AN ASSESSMENT OF THE MEDIA'S ROLE IN

DISSEMINATING NEWS AND INFORMATION TO

FARMERS AFTER THE CESSATION OF ARMED

CONFLICTS IN THE REPUBLICS OF CÔTE D'IVOIRE

AND MALI

By

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Major Field: AGRICULTURAL EDUCATION

Abstract: This research study followed a convergent parallel, mixed methods design. It examined and compared farmers' perceptions on the role of media and other sources in disseminating news and information after the cessation of armed conflicts in Mali and in RCI. The study involved 201 farmers who responded to a survey instrument and 10 key informant farmers who were interviewed. The quantitative findings were derived from descriptive analyzes of selected variables. Most participants were male and married, had little formal education, and farmed staple or cash crops. The key informants were similar. About four-fifths of the survey participants preferred receiving information in their local languages. They were *extremely interested* in receiving news and information about agriculture-related, weather forecasts, market news, and health and nutrition programs (median = 5). Most perceived the information received was *extremely related* to weather forecasts, market news, plant diseases, farmer interest groups, land ownership, and natural resources (median = 5). Most indicated *very frequently* receiving information about agriculture and food production from peer farmers and information regarding strategies for conflict resolution from extension agents and radio stations (medians = 5). A majority also said extension agents *very frequently* disseminated information about women and child labor in agriculture (median = 5). As a group, the participants indicated *somewhat yes* in regard to the information sources helping them to resume farming activities after conflict ended. The participants overall also *agreed* the media and other sources contributed to community resilience building. Statistically significant ($p < .05$) associations existed between a farmer's country of residence and their farming profession type, religious affiliation, and perceptions of how the media and other information sources helped them to resume farming or contributed to community resilience building. Six themes emerged from the interviews. More convergences than divergences were found between the views of the survey participants and the key informants. Even though the findings showed the media assisted farmers in recovering their economic livelihoods, the need existed to provide programs on other issues impacting rural communities rebuilding after armed conflicts. Differences between country groups are discussed and recommendations offered for policies, practice, and future research.

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CHAPTER I

INTRODUCTION

Background and Setting

The Republics of Côte d'Ivoire (RCI) and Mali are two bordering states located in West

Africa. The countries share a border of about 330 miles (Central Intelligence Agency [CIA],

2014). These nations also share rich social and historical backgrounds; both were French colonies

and gained their independence in the early 1960s (Gordon, 2005).

Côte d'Ivoire

The Republic of Côte d'Ivoire (also known as Ivory Coast) gained its independence from France

on August 7, 1960; it lies on the Gulf of Guinea with an approximate land area of 322, 462 sq.

km. RCI borders five countries – Burkina Faso to the northeast, Ghana to the east, Guinea and

Liberia to the west and Mali to the northwest – and the Atlantic Ocean to the south (Bloom &

Sachs, 1998). The main cities are Abidjan (the capital), Bouake, Ferekessedougou, Gagnoa, Man,

Korogho, and Yamoussoukro (CIA, 2014). The country comprises 19 administrative regions and

58 departments.

RCI is watered by four rivers, including the Cavally, the Sansandra, the Badama, and the Comeo. RCI's land area comprises 21.8% arable land, 41% pasturelands, and 22% forest (Bloom & Sachs, 1998). According to the CIA (2014), more than 50% of the total land area is used for agriculture. The land area includes two major agricultural regions: the forest region in the south and the savannah region in the north (see Figure 1).

Figure 1. Map of Côte d'Ivoire

RCI's population is estimated to be about 22 million with an annual growth rate of 2.13% (CIA, 2014). The population comprises more than 60 ethnic groups among which the largest are the Agni, Baoulé, Bété, Sénoufo, Juula, and Lagoon (CIA, 2014). The official language is French; however, about 80 indigenous languages are also spoken in RCI (Gordon, 2005). Baoulé is the largest indigenous language (about one third of the population speak it) followed by Dioula and Sénefou (approximately 10% each). Christianity and Islam are the major religions with about 35 to 40% of the population identifying with each (World Bank, 2012). Approximately 11.9% of Ivorians practice indigenous religions (Miran, 2006). The north of the country is usually associated with Islam whereas the south with Christianity, but Muslims and Christians live everywhere in the country (Miran, 2006).

Agriculture is the economic foundation of RCI (CIA, 2014). It engages more than 70% of the population and represents 43% of RCI's GDP (United Nations Development Program [UNDP], 2013). In RCI, agriculture contributes to more than one-half of the country's exports (World Bank, 2012). The main cash crops are cocoa and coffee. RCI is known as the world's first cocoa exporter and ranks fifth in coffee production (World Bank, 2012). The country also produces bananas, cassava, yam, sugar, palm oil, timber, and rubber (World Bank, 2012).

RCI's economy was a success story during the 1960s and 1970s (World Bank, 2012). The economy was set back between 1980 and the late 1990s because of devaluation of the CFA franc and soon thereafter by a political crisis (World Bank, 2012). Afterward, the economy was improving when a new crisis occurred in 2002 (World Bank, 2012). According to the African Development Bank ([ADB], 2010), in RCI the poverty rate increased from 36.8 % in 2002 to 48.9% in 2008; the poverty rate in rural communities increased even more.

This economic downfall was accelerated by an unprecedented politico-socio crisis that shook the country for more than two decades after the death of president Houphouet Boigny in

1993 (Bellamy & Williams, 2011; Zounmenou, 2012). "[E]conomic disparities were used by politicians to exacerbate ethnic, cultural and religious divisions within the country" (Bellamy & Williams, 2011, p. 830). This crisis significantly impacted the agriculture sector and jeopardized several ongoing agricultural development programs (Countries Poverty Reduction Plan, 2012).

To rebound the economy and revitalize the agriculture sector, RCI's government and its development partners developed post-conflict reconstruction strategies that included specific measures promoting the agricultural industry to maintain peace and stability ADB (2010). Tools of mass media, especially radio, are being used to convey information and educate rural people (International Crisis Group, 2014). Media and communication technologies can be perceived as innovative strategies because they are used to stimulate change and encourage democracy and development in conflict and post-conflict situations (Schoemaker & Stremlau, 2014).

Mali

The Republic of Mali, earlier known as French Sudan, became independent in 1960. Mali is located in West Africa and bordered by Algeria to the northeast, Guinea to the southwest, Côte d'Ivoire, and Burkina Faso to the southeast, and Niger in the east (CIA, 2014). Mali covers a land area of 1, 220, 190 sq. km. The climate is subtropical and divided into three climatic zones: the cultivated Sudanese zone in the south, the semiarid Sahel zone in the center, and the arid desert Saharan zone in the north (CIA, 2014). The country has two main seasons: the dry season from October to May and the rainy season from June to September.

The population of Mali was estimated to be about 16.5 million in 2012 and is divided among several ethnic groups, including Bambara (46.3%, the largest), Peulh (9.4%), Dogon 7.2%, Sonrais (5.6%), and many others (CIA, 2014). The annual population growth is about 3%. More than 70% of Malians live in rural areas. The predominant religion is Islam (94.8%); followers of Christianity (2.4%) and Animism are much fewer (2%) (CIA, 2014).

The country is divided into eight economic and administrative regions and one district; the major cities are Bamako, Gao, Kayes, Kidal, Koulikoro, Mopti Ségou, Sikasso, and Tombouctou (see Figure 2). According to Solomon (2013), Mali was ranked among the 25 poorest countries in the world in 2013 with a GDP per capita of 700 U.S. dollar; about two-third or 64% of the general population was considered impoverished in 2004; the rate is even greater in the northern regions of the country, including Tombouctou (77% of resident are considered impoverished), Gao (78.7 %), and Kidal (92%). Radical Islamists have taken advantage of this population's vulnerability and the poor conditions of life of its communities to expand their ideologies and weaken the state (Solomon, 2013), especially with the occurrence of a *coup d'état* in 2012.

Mali's economy also relies heavily on agriculture (CIA, 2014). Its main agricultural products include cotton, rice, sorghum, sugar, millet, and livestock (CIA, 2014). In 2011, the Food and Agriculture Organization (FAO) listed Mali as one of the poorest countries in the world.
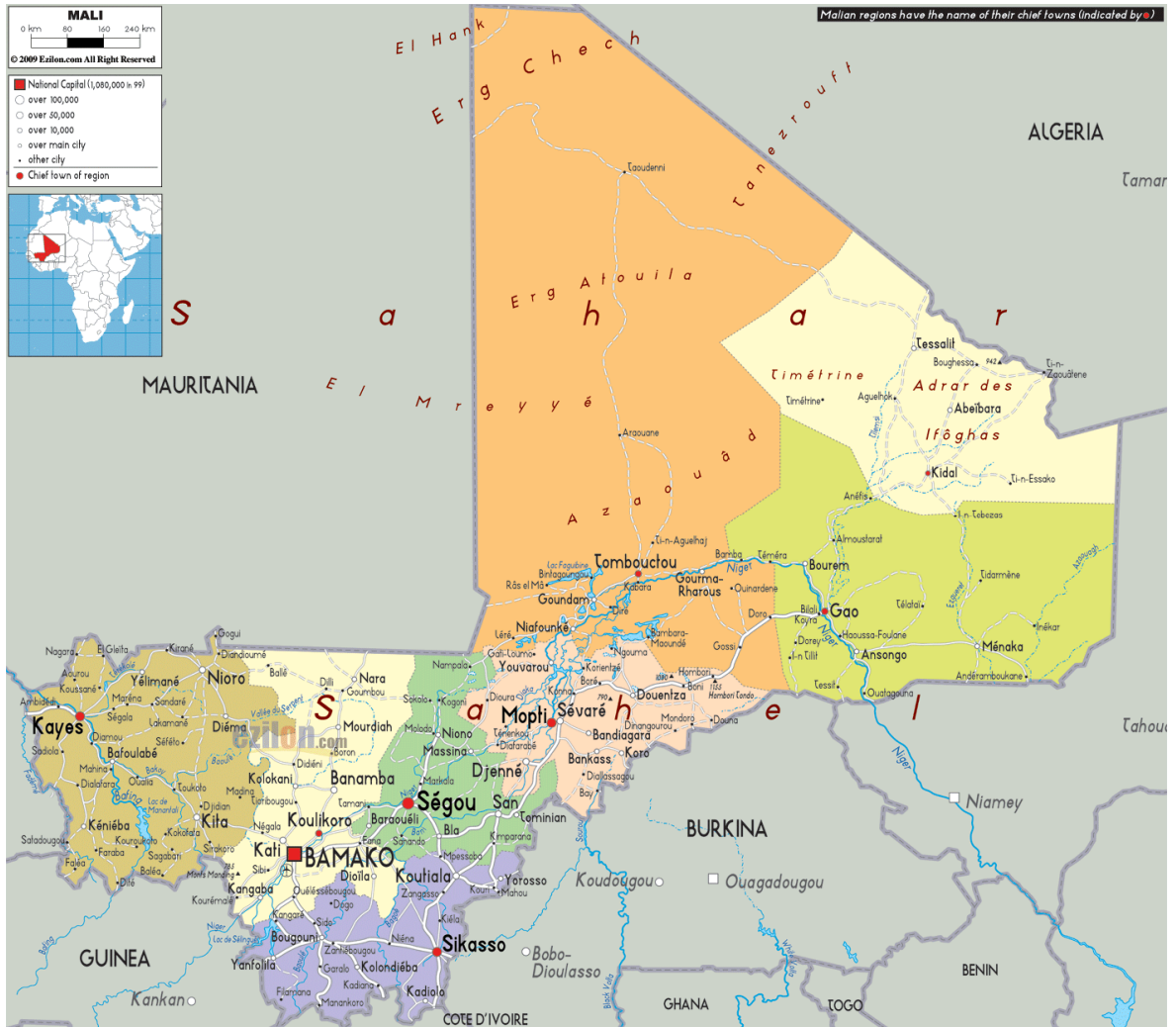
Figure 2. Map of Mali

Beginning in 1992, Mali began making administrative, political, and economic advances (CIA, 2014). At the political level, Mali changed from a dictatorial military regime to an emerging democracy during a two-decade long period (International Crisis Group, 2014). During this period, Mali underwent significant reforms that enhanced its economic growth. Reforms in agriculture, food security, the environment, and education were ongoing (USAID, 2013) when the country experienced a military *coup d'état* in March of 2012 as orchestrated by lower ranking military personnel under the leadership of Captain Amadou Aya Sanogo (Solomon, 2013). The elected president, Amadou Toumani Toure, was overthrown by the military coup (CIA, 2014).

Starting from January 2013, significant conflict occurred in the northern region causing the occupation of major cities by separatist and Jihadist groups (Leymarie, 2012). In January 2013, military forces from France and several African Union countries entered Mali to assist with ending the conflict and reestablishing peace and stability (Solomon, 2013). After capturing the occupied cities in the north, the Malian government developed an inclusive plan for reconstruction (Gouvernement du Mali, 2013). This plan places particular emphasis on agriculture development and enhancing the livelihoods of rural populations (Gouvernement du Mali, 2013). However, despite improvements in security conditions in the north after operations conducted by the French armed forces and Mali's army, the situation remains precarious with recurrent terrorist attacks and a delay in peace talks (International Crisis Group, 2014).

RCI and Mali are former French colonies and share many similar characteristics. Agriculture is a key economic sector in these two West African countries. According to UNESCO (2013), the literacy rate of RCI is about 56 % (65.6% for males and 47% for females) while Mali has only literacy rate 33.4% for (43.1% for males and 24.6% for females). Further, approximately 42% of Ivorians live under the poverty line and 50% live in rural areas whereas more than one-half of the population of Mali lives under the poverty line and only about 34% live in urban areas (World Bank, 2012). Considering religion in the two countries, the statistics

revealed that a vast majority of Mali's population is Muslim (94. 8%) with only 2.4% Christians whereas RCI's population includes 38% Muslims and 38% Christians, the rest of the Ivorian population is divided between animism and other religions (CIA, 2014).

A Comparative Analysis of the Phenomenon in Mali and in RCI

RCI was a stable country until 1999 when a military *d'état coup* occurred after the death of president Houphouet-Boigny. The military coup was first followed by clashes between government forces and civilians who wanted to impose the will of the majority after fraudulent presidential elections that favored the incumbent president and military junta leader Robert Guei. Violent fighting occurred between militants of the two major opposition political parties, including the *Front Populaire Ivoirien* (FPI) and the *Rassemblement des Republicains* (Akindes, 2004).

In 2000, following elections that placed Laurant Gbagbo into power, RCI was again shaken by brutal social crises, which led to a long-lasting armed conflict in 2002 (Akindes, 2004). Akindes (2004) described the armed conflict in RCI as "the sum total of the events that have jeopardized the continuity of the state and social order, and broken the relatively long period of political stability in a country that has long been considered a model" (p. 5). The latest outbreak of armed conflict was a result of contested 2011 presidential elections and led to the deaths of thousands of civilians, displacement of millions of rural populations, and many other undesired consequences (International Committee of the Red Cross [ICRC]; 2012 United Nations Security Council, 2014). As of July 2014, RCI counted 117,830 refugees, including 24,000 Internally Displaced Persons (IDPs) as a result of the 2011 post-electoral crisis (United Nations High Commissioner for Refugees [UNHCR], 2015).

Mali has been the scene of successive Tuareg rebellions among which the major uprisings occurred in 1960, 1989, 1992 and 2011 (Solomon, 2013). The current conflict in Mali started in

2012 and was exacerbated by a military coup plunging the country into an unprecedented social, economical, and political crisis (Themner & Wallensteen, 2013). Mali's Tuareg communities believed that they remained marginalized after 50 years of the country being independent even though more that 3000 of their combatant had been enrolled in the national army after the signature of the National Pact in 1996 between the government of Mali and rebel forces (Solomon, 2013).

In 2012, the Tuareg separatist movement known as *Mouvement National de Liberation de l'Azawad* (MNLA) and Jihadist groups who were seeking for a safe haven in the Sahara launched an offensive against government forces in northern towns of Mali (Themner & Wallensteen, 2013; Solomon, 2013). As result of the political chaos in Bamako, Mali's capital, and the state of deliquescence of the country, major cities of northern Mali fell into the hands of Islamist groups who swore to establish an Islamist state in northern Mali threatening the claims of MNLA (Themner & Wallensteen, 2013). This situation resulted in violations of human rights with incriminating reports of sexual assaults and application of Islamic Sharia law in the occupied regions (Themner & Wallensteen, 2013).

With the support of French airstrikes and military support from 40 other nations, the occupied cities had been recaptured in early 2013 (Solomon, 2013; Wulf & Mesko, 2013). However, the town of Kidal remained under the control of Tuareg rebel forces. The Government of Mali and rebel forces under the umbrella of the Coordination of Azawad Movement (CMA) have been involved in peace talks in Algiers since July of 2014.

The armed conflict in Mali resulted in the internal and trans-border displacement of thousands of Malians, especially rural populations in the northern regions. As of July 2014, Mali had about 428,902 refugees, including 128,866 IDPs resulting from the ongoing-armed conflict (UNHCR, 2015). The two countries – Mali and RCI – with many historical as well as socio-

cultural similarities and located in the same general geographic region of Africa offered a unique opportunity for comparison in regard to the phenomenon of interest. This was especially true because both nations include rural populations who experienced the effects of armed conflict but for varying lengths of time. Moreover, in the case of RCI, the country had experienced a relatively long period of time to recover from the conflict (approximately 13 years) while the armed conflict in Mali was more recent or *fresh* on the minds of its people.

Statement of the Problem

During the decades following the independence of many Sahel countries, the region of West Africa has experienced recurring armed conflicts (Themner & Wallensteen, 2013). Rural communities are frequently the most affected by the armed conflicts. On the one hand, millions are involved either as warlords and fighters or simply as victims. On the other hand, many people are displaced internally or externally and leave behind their homes, resources, and economic livelihoods. As a consequence of the recent conflict in Mali, about 550,000 people were displaced and, by the end of 2012, it was estimated more than one million people remain displaced in RCI from armed conflict there (FAO, 2013; Internal Displacement Monitoring Centre [IDMC], 2014).

Further, FAO and the Word Food Organization (WFP) estimated that about 600,000 people (mostly living in rural areas) were food insecure in the north of Mali in 2013 due to armed conflict (FAO, 2013). Governments, donors, and the media are working hand-in-hand to develop strategies aimed at peacebuilding and peace-keeping and also supporting economic recovery mostly targeting the rural population. However, much more assistance is needed, especially media and communication programs developed to support as well as complement post-conflict recovery efforts, peacebuilding, and the capacity enhancement of rural communities to recover after the cessation of armed conflicts. In addition, the media should emphasize the role of women in conflict resolution, in peacebuilding, and in economic recovery interventions, and also give

particular attention to the special needs of children and youth during and after armed conflicts. More study is needed about this phenomenon, especially in regard to rural populations of West Africa, including the nations of Côte d'Ivoire and Mali.

Purpose of the Study

This research study sought to examine and compare farmers' perceptions on the role of the media and other information sources in disseminating news and information after the cessation of armed conflicts in Mali and in RCI. In doing that, the study described farmers' views on the approaches used by the media and its partners to disseminate news and information after the cessation of armed conflicts in Mali and in RCI. In particular, the study also assessed and compared farmers' perceptions of the media and other information sources in disseminating news and information intended to improve their economic livelihoods and the resilience of rural communities as they recovered from armed conflicts in Mali and in RCI.

Research Questions

Six research questions guided this descriptive, mixed methods study:

1. What were selected personal and professional characteristics of farmers who experienced armed conflicts in Mali and in RCI?

2. How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?

3. How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?

4. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist with their economic livelihood recovery after cessation of the armed conflicts in Mali and in RCI?

5. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist in building community resilience after cessation of the armed conflicts in Mali and in RCI?

6. What types of relationships existed between a) selected personal and professional characteristics of farmers, and b) between farmers' selected characteristics and their views on the media's contribution to economic livelihood recovery and to resilience building in their communities after cessation of the armed conflicts in Mali and in RCI?

Significance of the Study

The media is a critical tool for supporting socio-economic recovery, peacebuilding, and stability after the cessation of armed conflicts (SIDA & UNESCO, 2003). Harris (2011) maintained that a significant number of activities of peacemaking and peacekeeping occur at the government, civil society, and individual levels. Actors, therefore, should disseminate and promote peacebuilding activities by making them known and by offering support to develop and make such more effective (Harris, 2011). All stakeholders, including farmers, policymakers, NGOs, the private sector, researchers, donors, and the media, should work together to restore the resilience of rural people, their economic livelihoods, and food and nutrition security after the cessation of armed conflicts (International Food Policy Research Institute [IFPRI], 2014). However, more empirical data as well as interpretive evidence is needed to describe and report on policies and practices that may be effective in this regard. In addition, according to Gilboa (2007), the role of the media in conflict and post-conflict settings has not been sufficiently examined by researchers in most of the related disciplines.

It is perceived, however, that the media can play a vital role in the process of reconciliation during the aftermath of armed conflicts just as the media can be harmful if they magnify and encourage conflict (Yamshon & Yamshon, 2006). Fortune and Bloh (2008) argued that governments and international partners overlook strategic communication and the role of media in post-conflict reconstruction and reform processes. This oversight could hinder the implementation of, and reduce trust in, the reform processes and actors (Fortune & Bloh, 2008). This study sought to describe and assess the communications strategies developed by stakeholders in Mali and RCI to assist farmers and other citizens of rural communities in recovering from the impacts of armed conflicts and regain their economic livelihoods.

Assumptions of the Study

The following assumptions were made for the purpose of this study:

1. The communications strategies implemented by various stakeholders assisted farmers in recovering from armed conflicts and enhanced their resistance to future armed conflicts.
2. The media (especially radio) were used to conduct agricultural communications programs in regions affected by armed conflict in Mali and RCI.
3. Farmers in Mali and RCI participated actively and honestly in this study.
4. The media contributed to reducing sex disparities in the agriculture sector in the post-conflict regions of Mali and RCI.
5. The media contributed to promoting the protection and welfare of children and youth after armed conflict ended in Mali and RCI.

Limitations of the Study

Due to security issues, the researcher was not be able to reach all potential participants in some of the areas that experienced significant armed conflicts. Transportation to the study's sites was difficult due to road conditions in Mali and in RCI. It was the researcher's impression that

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some participants were hesitant to speak openly due to fear of retribution and reprisals. In addition, considering the latent insecurity conditions and post-conflict status of the study's countries, the researcher was not able to conduct random sampling among the study's population. The study, therefore, used purposeful sampling within rural areas of Mali and RCI that were considered safe for travel and conducting of research with people.

Definition of Terms

The following key terms were used in the study:

1. Armed conflict: Uppsala Conflict Data Program ([UCDP], 2014) defined armed conflict as "a contested incompatibility, which concerns government and/or territory where the use of armed force between two parties results in at least 25 battle-related deaths in a calendar year" (p. 5).

2. Communication channels (outlets): Rogers (2003) defined a communication channel as a means by which messages are conveyed from an individual or individuals to others. Rogers (2003) distinguished two forms of communication channels, including *mass media channels* and *interpersonal channels*. *Mass media channels* pass information through a medium such as radio, television, newspapers and new media whereas *interpersonal channels* involve face-to-face interaction.

3. Communication messages: A message can be defined as a statement, which encompasses some information, news, or advice (Wilson & Ogden, 2008).

4. Communication strategies: Communication strategies represent plans for disseminating information concerning a specific issue such as an event, a situation, or product to a public (Wilson & Ogden, 2008).

5. Community-based organizations (CBOs): Community-based organizations are not-for-profit local groups, which function in the framework of a single local community to increase attention to the needs of residents of their geographic place (Marwell, 2004).

6. Internally Displaced Persons (IDPs): According to the Guiding Principles on Internal Displacement by the United Nations Office for the Coordination of Humanitarian Affairs ([OCHA], 2003), internally displaced persons (IDPs) are

> persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violation of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border. (p. 2)

7. Economic livelihood: Chambers and Conway (1992) defined economic livelihood as the capabilities, assets (stores, resources, claims, and access), and activities that are necessary to meet basic needs, including access to food, potable water, health facilities, and educational opportunities.

8. Extension: Extension programs were initially developed in the United States as a service to convey research-based knowledge to farmers (Rogers, 2003). Today, agricultural extension goes beyond the of transfer of information, it now includes assisting farmers' groups to deal with marketing issues, and develop partnerships with several service providers and other agencies. Agricultural extension, therefore, is defined as a whole set of assumptions, principles, and organizational structures that assist farmers and facilitate their effort to solve problems (Davis, 2009; Rogers, 2003)

9. Information and Communication Technologies (ICTs): Information and communication technologies is a broad term that includes all communication technologies or application including, radio, television, mobile telephone, Internet, and satellite systems, and also

many services related to them such as videoconferencing and distance learning (Marcelle, 2000).

10. <u>Non-governmental organizations (NGOs):</u> Non-governmental organizations (NGOs) are independent not-for-profit structures established by voluntary citizens groups at local, national, regional, or international levels. NGOs are not governmental but they may receive funds from or offer resources to governments or they perform a variety of services with the permission of governments, i.e., agricultural development, health issues, human rights or education, and many other areas of need (Love, 2011).

11. <u>Peacebuilding</u>: The United Nations (2014) refers to peacebuilding as a variety of measures undertaken to reduce any risk of reoccurrence of violent conflict by improving national capacity at all levels of conflict management, and through laying the foundations for sustainable peace and development.

12. <u>Peacekeeping</u>: Peacekeeping is defined as the deployment of state or multinational forces for the purpose of assisting, controlling and resolving an actual armed conflict between or within states (Caplan, 2006).

13. <u>Post-conflict</u>: Post-conflict from a temporal perspective is the period of time following the end of an armed conflict between parties in conflict in a given country. However, the term encompasses two definitional problems. First the determination of the beginning of a post-conflict period and the second is to determine the official end of the conflict (conflicts do not necessarily end immediately after the signature of an agreement between warring parties). Hence, Collier and Hoeffler (2004) defined the post-conflict period as the 10-year period following the end of a conflict.

14. <u>Post-conflict Reconstruction and Recovery</u>: Post-conflict reconstruction and recovery, according to Tzifakis and Tsardanidis (2006), is defined "as a complex, holistic and multidimensional concept encompassing military, economic, and social conditions" (p. 68) aiming at improving life after the cessation of hostilities in a given country.

15. <u>Reconciliation</u>: Refers to actions undertaken to build or rebuild trust between people who have experienced armed conflict through appropriate use of government entities, such as organizing elections and the media to resolve differences between them. "Reconciliation is complex process, requiring individuals and social groups to forgive, forget and/or abandon longstanding discriminations, animosities and often, incidents that they regarded as atrocities" (World Bank, 2013, p. 17). This process, therefore needs to be accompanied by adequate communication strategies that will reinforce social cohesion and help reduce social, political, ethnic, religious and other obstacles to reconciliation and peacebuilding (World Bank, 2013).

16. <u>Refugee</u>: Paragraph 6B of the UNHCR mandate of 1950 defined refugee as

> a person who is outside the country of his [or her] nationality or, if he [or she] has no nationality, the country of his [or her] former habitual residence, because he [or she] has or had well-founded fear or persecution by reason of his [or her] race, religion, nationality or political opinion and unable or, because of such fear, is unwilling to avail him [or her] self of the protection of the government of the country of his [or her] nationality, or if he [or she] has no nationality, to return to the country of his [or her] former habitual residence. (p. 7)

17. <u>Resilience</u>: Resilience is the capacity to successfully achieve developmental outcomes in spite of adversity, constraints, or threatening circumstances and challenges (Masten, Best, & Garmezy, 1990).

CHAPTER II

REVIEW OF LITERATURE

This chapter consists of six major sections and related subsections. The first section provides a descriptive background of armed conflicts in general. The second section discusses the aspects of armed conflicts in Mali and in RCI. The third section describes the use of media in post-conflict interventions. The fourth section presents an overview of the media systems in Mali and in in RCI. The fifth section discusses post-conflict recovery and reconstruction and its implications for building community's resilience. The last section describes the theoretical/conceptual framework that guided this study.

Background on Armed Conflict

Megwa (2009) stated "[c]onflicts are a central part of human organization, and so are attempts at solving them" (p. 30). Wallensteen and Sollenbeg (2001) defined armed conflict as disputes involving a government and/or a territory where the two parties, including the government of a state in conflict, use armed forces resulting in at least 25 battle-related deaths. For Coser (1956), a conflict was a situation in which opposing parties are engaged in fights to neutralize, injure, and eliminate one another in regard to values and claims of wrong-doing.

Between 1946 and 2002, 226 armed conflicts occurred in 79 places around the world (Eriksson, Wallensteen, & Sollenbeg, 2003). In 2000 alone, 33 active armed conflicts occurred in 27 locations, compared to 2010 when 30 active armed conflicts were reported in 25 locations (Themner & Wallensteen, 2010)

Eriksson et al. (2002) divided armed conflicts into three different categories, *minor armed conflic*t during which the number of deaths caused by the battles was at least 25 but did not exceed 1000; *intermediate armed conflict* causes more than 1000 deaths, but less than 1000 in a given year; and, *war* which causes more than 1000 deaths in any given year. The last two categories are known as *major armed conflict*. However, the International Committee of the Red Cross [ICRC] (2008) distinguished two types of armed conflict; namely, the international armed conflict involving two states, and the non-international armed conflict involving governmental armed forces and one or more armed groups, or between such armed groups arising in the territory of a state.

According to Brinkman and Hendrix (2011), the causes of armed conflicts are very complex. In many cases, they occur because access to resources (land, water, natural resources) is in dispute or constrained, bad governance, ethnicity, religion, or external factors, e.g., instability in a neighboring country (Collier, 2007; Robertson & Olson, 2012). Armed conflicts are also caused by numerous grievances such as repression, exploitation, and exclusion (Collier, 2007). Azam (2001) argued that many inter-ethnic conflicts in Africa are caused by the failure of the states to fairly distribute resources among ethnic groups. "Factors such as inequality, poverty, polarization, exclusion, ethnic tensions, natural resources appropriation contribute significantly to the risk of [armed] conflict" (Cuesta & Murshed, 2008, p. 5). For instance, the rebel groups of Mali were motivated by the desire to found their own autonomous state of *Azawad* in northern Mali claiming that successive governments of Mali had not given much attention to the economic and social development of its northern regions after more than 50 years of independence (Themner & Wallensteen, 2013).

Armed conflict is a phenomenon that characterizes many countries with low levels of economic development and high levels of food insecurity (Brinkman & Hendrix, 2011; Collier, 2007). Many of these countries are located in Africa or Asia. According to the Uppsala Conflict

Data Program (Themner & Wallensteen, 2013), between 1989 and 2012 for the 141 armed

conflicts identified across the world, more than 61% occurred in Africa (42) and Asia (47). Table

1 compares the number of armed conflicts that occurred in five different regions, including

Africa, the Americas, Asia, Europe, and the Middle East, during seven different years. Table 1

shows the prevalence of conflict in Africa and Asia. In 2012, for example, only two armed

conflicts were recorded in Europe against 13 in Africa and 10 in Asia (Themner & Wallensteen,

2013).

Table 1

Armed Conflict by Region, 1989-2011

Region	1989	1993	1997	2001	2005	2009	2012
Europe	2	9	0	2	2	1	2
Middle East	4	7	4	3	5	5	5
Africa	12	11	14	16	7	12	13
Americas	9	3	2	2	2	3	2
Asia	16	15	19	14	17	15	10

Note. Taken from UCDP, 2013

Terrorism also could be associated with traditional armed conflict. In some cases,

terrorists are used as combatants; for example, Hamas and Islamic Jihad in Palestine or Ansar

Dine (Defenders of the Faith) in Mali (Themner & Wallensteen, 2013). "Terrorism can here be

understood as actions that inject fears and sentiments of humiliation and demand counter-actions"

(Eriksson et al., 2003, p. 597).

Armed conflicts have several consequences on civil societies, including deaths, injuries, displacements, as well as loss of economic livelihoods, destruction of infrastructure and degradation of the environment (Douarin, Litchfield, & Sabates-Wheeler, 2010; Brinkman & Hendrix, 2011; Urdal & Che, 2013). The effects of conflicts can be particularly severe in rural areas and result in the displacement of large numbers of rural populations (FAO, 2005).

According to the United Nations High Commission for Refugees (UNHCR), in 2014, the number of refugees exceeded 50 million people because of continuing armed conflicts in countries such Afghanistan, the Central African Republic, Mali, and elsewhere (Schmemann, 2014). In addition, the destruction of infrastructure such as roads makes interventions very difficult and frequently little attention is paid to rural areas impacted by conflict (FAO, 2005). The nature of physical infrastructure destruction varies from to one country to another. In general, it involves the destruction of roads, bridges, offices and equipment of public agencies, and educational institutions. The loss of infrastructure diminishes the capacities of governments to rebuild trust and legitimacy with their citizens (UNDP, 2010).

FAO (2005) described some common characteristics of post-conflict countries:

o Death and injury of many people, and continuous fear of violence

o Prevalence of hunger, especially among women, children, youth and other marginalized groups

o Displacement of large numbers of people (internally and externally)

o Political and ethnic tensions

o Destruction of infrastructure

o Environmental degradation

o Weak government system

o Discriminatory laws

o   Limited number of qualified government staff

o   Widespread destruction of records and information

Armed conflicts can be a severe blow to a country's or even a region's economy. According to Collier (1999), conflict jeopardizes a nation's economic development and can lead not only to destruction of infrastructure, and the failure of institutions and organizations but also to corrosion of the economic environment. Furthermore, armed conflict decreases a country's per capita income in general at an annual rate of 2.2% (Collier, 2007). Murdoch and Sandler (2004) explained that civil war decreases a country's economic growth rate by 85% during the first five years and the growth will continue to be reduced even during the recovery period and up to 35 years after the cessation of the conflict to 31%. Collier (2007) argued that civil war is one of the main causes of severe poverty in many regions in the world because war is damages infrastructure, institutions, and production systems; breaks up communities and social systems and networks; and kills and injuries innocent people. Armed conflicts also cause disruption and diversion of public expenses; less attention is given to priorities. For example, " [g]overnments in post-conflict societies are well aware that they are living dangerously. Typically, they react to this risk by maintaining their military spending at an abnormally high level" (Collier, 2007, p. 27). Gyimah-Brempong and Corley (2005) found that armed conflicts have extreme consequences on the economic growth of countries, which experienced them.

The agricultural sector in general is heavily impacted by armed conflicts (Kimenyi et al., 2014). During conflict time, agricultural production can drop on an average of 12.3 percent per year (Messer, Cohen, & Acosta, 1998). Matijasevic, Velasquez, Villada, and Ramirez (2007) described how famers had to stop their agricultural activities for building roads or becoming combatant for armed groups in Colombia. Moreover, several farmers could not work because of the controls performed by armed groups would not let farmers cross a bridge or a road in Colombia Matijasevic et al. (2007). Agricultural and food production systems are often destroyed

during armed conflicts, causing famine and food shortage in the conflict zones (Urdal & Che, 2013). According to the Human Security Centre (2004) six out of seven of the most recent famines in Sub-Saharan Africa are consequent to armed conflicts.

Moreover, access to health services in conflict zones could be interrupted or limited due to the destruction of healthcare facilities or displacement of health agents during armed conflicts time. This situation increases the risk of outbreaks of epidemic diseases and lack of preventive medicine services such vaccinations or obstetrical care (Urdal & Che, 2013. Betsi et al. as cited in Urdal and Che, (2013) found a significant decrease in the number of health agents and suspension of basic health services in rural and urban areas in Côte d'Ivoire as result to the 2002 armed conflict. Another example is in 2012, in Gao a major town northern of Mali, 32 cases of cholera were reported in the village of Wabaria located along the river Niger (ICRC, 2012). Further, Ghimire and Pun (2006) found that violent conflict could cause shortage of basic health supplies; in Nepal, for example, it was reported that health facilities were destroyed, health agents were threatened, and medical supplies were difficult to transport during the Maoist rebellion.

Moreover, armed conflicts increase the risk of malnutrition and hunger among the populations living in regions affected by the unrest and violence. According to the USAID (2012), because of the insurgency, more than 175, 000 children, particularly in rural areas, were at risk of severe malnutrition in northern Mali and about one third of Mali's population faced severe hunger as a result of conflict there during 2012.

Armed conflicts can also have severe consequences on education and on human capital. For instance, Chamargabagwala and Moran (2009) found that the civil conflict in Guatemala had very negative impacts on men's and women's education in rural areas, and more specifically on marginalized Mayan communities. Likewise, Akresh and De Walque (2008) identified the negative effects of armed conflict on schooling in Rwanda. Armed conflicts cause school

dropouts and even school closings due sometimes to the destruction of infrastructure and the displacement of teachers and students. For an example, De Walque (2004) found occurrences of decreased school attainment during the civil conflict in Cambodia.

According to Roberson and Olson (2012), countries that experienced armed conflicts have weak institutions and governments, e.g., poor management of natural resources. The governments can loose their credibility as communities or populations in regions of the country, particularly those who were involved in the conflict, may believe that the decisions made during the conflict were not fair (Roberson & Olson, 2012). In such a case, informal customary government may emerge which results in divided post-conflict societies or two groups, including *a formal system* of governance that operates on a slow timescale and a *fractured assemblage of groups* that works on a fast timescale (Roberson & Olson, 2012). This situation can frequently cause a multiplying of levels of decision-making and weakens the formal government.

Armed conflict can also cause loss of loyalty of marginalized or ignored groups to the central government and allegiance to insurgent groups (Robertson & Olson, 2012). Citizens of such areas may revert to illicit economic activities. For example, in Colombia, several regions of the country were controlled by rebel groups and devolved to coca production (i.e., the raw product of cocaine), which caused the loss of agricultural skills and knowledge (Robertson & Olson, 2012).

Armed Conflicts in Côte d'Ivoire (RCI)

The origins or the politico-military crises in RCI are very profound and complex. In 1994, President Henri Konan Bedie who succeeded to the late President Felix Houphouet-Boigny initiated a reform in the electoral code stipulating that every candidate to the up-coming presidential elections should demonstrate his or her Ivorian ascendance (Djehoury, 2007). For president Bedie, that was a way to preserve the Ivorian identity and also to prevent his main

challenger, Alassane Dramane Ouattara, (originally from the northern RCI) to run for the elections (Djehoury, 2007). According to Djehoury (2007), this situation combined with religious alibis created a break-up between the southern and northern parts of RCI. Northern RCI was for the majority populated by *Julas* Muslim who are believed to originate from Burkina Faso and Mali; and Christians dominated southern RCI (Akindes, 2004).

It was under such a deteriorated political atmosphere that General Robert Guei seized power as result of a military *coup d'état* (Akindes, 2004). Yet, Robert Guei and his partisans wanted to monopolize power through fraudulent elections, causing popular discontent within the majority of populations, which fought against government forces (Djehoury, 2007; Akindes, 2004). In addition, violent altercations opposed militants of the two major opposition political parties, FPI and RDR (Akindes, 2004). In 2000, General Robert Guei organized presidential elections that he lost against Laurant Gbagbo and also by disqualifying Alassane Ouattara and six other candidates (Djehoury, 2007; Adolphe, 2005). Partisans of Alassane Ouattara deserted the army and fled to Burkina. The armed conflict started in 2002. A military *coup d'état* against President Gbagbo led the killing of General Robert Guei and also murder attempts against several political figures, including Alassane Dramane Ouattara (Djehoury, 2007). This situation marked served as a premise to the armed conflict.

Three rebel groups, i.e., the *Mouvement Patriotique de la Côte d'Ivoire* ([MPCI], Patriotic Movement of Côte d'Ivoire), the *Mouvement pour la Justice et la Paix* ([MJP], Movement for Justice and Peace), and the *Mouvement Populaire Ivoirien du Grand Ouest* ([MPIGO], Ivorian Movement for the Great West) engaged in combat against the country's government forces. All three insurgent groups were fighting to overthrow the regime of president Laurent Gbagbo (Eriksson et al., 2011). After five years of bloody fighting and failed mediations facilitated by the Economic Community of West Africa Economic States (ECOWAS) the conflicts ended (Apuuli, 2012).

In 2007, parties in conflict in RCI signed a peace agreement under the auspices of the chairman of the ECOWAS, president Blaise Compaore of Burkina Faso (Roberson & Olson, 2012). After several failed attempts in late October of 2010, the country held delayed and repeatedly postponed presidential elections that marked the end the political crisis caused by the civil war that started in 2002 (Apuuli, 2012). Alassane Dramane Ouattara, the opposition candidate, won the second round of the elections with 54.1 % of the vote against the then president Laurent Gbagbo. According to Apuuli (2012), Laurent Gbagbo and his partisans rejected the results jointly proclaimed by the Independent Electoral Commission and the United Nation Operation in Côte d'Ivoire (Apuuli, 2012).

Thereafter, both sides embarked in violent altercations. Further to a military offensive by Ouattara's partisan and the assistance of the UN and French forces, president Gbagbo was arrested, held in detention in the north of the country and then transferred to the International Criminal Court (ICC) and Ouattara was invested as RCI's president (Apuuli, 2012; Themner & Wallensteen, 2013).

Several international and regional actors were involved in the resolution of the armed conflict in RCI, including ECOWAS, the United Nations, the African Union, the European Union, and individual countries (Djehoury, 2007). France initiated the first deployment of international forces in RCI through the *Operation Licorne* in 2002 followed by the ECOWAS Mission in Côte d'Ivoire (ECOMICI) ECOWAS peacekeeping forces (Gabi, 2012). On the diplomatic side, ECOWAS initiated and conducted several mediations mission between the belligerents (Gabi, 2012). For example, the regional organization responded quickly to the post-electoral crisis of 2011 by organizing diligently a summit of the heads of the states of the region in Abuja Nigeria to take measures regarding the Ivorian crisis (Gabi, 2012). ECOWAS had also actively been involved in the resolution of the conflict in RCI from its early stages to the end.

The United Nations Operation in Côte d'Ivoire (UNOCI) was established with respect to the United Nations Security Council Resolution 1528 in replacement of the UN Mission in Côte d'Ivoire (MINUCI) which aimed at supporting the implementation of the peace agreement of January 2003 signed by parties in conflict (United Nations, 2003). The mandate of UNOCI is to protect civilian populations, assist the government in its disarmament, demobilization and reintegration of ex-combatants, and in the piloting and organization of the 2015 presidential elections (ONUCI, 2015).

The armed conflict in had very negative consequences on RCI's economy, particularly on the food and agricultural sector. For example, the cocoa industry, which represents the country's major source of income, had dropped very considerably during the conflict time (World Bank, 2013). Moreover, access to agricultural inputs and land was impossible, causing a disruption in the agricultural and food production in almost across the whole country (World Bank, 2013). Rural economies declined significantly, especially in areas where the armed conflict was widespread between civilians of different ethnic groups (FAO, 2012). Further, advisory service delivery was impossible and event destroyed (FAO, 2012; World Bank, 2012).

Armed Conflicts in Mali

Mali had been the scene of multiple of Tuareg rebellions – 1963-1964, 1990-1996, 2006-2009 and the current conflict, since January 2011 (Solomon, 2013). Further at the time of the country's independence in 1960, the Tuaregs saw themselves as different or even superior to the black settlers (sedentary) way of life and resented that they should not be in one nation with the southern inhabitants of Mali (Solomon, 2013). Their attitude toward the black, sedentary Malians in the southern part of the country was depicted by a statement made by a Tuareg Chief after the independence: "What can blacks rule over when they are only good to be slaves?" according to Keita as cited in Solomon (2013). Likewise, Keita asserted that sedentary Malians perceived

Tuaregs as "a bunch of white, feudal, racist, pro-slavery, bellicose and lazy savage nomads" as cited in Solomon (2013). These cultural clashes triggered the rebellious attitudes of the Tuareg. The Tuaregs, traditionally cattle breeders, are originally nomadic *Berber* people who lived in the Sahel and the Sahara regions of Mali, Niger, Burkina Faso, Algeria, and Libya for centuries (Devon, 2013; Francis, 2013). It difficult to say with accuracy the number of Tuaregs living in Mali because empirical data about Malian citizens regarding their ethnic affiliations are usually not collected by the government, however it known that 3.5% of Malians speak *Tamasheq*, which is the language of the Tuaregs (Devon, 2013).

Beginning from the early 1960s, Mali had witnessed repetitive outbreaks of armed conflict involving Tuareg rebel groups motivated to establish an independent state in the northern part of the country (Themner & Wallensteen, 2013). The early Tuareg rebellion also know as the *Afellaga* rebellion occurred in 1960 when immediately after the independence of Mali from France, the Tuaregs claimed their autonomy from the young nation because they felt that they were discriminated in the distribution of the state benefits (Devon, 2013). Between 1990-1996, the Tuaregs rebelled again for the same grievances, and finally ended with the National Pact signature in 1996 (Murison, 2003). In 2012, the separatist group *Mouvement National de l'Azawad* ([MLNA], National Movement for the Liberation of Azawad) engaged in battles against the Government of Mali demanding the independence of the *Azawad* – a name given to the northern part of Mali by the rebels (Themner & Wallensteen, 2013).

In 2011, living conditions were degrading gradually for ordinary Malians. The government policies continued to favor bad governance characterized by corruption and injustice (Francis, 2013). That phenomenon was increasingly threatening the regime of Amadou Toumani Toure who was Mali's president from 2002 to 2012 (Solomon, 2013). This deliquescent situation provoked a general discontentment within the Malian population causing the collapse of the regime and intensified the rebellion in the northern part of the country (Solomon, 2013). In

addition, Solomon (2013) asserted "[t]his crisis legitimacy is further exacerbated by two interconnected variables: the lack of any form of social contract between citizens and the rulers and the dearth of any overarching national vision that is shared by the majority of the populace" (p. 433).

The conflict with the rebel groups was exacerbated by a *coup d'état* that caused the disintegration of Mali's armed forces. Mali's armed forces, which were weakened by the political chaos in Bamako its capital, were routed from northern regions by separatist and Islamist groups which led to the fall of northern cities to the rebel groups (Down & Raleigh, 2013; Solomon, 2013; Themner & Wallensteen, 2013). Thereafter, MNLA, the Tuareg nationalist fraction was defeated by Jihadist groups and quickly expelled from the cities by the Islamist groups Ansar Adine (Defenders of the Faith), led by Iyad Ag Ghaly, and his allies from *Mouvement pour la Jihad en Afrique de l'Ouest* ([MUJAO], Movement for Oneness and Jihad in West Africa) (Solomon, 2013; Themner & Wallensteen, 2013). Francis (2013) stated

> [t]he declaration of the northern Mali as an independent Islamic state – the Islamic State of Azawad – was endorsed by AQIM and other Jihadist groups in North Africa and the Sahel. Ansar ed- Din imposed *sharia law* in the world-renowned historic city of Timbuktu and other cities, which led to the amputation of hands for stealing and stoning for adultery, as well as destruction of ancient Muslim shrines in Timbuktu that offended the Jihadists' puritanical Salafi Islamic views. A terrorist state under strict sharia law had emerged in the largely secular Muslim northern Mali similar to the al-Shabaab terrorist state in Somalia and the Taliban-al-Qaeda terrorist state in Afghanistan before the U.S. led invasion in 2001. (p. 3)

Therefore, the northern part of Mali was transformed into a safe haven for those Islamist groups, which decided to move south and again defeated Mali's national army in the strategic

town of Konna and threatened to advance on the capital city of Bamako (Dowd & Raleigh, 2013; Solomon, 2013). The transitional president Dioncounda Traore urged for military assistance from the French government. This request prompted French airstrikes against the Islamist forces on January 2013 (Solomon, 2013). This marked the beginning of the liberation of northern cities from occupation of Jihadist groups and the beginning of negotiations with separatist armed groups (Solomon, 2013; Wulf & Mesko, 2013). Many countries, including the United States, actively supported the French offensive. Later, French forces were joined by other foreign troops from Chad, Burkina Faso, Nigeria, Benin, Senegal, and Niger as part of the *Serval Operation*.

Under the auspices of several West African states and the Government of Chad, the government of Mali and the armed groups MNLA and *Haut Conseil pour l' Unite de l'Azawad* (HCUA [High Commission for the Unity of Azawad]) signed a preliminary agreement on June 19, 2013 in Ouagadougou, Burkina Faso (Wulf & Mesko, 2013). The international community considering the new security conditions in Mali urged the transitional government to organize presidential and legislative elections for returning to a civilian democratic and constitutional rule. The presidential elections were held in July 2013 and Ibrahim Boubacar Keita was elected as president for a five-year term.

The armed conflict had very negative consequences on the agricultural sector of Mali's economy. The local economies in the conflict zones were shattered by the insecurity created by the conflict (Kimenyi et al., 2014). According to Kimenyi et al. (2014) because of the conflict, the supply chain of agricultural inputs, i.e., fertilizers, gas, seeds, and irrigation systems was very affected in the northern regions; agro-dealers could not access farmers due to insecurity. Kimenyi et al. (2014) stated " [m]any farmers were not able to obtain the quantity of fertilizer that the need, which resulted in a reduced area of land under cultivation and lower yields" (p. 9). Further, they indicated that rebels have stolen water pump making irrigation impossible. Kimenyi et al. (2014) explained that the livestock value chain was the most affected sector by the armed conflict

in the agricultural sector; livestock owners were flee to safer place in southern part of the country or in the neighboring countries. Moreover, rebels often attack herders and pillaged their cash and livestock. Kimenyi et al. (2014) found that the conflict in Mali has four main impacts on actors and agriculture, including reduction of human mobility, reduction of access to inputs and markets, increase of plundering and theft of agricultural assets, and fluctuation of prices of inputs and agricultural products. The disruption of the agricultural production in Mali created food insecurity for over 900,000 people, especially rural populations (Gourdin, 2012). According to Tedosijevic (2003), the per capita agricultural and food production levels loose 10% during

Use of Media in Post-conflict Interventions

"The first most basic task for any administration in a post conflict area is to ensure that people can access the means of communication by receiving broadcast signals and having access to basic electricity supplies, telephones and [I]nternet" (SIDA & UNESCO, 2003, p.28). The international community undertakes a wide range of media programs to assist post-conflict countries in various areas of their reconstruction process depending on many factors, including the nature of the political opening, the country's economic and political status, the nature of the existing media, donors' portfolios, and the strategic importance of the country (Kumar, 2006). Good communication networks are now considered essential in rebuilding national cohesion, restoring connections between rural and urban family members and also. Hoffmann (2014) however, asserted

> Communication is seen essentially as a tool rather than an end in itself and conceptualized as a form of transferring knowledge and ideas, in some instances acknowledging the need to listen, but more often than not merely in order to sustain intended outcomes; rarely as an interactive process that could engender emancipation. Thus, the prerequisite conditions for such a process are rarely discussed and media

development strategies – even if still uniform – are based generally on the liberal peace

agenda. (p. 116)

Historically, media are perceived as propaganda instruments during armed conflict until

recently when an attempt was made to understand the role of media in promoting peace and

development in conflict/post-conflict nations (Schoemaker & Stremlau, 2014). Shinn and Briers

(2009) argued that information and news from the media are not always accurate; the media

sometimes unintentionally but occasionally intentionally conveys incorrect information to their

audiences. Access to information is a form of empowerment that involves a certain number of

basic freedoms such as freedom from ignorance, freedom from servitude, and freedom to choose

(Acayo & Mnjama, 2004). Moreover, Fortune and Bloh (2008) maintained that communication is

one of the most useful tools to building trust in the aftermath of violent conflicts. Governments

need to develop ways to inform people about ongoing reforms and guarantee their support in

clear, focused, and targeted messages (Fortune & Bloh, 2008). Communication is difficult but it

is essential in the post-conflict reconstruction and recovery process (Shinn & Briers, 2009).

Media, particularly radio and print, could play a key role in bringing positive change in

post-conflict countries (Fortune & Bloh, 2008). Mass media contributes to educating rural

communities in several areas. Mogekwu (2009) postulated that political education is a prominent

domain where mass media can have a substantial influence on communities. He added that

African rural communities and even urban communities do not understand the modern political

systems that are practiced by the African elite (Melber, 2011; Mogekwu, 2009).

Further, women issues, especially in post-conflict period, are less covered by the mass

media (Myers, 2009). For example, Myers (2009) indicated that radio programs in Africa only

focus on subjects related to family and the domestic sphere. A study conducted by the

International Women's Media Foundation (IWMF) in 2008 in Mali, Uganda, and Zambia

revealed that a profound disconnect existed between the African media coverage and the reality, especially when reporting about agriculture and women in agriculture. The study found that even though agriculture represents the backbone of African economies, it only benefits from 4% of the total media coverage, and women's issues are only 7% of the stories analyzed (IWMF, 2008). Women can be key actors in peacebuilding and in reconstruction efforts after the cessation of armed conflict. However, they are very often marginalized and their experience overlooked and they benefit less from media programs (SIDA & UNESCO, 2003). According to FAO (2014), women worldwide produce more than one-half of the food consumed and up to 60 to 80% of basic foodstuffs in Sub-Saharan Africa and in the Caribbean.

It takes time and effort for the cessation of armed conflicts to occur. Conflict resolution usually involves individuals, institutions, or media that have respect, power, authority, and credibility (Megwa, 2009). The media and people involved in conflict resolution and reconstruction mechanisms should have the trust of all parties involved to be successful in their roles. Likewise, in good democratic systems, the media plays an essential role in promoting and ensuring good and transparent governance, peace, and stability. Media should provide the whole society with credible and relevant information and therefore enable people to make well-informed decisions (SIDA & UNESCO, 2003). Metzl (1997) stated "mass media reach not only people's home, but also their minds, shaping their thoughts and sometimes their behavior" (p. 15). The media is an important tool to assist people who experienced armed conflict, particularly those living in rural areas (Megwa, 2009).

Organs of the mass media are also considered part of the mechanism for preserving stability and cohesion in a society, according to Tichenor, Donohue, and Olien (1980). They can be used to prevent or resolve conflict and assist victims of armed conflict to recover (Megwa, 2009). Frohardt and Temin (2003) posited that media such as radio, television, and print generally play a constructive and informative role in communities and can be used to educate and

raise the awareness of rural communities about several issues, such as hygiene and sanitation, environment protection concerns, nutrition, women empowerment, children rights and many other topics. SIDA and UNESCO (2003) recommended that

> [o]ne of the first steps after the cessation of violence is the need to reduce perceptions of threats and promote some degree of compromise, both at elite and grass-roots levels of society. Media's role in this phase is important, particularly when the most essential dimension in an internal political power struggle concerns attempts to legitimize power. (p. 11)

Mass media including new information communication technologies (ICTs) are essential sources of information for people who are living through or have recently experienced armed conflict (World Bank, 2013). Governments and international agencies perceive media and ICTs as the most useful tools to assist in the main areas of post-conflict reconstruction policy and practice, including stabilization, infrastructure, reconciliation, public engagement, and development (World Bank, 2013).

Stabilization constitutes the first step in peacebulding and reconstruction processes. According to Collier (2007), "the end of a war often is not the end of the conflict; once over, a conflict is alarmingly likely to restart" (p. 27). Governments of post-conflict nations and their partners should emphasize sustainable construction and do all they can to prevent conflicts from re-occurring (World Bank, 2013). Conflict prevention is a major component of stabilization and post-conflict reconstruction (World Bank, 2013). The media, i.e., traditional and new information technologies, can play a key role in stabilization and also help minimize the risk of reoccurrence of violence. As a successful example, in 2007, the *Ushahidi* software was used in Kenya to oversee violence during the post-election crisis and helped to implement communication strategies that reduced the risk of violence intensification. *Ushahidi* is a free open source software

that enables individuals or groups to collaborate through creating live multi-media maps to monitor various projects, including public health issues, elections, disasters, and conflicts (Morrow, Mock, Papendieck, & Kocmich, 2011)

During armed conflict, communication infrastructure can be severely damaged and even destroyed by combatants creating the need to restore communication infrastructure during post-conflict and reconstruction processes (World Bank, 2013). Adequate communication infrastructure in post-conflict countries is essential in the reconstruction and stabilization process to rebuild social cohesion, confidence, and restore connection between conflict-affected family members (World Bank, 2013).

Public confidence in reconstruction and stabilization processes is essential to conflict settlement and reduces the risk of conflict escalation in the future. The media, including ICTs, are vital tools to ensure public engagement. World Bank (2013), however, warned that "[b]alanced and well-informed reporting can build confidence and support stabilization; broadcasts that are partisan or based on rumor can promote disharmony and spread anxiety" (p. 18). For example, *Radio Milles Collines* during the genocide in Rwanda in 1994 contributed to the escalation of violence through its heinous and partisan messages against the *Tutsi* ethnic group (Hoffmann, 2014).

According to the World Bank (2013), to address this issue, the government and donors have adopted two different approaches, including *media standards* and *media freedom*. On the one hand, *Media standards* involves many aspects such as to provide training to journalists about ethical principles, to support the establishment journalists' organizations to promote professionalism, and the creation of news agencies having the competence and resources to collect, process and share news stories with media outlets. On the other hand, *media freedom* is to ensure when journalists can work effectively in a stable and secured environment without being

threatened by any type of danger. However, *media freedom* could be used nefariously to encourage hatred and division within war-torn communities (Paris, 2004). To the contrary, *media freedom* is generally under the safeguard of governments. Moreover, for the World Bank (2013) to ensure public engagement

> [i]nformation collected by governments can be made available much more widely than in the past, through traditional and new media [ICTs]. Instead of being restricted to narrow group of officials, data access and analysis can be thrown open to the wider community, increasing transparency and accountability and enabling a wider range of (more or less) informed contributions to decision-making. (p. 20)

Communication and media professionals perceive that ICTs, also known as *new media*, are essential tools in stabilization and reconstruction processes (Hoffmann, 2014). ICTs have emerged in post conflict communication in addition to the traditional media, i.e., radio, television, and newspapers. In Mali, Community Learning and Information Centers (CLICs; community based cybercafés) were established to make the Internet available to rural communities (Kanté et al., 2009; USAID 2003). However, Kanté et al. (2009) found that interpersonal communications were more preferred and if CLICs are to be significant sources of information for rural citizens, opinions leaders, in particular, should be trained about how to use new media tools, especially in regard to issues important to their communities.

In 2008, it was reported that 23% of the world's population used the Internet, and 60% now own a mobile telephone. For instance, according to Brunner and Giroux (2009), the use of more affordable mobile telephones and social media has exploded. This is a positive change not only for civil society, but also for government officials and emergency agencies that seek new, efficient, and effective ways to reach their target groups (Brunner & Giroux, 2009). In addition, Hoffmann (2014) found that ICTs made communication easier for people who have experienced

violent conflicts to engage them in reconstruction and stabilization interventions and to amplify their own initiatives for peace as illustrated by a 2008 mass protest in Columbia and the 2011 Arab Spring protest in Egypt triggered by Facebook messages (Beaumont, 2011).

According to Mogekwu (2009), the mass media should play a role in educating local communities to monitor their leaders and their actions. In doing so, the mass media fulfill their traditional *watchdog role* in society. In addition, the media can address a multitude of community problems such as poor health and diseases through campaigns to bring about awareness, treatment, and prevention. If the media helps communities to identify leadership issues early enough, this could help to avoid conflicts (Mogekwu, 2009).

The media, including those who employ ICTs, can assist communities in prevention activities by creating opportunities and venues to forge community relationships, enhance community trust, and encourage information-sharing among community members (Brunner & Giroux, 2009). Mobile telephone networks have been used successfully during emergencies, e.g., during the 2010 earthquake in Haiti and the terrorist attack on the World Trade Center towers in 2001. In a study conducted about the uses of mobile telephones in post-conflict Liberia, Best, Smyth, Etherton, and Wornyo (2010) found that the majority of people in post-conflict zones perceived mobile telephones were a means to be connected with the rest of the world. Moreover, they added in some cases, mobile telephones were the only available source of information, i.e., no radio stations, newspapers, or Internet cafés were operating in parts of Liberia.

In addition, Shoemaker and Stremlau (2014) argued that policy makers put a strong emphasis on the potential of freedom of expression and the use of media and ICTs to encourage development and democratization in post-conflict states. Mogekwu (2009) argued that

> when mass media work consistently on the minds of the people to equip them with the
> instrument of knowledge and awareness, they are empowering them to take hold of their

environment, utilize it as best as they can for improvement of their lives and escape the cycle of violence that derives from the absence of such empowerment. (p. 248)

The development of a "free media" system has been emphasized in rebuilding post-conflict nations of Afghanistan, Iraq, and The Democratic Republic of the Congo (Shoemaker & Stremlau, 2014). SIDA and UNESCO (2003) stated that a *developed* and *pluralistic* public media system supported by humanitarian information channels can create a more accurate view and problems and solution to a conflict. In describing the role the mass media could play in building the resilience of local communities, Mogekwu (2009) stated, "the mass media can purposefully engage in mass mobilization for social justice, self reliance, economic emancipation and better life for all" (p. 248).

Developing countries are subject to repetitive conflict and conflicts last longer once they start (Collier, 2007). SIDA (2004) indicated that communication and sensitization activities conducted by the media within post-conflict communities should also focus on the acceptance of ex-soldiers and their contribution to the local economy in the framework of Disarmament, Demobilization, and Reintegration (DDR) processes. Mass media, especially are vital tools to a successful implementation of DDR processes. Swarbrick (2007) wrote

[m]any countries where the DDR operations are conducted do not have extensive television access outside the major cities, and the newspaper circulation and literacy levels can be low, factors that place a premium on the use of radio for mass communication. (p. 43)

Swarbrick emphasized that the media program should target ex-combatants and the general public, informing them about activities and how the take part in the DDR processes. In addition to providing general news and information to communities, the media also can be used for peacebuilding activities through developing innovative programs that can articulate people's

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needs in post-conflict areas and create a space for dialogue (SIDA, 2004). Swarbrick (2007) argued that donors can support building a central public information system to develop effective information strategies and outreach programs.

Other than the traditional mass media, extension agents (advisors) from the public or private sector may help manage conflict in rural communities in many ways. They can act as catalysts between social groups, and provide guidance and information to assist in the resolution of conflict (Robertson & Olson, 2012).

To ensure that the media play its role in post-conflict reconstruction and reform, the need exists to develop a strategic communication mechanism. Fortune and Bloh (2008) defined strategic communication as a set of procedures or a framework through which an entity or a government informs the citizens about policies and strategies using a variety of channels in an organized way. Strategic communication is conducted in two different ways, including vertical communication and horizontal communication. Vertical communication is a two-sided flow of information – the government or another entity communicates on critical policy issues, communities receive information and respond to the government, whereas horizontal communication happens when information is disseminated within and across social groups (Fortune & Bloh, 2008). Both vertical and horizontal communications are critical for the public to understand and trust policies during and after crises (Fortunes & Bloh, 2008). Strategic communication plans in the contexts of post-conflict reconstruction and reform initiatives can have many positive outcomes for the people who experienced armed conflict. For instance, such a plan promotes effective management of citizens' expectations, develops their sense of ownership of the reconstruction processes, broadens constituency, strengthens transparency, builds credibility and confidence in the government, and improves quality and coordination of information (Fortune & Bloh, 2008).

Another emerging concept in the process of peacebuilding is *communication for peace.* Hoffman (2014) posited, however that *communication for peace* lacks a comprehensive theoretical. Research in related disciplines, i.e., international law, communication science, and peace and conflict studies, should systematically examine for *communication for peace* as an essential part of stabilization and peacebuilding by Hoffman (2014).

The media, as well as governmental and non-governmental agencies use a variety of approaches in peace communication. For example, community leaders can be trained in communication techniques to sensitize their people through a variety of communication approaches, including meetings community members (Frohardt & Temin, 2003). Further, the use of local languages in the media such as radio and television can increase understanding of the process of peace and recovery after the cessation of armed conflict (Frohardt & Temin, 2003). In Sub-Saharan Africa, particularly in conflict countries, mass media are urban-centered and the problems of quality of information and language of delivery of media messages are issues (Megwa, 2009). Even though English, French, and Portuguese are predominant languages in the African media, many rural citizens can neither read nor write in these western languages (Megwa, 2009).

According to Frohardt and Temin (2003), the international community, when supporting recovery and conflict resolution activities, should undertake various actions to assist the media in playing its role effectively in areas of post-conflict. These actions include ensuring supervision of media in vulnerable societies; creating collaboration between media organizations and conflict resolution organizations/agencies; setting up early information systems; and reviewing systematically the media's behavior in vulnerable societies (Megwa, 2009).

According to Best, Wornyo, Smyth, and Etherton (2010), the literature showed the need for communication between citizens of a country if a sustainable peace is to be reached instead of

the all-too-frequent return to civil conflict. ICTs are, therefore, useful tools to create and maintain peace in post-conflict countries (Best et al., 2010).

Overview of the Media Systems in Mali and in RCI

Freedom of speech is guaranteed under article four of Mali's constitution (Freedom House, 2014). Moreover, the Law 00-46/AN-RM of July 2000 regulates freedom of expression and press *offence*, i.e., the law restricts freedom of expression when the media is used to encourage racial, national, religious hatred, and incitement to murder or violence (International Media Support [IMS], Media Foundation West Africa [MFWA], & Panos West Africa, 2013). However, Mali never had a law that guarantees its citizens access to information (Freedom House, 2014). The major media outlets, including the national television and radio network in Mali, and the main newspaper, are run by the government.

Radio is the most popular source of information for many Malians (Cartmell et al., 2008). Between 1992 and 2012, the government of Mali had issued about 500 licenses to establish commercial and community radio stations (IMS, MFWA, & Panos West Africa, 2013). The community radio stations are either owned by local communities or civil society organizations. Before starting of the conflict in 2011, the country had about 369 private radio stations; the city of Bamako alone had about 16 private radio stations (IMS, MFWA, & Panos West Africa, 2013).

Mali does not have national legislation governing private television channels. Television access is limited in many locations because of the lack of electricity and television devices (Freedom House, 2012). *Office de Radiodiffusion Television du Mali* (ORTM) is the state-owned television and radio network, including two television channels and two radio stations and many local repeater radio stations throughout the country (IMS, MFWA, & Panos West Africa, 2013).

The government of Mali has issued about 300 licenses to potential newspaper publishers; however, only 30 newspapers appear daily or weekly. Most of these newspapers are only

distributed in Bamako (IMS, MFWA, & Panos West Africa, 2013). The only national newspaper, *L'Essor*, is state-run and is published in French and has a very low circulation rate throughout the country.

In 2003, the government of Mali liberalized telecommunication allowing the establishment of mobile telephone networks (Katz & Koutroumpis, 2013). This initiative led to a quick spreading of mobile telephones across the entire country. The number of mobile connections increased from 406,000, in 2004 to more than 18 million in 2013 by only two operators. Mali ranks fifth amongst the 15 West African countries in the adoption of mobile telephone (Katz & Koutroumpis, 2013).

Only 2% of Mali's population had access to the Internet in 2012 (Freedom House, 2012). A few online publications exist but their reach and impact is questionable (Freedom House, 2012). Moreover, legislation that regulates new media does not exist in Mali (IMS, MFWA, & Panos West Africa, 2013). Despite the chaotic situation created by the political crisis of 2011 and the armed conflict in the northern part of Mali, the country was ranked 25th of 179 by Reporters Without Borders (RWB) on the Press Freedom Index of 2011/2012. However, according to Freedom House (2014), 10% of Mali's citizens living in the northern part of the country were restricted to media access by the end of 2012. During the armed conflict, media outlets were vandalized and some were forced to close by the Jihadist groups (IMS, MFWA, & Panos West Africa, 2013).

Mali has established two main oversight bodies for its media system, including the Superior Council of Communication (CSC) and the National Committee for Equal Access to State Media (CNEMAME). They ensure that accurate information is disseminated to the general public. In addition, CNEMAME ensures that candidates during political campaigns have equal access to the state media (IMS, MFWA, & Panos West Africa, 2013). Several media and

journalist organizations exist in Mali, among which the major groups are the National Union of

Journalists of Mali, the Association of Journalists for the Promotion of Professionalism Involving

Journalist, the Association of Sport Journalists, and the Organization of Young Reporters (IMS,

MFWA, & Panos West Africa, 2013).

The media system in RCI is somewhat more diverse. However, the national government

runs the larger media outlets, including the national radio and television stations and the major

national newspaper (infoasaid, 2013). In addition, about 120 private radio stations also known as

outreach radio stations operate throughout the country. Many of these radio stations are owned by

local communities, religious organizations, or private entrepreneurs (infoasaid, 2013). The radio

programs generally focus on entertainment and cultural issues (Freedom House, 2014)

During 2011, within the scope of reconstruction and peacebuilding interventions, the

United Nations' mission in RCI launched an FM radio station known as Radio ONUCI. Radio

ONUCI broadcasts from Abidjan, the nation's capitol city, and has a countrywide coverage

through repeater stations (infoasaid, 2013). Most of radio stations in RCI broadcast in French;

however, occasionally they broadcast some of their programs in local languages (Moussa, 2012).

The national television network, *Radio Television Ivoirienne* (RTI), includes two

television and two radio stations located in Abidjan. The infrastructure of RTI was attacked and

severely damaged during the armed conflict in 2010 (infoasaid, 2013). At the cessation of the

armed conflicts, RCI's government developed strategies to liberalize broadcasting and allow the

opening of private television stations (infoasaid, 2013).

The country has about 12 daily newspapers; all are published in Abidjan. The

government-run newspaper, *Fraternity Matin*, has the largest circulation (Freedom House, 2014).

It sold 13,000 to 16,000 copies daily in 2010. However, very few of these newspapers circulate

throughout the country (infoasaid, 2013). Several of the newspapers have websites where they share their daily or weekly issues.

In 2011, according to its national telecommunication agency, *Agence de Telecommunication de Côte d'Ivoire* (ATCI), the country counted 15.8 million mobile telephone subscribers for five mobile telephone networks. Mobile telephony, therefore, covers approximately 89% of the population. The *Agence Ivoirienne de Presse* (AIP) is a government-owned news agency that provides domestic news to the local media under the Ministry of Information (infoasaid, 2013). Although only 3% of Ivorians have access to the Internet, many of them are turning to online sources for news and information (Freedom House, 2014).

Even though RCI has a varied media system, in 2012, the country was ranked 159th of 179 by RWB (2013) on the Press Freedom Index of 2011/2012. In 2011, the government created a new oversight body for radio and television known as *Haute Autorite de la Communication Audiovisuelle* ([HACA] High Authority for Audiovisual Communication). The main mission of HACA is to regulate and oversee the media in RCI (Freedom House, 2014).

The country has several media and journalist associations, including the Union of Local Radio Stations of Côte d'Ivoire (URPCI), the Association of Newspaper Publishers of Côte d'Ivoire, the National Union of Journalists of Côte d'Ivoire, and the Organization of Professional Journalists of Côte d'Ivoire (infoasaid, 2013).

The media is growing in Mali and in RCI; however, many of the media professionals lack professionalism and ethics (Freedom House, 2014; infoasaid, 2013). Journalists are not well trained and most cannot earn their livings entirely from their jobs; consequently, many are susceptible to corruption (Cartmell et al., 2008; Freedom House, 2014).

Post-Conflict Recovery and Reconstruction and Implications for Building

Community's Resilience

Collier (2007) postulated that countries with weak economies are the most vulnerable to persistent, reoccurring conflicts. The poorest and most vulnerable people to conflict live in rural regions with limited resources and where the price for armed violence is relatively low (World Bank, 2013). Considerable economic diversification and growth, and inclusive distribution of a country's economic and social wealth are likely to ensure social stability and reduce the risk of violent conflicts occurring (World Bank, 2013).

In 2007, in the context of a group discussion involving the United Nations' South Sudanese experts, donor representatives, scholars, and advocacy groups concluded that building sustainable peace requires appropriate crisis management solutions and strategies that promote reconciliation and understanding among the conflict's belligerents, security measures, and adequate response to humanitarian crises (Philips, 2014). To assist populations who experienced armed conflicts in recovering their economic livelihoods and resisting future shocks, the United Nations Development Program ([UNDP], 2010) identified four important issues that should be addressed when dealing with capacity development in post-conflict countries: are restoration of physical infrastructure; building institutional and organizational systems; addressing psycho-social trauma; and improving relationships between community members.

Colleta, Kostner, and Viederhofer (1996) argued that strengthening civil society after armed conflict requires the promotion of local associations, community participation, and peer accountability. These are also the minimal conditions for building trust and encouraging people to reinvest both emotionally and financially in their communities.

Farmers and livestock producers in sub-Saharan Africa and South Asia do not have the capacity of productivity resilience enjoyed by farmers in developed countries (IFPRI, 2012). In

Africa, the resilience of chronically vulnerable communities to crisis is particularly weak (IFPRI, 2012). Many producers can barely recover and rebuild after experiencing shocks whether natural disasters or violent conflicts.

In addition, during the reconstruction process, post-conflict countries are forced to make challenging choices in response to the severe insufficiency of resources; makeover reconstruction programs, very often fail to identify the impact on gender relations when reallocating resources (Zuckerman & Greenberg, 2004). Many post-conflict countries initiate women's empowerment programs to increase their political and economical participation (Zuckerman & Greenberg, 2004). Zuckerman and Greenberg (2004) posited that post-conflict recovery programs should include a *legal literacy* component specifically targeting women. "The effective participation of women in reconstruction planning is a key element in achieving this goal" (Zuckerman & Greenberg, 2004, p. 74). Women's participation would improve gender equality, accountability, and transparency in the implementation of reconstruction programs (Zuckerman & Greenberg, 2004).

Brunner and Giroux (2009) defined *resilience* as the process of preparing and responding to diverse risks or possible crises. Resilience is a crucial term in stability and peace; it relates to different disciplines, including psychology, ecology and environmental science, and engineering (Brunner & Giroux, 2009; IFPRI, 2014). Further, Cascio (2009) defined resilience as "the capacity of an entity […] to withstand sudden, unexpected shocks, and (ideally) be capable of recovering quickly afterwards" (p. 7). Resilience became increasingly important for modern societies but it is accepted that no country can prevent every risk from happening, but rather must learn how to manage risks in a way that minimize its effects (Brunner & Giroux, 2009).

Edwards (2009) contended that his "four Es" of community resilience are essential to communities recovering after shocks, including *engagement, education, empowerment, and*

encouragement. Edwards (2009) maintained that a community's resilience is a continuum; therefore, governments and agencies should engage in ongoing dialog and feedback with community members. This process is implemented by providing a number of tools and resources, including educational and informational programs delivered through media channels.

Theoretical/Conceptual Framework

Even though many people believe that media in the context of armed conflict are mostly perceived as instruments for war promotion and propaganda, the media can be used effectively to contribute positively to ending violent conflicts and supporting reconstruction interventions (Bratiae, 2006). However, the role of the media in post-conflict peace development has not been deeply explored by researchers (Bratiae, 2006). Yet, practitioners in international government agencies and non-governmental organizations used the media to support post-conflict reconstruction in many places, including Bosnia, Burundi, Cambodia, Croatia, Rwanda, and Sierra Leone among other nations (Heiber, 2001; Spurk, 2002). But, as stated previously, Hoffman (2014) maintained that post-conflict communication and/or communication for peace lacked a comprehensive theoretical framework.

Conceptual frameworks enable researchers to support and understand their assumptions and claims about a phenomenon (Doolittle & Camp, 1999). This study was underpinned by a range of media effects theories, including the agenda setting theory, the uses and gratification model, and the social cognitive theory of mass communication.

Further, the researcher used the Agricultural Knowledge and Information System for Rural Development (AKIS/RD) model to explain, support, and understand the phenomenon of the study. The AKIS/RD model was developed and promoted by the FAO and the World Bank (2000) to help rural people improve their livelihoods through a better access to agricultural research, extension, information, technologies, and education programs. The strategic vision of

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the AKIS/RD model is that farmers and other rural populations would gain better capacity regarding knowledge, skills, attitudes, information, and technologies. AKIS/RD enables poor rural populations to gather, share, and exploit information available beyond their communities and immediate environs (FAO & World Bank, 2000).

In addition, the AKIS/RD model (see Figure 3) emerged as a guiding framework to increase the motivation of farmers to effectively conduct their production enterprises and reduce poverty and food insecurity (FAO & World Bank, 2000). Overall, AKIS/RD would support farmers to: identify challenges and opportunities faced by their communities and use economic, social, and technological scientific approaches to address them; to assist farmers in acquiring skills and technologies for improving the productivity and managing effectively their natural resources; support government implementing activities for the benefit of a wider public; and provide education and continuous training and learning opportunities (FAO & World Bank, 2000). The model can be used to explain and understand the communication strategies that had been developed by governments, aid agencies, and media in RCI and Mali to help farmers and other rural citizens to appropriately and confidently recover their economic livelihoods after the cessation of armed conflicts.
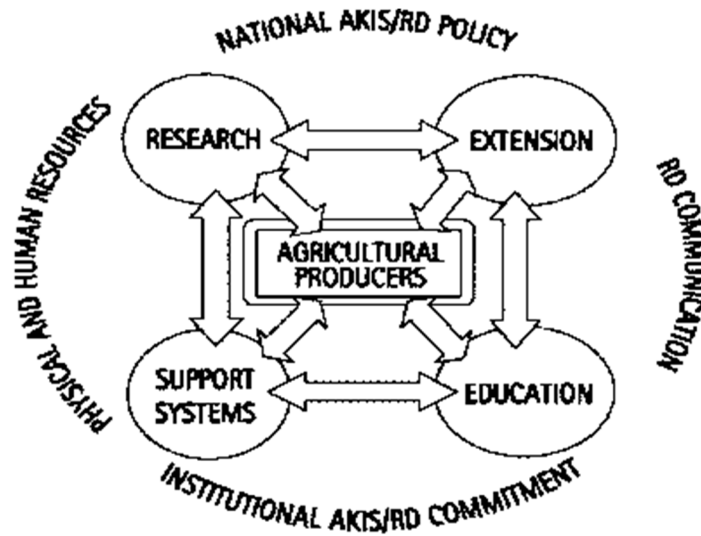
Figure 3. AKIS/RD model (FAO & World Bank, 2000)

Media effects theories explain how the media can better inform and educate an audience and conditions under which the media are more effective (Bratiae, 2006). Three factors are associated with the analysis of the effect of mass media, including the audience factor, message factor (mass media), and the environment in which the communication occurs (Schramm & Robert, 1977).

Early communication theorists discussed extensively how the mass media could influence their audiences. Earlier many theorists perceived mass media as a means to influence individuals in the directions chosen by the elites (Lippmann, 1922). Bratiae (2006) stated that with the starting of empirical research rose doubts about the direct effects of media and the passiveness of the audience. Lazarsfeld, Berelson, and Gaudet (1948) posited that opinion leaders often are the ones who relay mediated messages to their followers. Further, Katz and Lazarsfeld (1955) postulated that people are more interested in, and only select messages that go along with, their own perceptions. Katz (1980) and Katz and Lazarsfeld (1955) perceived the audience use of media as a selective process.

People generally use media to fulfill their needs (Berelson, 1959; Herzog, 1944). The uses and gratification model suggests that an active audience seeks out programs to satisfy psychological and social needs (Katz, 1959). The uses and gratification model also involves a change of focus from the purposes of the communicator to the purpose of the audience (Severin & Tankard, 2001). Katz (1959) discussed the usefulness of this theory by raising the question "What do people do with the media?" versus "What do the media do to people?" which was the previous focus of communication research. Mass media are means for individuals to connect or disconnect with others (Katz, Gurevitch, & Haas, 1973). Katz et al. (1973) identified and categorized 35 needs derived from inclusive literature about the social and psychological function of the media. These categories include cognitive needs (acquiring information, knowledge, and understanding), affective needs (strengthening credibility, confidence, stability, and status), and tension needs (escape and diversion) (Katz et al., 1973). In times of conflict and conflict due to the level and number of uncertainties in their location people's need for information increases; therefore, they become more vulnerable to media influence (Bratiae, 2006). McCombs as cited in Bratiae (2006) referred to this situation as a "need for orientation" (p. 4).

The agenda-setting model suggests the utility of the media's capacity, through continuous news reporting, for raising the relevance of an issue in the audience's mind (Severin & Tankard, 2001). Agenda setting is an automatic process, but it involves information processing by audience members. People differently assess the information they receive from media, and this assessment may result in individual agenda-setting effects (Severin & Tankard, 2001).

Research conducted by Hovland (as cited in Bratiae, 2006) found that people can gain both information and attitudes from media, but receiving information does not necessarily lead to attitude change. Bratiae (2006) concluded this is an essential information tool for people working in post-conflict communication who anticipate that the media have failed if they do not bring to bear the expected change in attitudes. In conflict or post-conflict situations, people may overlook

any information that does not match their beliefs (Bratiae, 2006). This aligns with Albert

Bandura's social cognitive theory of mass communication (2001), which suggested that people

learn best from behaviors they perceived as beneficial. It is easy to present post-conflict

interventions as beneficial and to stimulate preconceptions that favor peace and stability over

violence and conflict (Bratiae, 2006). Bandura's (2001) social cognitive theory of mass

communication examines determinants and mechanisms of the effects of mass communication on

human thought, affect, and action. "Social cognitive theory explains psychosocial functioning

terms of triadic reciprocal causation" (Bandura 1986, p. 266). The triadic reciprocal causation of

social cognitive theory of mass communication includes *personal determinants, behavioral

determinants*, and *environmental determinants* (Bandura, 2001). Further, Bandura (2001)

asserted, "human behavior is controlled either by environmental influences or by internal

dispositions" (p. 266).
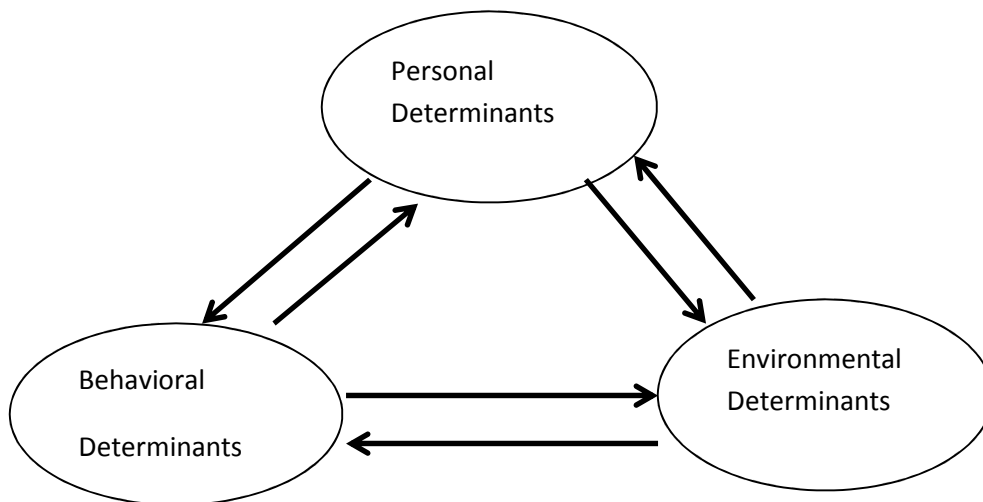
Figure 4. Schematization of triadic reciprocal causation in the causal model of social cognitive
theory (Bandura, 2001)

    Bandura (2001) argued that people's capacity of symbolization enables them to

understand their environment and regulate environmental events that relate to their lives.

Cognitive factors, therefore, partly determine which environmental events to observe and how to

understand these events, and also whether they have sustainable effects (Bandura, 2001). It is

"with symbols that people process and transform transient experiences into cognitive models that serve as guides for judgment and action" (Bandura, 2001, p. 267). Further, Bandura (2001) added:

> People gain understanding of causal relationships and expand their knowledge by operating symbolically on the wealth of information derived from personal and vicarious experiences. They generate solutions to problems, evaluate their likely outcomes, and pick suitable options without having to go through laborious behavioral search. Through the medium of symbols people can communicate with others at any distance in time and space. (p. 267)

Bandura (2001) concluded the media are the best point of access to the larger public because of their strong influential power. Therefore, the media can influence and change people's behaviors (Bandura, 1986; William, 1986). According to Bandura (2001), to make large-scale changes, communication systems must operate through two pathways, i.e., *the direct pathway* and *the socially mediated pathway* (Figure 5). In the direct pathway, communication media focus on informing, enabling, motivating, and guiding the audience whereas in the socially mediated pathway, media influences are used to link participants to society and community (Bandura, 2001).
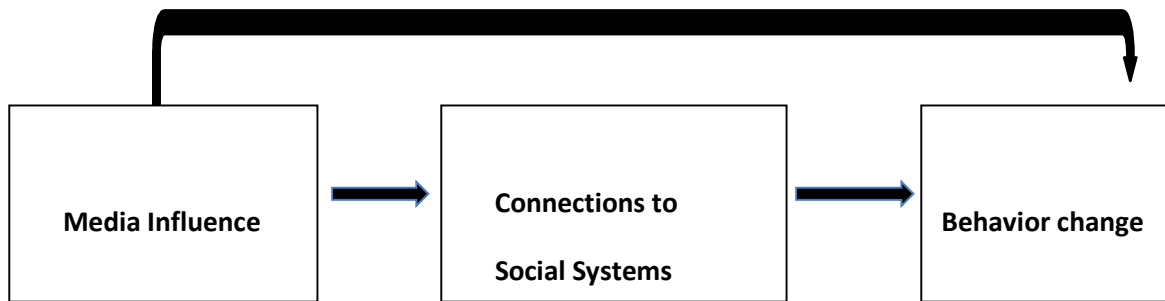
Figure 5. Dual path of communication influences operating on behavior both directly and mediationally through connection to influential social systems

Even though the literature admits that the media are not the only agents of change, they are known to play essential roles in the complex social systems and norms that are subject to change (Severin & Tankard, 1992). The *hypodermic needle* metaphor creates a strong rationale about the power of the media to introduce new ideas, attitudes, and dispositions toward behavior into strongly vulnerable audiences such as those individuals who experienced armed conflicts (Gitlin, 1995).

CHAPTER III

METHODOLOGY

This chapter includes 11 sections and related subsections: 1) institutional review board approval, 2) the purpose of the study, 3) six research questions, 4) role of the researcher, 5) research design, 6) study population and participant selection, 7) instrumentation, 8) semi-structured interview protocol, 9) measures of validity and reliability, 10) data collection procedures, and 11) data analysis.

Institutional Review Board Approval

The researcher sought approval of the Institutional Review Board of Oklahoma State University (OSU) for the study (approval No. AG 1433; Appendix A). Ethical rules, as established by Tracy (2010), i.e., procedural, situational, and relational, were strictly observed. The researcher ensured the study did not harm the participants in any way. He avoided deception, made participation voluntary, and respected the privacy and confidentiality of participants (Tracy, 2010). The identities of participants were kept confidential. Participants were informed about the purpose, methods, implications, and potential hazards of the study (Appendix B). The data were password protected and stored on a safe server.

Purpose of the Study

This research study sought to examine and compare farmers' perceptions on the role of the media and other information sources in disseminating news and information after the cessation of armed conflicts in Mali and in RCI. In doing that, the study described farmers' views on the approaches used by the media and its partners to disseminate news and information after the cessation of armed conflicts in Mali and in RCI. In particular, the study also assessed and compared farmers' perceptions of the media and other information sources in disseminating news and information intended to improve their economic livelihoods and the resilience of rural communities as they recovered from armed conflicts in Mali and in RCI.

Research Questions

Six research questions guided this descriptive, mixed methods study:

1. What were selected personal and professional characteristics of farmers who experienced armed conflicts in Mali and in RCI?

2. How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?

3. How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?

4. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist with their economic livelihood recovery after cessation of the armed conflicts in Mali and in RCI?

5. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist in building community resilience after cessation of the armed conflicts in Mali and in RCI?

6. What types of relationships existed between a) selected personal and professional characteristics of farmers, and b) between farmers' selected characteristics and their views on the media's contribution to economic livelihood recovery and to resilience building in their communities after cessation of the armed conflicts in Mali and in RCI?

Role of the Researcher

"Qualitative research today involves closer attention to the interpretative nature of inquiry and situating the study within the political, social, and cultural context of the researchers, and the reflexivity or 'presence' of the researchers in the accounts they present" (Creswell, 2013, p. 45). Qualitative research procedures require researchers, therefore, to disclose their background and "how it informs their interpretation of the information in a study, and what they have to gain from the study" (Creswell, 2013, p. 47). The qualitative researcher, despite his or her background and position regarding the phenomenon being studied, should report faithfully the realities as derived from the voices and perceptions of the study's informants (Creswell, 1994).

This was a mixed methods study on the role of the media in disseminating news and information to farmers and other rural citizens after cessation of the armed conflicts in the Republics of Côte d'Ivoire and Mali. As the investigator, therefore, I disclosed my personal subjectivity to elucidate my life experiences and relationships with the phenomenon and the countries studied to ensure confidence in the qualitative findings. I also explained how these experiences and relationships influenced the lenses from which I viewed and interpreted the phenomenon studied.

I was born in the city of Tombouctou in the northern part of Mali. I belong to the Sonrais ethnic group, the largest group in that region. After completing my education at the teacher training school of Bamako, I returned to my home region and served as an English teacher for eight years in the District of Goundam. These years corresponded with the second Tuareg rebellion in Mali (1990 to 1996). The inhabitants of the district of Goundam who were, for the most part, subsistence farmers, including crop farmers, livestock owners, and market gardeners, were severely impacted by the armed conflicts. For example, the town of Goundam was attacked by the rebel forces in May 1992 and resulted in the death of more than 50 people, including civilians and members of the military. I have witnessed several difficult situations in the regions, including rebel attacks, refugee displacement, and the signing of peace agreements.

Also during my stay in Goundam, communication channels were very limited. Only the national public radio station was accessible, and only *High Frequency* (HF) radio transceivers were used by some aid agencies for their long distance communications. The region was totally deprived of most mass media communication outlets. This situation triggered my interest in communications and mass media. With the support of the coordinator of Doctors Without Borders, a French non-profit organization intervening in the area at that time, I initiated an artisanal radio station to meet the communication needs of the population in the city of Goundam. The initiative was welcomed but the radio station, due to its artisanal nature, could not cover the whole city.

In the summer of 2007, I participated in a capacity building program with Oklahoma State University for Malian journalists who reported on agricultural and environmental issues. My participation in this program drove me toward my passion. From 2009 to 2011, I completed a master's of science degree in agricultural communications at Oklahoma State University. In 2011, after completion of my program, I traveled back to Mali. My return coincided with the beginning of another armed conflict that resulted in a political crisis in Mali. During that time, I

traveled to conflict areas, primarily in the northern part of Mali, to convey humanitarian aid to people in need.

I believe that the media can play important roles in assisting rural populations, especially in regard to farmers who experience armed conflict to recover their economic livelihoods and develop resilience to future crises. The education I received at Oklahoma State University and my life experiences enabled me to understand the complexity of the phenomenon and explore activities that could be undertaken by the media in post-conflict situations to assist farmers who experienced armed conflicts. The lens through which I view post-conflict communication targeting farmers has been influenced by my background of coming from a conflict-affected region and witnessing firsthand what farmers experienced.

On another note, I would like to underline that I do not have any political affiliation in Mali, however, I do express my personal opinion on major political and social issues through different platforms, i.e., social networks, newspapers, radio, public forums, and in other ways. I also keep up-to-date about news regarding agriculture, food, and the environment in Mali, West Africa, and Africa in general.

Charmaz (2006) argued that the researcher's reflexivity and knowledge of the phenomenon being studied influence the investigator. I do understand that objectivity is impossible and my own perspective may influence the data collection, data analysis, and my related interpretations. I used member checking to increase confidence in the study's data. The study's mixed methods approach also stands to increase its objectivity by triangulating the data before distilling and refining conclusions, implications, and recommendations.

Research Design

This study employed a convergent parallel mixed methods research design (Creswell, 2011). A convergent parallel mixed methods research design consists of procedures for collecting qualitative and quantitative data concurrently but analyzing said data separately; and, thereafter, combining the sets of findings for interpretation (Creswell, 2011). In a convergent parallel mixed methods design, the researcher treats equally the data collected from both procedures and then uses criteria determining a quantitative or qualitative priority for addressing the purpose of the study (Creswell & Plano Clark, 2011). Tashakkori and Teddlie (2009) postulated that this approach enables "the researcher to simultaneously answer confirmatory and explanatory questions" (p. 15). Tashakkori and Teddlie (2009) also stated that a mixed methods research design "elucidates the divergent aspects of the phenomenon" (p. 17). Deacon, Bryaman, and Fenton (1998) argued that mixed methods research allows the researcher to build, extend, and elaborate more convincing and stronger explanations of the social phenomenon investigated. Mixed methods research also enables the researcher to provide policymakers with both *numbers* and *issues* about a phenomenon (Creswell, 2012). Further, Greene, Benjamin, and Goodyear (2001) stated "the fundamental uncertainty of scientific knowledge – especially about complex, multiply-determined, dynamic social phenomena – can be better addressed through the multiple perspectives of diverse methods than through the limited lens of just one" (p. 27).

The mixed methods research approach enables investigators to gain a more comprehensive understanding of the phenomenon studied by triangulating the data. Triangulation via a mixed methods approach allows the researcher to compare the quantitative and qualitative facets of the phenomenon and verify if said observations have the same meaning and significance when data collection occurs through two epistemological lenses (Creswell, 2008). Further, triangulation enables the researcher to determine whether the findings converge, are coherent, or

controvert (Ary, Jacobs, Sorensen, & Walker, 2014). Figure 6 illustrates a *generic* convergent

parallel mixed methods approach to data collection and analysis.
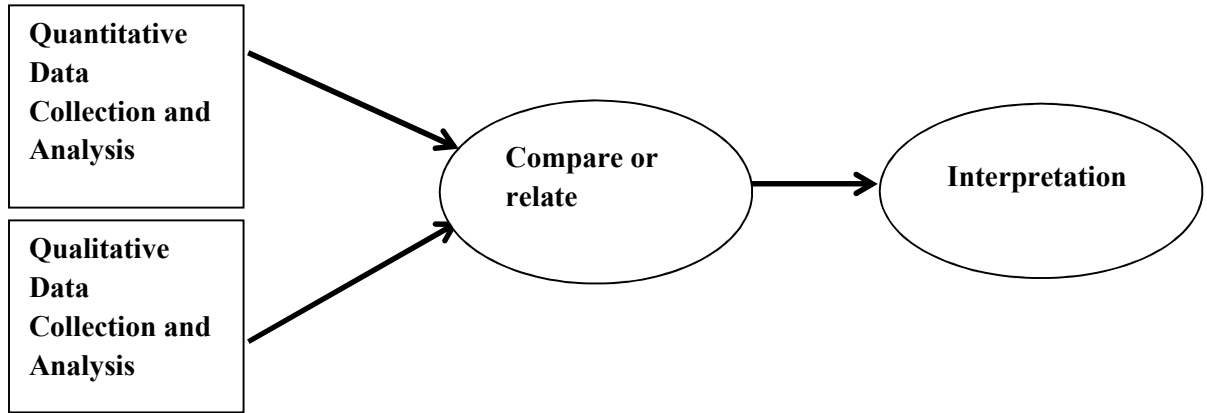
Figure 6. The Convergent Parallel Mixed Methods Design (Creswell, 2011, p. 220)

This study followed the convergent design procedure summarized in Figure 7.

STEP 1	**Design the Quantitative Strand:** • State quantitative research questions and determine the quantitative approach. **Collect the Quantitative Data:** • Obtain permissions • Identify the quantitative sample • Collect closed-ended data with instruments.	and	**Design the Qualitative Strand:** • State qualitative research questions and determine the qualitative approach **Collect the Qualitative Data:** • Obtain permissions • Identify the qualitative sample • Collect open-ended data with protocols.
STEP 2	**Analyze the Quantitative Data** • Analyze the quantitative data using descriptive statistics, inferential statistics, and effect sizes.	and	**Analyze the Qualitative Data:** • Analyze the qualitative data using procedures of theme development and those specific to the qualitative approach.

STEP 3

Use Strategies to Merge the Two Sets of Results:

- Identify content areas represented in both data sets and compare, contrast, and/or synthesize the results in a discussion or table.
- Identify differences within one set of results based on the dimensions within the other set and examine the differences within a display organized by the dimensions.
- Develop procedures to transform one type of result into the other type of data (e.g., turn themes into counts). Conduct further analyses to relate the transformed data to the other data (e.g., conduct statistical analyses that include the thematic counts).

STEP 4

Interpret the Merged Results:

- Summarize and interpret the separate results.
- Discuss to what extent and in what ways results from the two types of data converge, diverge, relate to each other, and/or produce a more complete understanding.

Figure 7. Flowchart of the Basic Procedures in Implementing a Convergent Design (Creswell, 2011, p. 79)

Study Population and Participant Selection

The study's population included farmers living in post-conflict regions of Mali and RCI. Convergent mixed method procedures were used, i.e., in convergent mixed methods design the researcher decides whether the two samples include different or the same individuals (Creswell, 2011). Participants from the same population provided both quantitative and qualitative data for this study. The study's key informants (Campbell, 1955) were selected from the overall sample of participants from the quantitative portion of the study to participate in semi-structured interviews, i.e., the qualitative part of the investigation. In addition, key informants were selected because the researcher anticipated that they would be representative of the study's population and also due to the prominent roles they held in farmers' organizations to which many members of the population belonged. Marshall (1996) stated, "key informants, as result of their personal skills, or position within the society, are able to provide more information and deeper insight into what is going on around them" (p. 92). Further, Tremblay (as cited in Marshall, 1996) identified five main characteristics of an *ideal* key informant, including role in the community, knowledge, willingness, communicability, and impartiality.

For the quantitative part of this study, the researcher used purposive sampling to select participants from amongst crop producers, livestock owners, poultry producers, market gardeners, fishermen, and other rural citizens who experienced the effects of armed conflict in their regions. According to Creswell (2012), "[i]n purposeful sampling, researchers intentionally select individuals and sites to learn or understand the central phenomenon" (p. 206). Participants for this study, therefore, were selected purposefully from among farmers and other rural citizens who experienced the effects of armed conflict in the regions of Mopti (central region) and Timbuktu (northern area) in Mali ($n = 106$) (see Figure 8), and Ferke (northern area) and Gagnoa (western area) in RCI ($n = 95$) (see Figure 9). In total, 201 ($N = 201$) farmers participated in the quantitative portion of the study.

Figure 8. Map of the study sites in Mali

Figure 9. Map of the study sites in RCI

The research participants were from various villages in the districts studied and included staple food crop farmers (e.g., rice growers), livestock owners, fishermen (women), market gardeners, and cocoa and coffee farmers.

The sites were selected based on the suggestions made by cognizant government officers and non-governmental officials in Mali and RCI. In Mali, PCDA-Ségou (Programme Compétitivité et Diversification Agricoles), the Regional Head Office of Social Development of Ségou, and the Sasakawa Africa Fund for Extension Education (SAFE) Coordinator for Mali assisted in selection of the study sites (districts). The membership lists of local farmers' unions and community-based organizations (CBOs) in rural areas of Mali and RCI also served to identify and select participants for the study. In Mali, for example, the local farmers' unions are sub-divisions of the national farmers' union (*Assemblee Permenente des Chambres d'Agriculture du Mali [APCAM]*). It is a professional association of farmers, including crop producers, livestock producers, fishermen, forestry producers, and other rural citizens. The main objective of the union is to ensure that farmers are fully represented in all decision-making processes of the national government particularly concerning agriculture and food production (APCAM, 2013). In addition, the union provides training and capacity building opportunities for the farmers who are members.

In RCI, the study sites were selected based on suggestions made by the local director of extension services (*Agence Nationale d'Appui au Developpement Rural* [ANADER]) in Ferke and two Ivorian journalists who reported on agricultural issues. These individuals included the director of the local radio *Defis* in the town of Gagnoa and the country correspondent of *Jeune Afrique*, an international French newspaper that focuses mainly on topics about Africa. Both journalists were familiar with agricultural topics and post-conflict reconstruction efforts in their country. The main mission of ANADER was to improve living conditions of rural people by

developing programs to support sustainable development and rural economic growth (ANADER, 2015).

In every study site in RCI, the researcher used the membership lists of local farmers' organizations (*Association Nationale des Organisations Professionnelles Agricoles de Côte d'Ivoire* [ANOPACI]). This association included all farming organizations in RCI and aimed at assisting Ivorian farmers in improving their livelihoods as well as promoting agriculture and professionalism in related jobs.

In Mali, access to the northern regions remained problematic at the time of the study, i.e., July and August of 2014. Farmers were still hesitant to resettle or return to their homes after the cessation of the armed conflict (FAO, 2012). A part of the region of Mopti and the entire region comprising Tombouctou, Gao, and Kidal experienced armed conflict and occupation by rebel forces in 2012 (IREX, 2013). After military intervention and presidential and parliamentary elections in 2013, many people from the rural areas returned home but they were still traumatized and uncertain about the security situation in the country (IREX, 2013). The researcher anticipated that selecting participants from populations of these regions, which were affected by armed conflict, would increase the probability of the study participants being representative of the larger population. Although desirable, it would have been very problematic to use random sampling methods with the ongoing insecurity in Mali as well as in RCI during the summer of 2014, i.e., the period of data collection.

Maximal variation sampling method was used for the qualitative part of this study. "Maximal variation sampling is a purposeful sampling in which the researcher samples cases or individuals that differ on some characteristic or trait" (Creswell, 2012, pp. 207-208). In the context of this study, key informants were selected from different age groups, farming professions, locations, social statues, and genders. However, the sampling included individuals

who also participated in the quantitative data collection to corroborate and compare the findings derived from both collection methods (Creswell, 2011).

During the qualitative portion of the study, semi-structured interviews were conducted with selected farmers and other rural citizens who completed the study's survey questionnaire; five participants per country ($N = 10$). The interviews were conducted in each country until data saturation occurred (Creswell, 2012).

Instrumentation

Parallel data collection tools were designed for this study, i.e., survey questionnaire (see Appendix C) and a semi-structured interview protocol [see Appendix D] (Creswell & Plano Clark, 2011). In the parallel questions or tools approach, the same phenomenon is addressed by the quantitative and qualitative data collection procedures to enable the researcher to merge and compare the data (Creswell & Plano Clark, 2011). Through an in-depth review of literature, the researcher chose to modify, adapt, and use a portion of the Communities Advancing Resilience Toolkit (CART) survey instrument to collect some of the study's quantitative data, i.e., participants' perceptions of the media's role in building resilience within rural communities. The instrument was modified and used with the permission of its developers (see Appendix E). The CART survey instrument was designed to evaluate a community's resilience (Pfefferbaum, Neas, Pfefferbaum, Norris, & Horn, 2013). The initial CART survey instrument focused on seven constructs associated with community capacity and competence: "(a) connected, commitment, and shared values; (b) participation; (c) support and nurturance; (d) structure, roles, and responsibilities; (e) resources; (f) critical reflection and skill building; and (g) communication" (Pfefferbaum et al., 2013, p. 27). Figure 10 illustrates the seven factors associated with community competence and capacity.
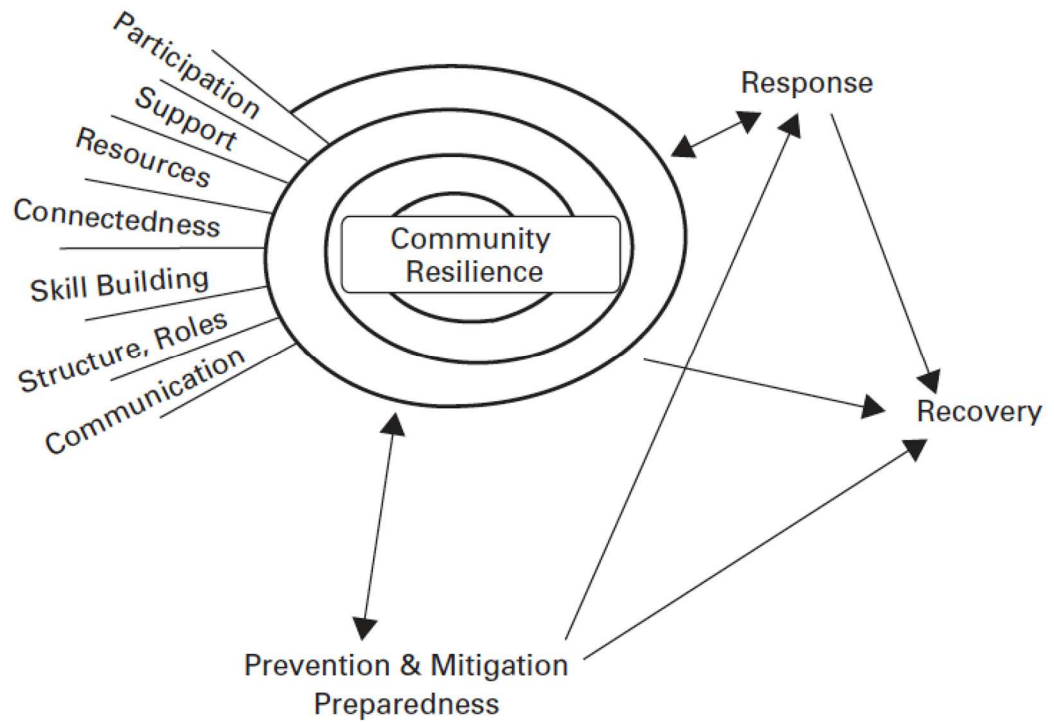
Figure 10. The Relationship of Resilience Factors (Pefefferbaum et al., 2013, p. 59)

The initial CART survey instrument was pilot tested in the fall of 2005 and involved church groups in two rural communities in the United States (Pfefferbaum et al., 2013). As a result of the pilot test, its reliability and validity were assessed. Cronbach's alpha coefficient (.70) was calculated for the instrument's overall internal consistency. The developers of the initial CART survey instrument did not report Cronbach's alpha estimates for specific constructs. Acceptable face validity, discriminant, and convergent validity were also confirmed as result of the developers' pilot study (Pfefferbaum et al., 2013).

A portion of the CART instrument was modified for use in this study. In addition, new constructs, items, and scales were added based on a review of the relevant literature and on the context of the study.

The study's instrument (see Appendix C) was comprised of two parts. The first part included 12 questions, several items related to each question, and five summated-rating scales.

- Question 1 asked about farmers' access to sources of information in regard to agriculture and food production after armed conflict ended. It included three sub questions with eight summated-rating items and two open-ended questions.

- Question 2 asked about farmers' preferred language for receiving news and information.

- Question 3 asked farmers about their preferred media programs and included nine summated-rating items.

- Question 4 asked farmers if the information they received from media and other sources of information after the armed conflict ended was related to agriculture and food production issues/activities, for example, non-GMO seed varieties, fisheries, plants diseases. It included 19 summated-rating items.

- Question 5 asked farmers if the information received from the media and other sources of information assisted them to resume their activities after the cessation of armed conflict ended. It included two sub questions: a ranking item "Did the information help you resume your farming activities after the armed conflict?" and a prompt, "Briefly explain."

- Question 6 asked farmers and other rural citizens to rate how frequently they received information about agriculture and food production from the media and other sources of information after armed conflict ended. It included nine summated-rating items.

- Question 7 asked farmers and other rural citizens to rate how frequently the media and other sources of information addressed issues regarding women in agriculture and food production after armed conflict ended. It included nine summated-rating items.

- Question 8 asked farmers and other rural citizen to rate how frequently the media and other sources of information addressed the issue of child and youth labor and welfare in agriculture after armed conflict ended. It included nine summated-rating items.

- Question 9 asked farmers and other rural citizens to rate how frequently the media and other sources of information addressed the issue of conflict resolution after armed conflict ended. It included nine summated-rating items.

- Question 10 asked farmers and other rural citizens about the types of support they needed on their return home after the armed conflict ended. It was divided into three sub questions, including 16 summated-rating items and two open-ended questions.

- Question 11 asked farmers and other rural citizens to rate their agreement or disagreement with statements reflecting changes in their community after the armed conflict ended. It included nine summated-rating items.

- Questions 12 asked farmers and other rural citizens to rate the effects of the work media and other information sources had on their community after the armed conflict ended. It included 23 summated-rating items.

All of the summated-rating scales included five anchors. For frequency, the scale was *1 = Never, 2 = Not very frequently, 3 = Sometimes, 4 = Frequently,* and *5 = Very frequently*. For agree/disagree, the scale was *1 = Strongly disagree, 2 = Disagree, 3 = Uncertain/Not sure, 4 = Agree,* and *5 = Strongly agree*. Part two of the survey questionnaire investigated the personal and professional characteristics of the study's participants. The questions were mainly categorical and asked participants to identify their genders, ages (a continuous variable), levels of education, marital status, family sizes, religions, displacement status, estimated loss of income, and farm activity(ies). (*Note.* Using the word *gender* instead of *sex* was more appropriate in the context of this study because the word *sex*, if translated in the participants' local languages, had a different meaning than an individual's biological identity.)

The survey questionnaire was translated into French by the researcher, a native speaker, for its use in both countries. In addition, the researcher hired and trained three research assistants in Mali and four in RCI, who were also native speakers of French, to assist with administering the

survey questionnaire to the participants; the response items were asked orally. The questions were asked in the study participants' local languages, as needed, including *Bambara, Sonrais, Fulani, Jula, Senoufo,* and *Bete*. The researchers recorded the participants' responses.

Semi-structured Interview Protocol

The interview protocol or guide was developed to collect the study's qualitative data (see Appendix D). The interview guide included seven open-ended questions and several probing questions consistent with the study's research questions. The questions were phrased in an easy to understand format (Creswell, 2012). Merriam (2009) suggested using open-ended questions because such questions give interviewees more opportunities to elaborate on the topics at hand, and they also elicit additional descriptive data.

Measures of Validity and Reliability

The modified instrument was reviewed by a panel of experts, including faculty members at Oklahoma State University with experience in agricultural communications, agricultural education, and political science to ensure content and face validity of the instrument's constructs, response items, and rating scales.

A pilot study was conducted to establish the instrument's reliability (internal consistency) and face validity. The pilot test was conducted in the district of Niono, in the commune of Diabaly (see Figure 11) located in the northern part of the region of Ségou, Mali.
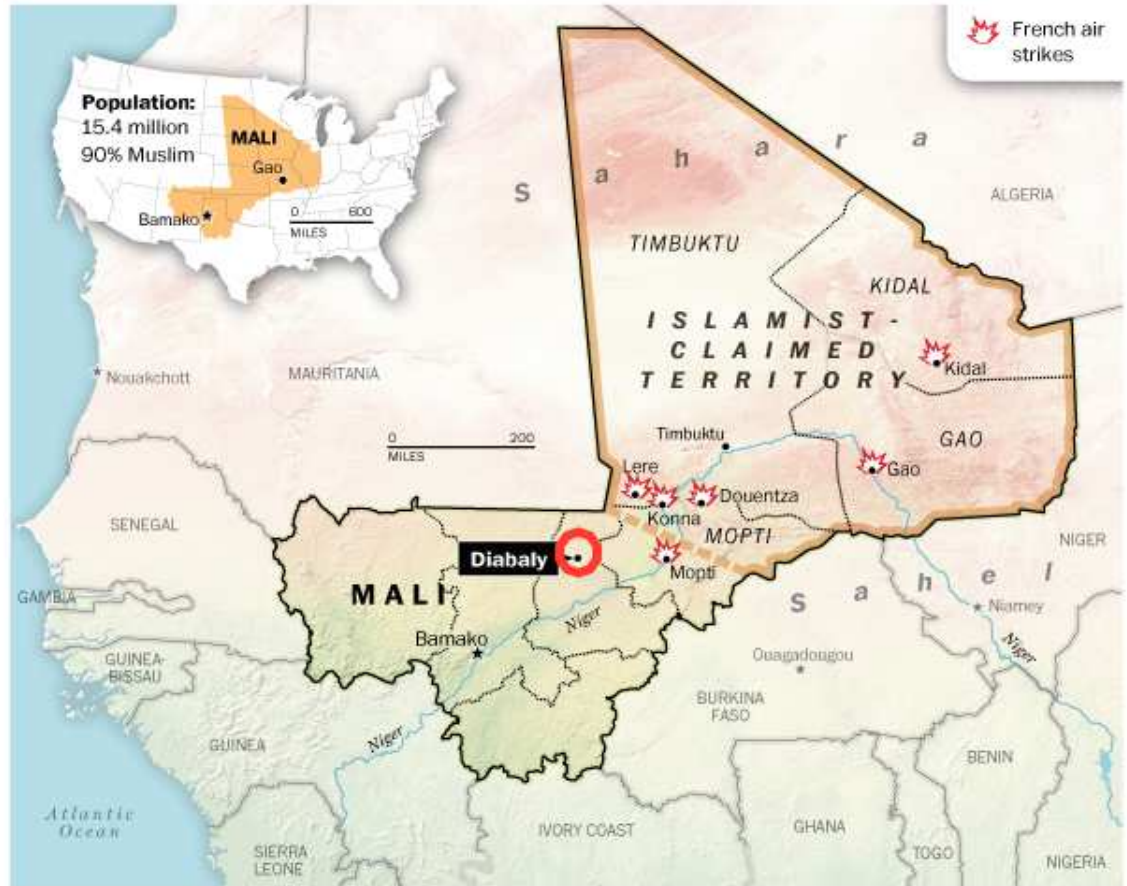
Figure 11. Map of Mali indicating the pilot study site

Sixteen farmers and other rural people participated in the pilot study; these participants were not involved in the main study. The choice of location was made based on the similarity of the farmers and other rural citizens of that area with the participants anticipated for the larger study. Based on the results of the pilot study, Cronbach's alpha reliability estimates for the constructs comprising the survey questionnaire are reported in Table 2; in addition, post-hoc Cronbach's alpha reliability estimates are reported (see Table 2).

Table 2

Reliability Estimates for Constructs Comprising the Survey Questionnaire, Pilot Study and Post-hoc

Constructs	Cronbach's alpha reliability estimates (Pilot	Post-hoc reliability estimates (Full
Study participants' levels of interest for various media programs after cessation of the armed conflicts	$\alpha = .31$	$\alpha = .58$
Study participants' perceptions of the relatedness of the information and agricultural subjects after cessation of the armed conflicts	$\alpha = .54$	$\alpha = .86$
Study participants' perceptions regarding frequency of information about agriculture and food production after cessation of the armed conflicts	$\alpha = .64$	$\alpha = .57$
Study participants' perceptions regarding frequency of information about the role of women after cessation of the armed conflicts	$\alpha = .75$	$\alpha = .72$
Study participants' perceptions regarding frequency of information about the issue of child labor after cessation of the armed conflicts	$\alpha = .58$	$\alpha = .69$
Study participants' perceptions regarding frequency of information about strategies for conflict resolution after cessation armed conflicts	$\alpha = .88$	$\alpha = .75$
Study participants' perceptions of the contribution of media and other sources of information to resilience building within rural communities after cessation of armed conflicts	$\alpha = .94$	$\alpha = .90$
Overall Cronbach alpha	$\alpha = .84$	$\alpha = .90$

The interview protocols included major guiding questions and sub-questions or probing questions. The panel of experts also reviewed the interview protocols to ensure content validity and their appropriateness for the study. Gubrium and Koro-Ljungberg (2005) argued that the key

indicator of validity and reliability in qualitative research could be achieving internal consistency through a logical connection between the purpose of the study, the research questions, the researcher's philosophical stance, the theoretical framework, the study's methodology, and the reporting of the study's findings.

Concerning the qualitative measures of validity, the researcher observed strictly Tracy's (2010) eight criteria for addressing his bias and potential influence upon the investigation, including worthiness of the topic, sound rigor, sincerity, credibility, resonance, significant contribution, ethical procedures, and meaningful coherence. Patton (2002) asserted that a qualitative researcher is considered the instrument and needs ways to control his or her bias to build trustworthiness in the data gathered. The relevance of the topic studied is supported by the phenomenon's related literature (Fortune & Bloh, 2008; Gilboa, 2007; Yamshon & Yamshon, 2006). A study of the role of the media in disseminating information to farmers in the post-conflict nations of Mali and RCI is relevant and significant in the field of *peace communication* (Hoffman, 2014). This study can contribute to filling a gap in the literature about peace communication and provide practical policy recommendations and strategies for governments and aid agencies.

Rigor was achieved by the environment in which the interviews occurred and also through the methods of conducting the interviews. The researcher established sincerity by maintaining a transparent and honest attitude during data collection and data analysis. Possibilities of naturalistic generalizations and transferability of the study's findings aided in establishing resonance. The study's findings stood to make significant contributions to developing and implementing effective communication strategies targeting farmers who experienced armed conflicts. The ethical procedures (Tracy, 2010) were strictly observed during data collection and data analysis. For example, the researcher and his assistants read and explained the investigation's consent form and purpose and objectives to the participants before

any data collection began. All answering of questionnaires and interviews were conducted at convenient times and places for the participants. Finally, the study's credibility was achieved by ensuring trustworthiness and confidence in the study's findings. Peer debriefing was used during the process of data analysis to ensure credibility and conformity of the findings (Lincoln & Guba, 1985).

In addition, to immerse himself in the qualitative data, the researcher listened several times to the recorded interviews and also read and re-read the transcripts before loading them onto Nvivo (Creswell, 2012). During each reading session, the investigator recorded memos as they occurred to him, for future reference and interpretive considerations.

Data Collection Procedures

Considering the triangulation approach of the mixed methods design used in this study, qualitative and quantitative data were collected simultaneously (Creswell, 2008). Quantitative data were collected using a survey questionnaire (see Appendix C) as administered to the study's participants by the researcher and research assistants. The survey questionnaires and the informed consent forms (see Appendix B) were hand-delivered to the participants. Considering the low level of literacy among the study's population, the researcher and researcher assistants asked the questions orally and completed the instruments using the participants' responses. The participants were asked to clarify or elaborate on their responses as was needed.

Prior to data collection, the research assistants in Mali as well as in RCI were trained by the main investigator to meet the basic requirements and procedures related to research involving human subjects research. In each of the countries, the main investigator spent one and one-half days training the research assistants about how to effectively administer the survey questionnaire (Maiga, Ringer, & Edwards, 2015). The research assistants conducted mock questionnaire interviews among themselves in the local languages, including *Bambara*, *Sonrais*, *Fulani*, *Jula*,

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Senoufo, and *Bete* under the supervision of the main investigator to ensure that they could ask the questions accurately in the study participants' local languages, as needed. The main investigator emphasized the need to respect the rights, values, and decisions of participants, particularly their understanding of the informed consent form. The main investigator insisted that the assistants tell the farmers that participation in the study was voluntary and their identities would be kept confidential. The research assistants learned about the importance of confidentiality and how to safeguard the welfare and rights of the study's participants.

To collect the study's qualitative data, the researcher conducted in-depth, semi-structured interviews of 10 key informants (Creswell, 2008; Krueger, 1994), including five from each country. The interviews were scheduled individually with the key informants. The locations and times of the interviews were determined by the interviewees. Newing (2011) posited that semi-structured interviews should be conducted by following an interview guide (see Appendix D) that is prepared in advance. The research assistants were not involved in the semi-structured interviews. The semi-structured interviews averaged 45 minutes in duration. The interviews included male and female farmers. The researcher made an effort to include farmers from almost all areas of agricultural production in Mali and RCI to increase the likelihood of representativeness.

The key informant interviewees were selected purposefully from the groups of interest in the two countries who participated in the survey questionnaire part of the study. This was in accord with the study's convergent mixed methods design (Creswell, 2012; Plano Clark & Creswell 2008;). Data were collected until saturation (Creswell, 2012) was reached. "Saturation is reached when [the researcher] can 'make sense' of the data in terms of identifying areas of consensus or other patterns, and when collecting more data produces little important new information or understanding that is relevant to [the] research question[s]" (Newing, 2011, p. 75).

Data Analysis

The quantitative data and the qualitative data for this study were analyzed separately by using appropriate analytical procedures for each set of data (Creswell, 2011). The quantitative data were analyzed using the latest SPSS v.21 software. Descriptive statistics, including medians, frequencies, percentages, and correlation coefficients were calculated and reported. The study used Likert-type and Likert-scale questions to collect data. Clason and Dormody (as cited in Boone & Boone, 2012) identified Likert-type items as single questions that use some aspect of the original Likert response alternatives. Therefore, as suggested by Boone and Boone (2012), the researcher used medians and frequencies to report findings from the study's Likert-type items (see questions/parts of the survey questionnaire, Appendix C). However, means and standard deviations were calculated for two Likert-scale constructs (Boone & Boone, 2012; Warmbrod, 2014) [see questions/parts of the survey questionnaire, Appendix C]. Correlations were used to measure the relationships between select independent variables of interest and to examine associations among these variables and the participants' perceptions of how the information received from the media and other sources helped them resume their farming activities after cessation of the armed conflicts.

Phi coefficient was used to measure associations between dichotomous variables. Cramer's V was calculated to measure associations between dichotomous variables and categorical variables with three or more possible responses or ordinal variables with three or more responses. Point Biserial correlation coefficients were calculated to measure selected bivariate relationships between dichotomous and discrete variables and other selected variables (Field, 2013). Davis' Conventions (1971) were used to describe the magnitude of the relationships.

The semi-structured interviews were transcribed verbatim and the data analyzed using NVivo 10.2.0. The prescribed qualitative procedures, e.g., audit trails and peer debriefing, were followed. The qualitative data were organized in a logical format for analysis and interpretation.

The transcribed texts of the 10 key informant interviews were imported into the NVivo 10.2.0 (1373) software (see Figure 12). Procedures of *naturalistic inquiry* (Lincoln & Guba, 1985) were used to analyze the qualitative data. The data were coded and recoded for the purpose of identifying emerging patterns related to the study's research questions. During the process of coding and recoding, separate files including interview quotes were kept in context as derived from each pattern. The provisional coding method was used (Saldana, 2013). In provisional coding, the researcher establishes a list of codes ranging from 12 to 60 based on the study's research questions, pilot fieldwork, previous research findings, the study's conceptual framework, and literature related to the phenomenon studied (Saldana, 2013).

Qualitative data analysis leads to identifying recurrent patterns and emerging themes (Merriam, 1998). The emerging themes were interpreted and triangulated to the quantitative data collected through the study's survey instrument. Field notes also provided context for the researcher's reflections and were used to guide aspects of the qualitative data analysis and related interpretations.

The quantitative and qualitative findings were triangulated to provide a more comprehensive and deeper understanding of the study's phenomenon. According to Bamberger, Rugh, and Mabry (2012), triangulation is the process through which the researcher makes thoughtful efforts to confirm, elaborate, or disconfirm facts and interpretations. The triangulation process is an opportunity for the researcher to reveal and discuss convergences or divergences between the two sets of findings (Creswell & Plano Clark, 2011).
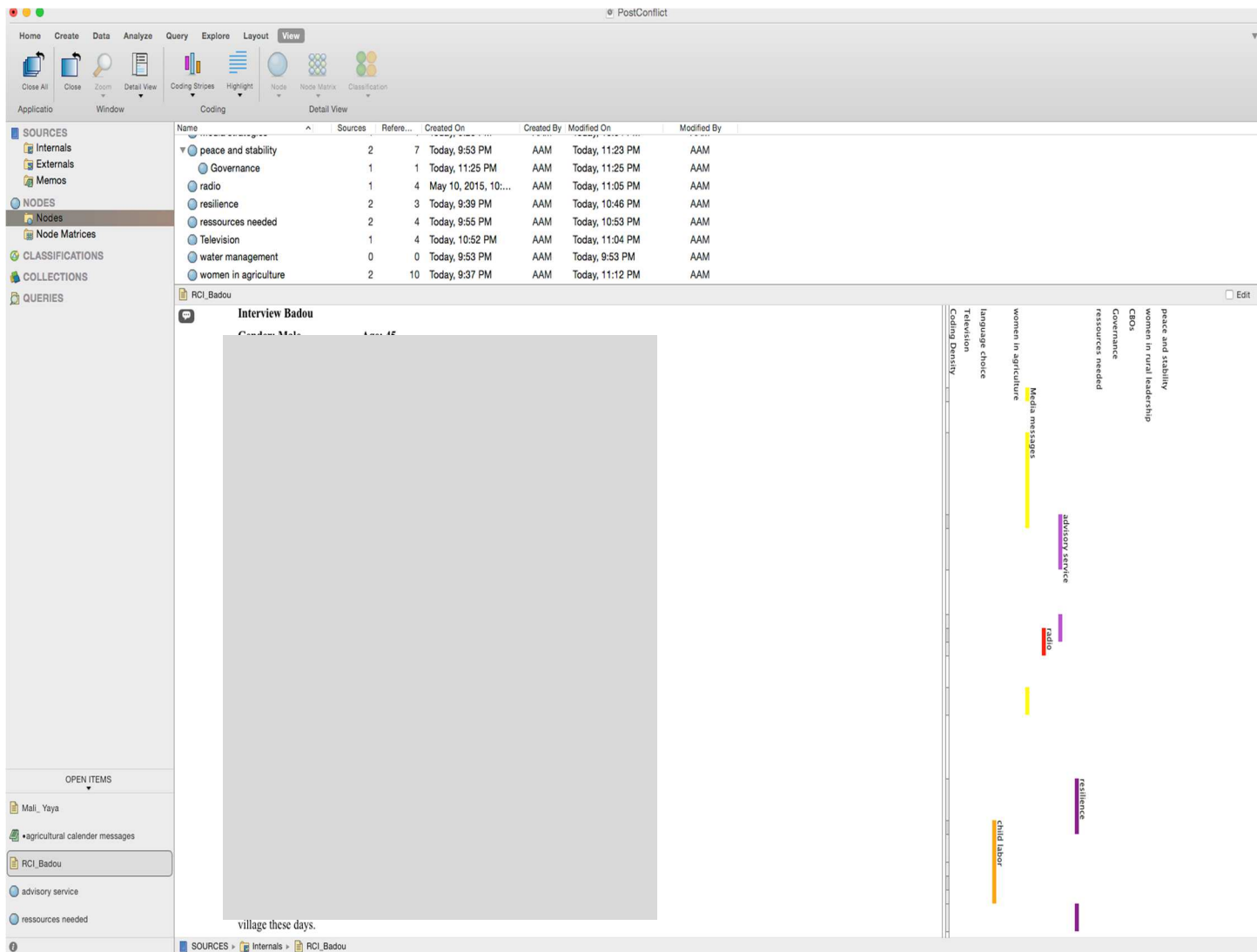
Figure 12. Sample of the NVivo data analysis procedures: Provisional coding

CHAPTER IV

FINDINGS

This chapter includes two major sections and related sub-sections. The first section presents the quantitative findings. The second section describes the study's qualitative findings.

The first section includes findings about the participants' personal and professional characteristics, their perceptions of whether the information provided by the media and other sources helped them to resume farming activities after cessation of the armed conflicts, their levels of interest for receiving various media programs, and their perceptions of the relatedness of information and messages to agricultural subjects from the media and other sources after cessation of the armed conflicts. In addition, this section describes the participants' perceptions regarding the frequency of information about agricultural and food production from the media and other sources, their perceptions regarding the frequency of information about the role of women in agriculture from the media and other sources, their views regarding the frequency of information about the issue of child labor in agriculture from the media and other sources, and their perceptions regarding the frequency of information about strategies for conflict resolution from the media and other sources after cessation of the armed conflicts. Further, the section presents findings about participants' perceptions of the contribution of the media and other sources of information to resilience building within their communities. Finally, the section describes associations and relationships between selected variables of interest.

The second section of the chapter presents the personal and professional characteristics of the study's 10 key informants and six themes that emerged from the key informant interviews.

Purpose of the Study

This research study sought to examine and compare farmers' perceptions on the role of the media and other information sources in disseminating news and information after the cessation of armed conflicts in Mali and in RCI. In doing that, the study described farmers' views on the approaches used by the media and its partners to disseminate news and information after the cessation of armed conflicts in Mali and in RCI. In particular, the study also assessed and compared farmers' perceptions of the media and other information sources in disseminating news and information intended to improve their economic livelihoods and the resilience of rural communities as they recovered from armed conflicts in Mali and in RCI.

Research Questions

Six research questions guided this descriptive, mixed methods study:

1. What were selected personal and professional characteristics of farmers who experienced armed conflicts in Mali and in RCI?

2. How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?

3. How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?

4. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist with their economic livelihood recovery after cessation of the armed conflicts in Mali and in RCI?

5. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist in building community resilience after cessation of the armed conflicts in Mali and in RCI?

6. What types of relationships existed between a) selected personal and professional characteristics of farmers, and b) between farmers' selected characteristics and their views on the media's contribution to economic livelihood recovery and to resilience building in their communities after cessation of the armed conflicts in Mali and in RCI?

Findings

Section One: Quantitative Findings

The study's population included farmers living in post-conflict regions of Mali and RCI. Participants lived in the regions of Mopti (central region) and Timbuktu (northern area) in Mali (n = 106); and Ferke (northern area) and Gagnoa (western area) in RCI (n = 95). In total, 201 (N = 201) farmers participated in the quantitative portion of the study. Because not all participants responded to each question (or item), the totals of frequencies and percentages – by country and overall – very slightly from table to table. In other words, totals by table were based on the number of responses for the specific item reported on within that particular table.

Personal and Professional Characteristics of Participants in the Quantitative Portion of the Study

A total of 201 farmers from both countries completed all or portions of the survey questionnaire. The study participants' ages ranged from 20 to 84 (M = 45.45) in Mali, 18 to 81 (M = 39.37) in RCI, and the group overall ages ranged from 18 to 84 (M = 42.52). In Mali, 82 (78.8%) participants were male, and 22 (21.2%) were female; in RCI, 79 (85.9%) were male and 13 (14.1%) were female. Overall, 161 (82.1 %) of the participants were male and 35 (17.9%) were female; 5 of the study participants did not specify their gender (see Table 3).

Table 3

Gender Distribution of the Study Participants

	Mali		RCI		Overall	
	f	%	*f*	%	*f*	%
Male	82	78.8	79	85.9	161	82.1
Female	22	21.2	13	14.1	35	17.9
Total	104	100.0	92	100.0	196	100.0

The study participants were asked about their levels of education; in both Mali and RCI, a very large majority (93.3%) of the study participants had less than a high school education. Overall, 169 (93.4%) of the study participants had less than a high school education. In Mali, 6.7 % of the participants had a high school degree or equivalent, versus 3.9 % in RCI, and 5.5% overall (i.e., both groups combined) had a high school degree or equivalent. Only 1.3% of the study the participants in RCI held a bachelor's degree and none in Mali, or an overall of 0.6% for the study; and 1.3% of the RCI participants had attended graduate school for an overall of 0.6% for the study (see Table 4). Twenty of the study participants did not indicate their levels of education.

Table 4

Study Participants' Levels of Education

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
Less than high school	97	93.3	72	93.3	169	93.4
High school degree or equivalent	7	6.7	3	3.9	10	5.5
Bachelor's degree	0	0.0	1	1.3	1	0.6
Graduate degree	0	0.0	1	1.3	1	0.6
Total	104	100.0	77	100.0	181	100.0

In Mali, 89.4% of the study participants were married, 1.9% were divorced, 1.9% were widowed, and 6.7 were never married. On the other hand, in RCI, 92.4 % were married, 1.1% were separated, 1.1% were widowed, and 5.4% were never married. Overall, 90.8% were married, 0.5% were separated, 1.0% were divorced, 1.5% were widowed, and 6.1% were never married (see Table 5). Five of the study participants did not indicate their marital status.

Table 5

Marital Status of the Study Participants

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
Married	93	89.4	85	92.4	178	90.8
Separated	0	0	1	1.1	1	0.5
Divorced	2	1.9	0	0	2	1.0
Widowed	2	1.9	1	1.1	3	1.5
Never Married	7	6.7	5	5.4	12	6.1
Total	104	100.0	92	100.0	196	100.0

The study participants were asked about their family sizes. In Mali, the average family size was 11.96 persons; whereas, in RCI, the average was 8.60. The overall group's family size average was 10.38 persons (see Table 6).

Table 6

Study Participants' Family Size Average[a]

	Range	*M*
Mali	3 to 40	11.96
RCI	1 to 32	8.60
Overall	1 to 40	10.38

Note. [a]Extended (large) families are culturally based and common in Sub-Saharan Africa; these families frequently consist of parents, children, and other relatives who usually live in the same household (Lloyd & Blanc, 1996).

The study participants were asked about their religious affiliation. In Mali, almost all the participants were Muslims (99%); only 1% were Christians. Whereas, in RCI, the participants were almost equally distributed between Islam and Christianity, 49.5% and 45.2%, respectively. In addition, in RCI, 5.4% of the study participants indicated they practiced other religions. Overall, 75.6 % of the study participants were Muslims, 21.8% were Christians, and 2.5% indicated other religious beliefs (see Table 7). Four of the study participants did not indicate their religious affiliation.

Table 7

Religious Affiliation Distribution of the Study Participants

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
Muslim	103	99.0	46	49.5	149	75.6
Christian	1	1.0	42	45.2	43	21.8
Other	0	0.0	5	5.4	5	2.5
Total	104	100.0	93	100.0	197	100.0

The study participants were asked to indicate the type of farming profession they practiced. In Mali, 65.4% indicated they were farmers, i.e., these individuals produced various staple crops such as rice and/or cash crops, versus 89.2% in RCI. In Mali, 11.5% reported they were livestock producers, whereas, only 2.2% in RCI were livestock producers. In Mali, 6.7% of participants reported to be fishermen (or women) and 2.2% indicated being fishermen (or women) in RCI. Further, 2.7% of the participants in Mali indicated they were poultry producers versus 2.2% in RCI. In Mali, 12.5% of the participants reported being market gardeners and 3.2% in RCI indicated they were market gardeners. Only 1.0% of the participants in Mali indicated they practiced other types farming, and, similarly, in RCI 1.1% reported other. Overall, 76.6 % of the

participants indicated they were farmers, i.e., staple and/or cash crop producers, 7.1% reported

they were livestock producers, 4.6% indicated they were fishermen (or women), 2.5% were

poultry producers, 8.1% were market gardeners (i.e., vegetable producers), and only 1.0%

indicated they were other types of farmers (see Table 8). Four of the participants did not indicate

the type of farming profession they practiced.

Table 8

Study Participants' Types of Farming Professions

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
Farmer	68	65.4	83	89.2	151	76.6
Livestock producer	12	11.5	2	2.2	14	7.1
Fishermen (or women)	7	6.7	2	2.2	9	4.6
Poultry producer	3	2.7	2	2.2	5	2.5
Market gardener	13	12.5	3	3.2	16	8.1
Other	1	1.0	1	1.1	2	1.0
Total	104.0	100.0	93	100.0	197	100.0

Further, the study participants were asked to indicate the amounts of their incomes

derived from farming activities. In Mali, 11.2% of the participants stated that a little part of their

incomes were derived from farming activities; 29.2% reported that some part of their incomes

were derived from farming activities; 43.8% of the participants reported that a large part of their

incomes were derived from farming activities; and, 15.7% of the participants indicated all of their

incomes were derived from farming activities (see Table 9).

In the case of RCI, 13.0% of the participants indicated a little part of their incomes were derived from farming activities; 22.8% reported some part of their incomes were derived from farming activities; 29.9% indicated a large part of their incomes came from farming activities; and, 33.7 % of the participants indicated all of their incomes were derived from farming activities. Overall, 12.2% reported that a little part of their incomes were derived from farming activities; 26.0% indicated some part of their incomes were derived from farming activities; 37.0% stated that a large part of their incomes were derived from farming activities; and, 24.9% reported that all of their incomes came from farming activities (see Table 9). Twenty of the participants did not indicate the amounts of their incomes derived from farming activities.

Table 9

Study Participants' Reported Income from Farming Activities

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
A little part of my income	10	11.2	12	13.0	22	12.2
Some part of my income	26	29.2	21	22.8	47	26.0
A large part of my income	39	43.8	28	29.9	67	37.0
All of my income	14	15.7	31	33.7	45	24.9
Total	89	100.0	92	100.0	181	100.0

The study found that, in Mali, during the armed conflicts, 16.5% of the participants were internally displaced, very few (1.0%) were externally displaced, and a large majority (82.5%) were not displaced. Further, in RCI, 25.8% were internally displaced, none of the study participants reported having been externally displaced, and 74.2% indicated they were not displaced during the time of the armed conflicts. Overall, 20.8% of the participants were internally displaced, very few (0.5%) were externally displaced, and a large majority (78.7%)

were not displaced (see Table 10). Nine of the participants did not indicate whether they were

displaced during the armed conflicts.

Table 10

Displacement Status of the Study Participants During the Armed Conflicts

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
Internal	17	16.5	23	25.8	40	20.8
External	1	1.0	0	0.0	1	0.5
Not Displaced	85	82.5	66	74.2	151	78.7
Total	103	100.0	89	100.0	192	100.0

The study participants were asked about their preferred language for the conveyance of

media messages. In Mali, 4.7% chose French; however, an overwhelming majority (95.3%)

selected local languages, i.e., *Bambara, Sonrais, Tamasheq, Fulani,* and others. In RCI, about

one-third of the study participants (32.6%) chose French and 67.4% selected local languages, i.e.,

Senoufo, Bete, Jula, and others. Overall, 17.9% selected French and 82.1% chose their local

languages (see Table 11).

Table 11

Study Participants' Language Preferences for Receiving Information from the Media

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
French	5	4.7	31	32.6	36	17.9
Local Languages	101	95.3	64	67.4	165	82.1
Total	106	100.0	95	100.0	201	100.0

Study Participants' Perceptions of Whether the Information Provided by the Media and

Other Sources Helped Them to Resume Farming Activities After Cessation of the Armed Conflicts

The study participants were asked if the information provided by the media and other sources helped them to resume their farming activities after cessation of the armed conflicts. The participants answered using a five point-response scale: 1 = *Definitely yes,* 2 = *Somewhat yes, 3 = Uncertain/Not Sure, 4 = A little,* and *5 = Not at all* (For the purpose of analysis, the scale was recoded, 1 = *Not at all . . .* 5 = *Definitely yes*.)

In Mali, a majority of the participants (70.2%) reported *definitely yes* and only 1.9% indicated *not at all*. However, in the case of RCI, less than one-third of the participants indicated either *definitely yes* (10.6%) or *somewhat yes* (21.3%). Moreover, nearly one-fourth (24.5%) of the RCI participants stated *not at all*. Overall, 41.9% of the participants indicated *definitely yes*, 15.7% expressed *somewhat yes*, 9.6% reported they were *uncertain*, 20.2% stated *a little*, and 12.6% indicated *not at all* (see Table 12). Three of the participants did not indicate their perceptions of whether the information provided by the media and other sources helped them to resume farming activities after cessation of the armed conflicts.

In addition, means were calculated for the two country groups as well as an overall mean. For Mali, the mean was 4.38 (*SD* = 1.08); and the mean for RCI was 2.61 (*SD* = 1.35). The group

overall mean was 3.54 (*SD* = 1.50) (see Table 13). The "real limits" used to interpret the five-point response scale were 4.50 to 5.00 = *Definitely yes*, 3.50 to 4.49 = *Somewhat yes*, 2.50 to 3.49 = *Uncertain/Not sure*, 1.50 to 2.49 = *A little*, and 1.00 to 1.49 = *Not at all*. Therefore, the mean for Mali was in the range of *Somewhat yes*, the mean for RCI was in the range of *Uncertain/Not sure*, and the overall group mean was also in the range of *Somewhat yes*.

Table 12

Study Participants' Perceptions of Whether the Information Provided by the Media and Other Sources Helped Them to Resume Farming Activities After Cessation of the Armed Conflicts

	Mali		RCI		Overall	
	f	*%*	*f*	*%*	*f*	*%*
Definitely yes	73	70.2	10	10.6	83	41.9
Somewhat yes	11	10.6	20	21.3	31	15.7
Uncertain/not sure	9	8.7	10	10.6	19	9.6
A little	9	8.7	31	33.0	40	20.2
Not at all	2	1.9	23	24.5	25	12.6
Total	104	100.0	94	100.0	198	100.0

Table 13

Means and Standard Deviations of Study Participants' Perceptions of Whether the Information Provided by the Media and Other Sources Helped Them to Resume Farming Activities After Cessation of the Armed Conflicts

	f	*%*	*M*	*SD*
Mali	104	52.53	4.38	1.08
RCI	94	47.47	2.61	1.35
Overall	198	100.0	3.54	1.50

The study participants were asked to indicate their levels of interest for various media

programs after cessation of the armed conflicts. The participants answered using a five-point

response scale: 1 = *Not interested*, 2 = *A little interested*, 3 = *Somewhat interested*, 4 = *Interested*,

and 5 = *Extremely interested* (see Appendix C).

In Mali, 14.2% of the participants stated that they were *not interested* in receiving leisure

programs from the media and other sources of information after cessation of the armed conflicts,

i.e., sports, music, or cinema; and 10.6% in RCI indicated that they were *not interested* in

receiving leisure programs from the media and other sources after cessation of the armed conflicts

(see Table 14). However, in Mali, 43.4% of the participants indicated they were *extremely*

interested in receiving leisure programs after cessation of the armed conflicts; whereas, in RCI,

only 7.4% reported they were *extremely interested*. Overall, 12.4% of the participants stated that

they were *not interested* in receiving leisure programs from the media and other sources of

information after cessation of the armed conflicts; more than one-half (54.8%) of the participants

were either *interested* or *extremely interested*. The median in regard to receiving leisure programs

after cessation of the armed conflicts for the participants from Mali was 4 and was 3 for those

from RCI. Overall, the group's median was 4 indicating they were *interested* in receiving leisure

programs (see Table 14).

None of the participants, from either Mali or RCI, indicated they were not *interested* in

receiving agriculture-related programs from the media and other sources of information after

cessation of the armed conflicts. In both the countries, a very large majority of the participants

(89.5% in Mali and 95.7% in RCI; see Table 14) reported that they were *extremely interested* in

receiving agriculture-related programs from the media and other sources of information after

cessation of the armed conflicts. Overall, an overwhelming majority of the participants (92.5%)

indicated they were *extremely interested* in receiving agriculture-related programs from the media and other sources of information after cessation of the armed conflicts. Only 1.0% of the participants stated that they were *a little interested*. The median in regard to receiving agriculture-related programs after cessation of armed conflicts was 5 for participants from both countries. Overall, the group's median was 5 indicating they were *extremely interested* in receiving agriculture-related programs (see Table 14).

Only about 1.0% of the participants, in Mali and RCI, indicated they were *a little interested* in weather forecast programs from the media and other sources of information after cessation of the armed conflicts. To the contrary, in Mali, 71.4% of the participants were *extremely interested* in receiving weather forecast programs as were 95.7% of the participants in RCI. Overall, 1% of participants stated that they were *a little interested* in receiving weather forecast programs from the media and other sources of information after cessation of the armed conflicts; a large majority of the participants (82.9%) indicated they were *extremely interested* in receiving weather forecast programs. The median in regard to receiving weather forecast programs after cessation of armed conflicts was 5 for the participants from both countries. Overall, the group's median was 5 indicating they were *extremely interested* in receiving weather forecast programs (see Table 14).

None of the study participants in either country reported that he or she was *not interested* in market news programs from the media and other sources of information after cessation of the armed conflicts. About one-half (50.9%) of the participants in Mali were *extremely interested* in receiving market news programs and a large majority (80.9%) of participants in RCI were *extremely interested*. Overall, none of participants stated that they were *not interested* or *a little interested* in receiving market news programs; to the contrary, an overwhelming majority (95.5%) of participants indicated they were either *interested* or *extremely interested* in receiving market news programs from the media and other sources after cessation of the armed conflicts The

median in regard to receiving market news programs after cessation of the armed conflicts was 5 for the participants from both countries. Overall, the group's median was 5 indicating they were *extremely interested* in receiving market news programs (see Table 14).

Only 0.9% of the participants in Mali and 12.8% of the participants in RCI indicated they were *a little interested* in receiving general news programs from the media and other sources of information after cessation of the armed conflicts. In Mali, 57.5% of the participants were *extremely interested* in receiving general news programs versus 8.5 % of the participants in RCI. Overall, 7.5% of the participants stated that they were *not interested* or *a little interested* in receiving general news programs; however, a large majority (82.0%) of the participants indicated they were either *interested* or *extremely interested* in receiving general news programs from the media and other sources of information after cessation of the armed conflicts. The median response in regard to receiving general news programs after cessation of the armed conflicts for the participants in Mali was 5; the median was 4 in the case of RCI. Overall, the group's median was 4 indicating they were *interested* in receiving general news programs (see Table 14).

Only 0.9% of the participants in Mali and 3.3% of the participants in RCI indicated they were *a little interested* in receiving hygiene and sanitation programs from the media and other sources of information after cessation of the armed conflicts. In Mali, 57.5% of the participants indicated they were *extremely interested* in receiving hygiene and sanitation programs, and, in RCI, 37.8% were *extremely interested*. Overall, 2% of the participants stated that they were *a little interested* in receiving hygiene and sanitation programs; however, an overwhelming majority (90.3.%) of the participants indicated they were either *interested* or *extremely interested* in receiving hygiene and sanitation programs from the media and other sources of information after cessation of the armed conflicts. The median in regard to receiving hygiene and sanitation programs for the participants in Mali was 5; the median was 4 in the case of RCI. Overall, the

group's median was 4 indicating they were *interested* in receiving hygiene and sanitation programs (see Table 14).

Only 3.8% of the participants in Mali indicated they were *a little interested* or *somewhat interested* in receiving health and nutrition programs from the media and other sources of information after cessation of the armed conflicts. To the contrary, a very large majority (96.2%) (see Table 14) of the participants from Mali reported that they were *interested* or *extremely interested* in receiving health and nutrition programs. In RCI, 10.7% of the participants indicated they were *a little interested* or *somewhat interested* in receiving health and nutrition programs after cessation of the armed conflicts; whereas, a rather large majority (89.4%) of the participants stated that they were *interested* or *extremely interested* in receiving health and nutrition programs. Overall, 7.0% of the participants stated they were *a little interested* or *somewhat interested* in receiving health and nutrition programs from the media and other sources after cessation of the armed conflicts; and, 93.0% of the participants indicated they were either *interested* or *extremely interested* in receiving such programs. The median in regard to receiving health and nutrition programs after cessation of the armed conflicts was 5 for the participants from both countries. Overall, the group's median was 5 indicating they were *extremely interested* in receiving health and nutrition programs (see Table 14).

In Mali, 27.4% of the participants were *not interested* in receiving news about politics from the media and other sources of information after cessation of the armed conflicts; whereas, only 1.1% of the participants in RCI were *not interested* in receiving news about politics (see Table 14). On the other hand, 20.8% of the participants in Mali were *extremely interested* in receiving news about politics; whereas, none of the participants from RCI reported the same. Overall, nearly one-half (44.8%) of the study participants stated that they were *not interested* or *a little interested* in receiving news about politics, and 11.1% indicated they were *extremely interested* in receiving news about politics. The median in regard to receiving news about politics

after cessation of the armed conflicts was 3 for the participants from both countries. Overall, the

group's median was 3 indicating they were *somewhat interested* in receiving news about politics

(see Table 14).

Only 1.9 % of the participants in Mali and 1.1 % in RCI stated that they were *extremely*

interested in receiving other media programs after cessation of the armed conflicts. Overall, none

of participants stated that they were *a little interested* or *somewhat interested* in receiving other

media programs after cessation of the armed conflicts; and, only 2.5% indicated they were

interested or *extremely interested* (see Table 14). The median in regard to receiving other

programs after cessation of the armed conflicts was 0 for the participants from both countries.

Overall, the group's median was 0 indicating they were *not interested* in receiving other media

programs (see Table 14; the item other received a median of "0" for both countries and the group

overall because very few participants responded to the question, i.e., not enough respondents

answered for SPSS v.21 to calculate a median of "1" or larger).

Table 14

Study Participants' Levels of Interest for Receiving Various Media Programs After Cessation of the Armed Conflicts

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Leisure	Not interested	15	14.2	10	10.6	25	12.4
	A little interested	7	6.6	22	23.4	29	14.4
	Somewhat interested	7	6.6	29	30.9	36	17.9
	Interested	31	29.2	26	27.7	57	28.4
	Extremely interested	46	43.4	7	7.4	53	26.4
Median			4		3		4
Agriculture-related programs	Not interested	0	0.0	0	0.0	0	0.0
	A little interested	1	1.0	1	1.1	2	1.0
	Somewhat interested	1	1.0	1	1.1	2	1.0
	Interested	9	8.6	2	2.1	11	5.5
	Extremely interested	94	89.5	90	95.7	184	92.5
Median			5		5		5

Table 14

Study Participants' Levels of Interest for Receiving Various Media Programs After Cessation of the Armed Conflicts (continued)

Items		Mali			RCI			Overall		
		f	*%*		*f*	*%*		*f*	*%*	
Weather forecasts	Not interested	0	0.0		0	0.0		0	0.0	
	A little interested	1	1.0		1	1.1		2	1.0	
	Somewhat interested	4	3.8		1	1.1		5	2.5	
	Interested	25	23.8		2	2.1		27	13.6	
	Extremely interested	75	71.4		90	95.7		165	82.9	
Median				5			5			5
Market news	Not interested	0	0.0		0	0.0		0	0.0	
	A little interested	0	0.0		0	0.0		0	0.0	
	Somewhat interested	8	7.5		1	1.1		9	4.5	
	Interested	44	41.5		17	18.1		61	30.5	
	Extremely interested	54	50.9		76	80.9		130	65.0	
Median				5			5			5

Table 14

Study Participants' Levels of Interest for Receiving Various Media Programs After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
General news	Not interested	0	0.0	2	2.1	2	1.0
	A little interested	1	0.9	12	12.8	13	6.5
	Somewhat interested	3	2.8	18	19.1	21	10.5
	Interested	41	38.7	54	57.4	95	47.5
	Extremely interested	61	57.5	8	8.5	69	34.5
Median			5		4		4
Hygiene and sanitation	Not interested	0	0.0	0	0.0	0	0.0
	A little interested	1	0.9	3	3.3	4	2.0
	Somewhat interested	2	1.9	13	14.4	15	7.7
	Interested	42	39.9	40	44.4	82	41.8
	Extremely interested	61	57.5	34	37.8	95	48.5
Median			5		4		4

Table 14

Study Participants' Levels of Interest for Receiving Various Media Programs After Cessation of the Armed Conflicts (continued)

Items		Mali			RCI			Overall		
		f	%		f	%		f	%	
Health and Nutrition	Not interested	0	0.0		0	0.0		0	0.0	
	A little interested	2	1.9		1	1.1		3	1.5	
	Somewhat interested	2	1.9		9	9.6		11	5.5	
	Interested	46	43.4		26	27.7		72	36.0	
	Extremely interested	56	52.8		58	61.7		114	57.0	
Median				5			5			5
Politics	Not interested	29	27.4		31	33.3		60	30.2	
	A little interested	15	14.2		14	15.1		29	14.6	
	Somewhat interested	14	13.2		32	34.4		46	23.1	
	Interested	26	24.5		15	16.1		41	20.6	
	Extremely interested	22	20.8		0	0.0		22	11.1	
Median				3			3			3

Table 14

Study Participants' Levels of Interest for Receiving Various Media After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Other[a]	Not interested	0	0.0	0	0.0	0	0.0
	A little interested	0	0.0	0	0.0	0	0.0
	Somewhat interested	0	0.0	0	0.0	0	0.0
	Interested	2	1.9	0	0.0	2	1.0
	Extremely interested	2	1.9	1	1.1	3	1.5
Median			0		0		0

Note. [a]The item other received a median of "0" for both countries and the group overall because very few participants responded to the question, i.e., not enough respondents answered for SPSS v.21 to calculate a median of "1" or larger.

The study participants were asked to provide their perceptions on how the information they received from the media and other sources after cessation of the armed conflicts was related to agricultural subjects (18 subjects were listed; see Appendix C). The participants answered using a five-point response scale: 1 = *Not related at all*, 2 = *Slightly related*, 3 = *Moderately related*, 4 = *Related*, and 5 = *Extremely related*.

It was found in Mali that more than more one-half (53.8%) of the study participants perceived that information provided by the media and other sources after cessation of the armed conflicts was *extremely related* to non-GMO seeds; whereas, only 14.9% of the participants in RCI indicated that information provided by the media and other sources was *extremely related* to non-GMO seeds. The median was 5 for the participants from Mali; the median for the RCI participants was 3 (see Table 15). Overall, 65.2% of the participants reported that information provided by the media and other sources after cessation of the armed conflicts was either *related* or *extremely related* to non-GMO seeds. For the group overall, the median for this item was 4 (see Table 15).

On the other hand, in Mali, 30.5% of the participants indicated information provided by the media and other sources after cessation of the armed conflicts was *extremely related* to GMO seeds (median = 4), compared to only 4.2% of the participants in RCI (median = 3). Overall, nearly one-half (49.5%) of the study participants indicated information provided by the media and other sources after cessation of the armed conflicts was either *related* or *extremely related* to GMO seeds (median = 3) (see Table 15).

In Mali, an overwhelming majority (96.2%) of the participants noted that information provided by the media and other sources after cessation of the armed conflicts was either *related*

or *extremely related* to post-harvest technologies (median = 5) versus 67.3% in RCI (median = 4). Overall, a large majority (82.7%) of the participants reported that the information they received from the media and other sources after cessation of the armed conflicts was either *related* or *extremely related* to post-harvest technologies; the median for this item was 4 (see Table 15).

In Mali, only 2.9% of the participants indicated information they received from the media and other sources after cessation of the armed conflicts was *not related at all* to livestock breeds. Contrarily, in RCI, about one-fourth (25.3%) of the participants stated that information they received from the media and other sources after cessation of the armed conflicts was *not related at all* to livestock breeds. Overall, 70.7% of the participants reported the information they received from the media and other sources after cessation of the armed conflicts was either *related or extremely related* to livestock breeds. The median for this item was 4 by country group and overall (see Table 15).

In Mali, 28.3% of the participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *not related at all* or *slightly related* to fisheries; nearly two-thirds (64.1%) indicated *related* or *extremely related* (median = 4). However, in RCI, more than three-fourths (78.8%) of the participants perceived the information they received was *not related at all* or *slightly related* to fisheries (median = 1). Overall, slightly more than one-half (52.0%) of the study participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *not related at all* or *slightly related* to fisheries; the median for this item was 2 (see Table 15).

Of the participants from Mali, 75.5% indicated that the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to poultry keeping (median = 4); whereas, slightly less than one-half (48.4%) of the participants in RCI reported the same about receiving information on poultry keeping (median =

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3). Overall, 62.8% of the participants stated that the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to poultry keeping. For the group overall, the median for this item was 4 (see Table 15).

A large majority (80.2%) of the participants from Mali indicated that the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to market gardening (median = 5). In RCI, however, less than one-half (44.7%) of the participants perceived the information they received after cessation of the armed conflicts was *related* or *extremely related* to market gardening (median = 3). Overall, 63.5% of the study participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to market gardening. For the group overall, the median for this item was 4 (see Table 15).

In Mali, less than one-third (30.8%) of the study participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *not related* or *slightly related* to bee keeping. In RCI, a large majority (80.2%) of the participants reported the information they received after cessation of the armed conflicts was *not related* or *slightly related* to bee keeping (median = 1). In contrast, more than one-half (61.5%) of the participants in Mali indicated the information they received was *related* or *extremely related* to bee keeping (median = 4) versus only 12.1% in RCI. Overall, more than one-half (53.8%) of the study participants stated that the information they received from the media and other sources after cessation of the armed conflicts was *not related* or *slightly related* to bee keeping. On the other hand, 38.4% of the study participants overall indicated the information they received was *related* or *extremely related* to bee keeping. For the group overall, the median for this item was 2 (see Table 15).

An overwhelming majority (95.3%) of the participants in Mali perceived that the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to weather forecasts (median = 4), and 79.5% in RCI perceived the same (median = 5). Overall, 88.0% of the participants stated that the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to weather forecasts. For the group overall, the median for this item was 5 (see Table 15).

In Mali, an overwhelming majority (92.5%) of the participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to market news, including commodity prices (median = 4). In the case of RCI, 79.3% of the study participants reported the information they received was *related* or *extremely related* to market news, including commodity prices (median = 5). Overall, a very large majority (86.3%) of the participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to market news. For the group overall, the median for this item was 5 (see Table 15).

A very large majority (86.3%) of the participants, including both countries, indicated the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to plant diseases. The median for both countries and for the group overall was 5. In Mali, 1.9% of the study participants noted that the information they received from the media and other sources after cessation of the armed conflicts was *not related at all* to livestock diseases versus 26.9% in RCI. The medians for the two groups – Mali and RCI – were 4 and 5, respectively (see Table 15). Overall, regarding livestock diseases, 79.7% of the participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related*. For the group overall, the median for this item was 4 (see Table 15).

For both countries, a very large majority (85.9%) of the participants reported that the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to farmer interest groups. The median was 5 in the case of both countries (see Table 15). In addition, overall, 73.0% of the participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to women's groups. The median was 4 in the case of both countries. Overall, the medians for these two items – farmer interest groups and women's groups – were 5 and 4, respectively (see Table 15).

 In Mali, a very large majority (84.9%) of the participants perceived the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to nutrition (median = 4). In RCI, more than six-in-ten (61.9%) of the participants stated that the information they received was *related* or *extremely related* to nutrition (median = 4). Overall, 74.2% of the participants considered the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to nutrition. For the group overall, the median for this item was 4 (see Table 15).

Only 8.5% and 7.7% of the study participants in Mali and in RCI, respectively, considered the information they received from the media and other sources after cessation of the armed conflicts *not related at all* or *slightly related* to child labor in agriculture. Overall, 81.2% of the participants indicated the information they received was *related* or *extremely related* to child labor in agriculture. For Mali and the group overall, the median for this item was 4; in the case of RCI, the median was 5 (see Table 15).

Only 4.8% and 14.0% of the participants in Mali and in RCI, respectively, indicated the information they received from the media and other sources after cessation of the armed conflicts was *not related at all* or *slightly related* to natural resources. Overall, 81.3% of the participants

indicated the information they received was *related* or *extremely related* to natural resources. The median was 5 for both countries and the group overall (see Table 15).

In Mali, only 6.1% of the participants indicated the information they received from the media and other sources after cessation of the armed conflicts was *not related at all* or *slightly related* to land ownership. A slightly larger number (11.7%) of the participants in RCI considered the information they received was *not related at all* or *slightly related* to land ownership. Overall, 84.2% of the participants perceived the information they received from the media and other sources after cessation of the armed conflicts was *related* or *extremely related* to land ownership. In regard to Mali, the median was 4 for this item; however, the median was 5 in the case of RCI and for the group overall (see Table 15).

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Non-GMO seeds	Not related at all	6	5.7	16	17.0	22	11.1
	Slightly related	4	3.8	7	7.4	11	5.6
	Moderately related	4	3.8	32	34.0	36	18.2
	Related	34	32.7	25	26.6	59	29.8
	Extremely related	56	53.8	14	14.9	70	35.4
Median		5		3		4	
GMO seeds	Not related at all	18	17.1	21	22.1	39	19.5
	Slightly related	11	10.5	11	11.6	22	11.0
	Moderately related	8	7.6	32	33.7	40	20.0
	Related	36	34.3	27	28.4	63	31.5
	Extremely related	32	30.5	4	4.2	36	18.0
Median		4		3		3	

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Post-harvest technologies	Not related at all	0	0.0	13	13.7	13	6.5
	Slightly related	1	1.0	8	8.4	9	4.5
	Moderately related	3	2.9	10	10.5	13	6.5
	Related	47	45.2	37	38.9	84	42.5
	Extremely related	53	51.0	27	28.4	80	40.2
Median			5		4		4
Livestock breeds	Not related at all	3	2.9	24	25.3	27	13.6
	Slightly related	4	3.9	6	6.3	10	5.1
	Moderately related	7	6.8	14	14.7	21	10.6
	Related	41	39.8	17	17.9	58	29.3
	Extremely related	48	46.6	34	35.8	82	41.4
Median			4		4		4

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Fisheries	Not related at all	19	17.9	70	74.5	89	44.5
	Slightly related	11	10.4	4	4.3	15	7.5
	Moderately related	8	7.5	12	12.8	20	10.0
	Related	31	29.2	4	4.3	35	17.5
	Extremely related	37	34.9	4	4.3	41	20.5
Median			4		1		2
Poultry keeping	Not related at all	7	6.6	14	15.1	21	10.6
	Slightly related	11	10.4	12	12.9	23	11.6
	Moderately related	8	7.5	22	23.7	30	15.1
	Related	43	40.6	33	35.5	76	38.2
	Extremely related	37	34.9	12	12.9	49	24.6
Median			4		3		4

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Market gardening	Not related at all	7	6.6	21	22.3	28	14.0
	Slightly related	8	7.5	4	4.3	12	6.0
	Moderately related	6	5.7	27	28.7	33	16.5
	Related	30	28.3	25	26.6	55	27.5
	Extremely related	55	51.9	17	18.1	72	36.0
Median			5		3		4
Bee keeping	Not related at all	24	23.1	71	78.0	95	48.7
	Slightly related	8	7.7	2	2.2	10	5.1
	Moderately related	8	7.7	7	7.7	15	7.7
	Related	38	36.5	3	3.3	41	21.0
	Extremely related	26	25.0	8	8.8	34	17.4
Median			4		1		2

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Weather forecasts	Not related at all	1	0.9	11	11.8	12	6.0
	Slightly related	2	1.9	4	4.3	6	3.0
	Moderately related	2	1.9	4	4.3	6	3.0
	Related	59	55.7	7	7.5	66	33.2
	Extremely related	42	39.6	67	72.0	109	54.8
Median			4		5		5
Market news	Not related at all	0	0.0	9	9.8	9	4.5
	Slightly related	2	1.9	4	4.3	6	3.0
	Moderately related	6	5.7	6	6.5	12	6.1
	Related	52	49.1	15	16.3	67	33.8
	Extremely related	46	43.4	58	63.0	104	52.5
Median			4		5		5

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Plant diseases	Not related at all	2	1.9	12	12.9	14	7.1
	Slightly related	1	1.0	4	4.3	5	2.5
	Moderately related	3	2.9	5	5.4	8	4.0
	Related	45	42.9	18	19.4	63	31.8
	Extremely related	54	51.4	54	58.1	108	54.5
Median			5		5		5
Livestock diseases	Not related at all	2	1.9	25	26.9	27	13.7
	Slightly related	2	1.9	1	1.1	3	1.5
	Moderately related	1	1.0	9	9.7	10	5.1
	Related	55	52.9	13	14.0	68	34.5
	Extremely related	44	42.3	45	48.4	89	45.2
Median			4		5		4

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Farmer interest groups	Not related at all	2	1.9	11	11.8	13	6.5
	Slightly related	0	0.0	5	5.4	5	2.5
	Moderately related	4	3.8	6	6.5	10	5.0
	Related	37	34.9	16	17.2	53	26.6
	Extremely related	63	59.4	55	59.1	118	59.3
Median			5		5		5
Women's groups	Not related at all	4	3.8	8	8.5	12	6.0
	Slightly related	5	4.7	10	10.6	15	7.5
	Moderately related	11	10.4	16	17.0	27	13.5
	Related	42	39.6	14	14.9	56	28.0
	Extremely related	44	41.5	46	48.9	90	45.0
Median			4		4		4

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Nutrition	Not related at all	1	0.9	5	5.4	6	3.0
	Slightly related	4	3.8	16	17.4	20	10.1
	Moderately related	11	10.4	14	15.2	25	12.6
	Related	47	44.3	37	40.2	84	42.4
	Extremely related	43	40.6	20	21.7	63	31.8
Median			4		4		4
Child labor	Not related at all	5	4.7	6	6.6	11	5.6
	Slightly related	4	3.8	1	1.1	5	2.5
	Moderately related	12	11.3	9	9.9	21	10.7
	Related	53	50.0	19	20.9	72	36.5
	Extremely related	32	30.2	56	61.5	88	44.7
Median			4		5		4

Table 15

Study Participants' Perceptions of Relatedness of Information and Messages to Agricultural Subjects from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Natural resources	Not related at all	1	1.0	9	9.7	10	5.1
	Slightly related	4	3.8	4	4.3	8	4.1
	Moderately related	10	9.6	9	9.7	19	9.6
	Related	37	35.6	24	25.8	61	31.0
	Extremely related	52	50.0	47	50.5	99	50.3
Median			5		5		5
Land ownership	Not related all	2	2.0	9	10.5	11	6.0
	Slightly related	4	4.1	1	1.2	5	2.7
	Moderately related	12	12.2	1	1.2	13	7.1
	Related	42	42.9	7	8.1	49	26.6
	Extremely related	38	38.8	68	79.1	106	57.6
Median			4		5		5

Study Participants' Perceptions regarding the Frequency of Information about Agricultural and
Food Production from the Media and Other Sources After Cessation of the Armed Conflicts

The study participants were asked about their perceptions regarding the frequency of

information and messages about agriculture and food production in the media and other sources

after cessation of the armed conflicts. The participants answered using a five point response scale:

1 = *Never*, 2 = *Not very frequently*, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently* (see

Appendix C).

In Mali, 4.8% of the participants indicated information and messages about agricultural

and food production *never* occurred on television after cessation of the armed conflicts; whereas,

30.4% in RCI stated *never* (see Table 16). However, in Mali, a very large majority (87.6%) stated

that information and messages about agricultural and food production occurred *sometimes*,

frequently, or *very frequently* on television after cessation of the armed conflicts; in RCI, slightly

more than one-half stated the same. Overall, 70.5% of the participants indicated information and

messages about agricultural and food production occurred *sometimes*, *frequently*, or *very*

frequently on television after cessation of the armed conflicts. The median was 4 for Mali, and 3

in the case of RCI and the group overall (see Table 16).

In Mali, nearly all (97.1%) of the participants indicated information and messages about

agricultural and food production occurred *sometimes*, *frequently*, or *very frequently* from their

radio stations after cessation of the armed conflicts (see Table 16). A moderate difference existed

between the two countries. In the case of RCI, 82.0% of the participants perceived similar

information and messages occurred *sometimes*, *frequently*, or *very frequently* on their radio

stations. Overall, an overwhelming majority (90.0%) of the participants reported that information

and messages regarding agricultural and food production occurred *sometimes*, *frequently*, or *very*

frequently on their radio stations after cessation of the armed conflicts. The medians were 5 and 4

for Mali and RCI, respectively, and 4 for the group overall (see Table 16).

Very large majorities of the participants in Mali (84.6%) and in RCI (96.8%) stated that they *never* received information and messages regarding agricultural and food production from the Internet. Overall, 90.4% of the participants noted *never* in regard to receiving information and messages from the Internet. The median was 1 for this item by country and the group overall (see Table 16).

Nearly one-half (46.7%) of the participants in Mali and 77.4% of the participants in RCI stated that information and messages regarding agricultural and food production were *never* shared on their mobile telephones after cessation of the armed conflicts (see Table 16). Overall, more than six-in-ten (61.1%) of the participants indicated that information and messages regarding agricultural and food production were *never* shared on their mobile telephones after cessation of the armed conflicts. In Mali, however, slightly less than one-third (29.5%) of the participants indicated information and messages regarding agricultural and food production were shared either *frequently* or *very frequently* on their mobile telephones after cessation of the armed conflicts; whereas, in RCI, only 5.4% reported the same frequency. For Mali, the median was 2 for this item; however, the median was 1 in the case of RCI and the group overall (see Table 16).

A large majority (79.0%) of the participants in Mali stated that information and messages regarding agricultural and food production *never* appeared in the newspapers after cessation of the armed conflicts. More than one-half (54.3%) of the participants in RCI also indicated *never* in regard to the item newspapers. Overall, 67.5% of the participants perceived that information and messages regarding agricultural and food production *never* appeared in the newspapers after cessation of the armed conflicts. The median was 1 for both countries and the group overall (see Table 16).

In Mali, 82.4% of the participants indicated that sharing of information and messages regarding agricultural and food production occurred either *frequently* or *very frequently* between

peer farmers after cessation of the armed conflicts (see Table 16). In RCI, however, 95.7% of the participants reported that sharing of information and messages occurred either *frequently* or *very frequently* amongst peer farmers. Overall, an overwhelming majority (90.3%) of the participants indicated sharing of information and messages regarding agricultural and food production occurred either *frequently* or *very frequently* amongst peer farmers after cessation of the armed conflicts. For Mali, the median was 4 for this item; however, the median was 5 in the case of RCI and the group overall (see Table 16).

One-half (50.0%) of the participants in Mali perceived that information and messages regarding agricultural and food production were provided either *sometimes* or *frequently* by extension agents after cessation of the armed conflicts (see Table 16). In RCI, nearly two-thirds (63.4%) of the participants stated that information and messages regarding agricultural and food production were provided either *sometimes* or *frequently* by extension agents. Overall, more than one-half (56.6%) of the participants perceived that information and messages regarding agricultural and food production were provided either *sometimes* or *frequently* by extension agents after cessation of the armed conflicts. The median was 3 for both countries and the group overall (see Table 16).

The study found that more than one-half (55.6%) of the participants in Mali and in RCI (62.2%) perceived that information and messages regarding agricultural and food production were provided either *sometimes* or *frequently* by NGO personnel after cessation of the armed conflicts (see Table 16). Overall, more than one-half (59.0%) of the participants reported that information and messages regarding agricultural and food production were provided either *sometimes* or *frequently* by NGO personnel. The median was 3 for both countries and the group overall (see Table 16).

Table 16

Study Participants' Perceptions regarding the Frequency of Information about Agricultural and Food Production from the Media and Other Sources After Cessation of the Armed Conflicts

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Television	Never	5	4.8	28	30.4	33	16.8
	Not very frequently	8	7.6	17	18.5	25	12.7
	Sometimes	28	26.7	17	18.5	45	22.8
	Frequently	25	23.8	20	21.7	45	22.8
	Very frequently	39	37.1	10	10.9	49	24.9
Median			4		3		3
Radio	Never	0	0.0	5	5.3	5	2.5
	Not very frequently	3	2.8	12	12.8	15	7.5
	Sometimes	17	16.0	29	30.9	46	23.0
	Frequently	25	23.6	33	35.1	58	29.0
	Very frequently	61	57.5	15	16.0	76	38.0
Median			5		4		4

Table 16

Study Participants' Perceptions regarding the Frequency of Information about Agricultural and Food Production from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Internet	Never	88	84.6	90	96.8	178	90.4
	Not very frequently	9	8.7	3	3.2	12	6.1
	Sometimes	3	2.9	0	0.0	3	1.5
	Frequently	2	1.9	0	0.0	2	1.0
	Very frequently	2	1.9	0	0.0	2	1.0
Median			1		1		1
Mobile telephone	Never	49	46.7	72	77.4	121	61.1
	Not very frequently	14	13.3	6	6.5	20	10.1
	Sometimes	11	10.5	10	10.8	21	10.6
	Frequently	13	12.4	3	3.2	16	8.1
	Very frequently	18	17.1	2	2.2	20	10.1
Median			2		1		1

Table 16

Study Participants' Perceptions regarding the Frequency of Information about Agricultural and Food Production from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	%	f	%	f	%
Newspaper	Never	83	79.0	50	54.3	133	67.5
	Not very frequently	9	8.6	16	17.4	25	12.7
	Sometimes	7	6.7	15	16.3	22	11.2
	Frequently	1	1.0	5	5.4	6	3.0
	Very frequently	5	4.8	6	6.5	11	5.6
Median			1		1		1
Peer farmers	Never	2	1.9	0	0.0	2	1.0
	Not very frequently	2	1.9	1	1.1	3	1.5
	Sometimes	11	10.7	3	3.3	14	7.2
	Frequently	41	36.8	11	12.0	52	26.7
	Very frequently	47	45.6	77	83.7	124	63.6
Median			4		5		5

Table 16

Study Participants' Perceptions regarding the Frequency of Information about Agricultural and Food Production from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Extension agents	Never	23	21.9	12	12.9	35	17.7
	Not very frequently	20	18.9	13	14.0	33	16.7
	Sometimes	37	34.9	23	24.7	60	30.3
	Frequently	16	15.1	36	38.7	52	26.3
	Very frequently	9	8.5	9	9.7	18	9.1
Median			3		3		3
NGO personnel	Never	9	8.5	19	21.1	28	14.4
	Not very frequently	17	16.0	10	11.1	27	13.8
	Sometimes	33	31.1	34	37.8	67	34.4
	Frequently	26	24.5	22	24.4	48	24.6
	Very frequently	20	18.5	5	5.6	25	12.8
Median			3		3		3

Study Participants' Perceptions regarding the Frequency of Information about the Role

of Women in Agriculture from the Media and Other Sources After Cessation of the Armed

Conflicts

The study participants were asked about the frequency of information and messages

regarding the role of women in agriculture in the media and other sources after cessation of the

armed conflicts. The participants answered using a five point response scale: 1 = *Never*, 2 = *Not*

very frequently, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently* (see Appendix C).

In Mali, 4.8% of the participants indicated information and messages regarding the role

of women in agriculture *never* occurred on television after cessation of the armed conflicts (see

Table 17). In RCI, however, more than one-fourth (26.9%) of the participants indicated similar

information and messages *never* occurred on television after cessation of the armed conflicts. In

Mali, more than one-half (60%) of the participants perceived that information and messages

regarding the role of women in agriculture occurred *frequently* or *very frequently* on television

after cessation of the armed conflicts versus 47.3% of the participants in RCI. Overall, more than

one-half (54.1%) of the participants reported that information and messages regarding the role of

women in agriculture occurred *frequently* or *very frequently* on television after cessation of the

armed conflicts (see Table 17). For Mali and the group overall, the median was 4 for this item;

however, the median was 3 in the case of RCI (see Table 17). In regard to radio, however, an

overwhelming majority (93.0%) of the participants overall said that information and messages

regarding the role of women in agriculture occurred *sometimes*, *frequently*, or *very frequently*

after cessation of the armed conflicts (see Table 17). The median was 4 for both countries and the

group overall (see Table 17).

A very large majority (87.1%) of the participants overall indicated that they *never*

viewed information and messages regarding the role of women in agriculture on the Internet after

cessation of the armed conflicts (see Table 17). In addition, nearly two-thirds (63.1%) of the

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participants overall stated that they *never* received information and messages regarding the role of women in agriculture on their mobile telephones after cessation of the armed conflicts. However, 17.5% of the participants in Mali reported receiving information and messages regarding the role of women in agriculture on their mobile telephones after cessation of the armed conflicts versus only 1.1% in RCI. The median was 1 for these items – Internet and mobile telephone – by country and the group overall (see Table 17).

Two-thirds (66.5%) of the participants overall indicated information and messages regarding the role of women in agriculture *never* appeared in the newspapers after cessation of the armed conflicts (see Table 17). In contrast, overall, only 2.6% of the participants noted that extension agents *never* provided information and messages regarding the role of women in agriculture after cessation of the armed conflicts. A very large majority (85.4%) of the participants overall indicated information and messages regarding the role of women in agriculture were provided by extension agents either *frequently* or *very frequently* after cessation of the armed conflicts. The median was 1 for the item newspapers in regard to each country and the group overall (see Table 17). However, the median was 4 for the item extension agents in regard to Mali; and, 5 in the case RCI and the group overall (see Table 17).

Overall, more than one-half (53.1%) of the participants perceived information and messages regarding the role of women in agriculture were shared amongst peer farmers either *sometimes* or *frequently* after cessation of the armed conflicts (see Table 17). Likewise, more than one-half (54.3%) of the participants indicated information and messages regarding the role of women in agriculture was provided by NGO personnel either *sometimes* or *frequently* after cessation of the armed conflicts (see Table 17). The medians for these items – peer farmers and NGO personnel – were the same for Mali, RCI, and the group overall, i.e., 3 (see Table 17).

Table 17

Study Participants' Perceptions regarding the Frequency of Information about the Role of Women in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Television	Never	5	4.8	25	26.9	30	15.2
	Not very frequently	10	9.5	8	8.6	18	9.1
	Sometimes	27	25.7	16	17.2	43	21.7
	Frequently	16	15.2	19	20.4	35	17.7
	Very frequently	47	44.8	25	26.9	72	36.4
Median			4		3		4
Radio	Never	2	1.9	5	5.3	7	3.5
	Not very frequently	2	1.9	5	5.3	7	3.5
	Sometimes	25	23.8	31	33.0	56	28.1
	Frequently	29	27.6	36	38.3	65	32.7
	Very frequently	47	44.8	17	18.1	64	32.2
Median			4		4		4

Table 17

Study Participants' Perceptions regarding the Frequency of Information about the Role of Women in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Internet	Never	83	80.6	86	94.5	169	87.1
	Not very frequently	10	9.7	3	3.3	13	6.7
	Sometimes	4	3.9	2	2.2	6	3.1
	Frequently	1	1.0	0	0.0	1	0.5
	Very frequently	5	4.9	0	0.0	5	2.6
Median			1		1		1
Mobile telephone	Never	52	50.5	71	77.2	123	63.1
	Not very frequently	13	12.6	7	7.6	20	10.3
	Sometimes	11	10.7	7	7.6	18	9.2
	Frequently	9	8.7	6	6.5	15	7.7
	Very frequently	18	17.5	1	1.1	19	9.7
Median			1		1		1

Table 17

Study Participants' Perceptions regarding the Frequency of Information about the Role of Women in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Newspaper	Never	77	74.0	54	58.1	131	66.5
	Not very frequently	10	9.6	12	12.9	22	11.2
	Sometimes	8	7.7	16	17.2	24	12.2
	Frequently	2	1.9	6	6.5	8	4.1
	Very frequently	7	6.6	5	5.4	12	6.1
Median			1		1		1
Extension agents	Never	3	2.9	2	2.2	5	2.6
	Not very frequently	2	2.0	1	1.1	3	1.6
	Sometimes	16	15.7	4	4.4	20	10.4
	Frequently	51	50.0	13	14.4	64	33.3
	Very frequently	30	29.4	70	77.8	100	52.1
Median			4		5		5

Table 17

Study Participants' Perceptions regarding the Frequency of Information about the Role of Women in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Peer farmers	Never	20	19.4	16	17.2	36	18.4
	Not very frequently	22	21.4	14	15.1	36	18.4
	Sometimes	27	26.2	23	24.7	50	25.5
	Frequently	21	20.4	33	35.5	54	27.6
	Very frequently	13	12.6	7	7.5	20	10.2
Median			3		3		3
NGO personnel	Never	14	13.5	16	17.2	30	15.2
	Not very frequently	13	12.5	18	19.4	31	15.7
	Sometimes	33	31.7	38	40.9	71	36.0
	Frequently	21	20.2	15	16.1	36	18.3
	Very frequently	23	22.1	6	6.5	29	14.7
Median			3		3		3

Study Participants' Perceptions regarding the Frequency of Information about the Issue of Child Labor in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts

The study participants were asked about the frequency of information and messages regarding the issue of child labor in agriculture and food production in the media and other sources of information after cessation of the armed conflicts. The participants answered using a five-point response scale: 1 = *Never*, 2 = *Not very frequently*, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently* (see Appendix C).

Overall, about six-in-ten (61.1%) of the participants indicated information and messages regarding the issue of child labor in agriculture and food production occurred on television *frequently* or *very frequently* after cessation of the armed conflicts. The median was 4 for this item by country and the group overall (see Table 18). Overall, a majority (70.2%) of the participants indicated information and messages regarding the issue of child labor in agriculture and food production occurred on their radio stations *frequently* or *very frequently* after cessation of the armed conflicts. The median for these items – television and radio – was 4 in regard to both countries and the group overall (see Table 18).

A very large majority (87.6%) of the participants overall stated that information and messages regarding the issue of child labor in agriculture and food production *never* occurred on the Internet after cessation of the armed conflicts (see Table 18). Overall, 64.3% of the participants indicated that information and messages regarding the issue of child labor in agriculture and food production were *never* shared on their mobile telephones after cessation of the armed conflicts. Further, 15.2% of the participants in Mali indicated information and messages regarding the issue of child labor in agriculture and food production were *very frequently* shared on their mobile telephones; whereas, only 4.4% in RCI stated the same. The median was 1 for these items, i.e., Internet and mobile telephone, regarding both countries and the group overall (see Table 18).

About two-thirds (65.6%) of the participants overall indicated that information and messages regarding the issue of child labor in agriculture and food production *never* appeared in newspapers after cessation of the armed conflicts (see Table 18). In Mali, 26.7% of the participants stated that information and messages regarding the issue of child labor in agriculture and food production was provided *very frequently* by extension agents, and 76.1% of the participants in RCI stated the same. Overall, a large majority (79.8%) of the participants indicated information and messages regarding the issue of child labor in agriculture and food production were provided by extension agents either *frequently* or *very frequently* after cessation of the armed conflicts (see Table 18). The median was 1 for the item newspapers regarding both countries and the group overall; however, the median for the item extension agents was 4 in the case of Mali and 5 in regard to RCI and the group overall (see Table 18).

Nearly one-half (48.8%) of the participants overall indicated information and messages regarding the issue of child labor in agriculture and food production were shared *sometimes* or *frequently* amongst peer farmers after cessation of the armed conflicts (see Table 18). Similarly, more than one-half (55.4%) of the participants stated that NGO personnel provided information and messages regarding the issue of child labor in agriculture and food production *sometimes* or *frequently* after cessation of the armed conflicts. In Mali, 21.4% of the participants reported that NGO personnel provided information and messages regarding the issue of child labor in agriculture and food production *very frequently* versus only 5.4% in RCI. The median was 3 for these items, i.e., peer farmers and NGO personnel, for both countries and the group overall (see Table 18).

Table 18

Study Participants' Perceptions regarding the Frequency of Information about the Issue of Child Labor in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Television	Never	10	9.4	23	25.0	33	16.7
	Not very frequently	12	11.3	3	3.3	15	7.6
	Sometimes	24	22.6	5	5.4	29	14.6
	Frequently	21	19.8	21	22.8	42	21.2
	Very frequently	39	36.8	40	43.5	79	39.9
Median			4		4		4
Radio	Never	6	5.7	1	1.1	7	3.5
	Not very frequently	7	6.6	4	4.3	11	5.6
	Sometimes	24	22.6	17	18.5	41	20.7
	Frequently	25	23.6	29	31.5	54	27.3
	Very frequently	44	41.5	41	44.6	85	42.9
Median			4		4		4

Table 18

Study Participants' Perceptions regarding the Frequency of Information about the Issue of Child Labor in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Internet	Never	87	82.1	83	91.2	170	87.6
	Not very frequently	8	7.5	2	2.2	10	5.2
	Sometimes	3	2.8	2	2.2	5	2.6
	Frequently	2	1.9	1	1.1	3	1.5
	Very frequently	3	2.8	3	3.3	6	3.1
Median			1		1		1
Mobile telephone	Never	58	55.2	68	74.7	126	64.3
	Not very frequently	15	14.3	6	6.6	21	10.7
	Sometimes	9	8.6	10	11.0	19	9.7
	Frequently	7	6.7	3	3.3	10	5.1
	Very frequently	16	15.2	4	4.4	20	10.2
Median			1		1		1

Table 18

Study Participants' Perceptions regarding the Frequency of Information about the Issue of Child Labor in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Newspaper	Never	74	72.5	52	57.8	126	65.6
	Not very frequently	16	15.7	4	4.4	20	10.4
	Sometimes	2	2.0	12	13.3	14	7.3
	Frequently	3	2.9	10	11.1	13	6.8
	Very frequently	7	6.9	12	13.3	19	9.9
Median			1		1		1
Extension agents	Never	7	6.9	3	3.3	10	5.2
	Not very frequently	6	5.9	0	0.0	6	3.1
	Sometimes	21	20.8	2	2.2	23	11.9
	Frequently	40	39.6	17	18.5	57	29.5
	Very frequently	27	26.7	70	76.1	97	50.3
Median			4		5		5

Table 18

Study Participants' Perceptions regarding the Frequency of Information about the Issue of Child Labor in Agriculture from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	%	f	%	f	%
Peer farmers	Never	22	21.2	13	14.3	35	17.9
	Not very frequently	25	24.0	16	17.6	41	21.0
	Sometimes	27	26.0	25	27.5	52	26.7
	Frequently	15	14.4	28	30.8	43	22.1
	Very frequently	15	14.4	9	9.9	24	12.3
Median			3		3		3
NGO personnel	Never	12	11.7	19	20.7	31	15.9
	Not very frequently	15	14.6	14	15.2	29	14.9
	Sometimes	28	27.2	39	42.4	67	34.4
	Frequently	26	25.2	15	16.3	41	21.0
	Very frequently	22	21.4	5	5.4	27	13.8
Median			3		3		3

Study Participants' Perceptions regarding the Frequency of Information about Strategies for Conflict Resolution from the Media and Other Sources After Cessation of the Armed Conflicts

The study participants were asked about the frequency of information and messages regarding strategies for conflict resolution in the media and other sources of information after cessation of the armed conflicts. The participants answered using a five-point response scale: 1 = *Never*, 2 = *Not very frequently*, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently* (see Appendix C).

In Mali, only 3.8% of the participants indicated information and messages regarding strategies for conflict resolution were *never* disseminated on television after cessation of the armed conflicts; whereas, in RCI, nearly one-third (31.9%) of the participants reported *never* (see Table 19). In Mali, about two-thirds (66.0%) of the participants stated that information and messages regarding strategies for conflict resolution were disseminated *very frequently* on television after cessation of the armed conflicts versus 31.9% in RCI. In Mali, a very large majority (87.6%) of the participants indicated information and messages regarding strategies for conflict resolution were shared *frequently* or *very frequently* on their radio stations compared to 68.9% in RCI. Overall, 78.8% of the participants indicated information and messages regarding strategies for conflict resolution were shared *frequently* or *very frequently* on their radio stations after cessation of the armed conflicts. The median was 5 for the item television in regard to Mali; the medians were 3 and 4, respectively, for RCI and the group overall. In addition, the median was 5 for the item radio in the case of Mali and the group overall, and was 4 in regard to RCI (see Table 19).

A very large majority (82.7%) of the participants for the group overall indicated information and messages regarding strategies for conflict resolution were *never* shared on the Internet. Only a few participants (6.2%) stated that they received information and messages regarding strategies for conflict resolution from the Internet *frequently* or *very frequently* after

cessation of the armed conflicts (see Table 19). The median was 1 for both countries and the group overall.

More than one-half (55.4%) of the participants for the group overall indicated that they *never* received information and messages regarding strategies for conflict resolution on their mobile telephones after cessation of the armed conflicts (see Table 19). In the case of Mali, 33.4% of the participants stated that they received information and messages regarding strategies for conflict resolution *frequently* or *very frequently* on their mobile telephones versus 12.2% in RCI. Overall, 23.6% of the participants indicated they received information and messages regarding strategies for conflict resolution on their mobile telephones *frequently* or *very frequently* after cessation of the armed conflicts. The median was 2 in the case of Mali, and the median was 1 for RCI and the group overall (see Table 19).

A large majority (69.2%) of the participants in Mali and more than one-half (53.8%) in RCI perceived that information and messages regarding strategies for conflict resolution *never* appeared in newspapers after cessation of the armed conflicts (see Table 19). In Mali, about one-third (34.6%) of the participants indicated that information and messages regarding strategies for conflict resolution were *very frequently* shared by extension agents versus 79.6% in RCI. Overall, a very large majority (83.7%) of the participants indicated information and messages regarding strategies for conflict resolution were *frequently* or *very frequently* shared by extension agents after cessation of the armed conflicts. The median for the item newspaper was 1 for both countries and the group overall. Further, the median for the item extension agents was 4 in regard to Mali, and 5 in the case of RCI and the group overall (see Table 19).

Nearly one-half (49%) of the participants in Mali and almost two-thirds (66.6%) in RCI indicated information and messages regarding strategies for conflict resolution were shared *sometimes* or *frequently* amongst peer farmers after cessation of the armed conflicts (see Table

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19). Overall, 57.4% of the participants indicated information and messages regarding strategies for conflict resolution were shared *sometimes* or *frequently* amongst peer farmers after cessation of the armed conflicts. The median was 3 in the case of both countries and the group overall (see Table 19).

In Mali, 28.8% of the participants stated that information and messages regarding strategies for conflict resolution were provided by NGO personnel *very frequently* after cessation of the armed conflicts versus only 4.3% in RCI. Overall, only 17.3% of participants perceived that information and messages regarding strategies for conflict resolution were provided *very frequently* by NGO personnel after cessation of the armed conflicts (see Table 19). The median for the item peer farmers was the same for both countries and the group overall, i.e., 3; however, the median for the item NGO personnel was 4 in regard to Mali, and 3 in the case of RCI and the group overall (see Table 19).

Table 19

Study Participants' Perceptions regarding the Frequency of Information about Strategies for Conflict Resolution from the Media and Other Sources After Cessation of the Armed Conflicts

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Television	Never	4	3.8	30	31.9	34	17.0
	Not very frequently	5	4.7	5	5.3	10	5.0
	Sometimes	11	10.4	14	14.9	25	12.5
	Frequently	16	15.1	15	16.0	31	15.5
	Very frequently	70	66.0	30	31.9	100	50.0
Median			5		3		4
Radio	Never	1	1.0	4	4.3	5	2.5
	Not very frequently	4	3.8	1	1.1	5	2.5
	Sometimes	8	7.6	24	25.8	32	16.2
	Frequently	16	15.2	30	32.3	46	23.2
	Very frequently	76	72.4	34	36.6	110	55.6
Median			5		4		5

Table 19

Study Participants' Perceptions regarding the Frequency of Information about Strategies for Conflict Resolution from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Internet	Never	84	81.6	74	84.1	158	82.7
	Not very frequently	10	9.7	3	3.4	13	6.8
	Sometimes	0	0.0	8	9.1	8	4.2
	Frequently	4	3.9	2	2.3	6	3.1
	Very frequently	5	4.9	1	1.1	6	3.1
Median		1		1		1	
Mobile telephone	Never	47	44.8	61	67.8	108	55.4
	Not very frequently	14	13.3	7	7.8	21	10.8
	Sometimes	9	8.6	11	12.2	20	10.3
	Frequently	11	10.5	2	2.2	13	6.7
	Very frequently	24	22.9	9	10.0	33	16.9
Median		2		1		1	

Table 19

Study Participants' Perceptions regarding the Frequency of Information about Strategies for Conflict Resolution from the Media and Other Sources After Cessation the of Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	*%*	*f*	*%*	*f*	*%*
Newspaper	Never	72	69.2	50	53.8	122	61.9
	Not very frequently	14	13.5	5	5.4	19	9.6
	Sometimes	4	3.8	16	17.2	20	10.2
	Frequently	3	2.9	7	7.5	10	5.1
	Very frequently	3	10.6	15	16.1	18	13.2
Median			1		1		1
Extension agents	Never	1	1.0	1	1.1	2	1.0
	Not very frequently	6	5.8	1	1.1	7	3.6
	Sometimes	18	17.3	5	5.4	23	11.7
	Frequently	43	41.3	12	12.9	55	27.9
	Very frequently	36	34.6	74	79.6	110	55.8
Median			4		5		5

Table 19

Study Participants' Perceptions regarding the Frequency of Information about Strategies for Conflict Resolution from the Media and Other Sources After Cessation of the Armed Conflicts (continued)

Items		Mali		RCI		Overall	
		f	%	f	%	f	%
Peer farmers	Never	19	18.3	14	15.1	33	16.8
	Not very frequently	14	13.5	11	11.8	25	12.7
	Sometimes	25	24.0	31	33.3	56	28.4
	Frequently	26	25.0	31	33.3	57	28.9
	Very frequently	20	19.2	6	6.5	26	13.2
Median			3		3		3
NGO personnel	Never	13	12.5	17	18.3	30	15.2
	Not very frequently	9	8.7	11	11.8	20	10.2
	Sometimes	17	16.3	45	48.4	62	31.5
	Frequently	35	33.7	16	17.2	51	25.9
	Very frequently	30	28.8	4	4.3	34	17.3
Median			4		3		3

Study Participants' Perceptions of the Contribution of the Media and Other Sources of

Information to Resilience Building Within Their Communities After Cessation of the Armed

Conflicts

The participants were asked to indicate the degree to which they agreed that the media and other sources of information contributed to resilience building within their communities after cessation of the armed conflicts (23 items were included; see Appendix C). The "real limits" used to interpret the five-point response scale were 1.00 to 1.49 = *Strongly disagree*, 1.50 to 2.49 = *Disagree*, 2.50 to 3.49 = *Uncertain/Not sure*, 3.50 to 4.49 = *Agree*, and 4.50 to 5.00 = *Strongly agree*. *Grand Means* were calculated including all 23 items for the two countries and overall. For Mali, the *Grand Mean* = 3.93; RCI, the *Grand Mean* = 3.75; and, overall, the *Grand Mean* = 3.85 (see Table 20). All three *Grand Means* were in the range of *Agree*.

The study found that for the participants from Mali the item "the media assisted my community to sustain itself" had the highest mean (*M* = 4.26, *SD* = 0.71), followed by the items "the media made my community members work together" (*M* = 4.22, *SD* = 0.67); "the media assisted my community to be more organized" (*M* = 4.11, *SD* = 0.69) and "the media made my community members more helpful" (*M* = 4.11, *SD* = 0.80), which were tied; and, "the media built trust within my community" (*M* = 4.07, *SD* = 0.77) (see Table 20). These five highest ranking item means were in the range of *Agree*.

For the participants from RCI, the item "the media made my community members more helpful" had the highest mean (*M* = 4.49; *SD* = 1.14), followed by the items "the media assisted my community to sustain itself" (*M* = 4.37, *SD* = 1.21); " the media helped my community to build hope" (*M* = 4.30, *SD* = 1.16); "the media made my community members work together" (*M* = 4.24, *SD* = 1.27); and, "the media assisted my community to be more organized" (*M* = 4.15, *SD* = 1.24) (see Table 20). These five highest-ranking item means were in the range of *Agree*.

For both countries, the item "the media assisted my community to adopt new practices" had the lowest mean (Mali, $M = 3.64$, $SD = 0.96$; RCI, $M = 3.14$, $SD = 1.60$), which meant *Agree* in the case of the participants from Mali but *Uncertain/Not sure* for those from RCI (see Table 20).

Overall, the item "the media assisted my community to sustain itself" had the highest mean ($M = 4.31$, $SD = 0.98$), followed by the items "the media made my community members more helpful" ($M = 4.29$, $SD = 0.99$); "the media made my community members work together" ($M = 4.23$, $SD = 0.99$); and, "the media helped my community to build hope" ($M = 4.14$, $SD = 0.98$). These four highest-ranking item means for the overall group were in the range of *Agree*. The item "the media assisted my community to adopt new practices" had the lowest mean ($M = 3.41$, $SD = 1.31$) for the overall group, which meant the participants were *Uncertain/Not sure* about the media's role in regard to their community adopting new practices (see Table 20). Whether considering the participants' ratings by country group or overall, no item was rated in the range of *Disagree* or *Strongly disagree* (see Table 20).

Table 20

Study Participants' Perceptions of the Contribution of the Media and Other Sources of Information to Resilience Building Within Their Communities After Cessation of the Armed Conflicts

Items	Mali		RCI		Overall	
	M	*SD*	*M*	*SD*	*M*	*SD*
The media assisted my community in preventing armed conflict	3.86	0.84	3.80	1.39	3.83	1.13
The media built trust within my community	4.07	0.77	3.82	1.40	3.95	1.12
The media helped my community knowing how to react to armed conflict	3.95	0.71	3.96	1.21	3.95	0.98
The media assisted my community to be more organized	4.11	0.69	4.15	1.24	4.13	0.99
The media helped my community to develop a conflict resolution plan	3.81	0.76	3.61	1.45	3.72	1.14
The media made my community more resistant to armed conflict	3.92	0.80	3.71	1.48	3.82	1.17
The media made my community more prepared to solve internal conflict	3.99	0.75	4.02	1.11	4.00	0.94
The media assisted my community to give more attention to children	3.91	0.80	4.03	1.27	3.96	1.05
The media helped my community to build strong leadership	3.72	0.87	4.06	1.36	3.88	1.14
The media assisted my community to give more attention to women	3.89	0.83	3.83	1.28	3.86	1.07

Table 20

Study Participants' Perceptions of the Contribution of the Media and Other Sources of Information to Resilience Building Within Their Communities After Cessation of the Armed Conflicts (Continued)

Items	Mali		RCI		Overall	
	M	*SD*	*M*	*SD*	*M*	*SD*
The media assisted my community to prioritize issues	3.67	0.84	3.83	1.28	3.75	1.04
The media made my community members more helpful	4.11	0.80	4.49	1.14	4.29	0.99
The media assisted my community to sustain itself	4.26	0.71	4.37	1.21	4.31	0.98
The media help my community to build hope	4.00	0.76	4.30	1.16	4.14	0.98
The media assisted my community to adopt new practices	3.64	0.96	3.14	1.60	3.41	1.31
The media made my community members work together	4.22	0.67	4.24	1.27	4.23	0.99
The media built more trust in public officers in my community	3.90	0.86	3.81	1.49	3.86	1.19
The media built more trust in the local media in my community	3.91	0.77	3.53	1.19	3.73	1.00
The media assisted my community to have services and programs	3.85	0.82	3.48	1.50	3.68	1.20
The media prepared my community to solve internal conflicts	3.99	0.75	4.02	1.11	4.00	0.94

Table 20

Study Participants' Perceptions of the Contribution of the Media and Other Sources of Information to Resilience Building Within Their Communities After Cessation of the Armed Conflicts

Items	Mali		RCI		Overall	
	M	*SD*	*M*	*SD*	*M*	*SD*
The media helped my community to set up mechanisms to provide accurate information to residents during emergencies, including armed conflicts	3.82	0.78	3.13	1.35	3.50	1.14
The media assisted my community to provide emergency services during armed conflicts	3.86	0.92	3.27	1.48	3.58	1.25
The media prepared members of my community not to leave for a new area	3.76	1.02	1.93	1.49	2.91	1.55
Grand Means	3.93	0.49	3.75	0.77	3.85	0.64

A Comparison of Selected Personal and Professional Characteristics and

Perceptions of the Study Participants by Country: Independent Samples T-test Results

Table 21 presents a comparison of independent samples *t*-test results by country of the participants' selected personal and professional characteristics as well as their perceptions of the media's role in regard to resuming farming and building community resilience after cessation of the armed conflicts. These results were used to determine which bivariate relationships to test for levels and magnitudes of statistical significance (see Tables 22, 23, 24, 25, 26, 27, and 28) as related to answering research question six.

Table 21

A Comparison of Selected Personal and Professional Characteristics and Perceptions of the Study Participants by Country: Independent Samples T-test Results

Variables	Contrast								95% Confidence Interval of the Difference		
		n	*M*	*SD*	*SE*	*Mean Diff.*	*t*	*df*	*Lower*	*Upper*	*Sig.**
Gender[a]											
	Mali	104	1.79	0.41	0.04	-0.072	-1.33	194.51	-0.18	0.04	0.008
	RCI	93	1.86	0.35	0.04						
Age[a]											
	Mali	98	45.45	13.74	1.39	6.09	3.24	186.49	2.38	9.80	0.028
	RCI	91	39.36	12.10	1.27						
Religion[a]											
	Mali	104	1.01	0.10	0.01	-0.55	-8.75	96.42	-0.67	-0.43	0.000
	RCI	93	1.56	0.60	0.06						
Marital status											
	Mali	104	1.11	0.31	0.03	0.03	0.72	193.89	0.05	0.11	0.151
	RCI	92	1.08	0.27	0.03						
Level of education											
	Mali	104	1.07	0.25	0.03	0.00	0.06	179.00	-0.07	0.08	0.900
	RCI	77	1.06	0.25	0.03						

Table 21

A Comparison of Selected Personal and Professional Characteristics and Perceptions of the Study Participants by Country: Independent Samples T-test Results (continued)

Variables	Contrast								95% Confidence Interval of the Difference		
		n	*M*	*SD*	*SE*	*Mean Diff.*	*t*	*df*	*Lower*	*Upper*	*Sig.*
Farming profession types[a]											
	Mali	104	1.89	1.46	0.14	0.573	3.25	183.18	0.23	0.92	0.000
	RCI	93	1.31	1.00	0.10						
Resume farming[a]											
	Mali	104	4.39	1.08	0.11	1.78	10.18	178.44	1.43	2.12	0.000
	RCI	94	2.61	1.35	0.14						
Building community resilience[a]											
	Mali	104	3.93	0.49	0.05	0.181	1.93	149.94	-0.01	0.37	0.000
	RCI	92	3.75	0.78	0.08						

*Note. *p < .05. [a]Equal variances not assumed.

To examine selected associations between farmers' country of residence, i.e., either Mali or RCI, and their sex, marital status, levels of education, and farming profession types, either phi or Cramer's *V* was calculated. If both variables were binominal, a phi coefficient was computed to determine the strength of association. In cases where at least one of the variables had three or more response categories, Cramer's *V* was calculated.

No significant association was found between a farmer's country of residence and gender (phi = .094, sig. = .188); see Table 22. Overall, more male farmers than female farmers participated in the study (see Table 22). A larger proportion of the farmers in Mali were female than in RCI but the difference was not significant. (*Note.* Using the word *gender* instead of *sex* was more appropriate in the context of this study because the word *sex*, if translated in the participants' local languages, had a different meaning than an individual's biological identity.)

Table 22

Association of Farmers' Country of Residence and Their Gender

Country	Gender			phi* *Sig.*
	Female	Male	Total	
Mali	22	82	104	
RCI	13	80	93	
Total	35	162	197	.094 .188

*Note. Phi ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Phi = .10 (small effect size); phi = .30 (medium effect size); phi = .50 (large effect size) [Green, Salkind, & Akey, 1997].

Association of Farmers' Country of Residence and Their Marital Status

No significant association was found between a farmer's country of residence and their marital status (phi = -.051, sig. = .473). The proportion of married farmers versus unmarried farmers was similar in both groups (see Table 23). Overall, most of the farmers were married.

Table 23

Association of Farmers' Country of Residence and Their Marital Status

Country	Marital Status			phi* *Sig.*
	Married	Not Married	Total	
Mali	93	11	104	
RCI	85	7	92	
Total	178	18	196	-.051 .473

*Note. Phi ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Phi = .10 (small effect size); phi = .30 (medium effect size); phi = .50 (large effect size) [Green, Salkind, & Akey, 1997].

Association of Farmers' Country of Residence and Their Levels of Education

In addition, farmers' country of residence was not significantly associated with their levels of education (phi = -.005, sig. = .949). The number of farmers who reported holding a high school degree, the equivalent of a high school degree, or more education in both of the countries was rather small and similar in terms of the proportion of their respective groups (see Table 24). Eighteen of the Ivorian farmers did not provide their levels of education.

Table 24

Association of Farmers' Country of Residence and Their Levels of Education

Country	Levels of Education			phi* *Sig.*
	Some high school education or less	High school degree, the equivalent, or higher	Total	
Mali	97	7	104	
RCI	72	5	77	
Total	169	12	181	-.005 .949

Note. Phi ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Phi = .10 (small effect size); phi = .30 (medium effect size); phi = .50 (large effect size) [Green, Salkind, & Akey, 1997].

Association of Farmers' Country of Residence and Their Farming

Profession Types

A significant association existed between farmers' country of residence and their farming profession types (Cramer's *V* = .296, sig. = .004) (see Table 25); the response category *farmer*, i.e., a staple and/or cash crop producer, dominated both groups. In the case of Mali, however, more participants indicated different categories than did the Ivorians, especially in regard to being livestock producers and market gardeners (see Table 25).

Table 25

Association of Farmers' Country of Residence and Their Farming Profession Types

	Farming Profession Types							Cramer's *V** *Sig.*
	Farmer	Livestock producer	Fisheries	Poultry producer	Market gardener	Other	Total	
Mali	68	12	7	3	13	1	104	
RCI	83	2	2	2	3	1	93	
Total	151	14	9	5	16	2	197	.296 .004

*Note. Cramer's *V* ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's *V* = .10 (small effect size); Cramer's *V* = .30 (medium effect size); Cramer's *V* = .50 (large effect size) [Green, Salkind, & Akey, 1997].

Association of Farmers' Country of Residence and Their Religions

A farmer's country of residence was also significantly associated with his or her religious affiliation (Cramer's *V* = .577, sig. = .000). Except for one participant, all of the farmers from Mali reported they were Muslims; however, the farmers from RCI were almost evenly divided in regard to their religious affiliation, i.e., 46 were Muslims and 42 were Christians (see Table 26). Of the two country groups, only five participants from RCI reported their religious affiliation as neither Muslim nor Christian (see Table 26).

Table 26

Association of Farmers' Country of Residence and Their Religions

	Religions				Cramer's V* Sig.
	Muslim	Christian	Others	Total	
Mali	103	1	0	104	
RCI	46	42	5	93	
Total	149	43	5	197	.577 .000

*Note. Cramer's V ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's V = .10 (small effect size); Cramer's V = .30 (medium effect size); Cramer's V = .50 (large effect size) [Green, Salkind, & Akey, 1997].

Relationships Between Participants' Ages and Other Personal and Professional Characteristics and Their Selected Perceptions of the Media

Point biserial correlation coefficients were calculated to describe the relationships between participants' ages, a continuous variable, and their gender, religion, marital status, levels of education, farming profession type, and country of residence, their perceptions of how the information received from the media helped them resume their farming activities and build resilience within their communities after cessation of the armed conflicts (see Table 27). The calculation of point biserial correlation coefficient is recommended when at least one of the variables to be tested is a discrete dichotomy (Field, 2013). An *a priori* of .05 was established to determine whether the selected relationships were statistically significant. Davis's conventions (as cited in Miller, 1994) were used to describe the magnitude of the correlation coefficients: *perfect* (r_{pb} = 1.0), *very high* (r_{pb} = .70 to .99), *substantial* (r_{pb} = .50 to .69), *moderate* (r_{pb} = .30 to .49), *low* (r_{pb} = .10 to .29), and *negligible* (r_{pb} = .01 to .09). In addition, point biserial correlation

coefficients were calculated to describe the relationships between participants' country of residence and their perceptions of how the information received from the media helped them resume their farming activities and build resilience within their communities after cessation of the armed conflicts (see Table 28).

No statistically significant relationship was found between participants' ages and gender. The relationship was positive and low (r_{pb} = .135, p = .068). A negative and negligible relationship was found between participants' ages and religious affiliation (r_{pb} = -.068, p = .357); the relationship was not statistically significant. A negative, low, and statistically significant relationship was found between participants' ages and their marital status (r_{pb} = -.242, p = .001). The older a participant was the more likely he or she was to be married. A negative and low relationship existed between participants' ages and their levels of education (r_{pb} = -.104, p = .182). The relationship was not significant at $p < .05$. A negative, low, and significant relationship was found between participants' ages their farming profession types (r_{pb} = -.152, p = .037) (see Table 27). The older a participant, the more likely he or she was to be a farmer of staple and/or cash crops. A negative, low, and statistically significant relationship was found between participants' ages and their country of residence (r_{pb} = -.229, p = .002) (see Table 27). The older a participant, the more likely he or she was to be a citizen of Mali.

No statistically significant relationship was found between participants' ages and their perceptions of how the information received from the media helped them resume their farming activities after cessation of the armed conflicts (r_{pb} = .138, p = .061). The relationship was positive and low. No statistically significant relationship was found between participants' ages and their perceptions of how the information received from the media built resilience within their communities after cessation of the armed conflicts (r_{pb} = .024, p = .743) (see Table 27). The relationship was positive and negligible.

Table 27

Relationships Between Participants' Ages and Other Personal and Professional Characteristics and Their Selected Perceptions of the Media

Characteristics/Perceptions	Age	
	Correlation coefficient	*Sig.*
Gender[a]	.135	.068
Religion[b]	-.068	.357
Marital status[c]	-.242**	.001
Level of education[d]	-.104	.182
Farming profession type[e]	-.152*	.037
Country of residence[f]	-.229**	.002
Media's role in resuming farming activities[g]	.138	.061
Media's role in building community resilience[g]	.024	.743

Note. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

[a]1 = Male, 2 = Female; [b]1 = Muslim, 2 = Christian; [c]1 = Married, 2 = Not married; [d]1 = Some high school education or less, 2 = High school degree, the equivalent, or more education; [e]1 = Farmer, 2 = All other types of food and agricultural production; [f]1 = Mali, 2 = RCI; [g]1 = *Not at all . . . 5 = Definitely yes*

For the purpose of correlational analysis, response categories for the variables marital status, level of education, and farming profession type were combined from three or more to two. For the variable religion, the five cases selecting the category *other* were excluded from the correlational analysis.

Relationships of Farmers' Country of Residence and Their Perceptions of

How Information Received from the Media and Other Sources Helped Them Resume Farming

Activities and Build Resilience Within Their Communities After Cessation of the Armed Conflicts

A negative, substantial, and statistically significant relationship was found between farmers' country of residence and their perceptions of how the information received from the media helped them resume their farming activities after cessation of the armed conflicts (r_{pb} = -.592, p = .000) (see Table 28). It was more likely that farmers who were citizens of Mali

perceived the information received from the media helped them to resume farming activities after

cessation of armed conflicts. A negative, low, and statistically significant relationship was found

between farmers' country of residence and their perceptions of how the information received

from the media helped build resilience within their communities after cessation of the armed

conflicts (r_{pb} = -.141, p = .049). It was more likely that farmers who were citizens of Mali

perceived the information from the media helped to build resilience within their communities

after cessation of the armed conflicts (see Table 28).

Table 28

Relationships of Farmers' Country of Residence and Their Perceptions of How Information
Received from the Media and Other Sources Helped Them Resume Farming Activities and Build
Resilience Within Their Communities After Cessation of the Armed Conflicts

	Resume Farming Activities (1 item)	Community Resilience Building (*Grand Mean*)
Country of Residence	-.592**	-.141*

Note. **Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Section Two: Qualitative Findings

A total of 10 farmers (key informants) were selected purposefully to participate in the qualitative portion of this study. The participant selection was done considering the five key informant characteristics as described by Marshall (1996), including their roles in the community, knowledge, willingness, communicability, and impartiality. The interview participants, as derived from study areas in Mali and in RCI, included seven males and three females ranging from 32 to 66 years in age. All participants lived in rural areas and were affected by the armed conflicts in their countries and farming was their main economic activity. Table 29 describes the selected personal characteristics of the interview participants.

Table 29

Selected Personal Characteristics of the Key Informant Interview Participants

Characteristics	*f*
Country of Residence	Mali (5) RCI (5)
Sex	Male (7) Female (3)
Age	32 to 45 (3) 46 to 66 (7)
Levels of Education	Completed secondary education (2) Less than a complete high school education or no schooling at all (8)
Religious affiliations	Muslim (8) Christian (2)
Type of Agricultural Livelihood	Farming (4) Livestock producer (2) Fisheries (1) Poultry producer (1) Market gardener (2)
Marital Status	Married (9) Divorced (1)
Displacement Status	No displacement (8); internally displaced (2)

The coding and recoding process generated categories (Gee, 2005) from the data. These categories were observed in almost all 10 of the coded interviews. Several themes emerged from the identified patterns and categories. Six major themes were selected because of their consistency with the study's purpose, including (1) the media and other sources of information were not interested in agriculture-related issues or rural communities after cessation of the armed conflicts; (2) lack of extension or advisory services during and after the armed conflicts; (3) need for more media programs on agricultural issues after cessation of the armed conflicts; (4) the media needs to put more emphasis on issues regarding women, children, and youth; (5) the media needs to provide programming in farmers' local languages; (6) and, loss of trust in the media after cessation of armed conflicts. Transcriptions of the10 interviews provided verbatim statements made by the key informants that pertained to and supported the major themes.

Theme I: Media and other sources of information were not interested in agriculture-related issues or rural communities after cessation of the armed conflicts

Study participants perceived that the media and other sources of information did not assist rural people in recovering their economic livelihoods after cessation of the armed conflicts. Moreover, the study participants indicated that the media did not focus much on agricultural and rural issues even though rural populations who experienced armed conflicts needed such programming.

For many of the participants, the media focused more on urban issues and provided more entertainment programs, i.e., music, cinema, and sports that were not their priorities. A study participant from Mali said:

The media did not tell us anything about agricultural practices or what we need to do to improve our yields. We were left alone. For example, during the conflict many people left this town for safer places, and because of the armed conflict people lost their cattle.

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At the end of the conflict, and when people returned home, neither the farmers nor the

cattle breeder's received any information from the authorities or media. It was even

worse for cattle breeders who stayed in remote areas with very limited access to media.

This participant described the lack of assistance not only from the media but also from the

authorities, i.e., government officials. He also pointed out that cattle breeders, who were nomadic

and lived in remote areas looking for pasture to feed their cattle, were the least informed.

An interviewee from Mali mentioned that she had not recently witnessed any form of

reporting by the media, national or local, regarding community issues or agriculture in her area.

She noted:

I did not see them [the media] for a long time now. Some reporters from the national

radio came here about four to five years ago, and that was before the conflict started here.

Other than that, I do not recall any visit from any media.

Another Ivorian participant, who particularly mentioned television, shared:

Television never talked about agriculture after the conflict. After the conflict, the price of

rubber has fallen on the market but the media never told us. Why didn't they tell us? Who

will not be happy if they tell us? If it does not make anyone unhappy, they should tell us.

We are farmers and we need to know when commodities prices change and that's the role

of the media.

In addition, several of the interviewees from Mali and RCI deplored the fact that the

media were uniquely interested in their regions during the armed conflicts in regard to only

reporting about fights, deaths, and displacements of people. One Ivorian participant said: "The

media was only here during the war to tell the world about our miseries. When the war ended,

they packed and left us. They did not care about agriculture. This was not their business."

Anecdotal observations related to this theme showed that agriculture-related programs were not frequently on the media. Further, based on his visits to media outlets – radio and television stations, and newspaper agencies –, conversations with media specialists, and field observations, the lead researcher discovered that most of the media channels (national and local) did not have specific agricultural programs targeting farmers who experienced armed conflicts. Several of the media channels he visited did not demonstrate an interest in having agricultural programs or indicated they did not have the means to offer such programs, i.e., reporters, logistics, and security.

In Mali, the national radio station had a weekly radio program targeting farmers in general. Many local radio stations visited by the researcher, in Mali and in RCI, had some types of programs that emphasized agriculture but the programs lacked more substantive content and were mostly entertainment-oriented or the announcement of commodity prices. To the contrary, in RCI, the researcher listened to some agricultural news and peacebuilding messages on the ONUCI radio station that covered the whole country. In addition, some newspapers, such as the national news bulletin of Mali, *Journal l'Essor,* had a weekly special column for agricultural news. The interviewees were cognizant that the national television channels had some programs targeting rural people but they perceived the programs were not sufficient and more are needed.

Theme II: Lack of extension or advisory services during and after the armed conflicts

This theme speaks to the lack of extension or advisory services to the farmers who experienced armed conflicts in the study's regions. The study's participants from both countries expressed resoundingly that extension or other forms of advisory services were completely absent during and after armed conflicts in their areas. They described their resentments through several strongly worded statements. A Malian interviewee stated:

They [extension agents] neither came to find out about our problems or help us to improve our farming practices during or after the armed conflicts. They only organized some farmers' gatherings in bigger cities maybe once in a while. That's it!

Another interviewee from RCI stated:

I think they [extension services] should at least call for farmers' meetings to share the information they received from their superiors [e.g., government agencies, researchers], but sometimes we can spend almost two years without any kind of update about farming issues.

In a similar way, another Malian participant declared:

We go to them [extension services] to come see [i.e., seek advice from extension agents], but they never come to visit our farms. They always made up reasons for not visiting. Either they say, they do not have means of transportation or they simply will recommend us some brands of insecticides to apply. This month, they visited us once because there was an internal conflict between crop producers and cattle breeders.

Based on the researcher's observations, government-provided extension or otherwise advisory services were almost non-existent in the study areas. All of the extension agents were located in big towns and did not have means to provide advisory service to farmers in the more rural areas. In northern Mali, where armed conflict was still recurrent at the time of the study, no extension agents were observed on the field. The extension agents met by the researcher indicated that they feared for their own security and, therefore, could not assure field visits to the farmers.

Theme III: Need for more media programs on agricultural issues after cessation of the armed conflicts

A shared perception existed among the study's key informants, including participants of both countries; that the media could help them in many ways to recover their economic livelihoods and in a number of related areas. A typical statement made by one of the Ivorian participants was this: "The media could help in different ways. For example, they could help us to organize ourselves, or think about development, they should also facilitate interactions between different farming professions to avoid internal conflicts." Likewise, another Ivorian participant added:

> After the conflict, there was several land disputes here, many people lost their fields [land] because of the conflict. When they returned home they found that the fields were confiscated and used by other farmers. The media could help us solve this problem by reporting about it.

A Malian interviewee perceived that the media could help them improve their farming practices. He said:

> I heard some information on the radio that targeted the cattle breeders; the reporter explained what the cattle breeders should do to take good care of the animals. For example, he said that the breeders who have more than one-hundred head [of cattle] should try to sell some, and use that money to feed the rest of their cattle to have well fed animals. Also, they advised the farmers about how to apply insecticides to prevent pest infestation in their crops.

In addition, another Malian participant stated: "The media need to tell us about the agricultural calendar, water management, and seed varieties and also about maintenance of motor-pumps. They all need to raise awareness of farmers about the necessity to maintain their tools."

Many of the interviewees expressed that the media, particularly radio and television, could inform them about micro financing systems or cereal banks [i.e., storage of dried cereals kept by farming communities in Mali for hunger prevention measures], and also help them with demonstrations from successful farming experiences. A Malian participant discussed the role of radio and television:

> Radios [i.e., spokespeople] can also talk to us about how to get access to loans. They should help us with marketing processes. They should also teach us about how to establish and manage a cereal bank or to deal with [the] hunger gap here [i.e., the period between the dry season and the new harvest season]. On television, they can also show us success stories, successful agricultural projects, to show us how these people have been successful.

Another Ivorian interviewee said:

> Farmers definitely need the media's help. We need someone to talk to us, to educate us, to inform us. We don't know anything. We did not go to school. They also need to help us to live together in peace.

All 10 of the interviewees perceived that the media could play a key role in reconstruction and peacebuilding after cessation of the armed conflicts. A Malian participant stated: "The information they brought us was to come together to understand each other and to forget about what happened in the past and to move on." An Ivorian farmer mentioned: "The media should work to establish peace in our community." On the same topic another Malian interviewee said: "The media should help to raise awareness and encourage farmers to live together in peace and good understanding."

Other key informants also emphasized that the government and donors could use the media, especially local media, to convey peace messages and to reconstruct the social system. All

of the statements in this theme taken together emphasized the various areas where the media and other sources of information could assist the farmers and other rural populations after cessation of the armed conflicts to recover their economic livelihoods and live peacefully with the acceptance of one another.

Theme IV: The media needs to put more emphasis on issues regarding women, children, and youth.

This theme connotes that the participants perceived the media and other sources of information should have more programs focused on issues affecting women as well as children and youth after cessation of the armed conflicts. Most of the key informants indicated that women are key actors in agriculture in their communities and the media should pay more attention to their needs, concerns, and issues. A Malian participant shared:

> Women play an important role in our community today; they do all kinds of small activities. The media should talk about their roles in our society. They should emphasize that women should have their place in education, agriculture, and anywhere they can bring their contributions to the society.

Another Malian participant stated: "There are some programs on the national television and radio about women. They talk about women rights, about the right to access to land, [and] micro lending. They also talk about the role of women in peace talks." An Ivorian participant stated: "Women need education and information, radios; television, and newspapers can educate them, [and] they can tell them what is right to do."

Answering a question regarding the role of media in assisting with the alleviation of child labor and youth development after cessation of the armed conflicts in their region, an Ivorian interviewee stated:

Child labor is a big issue here. Many farmers do not admit its existence. But it is here. The radios must talk about it. Television should come and film the children working on the farm. If everybody knows about this issue, it will end. I don't know why they don't have programs about this issue, which compromise the future of many children. Radio, television and other media should help us.

A Malian participant added: "The radio should raise awareness about child labor." Moreover, an Ivorian participant perceived television as an important tool to eradicate child labor in his country. He said: "If the national television shows the people who use children to work on their farm, and the miseries the children suffer, they will be ashamed and they will give up this bad practice."

In general, all 10 participants perceived the media as an essential means for women's empowerment in the rural areas of sub-Saharan Africa. All of them indicated the necessity of the media to develop more programs targeting women, especially rural women who experienced armed conflicts.

Theme V: The media needs to provide programming in the farmers' local languages

This theme emerged when farmers discussed in which languages they preferred to receive information regarding agriculture and food production. All of the interviewees indicated that the media and other sources of information should use their local languages to inform or educate them about agriculture, food production, and natural resources. An Ivorian key informant noted: "Radio and television should talk to us in a language we understand." Further, a Malian participant commented: "They [the media] should give us the information in all of our national languages, such as *Bambara, Tamacheq, Sonrais, Peulh, and Dogon*." Likewise, another Ivorian participant questioned: " We have our own language, why do they [the media] use other languages to inform us?"

Due to of the low level of literacy among the farmers, a Malian participant explained that the media should use their local languages: "I did not go to school to learn French. I want the media to use my native language." Another Malian interviewee said: "I enjoy listening to news in *Bambara*." And a third Malian interviewee indicated that he regularly listened to the national news because it is broadcast in native languages:

Every day, I listen to news in *Tamasheq* on the national radio station. I can't miss it! I wish they could give more programs on local languages. Radio and television are good means to educate people. We cannot buy newspapers or even read them but we can listen and understand news on radio or television if they are conveyed in our vernacular languages.

Theme VI: Loss of trust in the media after cessation of the armed conflicts

Several of the participants from Mali and RCI expressed their loss of trust in the media after cessation of the armed conflicts. One individual from RCI expressed this loss of trust in the media with bitterness. He stated: "Every night, they give us information on television, but we do not know if this information is true or not? The media always say things that are not true, for reasons I ignore!" Another Ivorian participant explained:

Sometimes, I believe in television but not always. For me, television represents the government. It is the mouth and the eye of the government. But since it is about government, our country, we listen anyway. But they don't always tell the truth and that is the problem.

A Malian participant noted his preference for receive information from peer farmers because he did not trust the media. He said: "I do not trust what they say on television or radio because they always tell us lies. I prefer receiving news from people I know." Another Ivorian

participant perceived the media as not being fair and neutral in disseminating information. He explained:

> The media in Côte d'Ivoire just serves the current government. They only talk about politics and make propaganda for the government. They don't talk about agriculture or commodity prices. They avoid talking about coffee, cocoa, or rubber. They must change. Nobody in our village watches the national television. Only women and children watch music and movies.

Researcher's Integration and Interpretation of the Study's Parallel Findings

The results from both portions of this mixed methods study were provided in this chapter. The quantitative findings were presented in tables and as text, which resulted from statistical calculations to address the study's research questions. The qualitative findings were presented as text under six emerging themes with supporting quotes provided by the study's 10 key informants.

In chapter 5, the findings – quantitative and qualitative – are triangulated to augment the researcher's interpretation of the phenomenon studied (see Figure 7). To that end, the findings from the two strands are compared, contrasted, and discussed (Creswell & Plano Clark, 2011). The data triangulation is displayed in chapter 5 through a table that shows the differences and similarities between the findings regarding the study's research questions and also to support its conclusions, implications, and recommendations (see Table 30).

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, DISCUSSION, AND

RECOMMENDATIONS

This chapter presents four major sections, including summary of the study: rationale and method, summary of the study's findings and related conclusions, implications and discussion, and recommendations. Each section consists of several sub-sections.

The first section, summary of the study: rationale and method, consists of nine sub-sections, including purpose of the study, research questions, significance of the study, theoretical/conceptual framework, study population and participant selection, research design, instrumentation, data collection, and data analysis.

The second section includes a summary of the study's findings and related conclusions in regard to the study's purpose and six research questions. The third section discusses selected implications as derived from the study's conclusions. The fourth section, recommendations, presents two sub-sections, including recommendations for practice and policy and recommendations for additional research.

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Summary of the Study: Rationale and Method

Purpose of the Study

This research study sought to examine and compare farmers' perceptions on the role of the media and other information sources in disseminating news and information after the cessation of armed conflicts in Mali and in RCI. In doing that, the study described farmers' views on the approaches used by the media and its partners to disseminate news and information after the cessation of armed conflicts in Mali and in RCI. In particular, the study also assessed and compared farmers' perceptions of the media and other information sources in disseminating news and information intended to improve their economic livelihoods and the resilience of rural communities as they recovered from armed conflicts in Mali and in RCI.

Research Questions

Six research questions guided this descriptive, mixed methods study:

1. What were selected personal and professional characteristics of farmers who experienced armed conflicts in Mali and in RCI?
2. How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?
3. How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?

4. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist with their economic livelihood recovery after cessation of the armed conflicts in Mali and in RCI?

5. How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist in building community resilience after cessation of the armed conflicts in Mali and in RCI?

6. What types of relationships existed between a) selected personal and professional characteristics of farmers, and b) between farmers' selected characteristics and their views on the media's contribution to economic livelihood recovery and to resilience building in their communities after cessation of the armed conflicts in Mali and in RCI?

Significance of the Study

The media is a critical tool for supporting socio-economic recovery, peacebuilding, and stability after the cessation of armed conflicts (SIDA & UNESCO, 2003). Harris (2011) maintained that a significant number of peacemaking and peacekeeping activities occur at the government, civil society, and individual levels. Actors, therefore, should disseminate and promote peacebuilding activities by making them known and by offering support to develop and make such more effective (Harris, 2011). All stakeholders, including farmers, policymakers, NGOs, the private sector, researchers, donors, and the media, should work together to restore the resilience of rural people, their economic livelihoods, and their food and nutrition security after the cessation of armed conflicts (International Food Policy Research Institute [IFPRI], 2014). However, more empirical data as well as interpretive evidence is needed to describe and report on policies and practices that may be effective in this regard. In addition, according to Gilboa (2007), the role of the media in conflict and post-

conflict settings has not been sufficiently examined by researchers in most of the related disciplines.

It is perceived, however, that the media can play a vital role in the process of reconciliation during the aftermath of armed conflicts just as the media can be harmful if they magnify and encourage conflict (Yamshon & Yamshon, 2006). Fortune and Bloh (2008) argued that governments and international partners often overlook strategic communication and the role of the media in post-conflict reconstruction and reform processes. This oversight could hinder the implementation of, and reduce trust in, the reform processes and actors (Fortune & Bloh, 2008). This study sought to describe and compare the perceptions of farmers in Mali and in RCI on the role of the media and other information sources in assisting them to recover from the impacts of armed conflicts and regain their economic livelihoods.

Theoretical/Conceptual Framework

Bratiae (2006) asserted that media could assist considerably in post-conflict reconstruction efforts. However, the role of the media after cessation of armed conflicts has not been investigated by many researchers (Bratiae, 2006). Hoffman posited that post-conflict communication lacked a comprehensive theoretical framework.

This study was guided by a range of media effects theories, including the agenda setting theory, the use of and gratification model, and the social cognitive theory of mass communications (Bandura, 2001; Katz, 1959; Severin & Tankard, 2001). Further, the Agricultural Knowledge and Information System for Rural Development (AKIS/RD) model was also used to support understanding the study's phenomenon (FAO & World Bank, 2000) as well as the implications and recommendations that emerged from its examination.

Study Population and Participant Selection

This study's population included farmers living in post-conflict regions of Mali and RCI. For the quantitative portion of the study, 201 participants were selected purposefully, including 106 in Mali and 95 in RCI. The study sites in both countries were selected based on suggestions provided by experts who worked in agriculture-related fields. The study was conducted in the regions of Mopti (central region) and Timbuktu (northern area) in Mali (see Figure 8), and Ferke (northern area) and Gagnoa (western area) in RCI (see Figure 9).

Ten key informants provided data for the qualitative portion of the study. The key informants included five participants per country. The informants were selected from the overall sample of participants from the quantitative portion of the study. The key informants were chosen based on their leadership roles within farmers' organizations and the recommendations of extensions agents, media workers, and NGO personnel who were knowledgeable about the phenomenon and related actors in the study regions of Mali and RCI.

Research Design

To investigate the study's phenomenon, the researcher employed a convergent mixed methods research design (see Figure 7). According to Creswell and Plano Clark (2011), if using a convergent mixed methods research design, the researcher collects qualitative and quantitative data concurrently but analyzes the data separately; and, thereafter, the two sets of findings are combined for interpretation. Tashakkori and Teddlie (2009) stated that a mixed methods research design "elucidates the divergent aspects of the phenomenon" (p. 17). Conducting mixed methods design research enables the investigator to triangulate a study's qualitative and quantitative findings.

Researchers stand to a gain a more comprehensive understanding of the phenomenon studied by triangulating the data. Further, triangulation enables the researcher to determine whether the findings converge, are coherent, or controvert (Ary et al., 2014).

Instrumentation

To collect data for this study, two parallel data collection tools were designed: a survey questionnaire and a semi-structured interview protocol. The survey questionnaire used for this study was comprised of two parts. The first part consisted of 12 questions with several items related to each question, and each having a five-point rating scale (see Appendix C). A proportion of the survey questionnaire was a modification and adaptation of the Communities Advancing Resilience Toolkit (CART) survey instrument that was developed to evaluate a community's resilience (Pfefferbaum et al., 2013). New constructs, items, and scales were added to the initial CART based on a review of the relevant literature. The second part included items describing the personal and professional characteristics of the study participants (see Appendix C). The interview protocol developed for the qualitative data collection included seven major open-ended questions and several probing questions (see Appendix D).

A panel of experts, including faculty members of Oklahoma State University's departments of Agricultural Education, Communications, and Leadership and Political Science, reviewed both instruments to ensure their content and face validity. In addition, prior to the main study, a pilot study was conducted in Mali to test the survey instrument's internal consistency and face validity. The instrument's pilot study and post-hoc reliability estimates ranged from .31 to .84 and from .58 to .90, respectively (see Table 2).

Data Collection

The data for this study were collected in the summer of 2014 in the Republics of Mali and RCI. Considering the study's convergent mixed methods design, the qualitative data and quantitative data were collected concomitantly (Creswell, 2008). The main researcher was assisted by four research assistants in both countries to orally administer the survey instrument because of the study participants' low levels of literacy. The items were asked in the participants' preferred local languages as needed, and recorded in French. The researcher and his assistants are fluent speakers of French. The participants' responses were hand-entered into a SPSS version 21.0 data file by the researcher.

The main investigator conducted all 10 of the key informant interviews at times and locations convenient for the interviewees. All interviews were recorded using a digital voice recorder. In addition, the researcher took written notes during each interview.

Data Analysis

The two sets of data were analyzed separately by using appropriate analytical procedures for each (Creswell, 2011). The quantitative data analysis focused on computing descriptive statistics, including frequencies, percentages, and medians for Likert-type items (Boone & Boone, 2012), and means and standard deviations for the Likert-scale items (Boone & Boone, 2012; Warmbrod, 2014). Phi coefficient was used to measure associations between dichotomous variables. Cramer's V was calculated to measure associations between dichotomous variables and categorical variables with three or more possible responses or ordinal variables with three or more responses. Point Biserial correlation coefficients were calculated to measure selected bivariate relationships between dichotomous and discrete variables and other selected variables. Davis' Conventions (1971) were used to describe the magnitude of the relationships.

The semi-structured interviews were transcribed verbatim and the data analyzed using NVivo 10.2.0. Qualitative data analysis led to the identification of recurrent patterns and emerging themes (Merriam, 1998). The two sets of data were triangulated to identify convergences and divergences between them (Creswell & Plano Clark, 2011; see Figure 7).

Summary of the Findings and Related Conclusions

<u>Research Question 1</u>

What were the selected personal and professional characteristics of farmers who experienced the effects of armed conflicts in Mali and in RCI?

The quantitative portion of this study included a sample of 201 farmers who experienced armed conflicts, 106 from Mali and 95 from RCI. Male participants represented a very large majority (82.1%) of the study participants and were almost evenly distributed between the two countries (78.8% in Mali and 85.9% in RCI; see Table 3). Only 21.0% of the participants in Mali and 14.1% in RCI were female (see Table 3). The study revealed that an overwhelming majority (93.3%) of the participants had less than a high school degree, only 5.5% had a high school degree, or equivalent, and very few (1.2%) had a bachelor's degree or a graduate degree (see Table 4).

An overwhelming majority (90.8%) of the study participants were married – 89.4% in Mali and 92.4% in RCI; very few (9.1%) were separated, divorced, widowed, or never married (see Table 5). Overall family size was about 10 persons and larger in Mali than in RCI, i.e., 11.90 and 8.60 persons, respectively (see Table 6). Almost all (99.0%) of the study participants in Mali were Muslims; however, the participants in RCI were about evenly distributed between Islamic and Christian religious beliefs, i.e., 49.5% and 45.0%, respectively. Only 2.5% of the overall group reported to practice other religions (see Table 7).

A large majority (76.6%) of the participants overall indicated they were farmers, i.e., staple crops and/or cash crop producers, and only a few reported other farming profession types. In Mali, compared to RCI, more farmers indicated they were livestock producers, fishermen (women), and market gardeners (see Table 8). The study also found that about 60% of the participants derived a large part or all their incomes from farming activities and almost 40% earned a little or some part of their incomes from farming activities (see Table 9). A large majority (78.7%) of the study participants reported not being displaced in either country as a result of the armed conflicts. Overall, 20.8% of the participants were internally displaced and only 1.0% were externally displaced.

Regarding the qualitative portion of the study, the 10 key informants were evenly distributed between the two countries. Seven were male and three were female, and they represented most of the types of faming professions in each country. Their ages ranged from 32 to 66 years (see Table 29).

Conclusions

Based on the study's findings regarding the participants' selected personal and professional characteristics, most the farmers who participated in this study were male in Mali and in RCI. An overwhelming majority of the farmers had less than a high school education regardless of their country. Moreover, an overwhelming majority of the farmers from both countries were married. Farmers in Mali had larger family sizes compared to their Ivorian peers. The farmers' religious affiliations differed by country. Unlike the participants from Mali who were nearly all Muslims, the farmers in RCI were almost evenly divided between Islam and Christianity. These findings aligned with data presented by the World Bank (2011) and the CIA (2014) in regard to religious affiliation in the two countries.

In addition, most of the study's participants were farmers, in that they were staple crop and/or cash crop producers. The participants were slightly more diversified in Mali, where more reported being livestock producers, market gardeners, fishermen (women), and poultry producers than did in RCI. The incomes for most of the participants from both countries were related to their farming activities. Only one-in-five of the farmers experienced any form of displacement during their nations' armed conflicts.

A majority of the key informants were also male, married, and represented most of the farming professions, had less than a high school education, were middle aged, and were not displaced during the armed conflicts. The key informants, therefore, were representative of the farmers, by country and as an overall group, who provided quantitative data about their personal and professional characteristics.

Research Question 2

How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?

The study found that a very large majority (82.1%) of the participants preferred receiving information and messages from the media and other sources in their local languages (see Table 11). However, a large difference existed between the two countries regarding the use of French in the media and other sources to convey information to farmers: 32% of the participants in RCI preferred receiving information and messages in French versus only 4.7% in the case of Mali.

The study participants were asked to express their levels of interest in receiving nine types of media programs, including leisure, agriculture-related, weather forecasts, market news, general news, hygiene and sanitation, health and nutrition, politics, and other, after

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cessation of the armed conflicts (see Appendix C). The participants answered using a five-point response scale: 1 = *Not interested at all*, 2 = *A little interested*, 3 = *Somewhat interested*, 4 = *Interested*, and 5 = *Extremely interested*.

For the group overall, agriculture-related, weather forecasts, market news, and health and nutrition programs received a median of 5 (see Table 14) indicating the participants were *extremely interested* in those programs. Even though a very large majority (80.9%) of the participants from RCI were *extremely interested* in receiving market news after cessation of the armed conflicts only about one-half (50.9%) of the participants from Mali held that view (see Table 14).

Leisure, general news, and hygiene and sanitation programs received an overall group median of 4 (see Table 14). In the case of Mali, however, more than four-in-ten participants reported being *extremely interested* in leisure programs. The farmers in Mali were also more interested in receiving hygiene and sanitation programs. Further, six-in-ten of the farmers in Mali were *extremely interested* in general news versus fewer than one-in-ten participants in RCI.

Politics and other programs received the lowest overall group medians of 3 and 0, respectively. In Mali, almost one-half (45.3%) of the participants were *interested* or *extremely interested* in media programs about politics after cessation of the armed conflicts; whereas, less than one-fifth of the Ivorians held a similar interest (see Table 14). Almost none of the participants expressed an interest in receiving other media programs after cessation of the armed conflicts.

The study participants were asked to indicate their perceptions of the relatedness of the information and messages provided by the media and other sources to 18 agricultural subjects after cessation of the armed conflicts (see Appendix C). The participants answered

using a five-point response scale: 1 = *Not related at all*, 2 = *Slightly related*, 3 = *Moderately related*, 4 = *Related*, and 5 = *Extremely related*.

For the group overall, weather forecasts, market news, plant diseases, farmer interest groups, land ownership, and natural resources received a median of 5 (see Table 15) indicating the participants perceived that information and messages received from the media and other sources were *extremely related* to these subjects. Even though a large majority (72.0%) of Ivorian farmers perceived that information and messages were *extremely related* to weather forecasts after cessation of the armed conflicts, only about four-in-ten of the Malian farmers held that view. On the other hand, more than one-half (57.7%) of the farmers from Mali perceived that information and messages were *related* to weather forecasts; whereas, only 7.5% of the farmers from RCI held a similar perception (see Table 15).

Nearly one-half (49.1%) of the participants from Mali perceived that the information and messages were *related* to market news after cessation of the armed conflicts; whereas, only 16.3% of the participants from RCI held that view (see Table 15). More farmers in RCI than in Mali viewed that the information and messages were *extremely related* to market news. In Mali, about four-in-ten farmers perceived that the information and messages were *related* to landownership; whereas, only one-in-ten held that view in RCI. On the other hand, a very large majority of the Ivorian participants perceived that the information and messages were *extremely related* to land ownership; and, only 38.8% of the participants in Mali held that perception. More farmers in Mali than in RCI perceived that the information and messages were *related* to farmer interest groups (see Table 15).

The items women's groups, livestock diseases, nutrition, child labor in agriculture, poultry keeping, post-harvest technologies, non-GMO seed varieties, market gardening, and livestock breeds received an overall group median of 4 (see Table 15). In Mali, 39.6% of the

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participants perceived that the information and messages were *related* to women's group; whereas, only 14.9% of the farmers from RCI shared the same view. More farmers in Mali than in RCI perceived that the information and messages were *related* to livestock breeds. In Mali about four-in-ten of the participants perceived that the information and messages were *extremely related* to nutrition; whereas, about two-in-ten participants in RCI shared the same view. Even though 61.5% of the participants from RCI perceived that information and messages were *extremely related* to child labor in agriculture only 30.2% of the Malian participants expressed that view (see Table 15).

More than one-third of the Malian farmers viewed that the information and messages were *extremely related* to poultry keeping; and, only 12.9% of the Ivorian farmers held the same perception. In Mali, about one-half (51.0%) of the participants perceived that the information and messages received were *extremely related* to post-harvest technologies versus only 28.4% of the participants from RCI. Although more than one-half (53.8%) of the Malians perceived that the information and messages were *extremely related* to non-GMO seed varieties, only14.9% of the Ivorian participants had the same view. More farmers in Mali than in RCI perceived that the information and messages were *related* to livestock breeds (see Table 15).

The item GMO seed varieties received an overall group median of 3. About three-in-ten of the farmers in Mali perceived that the information and messages received after the armed conflicts were *extremely related* to GMO seeds; whereas, only 4.2% of the farmers in RCI held that perception (see Table 15).

The items fisheries and bee keeping received the lowest medians, i.e., 2. A majority (74.5%) of the Ivorian farmers perceived that the information and messages were *not related at all* to fisheries; however, only 17.9% of the Malian farmers shared the same perception. In

addition, more farmers in RCI than in Mali perceived that the information and messages were *not related at all* to bee keeping (see Table 15).

The study participants were asked to indicate their perceptions regarding the frequency of information and messages about agriculture and food production provided by the media and other sources after cessation of the armed conflicts (see Appendix C). The participants answered using a five-point response scale: 1 = *Never*, 2 = *Not very frequently*, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently*.

For the group overall, the item peer farmers received a median of 5 (see Table 16) indicating the participants perceived that information and messages about agriculture and food production were shared *very frequently* amongst peer farmers. Even though a very large majority (83.7%) of the Ivorian farmers viewed that information and messages about agriculture and food were shared *very frequently* amongst peer farmers, less than one-half (45.6%) of the Malian farmers held that view.

The item radio received an overall group median of 4 (see Table 16) indicating the participants perceived that information and messages about food and agriculture occurred *frequently* on their radio stations after cessation of the armed conflicts. However, more farmers in Mali than in RCI perceived that information and messages about agriculture and food production occurred *very frequently* on their radio stations after cessation of the armed conflicts.

The items television, extension agents, and NGO personnel received an overall group median of 3 (see Table 16) indicating the participants perceived that the information and messages about agriculture and food production appeared *sometimes* on television or were shared *sometimes* by extension agents or NGO personnel. More farmers in RCI perceived that information and messages about agriculture and food production were shared *very frequently*

by NGO personnel. In addition, more Malian farmers viewed that the information and messages appeared *very frequently* on television. In RCI, almost one-third (30.4%) of the participants perceived that information and messages about agriculture and food production *never* appeared on television after cessation of the armed conflicts (see Table 16).

The items Internet, mobile telephone, and newspapers received an overall group median of 1 (Table 16) indicating participants perceived that information and messages about agriculture and food production were *never* shared on the Internet, via their mobile telephones, or in newspapers after cessation of the armed conflicts. More Malian farmers perceived that information and messages about agriculture and food production *never* appeared in their newspapers. In addition, more farmers in Mali than in RCI perceived that information and messages about agriculture and food were shared *very frequently* on their mobile telephones after cessation of the armed conflicts, i.e., about 29.5% and 5.4%, respectively (see Table 16).

The study participants were asked their perceptions regarding the frequency of receiving information and messages about strategies for conflict resolution from the media and other sources after cessation of the armed conflicts (see Appendix C). The participants answered using a five-point response scale: 1 = *Never*, 2 = *Not very frequently*, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently*.

For the group overall, the items extension agents and radio received a median of 5 (see Table 19) indicating the participants perceived that information and messages about strategies for conflict resolution were provided *very frequently* by extension agents and on their radio stations. Even though a large majority (79.6%) of the Ivorian farmers viewed that information and messages about strategies for conflict resolution were provided *very frequently* by extension agents only about one-third of the Malian farmers held that

perception. More farmers in Mali than in RCI perceived that information and messages about strategies for conflict resolution were shared *very frequently* on their radio stations after cessation of the armed conflicts (see Table 19).

The item television received an overall group median of 4 (see Table 19) indicating the participants perceived that information and messages about strategies for conflict resolution were broadcast *frequently* on their television stations after cessation of the armed conflict. The items peer farmers and NGO personnel received an overall group median of 3 (see Table 19) indicating the participants perceived that information and messages about strategies for conflict resolution were *sometimes* shared amongst peer farmers and by NGO personnel. More farmers in Mali than in RCI perceived that information and messages about strategies for conflict resolution were shared *very frequently* by NGO personnel.

The items newspaper, Internet, and mobile telephone received an overall group median of 1 (Table 19) indicating participants perceived that information and messages about strategies for conflict resolution were *never* shared via these sources after cessation of the armed conflicts. More Malian farmers perceived that information and messages about conflict resolution *never* appeared in their newspapers. In addition, more farmers in Mali than in RCI perceived that information and messages about strategies for conflict resolution were shared *very frequently* on their mobile telephones.

Four of the six themes that emerged from the key informant interviews' revealed their perceptions of media strategies, programs, channels, and messages after cessation of the armed conflicts in their countries.

Theme I: The media and other sources of information were not interested in agriculture-related issues or rural communities after cessation of armed conflicts. All 10 of the key informants made strong statements regarding the media's lack of interest for reporting

on agriculture-related issues. The key informants perceived that the media focused on leisure topics instead of dealing with their concerns. The following quote from a Malian key informant largely summarized their views:

> The media did not tell us anything about agricultural practices or what we need to do to improve yields. We were let alone. For example, during the conflict many people left this town for safer places, and because of the armed conflict people lost their cattle. At the end of the conflict, and when people returned home, neither the farmers nor the cattle breeders received any information from the authorities or media. It was even worse for cattle breeders who stayed in remote areas with very limited access to media.

Theme II: Lack of extension or advisory services during and after the armed conflicts

The farmers reported a lack of extension or advisory services in their areas during and after cessation of the armed conflicts. In their statements, they described feeling abandoned and not benefitting from government-provided extension services or receiving the help of other service providers. They also suggested that extension agents should organize farmer meetings regularly and use the media more to share their information.

Theme III: Need for more media programs on agricultural issues after cessation of the armed conflicts

The key informants unanimously perceived the necessity to have a variety of agriculture and food production related programs presented by the media. For example, they wished to receive media programs emphasizing land management, animal husbandry, insecticide application or pest control, water management, and seed varieties.

Theme V: The media needs to provide programming in the farmers' local languages

All 10 of the key informants emphasized the need to receive media programs in their local languages. Representative of this position, a Malian key informant stated: "They [media] should give us the information in all of our national languages, such as *Bambara*, *Tamasheq*, *Sonrais*, *Peulh*, and *Dogon*."

Conclusions

Based on the study's findings, the participants overall were the most interested in receiving agriculture-related, weather forecasts, market news, and heath and nutrition programs from the media and other sources after cessation of the armed conflicts in Mali and in RCI. Of the two groups, the Ivorian farmers were the most interested in receiving market news. Moreover, the farmers overall were *interested* in receiving leisure, general news, and hygiene and sanitation programs from the media and other sources. However, the farmers in Mali were also more interested in those types of programs than the Ivorian farmers. More farmers in Mali were interested in programs about politics than were the Ivorians but as a group the participants were only *somewhat interested*.

Based on the study's findings, the participants overall perceived that information and messages provided by the media and other sources were *extremely related* to weather forecasts, market news, plants diseases, farmer interest groups, land ownership, and natural resources after cessation of the armed conflicts in Mali and in RCI. Of the two groups, more Ivorian farmers perceived that the information and messages were *extremely related* to weather forecasts and to market news. More farmers from Mali perceived that the information and messages were *related* to land ownership. However, more Ivorian farmers perceived that the information and messages were *extremely related* to land ownership.

The participants overall perceived that the information and messages provided by the media and other sources were *related* to women's groups, livestock diseases, nutrition, child

labor in agriculture, poultry keeping, post-harvest technologies, non-GMO seed varieties, market gardening, and livestock breeds. More farmers from Mali than RCI perceived that the information and messages were *related* to women's group, to livestock breeds, and to nutrition. A larger number of the Ivorian farmers perceived that the information and messages were *extremely related* to child labor after cessation of the armed conflicts. However, more farmers from Mali viewed that the information and messages were *related* to poultry keeping, post-harvest technologies, non-GMO seed varieties, and livestock breeds than did the Ivorian farmers. The participants overall perceived that the information and messages provided by the media and other sources were *somewhat related* to non-GMO seeds. More farmers in Mali than in RCI held that view.

The participants overall perceived that information and messages provided by the media and other sources were *a little related* to fisheries and bee keeping. More Ivorian than Malian farmers perceived that the information and messages were *not related* to fisheries and bee keeping.

Based on the study's findings, the participants overall perceived that the information and messages about agriculture and food production were *very frequently* shared amongst peer farmers after cessation of the armed conflicts. Of the two groups, however, more Ivorian than Malian farmers held that view.

The participants overall perceived that the information and messages about agriculture and food occurred *frequently* on their radio stations after cessation of the armed conflicts. More farmers in Mali than in RCI expressed that perception.

The participants overall viewed that information and messages about agriculture and food production were broadcast *sometimes* on television or were shared *sometimes* by extension agents and NGO personnel after cessation of the armed conflicts. More Ivorian

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than Malian farmers perceived that information and messages about agriculture and food production were *never* broadcast on television. In addition, a larger number of Malian farmers than Ivorians perceived that information and messages were shared *very frequently* on television and by NGO personnel after cessation of the armed conflicts.

The participants overall perceived that information and messages about agriculture and food production *never* appeared on the Internet or in newspapers or were *never* shared on their mobile telephones after cessation of the armed conflicts in their countries. However, a substantial number of the Malian farmers perceived that information and messages were shared *very frequently* via their mobile telephones. In addition, more Malian than Ivorian farmers perceived that such information and messages about agriculture and food production *never* appeared in their newspapers after cessation of the armed conflicts.

Based on the study's findings, a large majority of the farmers overall preferred receiving agricultural-related information and messages in their local languages as much as possible after cessation of the armed conflicts. However, about one-third of the Ivorian farmers wished to receive such information and messages in French.

The participants overall perceived that information and messages about strategies for conflict resolution were provided *very frequently* by extension agents and similarly broadcast on their radio stations after cessation of the armed conflicts. More Ivorian than Malian farmers viewed that information and messages about strategies for conflict resolution were provided *very frequently* by their extension agents. The participants overall also perceived that the information and messages about strategies for conflict resolution occurred *frequently* on their television stations. In addition, the participants perceived that information and messages about strategies for conflict resolution were *sometimes* shared amongst peer farmers or by NGO personnel. More farmers in Mali than in RCI perceived that information and

messages about strategies for conflict resolution were shared *very frequently* by NGO personnel.

The participants overall perceived that information and messages about strategies for conflict resolution were *never* shared on the Internet, on their mobile telephones, or by newspapers after cessation of the armed conflicts. More Malian than Ivorian farmers held that view. However, more farmers in Mali than in RCI perceived that information and messages about strategies for conflict resolution were shared *very frequently* on their mobile telephones.

Research Question 3

How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?

The study participants were asked their perceptions regarding the frequency of receiving information and messages about the role of women in agriculture from the media and other sources after cessation of the armed conflicts (see Appendix C). The participants answered using a five-point response scale: 1 = *Never*, 2 = *Not very frequently*, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently*.

For the group overall, the item extension agents received a median of 5 (see Table 17) indicating the participants perceived that information and messages about women in agriculture were shared *very frequently* by their extension agents. A large majority (77.8%) of the Ivorian farmers viewed that information and messages about women in agriculture were shared *very frequently* by extension agents; however, less than one-third (29.4%) of the Malian farmers held that view.

The items television and radio received an overall group median of 4 (see Table 17) indicating the participants perceived that information and messages about women in agriculture were broadcast *frequently* on their television and radio stations after cessation of the armed conflicts. More farmers in RCI than in Mali perceived that information and messages about women in agriculture were *never* broadcast on their television and radio stations after cessation of the armed conflicts. Further, more farmers in Mali than in RCI perceived that information and messages about women in agriculture were broadcast *very frequently* on their television and radio stations.

The items peer farmers and NGO personnel received an overall group median of 3 (see Table 17) indicating the participants perceived that information and messages about women in agriculture were shared *sometimes* amongst peer farmers and *sometimes* provided by NGO personnel. More farmers in Mali than in RCI perceived that information and messages about women in agriculture were shared *very frequently* by NGO personnel (see Table 17).

The items Internet, mobile telephone, and newspaper received an overall group median of 1 (Table 17) indicating participants perceived that information and messages about women in agriculture were *never* shared on the Internet, via their mobile telephones, or in newspapers after cessation of the armed conflicts. However, more Ivorian farmers perceived that information and messages about women in agriculture *never* occurred on their mobile telephones.

The study participants were asked about their perceptions regarding the frequency of receiving information and messages about child labor in agriculture from the media and other sources after cessation of the armed conflicts (Appendix C). The participants answered using

a five-point response scale: 1 = *Never*, 2 = *Not very frequently*, 3 = *Sometimes*, 4 = *Frequently*, and 5 = *Very frequently*.

For the group overall, the item extension agents received a median of 5 (see Table 18) indicating the participants perceived that information and messages about child labor in agriculture were shared *very frequently* by their extension agents. Although a large majority (76.1%) of the Ivorian farmers perceived that such information and messages were shared *very frequently* by extension agents, only 26.7% of the Malian farmers held that view (see Table 18).

The items television and radio received an overall group median of 4 (see Table 18) indicating the participants perceived that information and messages about the issue of child labor in agriculture were broadcast *frequently* on their television and radio stations after cessation of the armed conflicts. However, more farmers in RCI than in Mali perceived that information and messages about the issue of child labor in agriculture were *never* broadcast on their radio stations after cessation of the armed conflicts (see Table 18).

The items peer farmers and NGO personnel received an overall group median of 3 (see Table 18) indicating the participants perceived that information and messages about child labor in agriculture were shared *sometimes* amongst peer farmers and by NGO personnel. More farmers in RCI than in Mali perceived that information and messages about child labor in agriculture were shared *very frequently* by peer farmers and NGO personnel after cessation of the armed conflicts (see Table 18).

The items Internet, mobile telephone, and newspaper received an overall group median of 1 (Table 18) indicating participants perceived that information and messages about child labor in agriculture were *never* shared on the Internet, via their mobile telephones, or in their newspapers after cessation of the armed conflicts. More Ivorian than Malian farmers

perceived that information and messages about child labor in agriculture were *never* shared via their mobile telephones. In addition, a larger number of farmers in Mali than in RCI perceived that information and messages about child labor in agriculture *never* appeared in their newspapers after cessation of the armed conflicts (see Table 18).

One of the six themes that emerged from the key informant interviews revealed the farmers' perceptions of what media and other sources of information should emphasize about issues regarding women, children, and youth after cessation of the armed conflicts.

Theme IV: The media needs to put more emphasis on issues regarding women, children, and youth

Almost all 10 of the key informants mentioned the important role the media and other sources of information should have played to promote the economic livelihood of women, children, and youth after cessation of the armed conflicts in their countries. Their perceptions were captured in several patterns and statements as illustrated by this quote from a Malian participant:

> Women play an important role in our community today; they do all kinds of small activities. The media should talk about their roles in our society. They should emphasize that women should have their place in education, agriculture, and anywhere they can bring their contributions to the society.

An Ivorian participant provided another example statement supporting this theme: "Women need education and information; radios, television, and newspapers can eduui je te cate them, [and] they can tell them what is right to do." As for the media's role regarding children and youth after cessation of the armed conflicts, an Ivorian farmer provided this view:

Child labor is a big issue here. Many farmers do not admit its existence. But it is

here. The radios must talk about it. Television should come and film the children

working on the farm. If everybody knows about this issue, it will end. I don't know

why they don't have programs about this issue, which compromise the future of

many children. Radio, television and other media should help us.

Conclusions

Based on the study's findings, the participants overall perceived that the information

and messages about women in agriculture were shared *very frequently* by their extension

agents. More farmers in RCI than in Mali held this view. The participants overall also

perceived that information and messages about women in agriculture were *frequently*

broadcast on their television and radio stations after cessation of the armed conflicts. More

farmers in RCI than in Mali perceived that information and messages about women in

agriculture were *never* broadcast on their television and radio stations. However, more

farmers in Mali perceived that information and messages about women in agriculture were

broadcast *very frequently* on their television and radio stations.

In addition, the participants overall perceived that information and messages about

women in agriculture were shared *sometimes* amongst peer farmers or provided *sometimes* by

NGO personnel. More farmers in Mali than in RCI perceived that information and messages

about women agriculture were shared *very frequently* by NGO personnel. The participants

overall perceived that information and messages about women in agriculture were *never*

shared on the Internet, on their mobile telephones, or in newspapers after cessation of the

armed conflicts. More Ivorian than Malian farmers held that view.

Based on the study's findings, the participants overall perceived that information and

messages about child labor in agriculture were *very frequently* shared by extension agents. Of

the two groups, more Ivorian than Malian farmers held that view. The participants overall perceived that the information and messages about child labor in agriculture were broadcast *very frequently* on their television and radio stations. However, more Ivorian than Malian farmers perceived that information and messages about child labor in agriculture were *never* broadcast on their radio stations.

The participants overall viewed that information and messages about child labor in agriculture were *sometimes* shared by peer farmers or by NGO personnel. More of the Malian farmers perceived such information and messages were *very frequently* shared by these sources. The participants overall perceived that information and messages about child labor were *never* shared on the Internet, on their mobile telephones, or in their newspapers. More Ivorian than Malian farmers held that view.

Research Question 4

How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist with their economic livelihood recovery after cessation of the armed conflicts in Mali and in RCI?

The study participants were asked if the information provided by the media and other sources helped them to resume their farming activities after cessation of the armed conflicts (see Appendix C). The participants answered one item using a five point-response scale: *1 = Definitely yes*, *2 = Somewhat yes, 3 = Uncertain/Not sure, 4 = A little,* and *5 = Not at all.* (For the purpose of analysis, the scale was recoded, *1 = Not at all . . . 5 = Definitely yes*. Accordingly, the "real limits" used to interpret the five-point response scale were 4.50 to 5.00 = *Definitely yes*, 3.50 to 4.49 = *Somewhat yes*, 2.50 to 3.49 = *Uncertain/Not sure*, 1.50 to 2.49 = *A little*, and 1.00 to 1.49 = *Not at all.*)

The overall group mean was 3.54 indicating the participants overall were *somewhat sure* the information provided by the media and other sources helped them to resume their farming activities after cessation of the armed conflicts (see Table 13). The Malian group mean (4.38) signaled they were also in the range of *somewhat sure* but more committed to that view than the group overall (see Table 13). The Ivorian group mean was 2.61 indicating they were *uncertain or not sure* the information provided by the media and other sources helped them to resume their farming activities after cessation of the armed conflicts (see Table 13).

In the qualitative portion of the study, the key informants gave voice to many ways in which the media and other sources could have helped them recover their economic livelihoods after cessation of the armed conflicts. A representative theme emerged regarding this research question.

Theme 3: Need for more media programs on agricultural issues after cessation of the armed conflicts

The 10 key informants had similar views on the role of the media and other sources of information in the recovery of their economic livelihoods after cessation of armed conflicts in the two countries. Two exemplar statements made by the informants follow. An Ivorian farmer posited:

> After the conflict, there were several land disputes here, many people lost their fields [land] because of the conflict. When they returned home they found that the fields were confiscated and used by other farmers. The media could help us solve this problem by reporting about it.

Further, a farmer from Mali stated:

Radios [i.e., spokespeople] can also talk to us about how to get access to loans. They should help us with marketing processes. They should also teach us about how to establish and manage a cereal bank or to deal with [the] hunger gap here [i.e., the period between the dry season and the new harvest season]. On television, they can also show us success stories, successful agricultural projects, to show us how these people have been successful.

Conclusions

Based on the study's quantitative findings, the participants overall were fairly sure or certain the information provided by the media and other sources assisted them in economic livelihood recovery, i.e., to resume their farming activities, after cessation of the armed conflicts in their countries. The Malian farmers were more certain than the Ivorian farmers.

Based on the study's qualitative findings, farmers from both countries perceived the media and other sources of information should have played more of a role in their economic livelihood recovery after cessation of the armed conflicts. To do this, the media could feature more programs focused on land disputes, conflict resolution, micro-lending, post-harvest management, and examples of success stories in farming intended to resonate with farmers struggling to recover during the aftermath of armed conflict.

Research Question 5

How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist in building community resilience after cessation of the armed conflicts in Mali and in RCI?

The participants were asked to indicate the degree to which they agreed that the media and other sources of information contributed to resilience building within their

communities after cessation of the armed conflicts; 23 items were posed (see Appendix C). The "real limits" used to interpret the five-point response scale were 1.00 to 1.49 = *Strongly disagree*, 1.50 to 2.49 = *Disagree*, 2.50 to 3.49 = *Uncertain/Not sure*, 3.50 to 4.49 = *Agree*, and 4.50 to 5.00 = *Strongly agree*.

The overall *Grand Mean* was 3.85 (see Table 20) indicating the participants agreed the media and other sources of information contributed to resilience building within their communities after cessation of the armed conflicts. For the group overall, the items "the media assisted my community to sustain itself," "the media made my community members more helpful," "the media made my community members work together," and "the media helped my community to build hope" received the highest ratings ($M \geq 4.14$). In other words, the participants agreed with those items. The item "the media assisted my community to adopt new practices" had the lowest mean (3.41) for the overall group indicating the participants were not sure about the media's role in regard to their communities adopting new practices. The participants overall did not *disagree* or *strongly disagree* with any of the 23 items (see Table 20).

In the case of Mali, the *Grand Mean* was 3.93 indicating the participants agreed that the media and other sources of information contributed to resilience building within their communities after cessation of the armed conflicts. In addition, five of the item means were in the range of *Agree*, including "the media assisted my community to sustain itself," "the media made my community members work together," "the media assisted my community to be more organized," "the media made my community members more helpful," and "the media built trust within my community" (see Table 20).

In the case of RCI, the *Grand Mean* was 3.75 indicating the participants agreed that the media and other sources of information contributed to resilience building within their

communities after cessation of the armed conflicts. Five of the item means were in the range of *Agree*, including "the media made my community members more helpful," "the media assisted my community to sustain itself," " the media helped my community to build hope," "the media made my community members work together," and "the media assisted my community to be more organized" (see Table 20).

The item "the media assisted my community to adopt new practices" had the lowest mean for both country groups (Mali, $M = 3.64$; RCI, $M = 3.14$; see Table 20). The Malian farmers *agreed* and the farmers in RCI were *not sure* about the contribution of the media and other sources of information to their communities adopting new practices after cessation of the armed conflicts in their countries.

Conclusions

Based on the study findings, the participants overall *agreed* that the media and other sources of information contributed to resilience building within their communities after cessation of the armed conflicts. In Mali and in RCI the participants *agreed* that the media assisted their communities to sustain themselves, made members of their communities work together, made members of their communities more helpful, and assisted their communities to be more organized. The Malian participants also *agreed* that the media and other sources assisted in building trust within their communities and the Ivorian farmers also *agreed* that the media and other sources helped their communities to build hope. Overall, the participants did not *disagree* or *strongly disagree* with any of the 23 items related to resilience building in their communities after cessation of the armed conflicts.

Research Question 6

What types of relationships existed between a) selected personal and professional characteristics of farmers, and b) between farmers' selected characteristics and their views on

the media's contribution to economic livelihood recovery and to resilience building in their communities after cessation of the armed conflicts in Mali and in RCI?

A phi correlation coefficient was calculated to determine the strengths of associations between binominal variables such as a participant's country of residence and gender. Cramer's *V* was computed to measure associations between dichotomous variables and categorical variables with three or more possible responses or ordinal variables with three or more responses.

Point biserial correlation coefficients were calculated between participants' ages, a continuous variable, and selected variables, e.g., gender, religion, and marital status. Point biserial correlations coefficients were also calculated to describe the relationships between participants' country of residence and their perceptions of how the information received from the media and other sources helped them resume their farming activities and build resilience within their communities after cessation of the armed conflicts.

No statistically significant association was found between a participant's country of residence and gender (see Table 22). The study involved more male than female participants and the female participants from Mali outnumbered those of RCI. No statistically significant association existed between a farmer's country of residence and their marital status (see Table 23). An overwhelming majority of farmers in both countries were married. No statistically significant association was found between a farmer's country of residence and their level of education (see Table 24). Very few farmers in either country held a high school degree, the equivalent, or more education.

A statistically significant association was found between a farmer's country of residence and their farming profession type (see Table 25). The farmers, i.e., staple and/or cash crop producers dominated both groups. The Malian group included more livestock

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producers and market gardeners. A statistically significant association was found between a farmer's country residence and their religious affiliation. A very large majority of the Malian farmers were Muslim; however, the Ivorian farmers were about evenly distributed between Islam and Christianity.

No statistically significant relationship existed between a participant's age and their gender, religious affiliation, and level of education (see Table 27). A negative, low, and statistically significant relationship was found between a participant's age and their marital status. The older participants were more likely to be married. A negative, low, and statistically significant relationship was found between a farmer's age and their farming profession type (see Table 27). The older farmers were more likely to be staple and/or cash crops producers. A negative, low, and statistically significant relationship was found between a participant's age and their country of residence (see Table 27). The Malian group included more older farmers than the Ivorian group.

No statistically significant relationship was found between a participant's age and their perception of how the information received from the media helped to resume farming activities after cessation of the armed conflicts (see Table 27). Similarly, no statistically significant relationship was found between a participant's age and their perception of how the information received from the media built resilience within communities after cessation of the armed conflicts (see Table 27).

A negative, substantial, and statistically significant relationship existed between a farmer's country of residence and their perception of how the information received from the media helped to resume farming activities after cessation of the armed conflicts (see Table 28). The Malian farmers were more likely to perceive the information received from the media and other sources of information was helpful. A negative, low, and statistically

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significant relationship was found between a farmer's country of residence and their perception of how the information received from the media helped build resilience within communities after cessation of the armed conflicts. The Malian farmers were more likely to perceive the information received from the media and other sources of information was helpful (see Table 28).

Table 30 presents a side-by-side comparison and contrast of the study's quantitative and qualitative findings (Creswell & Plano Clark, 2011; Li, Marquart, & Zercher, 2000; see Figure 7). In addition, convergences and divergences revealed by the comparison and contrast of the findings are highlighted.

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews

Research question 1	Survey questionnaire results $N = 201$	Convergences	Divergences	Key informant interviews $N = 10$
What were selected personal and professional characteristics of farmers who experienced armed conflicts in Mali and in RCI?	Male participants (82.1%) Female participants (21.0%) Less than a high school degree (93.3%) Married (90.8%) Not married (9.2%) Muslims (75.6%) Christian (21.8%) High school degree or equivalent (5.5%) Bachelor's or graduate degree (1.2%)	The participants for both portions of the study were very similar in regard to selected personal and professional characteristics.		Male (7) Female (3) Aged 32 to 66 Married (9) Divorced (1) Muslim (8) Christian (2) Less than a high school degree (8) High school degree or equivalent (2)

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 1	Survey questionnaire results	Convergences	Divergences	Key informant interviews
	$N = 201$			$N = 10$
What were selected personal and professional characteristics of farmers who experienced armed conflicts in Mali and in RCI?	Farmer (76.6%)	The participants for both portions of the study were very similar in regard to selected personal and professional characteristics.	The majority of the participants reported that they were not displaced during the times of armed conflict. However, a key informant stated: "For example, during the conflict many people left this town for safer places, and because of the armed conflict people lost their cattle. At the end of the conflict, and when people returned home, neither the farmers nor the cattle breeders received any information from the authorities or media."	Farmer (4)
	Livestock producer (7.1%)			Livestock producer (2)
	Fisheries (4.6%)			Fisheries (1)
	Poultry producer (2.5%)			Poultry producer (1)
	Market gardener (8.1%)			Market gardener (2)
	Not displaced (78.7%)			Not displaced (8)
	Internally displaced (20.8%)			Internally displaced (2)
	Externally displaced (0.5%)			Externally displaced (0)

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 2	Survey questionnaire results	Convergences	Divergences	Key informant interviews
	N = 201			*N* = 10
How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?	82.1% of the participants overall preferred receiving information and messages from the media and other sources in their local languages The participants overall were *extremely interested* in agriculture-related, weather forecasts, market news, and health and nutrition programs from the media and other sources (median = 5). The participants overall were *interested* in leisure, general news, and hygiene and sanitation programs (median = 4).	Both groups perceived the need for the media and other sources of information to provide this kind information in their local languages.		Theme V: The media needs to provide programming in the farmers' local languages All of the interviewees indicated that the media and other sources of information should use their local languages to inform or educate them about agriculture, food production, and natural resources.

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 2	Survey questionnaire results *N* = 201	Convergences	Divergences	Key informant interviews *N* = 10
How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?	The participants overall were *somewhat interested* in receiving media program about politics (median = 3). Almost none of the participants expressed an interest in receiving other media programs. The participants overall perceived that information and messages from the media and other sources were *extremely related* to weather forecasts, market news, plant diseases, farmer interest groups, land ownership, and natural resources (median = 5).	Participants overall perceived that the media were not interested enough in agriculture-related topics.	The participants overall recognized that some agriculture-related topics and issues were reported by the media such as weather forecasts, market news, plant diseases, farmer interest groups, land ownership, and natural resources. However, the key informants perceived the media reported less on topics about agriculture and rural development after cessation of the armed conflicts.	Theme III: Need for more media programs on agricultural issues after cessation of the armed conflicts Key informants perceived that the media could have helped them in many ways to recover their economic livelihoods and in a number of related areas.

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 2	Survey questionnaire results	Convergences	Divergences	Key informant interviews
	N = 201			*N* = 10
How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?	The participants overall perceived that the information and messages received were *related* to women's groups, livestock diseases, nutrition, child labor in agriculture, poultry keeping, post-harvest technologies, non-GMO seed varieties, market gardening, and livestock breeds (median = 4). The participants overall perceived that the information and messages were *somewhat related* to GMO seed varieties (median = 3). The participants overall perceived that the information and messages were less related to fisheries and bee keeping (median = 2).			

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 2	Survey questionnaire results *N* = 201	Convergences	Divergences	Key informant interviews *N* = 10
How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?	The participants overall perceived that information and messages about agriculture and food production were shared *very frequently* amongst peer farmers (median = 5). The participants overall perceived that information and messages about food and agriculture occurred *frequently* on their radio stations (media = 4). The participants overall perceived that information and messages about agriculture and food production were disseminated *sometimes* on television or by extension agents and NGO personnel (median = 3).		Even though a large majority of participants in the quantitative portion of the study perceived that the media disseminated different kinds of information related to agriculture, the key informants' views differed.	Theme 1: Media and other sources of information were not interested in agriculture-related issues or rural communities after cessation of the armed conflicts Key informants perceived that the media and other information sources did not assist them in recovering their economic livelihoods after cessation of the armed conflicts. Many of them insisted that the media did not report on agricultural issues.

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 2	Survey questionnaire results N = 201	Convergences	Divergences	Key informant interviews N = 10
How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?	The participants overall perceived that information and messages about agriculture and food production were shared *very frequently* amongst peer farmers (median = 5). The participants overall perceived that information and messages about food and agriculture were broadcast *frequently* on their radio stations (median = 4). The participants overall perceived that the information and messages about agriculture and food production were disseminated *sometimes* on television or by extension agents and NGO personnel (median = 3).	The qualitative findings almost mirrored the quantitative results as to the lack of, or the weakness of, extension services before and after conflicts in Mali and in RCI.	The key informants were much more critical than the overall survey group regarding the presence and work of extension and advisory services before and after the armed conflicts.	Theme II: Lack of extension or advisory services during and after the armed conflicts All 10 interviewees expressed the lack of extension or other forms of advisory services during and after armed conflicts in their areas.

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 2	Survey questionnaire results	Convergences	Divergences	Key informant interviews
	$N = 201$			$N = 10$
How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?	The participants overall perceived that information and messages about agriculture and food production were *never* shared on the Internet, via their mobile telephones, or in the newspapers (median = 1). The participants overall perceived that information and messages about strategies for conflict resolution were provided *very frequently* by extension agents and on their radio stations (median = 5). The participants overall perceived that information and messages about strategies for conflict resolution were shared *frequently* on their television stations (median = 4).			

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 2	Survey questionnaire results $N = 201$	Convergences	Divergences	Key informant interviews $N = 10$
How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?	The participants overall perceived that information and messages about strategies for conflict resolution were *sometimes* shared amongst peer farmers of by NGO personnel (median = 3). The participants overall perceived that information and messages about strategies for conflict resolution were *never* shared on the Internet, via their mobile telephones, or in their newspapers (median = 1).			

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 3	Survey questionnaire results	Convergences	Divergences	Key informant interviews
	N = 201			*N* = 10
How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?	The participants overall perceived that information and messages about women in agriculture were shared *very frequently* by their extension agents (median = 5). The participants overall perceived that information and messages about women in agriculture were broadcast *frequently* on their television and radio stations (median = 4). The participants overall perceived that information and messages about women in agriculture were shared *sometimes* amongst peer farmers or *sometimes* provided by NGO personnel (median = 3).	Except for extension agents, radio, and television, participants overall perceived that the media and other sources of information did not emphasize issues regarding women, children, and youth after cessation of the armed conflicts.		Theme IV: The media needs to put more emphasis on issues regarding women, children, and youth The interviewees perceived that the media and other sources of information should have had more programs focusing on issues affecting women as well as children and youth after cessation of the armed conflicts.

Table 30

Comparison and Contrast of Findings From the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 3	Survey questionnaire results	Convergences	Divergences	Key informant interviews
	$N = 201$			$N = 10$
How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?	The participants overall perceived that information and messages about women in agriculture were *never* shared on the Internet, on their mobile telephones, or in their newspapers (median = 1). The participants overall perceived that information and messages about child labor in agriculture were shared *very frequently* by their extension agents (median = 5). The participants overall perceived that information and messages about the issue of child labor in agriculture were broadcast *frequently* on their television and radio stations (median = 4).			

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 3	Survey questionnaire results *N* = 201	Convergences	Divergences	Key informant interviews *N* = 10
How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?	The participants overall perceived that information and messages about child labor in agriculture were shared *sometimes* amongst peer farmers and by NGO personnel (median = 3). The participants overall perceived that information and messages about child labor in agriculture were *never* shared on the Internet, via their mobile telephones, or in their newspapers (median = 1).	Both groups perceived the lack of enough coverage from the media and other information sources on the issue of child labor in agriculture after cessation of the armed conflicts, although the Ivorians less than the Malians.		"Child labor is a big issue here. Many farmers do not admit its existence. But it is here. The radios must talk about it. Television should come and film the children working on the farm. If everybody knows about this issue, it will end. I don't know why they don't have programs about this issue, which compromise the future of many children. Radio, television and other media should help us."

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informant Interviews (Continued)

Research question 4	Survey questionnaire results *N* = 201	Convergences	Divergences	Key informant interviews *N* = 10
How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist with their economic livelihood recovery after cessation of the armed conflicts in Mali and in RCI?	The participants overall were *somewhat sure* the information received from the media and other sources helped them to resume their farming activities after cessation of the armed conflicts (*M* = 3.54). (Of note, the Malian farmers [*M* = 4.38] were more sure than the Ivorians [*M* = 2.61].)		Even though the participants overall perceived that the information provided by the media and other sources of information helped them resume their farming activities, the key informants indicated that they had lost trust in the media.	Theme VI: Loss of trust in the media after cessation of the armed conflicts Several of the interviewees expressed their loss of trust in the media after cessation of the armed conflicts in their countries.

Table 30

Comparison and Contrast of Findings from the Study's Survey Questionnaire and Key Informants Interviews (Continued)

Research question 5	Survey questionnaire results $N = 201$	Convergences	Divergences	Key informant interviews $N = 10$
How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist in building community resilience after cessation of the armed conflicts in Mali and in RCI?	The participants overall *agreed* the media and other sources of information contributed to resilience building within their communities ($M = 3.85$).			

Discussion and Implications

<u>Research Question 1</u>

What were selected personal and professional characteristics of farmers who experienced armed conflicts in Mali and in RCI?

Some significant differences between the two countries appear when considering the participants' genders, religious affiliations, and farming professional types. This implies that media professionals, policymakers, donors, extension and advisory service professionals, and researchers should consider these differences when developing regional or national programs and projects targeting rural people who reside in the study's regions. For example, a rural development program targeting post-conflict regions of Mali should be very diversified and include all the types of farming professions in those regions.

The participants overall were mostly males. This is important to consider regarding the role of women in agriculture in Mali and in RCI. Even though farmers had an equal chance to participate in this study regardless of their gender, the study included significantly fewer women than men farmers. Does this mean that fewer women farmers resided in the study areas or were women not made accessible to the researcher? Or, could one argue that the societies, i.e., their cultural norms, in these regions do not permit women to express their views on social issues or interact freely with outsiders? If, indeed, women are key actors in food production, peacebuilding, and post-conflict reconstruction efforts in Sub-Saharan Africa (FAO, 2014; SIDA & UNESCO, 2003), their voices may not have been heard sufficiently in this study. According to SIDA & UNESCO (2003), women are often marginalized in post-conflict situations and their experience overlooked. Findings of this study, however unintentional, may support that position.

The religious distribution of the study's population, as derived from the two countries, is supported by data from the World Bank (2011) and the CIA (2014). The Malian participants were almost all Muslims. This finding implies that researchers should consider such a characteristic of the social system prior to conducting any research activities. On the other hand, the Ivorian group was more heterogeneous and included almost as many Christians as Muslims. This aspect of RCI's rural population also should be considered when doing future research. In terms of data collection, this difference could impact appropriateness of the dates for interviewing participants, i.e., the need to consider days of religious observance or religious holidays.

Some diversity of farming profession types was represented in the Malian group. But, overall, the participants mostly indicated they were food and/or staple crop producers. Whether enough diversity existed among other types of agriculture and food producers is questionable. Their views on the role of the media and other sources of information after cessation of the armed conflicts could be different than what was represented in this study

Research Question 2

How did farmers perceive the media and other information sources assisted them in recovering their economic livelihoods after cessation of the armed conflicts in Mali and in RCI, including strategies, programs, outlets (channels), and messages?

The implications discussed in this section are portrayed through the lens of the AKIS/RD (see Figure 3) model which is a guiding communication and information dissemination framework for farmers to effectively conduct their farming activities, receive innovations and new technologies derived from research, and thereby reduce food insecurity and improve their livelihoods (FAO & World Bank, 2000). This study found the necessity existed to use local languages to disseminate agriculture-related information and messages to farmers after cessation of armed conflicts in Mali and in RCI. This particular finding confirms the conclusions of studies

by Frohardt and Temin (2003) and Megwa (2009). Both studies insisted on the importance of using local languages in the media in Sub-Saharan Africa, especially in post-conflict countries. This also implies that the media systems in post-conflict nations should encourage the use of local languages by journalists and other communicators. However, a considerable number of farmers in RCI wished to receive information from the media in French. This might have resulted from the difference in literacy rate between the two countries (CIA, 2014). This finding should be considered by the media and other information providers when developing communications strategies targeting the farmers in RCI. They could develop programs in local languages and also make the programs available to farmers in French.

The study found that its participants were very interested in receiving a vast range of media programs, including agriculture-related, weather forecasts, market news, and health and nutrition programs. In addition, the study found that even though the participants received some diversity of media programs, they may have needed news and information on other agricultural topics to recover their economic livelihoods after cessation of the armed conflicts in their respective countries. The participants' views in this regard could be interpreted through the media effects theories. People are more often attentive to messages and information in which they are interested and only attend to messages that support or coincide with their own perceptions of information needs and interests (Katz & Lazarsfield, 1955).

Frohardt and Temin (2003) stated the role of the media in post-conflict situations is vital. The media could play a constructive and informative role by educating and raising awareness of rural communities through programs such as hygiene and sanitation, environmental protection, nutrition, and many other topics (Frohardt & Temin, 2003). This study found support for that. It is a fundamental role of the media to inform people about issues in a timely way. The agenda setting theorists maintained that the media should report on significant issues continuously to increase the importance of such topics in the minds of its audience (Severin & Tankard, 2001).

The study also found that more participants in Mali were interested in leisure programs. It is possible that this was related to the newness of the conflict in Mali versus RCI. Or, perhaps, media outlets in Mali usually offer more leisure programs than their counterparts in RCI? This implies that the media and other sources of information could use this framework, i.e., leisure programs, to convey messages to farmers. For example, radio stations could use their musical programs to share information of importance with women, as well as information on child labor, hygiene and sanitation, and many other topics. These findings are supported by Katz et al. (1973) categorization of needs regarding the use of the media, including *cognitive needs* (acquiring information, knowledge, and understanding), *affective needs* (strengthening credibility, confidence, stability, and status), and *tension needs* (escape and diversion). Leisure programs could be categorized as an affective need. The case of the Malian participants is also supported by *the need orientation* interest for a particular media program, as described by McCombs (1994).

The study participants perceived that after cessation of the armed conflicts, they received information and messages related to agriculture more often from their peer farmers, and sometimes from their radio or television stations, than from other sources. Some of the key informant participants even argued that the media were less interested in agricultural topics after cessation of the armed conflicts. Moreover, the key informant participants pointed out the deficiency or inexistence of agricultural extension or advisory services during and after the armed conflicts in their areas. Why, in countries where agriculture represents the backbone of the economy and engages more than 70% of their populations (UNDP, 2013), would the media under perform on such an important issue? Or, did the media and other sources of information have the capacity and training to provide such programs? What would have prevented the countries' national extension services from assisting these communities? Were security concerns a significant barrier to service delivery? Did they simply not have enough personnel and the means to accomplish this?

Further, the study found that the farmers perceived they never received information and messages about agriculture and food on the Internet, via their mobile telephones, or in their newspapers. In the case of Internet, was it due to its accessibility or availability? Was it related to the low level of education of the farmers or did the farmers have the knowledge and skills to use the Internet but the programs of interest were missing? What needs to be done to increase farmers' access to the Internet if that was the obstacle? What possibilities exist to establish community access centers to the Internet (Kanté et al., 2009), especially in the rural areas of Mali and RCI, and to include training for its potential users?

What should be made of the finding about farmers' views on their mobile telephones and receiving agriculture-related information and messages, especially considering that mobile telephones are widely owned by farmers in both countries. Each of the countries had at least two mobile telephone networks at the time of this study. However, the Malian farmers, much more than their Ivorian peers, recognized they had access to some information and messages related to agriculture and food production via their mobile telephones. That difference not withstanding, what prevented agricultural and food production messages and information from being shared via the farmers' mobile telephones? What needs to be done to share these types of information and messages via mobile telephones?

In a study conducted in Liberia, also a nation in West Africa, Best et al. (2010) found that the majority of people who experienced armed conflicts perceived mobile telephones were a way to be connected with the rest of the world and the telephones helped them to recover their economic livelihoods. Mobile telephones are a tremendous opportunity for information sharing in the developing world (Smith et al., 2010), therefore, policymakers, donors, extension or advisory services, and other stakeholders should encourage their use for the sharing of information. Strategies could be developed to share timely and relevant information with farmers via their

mobile telephones. In the case of Mali, the existing system could be assessed for improvement in the future and practices there may be useful to concerned stakeholders in RCI.

Regarding newspapers, it could be argued that considering the low literacy level of the farmers, they may not have been able to read the newspapers even when stories about agriculture appeared. Moreover, most of the newspapers are printed in the nations' capitals or in large cities far from the rural areas where the farmers lived. Another issue is that the purchasing power of the farmers may not have allowed them to subscribe to newspapers or purchase them on a regular basis. According to the World Bank (2013), about one-half of the Malians and Ivorians live below the poverty line (i.e., 1.25 US dollar per day). It may be a viable option to encourage farmers to subscribe as groups, e.g., farmer interest groups, to newspapers and have someone read relevant articles to them on a regular basis. Newspaper editors in Mali and in RCI could also consider ways to distribute their papers more readily in rural areas.

Information and messages about strategies for conflict resolution were very often shared by some media and information sources such as radio and extension agents. However, the media and other information sources could do more to reinforce peace and stability in the region. Schoemaker and Stremlau (2014) stressed the role media could play to promote peace and development. Moreover, Fortune and Bloh (2008) maintained that communication is one of the most useful tools to maintain peace and build trust in the aftermath of violent conflicts. They added that, during times of conflict, governments should develop strategies to inform communities about important issues through clear, focused, and targeted messages. Likewise, Tichenor et al. (1980) concluded that the media should be used as part of the mechanism for preserving stability and cohesion in a society.

Research Question 3

How did farmers perceive the media and other information sources addressed issues of economic livelihood recovery in regard to rural women, children, and youth affected by armed conflicts in Mali and in RCI?

In this study, the participants perceived that information and messages about women in agriculture were mostly shared by extension agents, television and radio, and sometimes amongst peer farmers. However, the perceptions differed by country. More Ivorian farmers viewed that such information was very frequently shared by extension agents and more Malian farmers perceived the news and information on these topics were mostly broadcast on their radio and television stations, or shared by extension agents. The occurrence of information and messages regarding women in agriculture in other media and information sources was low.

Information and messages related to women in agriculture are very relevant and deserve to be emphasized holistically by the media and other sources of information targeting rural communities. A study by IWMF (2008) in Mali, Uganda, and Zambia revealed that the African media coverage is profoundly disconnected from agriculture and women in the sector.

Extension or advisory services, radio, and television were indicated as the media and information sources that most frequently reported on or shared information and messages about child labor in agriculture after cessation of the armed conflicts. In general, such information and messages were more disseminated in RCI than in Mali. This may be related to the pernicious issue of child labor in the production of cocoa in RCI (Maiga, Edwards, & Cartmell, 2010). Media coverage has been done about RCI regarding that issue. This may have caused the media and other information sources to provide extensive coverage and information about the issue to an extent that the farmers from RCI had been sensitized.

How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist with their economic livelihood recovery after cessation of the armed conflicts in Mali and in RCI?

This study found that the farmers overall viewed the information and messages provided by the media and other sources contributed to their economic livelihood recovery after cessation of the armed conflicts. Even though the participants were positive in their views, the study findings showed several gaps in the media's role in assisting farmers who experienced armed conflicts. In addition, the study found that some of the key informant participants had lost trust in their local media. Why did that happen? Did the local media serve as a propaganda tool during the armed conflicts? Were the media used to broadcast unpopular and divisive messages prior to, during, or after the armed conflicts? Were the media programs more traumatizing than helpful to the farmers?

The media, as the *fourth estate* or *watchdog* of a society, should fully but neutrally play its role in post-conflict situations. According to Mogekwu (2009), the media could be useful in educating local people and increase their understanding of, participation in, and accountability for the decision-making process regarding their community's welfare. The media could also reinforce the efforts of local people to hold their leaders more accountable (Mogekwu, 2009). In addition, the AKIS/RD model (FAO & World Bank, 2000) encourages the use of the media to convey accurate information to rural communities for increasing citizens' motivation to conduct farming enterprises and recover their economic livelihoods after the cessation of armed conflict. The model is an effective tool to explain the effectiveness of the media and other sources of information in post-conflict situations. The media professionals and other information providers in Mali and in RCI may need additional training about media ethics and how to convey

information in neutral and unbiased ways. Moreover, the media professionals and other communicators, i.e., extension agents and NGO personnel, may also need training about trauma management and how to communicate with people who experience armed conflicts. Psycho-social trauma was included as one of the four important issues that should be addressed when assisting populations who experienced armed conflicts in recovering their economic livelihoods and resisting future shocks (UNDP, 2010).

Research Question 5

How did farmers' perceptions converge or differ regarding the media's role in disseminating news and information to assist in building community resilience after cessation of the armed conflicts in Mali and in RCI?

The farmers overall affirmed that the information and messages they received from the media and other sources of information assisted in building community resilience after the armed conflicts. However, the Malians were more positive. What was the reason for this difference in perception between farmers in Mali and in RCI? Was it due to the difference in the recency of armed conflict in the two countries, i.e., Mali's experience was somewhat "fresher," or due to the nature of the armed conflicts. In Mali, the armed conflict involved only the northern regions; whereas, in RCI the armed conflict was nationwide. What about differences in the countries' press systems? Mali, for example, has more local radio stations than RCI. The media's impact could be tremendous in the building (or rebuilding) of a community's resilience after the cessation of armed conflicts (Fortune & Bloh, 2008), especially as an information source during the process of reconstruction and community renewal. The World Bank (2013) viewed the media, including traditional and new sources of information, as essential in assisting people who are living through conflict or who had recently experienced it. Strategic communication plans in post-conflict reconstruction can have many positive outcomes for the people who experienced armed

conflict (Fortune & Bloh, 2008). For example, such plans promote effective management of citizens' expectations, develop their sense of ownership in the reconstruction processes, broaden community constituency, strengthen transparency, build credibility of, and confidence in, the government, and improve the quality and coordination of information (Fortune & Bloh, 2008).

Research Question 6

What types of relationships existed between a) selected personal and professional characteristics of farmers, and b) between farmers' selected characteristics and their views on the media's contribution to economic livelihood recovery and to resilience building in their communities after cessation of the armed conflicts in Mali and in RCI?

The Malian group included a larger number of older farmers. Does Mali have fewer young farmers or were they less accessible – maybe even still displaced – after cessation of the armed conflicts? Or were the Malian young farmers deployed in the armed forces or in the rebel forces during the time of the study? The voices of young farmers also need to be heard. Their perceptions of the media's contribution to economic livelihood recovery, as well as that of other information providers, need to be known to inform future interventions and support of recovery programs by the media after cessation of the armed conflicts. Most of the farmers who participated in this study were older and were food staple and/or cash crop producers. A more diverse array of farmer voices may have led to different results.

A significant relationship existed between a farmer's country of residence and their perceptions of how the information received from the media helped to resume farming activities after cessation of the armed conflicts, i.e., more Malian farmers perceived the media had assisted them after cessation of the armed conflicts. Lessons from Mali's experience in this regard may be of use to media practitioners in RCI and other nations that have experienced armed conflicts.

Bandura (2001), through his *social cognitive theory of the media*, argued that the best ways to inform, influence, and change people's behavior is the media, e.g., through news and information programming and education programs. This theory supports the participants' perceptions in regard to the media's contribution to community resilience building in Mali and in RCI after cessation of the armed conflicts.

Contribution to Theory

Relevant literature informed the researcher at the beginning of this study about the lack of a comprehensive theoretical framework of post-conflict communication and communication for peace (Hoffman, 2014). Moreover, several media theories were used as a theoretical/conceptual framework to guide the study, including the agenda setting theory, the use of and gratification model, and the social cognitive theory of mass communications (Bandura, 2001; Katz, 1959; Severin & Tankard, 2001). In addition, to ensure more understanding of the phenomenon and to support the study's implications and recommendations, the researcher also used the AKIS/RD model (FAO & World Bank, 2000). This study provided some application of various media theories and the AKIS/RD model in understanding and interpreting the perceptions of Malian and Ivorian farmers who experienced armed conflicts in regard to how the media and other sources of information assisted them in recovering their economic livelihoods.

Recommendations

Based on the findings of this study, 12 recommendations for policy and practice are offered:

- Results of this study should be shared with relevant stakeholders groups in Mali and in RCI.

- The media and other sources of information should develop news and informational programs focusing on agriculture and food production, natural resources, and environmental issues targeting farmers who experienced armed conflicts in their local languages, and also the French language in the case of RCI.

- The media and other sources of information should employ and train individuals who could deliver news, information, and messages to farmers in their local languages.

- The media and other information sources should develop and extend their programs to a variety of topics, including agriculture and food production, natural resources, gender issues, child labor in agriculture, hygiene and sanitation, and many other topics the target audience considers relevant. Developing media programs about topics that focus on communities' information needs and interests after the cessation of armed conflict could significantly support opportunities to recover and build more resilient livelihoods (Christoplos, Longley, & Slaymaker, 2004; Ringer, 2014).

- The media and other information sources should use traditional (local) communication tools, such as local public announcers, plays, local artists, and peer advisory approaches, to disseminate messages and information to farmers who experienced armed conflicts, especially in regard to their economic livelihood recovery efforts. Kanté et al. (2009) also found that rural citizens in Mali preferred interpersonal communication in regard to issues impacting their communities.

- Media professionals and other information sources should develop more strategies for using mobile telephones to disseminate information and messages to farmers who experienced armed conflicts.

- Governments and donors should consider strategies to make radio and television devices more available to farmers, especially to women farmers after the cessation of armed conflicts, e.g., distribute the devices for free or sponsor the costs.

- If the Internet is to be an important information portal for agricultural and food production, governments, NGOs, and other interested stakeholders should promote and establish Internet access centers for rural communities in Mali and in RCI. The requisite education and training, as well as related technical assistance, should accompany that effort. The lessons learned from the CLICs' initiative in Mali could be applied, i.e., providing resources, encouraging their adoption by rural citizens, and developing appropriate applications for their use (Kanté et al., 2009).

- Extension agents should be encouraged to serve in post-conflict areas in Mali and in RCI. However, their security needs must be addressed as well as transportation and other logistics supporting service delivery.

- The governments of Mali and RCI and their development partners should develop initiatives to promote functional literary and numeracy targeting their rural citizens, particularly those who experienced armed conflicts, to facilitate their access to traditional sources of information and to new media.

- Media professionals, extension agents, and NGO personnel who deal with farmers after the cessation of armed conflicts should be trained about media ethics, trauma mitigation practices, and crisis communication strategies. Such training could facilitate building trust in and reliance on *outsiders* who conduct post-conflict reconstruction and recovery

programs in rural communities of developing countries that experienced armed conflicts (Ringer, 2014).

- The governments of Mali and RCI should develop holistic communication plans targeting farmers and other rural citizens who experience armed conflicts in their countries.

Based on the findings of the study, nine recommendations for additional research are offered:

- Additional research should be conducted about the perceptions of media professionals, extension agents, NGO personnel, and other stakeholders regarding their roles in contributing to the economic recovery of farmers after the cessation of armed conflict.

- More studies should to be conducted about how people perceive their economic recovery after experiencing armed conflicts, especially the views of agriculturists in rural areas, including traditionally marginalized groups such as women, children, and youth.

- For future research in Mali and in RCI about post-conflict issues, researchers should implement strategies for increasing the participation of women and young farmers in their studies, and also include a variety of farming profession types.

- More mixed methods studies should be conducted on the phenomenon of post-conflict, especially in regard to rural populations and aspects of economic livelihood recovery that may be unique to agriculturists.

- Future studies on the phenomenon of post-conflict should include sampling and instrumentation procedures that may account for differences, e.g., attributes, factors, or results, associated with how recent or temporally distant the armed conflict was to the time of the investigation.

- Based on the study's conclusions, more research should be conducted about the perceptions of media professionals and other information providers regarding the contribution of the media to community resilience building after the cessation of armed conflict, especially in the agrarian societies as found in many developing countries.

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- Future investigations should be conducted about the contribution of the media and other sources of information to the economic livelihood growth of agriculturists during times of stability, especially focusing on the overall media programming and the services provided by other information sources during times of peace.

- Comparative studies should be conducted about the pre and post armed conflict attitudes of agrarian societies toward the media and other sources of information and how they perceive the media could be an effective supporter of their economic livelihoods during times of peace and after the cessation of armed conflict. Most similar systems design (MSSD) or most different systems design (MDSD) (Anckar, 2008) methodologies may be useful in this regard. Such analysis would enable the drawing of *a comparative picture* of news and information delivery during periods of conflict and in times of peace and stability. Moreover, in such comparative studies, the researchers could also use multi-level techniques (Anckar, 2008) to compare the magnitude of armed conflicts against agriculturists' perceived media and information needs when recovering their economic livelihoods and attempting to stabilize and reconstruct their communities.

- A comprehensive content analysis of the focal areas of media reporting and programming should be conducted in Sub-Saharan Africa, especially in Mali and in RCI.

REFERENCES

African Development Bank [ABD]. (2013). Open data for Côte d'Ivoire. Author. Retrieved from
http://cotedivoire.opendataforafrica.org

Aguinaldo, J. P. (2004). Rethinking validity in qualitative research from social constructionist
perspective: From "Is this valid research?" to "What is this research valid for?" *The
Qualitative Report, 9*(1), 127-136. Retrieved from http://www.nova.edu/ssss/QR/QR9-
1/aguinaldo.pdf

Akindes, F. A. (2004). *The roots of the military-political crises in Côte d'Ivoire.* Goteborg,
Sweden: Elanders Infologistics.

Akresh, R., & de Walque, D. (2008). Armed conflict and schooling: Evidence from the 1994
Rwanda genocide. IZA discussion papers 3516. Institute for the Study of Labor (IZA),
HiCN Working Papers, 47. Retrieved from
https://www.wdronline.worldbank.org/bitstream/handle/10986/6646/WPS4606.txt?seque
nce=2

Anckar, C. (2008). On the applicability of the most similar systems design and the most different
systems design in comparative research. *International Journal of Social Research
Methodology, 11*(5), 389-401. doi:10.1080/13645570701401552

Apuuli, K. P. (2012). The African Union's notion of 'African solutions to African problems' and the crises in Côte d'Ivoire (2010-2011) and Libya (2011). *African Journal on Conflict Resolution, 12*(2), 135-160. Retrieved from http://www.ajol.info/index.php/ajcr/article/view/83274

Arnim, L. (2005). Horizontal inequalities and violent group mobilization in Côte d'Ivoire. *Oxford Development Studies, 33*(1). doi:10.1080/13600810500099634

Ary, D., Jacobs, L. C., Sorensen, C., & Walker, D. A. (2014). *Introduction to research in education* (9th ed.) Belmont, CA: Wadsworth Cengage Learning.

Azam, J. P. (2001). The redistributive state and conflicts in Africa. *Journal of Peace Research, 38*(4), 429-444. Retrieved from http://www.csae.ox.ac.uk/workingpapers/pdfs/2001-03text.pdf

Badmus, I. A. (2009). Explaining women's roles in the West African tragic triplet: Sierra Leone, Liberia, and Côte d'Ivoire in comparative perspective. *Journal of Alternative Perspectives in the Social Sciences,1*(3), 808-839. Retrieved from http://www.japss.org/upload/15._Badmusarticle.pdf

Bamberger, M., Rugh, J., & Mabry, L. (2012). *Real world evaluation: Working under budget, time, data, and political constraints* (2nd ed.). Washington, DC: Sage Publications Inc.

Beaumont, P. (2011, February 25). The truth about Twitter, Facebook and the uprisings in the Arab world. *The Guardian.* Retrieved from www.guardian.co.uk/world/2011/feb/25/twitter- facebook-uprisings-arab-libya

Bellamy, A. J., & Williams, P. D. (2011). The new politics of protection? Côte d'Ivoire, Libya and the responsibility to protect. *International Affairs, 87*(4), 825-850. Retrieved from http://onlinelibrary.wiley.com/store/10.1111/j.1468-2346.2011.01006.x/asset/j.1468-

2346.2011.01006.x.pdf?v=1&t=htlvow91&s=695054c47b8fb62d8d572fc4c0fe722e942ff
1c1

Best, M. L., Smyth, T. N., Etherton, J., &Wornyo, E. (2010). Uses of mobile phones in post-
conflict Liberia. *Information Technologies and International Development, 6*(2), 91-108.
Retrieved from http://itidjournal.org/itid/article/viewFile/522/230

Berelson, B. (1959). The state of communication research. *Public Opinion Quarterly, 23*, 1-6.
doi:10.1086/266840

Bloom, D. E, & Sachs, J. D. (1998). Geography, demography, and economic growth in Africa.
Brookings Papers on Economic Activity, 2, 207-295. doi:10.2307/2534695

Boone, H. N., & Boone, D. A. (2012). Analyzing Likert data. *Journal of Extension, 50*(2),
2TOT2. Available at: http://www.joe.org/joe/2012april/tt2.php

Bratiae, V. (2006). Media effects during violent conflict: Evaluating media contributions to peace
building. *Conflict & Communication Online, 5*(1). Retrieved from
http://www.cco.regener-online.de/2006_1/pdf_2006-1/bratic.pdfBrinkman, H. J., &
Hendrix, C. S. (2011). Food insecurity and violent conflict: Causes, consequences, and
addressing the challenges. Word Food Programme, Occasional Working Paper #24.
Retrieved from http://ucanr.edu/blogs/food2025/blogfiles/14415.pdf

Campbell, D. T. (1955). The informant in quantitative research. *American Journal of Sociology,
60*, 339-342. Retrieved from
http://www.jstor.org/stable/2772026?seq=1#page_scan_tab_contents

Cartmell, D. D., Edwards, M. C., Sitton, S., Blackwell, C., Hynes, J. W., & Irani, T. (2008). An
agrarian society's developing press system: Malian journalist's views on media, ethics,
and democracy. *Proceedings of the 24th annual meeting of the Association for*

International Agricultural and Extension Education, 83-92. EARTH University, Costa Rica. Retrieved from https://aiaee.org/index.php/proceedings/36-2008-earth-university-costa-rica/720-an-agrarian-societys-developing-press-system-malian-journalists-views-on-media-ethics-and-democ

Cascio, J. (2009). Resilience in the face of crisis: Why the future will be flexible. Fastcompany. Retrieved from http://www.fastcompany.com/1257825/resilience-face-crisis-why-future-will-be-flexible

Central Intelligence Agency [CIA]. (2014). The world factbook: Africa. Author. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ml.html

Chamarbagwala, R., & Moran, H. E. (2011). The human capital consequences of civil war: Evidence from Guatemala. *Journal of Development Economics 94* (1), 41-61. Retrieved from http://www.sciencedirect.com/science/article/pii/S0304387810000076

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage Publications.

Chauvau, J. P., & Richards, P. (2008). West African insurgencies in agrarian perspective: Cote d' Ivoire and Sierra Leone compared. *Journal of Agrarian Change, 8*(4), 515-552. doi: 10.1111/j.1471-0366.2008.00179.

Chirot, D. (2006). The Debacle in Côte d'Ivoire. *Journal of Democracy, 17* (2), 63-77. doi: 10.1353/jod.2006.0024

Christoplos, I., Longley, C., & Slaymaker, T. (2006). *The changing roles of agricultural rehabilitation: Linking relief, development, and support to rural livelihoods*. Report of the Humanitarian Policy Group. London, United Kingdom: Overseas Development Institute.

Clason, D. L., & Dormody, T. J. (1994). Analyzing data measured by individual Likert-type items. *Journal of Agricultural Education, 35*(4), 31-35. doi:10.5032/jae.1994.04031

Colletta, N. J., Kostner, M., & Wiederhofer, I. (1996). *The transition from war to peace in Sub-Saharan Africa.* Washington, DC: The World Bank. Retrieved from http://wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1996/05/01/000009265_3961214180518/Rendered/PDF/multi_page.pdf

Collier, P. (2007). *The bottom billion: Why the poorest countries are failing and what can be done about it*. New York, NY: Oxford University Press.

Collier, P., Hoeffler, A., & Rohner, D. (2008). Beyond greed and grievance: Feasibility and civil war. *Oxford Economic Papers, 61*(2009), 1-27. doi:10.1093/oep/gpn029

Coser, L. (1956). *The functions of social conflict*. New York, NY: Free Press.

Creswell, J. W. (1994). *Research design: qualitative and quantitative approaches*. Thousand Oaks, CA: SAGE Publications.

Creswell, J. W. (2011). *Research design: qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Creswell, J. W. (2012). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: SAGE Publications**.**

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Cuesta, J., & Murshed, M. (2008). The micro-foundations of social contracts, civil conflicts and international peace-making. Microcon Research Working Paper 8. Retrieved from http://www.microconflict.eu/publications/RWP8_JC_MM.pdf

Davis, C. (2009, May). Agriculture and climate change: An agenda for negotiation in

    Copenhagen: The important role of extension systems. Retrieved from

    http://www.ifpri.org/sites/default/files/publications/focus16_11.pdf

Davis, J. A. (1971). *Elementary analyses*. Englewood Cliff, NJ: Prentice-Hall.

Deacon, D., Bryman, A., & Fenton, N. (1998). Collision or collusion? A discussion and a case

    study of the unplanned triangulation of quantitative and qualitative research methods.

    International Journal of Social Research Methodology, *1*(1), 47–63. Retrieved from

    http://www.tandfonline.com/doi/abs/10.1080/13645579.1998.10846862#.

    VZ3FTFypXhA

de Walque, D. (2004). The long-term legacy of the Khmer Rouge period in Cambodia, Policy

    Research Working Paper Series 3446, The World Bank. Retrieved from

    http://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-3446

Devon, D. B. (2013). The crisis in Mali: A historical perspective on the Tuareg people. Global

    Research. Retrieved from http://www.globalresearch.ca/the-crisis-in-mali-a-historical-

    perspective-on-the-tuareg-people/5321407?print=1

Djehouri, A. (2007). *La Guerre en Côte d'Ivoire*. Paris, France: Harmattan.

Doolittle, P. E., & Camp, W. G. (1999). Constructivism: The career and technical education

    perspective. *Journal of Vocational and Technical Education, 16*(1). Retrieved from

    hhtp://scholar.lib.vt.edu/ejournals/JVTE/v16n1/Doolittle.html

Eriksson, M., Wallensteen, P., & Sollenberg, M. (2003). Armed conflict, 1989–2002. *Journal of

    Peace Research, 40*(5), 593–607. Retrieved from

    http://jpr.sagepub.com/content/40/5/593.abstract

Francis, D. J. (2013). The regional impact of the armed conflict and French intervention in Mali. Norwegian Peacebuilding Resource Centre. Retrieved from http://www.peacebuilding.no/var/ezflow_site/storage/original/application/f18726c3338e39049bd4d554d4a22c36.pdf

Field, A. (2013). *Discovering statistics using IBM SPSS Statistics* (4th ed.). Thousand Oaks, CA: Sage publications Inc.

Food and Agriculture Organization (FAO), & The World Bank. (2000). *The Agricultural Knowledge and Information Systems for Rural Development: Strategic vision and guiding principles*. Authors. Retrieved from http://siteresources.worldbank.org /INTARD/8258261111044795683/20424542/vision.pdf

Fortune, F., & Bloh, O. (2008). Strategic communication: The heart of post-conflict processes. *Conflict Trends*, 17-24. Retrieved from http://www.gsdrc.org/go/display&type=Document&id=3756

Freedom House. (2014). Côte d'Ivoire: Freedom of the press 2014. Author. Retrieved from https://freedomhouse.org/report/freedom-press/2014/c-te-divoire#.VZsiDlypWTA

Gee, J. P. (2005). *An introduction to discourse analysis: Theory and methods* (2nd ed.). New York, NY: Routledge.

Gilboa, E. (2007). Media and international conflict: A multidisciplinary approach. *Journal of Dispute Resolution*, *1*, 229-232. Retrieved from http://scholarship.law.missouri.edu/cgi/viewcontent.cgi?article=1533&context=jdr

Gourdin, P. (2012, September 23). Géopolitique du Mali: Un etat failli? *La Revue Géopolitique*. Retrieved from http://www. diploweb.com/Geopolitique-du-Mali-un-Etat.html

Green, S. B., Salkind, N. J., & Akey, T. M. (1997). *Using SPSS for windows: Analyzing and understanding data*. Upper Saddle River, NJ: Prentice Hall, Inc.

Greene, J., Benjamin, L., & Goodyear, L. (2001). The merits of mixing methods in evaluation. *Evaluation, 7*(1), 25-44. Retrieved from http://evi.sagepub.com/content/7/1/25.abstract

Gubrium, E., & Koro-Ljungberg, M. (2005). Contending with border making in the social constructivist interview. *Qualitative Inquiry, 11*(5), 689-715. doi: 10.1177/1077800405278776

Gyimah-Brempong, K., & Corley, M. E. (2005). Civil wars and economic growth in Sub-Saharan Africa. *Journal of African Economies 14*, 270– 311. doi:10.1093/jae/eji004

Harris, G. (2011). Ministries of peacebuilding in sub-Saharan Africa: Rationale, functions and establishment. *African Security Review, 20*(1), 122-133. doi:10.1080/10246029.2011.561024

Herzog, H. (1944). Motivations and gratifications of daily serial listeners. In W. Schramm (Ed.). *The process and effects of mass communication*, pp. 50-55. Urbana, IL: University of Illinois Press.

Hieber, L. (2001). *Lifeline media: Reaching populations in crisis: A guide to developing media projects in conflict situations*. Media Action International, Geneva, Switzerland. Retrieved from http://www.unisdr.org/files/636_10303.pdf

Hoffmann, J. (2014). Conceptualizing 'communication for peace. *Peacebuilding, 2*(1), 100-117. doi:10.1080/21647259.2013.866461

Howell, D. C. (1997). *Statistical methods for psychology* (4th ed.). Belmont, CA: Duxbury.

Human Security Centre. (2004). *Deadly connections: The war/disease nexus*. Workshop Report 22-23, Vancouver, Canada. Retrieved from http://www.hsrgroup.org/docs/Publications/Additional-Publications/Human-Security-ReportProject-DeadlyConnections-War-Disease-Nexus.pdf

infoasaid. (2011). Côte d'Ivoire: Media and telecoms landscape guide. Author. Retrieved from http://www.cdacnetwork.org/contentAsset/raw-data/32bdfaf2-f912-4b50-a781-49baf8080363/attachedFile

Internal Displacement Monitoring Centre (2014). Internal Displacement: Global Overview of Trends and Developments in 2014. Author. Retrieved from http://www.internal-displacement.org/publications/2014/global-overview-2014-people-internally-displaced-by-conflict-and-violence/

International Crisis Group. (2014). *Mali: Reform or relapse*. Africa report #210. Author. Retrieved from http://www.crisisgroup.org/en/regions/africa/west-africa/mali/210-mali-reform-or-relapse.aspx

International Food Policy Research Institute [IFPRI]. (2014). Building resilience for food and nutrition security. IFPRI 2020 Conference, Addis Ababa, Ethiopia. Author. Retrieved from http://www.ifpri.org/topic/resilience

International Media Support (IMS), Media Foundation West Africa, & Panos West Africa (2013). Media on Mali divided by conflict. Author. Retrieved from http://www.mediasupport.org/wp-content/uploads/2013/02/media-in-mali-divided-by-conflict-2013-ims2.pdf

International Women's Media Foundation (IWMF). (2009). Sowing the seeds. Author. Retrieved from www.iwmf.org/categorydetail.aspx?c=womenag

Kanté, A., Dunkel, F., Williams, A., Magro, S., Traore, H., & Camara, A. (2009*).*
Communicating agricultural and health-related information in low literacy communities:
A case of villagers served by the Bougoula Commune in Mali. *Paper presented at the
25th Annual Meeting of the Association for International Agricultural and Extension
Education (AIAEE), San Juan, Puerto Rico*. Retrieved from
https://aiaee.org/index.php/proceedings/37-2009-san-juan-puerto-rico/632-
communicating-agricultural-and-health-related-information-in-low-literacy-communities

Katz, R., & Lazarsfeld P. F. (1955). *Personal influence: The part played by people in the flow of
mass communications*. Glencoe, IL: Free Press.

Katz, R., & Koutroumpis, P. (2013). Assessment of the economic impact of telecommunications
in Mali. Telecom Advisory Services, LLC, New York, NY. Retrieved from
http://www.teleadvs.com/wpcontent/uploads/
THE_ECONOMIC_IMPACT_OF_COMMUNICATIONS_IN_MALI_final_version.pdf

Kimenyi, M., Adibe, J., Djire, M., Jirgi, A. J., Kergna, A., Deressa, T. T., . . . Westbury, A.
(2014). The impact of conflict and political instability on agricultural investments in Mali
and Nigeria. Africa Growth Initiative, working paper 17. Retrieved from
http://www.brookings.edu/research/papers/2014/07/conflict-political-instability-
agricultural-investments-mali-nigeria

Kondylis, F. (2008). Conflict displacement and labor market outcomes in post-war Bosnia &
Herzegovina. HiCN Working Paper 45, Households in Conflict Network. Retrieved from
www.hicn.org

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research* (4th ed.). Thousand
Oaks, CA: Sage Publications.

Kumar, K. (2006). International assistance to promote independent media in transition and post-conflict societies. *Democratization, 13*(4), 652-667. doi:10.1080/13510340600791939

Laplante, L. J., & Phenicie, K. (2009). Mediating post-conflict dialogue: The media's role in transitional justice processes. *Maquette Law Review, 93*(1), 251-283. Retrieved from http://scholarship.law.marquette.edu/mulr/vol93/iss1/16/

Lazarsfeld, P. F., Berelson, B.R., & Gaudet, H. (1948). *The people's choice*. New York, NY: Columbia University Press.

Li, S., Marquart, J. M., & Zercher, C. (2000). Conceptual issues and analytical strategies in mixed-methods studies of preschool inclusion. *Journal of Early Intervention, 23*(2), 116-132. Retrieved from http://eric.ed.gov/?id=EJ609762

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

Lippman, W. (1922). *Public opinion*. New York, NY: Macmillan.

Longley, C., Christoplos, I., & Slaymaker, T. (2006). *Agricultural rehabilitation: Mapping the linkages between humanitarian relief, social protection and development*. HPG Report 22, London, England: Overseas Development Institute. Retrieved from www.odi.org.uk/papers/hpgbrief23.pdf

Maiga, A. A., Edwards, M. C., & Cartmell, D. D. (2010). Child trafficking in agriculture: The exploitation of children as workers in cocoa production in West Africa. *Proceedings of the 26th annual meeting of Association for International Agricultural and Extension Education (AIAEE),* 88-89. Retrieved from https://www.aiaee.org/attachments/article/549/compiled2010posters.pdf

Maiga, A. A., Ringer, J., & Edwards, M. C. (2015). Using field-based research experiences to mentor and empower aspiring investigators to develop local research capacity. *Proceedings of the 31st Annual Conference of the Association for Agricultural and Extension Education*.

Marcelle G. (2000). Gender, justice and ICTs. Retrieved from http://www.un.org/womenwatch/daw/csw/marcelle.htm

Marshall, M. N. (1996). The key informant techniques. *Family Practice, 13*, 92-97. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8671109

Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2*, 425-444. Retrieved from http://www.researchgate.net/publication/231892870_Resilience_and_development_Contributions_from_the_study_of_children_who_overcome_adversity

Matijasevic, T. M., Velasquez, L., Villada, C., & Ramirez, M. (2007). *Moving out of poverty: Understanding freedom, growth and democracy from the bottom-up. National synthesis report, Colombia, Centro de Estudios Regionales Cafeteros y Empresariales*, Manizales, Colombia. Retrieved from http://siteresources.worldbank.org/INTMOVOUTPOV/Resources/2104215-1187710751691/Colombia_synthesis.pdf

McCombs, M. (1994). News influence on our world. In J. Bryant and D. Zillmann (Eds.), *Media effects*: *Advances in the theory and research* (pp. 1-17). Hillsdale, NJ: Lawrence Erlbaum Associates.

Megwa, E. R. (2009). Agenda-setting, African media and conflict. In T. M. Richard, C. Onwumechili, & B. A. Musa (Eds.), *Communication era of global conflicts: Principles and strategies for 21st century Africa* (pp. 25-48). Lanham, MD: University Press America, Inc.

Melber, H. (2011). Namibia: A trust betrayed – again? *Review of African Political Economy, 38*(127), 103-111. doi:10.1080/03056244.2011.552686

Merriam, S.B. (2009). *Qualitative research: A guide to design and implementation* (2nd ed.). San Francisco, CA: Jossey-Bass.

Messer, E., M. Cohen, & J. D'Costa (1998). *Food from peace: Breaking the links between conflict and hunger*. Food, Agricultural, and the Environment Discussion Paper 24. Washington, DC: International Food Policy Research Institute. Retrieved from https://ideas.repec.org/p/fpr/2020dp/24.html

Miran, M. (2006). *Islam, histoire et modernité en Côte d'Ivoire*. Paris, France: Editions Karthala.

Mogekwu, M. (2009). The mass media and the establishment of peace as path to sustainable development in Africa. In T. M. Richard, C. Onwumechili, & B. A. Musa (Eds.), *Communication era of global conflicts: Principles and strategies for 21st century Africa* (pp. 235-250). Lanham, MD: University Press America, Inc.

Morrow, N., Mock, N., Papendieck, A., & Kocmich, N. (2011, April). Independent evaluation of the Ushahidi Haiti project. Development Information Systems International Ushahidi Haiti Project. Retrieved from http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=0CEsQFjAH&url=http%3A%2F%2Fwww.alnap.org%2Fpool%2Ffiles%2F1282.pdf&ei=TUbVV

OHcMISfyQTt_4CADQ&usg=AFQjCNG7M3WSfwHJfwXnbfiKw14RVACsXw&bvm
=bv.85464276,d.aWw

Moussa, Z. (2012). *The media and the political crisis in Côte d'Ivoire*. Accra, Ghana: Media
Foundation for West Africa.

Murdoch, J. C., & Sandler, T. (2004). Civil wars and economic growth: Spatial dispersion.
American Journal of Political Science, 48(1), 138-151. Retrieved from
http://www.colorado.edu/geography/class_homepages/geog_2002_s06/laptop_s06/curren
t%20projects/Cox_Low%20Robinson%20Book%20chapter/Cox_Low%20Book%20chap
ter/distance%20and%20civil%20war%20effects%20on%20economy-sandler.pdf

Murison K., (*2003). Africa south of the Sahara*, 32 ed. London, England: The Gresham Press.

Myers, M. (2004). Educational and developmental radio for rural women: Understanding
broadcasting broadcasters and listeners in a case study of Eritrea. Doctoral thesis, The
University of Reading, International and Rural Development Department, Reading,
United Kingdom.

Myers, M. (2009). *Radio, convergence, and development in Africa: Gender as a cross-cutting
issue*. Paper submitted to International Development Research Centre and Carleton
University Roundtable Discussion on a Research Agenda, Butare, Rwanda. Retrieved
from http://r4d.dfid.gov.uk/PDF/Outputs/ICT4D/Gender_as_a_cross-cutting_issue.pdf

Paris, R. (2004). *At war's end: Building peace after civil conflict*. New York, NY: Cambridge
University Press.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA:
SAGE.

Pfefferbaum, R. L., Pfefferbaum, B., Neas, B., Fran, H. N., & Van Horn, R. L. (2013). The
communities advancing resilience toolkit (CART): Development of a survey instrument
to assess community resilience. *International Journal of Emergency Mental Health and
Human Resilience, 15*(1), 15-30. Retrieved from http://www.nctsn.org/content/
communities-advancing-resilience-toolkit-cart-assessment-survey

Philips, D. L. (2014). Linking development and peace in Darfur – a note. *The Journal of the
National Committee on American Foreign Policy, 32*(2), 116-117.
doi:100.1080/10803921003697708

Plano Clark, V. L., & Creswell, J. W. (2008). *The mixed methods reader*. Thousand Oaks, CA:
Sage Publications.

Reporters Without Borders [RWB]. (2014). Press freedom index 2011-2012. Author. Retrieved
from https://freedomhouse.org/report/freedom-press/2014/c-te-divoire#.VZsiDlypWTA

Ringer, J. (2014). *A phenomenological study of individual strategies for rebuilding food
production ability in resource poor post-conflict farming communities in Myanmar*
(Unpublished doctoral dissertation). Oklahoma State University, Stillwater.

Robertson, A., & Olson, S. (2012). *Adapting agricultural extension to peacebuilding*. Report of a
workshop by the National Academy of Engineering and the United Institute of Peace,
Washington, DC. Retrieved from http://www.usip.org/publications/adapting-agricultural-
extension-peacebuilding

Saldana, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Thousand Oaks, CA:
Sage Publications.

Severin, W. J., & Tankard, J. W. (2001). *Communication theories: Origins, methods, and uses in
the mass media* (5th ed.). New York, NY: Longman.

Shinn, G. C., & Briers, G. E. (2009). Post-conflict agricultural development: Lessons learned in
eight provinces in Iraq. *Paper presented at the 25th Annual Meeting of the Association
for International Agricultural and Extension Education (AIAEE), San Juan, Puerto Rico.*
Retrieved from https://aiaee.org/index.php/proceedings/37-2009-san-juan-puerto-
rico/642-post-conflict-agricultural-development-lessons-learned-in-eight-provinces-in-
iraq

Shoemaker, E., & Stremlau (2014). Media and conflict: An assessment of the evidence. *Progress
in Development, 14*(2), 181-195. Retrieved from http://r4d.dfid.gov.uk/pdf/outputs/JSRP/
Media_and_Conflict_Evidence_Brief.pdf

Solomon, H. (2013). The African state and the failure of US counter-terrorism initiatives in
Africa: The cases of Nigeria and Mali. *South African Journal of International Affairs,
20*(3), 427-445. doi:10.1080/10220461.2013.841804

Swarbrick, P. (2007). Avoiding disarmament failure: The critical link in DDR. An operational
manual for donors, managers, and practitioners. Ministry for Foreign Affairs, Stockholm,
Sweden. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?
doi=10.1.1.295.3100&rep=rep1&type=pdf

Swedish International Development Cooperation Agency [SIDA], & United Nations Educational
Scientific and Cultural Organization [UNESCO]. (2003). Assistance to media in tension
areas and violent conflict. International seminar, Stockholm, Sweden. Author. Retrieved
from www.sida.se/publications

Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social & behavioral
research.* Thousand Oaks, CA: Sage Publications, Inc.

Tashakkori, A., & Teddlie, C. (2009). Integrating qualitative and quantitative approaches to research. In L. Bickman & D. Rog and (Eds.), *Handbook of applied social research methods* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Teddlie, C., & Tashkkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousands Oaks, CA: Sage Publications

Themener, L., & Wallensteen, P. (2011). Armed conflict, 1946-2010. *Journal of Peace Research, 48*(4), 525-536. doi:10.1177/0022343311415302

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry, 16*(10), 837-851. doi: 10.1177/1077800410383121

Tzifakis, N., & Tsardanidis, C. (2006). Economic reconstruction of Bosnia and Herzegovina: The lost decade. *Ethnopolitics*, *5*(1), 67-84. doi:10.1080/17449050600576316

United Nations Educational, Scientific and Cultural Organization [UNESCO]. (2013). Country profiles: Côte d'Ivoire. Author. Retrieved from http://www.uis.unesco.org/DataCentre/Pages/country-profile.aspx?code=CIV

United Nations High Commissioner for Refugees [UNHCR]. (2005). Self-study module on refugee status determination: Determining who is a refugee. Author. Retrieved from http://www.unhcr.org/cgi-bin/texis/vtx/home/opendocPDFViewer.html?

docid=43144dc52&query=Refugee%20definitions

United Nations High Commissioner for Refugees [UNHCR]. (2015). Côte d'Ivoire: Factsheet. Author. Retrieved from http://www.unhcr.org/cgi-bin/texis/vtx/home/opendoc

PDFViewer.html?docid=524d81cc9&query=Cote%20d'Ivoire

United Nations Office for the Coordination of Humanitarian Affairs [OCHA]. (2003). Guiding
    principles on internal displacement. Author. Retrieved from
    http://www.ifrc.org/Docs/idrl/I266EN.pdf

United Nations Security Council. (2014). Letter dated 14 April 2014 from the vice-chair of the
    Security Council Committee established pursuant to resolution 1572 (2004) concerning
    Côte d'Ivoire addressed to the president of the Security Council. Author. Retrieved from
    http://www.un.org/en/ga/search/view_doc.asp?symbol=S/2014/266

United States Agency for International Development [USAID]. (2013). Sahel – food security and
    complex emergency, fact sheet #4. Author. Retrieved from
    http://www.usaid.gov/sites/default/files/documents/1866/Sahel%20Food%20Insecurity%
    20and%20Complex%20Emergency%20Fact%20Sheet%20%234.pdf

Warmbrod, J. R. (2014). Reporting and interpreting scores derived from Likert-type scales.
    Journal of Agricultural Education, 55(5), 30-47.doi:10.5032/jae.2014.05030

Woods, D. (2003). The tragedy of the cocoa pod: Rent-seeking, land and ethnic conflict in Ivory
    Coast. *The Journal of Modern African Studies, 41*(4), 641-655.
    doi: 10.1017/S0022278X03004427

Yamshon, E., & Yamshon, D. (2006). Comics, media in conflict resolution programs: Are they
    effective in promoting and sustaining peace? *Harvard Negotiation Literature Review, 11*,
    421-425. Retrieved from http://classify.oclc.org/classify2/ClassifyDemo?owi=6101622

Zuckerman, E., & Greenberg, M. (2004). The gender dimensions of post-conflict reconstruction:
    An analytical framework for policymakers. *Gender & Development, 12*(3), 70-82.
    Retrieved from http://dx.doi.org/10.1080/13552070412331332330

APPENDICES

APPENDIX A

Institutional Review Board Approval

Oklahoma State University Institutional Review Board

Date: Thursday, July 03, 2014

IRB Application No: AG1433

Proposal Title: Evaluation of the Media's Role in Disseminating News and Information to Farmers and other Rural Citizens after the Cessation of Armed Conflicts in the Republics of Cote d'Ivoire and Mali

Reviewed and Processed as: Expedited

Status Recommended by Reviewer(s):   Protocol Expires: 7/2/2015

Principal Investigator(s):
Assoumane A. Maiga   Michael Craig Edwards
708 N. Duncan   456 Ag Hall
Stillwater, OK 74075   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1.   Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2.   Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3.   Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4.   Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

Tamara J. Mix, Vice-Chair
Institutional Review Board

APPENDIX B

Informed Consent Form

INFORMED CONSENT (Farmers)

Project Title: Evaluation of Communication Strategies and the Role of Mass Media in Disseminating Agriculture-related Information to Farmers in Post-conflict Nations: The Case of Cote d'Ivoire and Mali

Investigators:

Assoumane A. Maiga – Graduate Student – Agricultural Communications
Oklahoma State University
Michael Craig Edwards, Ph.D. – Professor – Agricultural Education,
Oklahoma State University

Purpose:

The overall purpose of this study is to evaluate the roles played by media in disseminating agriculture-related information to farmers in the countries of Mali and RCI after experiencing armed conflict. The research study will examine communication strategies developed by the national governments and their partners (e.g., donors, international organizations [IOs], and non-governmental organizations [NGOs]) to disseminate news and other information to rural populations after the cessation of armed conflict. The study will also explore the existing media system in each country (especially radio), identify communication programs associated with agriculture and food production, and assess the strengths and weaknesses of the media in disseminating information to farmers intended to improve their economic livelihoods and the vitality of rural communities as they recovered from armed conflict.

Procedures:
1. Thank you for agreeing to participate in this study. You will be asked questions throughout a survey questionnaire. The researcher or his assistant will guide you through the process if needed.
2. In addition, you might be selected to participate in a one-hour interview. The interview will be recorded. All identifiers will be removed for the purpose of confidentiality and no discomfort will be experienced.

Risks of Participation:

There are no known risks associated with this project, which are not greater than those ordinarily encountered in daily life.

Benefits:

Knowing the roles played by mass media in disseminating agriculture-related information in your country will help the researchers formulate strong recommendations for your governments and stakeholders to develop and implement appropriate communication strategies targeting farmers after experiencing armed conflicts.

Confidentiality:

Okla. State Univ.
IRB
Approved 7-3-14
Expires 7-2-15
IRB # AG-14-33
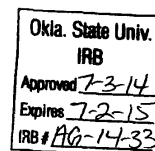
The records of this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. It is possible that the consent process and data collection will be observed by research oversight staff responsible for safeguarding the rights and well-being of people who participate in research.

All recordings will be destroyed after data have been used. Data will be stored for the duration of the study and will be deleted one year after completion of the study. All identifiers will be removed and you will be given a pseudo name for the purpose of confidentiality.

Contacts:

If you have questions regarding this research, you may contact, via e-mail, Assoumane Maiga at maiga@okstate.edu or M. Craig Edwards at craig.edwards@okstate.edu

If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

Participant Rights:

Your participation is completely voluntary. There is no penalty if you wish to withdraw from the study at any time.

APPENDIX C

Survey Instrument

Evaluation of the Media's Role in Disseminating News and Information to Farmers and other Rural Citizens after the Cessation of Armed Conflict in the Republics of Côte d'Ivoire and Mali

Survey Instrument

Part I

1. a. How do you access news and information about agriculture and food production after armed conflict?
Mark (X) all statements that apply.

_____ / I use a radio
_____ / I use a television
_____ / I use a local newspaper
_____ / I use a personal computer for the Internet
_____ / I use a Community Cyber Café for the Internet
_____ / I use a mobile phone
_____ / I rely on personal contacts
_____ / Other (specify)_____

1.b. Which source do you use most frequently? _____ /

1.c. Why?

_____

_____

_____

2. In which language(s) do you prefer to receive news and information about agriculture and food production?
Mark (X) the statement(s) that correspond(s) to your response(s).

French_____ /
Local language(s) _____ /   (specify) _____ /_____ /

5.a. Did the information help you resume your farming activities after the armed conflict?

Definitely yes   Somewhat yes   Not sure/Uncertain   A little   Not at all   (circle one)

5.b. Briefly explain.

_____

_____

_____

_____

_____

_____

_____

6. How frequently did you receive information about agriculture and food production from these sources after armed conflict ended in your region?
Rate your response using this scale: 1 = Never   2 = Not very frequently   3 = Sometimes 4 = Frequently   5 = Very frequently.
Circle one number for each item:

Television	1	2	3	4	5
Radio	1	2	3	4	5
Internet	1	2	3	4	5
Mobile phone	1	2	3	4	5
Newspapers	1	2	3	4	5
Peer farmers	1	2	3	4	5
Government extension agent(s)	1	2	3	4	5
NGO personnel	1	2	3	4	5
Other (specify)	1	2	3	4	5

!   3

3. In which of the programs provided by the media are you the most interested?
Rate your response using this scale: 1 = Not interested at all   2 = A little interested
3 = Somewhat interested   4 = Interested   5 = Extremely interested.
Circle one number for each item:

Leisure (music, cinema, sports)	1	2	3	4	5
Agriculture-related programs	1	2	3	4	5
Weather forecasts	1	2	3	4	5
Market news, including commodity prices	1	2	3	4	5
News	1	2	3	4	5
Hygiene and sanitation	1	2	3	4	5
Health and nutrition	1	2	3	4	5
Politics	1	2	3	4	5
Other (specify)	1	2	3	4	5

4. Was the information you received after armed conflict ended related to these subjects?
Rate your response using this scale: 1 = Not related at all   2 = Slightly related   3 = Moderately related   4 = Related   5 = Extremely related.
Circle one number for each item:

Non-GMO Seed varieties	1	2	3	4	5
GMO seed varieties	1	2	3	4	5
Post-harvest technologies	1	2	3	4	5
Livestock breeds	1	2	3	4	5
Fisheries	1	2	3	4	5
Poultry	1	2	3	4	5
Market gardening	1	2	3	4	5
Bee Keeping	1	2	3	4	5
Weather forecasts	1	2	3	4	5
Market news, including commodity prices	1	2	3	4	5
Plant diseases	1	2	3	4	5
Livestock diseases	1	2	3	4	5
Farmer interest groups	1	2	3	4	5
Women's groups	1	2	3	4	5
Nutrition	1	2	3	4	5
Child labor in agriculture	1	2	3	4	5
Natural resources/conservation	1	2	3	4	5
Land ownership	1	2	3	4	5
Other information? Please specify					

5.a. Did the information help you resume your farming activities after the armed conflict?

Definitely yes   Somewhat   Not sure/Uncertain   A little   Not at all   (circle one)

5.b. Briefly explain.

_____

_____

_____

_____

_____

_____

_____

6. How frequently did you receive information about agriculture and food production from these sources after armed conflict ended in your region?
Rate your response using this scale: 1 = Never   2 = Not very frequently   3 = Sometimes
4 = Frequently   5 = Very frequently.
Circle one number for each item:

Television	1	2	3	4	5
Radio	1	2	3	4	5
Internet	1	2	3	4	5
Mobile phone	1	2	3	4	5
Newspapers	1	2	3	4	5
Peer farmers	1	2	3	4	5
Government extension agent(s)	1	2	3	4	5
NGO personnel	1	2	3	4	5
Other (specify)	1	2	3	4	5

!   3

7. How frequently has the media or other sources of information addressed the role of women in agriculture and food production after armed conflict ended in your region?
Rate your response using this scale: 1 = Never   2 = Not very frequently
3 = Sometimes   4 = Frequently   5 = Very frequently.
Circle one number for each item:

Television	1	2	3	4	5
Radio	1	2	3	4	5
Internet	1	2	3	4	5
Mobile phone	1	2	3	4	5
Newspaper	1	2	3	4	5
Government extension agent(s)	1	2	3	4	5
Peer farmers	1	2	3	4	5
NGO personnel	1	2	3	4	5
Other (specify)	1	2	3	4	5

8. How frequently has the media or other sources of information addressed the issue of child labor in agriculture after armed conflict ended in your region?
Rate your response using this scale: 1 = Never   2 = Not very frequently   3 = Sometimes
4 = Frequently 5 = Very frequently.
Circle one number for each item:

Television	1	2	3	4	5
Radio	1	2	3	4	5
Internet	1	2	3	4	5
Mobile phone	1	2	3	4	5
Newspaper	1	2	3	4	5
Government extension agent(s)	1	2	3	4	5
Peer farmers	1	2	3	4	5
NGO personnel	1	2	3	4	5
Others (specify)	1	2	3	4	5

9. How frequently has the media or other sources of information addressed strategies for conflict resolution after armed conflict ended in your region?
Rate your response using this scale: 1 = Never   2 = Not very frequently   3 = Sometimes 4 = Frequently   5 = Very frequently.
Circle one number for each item:

Television	1	2	3	4	5
Radio	1	2	3	4	5
Internet	1	2	3	4	5
Mobile phone	1	2	3	4	5
Newspaper	1	2	3	4	5
Government extension agent(s)	1	2	3	4	5
Peer farmers	1	2	3	4	5
NGO personnel	1	2	3	4	5
Other (specify)	1	2	3	4	5

10.a. What kind of resources or support did you need the most on your return home after the cessation of armed conflict?
Rate your response using this scale: 1 = Highest need   2 = High need 3 = Average need   4 = Below average need   5 = Lowest need.
Circle one number for each item:

Access to a health center	1	2	3	4	5
Access to potable water	1	2	3	4	5
Access to local markets	1	2	3	4	5
Free food supply	1	2	3	4	5
Restocking of livestock	1	2	3	4	5
Money for seed	1	2	3	4	5
Equipment for agriculture	1	2	3	4	5
Water for irrigation	1	2	3	4	5
Animal feed/forage	1	2	3	4	5
Subsidized inputs, e.g., fertilizer	1	2	3	4	5
Animal for labor on the field	1	2	3	4	5
Spare parts for equipment	1	2	3	4	5
Advisory service from government/NGO extension agents	1	2	3	4	5
A loan to start an income-generating activity	1	2	3	4	5
Access to school for your children	1	2	3	4	5
Other (specify)	1	2	3	4	5

10.b. If you could choose only three (3), which would you choose?

_____

_____

_____

10.c. Why these?

_____

_____

_____

_____

_____

_____

11. Please indicate how much you agree/disagree with the following statements.
Rate your response using this scale: 1 = Strongly disagree   2 = Disagree
3 = Uncertain/Not sure   4 = Agree   5 = Strongly agree.
Circle one number for each item:

My community is a safe place to live and work	1	2	3	4	5
Members of my community have access to affordable food	1	2	3	4	5
Members of my community have access to potable water	1	2	3	4	5
Good housing is available to members of my community	1	2	3	4	5
Necessary health care services are available to members of my community	1	2	3	4	5
Good educational opportunities are available to children of my community	1	2	3	4	5
Good work opportunities are available to members of my community	1	2	3	4	5
Members of my community are friendly with their neighbors	1	2	3	4	5
Media contributes to my community being a peaceful place to live	1	2	3	4	5

12. Information provided by the media or other sources of information after armed conflict ended resulted in:
Rate your response using this scale: 1 = Strongly disagree   2 = Disagree
3 = Uncertain/Not sure   4 = Agree   5 = Strongly agree.
Circle one number for each item:

Building trust within my community	1	2	3	4	5
Making my community more resistant to armed conflict	1	2	3	4	5
Helping my community to develop a conflict resolution plan	1	2	3	4	5
My community knowing how to react when armed conflict occurs	1	2	3	4	5
My community being more prepared to solve internal conflicts	1	2	3	4	5
My community being more organized	1	2	3	4	5
More attention being given to women in my community	1	2	3	4	5
More attention being given to children in my community	1	2	3	4	5
More trust in public officials	1	2	3	4	5
People being more helpful to each other	1	2	3	4	5
People in the community having hope in the future	1	2	3	4	5
My community trusting the local news media to deliver accurate information	1	2	3	4	5
Setting up of mechanisms to provide accurate information to residents during emergencies, including armed conflict	1	2	3	4	5
My community trying to prevent armed conflict	1	2	3	4	5
My community providing emergency services during armed conflict	1	2	3	4	5
Building strong leadership within my community to help people improve their lives	1	2	3	4	5
My community easily working with outside agencies and organizations to get things done	1	2	3	4	5
People in my community working together to improve the community	1	2	3	4	5
My community prioritizing issues to improve	1	2	3	4	5
My community having services and programs to help its members	1	2	3	4	5
My community working together to sustain itself	1	2	3	4	5
My community adopting new agricultural practices	1	2	3	4	5
Members of my community not leaving for a new area	1	2	3	4	5

Part II

Mark (X) your response to the following questions.

1. **What is your gender?** _____/Female   _____/Male

2. **What is your age?** _____/

3. **What is the highest level of education you completed or the highest degree you received?**

    Less than a high school degree_____/
    High school degree or equivalent_____/
    Bachelor's degree_____/
    Graduate degree or higher (e.g., Master's or doctorate)
    Other (specify)_____/

4. **What is your current marital status?**

    Married_____/ Separated_____/ Divorced_____/
    Widowed_____/ Never Married_____/

5. **Including yourself, how many people does your family include?**_____/

6. **What is your religion?**

    Muslim_____/ Christian_____/   Other (specify)_____/

7. **Were you displaced during the armed conflict(s)?**

    Internally_____/   Externally_____/   No_____/

8. **If you were displaced, for how long were you displaced and unable to return to your**

    home? _____ months / years (circle)

9. **If you were displaced, where were you located for most of that time?**

    _____ _____/ (actual country, region, district, city, town,
    commune)

10. Please estimate your loss in earnings/income as a result of the effects of the armed

    conflict you experienced. _____ /

11.a. Which category(ies) best describe your primary activity(ies) as a farmer?

    Farming_____/   Livestock producer_____/   Fisheries_____/

    Poultry producer_____/   Market gardener_____/ Other (specify)_____/

11.b. During times of peace, what percentage of your income is derived from the

    category(ies) you chose?

A little_____/   Some_____/

A large part_____ /   All_____/

Thank you!

APPENDIX D

Semi-Structured Interview Protocol

Evaluation of the Media's Role in Disseminating News and Information to Farmers and other Rural Citizens after the Cessation of Armed Conflict in the Republics of Côte d'Ivoire and Mali

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Interview Protocol (Post-conflict Farmers)

Selected Characteristics of the Interviewee
Country of residence:
Sex:
Name: (Interview will be given a pseudonym)
Age:
Religion:
Level of Education:
Type of farmer/producer:
Location of farm or other agricultural enterprises:
Marital status:
Number of family members:

Major Guiding Questions:

1. **What is your opinion on the resolution/peace agreement regarding the armed conflict in your region?**
   Sub-questions/probes:
   - How did the armed conflict end in your region?
   - Which of the parties involved in the armed conflict in your region took part in the peace talks?
   - Were all of the parties in the armed conflict fully represented? Who are they?
   - What do you know about the peace agreement in general?
   - In your opinion, is the peace agreement sustainable? If yes, how? If no, what could be done to improve it?
   - Will the agreement ensure peace and stability in your region? How?
   - What else could be done to improve the agreement and ensure peace and stability are maintained?

2. **How did the media help your community recover after armed conflict ended?**
   Sub-questions/probes:
   - Was the information timely and relevant?
   - What types of information did the media provide?
   - Was the information related to agriculture and food production? In what ways?

!   1

Evaluation of the Media's Role in Disseminating News and Information to Farmers and other Rural Citizens after the Cessation of Armed Conflict in the Republics of Côte d'Ivoire and Mali

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- Did the information contribute to reorganizing your community for agriculture and food production? How?

3. **Think back and tell me about some major changes in your community after the armed conflict that resulted from the work of the media?**
Sub-questions/probes:
- Did the changes enhance your community's problem solving capacity? How?
- Did the changes help your community to develop initiatives to prevent armed conflict in the future? How? In what ways?
- Did the media enhance collaboration in your community? How?
- Did the media bring hope to your community? How?
- Did the media transform your community members' behaviors? How? Could you provide an example?

4. **In your opinion, did the media convey relevant messages to your community after the armed conflict ended?**
3. **(Cont'd)**
Sub-questions/probes:
- In which languages were the messages given?
- On which channels of communication were the messages given?
- Did the messages contribute to building trust between the community's members and their leaders? How? Why?
- Did they encourage skill building and understanding among community members, especially in regard to reducing the likelihood of armed conflict in the future? How?
- What do you think the media could do better in the future?

5. **Did the information conveyed by the media contribute to enhancing preparedness for the possibility of armed conflict in the future?**
Sub-questions/probes:
- Have the messages made farmers and other rural citizens more or less confident that future threats to food production during armed conflict could be dealt with successfully? How?
- Did the media inform farmers and other rural citizens about recovery mechanisms after the armed conflict? What are some examples?
- Did the media encourage members of your community to seek additional information and resources? What are some examples?

!   2

Evaluation of the Media's Role in Disseminating News and Information to Farmers and other Rural Citizens after the Cessation of Armed Conflict in the Republics of Côte d'Ivoire and Mali

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- Did the media encourage your community to develop conflict resolution plan(s)? If yes, please describe the plan(s).

6. **Do you think the information you received from the media changed your perception of the role of women in agriculture? In peace building in your community?**
   Sub-questions/probes:
- How were their programs related to the issue of women in agriculture?
- Did the information received reinforce the role of women in your community and its importance after the armed conflict? How?
- Did the messages change the relationships between men and women farmers in your community after the armed conflict? For example, in leadership or decision-making roles? Please explain.

7. **Do you think the information you received from the media contributed to meeting the specific needs of children and youth after the armed conflict ended?**
   Sub-questions/probes:
- What were the specific programs related to the protection and welfare of children and youth?
- Were any special programs provided about child trafficking? Please describe.
- How did the media address issues related to the rights of children and youth and the impact of armed conflict?
- Did the messages raise awareness on the need for the protection of children and youth during armed conflict and after conflict ends? How?
- Did the messages encourage your community to build strategies for the protection and welfare of children and youth as agricultural workers or otherwise? Please share some examples.

APPENDIX E

Permission to Use, Modify, and Adapt the CART Instrument

Assoumane:

The Terrorism and Disaster Center (TDC) is pleased to learn of your research on communication strategies development by Western African countries (Mali and Cote d'Ivoire) to develop farmers' resilience after conflict. As requested, you may use and edit the CART Assessment Survey instrument in your research. Rose Pfefferbaum, TDC Project Director for Community Resilience, will provide consultation and assistance to the extent possible as you progress through this effort.

As I think Rose discussed with you, we would like to add your data to our database of CART studies for use in survey development efforts and other analyses.

Please let Rose know how we can be of assistance to you. She, in turn, will keep me apprised of your needs so that we can be as responsive as possible.

Sincerely,
Brian

_____

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VITA

Assoumane Alhassane Maiga

Candidate for the Degree of

Doctor of Philosophy

Thesis: AN ASSESSMENT OF THE MEDIA'S ROLE IN DISSEMINATING NEWS

AND INFORMATION TO FARMERS AFTER THE CESSATION OF ARMED

CONFLICTS IN THE REPUBLICS OF CÔTE D'IVOIRE AND MALI

Major Field: Agricultural Education

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy/Education in your major at Oklahoma State University, Stillwater, Oklahoma in July 2015.

Completed the requirements for the Master of Science in Agricultural Communications at Oklahoma State University, Stillwater, Oklahoma/USA in 2011.

Completed the requirements for the Bachelor of Arts in English Language at University of Bamako, Bamako, Mali in 2005.

Experience:
- Teacher of English as a second language, upper primary school, Goundam, Mali
- Professor of English as second language, Language Center – DNP, Bamako - Mali

Professional Memberships:
- Phi Beta Delta Upsilon, OSU Chapter
- Golden Key International
- Association International for Agricultural Education and Extension
- American Association fro Agricultural Education
- Fulbright Students and Scholars Association, Oklahoma State University
- African Students Organization, Oklahoma State University