

Cotton, Rice, Soybean and Sugarcane Farmer Stakeholders: Who Are They?

Robert J. Soileau

Louisiana State University Agricultural Center

Joe W. Kotrlik

Louisiana State University

Abstract

Many organizations and government agencies involved with agriculture use some form of risk communications to deal with environmental risk. However, there are proponents of stakeholder relations. One can question how you can have a stakeholder relations plan if you do not know who your stakeholders are. This study identified stakeholders of Louisiana plant commodity farmers and rated them in terms of importance. Louisiana farmers representing cotton, rice, soybeans and sugarcane participated in a modified Delphi designed to identify stakeholders who can have a positive or negative impact on agricultural production issues. There were 49 stakeholders identified by these plant commodity farmers. In addition, the Delphi process rated the stakeholders in terms of importance to agricultural production issues. Farmers/ranchers, LSU AgCenter Experiment Station Research personnel, family, consumers, farm labor and agriculture chemical, fertilizer and seed dealers are the most important stakeholders with respect to agricultural production issues. One key recommendation is that stakeholder identification research should not be limited to commodity groups. It is recommended that educational institutions associated with agriculture such as the LSU AgCenter should conduct stakeholder identification research. This could allow these institutions to identify who their primary stakeholders are and to develop strategies for interacting with them.

Introduction/Theoretical Framework

“Human beings have invented the concept of ‘risk’ to help them understand and cope with the dangers and uncertainties of life” (Slovic, 1992, p.119). Lowrance defined risk as a “measure of the probability and severity of adverse effects” (1976, p. 94). Slovic (1992) refers to incidents that heighten risk, such as the discovery of pollution, as “unfortunate events.”

For modern societies, there is a price to pay for the use of technology. Each society has to determine what risk from technology is acceptable (Fischhoff, Slovic, & Lichtenstein, 1978). The use of science and technology in agriculture has created a perception of risk. Ironically, the use of science and technology was the reason DDT became detectable (Lowrance, 1976). While scientists and engineers have their own model of risk, so does the general public. Often these models, assumptions and assessments are completely different (Slovic, 1992).

Risk Communications

Risk communications is a method of public relations that many organizations and government agencies have used to address environmental risk. Bad communications of risk is a

primary contributor to environmental conflict (Daggett, 1989). Daggett stated that steps need to be taken to improve risk communications. One of the problems with this practice is what communicators overlook. Risk deals with more than just hazards, it also deals with outrage. “Outrage is everything that is relevant about a risk except how likely it is to be harmful” (Sandman, 1989, p. 45).

Some people involved in agriculture and forestry have called for risk communications in their industry. They believed it was a way to overcome the criticism that agriculture and forestry have received with respect to the environment (McMahon, 1992). Guidelines for effective risk communications were drawn up for the chemical industry in the late 1980’s. Many federal, state and local laws have made the chemical industry more open to the public (Covello, Sandman, & Slovic, 1989).

Seven rules were developed to enhance the risk communications abilities of chemical plant managers. The first rule was to “accept and involve the public as a legitimate partner” (p. 302). It is important to understand that the public can participate in the decisions that can impact their lives. Ultimately, the public should be well informed (Covello et al., 1989).

The second rule was to “plan carefully and evaluate performance” (p. 302). You cannot communicate the same way to every audience. Careful planning must take place to be effective. The third rule was to “listen to your audience” (p. 302). Trust, credibility, competence, fairness, caring and compassion were more of a concern to people. It is important to listen to people so they will eventually listen to you (Covello et al., 1989).

The fourth rule was to “be honest, frank and open” (p. 303). Your trust has to be earned. You cannot ask the public to trust you. The more you share information with people, the more likely they will begin to trust you. The fifth rule was to “coordinate and collaborate with other credible sources” (p. 303). If your issue deals with other agencies and/or organizations then you should work with them throughout the process. Working with an associate group can help the overall process (Covello et al., 1989).

The sixth rule was to “meet the needs of the media” (p. 303). The media can set the agenda and help determine the outcome of a risk situation if not handled properly. The seventh rule was to “speak clearly and with compassion” (p. 304). Clear, concise language is important to communicating effectively to the public (Covello et al., 1989).

Stakeholders

Just as important as to how well people communicate in environmental risk situations is what action is being implemented. Often the actions taken in an environmental risk situation speak louder than words to the general public. Also with respect to the chemical industry, the authors emphasize the importance of addressing these issues on the local level (Covello et al., 1989). Sandman believes that industries would better serve themselves by focusing on stakeholder relations. He rhetorically asks if an organization can do too much stakeholder relations. However, many organizations do not address stakeholder relations and instead

concentrate on public relations (Sandman, 2003).

If agriculture is going to relate to stakeholders, we need to know who a stakeholder is. In the business world, Freeman defines a stakeholder as "...any group or individual who can affect or is affected by the achievement of an organization's purpose" (Freeman, 1984 p. 53). Many businesses have learned to think of people in their communities as stakeholders. People in communities want a clean and safe environment and community stakeholders can impact decisions made by a company. If a company violates the values and identity of a community, the psychological contract between the community and the company has been broken. This can damage the company's reputation (Burke, 1999).

Stakeholder Management Theory

A company's reputation can have an impact on their ability to become an employer of choice in their community. Similar to some of the principles in risk communications, it is important to become a trusting neighbor to the community (Burke, 1999). The key is to keep groups or people involved that can potentially affect you or your business. This is why Freeman's (1984) definition of a stakeholder is so broad. Freeman proposed a Stakeholder Management Theory to give organizations a better concept of their stakeholders. The framework for his theory was broken down into three levels. The first level was the "rational level" in which organizations determine who their stakeholders are. The second level of the theory was the process level. This was where an organization had to understand its operating procedures so it knows how to manage its stakeholder relationships. The final portion of the theory was the transactional level. This was how management and stakeholders interact (Freeman, 1984).

Summary

From pesticides to biotechnology, agriculture has reacted in many different ways to the changing environmental perceptions of the general public. If stakeholder relations is the next step, then it is important to know who your stakeholders are. With respect to agriculture, who are their stakeholders? Identifying those stakeholders is the first step to Freeman's (1984) "rational level." This information should be very beneficial to agricultural and extension educators and commodity groups as they strive to educate youth and adults about the many facets of the agricultural industry.

Purpose/Objectives

The purpose of this study was to identify the stakeholders of Louisiana cotton, rice, soybean and sugarcane farmers. These are the four largest plant commodities in Louisiana based on their economic value (Louisiana State University Agricultural Center, 2004). This was accomplished using the views and experiences of selected members of each commodity group representing cotton, rice, soybean and sugarcane. This study had the following objectives:

1. The first objective was to describe the cotton, rice, soybean and sugarcane farmers who identified stakeholders on selected personal characteristics. These characteristics were: age, primary agricultural crop grown, total crop acreage and years farming.
2. The second objective was to determine the ranking of the identified stakeholders based on their “Importance” mean score from cotton, rice, soybean and sugarcane farmers.

Methods/Procedures

The Delphi technique was originally used at the RAND Corporation to gather consensus expert opinion (Dalkey & Helmer, 1963). The Delphi is an alternative to group interviews through the use of questionnaires. This technique can eliminate certain psychological factors that can influence people involved in a round table situation (Helmer & Rescher, 1959).

Population

The target population was Louisiana cotton, rice, soybean and sugarcane farmers. A purposeful sample of this population was used to identify stakeholders of Louisiana cotton, rice, soybean and sugarcane farmers. According to Scheele (2002), specific rules do not exist for creating a panel of experts for a Delphi study. The Delphi method is a qualitative research technique that gathers data from groups in a structured manner (Fontana & Frey, 2000). This procedure allows the researcher to pool experts to gather their collective knowledge (Helmer & Rescher, 1959). The alumni of the LSU AgCenter’s Agriculture Leadership Development Program (ALDP) and other members of their respective commodity groups (cotton, rice, soybean and sugarcane) are considered the experts for identifying their stakeholders.

The sampling plan for the Delphi incorporated the commodity group leaders of the Louisiana Cotton Association, Louisiana Rice Growers Association, Louisiana Soybean Association and American Sugar Cane League. Each commodity group leader was given a list of graduates from ALDP whose primary crop is representative of their respective commodity groups. The ALDP database and LSU AgCenter crop specialists were used to confirm the primary crop of each ALDP graduate. Each commodity group leader was asked by the researcher to choose five farmers from the ALDP graduate list and five non-ALDP graduates who are members of their respective commodity group who might be willing to participate in the study.

A list of 40 names was submitted by the commodity group leaders. Two farmers were listed by two different commodity groups. Therefore, the list of submitted names was 38. The researcher attempted to call all 38 farmers on the list to invite them to participate in the Delphi. Contact was made with 34 farmers; four farmers on the list could not be contacted after three separate attempts by phone. Two farmers who were contacted did not want to participate in the study, which resulted in 32 farmers agreeing to participate.

The sample size of 32 was considered adequate for this study. The sample size of a Delphi has been as small as 11 (Dalkey, 1969). When the size of the sample exceeds 30 participants, few new ideas are produced among homogeneous groups (Delbecq, Van de Ven, & Gustafson, 1975).

Instrumentation

The Round One instrument included a focus question for identifying stakeholders and instructions were provided for each participant in the Round One cover letter and the Round One questionnaire. The focus statement was: “A stakeholder is someone who has an interest in your business. An agricultural stakeholder could have a positive or negative interest/concern about agricultural production issues. List the 10 most important Louisiana agricultural stakeholders.” Personal information for each participant was also collected.

The Round Two instrument had instructions provided in the Round Two cover letter and the Round Two questionnaire. A listing of all of the stakeholders identified in Round One was listed. Any stakeholders that appeared similar were consolidated into one stakeholder by the primary researcher and confirmed by a panel of experts consisting of extension and agricultural education faculty. The participants were asked to rate the importance of each stakeholder to agriculture using the anchored scale listed below:

- 1 = No Importance
- 2 = Slight Importance
- 3 = Moderate Importance
- 4 = Substantial Importance
- 5 = Extreme Importance

These ratings were used to provide a ranking for each stakeholder identified in Round One based on the anchored scale. The mean for each stakeholder was interpreted as follows:

- 1.00 – 1.49 = No Importance
- 1.50 – 2.49 = Slight Importance
- 2.50 – 3.49 = Moderate Importance
- 3.50 – 4.49 = Substantial Importance
- 4.50 – 5.00 = Extreme Importance

The Round Three instrument had instructions provided in the Round Three cover letter and the Round Three questionnaire. The questionnaire was unique for each participant. It included each individual participant’s rating for each stakeholder and the mean of all participants in the study. The participants were asked to review how their ratings compared to the ratings from other Delphi panel members and then place their final rating on the importance of each stakeholder to agriculture using the anchored scale listed above. The ratings in the Rounds Two and Three instruments addressed research objective two.

Data Collection

A cover letter was attached to the Round One questionnaire of the modified Delphi and mailed out to all 32 farmers who agreed to participate in the study. A postcard follow-up was sent to everyone on the list five days after the original mail out. A phone follow-up reminder was

conducted 10 days after the original mailing to non-respondents. The final number of respondents to the Round One questionnaire was 29. A cover letter was attached to the Round Two questionnaire of the modified Delphi and mailed out to the 29 participants who completed the Round One questionnaire. A postcard follow-up was sent to everyone on the Round Two list five days after the Round Two instrument was mailed out. A phone follow-up reminder was conducted 10 days after the original mailing to non-respondents. Twenty-seven (27) participants completed Round Two. A cover letter was attached to the Round Three questionnaire of the modified Delphi and mailed out to the 27 participants who completed the Round Two questionnaire. A postcard follow-up was sent to all of the remaining participants five days after the Round Three instrument was mailed out. A phone follow-up reminder was conducted 10 days after the original mailing to non-respondents. The final number of respondents was 24.

Results/Findings

The first objective was to describe the cotton, rice, soybean and sugarcane farmers who identified stakeholders on selected personal characteristics. These characteristics were: age, primary agricultural crop grown, total crop acreage and years farming. This nominal and interval data was summarized using frequencies and percentages.

The median age of the 24 participants was 43 and the mean age was 42.13 ($SD=5.71$). The reported ages ranged from a low of 31 to a high of 53 years. The data was summarized into age categories (Table 1), which showed the 40-44 age category was the largest group of respondents ($n=9$, 37.5%).

Table 1
Age of Louisiana Farmers who Identified Agricultural Stakeholders in the Delphi Consensus Building Process.

Age Group	<i>n</i>	%
Less than 40	9	37.5
40-44	8	33.3
45-49	4	16.7
Greater than 49	3	12.5
Total	24	100.0

Note. $N=24$; $M=42.13$, $SD=5.71$, Range 31-53.

Cotton, rice and sugarcane farmers were equally represented among the primary crops grown by the 24 Delphi participants with each having seven participants (29.2%). Only three soybean farmers (12.5%) participated in the stakeholder selection process. The range of the total crop acreage varied greatly from a low of 650 acres to a high of 7,500 acres. The median acreage was 2,800 and the mean acreage was 2,864.58 ($SD=1,677.63$). The data was summarized into acreage categories in Table 2.

The median years farming was 20.5 for the participants and the mean years farming for

the participants was 21.25 ($SD=6.89$). The range of experience among the participants revealed a low of 8 years and a high of 32 years. The data was summarized into categories (Table 3), which showed the 20-25 years farming group was the largest ($n=7$, 29.1%). The 15-19 years farming group was the smallest ($n=3$, 12.5%).

The second objective was to determine the ranking of the identified stakeholders based on their “Importance” mean score from cotton, rice, soybean and sugarcane farmers. A consensus-based decision-making process was used to determine the primary stakeholders of the alumni. For the purpose of this study, consensus was defined as occurring when 51% of the respondents rated the importance of a stakeholder within one point (+ or -) within the median (Gaspard, 1992; Delaney, 2004). Before determining the rank of each stakeholder in Rounds Two and Three, the stakeholders were identified by the Round One participants of the Delphi ($N=29$). The median, mean, standard deviation and consensus were calculated for each stakeholder.

Table 2
Total Crop Acreage of the Louisiana Farmers who Identified Agricultural Stakeholders in the Delphi Consensus Building Process.

Total Crop Acreage Group	<i>N</i>	%
Less than 1,500	5	20.8
1,500-2,499	5	20.8
2,500-3,499	8	33.4
Greater than 3,499	6	25.0
Total	24	100.0

Note. $N=24$; $M=2,864.58$, $SD=1,677.63$, Range 650-7,500.

Table 3
Number of Years Farming of the Louisiana Farmers who Identified Agricultural Stakeholders in the Delphi Consensus Building Process.

Years Farming Group	<i>N</i>	%
Less than 15	4	16.7
15-19	3	12.5
20-24	7	29.1
25-29	6	25.0
Greater than 29	4	16.7
Total	24	100.0

Note. $N=24$; $M=21.25$, $SD=6.89$, Range 8-32.

Of the 49 stakeholders identified in the Delphi only six stakeholders received a rating of extreme importance with farmers/ranchers ($M=4.83$, $SD=.48$) receiving the highest rating (Table 4). Other stakeholders listed in the top five were LSU AgCenter Experiment Station personnel

($M=4.75$, $SD=.44$), family ($M=4.71$, $SD=.69$), consumers ($M=4.67$, $SD=.57$) and farm labor ($M=4.58$, $SD=.72$). Agriculture chemical, fertilizer and seed dealers was the only other stakeholder group to receive an extreme importance rating of 4.50 ($SD=.66$).

Table 4
Rating and Interpretation of Importance of the Stakeholders Identified by Louisiana Farmers in the Delphi Consensus Building Process

Stakeholder	<i>M</i>	<i>SD</i>	Importance Interpretation
Farmers/Ranchers	4.83	.48	Extreme
LSU AgCenter Experiment Station Personnel	4.75	.44	Extreme
Family	4.71	.69	Extreme
Consumer	4.67	.57	Extreme
Farm Labor	4.58	.72	Extreme
Agriculture Chemical, Fertilizer and Seed Dealer	4.50	.66	Extreme
Banker/Lender	4.42	.58	Substantial
Elevator/Gin/Mill Personnel	4.38	.58	Substantial
Landowner	4.38	.77	Substantial
Crop Consultant	4.33	.64	Substantial
LSU AgCenter Cooperative Extension Personnel	4.33	.64	Substantial
U.S. Department of Agriculture Personnel	4.29	1.00	Substantial
U.S. Representatives (Congress/Senate)	4.21	.93	Substantial
Agriculture Equipment Dealer	4.17	.76	Substantial
Air Applicator Service	4.17	.82	Substantial
Farm Service Agency	4.17	1.13	Substantial
Commodity Group Association	4.08	.83	Substantial
Agriculture Fuel Dealer	3.96	.91	Substantial
State Legislators (Senate/Representative)	3.83	1.01	Substantial
Truck Driver	3.67	.87	Substantial
NRCS Personnel	3.63	.88	Substantial
Commodity Broker	3.63	.92	Substantial
Louisiana Department of Agriculture and Forestry Personnel	3.58	.97	Substantial
Mechanic	3.50	.93	Substantial
Louisiana Farm Bureau Personnel	3.50	.93	Substantial

Stakeholder	<i>M</i>	<i>SD</i>	Importance Interpretation
Food Retailers	3.42	.97	Moderate
Port Board Members	3.29	1.04	Moderate
Department of Environmental Quality	3.21	.83	Moderate
Environmental Protection Agency	3.21	.88	Moderate
Police Jury/Parish Government	3.21	.88	Moderate
School System	3.21	1.02	Moderate
Rural Home Owners	3.13	.80	Moderate
Sheriff	3.13	.99	Moderate
Livestock Auction Personnel	3.08	1.02	Moderate
Tire Dealer	3.04	.75	Moderate
Auto Parts Dealer	3.00	.83	Moderate
Insurance Company	2.96	.75	Moderate
Accountant	2.96	1.00	Moderate
Louisiana Governor	2.96	1.04	Moderate
Hardware Dealer	2.92	.65	Moderate
Port Personnel	2.88	.95	Moderate
Environmentalist	2.54	1.02	Moderate
Lawyer	2.38	.92	Slight
Chamber of Commerce	2.25	.94	Slight
Property Developer	2.25	.94	Slight
Auto Dealer	2.25	.99	Slight
Clothing Retailers	2.08	.83	Slight
Mayor	2.08	.83	Slight
City Council	2.04	.75	Slight

Note. *N*=24. Response based on anchored scale: 1=No Importance, 2=Slight Importance, 3=Moderate Importance, 4=Substantial Importance, 5=Extreme Importance. Scale Interpretation: 1.00-1.49=No Importance, 1.50-2.49=Slight Importance, 2.50-3.49=Moderate Importance, 3.50-4.49=Substantial Importance, 4.50-5.00=Extreme Importance.

There were 19 stakeholder groups that received a substantial importance rating led by banker/lenders ($M=4.42$, $SD=.58$). No stakeholder group received a rating of no importance. There were seven stakeholders with a slight importance rating. The lowest rated stakeholder group was city council ($M=2.04$, $SD=.75$). Most of the political stakeholders were rated as

slightly or moderately important. The highest rated political stakeholders were state legislators ($M=3.83$, $SD=1.01$) and U. S. representatives ($M=4.21$, $SD=.93$). LSU AgCenter Experiment Station personnel ($M=4.75$, $SD=.44$) and LSU AgCenter Cooperative Extension Service personnel ($M=4.33$, $SD=.64$) were the highest rated government agency personnel. The results are summarized in Table 4.

Consensus was achieved for all 49 stakeholders (Table 5). This was achieved when 51% of the respondents rated the importance of a stakeholder within one point (+ or -) of the median. One of the extremely important stakeholders and five of the substantially important stakeholders achieved 100% consensus.

Table 5
Ranking and Consensus of the Stakeholders Identified by Louisiana Farmers in the Delphi Consensus Building Process.

Stakeholder	<i>M</i>	<i>SD</i>	Median Ranking	% Consensus
Farmers/Ranchers	4.83	.48	5	95.8
LSU AgCenter Experiment Station Personnel	4.75	.44	5	100.0
Family	4.71	.69	5	95.8
Consumer	4.67	.57	5	95.8
Farm Labor	4.58	.72	5	87.5
Agriculture Chemical, Fertilizer and Seed Dealer	4.50	.66	5	91.7
Banker/Lender	4.42	.58	4	100.0
Elevator/Gin/Mill Personnel	4.38	.58	4	100.0
Landowner	4.38	.77	5	83.3
Crop Consultant	4.33	.64	4	100.0
LSU AgCenter Cooperative Extension Personnel	4.33	.64	4	100.0
U.S. Department of Agriculture Personnel	4.29	1.00	5	83.3
U.S. Representatives (Congress/Senate)	4.21	.93	4	95.8
Agriculture Equipment Dealer	4.17	.76	4	100.0
Air Applicator Service	4.17	.82	4	95.8
Farm Service Agency	4.17	1.13	4.5	83.3
Commodity Group Association	4.08	.83	4	95.8
Agriculture Fuel Dealer	3.96	.91	4	91.7
State Legislators (Senate/Representative)	3.83	1.01	4	91.7
Truck Driver	3.67	.87	3.5	75.0
NRCS Personnel	3.63	.88	4	91.7
Commodity Broker	3.63	.92	4	87.5

Stakeholder	<i>M</i>	<i>SD</i>	Median Ranking	% Consensus
Louisiana Department of Agriculture and Forestry Personnel	3.58	.97	3.5	66.7
Mechanic	3.50	.93	4	83.3
Louisiana Farm Bureau Personnel	3.50	.93	3	83.3
Food Retailers	3.42	.97	4	83.3
Port Board Members	3.29	1.04	3	79.1
Department of Environmental Quality	3.21	.83	3	91.7
Environmental Protection Agency	3.21	.88	3	87.5
Police Jury/Parish Government	3.21	.88	3	87.5
School System	3.21	1.02	3	87.5
Rural Home Owners	3.13	.80	3	91.7
Sheriff	3.13	.99	3	87.5
Livestock Auction Personnel	3.08	1.02	3	83.3
Tire Dealer	3.04	.75	3	95.8
Auto Parts Dealer	3.00	.83	3	91.7
Insurance Company	2.96	.75	3	83.3
Accountant	2.96	1.00	3	91.7
Louisiana Governor	2.96	1.04	3	83.3
Hardware Dealer	2.92	.65	3	95.8
Port Personnel	2.88	.95	3	91.7
Environmentalist	2.54	1.02	2	83.3
Lawyer	2.38	.92	2	91.7
Chamber of Commerce	2.25	.94	2	91.7
Property Developer	2.25	.94	2	91.7
Auto Dealer	2.25	.99	2	87.5
Clothing Retailers	2.08	.83	2	91.7
Mayor	2.08	.83	2	91.7
City Council	2.04	.75	2	91.7

Note. *N*=24. Response based on anchored scale: 1=No Importance, 2=Slight Importance, 3=Moderate Importance, 4=Substantial Importance, 5=Extreme Importance. Consensus was achieved when 51% of the respondents rate the importance of a stakeholder within one point (+ or -) within the median.

Conclusions/Recommendations/Implications

Freeman defined a stakeholder as "...any group or individual who can affect or is affected by the achievement of an organization's purpose (Freeman, 1984, p.53). While Freeman's (1984) definition of a stakeholder is broad, he proposed a Stakeholder Management Theory to give organizations a better concept of their stakeholders.

The first level of his theory was the "rational level" in which organizations determine who their stakeholders are. This was done through a mapping process where the stakeholders and their relationships to the organization were mapped out (Freeman, 1984). The Delphi with the Louisiana plant commodity farmers was a first step at discovering who farmers identified as their stakeholders. In addition, it is an important first step to discover the important stakeholders of farmers with respect to agriculture production issues.

The most important stakeholders of Louisiana plant commodity farmers are a mixture of internal and external stakeholders. The internal stakeholders are farmers/ranchers, family and farm labor. The external stakeholders are LSU AgCenter Experiment Station Research personnel, consumers and agriculture chemical, fertilizer and seed dealers. The most important government agency was both branches of the LSU AgCenter Experiment Station and Cooperative Extension Service.

The researcher believes that stakeholder relations could become an effective tool for commodity producers in the future. But before a stakeholder relations plan is developed, stakeholders have to be identified. This study is a first step in that process. Once the stakeholders are identified, these commodity groups should develop stakeholder relations plans with respect to numerous issues.

It is also recommended that other commodity groups such as animal and forestry commodity associations look at identifying who their stakeholders are and what they perceive about their respective commodities using the Delphi. In addition, the Delphi study should be replicated with the same commodity groups. However, a larger number from each commodity group should be incorporated in the study so comparisons can be made among commodity groups. It is important to determine if stakeholders are similar for multiple commodities. This could potentially allow multiple commodity organizations to combine their resources for future stakeholder relations plans.

The stakeholder identification process should also be conducted with other potential commodity groups outside of Louisiana. Are there differences among similar commodities in different parts of the country? Unless stakeholder identification research is conducted, this will not be known.

Stakeholder identification research should not be limited to commodity groups. It is recommended that educational institutions associated with agriculture, such as the LSU AgCenter, should conduct stakeholder identification research. This could allow these institutions to identify who their primary stakeholders are and to develop strategies for interacting with them.

These strategies may involve utilizing cooperative extension personnel to lead or assist with the design and implementation of stakeholder relations programs.

References

- Burke, E. M. (1999). *Corporate community relations: The principle of the neighbor of choice*. Westport, CT: Praeger.
- Covello, V. T., Sandman, P. M., & Slovic, P. (1989). Risk communication, risk statistics, and risk comparisons: A manual for plant managers. In D. B. McCallum, & M. T. Pavlova (Eds.), *Effective risk communication: the role and responsibility of government and nongovernment organizations* (pp. 301-309). New York: Plenum Press.
- Daggett, C. J. (1989). The role of risk communication in environmental gridlock. In V. T. Covello, D. B. McCallum, & M. T. Pavlova (Eds.), *Effective risk communication: The role and responsibility of government and nongovernment organizations* (pp. 31-36). New York: Plenum Press.
- Dalkey, N. C. (1969). *The Delphi method: An experimental study of group opinion* (Contract Number F44620-67-C-0045). Santa Monica, CA: RAND.
- Dalkey, N., & Helmer, O. (1963). An experimental application of the Delphi method to the use of experts. *Management Science*, 9(3), 458-467.
- DeLany, B. W. (2004). *Entry-level job skills needed by wildlife management professionals*. (Doctoral dissertation, Louisiana State University, 2004). *Dissertation Abstracts International*, 65/07, 2579.
- Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). *Group techniques for program planning: A guide to nominal group and Delphi processes*. Glenview, Illinois: Scott, Foresman and Company.
- Fischhoff, B., Slovic, P., & Lichtenstein, S. (1978). How safe is safe enough? A psychometric study of attitudes towards technological risks and benefits. *Policy Sciences*, 9, 127-152.
- Fontana, A., & Frey, J. H. (2000). The interview: From structured questions to negotiated text. In N. K. Denzin & Y S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 645-672). Thousand Oaks: Sage Publications, Inc.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.
- Gaspard, C. P. (1992). *Identification of plant science concepts needed in agriscience programs of the future*. (Doctoral dissertation, Louisiana State University, 1992). *Dissertation Abstracts International*, 54/02, 405.
- Helmer, O., & Rescher, N. (1959). On the epistemology of the inexact sciences. *Management Science*, 6(1), 25-52.

- Lowrance, W. W. (1976). *Of acceptable risk: Science and the determination of safety*. Los Altos, CA: William Kaufmann, Inc.
- Louisiana State University Agricultural Center. (2004). *Louisiana summary: Agriculture & natural resources 2004*. Retrieved December 29, 2005 from <http://www2.lsuagcenter.com/Communications/agsum/agsum04/>
- McMahon, C. K. (1992). *Herbicides and forest ecosystems - approaches to risk communication*. Proceedings Southern Weed Science Society, 45th, 154-170.
- Sandman, P. M. (1989). Hazard versus outrage in the public perception of risk. In D. B. McCallum, & M. T. Pavlova (Eds.), *Effective risk communication: The role and responsibility of government and nongovernment organizations* (pp. 45-49). New York: Plenum Press.
- Sandman, P. M. (2003, June 12). *Stakeholders*. Retrieved April 4, 2004, from <http://www.psandman.com/col/stakeh.htm>
- Scheele, D. S. (2002). Reality construction as a product of Delphi interaction. In H. A. Linstone & M. Turoff (Eds.), *The Delphi method: Techniques and applications* (pp. 35-67) Retrieved July 16, 2005, from <http://www.is.njit.edu/pubs/delphibook/index.html>
- Slovic, P. (1992). Perception of risk: Reflections on the psychometric paradigm. In Krimsky, S. & Golding, D. (Eds.), *Social theories of risk* (pp. 117-152). Westport, CT: Praeger.