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Communication Efforts of Florida Extension Agents During the 2004 Hurricane Season

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Communication Efforts of Florida Extension Agents During the 2004 Hurricane Season

Abstract
The purpose of the study reported here was to examine what communication channels Florida's Extension faculty utilized during the 2004 hurricane season. A total of 208 people responded to the survey, for an overall response rate of 63.4%. Respondents indicated that they made slight to moderate use of news media channels. The most used and effective personal communication channels were word of mouth and telephones. The most used and effective mediated communication channel was flyers/print materials. Respondents did not believe that the general public or their own clientele groups were aware of Extension's disaster response efforts.

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Introduction

Hurricanes Charley, Francis, Ivan, and Jeanne swept over Florida in a little over a month in August and September of 2004, killing more than 100 people and causing more than $22 billion in damages (Florida Office of Insurance Regulation, 2005; Sherman, 2004). In agriculture and allied industries, estimates of hurricane-inflicted damages totaled more than $2 billion (UF/IFAS, 2005). In response, the University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS) formed a Hurricane Recovery Task Force to inventory UF/IFAS's immediate response and to "develop long-term strategies for dealing with these and future hurricanes or disasters, both natural and man-made" (UF/IFAS, 2005, p. 1). Among the recommendations, UF/IFAS Extension identified the need

to improve communication efforts as a primary concern after the 2004 hurricane season (UF/IFAS, 2005).

Historically, the Cooperative Extension Service has responded to the problems and crises of communities from local depressions and regional droughts to more nationwide cases, such as the Great Depression and world wars (Bosch, 2004; Cartwright, Case, Gallagher, & Hathaway, 2002). Extension's primary role in many former crises was to provide reliable information delivered by various forms of communication media (Cartwright et al., 2002). In relation to the Florida hurricane crisis of 2004, Extension agents responded by supporting the hurricane preparation and recovery efforts in their communities (McGovney, 2005).

Determining how to communicate to their publics or clientele and how to do so in a timely manner were just some of the communication issues facing Florida's Extension agents. The purpose of the study reported here was to examine the communication channels used by Extension personnel to communicate with the public during the 2004 hurricane season and to survey Extension agents about the perceived effectiveness of these communication channels.

Literature Review

Crisis communication involves incidents that suddenly and unpredictably threaten the stability of an organization (Whiting, Tucker, & Whaley, 2004). It is the "dialog between the organization and its publics prior to, during, and after the negative occurrence" (Fearn-Banks, 2002, p. 2). Messages of hope, support, and the rebuilding process offer publics the reassurance needed in uncertain times (Sapriel, 2003). Also, relaying timely information is relevant when communicating in a crisis. Communicators should strive for brevity but respect requests for information and offer to provide desired information within a specified time period (Covello, 2003).

Because the goal of crisis and risk communicators is to establish long-term relationships of trust and credibility with the media, communicators should provide information tailored to the needs of each type of media (Heath & Nathan, 1990-91). News media have easy access to large publics and communication systems that remain working even in the case of partial breakdown (Peters, Covello, & McCallum, 1997).

However, crisis situations become a crisis communication problem when there is extensive media attention that is not planned for or anticipated (Barton, 2000). Media coverage during a crisis situation tends to attract increased media attention for the individuals affected by the crisis (Brown, 2003). Generally, the news media try to obtain information about a disaster from authoritative sources like officials from county, state, and federal government agencies and traditional emergency organizations (Sood, Stockdale, & Rogers, 1987). According to Fett, Shinners-Gray, Duffy, and Doyle (1995), most persons' only contact with Extension is through the mass media. In past crises, Extension personnel have consequently been called on to provide expert and reliable information through various communication media (Cartwright et al., 2002).

To understand how the news media typically operates in natural disaster situations, communicators should examine how the media's coverage frames the public's perception and work to establish rapport and credibility with the media in order to maintain and enhance news coverage (Ruth, Muegge, & Irani, 2005). By examining the framing of news media coverage of agriculture in three major metropolitan newspapers in Florida during the 2004 hurricane season, Ruth, Muegge, and Irani (2005) found that agricultural stories only constituted about 4% of the hurricane coverage.

In terms of communicating during a crisis, Whiting, Tucker, and Whaley (2004) analyzed the preparedness of colleges of agriculture across the U.S. and the handling of crisis situations at those institutions. Only about 60% of responding land-grant universities had a central crisis communication plan, while nearly one-third of the respondents were unaware of a crisis communication plan in place for their Experiment Station and academic programs. A large majority of respondents believed that their administrators were somewhat or well informed of the crisis plan; however, less than half of the respondents believed that either faculty (43.3%) or staff (46%) were somewhat or well informed (Whiting et al., 2004).

Methodology

A team of researchers in the Agricultural Education and Communication department at the University of Florida developed a 76-question survey instrument that included quantitative and open-ended (qualitative) questions. The questionnaire was converted to an online Web form using Zoomerang, a premium online survey software that numerous businesses and organizations use to create professional, customized questionnaires. The survey was conducted via e-mail using an adapted form of Dillman's Tailored Design method (2000) to collect the data.

The 76-question survey was adapted from previous research on professional development and agricultural scientists' communication efforts (Ruth, Lundy, Telg, & Irani, 2005), as well as specific questions the researchers believed necessary to gain a clear understanding of Extension's role during the hurricane preparation and recovery efforts. Experts from the departments of Family Youth and Community Sciences, Agricultural and Biological Engineering, Food and Resource Economics, and Clinical and Health Psychology were also asked to include and edit questions

related to disaster preparedness, educational materials, agents' personal needs (including mental health issues), and community support needs. The population for this study included all UF/IFAS county Extension faculty and district Extension directors (n=328) with a viable e-mail address as of October 2004.

Extension faculty and directors received an e-mail on November 30, 2004, the last day of the official hurricane season, that gave them an overview of the study and provided the link to the 76-question survey. Two waves of follow-up reminders were conducted with nonrespondents on December 9 and December 20, 2004. The researchers closed the questionnaire on January 5, 2005, preventing any new responses. All communication and distribution of the questionnaire was done online, via e-mail, based upon the most current list of faculty. A total of 208 viable responses were received, for a 63.4% response rate. The data were analyzed using SPSS ® Student Version 12.0 for Windows.

Results

A total of 208 Extension faculty responded, for a 63.4% response rate. In terms of gender, 38% (n=70) of respondents were male, while 62% (n=114) were female. Table 1 identifies respondents according to age. The majority of agents (38.1%, n=51) ranged in age from 51-60, and 30.6% (n=41) were ages 41-50.

Table 1.
Extension Agents by Age

Age	**n**	**%**
26-30	15	11.1
31-40	21	15.7
41-50	41	30.6
51-60	51	38.1
61-66	6	4.5
Total	134	100.0

For those with administrative responsibilities, 39 (95%) were County Extension Directors, and two (5%) were District Directors.

Respondents were asked to indicate their primary program area from a list generated by the District Extension Directors' office. Out of 194 responses, the top program areas were family and consumer sciences (n=46, 24%); agricultural and natural resources (n=45, 23%); and 4-H youth development (n=37, 19%). Agents who indicated "other" as their response listed citrus; water quality; urban forestry; and livestock, pasture, and forage production, as some of their program areas (Table 2).

Table 2.
Extension Agents' Primary Program Area

Program Area	**n**	**%**
Family & Consumer Sciences	46	24
Ag/Natural Resources	45	23
4-H/Youth Development	37	19
Ornamental/Environmental Horticulture	21	11
Urban Horticulture	16	8
Commercial Horticulture	8	4
Community Development	2	1
Other	11	6
Total	194	100

Agents reported their years of experience with the Cooperative Extension Service in and outside of Florida. About one-third of respondents (30%, n=60) had worked for Extension 5 years or less, while less than 8% (7.6%, n=15) had worked more than 30 years. Table 3 identifies the number of responses according to years of service.

Table 3.
Agents' Years of Experience with the Cooperative Extension Service

Years of Service	n	%
0-5 years	60	30.0
6-10 years	35	17.7
11-15 years	17	8.5
16-20 years	19	9.6
21-25 years	29	15.0
26-30 years	23	11.6
More than 30 years	15	7.6
Total	198	100

Communicating to news media channels (television, radio, newspaper) has been reported as being a component of Extension agents' responsibilities, especially in marketing and promoting local Extension programs (Hurst, 2005). In the study reported here, roughly one-half of respondents made slight (28%, n=56) to moderate (27%, n=54) use of news media channels to communicate hurricane-related messages to specific clientele and the general public. Almost one-third (31%, n=61) did not use news media channels at all. This is in keeping with Hurst's study, where it was found that personal communication methods--such as word of mouth, speeches--were used slightly more frequently than news releases, public service announcements, and media interviews to market and promote local Extension programs to the public.

Many respondents noted in open-ended answers that communicating with news media channels was difficult because of electrical outages. Many also commented that they were performing other duties beyond their normal responsibilities--such as helping ranchers round up stray cattle; securing feed; clearing trees and debris; distributing food, water, ice, and supplies; and answering hurricane victims' questions by telephone or in person--which made communicating with news media a lower priority. Respondents noted feeling "pulled" between their own responsibilities at home--many experienced structural damage to their homes or had children at home because schools were closed due to electrical outages and storm damage--and their responsibilities at work. And they felt equally "pulled" between determining if they should work with news media outlets or serve immediate needs of persons around them.

The most used mediated communication channel--defined as one-to-many communication using print or electronic methods--during the 2004 hurricane season was flyers/print materials (29%, n=56), followed by newspapers (19%, n=37). Respondents rarely used live television and radio or recorded public service announcements (Table 4). Several respondents reported that the Internet/Web was the best medium to use to control a message, but power outages made Internet/Web and other electronic media channels problematic.

Table 4.
Extent Extension Agents Used Mediated Communication Channels During the 2004 Hurricane Season

Response	Not at All		Slight Extent		Moderate Extent		Great Extent	
	n	%	n	%	n	%	n	%
Flyers/print materials	20	10	56	29	63	32	56	29
Newspaper	34	18	64	34	56	29	37	19
Internet/Web	74	39	42	22	46	24	27	14
Radio PSA	96	51	43	23	36	19	12	6
Live radio interviews	123	66	39	21	19	10	6	3
TV PSA	128	69	35	19	17	9	5	3
Live TV interviews	130	71	40	22	13	7	1	1
Radio PSA	96	51	43	23	36	19	12	6
Other	37	56	7	11	12	18	10	15

Respondents said face-to-face communication was the most commonly used (37%, n=71) personal method of communication, defined as one-to-one or one-to-few person communication. Telephones (37%, n=71), on-site visits (20%, n=38), and cell phones (19%, n=36) were also ranked as necessary sources of personal communication. The least used sources of personal communication were text messaging (95%, n=169) and electronic mail (34%, n=62) (Table 5).

Table 5

Table 5.
Extent Extension Agents Used Personal Communication Methods During the 2004 Hurricane Season

Response	Not at All		Slight Extent		Moderate Extent		Great Extent	
	n	%	n	%	n	%	n	%
Face to face	16	8	43	23	61	32	71	37
Telephone	22	12	40	21	57	30	71	37
On-site visits	51	27	56	30	43	23	38	20
Cell phone	64	34	47	25	40	21	36	19
Electronic mail	62	34	57	31	43	23	23	12
Text messaging	169	95	5	3	3	2	0	0
Other	31	67	1	2	9	20	5	11

Agents were asked to report the effectiveness of mediated communication channels used during the hurricanes. Approximately one-third of respondents (32%, n=49) reported flyers/print materials as most effective, followed by newspapers (29%, n=45) and "other" (17%, n=26) forms of communication. Only 3% felt live television interviews (n=4) and Internet/Web (n=4) were the most effective channels used (Table 6).

Table 6.
Mediated Communication Channels Perceived as Most Effective in Conveying Information to the Public During the 2004 Hurricane Season

Response	n	%
Flyers, print	49	32
Newspaper	45	29
Radio PSA	15	10
Live radio interview	6	4
TV PSA	6	4
Live TV interviews	4	3
Internet/Web	4	3
Other	26	17
Total	155	100

When reporting on the most effective personal communication methods used to communicate, agents perceived face-to-face communication (36%, n=60) to be the most effective, followed by telephone communication (35%, n=59), on-site visits (9%, n=16), and cell phones (8%, n=14) (Table 7).

Table 7.
Personal Communication Channels Perceived as Most Effective in Conveying Information to the Public During the 2004 Hurricane Season

Response	n	%
Face to face	60	36
Telephone	59	35
On-site visits	16	9
Cell phone	14	8
Electronic mail	8	5
Text messaging	1	1
Other	11	7

Agents were asked to give their perception of the general public's and their clientele's awareness of Extension's efforts during the hurricane season (Table 8). Over half (53%, n=104) of the respondents reported the general public was only slightly aware of Extension's efforts, and 20%

(n=39) indicated the general public was not at all aware. Only 4% (n=8) of respondents felt the general public was aware to a great extent.

Table 8.
Extension Agents' Perception of the General Public's Awareness of Extension's Efforts During the 2004 Hurricane Season

Response	n	%
Not at all	39	20
Slight extent	104	53
Moderate extent	46	23
Great extent	8	4
Total	197	100

When asked the same question about their Extension clientele group, the majority of agents (40%, n=79) reported their clientele was moderately informed of Extension's efforts; however, 11% (n=22) reported their clientele not being aware at all (Table 9).

Table 9.
Extension Agents' Perception of Extension Clientele's Awareness of Their Efforts During the 2004 Hurricane Season

Response	n	%
Not at all	22	11
Slight extent	67	34
Moderate extent	79	40
Great extent	29	15
Total	197	100

Finally, respondents were asked if their Extension office had an internal or external plan to manage communication efforts in a crisis like the hurricanes or other emergency situations. For the purpose of the study, "internal" referred to the crisis communication preparedness on behalf of Extension agents, Extension offices, and the UF/IFAS Extension administration. "External" communication preparedness was how participants communicated with outside agencies at the local, county, state, and national level. Respondents reported that 83% (n=160) of their offices had an internal crisis communication plan, while 17% (n=33) said their offices did not. Slightly more than half (57%, n=104) reported having an external plan; however, 43% (n=80) did not.

Discussion and Conclusions

Based on the results of this study, respondents made slight to moderate use of mass media channels to communicate during the 2004 hurricane season. A large percentage of respondents (31%) did not use news media channels at all to communicate. Face to face and telephone calls were the most used and most effective personal communication channels, followed by on-site visits and cell phones. As previously noted, many said trying to meet immediate needs of persons and electrical outages were factors in using or not using news media outlets. It can be inferred that Extension agents chose forms of personal communicate on the basis of ensuring the well-being of their clientele.

In terms of mediated communication channels, Extension faculty reported that the most often used and most effective was flyers/print materials, followed by newspapers. The majority of respondents reported that they did not use live radio and television interviews or TV and radio public service announcements. These findings indicate that in times of a natural disaster, people need information that is readily and easily accessible and that also involves limited technological or power constraints.

Respondents felt that the general public was slightly aware to completely unaware of Extension's efforts during the hurricanes. This could be a result of Extension not traditionally delivering information to an audience other than its traditional clientele, or the general public might not have viewed Extension as source of information during a crisis. In addition, respondents felt their clientele were moderately (40%) informed of Extension's efforts; however, 11% perceived that their clients were not aware at all.

Eighty-three percent of respondents reported that their offices had an internal crisis communication plan, while 57% said their Extension office had an external plan. However, it was unclear if respondents knew the specifics of the internal and external plans. Without crisis communication plans intact, communicating in disaster and crisis scenarios is likely to be difficult,

especially if advance preparation is not sufficient to prepare for the crisis and if all employees are not trained to respond when and if a crisis occurs (Sandman, 1998; Covello, 2003; Fearn-Banks, 2002; Bonk, 2003). As a result of the lack of a unified crisis communication plan, consistent internal and external outreach efforts on behalf of Extension were, in many instances, not known and not obtained. Respondents noted that, at times, this confusion caused agents to be unclear of their roles and responsibilities, which negatively affected their effectiveness to communicate to their clientele and the public.

Overall, results from the study reported here indicate that Florida's Extension professionals were on the front line to provide aid to storm victims, sometimes when the professionals themselves were also severely affected by the storm. According to open-ended responses, Extension personnel were the first to arrive and assist farmers and ranchers in rural and hard-to-reach areas, while also providing food, water, and ice, organizing chain saw crews, and securing and providing electrical generators to their clientele and the general public. In addition, Extension was faced with the challenge of communicating and responding in a situation--being hit by four major storms in less than 2 months--that no state had experienced in over 120 years.

Due to the massive destruction caused by the hurricanes of 2004 and the Gulf Coast hurricanes of 2005, Katrina and Rita, it is vital that Extension assess the personal and professional needs of its employees and determine the impacts of Extension agents within their communities in times of a crisis or natural disaster. In addition, communication preparedness, such as implementing crisis communication plans, crisis training, and establishing how to communicate during these situations, should be addressed.

Recommendations for Practice

Based on the results of the study reported here, it is recommended that the implementation of a unified crisis communication plan be implemented in each state, to achieve consistent internal and external outreach efforts. These crisis plans should incorporate all forms of natural disasters--such as hurricanes, fires, tornadoes, earthquakes, and floods--man-made disasters, and terrorist attacks. Through the implementation of these efforts, Extension agents will be better prepared and informed about their roles during disasters and how to react in these disaster and/or crisis situations.

Recommendations include establishing a media relations plan to enhance informative and positive news coverage of Extension and agriculture during a crisis situation. By establishing effective media relations, communicators will increase their access to the media, enhance the media's understanding of the issues, and influence the delivery and accuracy of information (Ruth et al., 2005). This type of assessment and preparation will enhance Extension professionals' overall ability to communicate effectively during a crisis and understand the organization and their individual roles in assisting clientele, members of their community, and outside organizations.

Because electronic communication was problematic due to electrical outages caused by the hurricanes, Extension agents need to depend on other channels, such as flyers/print materials, word of mouth, newspapers, and radio to communicate their messages. These procedures should be outlined in the crisis communication plan. It is vital that Extension attempt to reach all outlets of news coverage. It is also recommended that Extension develop training for Extension agents on how to respond during hurricanes and other disasters, to be prepared and informed about their roles and responsibilities.

Recommendations for Future Research

Although the study reported here specifically focused on Florida's 2004 hurricane season and Extension's communication response, research in other states faced with disasters is essential to further the understanding and awareness of Extension's response in these types of situations. By comparing Extension's efforts in states other than Florida, researchers could further determine what roles and responsibilities agents serve according to location. It would also be important to survey both Extension clientele and the general public regarding their perception of Extension's communication efforts during times of crisis.

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