Influences of Stakeholders on Agricultural Research Centers

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Introduction

The Hatch Act of 1887 established the creation of land-grant university agricultural experiment stations to focus on "direct application of science to address problems in agriculture" (Seevers & Graham, 2012, p. 15). This need for local, experimental research supports the necessity to have research centers strategically placed across the state. Agricultural research stations drive new technologies and practices in the industry and help to create more sustainable production systems. Montana has seven research centers across the state that conduct a variety of research ranging from pest management to pulse crops to cattle breeding evaluation. An advisory council guides the research centers with programming decisions, goals, and addressing agricultural challenges unique to the area. The purpose of the Montana Agricultural Experiment Station (MAES) Advisory Council is "to act in an advisory capacity in program planning matters as they relate to the research, testing and development functions of the research centers and their relationships to other cooperating agencies" (MAES, para. 1). Research centers utilize stakeholder and advisory council input to identify local needs, define problems, and lead solutions. Therefore, it is important to continuously study how stakeholders communicate and influence research centers to better meet community needs.

Theoretical Framework

Previous research done by Ingram et al. in 2018 confirmed the positive effects of agricultural research on communities and the need for consistent communication between stakeholders and the research centers. Grunig and Hunt (1984) developed a two-way symmetrical model of public relations that "presents a more scientifically persuasive way of communicating with key audiences… as content creators conduct research to better understand the audience's attitudes and behaviors, which in turn informs the message strategy and creation." (p. 13). Stakeholders in this study directly engage in two-way communication by disseminating research from the center to the field and by gathering input from the field to research centers. With this flow of direct communication, research centers can create more targeted outreach programs and address community needs more promptly.

Methodology

The purpose of this study was to determine how stakeholders influence agricultural research centers. Objectives included: (1) to describe stakeholder involvement with research centers, (2) to identify how stakeholders directly communicate with research centers, and (3) to identify ways research centers can increase communication with communities. Researchers and center superintendents developed a quantitative survey. The survey was distributed to 30 active stakeholders identified by the Director of Montana Agricultural Experiment Stations following the Dillman, Smyth, and Christian (2014) method. Twelve individuals responded for a 40% response rate including eight extension agents, three research center superintendents, and one regional department head. Data analysis was conducted using descriptive statistics and content analysis of open-ended responses (Gall, Gall, & Borg, 1996).

Results

Objective One: The main connections extension agents had with their area research centers were as an informational resource for programs, to attend annual meetings, and to communicate the needs of producers. Extension agents (n=8) all agreed that research centers play a critical role in agricultural communities by educating the public through field days, supplying agents with

new information to relay to producers, and incorporating new agronomic tools in different climate conditions throughout the state. Approximately 43% (n= 13) of extension agents reported sharing research center findings with fellow agents and used the information to develop their own programs. All research center superintendents (n=3) considered themselves as project leaders who create specific research agendas for on-site staff guided by stakeholder input.
Objective Two: The majority of superintendents agreed that the annual advisory board meeting held at each center helps to maintain communication with local producers and council members help create successful research programs. Half of the agents (n= 4) stated that they had a professional responsibility to maintain interactions with the research center to influence decisions and relay producer concerns. Nearly all respondents reported email was the most preferred method of communication with the research centers. Two-thirds of extension agents (n= 6) expressed having a positive, interactive experience serving on the stakeholder and agreed that annual meetings were a great opportunity to gain feedback from members.
Objective Three: All stakeholders felt that research centers need to work closely with producers to provide information useful for solving practical problems and conduct scientific experiments relating to current agricultural needs. Area department heads would like to see an increase in the integration between field and research center faculty which can lead to greater impacts in both faculty and community engagement. Two of the three superintendents agreed that the availability of resources and funding play a major role in the development of applied research programs.

Conclusions

Agents, area department heads, and research center superintendents prioritize their position on the research center stakeholders as an integral communication process to maintain current with research practices and issues. These councils were the primary method used to engage members in guiding research center decisions. Applied research is an important component for research centers to meet producer needs. Extension agents must maintain a committed relationship with their area research center to increase the effectiveness and accuracy of information to deliver to their own clients. Area department heads suggested an increase in integration between field and research center staff can lead to greater community impacts. Experimental findings are critical to trial new research in the community, develop new production practices, and solve current agricultural problems. Stakeholder members preferred to communicate via email, verifying that electronic information is a still a significant and valued source of communication.

Recommendations

Research centers and stakeholder must continue to educate the public on agricultural information and technologies through current and new outlets. While agricultural field days are still important outreach events in the state, research centers must seek new venues to disseminate information at regional agricultural events, county fairs, professional conferences, and via social media. Two way communication between research centers and stakeholders must be maintained and improved to bring research and practice closer together as supported by Grunig and Hunt (1984). To do so, additional meetings and networking opportunities should be held throughout the year for more timely research updates. Increased collaboration between stakeholders can improve research on problems producers report and used to reflect on effective strategies. Extension agents must be informed about research center practices early on in their careers so they can bring new information to clients more quickly. Finally, funding and resources are critical for research centers to answer community needs and should be prioritized in budgets.

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