

Extension Educators Collecting Industry-specific Stakeholder Input

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Abstract

Extension educators have explored different methods for collecting stakeholder input, but a suitable methodology has not been agreed on. The Michigan State University Extension dairy team works with an advisory board and also collected formal stakeholder input through ten regional partner group surveys in 1997. In 2007, the team decided to seek another round of broad-based and inclusive stakeholder input. The research team decided to employ issue identification groups at different locations throughout the state and a mail survey. This paper reports on the procedure developed for this purpose and its results.

Key words: Focus group discussion, formative evaluation, issue identification, issue prioritization, multi-disciplinary teams, nominal group technique

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Introduction

Within the land grant university system, extension has the primary mission of education and diffusion of tested research and innovations (Rogers, 2003), but also an institutional maintenance function to garner political support on behalf of the system (McDowell, 1985). The choices of which audiences to address, which contents to provide, and how to deliver educational programs, therefore, need to be based on both the educational goal of producing research-based information in a readily accessible form and the maintenance goal of creating actionable political support. Both goals require stakeholder input and needs identification of clientele.

Extension educators nationwide are exploring different methods for collecting stakeholder input, in particular since the 1998 Farm Bill mandated stakeholder input for setting research, extension, and education priorities. However, a suitable methodology for collecting input has not been decided and a wide variety of approaches have been used by different institutions. Methods include informal interviews with individuals or groups (e.g., Boleman & Cummings; Stienbarger), group discussions (e.g., Bitsch, 2004; Malek), advisory groups (e.g., Barnett, Johnson, & Verma; Black et al.; Place), and mailed questionnaires (e.g., Kelsey & Mariger; Boone et al.). Tradeoffs between the different approaches are the depth of information versus its breadth, the quality and quantity of participation, and the resources and time required.

In 1994, Michigan State University Extension (MSUE) implemented a structure of self-directed teams as its major educational development and delivery model (Leholm et al.). These Area of Expertise teams were built around program areas. The number of teams has increased from originally three (dairy, field crops, and livestock) to around 30 teams today. Involvement of stakeholders is expected, including stakeholder information input on program needs, project

selection, direction, and evaluation. Teams are also expected to be entrepreneurial and generate resources to enhance programming.

The dairy team has a history of seeking to be responsive and relevant to industry stakeholders and addressing new issues. In addition to working closely with an advisory board, the dairy team had collected formal stakeholder input through surveying ten regional partner groups throughout the state in 1997 (Ferris, Bucholtz, & Robb). Results have provided support for fund requisition, research guidance, faculty and staff hires, and led to the development of timely extension programs, for example, on human resource management.

In 2007, the dairy team decided to seek another round of broad-based, inclusive stakeholder input. A research team was formed consisting of three dairy field extension educators, an animal science scientist and an agricultural economist. The research team decided to use two approaches: issue identification groups at different locations throughout the state and a mail survey. The purpose of this paper is to report on the issue identification procedure and its results. The issue identification procedure developed can be used as a stand-alone method to collect stakeholder input in a wide variety of settings with defined clientele groups, and also as a basis to develop additional research instruments, such as survey questionnaires. Issues identified apply to Michigan, but many have implications for other states with dairy production and for other livestock industries, as well as for agricultural production as a whole.

Group Methods for Issue Identification

Delbecq and Van de Ven developed a group process for program development with clientele involvement. Although comparable group approaches have been described earlier, the procedure they suggested for problem exploration is known as the nominal group technique. Van de Ven and Delbecq show theoretically (1971) and empirically (1974) that nominal group

processes are more effective in generating information and describing problem dimensions than interacting group processes. In a nominal group, participants work on a broad question or problem individually in a group setting and the outcome is based on a pooled summary of their individual efforts (Van de Ven & Delbecq, 1971). Van der Ven & Delbecq (1974) define an interacting group as an unstructured group meeting where participants interact spontaneously and without guidance. Both types of approaches rely on face-to-face meetings, different from the Delphi technique.

Modified nominal group techniques have been adopted by extension educators as an effective alternative to brainstorming (Sample), to collect county level input (Boleman & Cummings), and in educator training (Place). Despite superior effectiveness of nominal group techniques compared to spontaneously interacting groups for problem identification, several recent efforts have used moderated group discussions. For example, focus group discussions have been used effectively in need assessment and program development (e.g., Bitsch et al.; Bitsch & Harsh, Bitsch & Olynk). In structured focus group discussions, the group interaction leads to a deep level of problem description and clear articulation of problem dimensions (Bitsch, 2004).

In addition to depth and breadth of problem identification, other factors to consider in choosing a procedure for stakeholder input include efficient use of resources, including time and funds, and the timeliness of results. While nominal group techniques are likely to generate more input, focus groups are likely to generate more depth regarding each problem dimension. A fully executed nominal group procedure requires a longer time commitment from participants than a focus group. However, results of nominal group sessions are available immediately afterwards, whereas focus group discussions need to be analyzed and described in a time-consuming process.

Several other extension teams have previously experimented with modifications of these methods. For example, the MSUE pork team employed a modified nominal group technique for collecting input from its advisory group. After discussing the pork team's and others' experiences, the research team developed an issue identification procedure combining elements of nominal group techniques and the focus group discussion method.

Issue Identification Procedure

The method developed to identify, clarify, and rate issues and opportunities within the dairy industry involved seven sessions in four different regions of the state. Four sessions assembled dairy farm owners, managers, herdspersons, and next-generation family employees. Three sessions assembled professionals from allied industries, such as milk cooperative representatives, veterinarians, feed consultants, and lenders, and government agency personnel.

Each session started with an introduction briefly describing the changes that had occurred in the dairy industry since the last comprehensive issue identification in 1997. Then the purpose of the meeting was explained and an overview of the meeting format provided. After reviewing participants' commitment and protection, a consent form was signed. Next, participants were given about five minutes to write down what they considered important issues for Michigan's dairy industry and its future.

For the next step, participants were split in up to four subgroups, depending on the number of participants; the average total group size was 10.4 participants. Subgroups were assembled with at least three participants. When possible, farm groups were split according to participants' position on the farm (e.g., herdspersons, next generation, and owner/manager groups) and farm sizes to enable a more open discussion. Allied stakeholder groups were assigned to distribute participants with similar background to different subgroups.

Each subgroup was assembled by a category facilitator to brainstorm in one of four categories: business management (including farm business economics and structure, farm transition, legal issues, and human resource management), production performance (including cow management, animal health and welfare, nutrition, reproduction, and records management), environment (including water, air, and societal concerns), and industry issues (including structural change, dairy and agricultural policy, industry leadership, food security, and land use policy). All facilitators had previous experience moderating groups. However, an additional two hours training was scheduled to review the facilitation procedure, how to encourage equal and open participation, and how to deal with difficult or domineering participants.

Initially, facilitators encouraged participants to contribute in round-robin fashion, but did allow deviation. When contributions slowed they encouraged additional contributions and discussion, for example through showing a list of subcategories. The facilitators recorded all contributions on laptop spreadsheets. No reduction of duplicated issues, combination of similar issues, or condensation and abstraction was allowed at this stage. The subgroups were also tape-recorded for later reference. After 10-15 minutes, groups rotated among facilitators, until each subgroup had suggested issues within each of the four categories.

After completing rotations, the whole group reassembled to clarify and discuss the issues that had been recorded. One facilitator led the overall discussion and another facilitator recorded changes and combined items based on participants' suggestions and consent. The goal of this stage was a reduction of duplications and to arrive at clearly worded items. The discussion was also tape-recorded. This phase of the procedure took about one hour.

After participants had agreed on a list of items within each of the four categories, facilitators printed these lists for each participant. Participants were then asked to rate each issue

as high, medium, low, or no importance, individually. Their ratings were entered into the spreadsheets of each category and overall group ratings were computed for each issue. The overall ratings were printed and shared with participants to give them a sense of how the group viewed each issue identified. Although a discussion of the overall ratings with each group had been planned, most participants were interested in looking at the results, but did not feel the need for further discussion.

Results of each session can serve to guide specific programming efforts in that region. However, to summarize results across the state and guide state-wide programming and research efforts, results from individual groups need to be aggregated. Although average ratings had been calculated for each group, another procedure was needed to combine results across regions and different groups. Because issues identified during different sessions differed with respect to abstraction level and specificity regarding different topics, the numbers of issues identified differed widely. Accordingly, issues cannot be averaged across groups following a formula, but aggregation requires judgment. For this purpose, the research team met to analyze and amalgamate the results of the different sessions incorporating both qualitative and quantitative information. Results were discussed until a consensus was reached. The aggregated results were then reviewed by other dairy team members to allow further input and clarification.

Results

The total number of items rated at the seven sessions was 722; an average of 103.1 items per session. Many more items had been initially mentioned in the subgroup discussions, including duplications, overlap, and similar content on different abstraction levels. These were, however, partly eliminated during the overall group discussions. The number of issues discussed by the farm groups and the allied industry groups was similar; on average 106.0 (Range: 87-133)

and 99.3 (Range: 54-149) items per session, respectively. Both types of groups brought up significantly more items within the production performance and industry issues categories than within business management and environment categories (31.4, 31.1 versus 21.3, 20.3, respectively; Range: 9-59 items per category and session).

Results will be presented in two main classes, industry needs and individual needs. The industry needs stem from the industry issues category. They include issues important to the short and long term viability of the dairy industry as a whole (Table 1) and stakeholder concerns about the dairy industry (Table 2). Michigan's dairy industry, namely farmer associations and related groups, may or may not choose to make a priority of and/or initiate collective action on any of these issues. Issues outlined in the tables have been brought up during more than two meetings by different stakeholders, such as farmers, farm employees, industry consultants, farm suppliers, and service providers. These issues have been rated as important in more than one session, and survived the aggregation and weaning process of the research team. Many issues are relevant to agriculture beyond the dairy industry and applicable beyond Michigan.

Individual needs are issues where education, training, and research may contribute to sustainable dairy production on the farm level. These issues are categorized as herd management and environmental management (Table 3), and as farm business management, finance, and human resource management (Table 4). Individual needs and industry needs overlap. For example, concern about immigration legislation is perceived as an industry issue by many dairy industry stakeholders (Table 2) and may require collective action. However, education on immigration legislation and background information about potential legislation is also an individual need of industry participants (Table 4). Both on the individual level, as well as, on the

collective level, research about impacts of potential legislation may be required, in addition to reviewing and summarizing known facts, to meet these needs.

Conclusions and Implications

The issue identification procedure developed and used here, in particular rating through group participants and aggregating and weaning through the research team, served to narrow the number of issues compared to similar endeavors, e.g., the Texas Community Futures Forum identified 2,274 issues (Boleman & Cummings). Through this process, the number of issues was reduced to 114 (Table 1 through 4), while still providing enough richness and detail to guide program development. However, the same richness is not immediately conducive to priority setting. Each stakeholder group can use these results to review their priorities based on their values and their roles and functions in the overall system. For example, the MSUE dairy team will need to decide which of the many educational opportunities to address first and where resources can be spent for greater impact.

Advantages of the issue identification procedure developed are the broad involvement of industry stakeholders in a relatively short timeframe and at relatively low costs. Expertise from many different areas was brought together, starting with the research team and continuing through the different stakeholder groups at the regional meetings. Results from each session were available immediately afterwards for regional planning. While condensing the aggregated issue lists took a significant effort from the research team, it can be accomplished in a timely manner.

A disadvantage of the procedure is the substantial time commitment required of the research team throughout the process. Another disadvantage is the lack of an overall rating of the importance of issues and of statistical measures of the distribution of differing priorities

within and between the stakeholder groups. If that information is deemed necessary, the results of the issue identification procedure are well suited as a basis for survey development.

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Table 1. Viability Issues for the Michigan Dairy Industry

Promote availability of career opportunities in agriculture
Promote the value of the dairy industry in Michigan's economy
Increase legislators' knowledge of agriculture
Ensure continuation of Right to Farm program
Maintain adequate access to water resources in agriculture
Work with government to enhance plans to deal with potential foreign animal disease outbreaks
Communicate to consumers about safety of milk products and technologies used
Increase dairy product promotion activities and education, especially targeted to youth
Ensure continuation of Cooperatives Working Together (CWT) program
Develop more leaders within the dairy industry
Inform the public about current farming practices
Work with legislators to fund dairy industry initiatives
Involvement in the legislative process and representation in regulation development
Increase legislators' understanding of the tradeoff between the cost & benefits of compliance
Science-based environmental regulations
Proactive industry approach to environmental issues, working actively with government agencies
Dairy farmers demonstrating environmental stewardship
Timely access to trained Comprehensive Nutrient Management Plan (CNMP) service providers
Methods to reduce odor and air pollutants
Methods to process manure, including renewable fuel (e.g., methane digesters)
Advice on agricultural and environmental regulations by lawyers specialized in agricultural law
Improve production efficiencies
New dairy products to increase milk utilization
Take advantage of globalization by increasing dairy exports
Improve public understanding of animal welfare
Implement animal welfare assessment on farms
Survey what consumers think about food products and the way they are produced
Assess dairy farming's impact on environmental quality
Traceability of agricultural products to their origin to improve food safety
Greater effort and funding for food safety and inspection programs including imported foods
Adopt alternative energy technologies
Methods to improve disease resistance
Consumer/public acceptance of scientific information

Table 2. Issues of Concerns for the Michigan Dairy Industry

Farm business growth to improve quality of life
Consumer interpretation of dairy product labels, e.g., hormone-free, antibiotic-free, rBST-free
Food imports from less regulated countries
Agro-terrorism and bio-terrorism
Availability of farm labor
Immigration legislation
Loss of farm land due to urban encroachment
Farm transfer to the next generation
Availability and market/consumers' acceptance of technologies, e.g., rBST, antibiotics
Availability of dairy veterinarians
Successfully eradicating *Bovine Tuberculosis* in Michigan
Planning for and meeting changing state and federal environmental regulations
Public image of agriculture

Table 3. Individual Needs—Herd Management and Environmental Management

Herd Management

Increase cow longevity
Impacts of crossbreeding and inbreeding
Reducing the use of antibiotics through best practices
Best management practices for vaccinations
Troubleshooting mastitis and high somatic cell count
Foot health and lameness
Farm biosecurity protocols for farm visitors and purchased animals
Dry cow management
Fresh cow management
Lactating cow management
Calf management
Impact of heifer raising methods on performance
Managing culling rates
Cow comfort, stall, and bedding systems
Impact of stocking density and facility design on production, reproduction, and health
Grazing management practices and economics
Management practices for organic production
Choosing alternative feeds based on feeding value and profitability
Using bio-fuel byproduct feeds
Quality, digestibility, and production of feeds
Feeding to reduce nutrients in manure
Record analysis and monitoring production, health, and reproduction
Identify bottlenecks to improving herd performance
Robotic milking systems and their management
Strategies to use sexed semen and economic implications
Effective strategies for getting cows pregnant

Environmental Management

Building good relations with non-farm neighbors
Handling dead animal carcasses, including composting
Current regulations and environmental laws
Using manure as a fertilizer (e.g., application rates)
Michigan's Agriculture Environmental Assurance Program (MAEAP)
Reducing the potential for manure runoff from fields, farm buildings, and lots

Table 4. Individual Needs—Farm Business Management, Finance, and Human Resource Management

Farm Business Management and Finance

General farm business management
Financial management skills for dairy farmers
Profit maximization strategies
Use of records to improve financial decisions
Use of financial ratios and benchmarks
Calculating cost of production
Use of partial budgeting
Milk marketing and price risk management
Evaluation of farm enterprises
Evaluation of niche market opportunities
Planning for business growth
Evaluation of alternative legal business structures
Planning and financing business transfer to next generation
Understanding the legal system and dealing with lawsuits
Using insurance and other methods to protect assets
Contracting farm inputs
Effectively working with the on-farm management team
Contractual agreements with service providers
Effectively working with consultants
Leadership development and training

Human Resource Management

General human resource management
Hiring quality employees
Training employees
Communicating with employees
Communication training for employees
Communicating with family members involved in the farm
Ensuring job satisfaction and retention of employees
Motivating employees
Developing effective incentives for employees
Developing wage and benefits packages for employees
Terminating employees and avoiding legal liability
Managing Latino labor, cultural understanding
Training materials in Spanish for employees
Immigration legislation and background
Communicating dairy tasks in Spanish
English language skills for employees