing levels of detail, the complex set of relationships and influences which underlie a particular challenge as it experienced by local people. What is frequently revealed through this process is that a given experience (of coastal zone erosion, for example) can have a wide range of other stressors beyond the effects of climate change (land tenure policies, power relations between authorities and communities, infrastructure development, etc.). The draft mapping is then reviewed with communities and other participants in the inquiry for input, and on this basis, the broadcasters are then able to identify points within this map where they feel that their intervention may be able to promote positive change within the system.

Figure 5. A Participant Adding to a System Map during a Workshop in Ada, Ghana.

The first community-level inquiry was conducted in the Ada region (villages of Azizanya and Agfiedenyigba) as a part of the action research training. Members from all three stations participated to model the methodology. Through the inquiry, they were able to investigate impacts of climate change in the greater Ada region and link these to existing drivers of vulnerability in order to identify key areas for action. After the modeling workshop in Ada, stations from Afram Plains and Tongu repeated the same process in their own broadcasting regions to identify key areas of focus. The table below outlines the final areas of focus for the investigations that were determined by each of the stations through their preliminary systemic action research inquiries and mapping.

**Table 1. Summary of Research Focus at Each Participating Station
(GCRN Interim report, April 2011).**

Station	Afram Plains	Tongu	Ada
Theme	**Low Crop Yield** *In-migration from Volta Region for rich cocoa farming *Akosombo dam + CC *No cocoa / no crops *Out-migration > "Ghost town"	**Drought & Floods** * Displaced by Akosombo dam * Drought a constant issue * Spillage from Akosombo > relocation – returned * Spillage expected to be worse/more frequent * Out-migration	CC > Coastal Erosion > Land Tenure & Community Rights
Community	**Bethel**	**Avadiwoe-kome** (Island community)	**Azizanya**
People (Discussants & Interviewees)	Chief; MOFA; Women; Men; Children; Youth D.A.; NGOs; Assembly-members	Assembly members; Headmen; Farmers & Fishermen's groups; Youth & children; Elderly women/men; Market women; Agricultural extension officer; District Chief Executive; District Planning Officer	Azizanya chief; 1 female youth; Elderly fishmonger; Girl, 10–15 yrs; Ada Foah chief; District Chief Executive; MP
Language of Broadcast	**Ewe**	**Tongu**	**Dangme**
Key Questions and Notes	*How, in the process of the research/inquiry, can we deepen reflection and expression by using such "tools" as proverbs/songs etc?*		
	How, based on our rich experience, can we involve the community in developing the system map? (use of the ground, stick and symbols)		
	How can the process lead to dialogue and negotiation toward community-driven change?		
	Note potential implications from any legal issues (may need legal advice / draw on legal allies).		

After these themes of investigation were determined, broadcasters were put in contact with climate researchers working on similar issues within their region in order to obtain additional feedback specific to the climate dimension of the challenges they identified. The evidence produced by these researchers in reports and publications also served to confirm findings that broadcasters had produced, and to add additional credibility to their arguments with outside actors. This process was supported by the

AfricaAdapt network, which hosts a large community of researchers and practitioners working on climate change.

The third and final phase of this initiative involved compiling the findings and experiences of the three stations, and then sharing them at national and international levels to raise awareness of, and prompt responses to, community-level experiences of climate change, as well as to share lessons on the potential of community radio as a catalyst for social and political action on climate change in Ghana and elsewhere in Africa. Community forums or "durbars" were held at each of the three station locations, bringing together community members, elders, chiefs, and district representatives to re-listen to the broadcasts, discuss the findings, and raise questions for leaders and duty-bearers. These durbars provided a space where community members could articulate their concerns and get commitments from their representatives on issues such as disaster relief, alternative livelihoods projects, and the introduction of new policies. These discussions were then broadcast out to the broader listening community, so as to ensure that those who were not present could also provide input.

The reporting on community experience at the national level was then facilitated through GCRN via a national forum held in Accra, the national capital, where broadcasters and community members presented the results of these investigations to national representatives and members of the international community, highlighting common concerns from across the different broadcast areas and seeking to gain national support for the needs articulated at district levels. Beyond the national scale, lesson-sharing with the broader radio and climate communities continues to be facilitated through AMARC and the AfricaAdapt network.

Learning and Participatory Evaluation of the Process

The process has been designed to maximize and make visible the value of linking learning and action research in an ongoing process of learning in action. While learning is often understood to be deeply intertwined with the action research process, the Climate Airwaves initiative's emphasis on capacity development has led this to be a point of much more deliberate emphasis. At each stage of the training and implementation process, the members of the project team (broadcasters, trainers, GCRN staff, etc.) have both reviewed the impacts and implications of the work that they have done, and considered how it might be relevant for them in their daily activities. The participatory monitoring and evaluation process developed for this initiative is also aimed at embedding learning and reflection into the implementation of both training and piloting the methodology.

Ultimately, the success or failure of this initiative will be assessed by the broadcasters themselves and the communities that they represent. As noted above, one of the key frameworks for reflecting on the success of this initiative is the extent to which it strengthens the capacity of participating community radio broadcasters to do the following things: act intentionally amid complex constraints, generate desired development results, relate to other actors, adapt and self-renew, and bring things together to achieve greater coherence (Morgan, 2006). A second approach which has been adapted and frequently employed by GCRN to envision and develop strategies for social change in their action research initiatives is appreciative inquiry (Cooperrider & Srivastva, 1987). These two approaches are applied using both face-

to-face reflections at capacity-building workshops and stakeholder dialogues, and through the use of audio journaling by community broadcasters as they move through the different phases of the methodology.

Audio journaling allows the evaluation process to play a central role in the actual implementation, rather than construing it as an "add-on" procedure merely carried out for auditing or accountability purposes. Broadcasters, who already possess strong capacities in designing, recording, and editing discussions for airing, use these reflections as part of the broadcasts they produce throughout the initiative. These journals can be used to reflect on the challenges of understanding and communicating climate change knowledge, the value of the action research process, overall impressions of the initiative, etc., and they can also be revisited periodically to track how people's experiences have evolved over time in line with the dimensions of capacity outlined above. Some audio journaling moves beyond broadcaster experiences and engages community members in reflections on the value of, or approaches to, addressing climate change. Regular audio journaling, paired with both the baseline self-assessments conducted at the outset of the initiative and a re-assessment conducted at its conclusion, provide a body of participant-generated evidence that can then be reviewed collectively to establish what has been learned, what changes have occurred, and what the next steps should be, using the model of appreciative inquiry developed by GCRN.

Appreciative inquiry is fundamentally concerned with taking a co-constructive and positive approach to adaptive learning and planning by "inquiring into organization existence in ways that are economically, humanly, and ecologically significant" (Cooperrider & Whitney, 2005). It typically follows a "4-D" approach, inviting participants to reflect on *discovery* (appreciating and valuing the best of "what is"), *dream* (envisioning "what might be"), *design* (dialoguing "what should be"), and *destiny* (innovating "what will be"). To these, GCRN has added a fifth "D", *discernment* (reflecting on "what has become"). As a visioning exercise used across the range of GCRN programming activities, it was important to include this as a part of Climate Airwaves activities, to ensure that this work is seen as a component of the broader advocacy and social change project pursued by the Network.

Key Findings and Reflections

The process outlined here is currently in its final stages, with a closing national discussion forum for sharing results held in August 2011, and the lesson-sharing and evaluation currently being concluded. Thus, the long-term impact and value of the methodology being piloted in this partnership is difficult to gauge, although some early outcomes are already beginning to emerge. These relate primarily to broadcasters' own appreciation of the current and potential impacts of climate change on their communities and other communities in the region; their growing awareness of the complexity of climate change as a phenomenon; and an increase in participants' capacity to, and interest in, exploring the question of climate change within their communities. Challenges have also emerged around the interface of this work with competing narratives and interests which sit in tension with the principles and priorities that were explored in the program, as will be discussed below.

Through capacity building workshops paired with field visits to communities affected by climate-related impacts, participants report having a much more concrete understanding of the challenges that

climate change may present to their communities. Capacity building which has emphasized both the social and physical dimensions of vulnerability has helped them to identify those populations who would most likely be at risk within their own communities, and to consider how these new vulnerabilities intersect with existing vulnerabilities they are already working to address through their broadcasting, such as health, sanitation, women's rights, and social or political marginalization. This points to the strength of many community radio broadcasters as partners in action research, as they are able to quickly re-frame new issues within the contexts of the local communities for whom they are advocates. The use of *systemic action research*—where issues of investigation are always assumed to be both embedded in, and influenced by, broader structural dynamics—helped to build on this strength. The capacity building program also identified and targeted the specific need for additional training for female broadcasters on the basics of climate and environmental science, and provided an additional one-day women-only session on this, which resulted in increased confidence when those women joined the full group for the main training workshop.

At the same time, growing awareness of the local dimensions of climate change has had to be presented alongside a framing of climate change as a global phenomenon. Establishing the link between global drivers and localized impacts is recognized as a major challenge to communicating climate change knowledge, as people, including the media, are likely to focus on localized behaviors, such as charcoal burning, deforestation, and pollution as the causes of climate change (BBC World Service Trust, 2009). Thus, time has been invested into pointing to differences (as well as similarities) between climate change and environmental degradation in order to clarify the global dimensions of the former, and to frame it within both notions such as climate justice and common but differentiated responsibilities, as well as to link advocacy at the local level to similar national and international struggles that are underway. Through the use of visual supports, multimedia resources, and discussions, progress has been made in clarifying these distinctions for participants.

Another significant outcome of work thus far has been progress made in developing appropriate language and analogies to explain key climate-related concepts in local languages. Research conducted by the BBC World Service Trust (ibid.) notes that there is no local-language equivalent for the term "climate change" in Ghana, and that the technical and political discourses of climate change are virtually inaccessible to those who are most at risk. This was echoed in capacity-building workshops with broadcasters, the majority of whom, for example, had never seen a greenhouse, making the notion of a "greenhouse effect" difficult to illustrate. Thus, a key area of focus has been on the development and testing of a glossary of climate-related terminology into the three languages used by the participating stations. Terms and concepts such as *adaptation*, *vulnerability, greenhouse gas,* and *resilience* were described in local languages with accompanying analogies, and participants developed strategies for discussing these concepts with differently-situated community members, such as village elders or district representatives. The term *greenhouse effect,* for example, was instead described through an analogy to closed traditional coal-fired ovens. The broadcasting teams also sought to link their new understanding of the drivers and impacts of climate change with proverbs, which have a powerful role in Ghanaian culture. Both of these activities led to a noted increase in confidence in taking these discussions back into the community and engaging with those who have technical expertise on climate change, such as researchers.

Finally, there are already concrete outcomes beginning to emerge from the process at the level of the communities themselves. Among the more marked outcomes to date has been the initiation of new dialogue between community members from Azizanya (Ada), local and traditional authorities from the area, and neighboring communities facing similar challenges. Azizanya is a community facing rapid coastal erosion and a tense related conflict over land tenure rights between fishing communities and authorities looking to develop coastal land for tourism. Broadcasters report that the community durbar helped to renew an open (and broadened) dialogue on these issues, which have been the source of significant conflict and secrecy to date. In Afram Plains, the durbar organized by broadcasters brought district authorities into direct contact with island-dwelling communities for the first time outside of an election drive. The exchange highlighted the great disconnect between authorities and the community's needs, and prompted commitments of support from the District Chief Executive, who later attended the National Forum in Accra and reiterated this commitment in plenary discussion before its 130 participants.

While this pilot research has succeeded in producing some early outcomes that have been noted above, it has also been useful thus far in revealing some key challenges and lessons to be learned from the initiative to date. Many of these are not exclusive to this approach, but should nonetheless be retained as important points of caution. A first such difficulty is the challenge of maintaining coherence in a complex, multi-stage process amid competing priorities. In the case of community radio in Ghana (and elsewhere), the largely voluntary nature of station staffing means that maintaining the same team of actors for an extended period of time can be challenging. In the context of a capacity building initiative, this can sometimes mean that certain individuals are involved in some elements of the work, but may then miss other key steps. This poses challenges to ensuring a broad-based understanding of an approach within stations. This was the case in one of the three stations involved in this study, and it may have influenced the outcomes that station experienced.

Closely related to this first challenge is a second on the delivery of capacity support. One area for improvement in this approach which was noted by broadcasters was the need for capacity support to be maintained *throughout* the entire process, as opposed to having it emphasized at the outset. The importance of support in validating findings, designing broadcasts, and conducting community forums was noted, particularly as stations are using this approach for the first time.

A further challenge involves recognizing that these efforts take place within a broader social and political economy which may, at times, be at odds with the principles being put forward. In these cases, a key concern is the extent to which broadcasters can disrupt these dominant and often deeply embedded discourses while maintaining a community-driven dialogue. This occurred in one case, where broadcasters sought to engage members at a community forum on how climate change was impacting agriculture in the region, and community members wished to make links to the overgrazing and degradation of their lands by nomadic Fulani herdsmen, a group frequently at odds with the farmers of the region (Sarpong, 2006; Tonah, 2006). For broadcasters interested in maintaining an open dialogue who may also be sympathetic to these community viewpoints, this can present a significant challenge, despite the fact that such viewpoints sit in tension with the principle of connecting local impacts of climate change with their global drivers. As such, maintaining a balance between the community-driven approach pursued by both community radio and action research, and ensuring that the concept of global climate justice sits at the

root of these investigations can prove difficult. When working with a topic as complex as climate change, this challenge is amplified, and it may, in fact, go beyond the capacities of what is achievable by broadcasters working on their own. This recalls the principle of network strengthening noted above, and it highlights the importance of seeing capacity as not only resident in the broadcasters themselves, but in a broader network of allies, collaborators, and resources upon which they can draw.

Implications of Findings and Recommendations
Challenges and Lessons Learned

Dealing with Complexity Amid Competing Priorities

Some of the challenges encountered and lessons learned from this initiative to date can be grouped around three main themes: understanding, framing, and communicating climate change; establishing appropriate partnerships; and building and sustaining capacity. On the first point, climate change is recognized as a complex (Rind, 1999) or "wicked" (from a policy perspective) problem, even for those who have specialist knowledge of the issue. As noted above, for community radio broadcasters, most of whom are volunteers who may have had limited formal education (this is particularly prevalent among women in this initiative), this complexity can prove to be a major stumbling block in terms of linking local experience to global phenomena. This complexity is further complicated by frequent conflation between climate change and other environmental issues that have been heavily covered in the Ghanaian media in the past, particularly deforestation and depletion of the ozone layer (BBC World Service Trust, 2009). It has also led, as noted above, to a discourse of "self-blame" within many African community broadcasters, who attribute poor environmental stewardship in their communities (or those competing with their communities for resources) to being key drivers of the rise of climate change and global warming, and in turn, pass this message on to their communities. In reality, sub-Saharan Africa is responsible only for a fraction of global CO_2 emissions (Robinson & Miller, 2009).

This complexity has led either to limited coverage of the climate change agenda, or to the use of scripted "kits" developed outside of the community, which are then customized for local language and context. In the case of GCRN, they have done programming in the past on climate change with NGO partners in Ghana, as well as regular programming at some of the stations on other environmental issues, but these challenges still remain despite the experience they have accrued. As a result, initiatives seeking to help broadcasters produce their own reporting on local dimensions of climate change must invest heavily in ongoing capacity development and partnerships that can support these efforts. The time and resources needed for this type of investment present a significant challenge for stations that are largely run by volunteers, have limited financial resources to draw upon, and are often expected to cover the full breadth of issues relevant to community well-being, including health, governance, and other environmental concerns. Thus, the prioritization of climate change as an issue to which investments should be directed must be balanced with the perceived relative importance of the issue in comparison to the needs for investment in work on good governance, HIV/AIDS, land rights issues, and so on. In view of this, it should be expected that not all stations would see the value of devoting the required time and investment into this process if they are already struggling to provide adequate attention to those issues that their communities deem to be higher priorities.

Framing Climate Change as a Question of Politics, Rights, and Duties

This second point of learning may actually provide a way of addressing, or at least clarifying, the point raised above. In many community radio stations like those that form GCRN, addressing local dimensions of rights, justice, equity, and citizen empowerment are central to the stations' broadcasting objectives (White, 2007), and this presents both an opportunity and a requirement. For these stations to fully appreciate the local relevance of climate change and invest themselves into the development of capacities for covering it as an issue, it is essential that climate change be framed in the context of social and environmental rights and justice. This framing allows broadcasters to begin integrating climate change into the range of other interlinked issues that they are already covering, such as poverty, marginalization, and governance, as well as to understand its relationship with their communities' interests and challenges.

While broadcasting that is uniquely designed to raise awareness of current and anticipated impacts of climate change and promote behavioral change is already used through community radio, our findings suggest that these broadcasts tend to provide insufficient engagement with broadcasters or stations themselves, seeing them largely as conduits for transmitting messages produced elsewhere. This not only undervalues the broadcasters' agency and the contributions they can make, but it also risks compounding the confusion they experience in relaying the latest trends that science and policy actors wish to see passed on, potentially leading to the spread of misinformation. Much research has suggested that radio listeners have higher levels of understanding and information retention when they are engaged in active listening (for example, through listening and discussion groups, or through call-in question and answer segments). We argue that broadcasters will serve as better intermediaries with local communities if they, too, are actively engaged in processes of inquiry, interpretation, translation, and transmission of information and messages. This perspective is very much in line with educational theories of inquiry-based or constructivist learning, and critical or liberation pedagogies (Freire, 1972). By understanding climate change in the context of the existing points of struggle in which they are already engaged (gender, citizen voice and participation, political accountability, social inclusion, etc.), broadcasters are able to embed new knowledge within these existing frameworks and improve their grasp of the issues.

Sustainable Partnerships

It is important to distinguish between the types of engagement that community radio mobilizes to support and inform community development, and those that have become commonplace in international development practice. While development projects tend to be quite time-bound, targeted to a specific issue or set of stakeholders, implemented in an isolated manner (often independent of other initiatives which are taking place in the community or district, for example), and with an "exit strategy" built into the project design to avoid creating dependency, community radio seeks to embed itself into the fabric of the community, hoping both to maximize community appropriation of its services (and thus its sustainability), and to cover the range of issues that their communities deem important. Given the different nature of engagement and incentive structures found in radio and development intervention, it follows that the types of partnership models each pursues differs as well.

In keeping with these realities, the Climate Airwaves initiative has tried to build upon existing networked partnerships for capacity support for broadcasters, particularly with organizations sharing similar priorities or values as the broadcasters. This has meant trying to limit, for example, the role that external partners, such as IDS, play in the ongoing implementation of the work. It has also meant orienting the partnership toward the existing network of partners that GCRN has developed over the years, rather than aiming to engineer partnerships with new actors who may be very competent in their fields, but lack a strong desire to develop long-term alliances with limited financial incentives, or may simply be busy with their own initiatives. In cases where capacity support has been offered solely by such outside partners as IDS, we have sought to ensure that, in order to maximize its value, the support is aligned with the objectives of stations beyond the scope of the project itself. This model of partnership engagement can be challenging in projects where two quite distinct communities of practice are working together, but it may also be important to ensuring that stations' capacities to carry out this work do not fade over time.

A Long-term Vision of Capacity

Building on the points raised above, the final area of learning we wish to highlight has, so far, centered on the approach to collective (as well as individual) capacity building pursued through the partnership. This view of capacity is based on the notion that collective learning is a prerequisite to affecting broader social change (Harvey & Langdon, 2010), a core objective of community radio broadcasters in Ghana. It privileges work that builds collective capacity over work that sees individual skills development as an end in itself, and longer-term social change objectives over the outcomes of individual projects. This does not mean that individual development and shorter-term goals are not pursued, but rather, that these aims must be understood in the context of the longer-term, more transformative aims to which they should contribute. Conversely, there may also be more targeted forms of capacity building that are needed in order to move toward the longer-term vision of change, such as strengthening women's capacities to engage with action research activities, as was exemplified in the case of GCRN.

Balancing an emphasis on longer-term change with demonstrating impacts in the shorter-term in this way can create challenges for initiatives that are funded for shorter periods of time. These realities should be communicated to funding partners in advance to avoid situations where donor demands are in tension with the aims of those who the project activities are intended to serve.

References

AFRRI. (2008). *Communicating with radio: What do we know?* Ottawa, Canada: Farm Radio International.

Agrawal, A., & Perrin, N. (2009). Climate adaptation, local institutions and rural livelihoods. In W. N. Adger, I. Lorenzoni, & K. O'Brien (Eds.), *Adapting to climate change: Thresholds, values, governance* (pp. 350–367). Cambridge, UK: Cambridge University Press.

AMARC Africa and Panos Southern Africa. (1998). *What is community radio? A resource guide.* Retrieved from http://www.amarc.org/documents/manuals/What_is_CR_english.pdf

Balancing Act. (2008). *African broadcast and film markets.* Balancing Act: London.

BBC World Service Trust. (2009). *Africa talks climate research briefing: Ghana*. London: BBC World Service Trust.

Berkes, F., Colding, J., & Folke, C. (2000). Rediscovery of traditional ecological knowledge as adaptive management. *Ecological Applications*, *10(5)*, 1251–1262.

Bowen, H., & Goldstein, P. (2010). *Radio, mobile phones stand out in Africa's media/ communication landscape*. New York: InterMedia.

Bradley, M. (2006). *North–South research partnerships: Literature review and annotated bibliography*. Ottawa: IDRC.

Brown, J., Nanasta, D., & Bird, N. (2009). Financing climate change adaptation and mitigation in Africa: Key issues and options for policy-makers and negotiators. Presented at the *Third Financing for Development Conference on Climate Change, Kigali, Rwanda (May 21–22, 2009)* and the *African Ministerial Conference on the Environment (AMCEN) Special Session on Climate Change*, *Nairobi, Kenya (May 25–29, 2009).*

Burns, D. (2007). *Systemic action research: A strategy for whole system change.* London: Policy Press.

Cash, D. W., Adger, W., Berkes, F., Garden, P., Lebel, L., Olsson, P., Pritchard, L., & Young, O. (2006). Scale and cross-scale dynamics: Governance and information in a multilevel world. *Ecology and Society, 11*(2), 8.

Cooke, B., & Kothari, U. (Eds.) (2001). *Participation: The new tyranny*. London: Zed Books.

Cooperrider, D. L., & Whitney, D. (2005). *A positive revolution in change*: *Appreciative inquiry*. San Francisco: Berrett-Koehler Publishers

Cooperrider, D. L., & Srivastva, S. (1987). Appreciative inquiry in organizational life. *Research in Organizational Change and Development*, *1*, 129–169.

Cornish, L., & Dunn, A. (2009). Creating knowledge for action: The case for participatory communication in research. *Development in Practice*, *19(4)*, 665–677.

Dazé, A. (2007). *Climate change and poverty in Ghana*. Accra: CARE International.

Ensor, J., & Berger, R. (2009). Community-based adaptation and culture in theory and practice. In W. N. Adger, I. Lorenzoni, & K. O'Brien (Eds.), *Adapting to climate change: Thresholds, values, governance* (pp. 227–239). Cambridge, UK: Cambridge University Press.

Fals-Borda, O. (1988). *Knowledge and people's power: Lessons with peasants in Nicaragua, Mexico and Columbia*. New Delhi: Indian Social Institute.

Fahn, J. (2009). Climate change: How to report the story of the century. Science and Development Network. Retrieved from http://www.scidev.org/en/practical-guides/climate-change-how-to-report-the-story-of-the-cent.html

Freire, P. (1972). *Pedagogy of the oppressed*. Harmondsworth, UK: Penguin.

Gauthier, J. (2005). *Popularize, produce, disseminate! Reference sheets for field researchers*. Sheet 12: Radio. Ottawa: IDRC.

Godfrey, A., Pauker, E., & Nwoke, L. (2008). *Is this climate change? Formative research on knowledge and perception of climate change amongst policy makers, opinion formers and mass audiences in Nigeria*. London: BBC World Service Trust.

Harvey, B., & Langdon, J. (2010). Re-imagining capacity and collective change: Experiences from Senegal and Ghana. *IDS Bulletin, 41(3),* 79–86*.*

Heron, J. (1996). *Co-operative inquiry: Research into the human condition*. Thousand Oaks, CA: SAGE Publications.

IPCC. (2007). Summary for policymakers. In M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden, & C. E. Hanson, (Eds.), *Climate change 2007: Impacts, adaptation and vulnerability. Contribution of working group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 7–22). Cambridge, UK: Cambridge University Press.

Jennings, T. L. (2009). Exploring the invisibility of local knowledge in decision-making: The Boscastle Harbour flood disaster. In W. N. Adger, I. Lorenzoni, & K. O'Brien (Eds.), *Adapting to climate change: Thresholds, values, governance* (pp. 240–254). Cambridge, UK: Cambridge University Press.

Jordan, S. (2003). Who stole my methodology: Co-opting PAR. *Globalisation, Societies and Education, 1,* 185–200.

Kemmis, S., & McTaggart, R. (2000). Participatory action research. In N. Denzin & Y. Lincoln (Eds.), *The handbook of qualitative research* (2nd ed.). Thousand Oaks, CA: SAGE Publications.

McSweeney, C., New, M., & Lizcano, G. (2008). *UNDP climate change country profiles: Ghana*. Oxford University. Retrieved from http://country-profiles.geog.ox.ac.uk

McTaggart, R. (1991). Principles for participatory action research. *Adult Education Quarterly, 41*(3), 168–187.

Morgan, P. (2006). *The concept of capacity.* Brussels: ECDPM.

Myers, M. (2008). *Radio and development in Africa: A concept paper*. Ottawa, Canada: International Development Research Centre.

Ochieng, B. O. (2009). *Effective communication of science and climate change information to policy makers.* Nairobi: IDRC.

Paavola, J., Adger, W. M., & Huq, S. (2006). Multifaceted justice in adaptation to climate change. In W. N. Adger et al. (Eds.), *Fairness in adaptation to climate change* (pp. 264–277). Cambridge, MA: MIT Press.

Panos Institute of West Africa (2008). *Radios et NTIC en Afrique de l'Ouest: connectivité et usages* [Radios and ICT in West Africa : Connectivity and uses]. Dakar: Panos Institute of West Africa.

Peet, R., & Hartwick, E. (1999). *Theories of development*. New York and London: Guilford Press.

Pettit, J., Salazar, J. F., & Dagron, A. G. (2009). Citizens' media and communication. *Development in Practice, 19*(4*)*, 443–452.

Rind, D. (1999). Complexity and climate. *Science, 284*, 105–107.

Robinson, M., & Miller, A. (2009). *Expanding global cooperation on climate justice.* London: Brighton Woods Project.

Sarpong, G. A. (2006). *Toward the improvement of tenure security for the poor in Ghana: Some thoughts and observations*. Rome: FAO.

Tonah, S. (2006). Farmer-herder conflict in Volta region of Ghana. *Journal of Social Sciences*, *2*(1), 6–10.

White, G. (2007). Community radio in Ghana: The power of engagement. Retrieved from
http://www.c3.ucla.edu/research-reports/reports-archive/editors-perspective/community-radio-
in-ghana