

Grand Challenges Tennessee: Considering Agriculture Issues Within the Larger Narrative

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Introduction

There is no shortage of challenges within the agriculture sector. Addressing current and emerging issues requires an assessment of trends or developments that, if left unchecked, could have significant consequences for stakeholders (Jaques, 2014). While agriculture may have once been evaluated solely on the basis of production, contemporary agriculture systems are evaluated on the services or disservices they provide to and receive from humans and the environmental system (Liu et al., 2022; Power, 2010). As such, when seeking to address “agricultural issues,” we have to consider both real challenges felt by our producers, as well as issues perceived by public audiences to be related to the agricultural system. In either scenario, leveraging buy-in and fostering desired behavior changes to address contemporary issues can be difficult. Considering issues management from a systems perspective can provide a valuable framework for examining agriculture issues that require public buy-in as they fit within the larger systems of societal challenges (Irlbeck, 2023).

Purpose and Objectives

We conducted this study to examine the primary challenges faced by Tennessee (TN) residents and explore how agriculture and natural resources (ANR) issues fit within that narrative. We collected this data to provide future directions for the University of Tennessee System, but also to identify windows for addressing ANR issues in light of other pressing challenges weighing on our residents. Three research questions guided this study: (1) What are the primary “grand challenges” felt by TN residents? (2) How do TN residents rate issues related to ANR within the bigger scope of challenges? (3) How concerned are TN residents about select issues related to ANR?

Methods

At the beginning of 2022, the University of Tennessee Strategic Plan Working Groups set out to identify the most challenging problems facing residents. Determining these large-scale, complex problems required gathering opinions from key internal and external stakeholders across the state. This led to the development and launch of a statewide “Grand Challenges” survey. We used four sections of this larger instrument for primary data in this study. All items in the instrument were reviewed by a panel of administrators, Extension specialists, researchers, and Deans across the entire University system. We first asked respondents to identify the top two issues they are concerned about as a [State] resident using an open-ended question format. Respondents were then provided a list of 18 broad issue categories (e.g., issues related to agriculture, issues related to healthcare, etc.) and asked to rank them in order of most important (1) to least important (18). We assessed respondents’ ANR concerns using 10 items and a 5-point Likert response scale (1 = *very unconcerned*; 5 = *very concerned*). We contracted with Qualtrics to distribute the online survey to residents across the state and collect a non-probability opt-in sample (Baker et al., 2013). Quotas were set for demographic characteristics to encourage a representative sample. Useable responses were collected from 1,575 residents. Open-ended data in research question one were assessed using Glaser’s (1965) constant comparative method to sort responses by attributes and conduct frequency counts. Quantitative data analyses included descriptive statistics.

Results

Open-ended responses to the question “what keeps you up at night?” revealed TN residents were largely concerned about crime, inflation, and cost of living. Other notable concerns in the qualitative data included housing availability and affordability, as well as human rights concerns. When asked to rank various issue areas, respondents’ average ranked scores revealed issues related to crime ($M = 5.63$; $SD = 3.92$); agriculture ($M = 7.00$; $SD = 5.24$); civil rights, social justice, and race relations ($M = 7.24$; $SD = 5.51$); K-12 education ($M = 8.11$; $SD = 4.31$), and inflation ($M = 8.34$; $SD = 4.00$) as the top concerns across respondents. Regarding issues related to ANR, more than half of respondents indicated being concerned or very concerned about all issues presented (see Table 1). Of the issues listed, relatively more respondents were concerned or very concerned about the cost of food production, the livelihood of farmers, and pollinator health. Comparatively, fewer respondents were concerned about the use of GMOs in products and the accuracy of food labels.

Table 1
Respondents' Degree of Concern about ANR Related Issues

ANR Issue	Response Category				
	VUC <i>f</i> (%)	UC <i>f</i> (%)	N <i>f</i> (%)	C <i>f</i> (%)	VC <i>f</i> (%)
Cost of food production in [State]	37(2.3)	83(5.3)	265(16.8)	719(45.7)	471(29.9)
Livelihood of [State] farmers	34(2.2)	80(5.1)	289(18.3)	727(46.2)	445(28.3)
Pollinators health in [State]	53(3.4)	132(8.4)	377(23.9)	579(36.8)	434(27.6)
Farm labor shortages in [State]	59(3.7)	103(6.5)	374(23.7)	672(42.7)	367(23.3)
Availability of a skilled agricultural workforce	52(3.3)	117(7.4)	414(26.3)	631(40.1)	361(22.9)
Welfare of [State] livestock	61(3.9)	128(8.1)	394(25.0)	642(40.8)	350(22.2)
Impact of pesticide use in [State]	70(4.4)	133(8.4)	415(26.3)	623(39.6)	334(21.2)
Agricultural job loss due to automation	64(4.1)	155(9.8)	502(31.9)	532(33.8)	322(20.4)
Use of GMOs in [State] products	117(7.4)	194(12.3)	481(30.5)	477(30.3)	306(19.4)
Accuracy of food and product labels	94(6.0)	233(14.8)	460(29.2)	539(34.2)	249(15.8)

Note. VUC = very unconcerned, UC = unconcerned, N = neither concerned nor unconcerned, C = concerned, VC = very concerned

Conclusions, Implications, and Recommendations

We used a variety of question formats to gain a holistic view of what is on the hearts and minds of TN residents. Overall, respondents appeared to be concerned about most issues, which indicates they may be simultaneously experiencing multiple crises at one time and reacting based on which poses the most immediate threat. Frameworks pertaining to crisis management and response should be applied when developing a strategic plan moving forward to help determine residents’ capacity to care about agriculture issues in light of other pressing challenges (Jaques, 2014). For example, while agriculture issues did not emerge without prompt in the open-ended segment, such issues were ranked high on average as a concern. This finding makes sense when we look at the high concern about food costs as an ANR issue, which fits within the risk perspective framework when considering the personal relevancy and potential consequence of food affordability (Irlbeck, 2023). Conversely, despite the large amount of research on labeling, our results indicate that might not be the highest priority in our work if our goal is to address

grand challenges to improve the livelihood of TN residents. Research like the current study can be used to generate conversations around felt challenges and to drive research and outreach initiatives across our land-grant systems.

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