Summary Report of a Survey of State Animal Health Officials: Applying Lessons Learned from the Covid-19 Response to a Future High-Consequence Food or Agriculture Incident

Research Conducted and Report Compiled by:

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Introduction

Kansas State University's National Agricultural Biosecurity Center, in cooperation with the U.S. Department of Homeland Security Food, Agriculture, and Veterinary Defense Division, designed the following survey with the intention of capturing overarching themes, challenges, and recently identified gaps in the food and animal agricultural space as was revealed in the initial and ongoing response to Covid-19. Participation in this survey is expected to inform analysts and emergency planners of major unifying themes that will reveal large-scale areas of concern and facilitate discussion and collaboration on potential improvements when preparing to respond to a high-consequence food or ag incident. Because of the audience for this survey, many of the questions asked refer to a foreign animal disease incident (FAD) as a specific type of a high-consequence food or ag incident.

This summary of the results of this survey is being shared with survey participants and other leaders in federal, state, and local agencies who would have a role in responding to a high-consequence food or ag incident in an effort to help frame and guide conversations about planning updates needed in light of the Covid-19 incident. While the Covid-19 response was not directly tied to animal agriculture, its secondary impacts revealed the tenuous nature of supply chain disruptions on that sector. Similarly, the sustained response that was required on a state level, with multi-agency coordination required, is analogous to the sustained efforts that would be needed in an FAD incident.

The following summary document was created from a two-part survey effort made available to State Animal Health Officials (SAHOs) across the nation. First, there are 18 questions that employ a Likert-scale to gage the subjective feelings of respondents across a number of areas related to the Covid-19 response and FAD response in general. Respondents were asked to answer each question as truthfully as possible and to provide specific comments reflecting the reasoning behind each answer. Participants were asked to use this space to provide specific examples of strengths or weaknesses, gaps or solutions, or other insights to better frame their response, and to assist with our understanding of each respondent's assessment or determination. A second survey of 20 questions was then developed and distributed to the same group of respondents based on the responses to the first survey, this time designed to gauge opinions as to potential strategies for addressing identified areas of gaps or concerns. The following summary groups the questions from both surveys by identified theme areas.

These surveys were distributed to members of state animal health offices across the nation and was intended for personnel in leadership positions who have responsibilities and interactions related to emergency response. This includes, but is not limited to, state veterinarians or equivalent, assistant or deputy state veterinarians, and agricultural/animal health emergency management or emergency planning staff. It was left to the highest ranking official in each state office to determine the right people in each office to complete this survey. NABC researchers received 63 unique responses to the first survey and 65 responses to the second survey. Survey respondents were not asked to self-identify in an effort to gather more candid responses by maintaining anonymity

NABC would like to specifically thank Dr. Annette Jones, State Veterinarian of California and President of the National Assembly of State Animal Health Officials, and Dr. Justin Smith, State Animal Health Commissioner of Kansas, for their assistance in promoting and distributing this survey to their colleagues nationwide.

Reader Guide

This summary document is broken up into six theme areas and follows a consistent pattern throughout. This page serves as a quick guide for the reader to understand the origination and purpose of the various sections of this report. The reader will encounter the following components within each section of document:

Background: The background section provides the reader with information related to the development of questions for the survey and speaks to the overall environment into which the questions were being asked. Information in this section may also speak to pre-existing or ongoing conditions within the animal health world prior to or as a result of the Covid-19 incident. This section is primarily intended to serve as baseline knowledge and context for the reader.

Question: Questions are written and presented as they were to the survey respondents. The reader will notice two types of questions. First, there are questions that ask for the opinion of the survey respondents through a Likert scale. These questions were part of the first survey effort mentioned previously. Survey respondents were asked to support their responses with comments. Second, there are questions that follow a multiple-choice format, in which respondents were again asked their opinions, but this time were allowed to select all the responses that applied to a certain topic.

Graph: Following each question there is a combination bar and line graph that pictorially illustrates the survey responses. The bar graph represents the total number of responses to a question in a certain area, while the line graph represents the percentage of responses to a question in a certain area.

Summary of Comments: The summary of comments section attempts to coalesce the comments to the Likert-scale questions from the sixty-three respondents into a usable, easy-to-digest format. Rather than listing raw responses, the authors worked to summarize comments by repetitive themes and to keep as much of the original scope and tone of the language. In some cases, the reader will find seemingly contradictory comments, as there was not always uniformity or agreement among respondent comments. These comments reflect the opinions of the respondents and are not meant to be taken as endorsements by the authors or sponsors of the summary report.

Theme Recommendations: The recommendations section is authored by NABC staff and is based upon the collective results of the survey, sector knowledge and experience, and awareness of ongoing preparedness efforts. Recommendations are meant to be applicable across multiple levels of government and across multiple agencies with a focus on high level approaches and strategies. Recommendations are not intended to supplant or critique state-specific policy decisions or directions, but can be utilized as a guide for considering planning and preparedness updates or efforts.

Theme 1 – Lessons Learned from the Initial Covid-19 Response

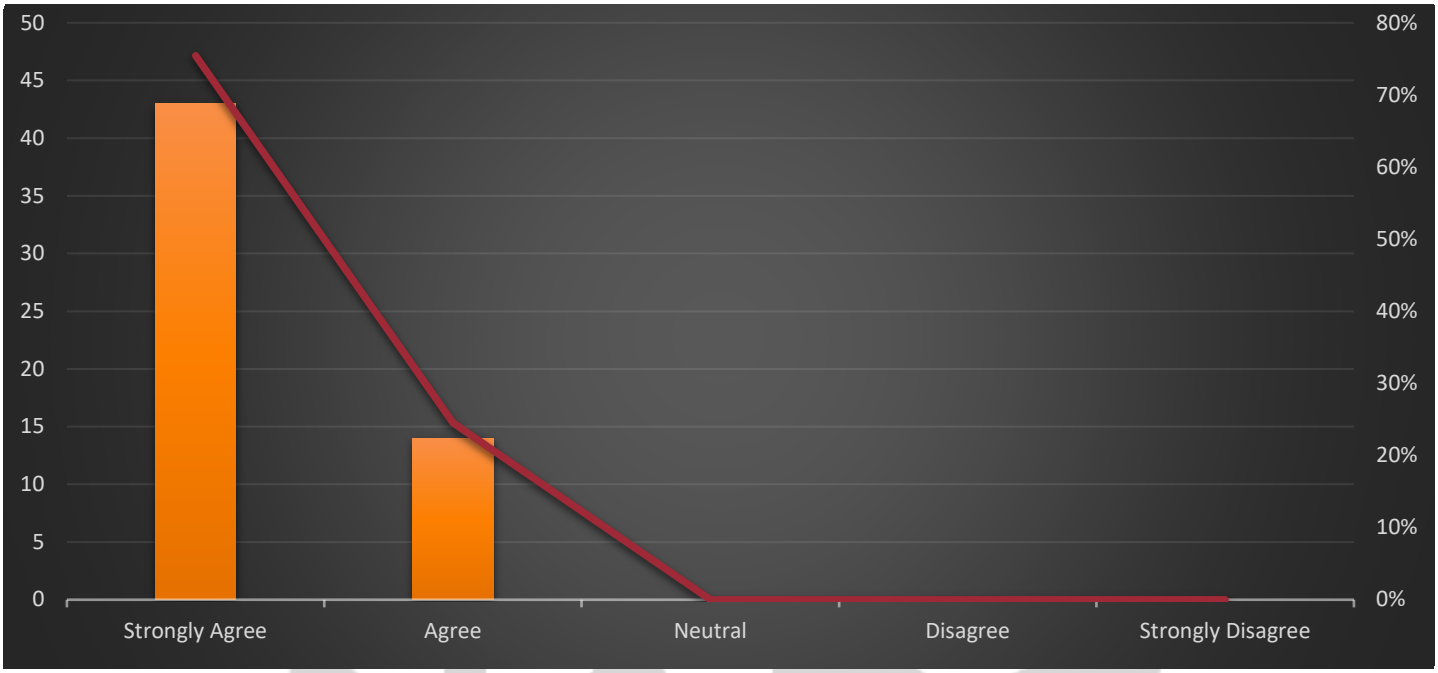
Background: The foundational question of the entire SAHO survey effort was quite simply asking SAHOs whether they believed or recognized that there were potentially valuable lessons to be learned from the response to Covid-19 that would have implications for a future foreign animal disease (FAD) outbreak. While obviously not a high-consequence FAD incident, the response to a human-centric pandemic in the form of the novel coronavirus provided a once-in-a-generation opportunity to study the efficacy of the preparedness and response enterprise built to respond to such a threat. Considering that many of the same challenges would likely present themselves in a FAD incident, it seemed logical to conclude that there could be some themes that would emerge that would be relevant to animal health regulators and planners.

Responses to this initial line of questioning were both candid and thorough. SAHOs responding to this survey provided a great deal of detail outlining their concerns related to such a response and, in doing so, clearly communicated a desire to at the very least consider how lessons learned through the Covid-19 response could apply to a future high-consequence FAD outbreak. While states experienced various levels of disruption to their agricultural enterprise, and to different segments of the industry, the effects or potential effects seemed to be wide-ranging. Perhaps the most important finding from this initial theme area was simply that a recognition exists among the SAHO group that the initial response to Covid-19 is worth considering on a deeper level.

Question: I believe that there are valuable lessons to be learned from the Covid-19 response that can be applied to our state's planning for future Foreign Animal Disease (FAD) incidents.

Responses:

Strongly Agree	43	75%
Agree	14	25%
Neutral	0	0%
Disagree	0	0%
Strongly Disagree	0	0%



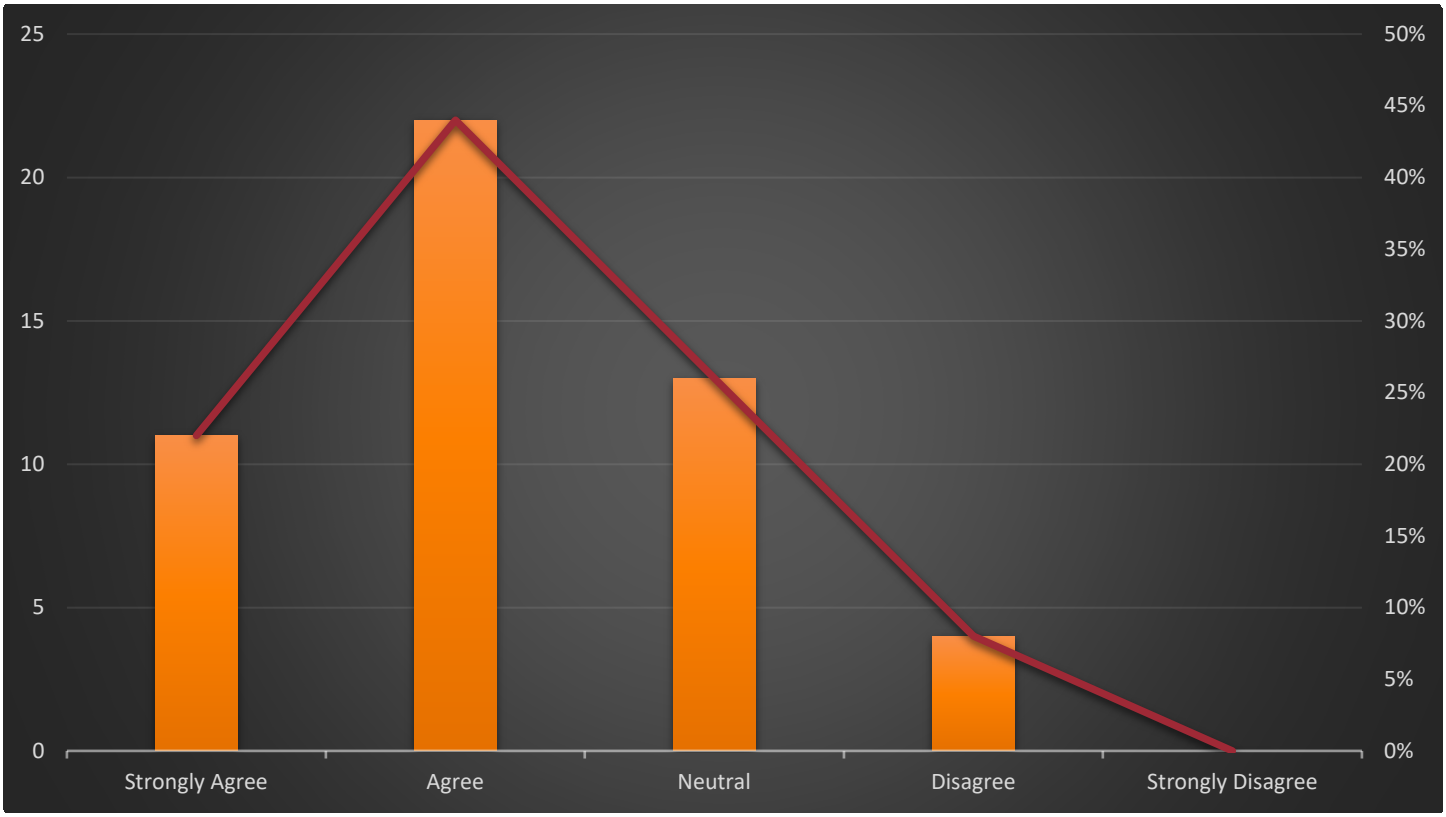
Summary of Comments:

- Supply chain disruptions caused by Covid-19 can be expected to a higher degree in a FAD incident.
- Communication and messaging consistency across levels of government and between the government and industry represent a weak point in the overall response effort.
- Resource limitations that existed early in the Covid-19 response are likely to also present themselves in a FAD incident. Similarly, having a FAD incident while another biological incident is ongoing would prove to be almost too much to overcome from a resource standpoint.
- Response efforts in a FAD incident will likely impact processing capacity, leading to real or perceived food shortages.
- Continuity of business planning for industry, in the form of enhanced biosecurity and SFS plans, represent one of the most important current national efforts to prepare for a FAD incident.
- Large scale sample collection and testing for a widespread or long-lasting incident will be a challenge.
- Better integration is needed between state animal health officials and other emergency response groups, on state, local, and federal levels, to properly utilize the NIMS/ICS/EOC structure.
- There is a lack of knowledge of both the importance of the food/ag sector and the unique challenges associated with a FAD incident among non-agriculture government and elected officials.
- Economic support for impacted producers is expected to be insufficient to guard against widespread economic hardship and loss of producers.
- Mass depopulation and disposal as part of a response presents a problem both logistically and through public perception.

Question: Our staff is planning on reviewing our current state FAD response plan to potentially include lessons learned from the Covid-19 incident.

Responses:

Strongly Agree	11	22%
Agree	22	44%
Neutral	13	26%
Disagree	4	8%
Strongly Disagree	0	0%



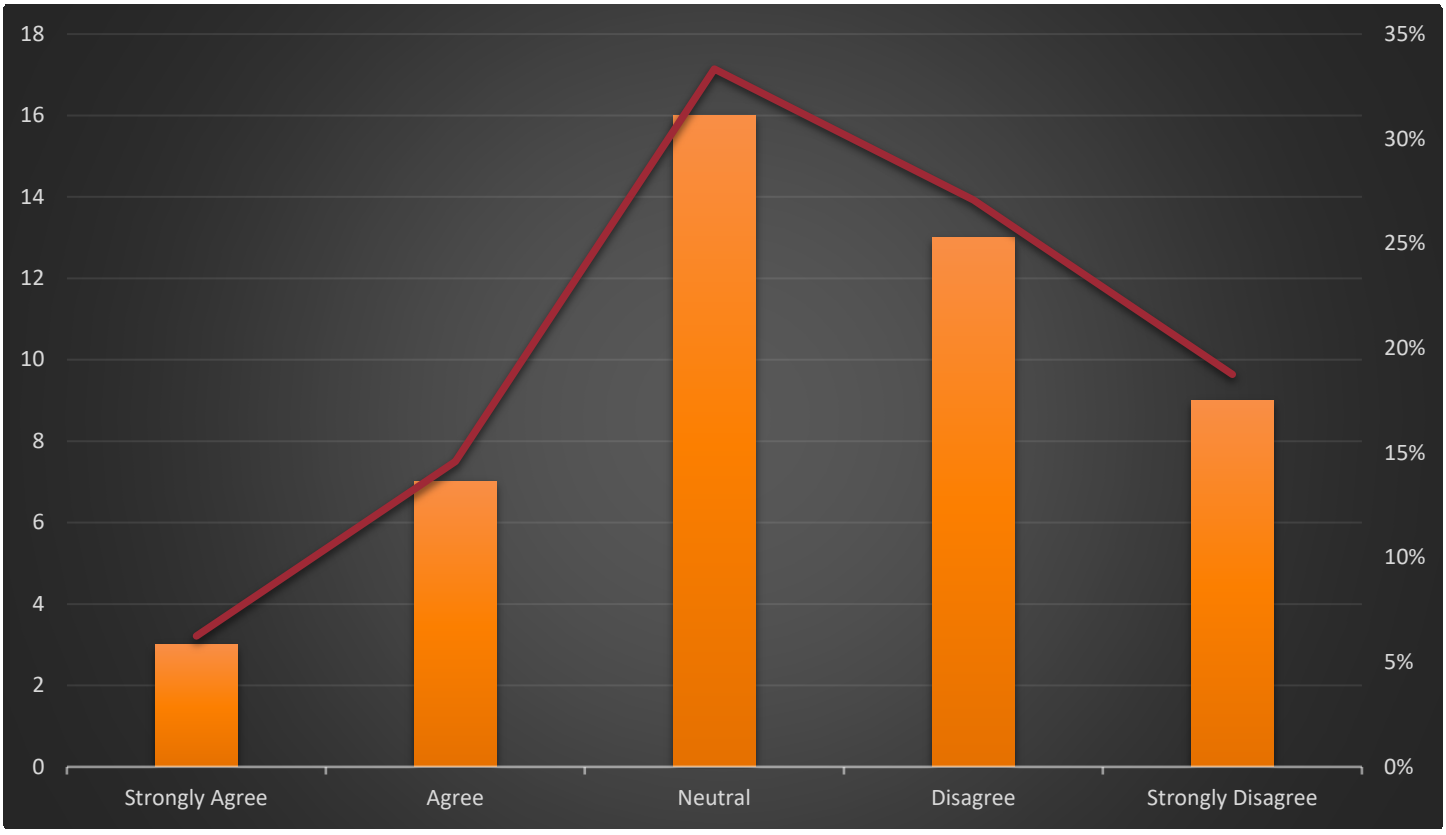
Summary of Comments:

- A FAD plan update in response to Covid-19 is either planned or in progress.
- If an opportunity presents itself, then a FAD plan review may take place.
- A FAD plan update is a low priority and is not planned.
- A lack of staffing or budget makes it difficult to dedicate time and resources to update a FAD plan.
- Recently reviewed FAD plan apart from Covid-19

Question: Based on the Covid-19 response, I am more confident today in our state and nation's ability to respond to a high-consequence FAD incident.

Responses:

Strongly Agree	3	6%
Agree	7	15%
Neutral	16	33%
Disagree	13	27%
Strongly Disagree	9	19%



Summary of Comments:

- The lack of a coordinated response from the federal level to state level made response more difficult.
- Decisions related to response often suffered from politicization from state to state.
- The presence of Covid-19 would make responding to a subsequent FAD incident much harder.
- The response by states to food or ag issues was strong than the federal response.
- Challenges related to real-time messaging to the public and industry provided lessons learned for a future incident.
- Other responses besides Covid-19 (HPAI; VND; TB) provide more relevant experiences.

Theme #1 - Recommendations:

- An industry-wide after-action process should occur, in which specific challenges associated with the Covid-19 response are analyzed and then applied to a future FAD incident. This could be organized on a state-by-state basis or on a commodity-by-commodity basis.
- Insights or plan changes that are identified by states should be shared across the SAHO landscape to both ensure that consistency in planning occurs and to share limited resources between states who have dedicated planners or planning staff and states that do not. Such sharing can be facilitated through existing relationships and groups such as NASAHO, USAHA, SAADRA, MSP, or others or could be facilitated by a third-party source collecting and distributing AARs and lessons learned.
- While this survey effort focused on state-level authorities, the results indicate that federal agencies with jurisdictional purview in this arena should conduct a similar review of federal FAD planning efforts to reflect realistic operational environments. Federal agencies such as USDA, FDA, DHS, DHHS, and others should also coordinate with national level industry group representatives to hear and address concerns from producers.
- Above all, a clearly defined national strategy that can be implemented and supported by local and state authorities needs to be communicated and committed to in an effort to address the lack of confidence expressed in this survey in the U.S. ability to respond to a high-consequence FAD incident.

Theme #2 – Coordinating Efforts Across Multiple Levels of Government

Background: Much like the Covid-19 response, a foreign animal disease incident will not follow the traditional all-hazards response model that is most familiar to federal, state, and local emergency planners and responders. This is not a reflection of limitation of the National Response Plan or National Incident Management System, but rather the reality of the highly complex nature of such a response. The jurisdictional authorities involved in responding to a FAD incident are diverse but, as a general rule, typically exist on a state rather than local level. This "upside-down" approach to responding means that additional efforts must be made to coordinate an effective response that will not be as automatic as a more regularly-occurring disaster like a flood or wildfire.

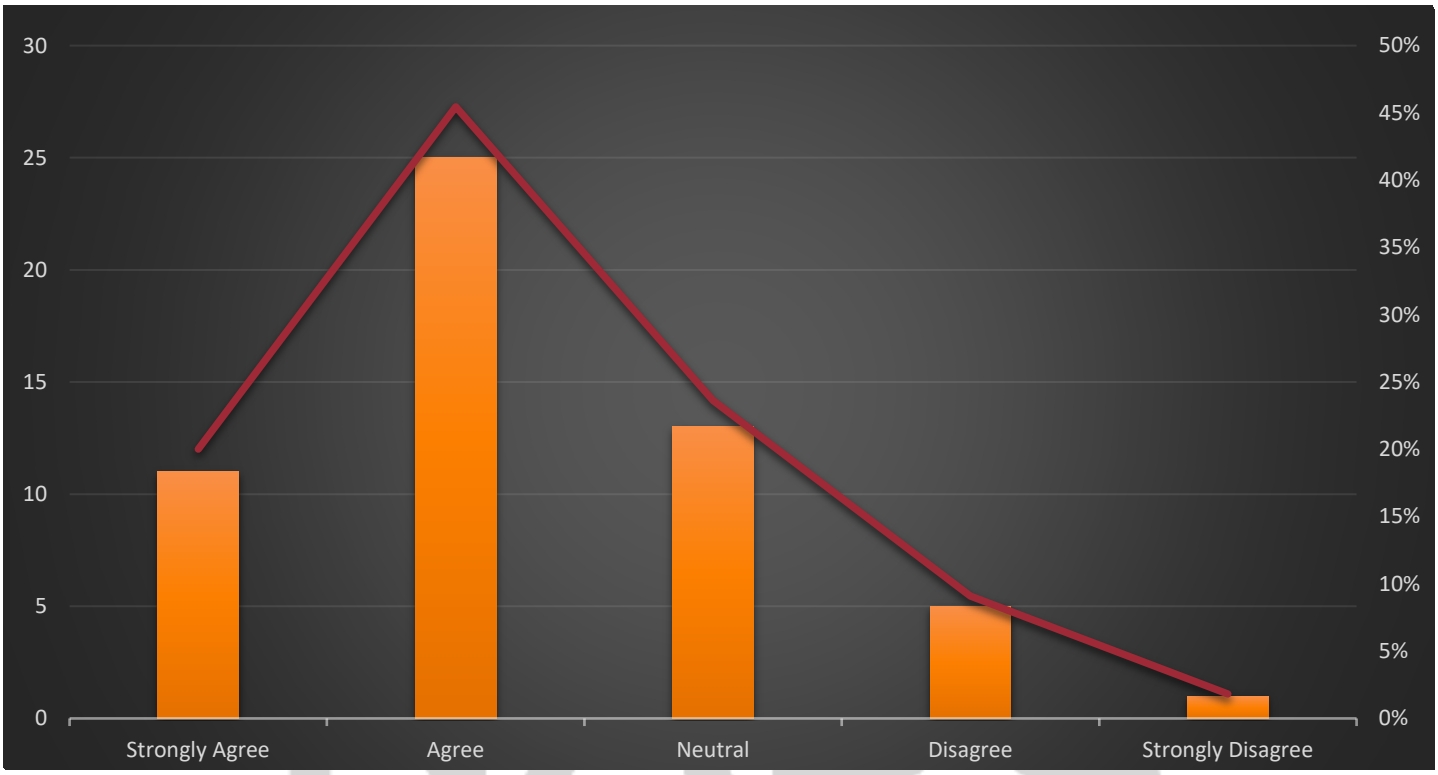
Because of this unique feature of biological incidents, particularly as they relate to a FAD outbreak, a number of questions were directed to SAHO respondents in an effort to gauge their level of confidence in the current response structure in their state. With Covid-19 not being a direct food or ag incident, but having cascading impacts into this space, there was a somewhat unique opportunity to reflect on the level of integration that occurred between traditional response agencies and those representing the agriculture sector.

It is important to emphasize here that a lack of knowledge or comfort likely exists in two directions – not simply one. While SAHO respondents largely emphasized the lack of knowledge that they felt impacted the understanding of food and ag concerns by other responding agencies and decision makers, it must also be acknowledged that animal health officials are themselves generally not experts on incident management. In this case, with food and ag issues being mostly secondary to human health concerns, the impacts of this knowledge gap on both sides seems to have been more of an annoyance than anything else. With a high-consequence FAD incident, however, the stakes will be much higher.

Question: During the Covid-19 response, food and agricultural concerns were consistently and thoroughly addressed by state leadership.

Responses:

Strongly Agree	11	20%
Agree	25	45%
Neutral	13	24%
Disagree	5	9%
Strongly Disagree	1	2%



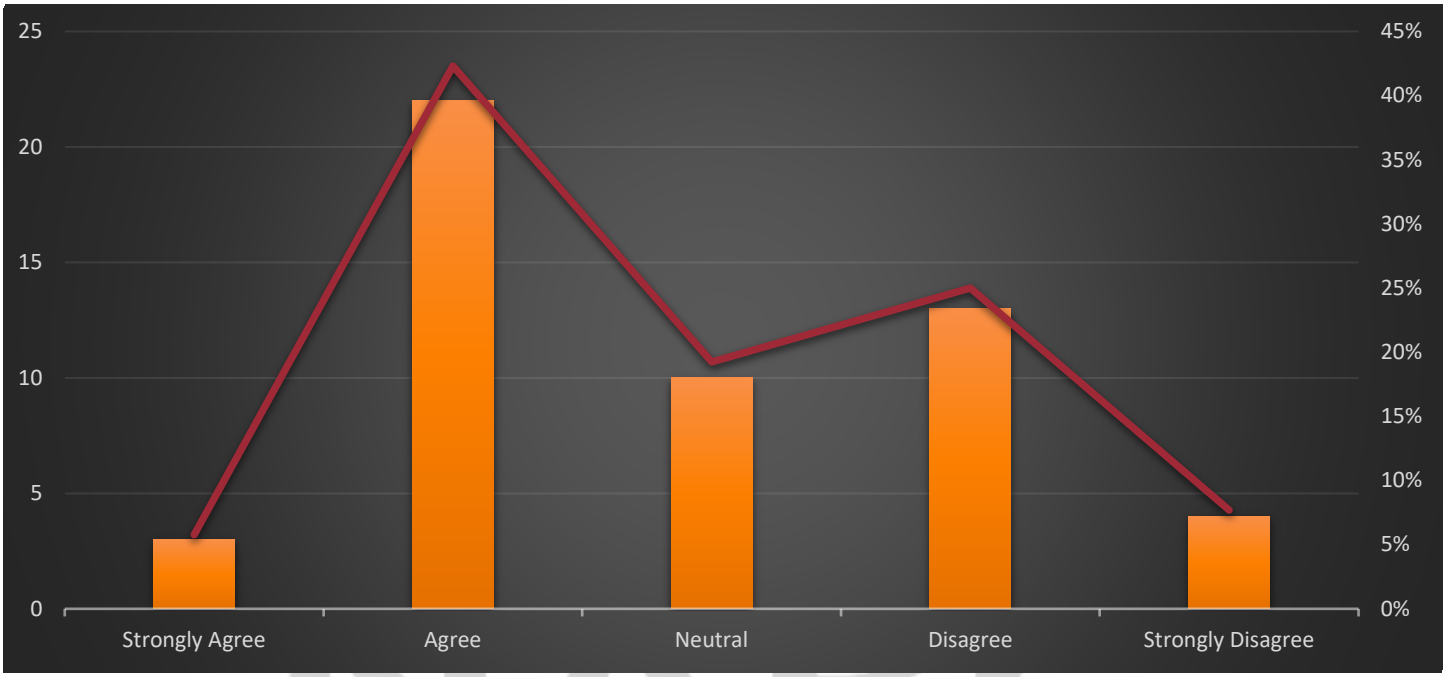
Summary of Comments:

- Food and Ag concerns often suffered from a slow response or low priority.
- In many cases, there was a positive integration of SAHO representatives into a state EOC.
- There was a general lack of knowledge among state level leadership about the unique needs or challenges of the food/ag sector, potentially leading to the slower response to those concerns.
- Much higher priority was given to food access/insecurity issues than producer/processor issues.
- Concerns related to meat processing created challenges between workforce issues and animal welfare issues.
- In some states, there was generally poor communication and integration between the food/ag sector and state leadership.

Question: Regarding food and agricultural concerns, I believe there was a consistent approach to addressing these concerns on a federal, state, and local level, with leadership at each level working together to find solutions to problems as they arose.

Responses:

Strongly Agree	3	6%
Agree	22	42%
Neutral	10	19%
Disagree	13	25%
Strongly Disagree	4	8%



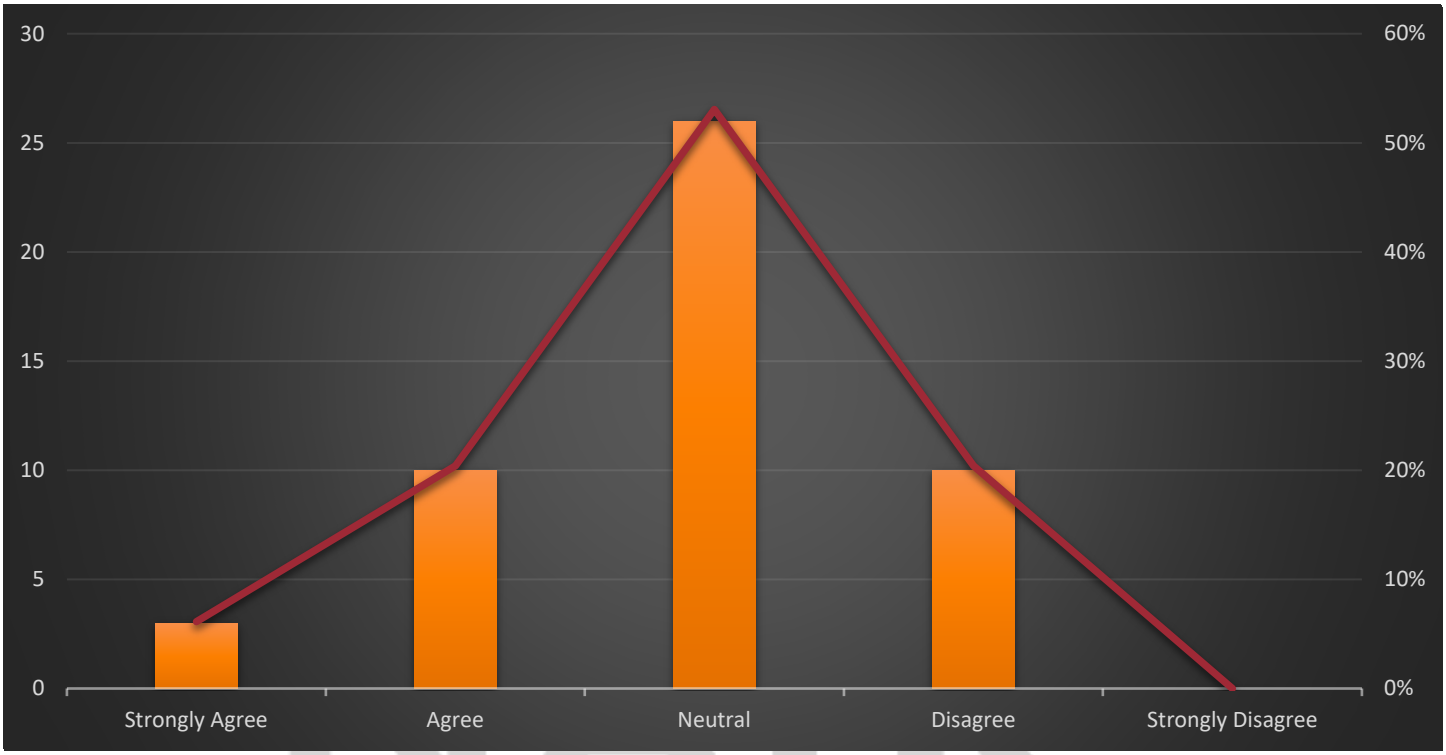
Summary of Comments:

- There was general confusion between the guidance and messaging for addressing concerns between federal and state agencies.
- Cooperation and collaboration with industry was essential in addressing issues as they arose.
- A lack of understanding of ag issues often resulted in a lack of leadership in addressing challenges by state-level decision makers.
- Because of production systems that cross state lines, there was an importance of regional cooperation in addressing issues.
- The resulting supply chain bottlenecks speak to the need to develop greater resiliency and flexibility into the supply chain for meat processing.

Question: The response to agricultural concerns by federal and state leadership has strengthened the trust factor between local jurisdictions (city-county level leadership) and regulatory officials.

Responses:

Strongly Agree	3	6%
Agree	10	20%
Neutral	26	53%
Disagree	10	20%
Strongly Disagree	0	0%



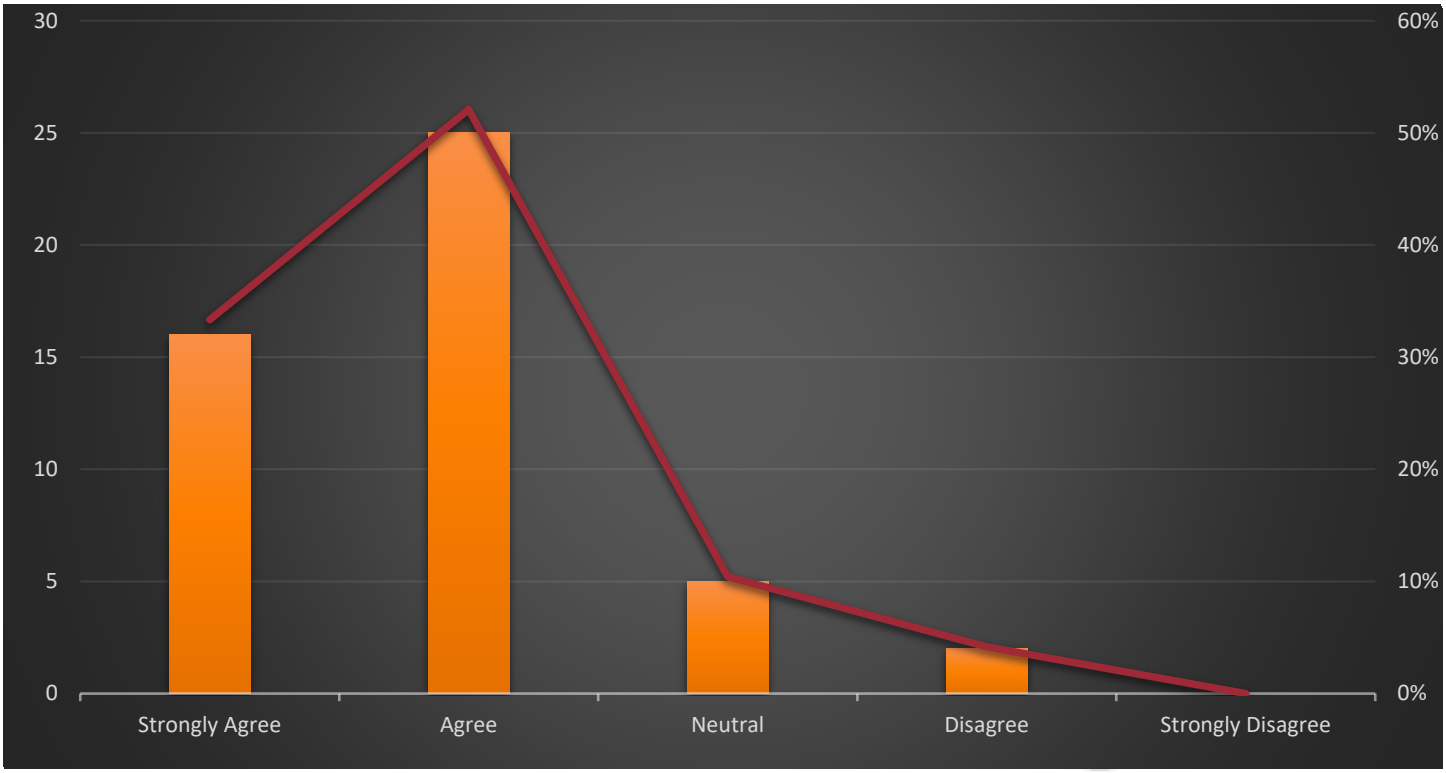
Summary of Comments:

- The relationship with local jurisdiction often depends on a local jurisdiction's knowledge or reliance on agriculture as an economic driver.
- In general there was good coordination across agencies in those states and local jurisdictions that experienced issues.
- Pre-Existing relationship with local emergency management made trust and decision making easier.
- In many areas there is a lack of pre-existing relationships with local emergency managers.

Question: I believe that the current FAD response model, with a unified effort between state SAHOs and USDA-APHIS, with local jurisdictions providing support, is the correct model for a national-level FAD incident.

Responses:

Strongly Agree	16	33%
Agree	25	52%
Neutral	5	10%
Disagree	2	4%
Strongly Disagree	0	0%



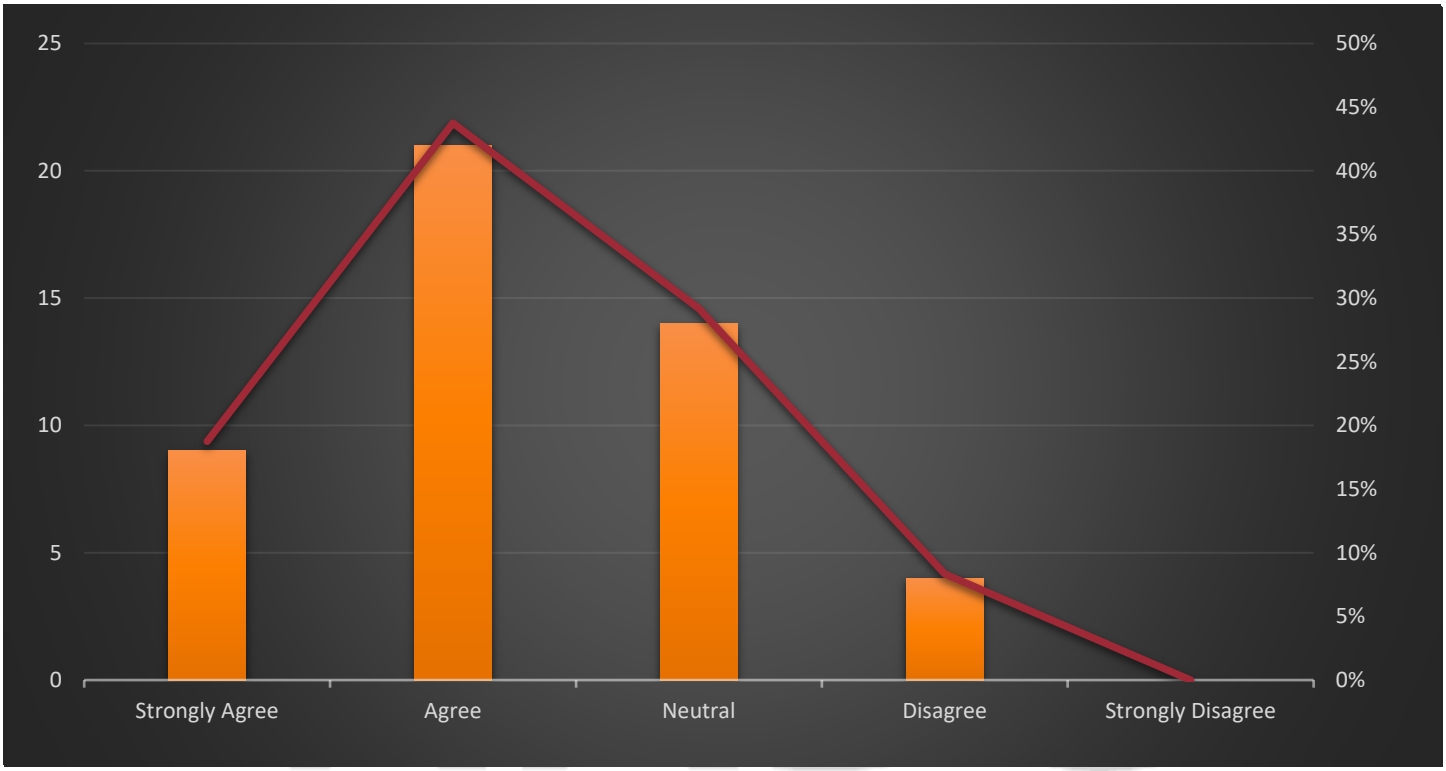
Summary of Comments:

- In general, this is the best model that exists for such a response.
- There is a need to include local jurisdictions more effectively.
- Leadership issues on the state or federal level may hinder response, particularly if decisions become overly political.
- Industry should be an active part of any response model.
- There is a great need for more unified response from state-to-state
- Some respondents indicated that there should be one unified plan directed by federal leadership.

Question: I believe that the current statutes and jurisdictional authorities that pertain to responding to an FAD incident, as they exist in my state, are adequate and appropriate to allow for an effective response across multiple state and local agencies.

Responses:

Strongly Agree	9	19%
Agree	21	44%
Neutral	14	29%
Disagree	4	8%
Strongly Disagree	0	0%



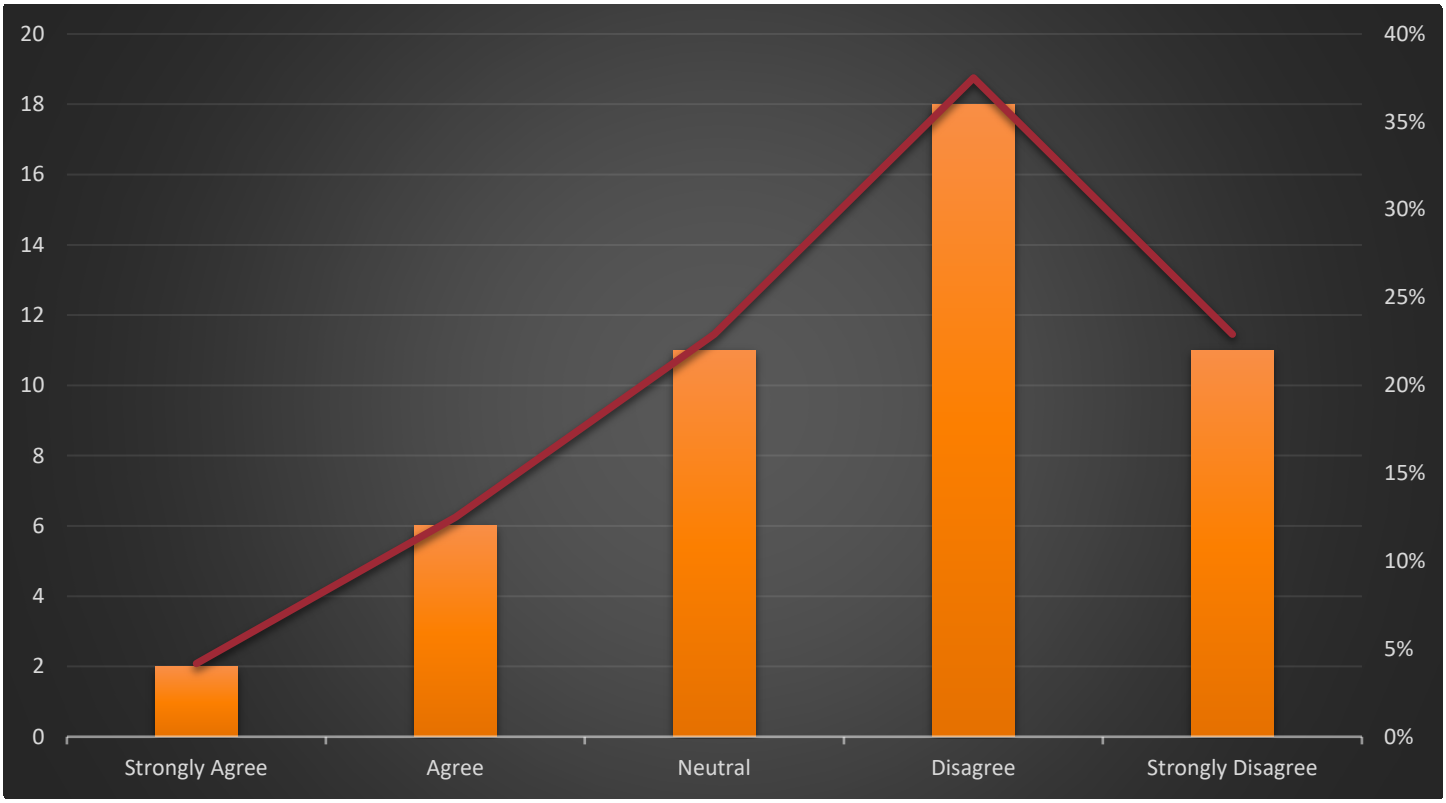
Summary of Comments:

- The general consensus for most states was that authority was inefficient but workable.
- Some states have clearly stated and understood authorities, but that these may not have been reviewed or exercises in years.
- Other states indicated that their authorities are not effective, either in addressing issues or for eliciting buy-in and support from other state agencies.
- Many states indicated that movement authority may need updating to reflect potential movement standstill issues.

Question: I am confident that federal funding and direction, across a spectrum of federal agencies, for current research on FAD countermeasures, vaccines, biosecurity, and response planning is both adequate and appropriate to both mitigate the risk of FAD introduction and to respond to an FAD incident.

Responses:

Strongly Agree	2	4%
Agree	6	13%
Neutral	11	23%
Disagree	18	38%
Strongly Disagree	11	23%



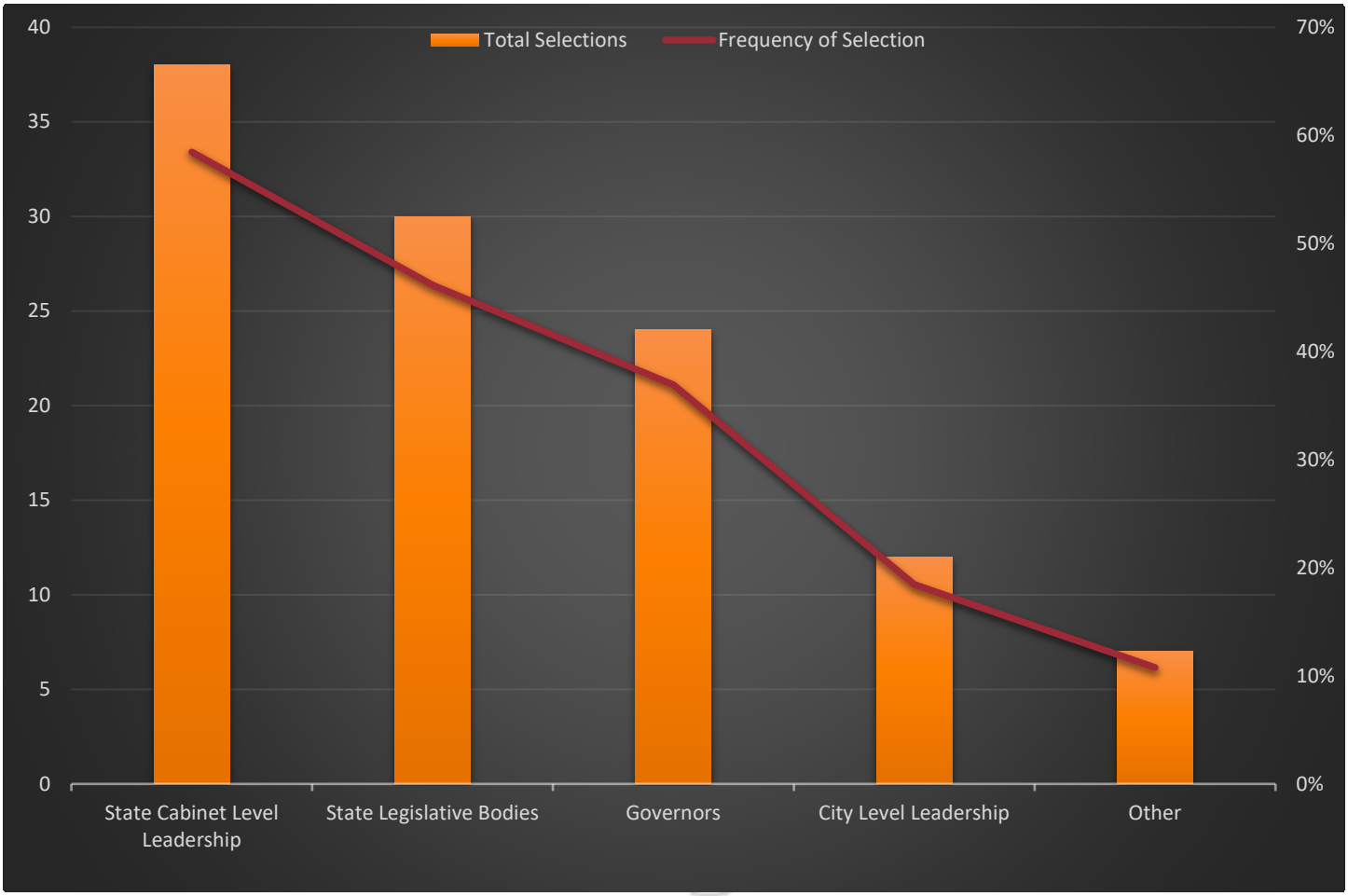
Summary of Comments:

- There is a need for greater response and preparedness funding.
- There is a need for greater research funding.
- Recent funding for vaccine development & distribution is a positive effort but doesn't address every issue.
- Many expect budget cuts to preparedness & research as a result of Covid-19.
- Oftentimes funding priorities are reactive instead of proactive.
- There are too many inefficiencies tied to funding distribution and utilization.
- The current priority on disease prevention limits preparedness funding.
- There is a need for greater biosecurity planning funding.
- It seems there is a lack of a clear funding strategy across multiple federal agencies.
- There is often too much of an emphasis on terrorism.
- The recent NADPRP farm bill funding is being received as a positive development.

Question (select all that apply): An educational campaign and materials intended to better inform decision makers on the importance of agriculture both economically and socially, would be most effective if targeted toward(s):

Responses:

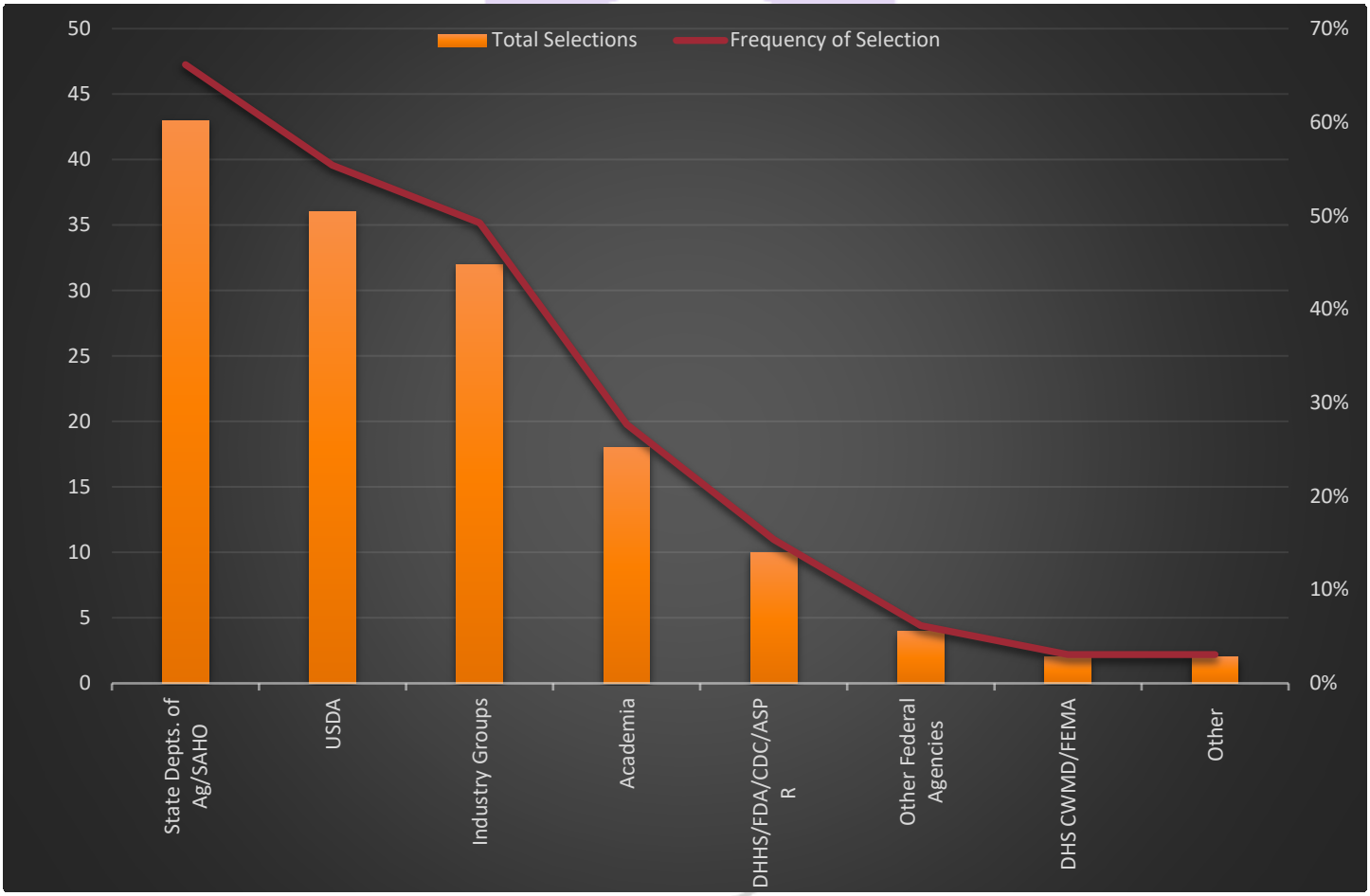
State Cabinet Level Leadership	38	58%
State Legislative Bodies	30	46%
Governors	24	37%
City Level Leadership	12	18%
Other	7	11%



Question (select all that apply): Who would be the best authority(ies) for the source of material for an educational campaign which would be best received by the above audience?

Responses:

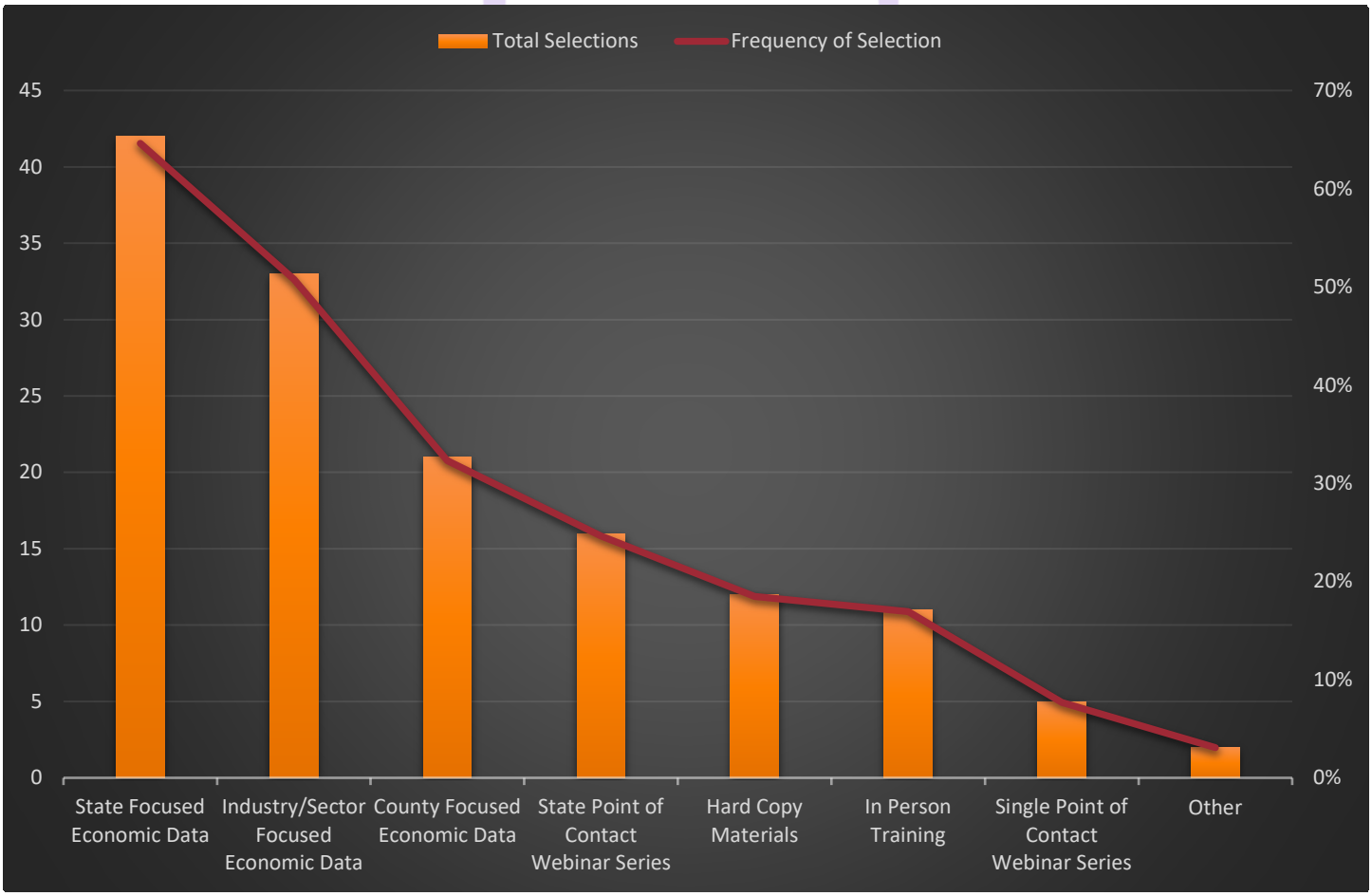
State Depts. of Ag/SAHO	43	66%
USDA	36	55%
Industry Groups	32	49%
Academia	18	28%
DHHS/FDA/CDC/ASPR	10	15%
Other Federal Agencies	4	6%
DHS CWMD/FEMA	2	3%
Other	2	3%



Question (select all that apply): In which format would an educational campaign be best received by the above audience?

Responses:

State Focused Economic Data	42	65%
Industry/Sector Focused Economic Data	33	51%
County Focused Economic Data	21	32%
State Point of Contact Webinar Series	16	25%
Hard Copy Materials	12	18%
In Person Training	11	17%
Single Point of Contact Webinar Series	5	8%
Other	2	3%



Theme #2 - Recommendations:

- Training should be provided to federal, state, and local government leaders and elected officials to explain the differences between a FAD response and that of a traditional natural hazard. Similarly, training should also include something of the complexities related to responding to a high consequence food or ag incident, explaining jurisdictional authority differences on federal, state, and local levels.
- The economic, societal, and cultural impacts of a high consequence food or ag incident need to be clearly articulated to political leaders. An official effort could be led by a group like NASDA, by USDA, by industry groups, or by academia/land grant universities. Awareness of what is at stake in a food or ag incident will likely lead to higher prioritization, more impactful planning/training/exercising efforts, and better coordination and decision making in the event of an actual incident.
- State and federal response partners should provide training materials for traditional first responders who may be tasked with responding to a food or ag incident but may not be familiar with the intricacies of such a response. Coordination between groups like FEMA/USDA/DHS/DHHS/FDA on the federal level and state emergency management agencies, SAHOs, and state departments of agriculture on the state level should ensure that such training occurs.
- State emergency management agencies should ensure that leaders in the food and ag realm, particularly through the ESF #11 function, are included in planning, training, and exercising efforts. Similarly, state leaders who are tasked with ESF #11 functional responsibility need to take such responsibilities seriously and devote staff time and effort to planning, training, and exercising functions.

Theme #3 – Logistics Challenges Posed by a Cascading or Surging Incident

Background: Logistics challenges in responding to a high-consequence food or ag incident exist primarily in two forms. First, there will be a need for response logistics in the form of personal protective equipment (PPE), supplies for cleaning and disinfection, supplies for depopulation and disposal, and overall responder support. Second, there will be a need for resources related to disease surveillance in the form of sample collection and testing. As was observed in the initial Covid-19 response, challenges will likely exist in both of these areas, particularly in the event of a widespread or national-level incident.

This area also brings in factors that may exist outside of the direct purview of the SAHOs that will be leading such a response. Sample collection and testing will be a combined effort between industry, state regulators, and state and federal laboratories. Decisions made before and during an incident regarding the testing scheme, protocols, and objectives will go a long way in determining resource needs to facilitate an effective response. This becomes particularly important when discussing continuity of business issues (referred to in greater detail in Theme #5). It will be easy to overwhelm the laboratory testing capacity if expectations are not effectively managed.

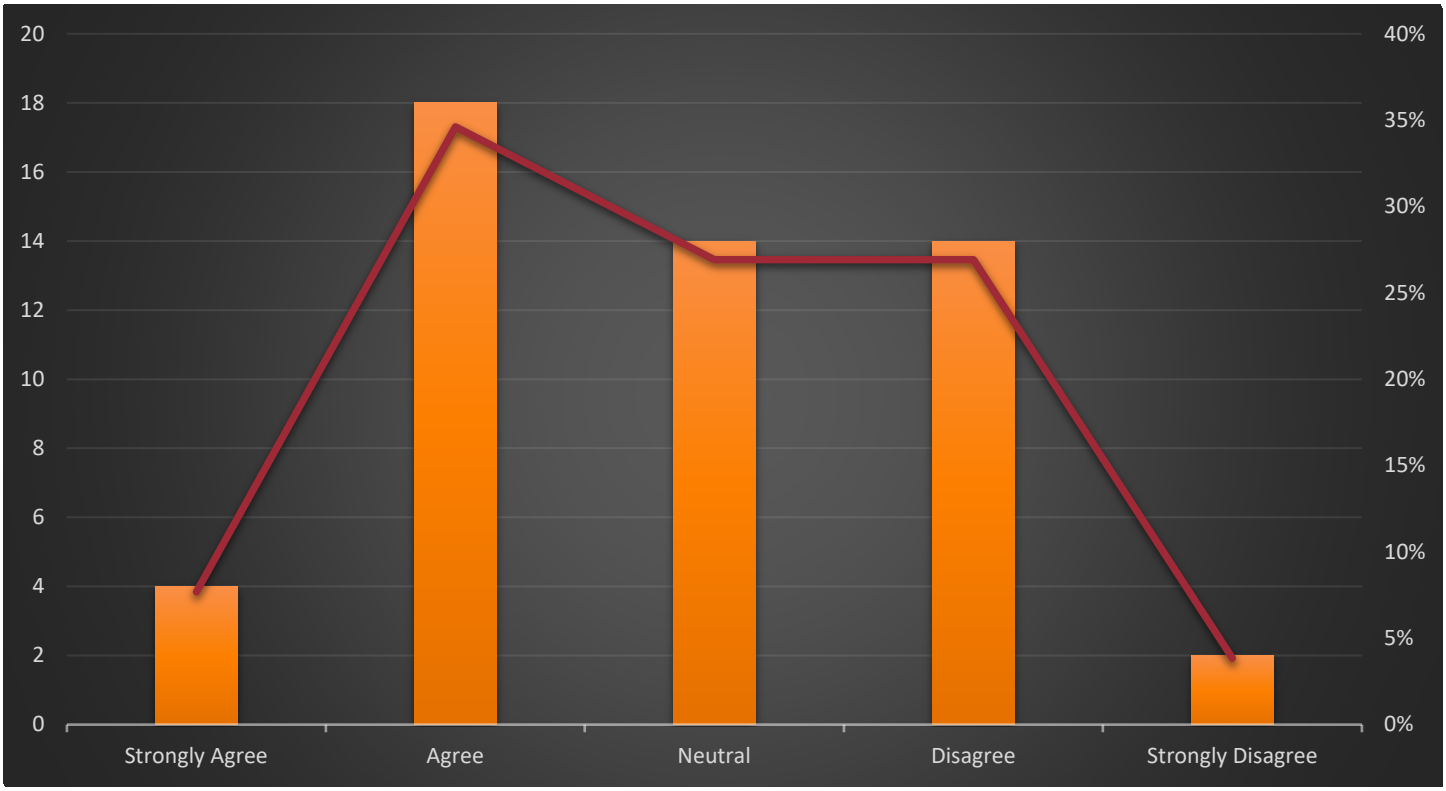
Similarly, decisions made during the incident regarding response activities will play a major role in determining the availability and use of resources for on-farm response. A strategy of stamping out, focused on mass depopulation and disposal, will result in a greater need for resources than a strategy of containment or targeted vaccination. Conversely, a strategy focused on vaccination will result in its own resource constraints particularly in the realm of specialized resources for vaccine distribution, administration, and tracing.

There is also an issue of resources that are privately held or require third-party cooperation. Many producers, particularly those that have large livestock operations, likely have on-hand resources that will be impactful in a response effort, particularly early in a response. Clear expectations regarding the use or purchase of resources privately held will be important to establish as part of a response effort. Similarly, sample delivery logistics that rely on private or corporate resources (such as UPS or FedEx) may easily be disrupted for any number of reasons.

Question: Based on the Covid-19 response, in the event of a national-level FAD incident, I believe that the operational logistics for gathering and delivering samples and the laboratory capacity for testing samples within our state will be adequate to respond to the disease incident.

Responses:

Strongly Agree	4	8%
Agree	18	35%
Neutral	14	27%
Disagree	14	27%
Strongly Disagree	2	4%



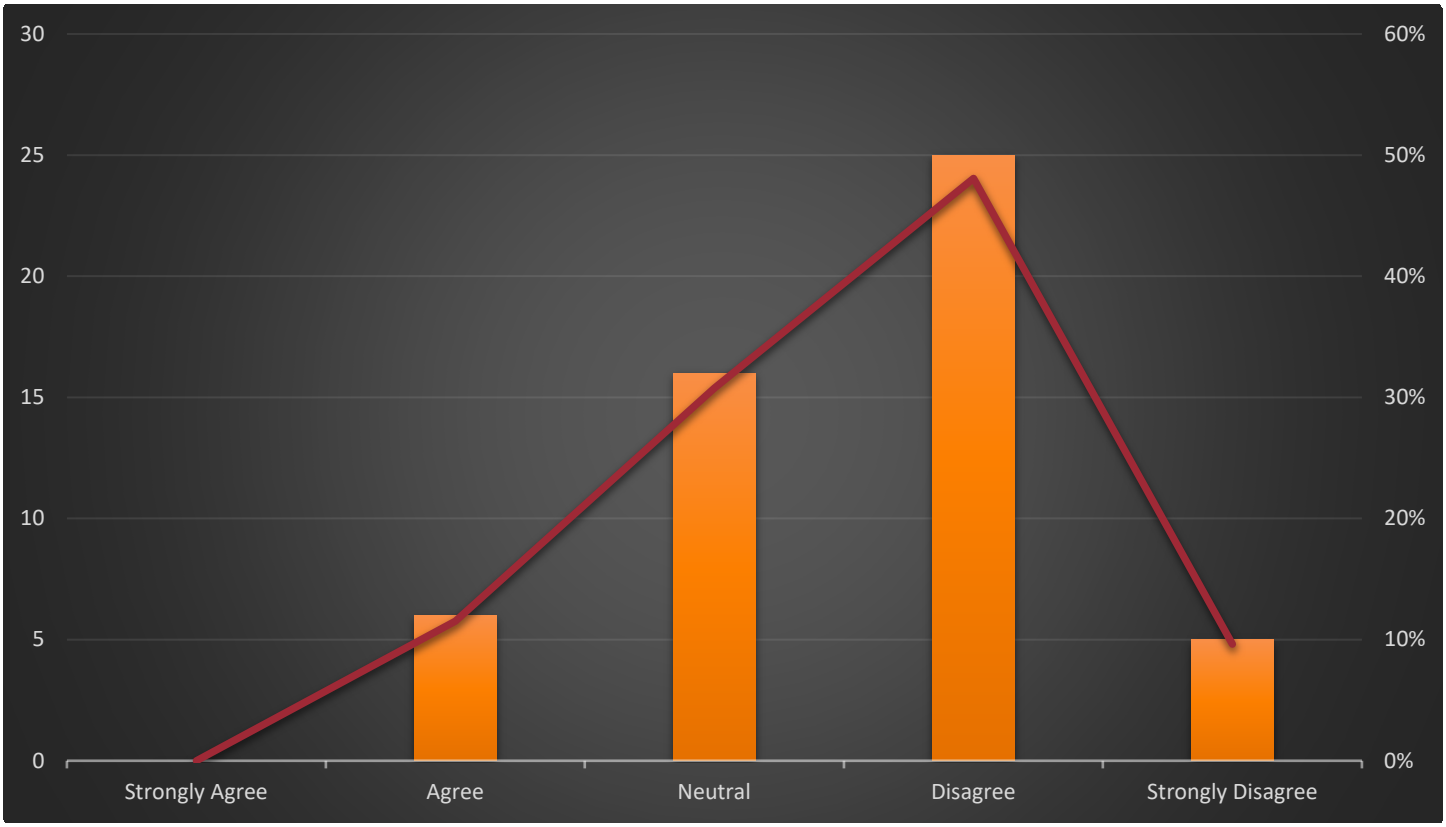
Summary of Comments:

- The greatest concern is for surge capacity related to both available personnel and equipment to fully operationalize needs in a high-consequence incident.
- In general there is a very positive relationship and cooperation between state agencies and their NAHLN counterparts.
- In a large-scale or long-term incident, local capacity for sample collection and testing will be overwhelmed.
- There is a need for clarity in facilitating out of state testing before an incident.
- Baseline or surveillance testing before an incident should be agreed upon to save time/energy during an active response.

Question: Based on the Covid-19 response, in the event of a national-level FAD incident, I believe that there will be adequate supplies and accessibility of PPE to respond to the disease incident.

Responses:

Strongly Agree	0	0%
Agree	6	12%
Neutral	16	31%
Disagree	25	48%
Strongly Disagree	5	10%



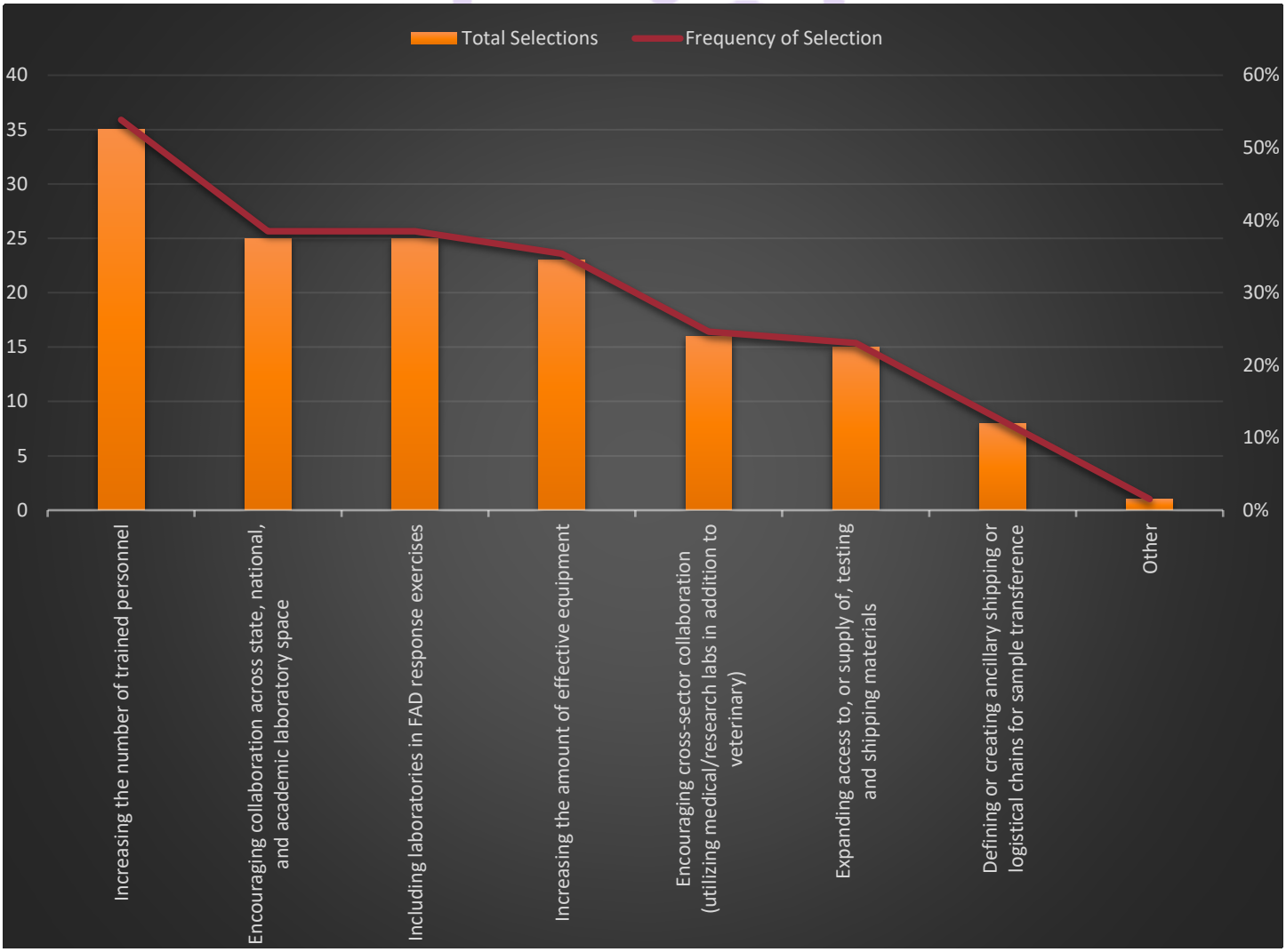
Summary of Comments:

- The National Veterinary Stockpile is highly important but limitations due to resource numbers, age, and delivery are concerning.
- PPE procurement is challenging for state agencies due to budgets, availability, and staffing.
- If there are multiple incidents ongoing at the same time, PPE shortages will quickly surface.
- An animal health incident occurring at the same time as a human health incident will result in low prioritization of PPE for animal health responders.
- States should not have to battle against other states for the same supplies.
- Inefficiencies in PPE usage should be addressed through training and better resource management to conserve PPE.
- Supplies needed for mass depopulation will result in the largest resource needs and subsequent limitations.
- Industries that utilize the same types of PPE may be able to assist with PPE sourcing during an incident.

Question (select all that apply): Effort(s) to address surge capacity concerns related to testing would be most effective if focused on:

Responses:

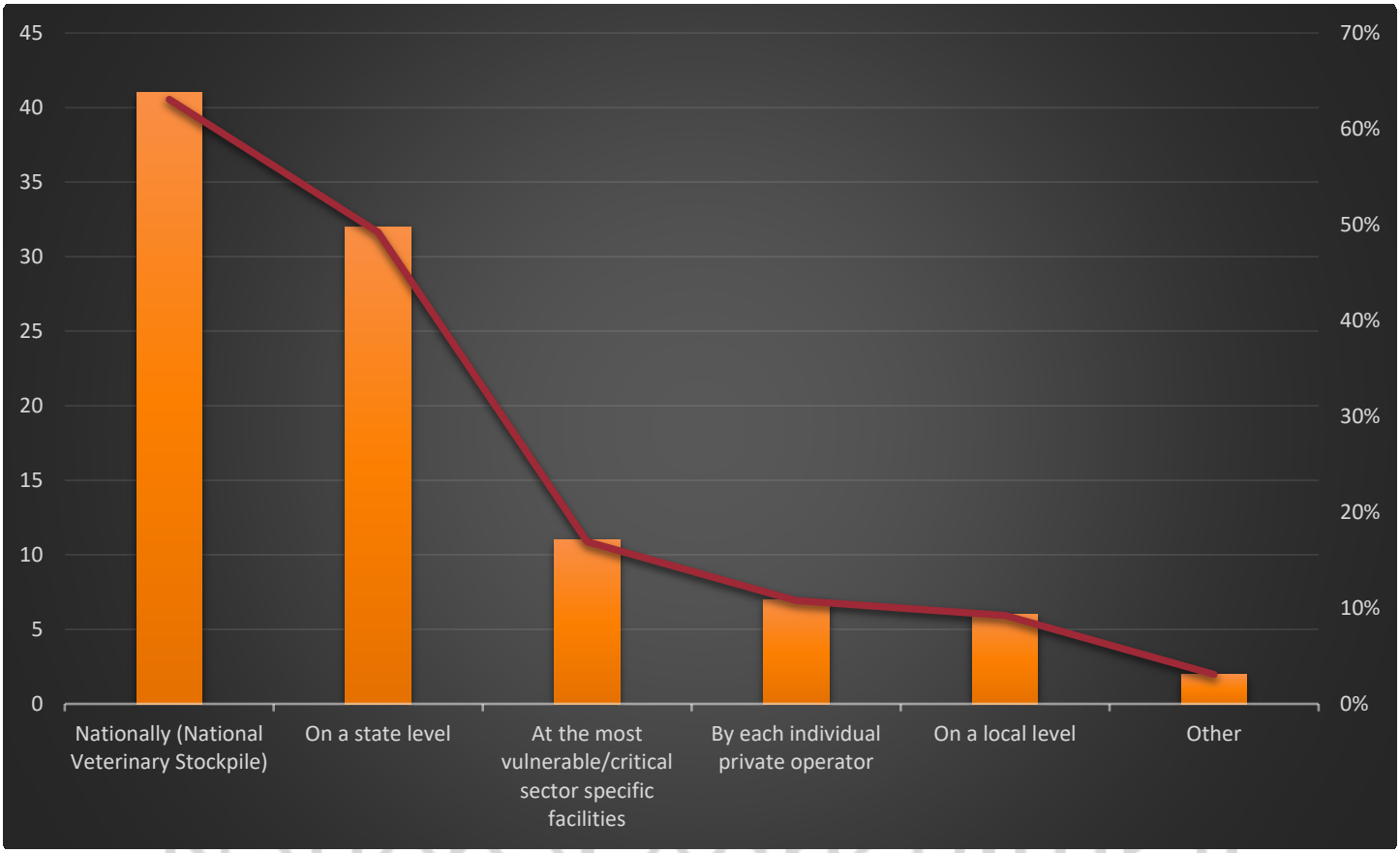
Increasing the number of trained personnel	35	54%
Encouraging collaboration across state, national, and academic laboratory space	25	38%
Including laboratories in FAD response exercises	25	38%
Increasing the amount of effective equipment	23	35%
Encouraging cross-sector collaboration (utilizing medical/research labs in addition to veterinary)	16	25%
Expanding access to, or supply of, testing and shipping materials	15	23%
Defining or creating ancillary shipping or logistical chains for sample transference	8	12%
Other	1	2%



Question (select all that apply): Supplies and equipment that are integral to a food or agricultural incident response should be held or stockpiled:

Responses:

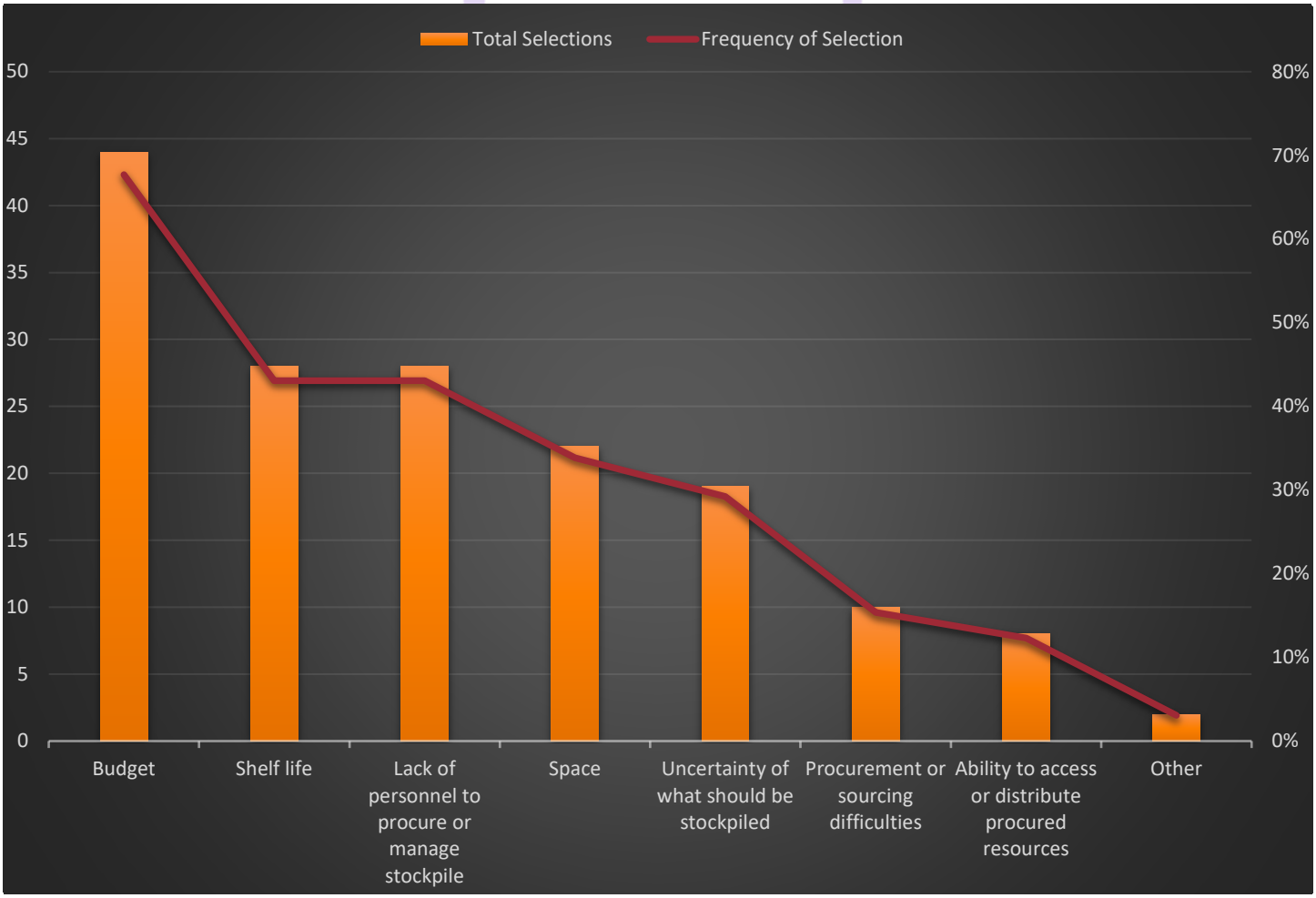
Nationally (National Veterinary Stockpile)	41	63%
On a state level	32	49%
At the most vulnerable/critical sector specific facilities	11	17%
By each individual private operator	7	11%
On a local level	6	9%
Other	2	3%



Question (select all that apply): The challenges associated with stockpiling materials for responding to a food or agricultural incident is most often associated with:

Responses:

Budget	44	68%
Shelf life	28	43%
Lack of personnel to procure or manage stockpile	28	43%
Space	22	34%
Uncertainty of what should be stockpiled	19	29%
Procurement or sourcing difficulties	10	15%
Ability to access or distribute procured resources	8	12%
Other	2	3%



Theme #3 Recommendations

- Efforts to bolster the National Animal Health Laboratory Network (NAHLN) through funding allocated by the 2018 Farm Bill was a positive step to address some of these issues.
- States should partner with NAHLN laboratories to plan, train, and exercise for incidents that result in significant surge to capture surge limitations, needs, and unexpected challenges.
- States should work collectively, and with USDA and industry groups, to create agreed upon testing standards for continuity of business purposes.
- The National Veterinary Stockpile should be fully supported by federal agencies through a collaborative effort, both in restocking/replacing equipment and in timely delivery of materials.
- States should utilize planning efforts to create up-to-date inventories of equipment that can be utilized to respond to a FAD incident, including outreach to producers that may have important access to resources that could be used as part of a response.

Theme #4 – Social Ramifications of a High-Consequence Food and Ag Incident

Background: It has long been understood that a foreign animal disease incident will likely create some level of public confusion related to food safety concerns. Terms like foot-and-mouth disease and African swine fever sound remarkably close to human diseases (hand, foot, and mouth; swine flu), so communicators expect there to be an issue with public perception. Efforts have long existed within the livestock industry to clarify such concerns in the event of a FAD incident.

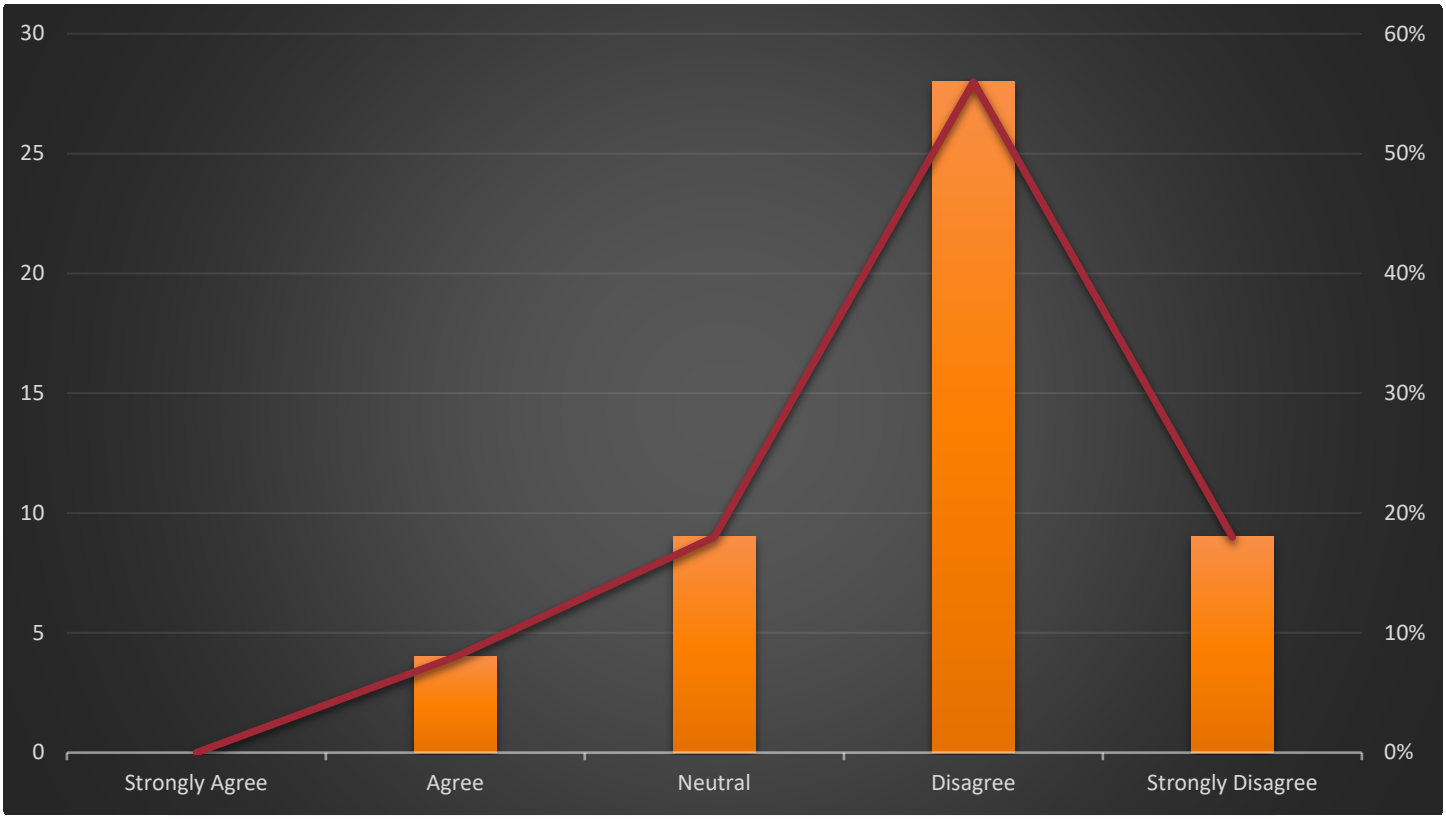
The reaction to Covid-19, however, revealed a new level of concern as it relates to the public's willingness to accept food shortages, either perceived or real, and the market effects that may occur with even the rumor of supply chain disruptions. The level of passion and anger exhibited both in person at grocery establishments and online through social media create a larger concern that the willingness of U.S. consumers to both exhibit patience and to trust food supplies may be more fragile than previously expected.

Other recent developments have cast something of a shadow over the entire livestock industry as it pertains to public perception and the potential challenges that may exist during a FAD response. Lessons learned from the Virulent Newcastle Disease incident in southern California point to a public that is increasingly hostile to the idea of euthanasia as a means of disease response. Likewise, increasing scrutiny of CAFO practices and the impact these operations may have on the environment have created something of a skeptical at best and hostile at worst attitude toward production agriculture. These factors indicate that there will likely be a significant amount of public perception issues that will need to be addressed in a food or ag incident.

Question: Based on the Covid-19 response, I am confident that our current state FAD response plan adequately accounts for the social and political unrest that may result from food supply chain disruptions, movement restrictions, market disruptions, or the depopulation of livestock.

Responses:

Strongly Agree	0	0%
Agree	4	8%
Neutral	9	18%
Disagree	28	56%
Strongly Disagree	9	18%



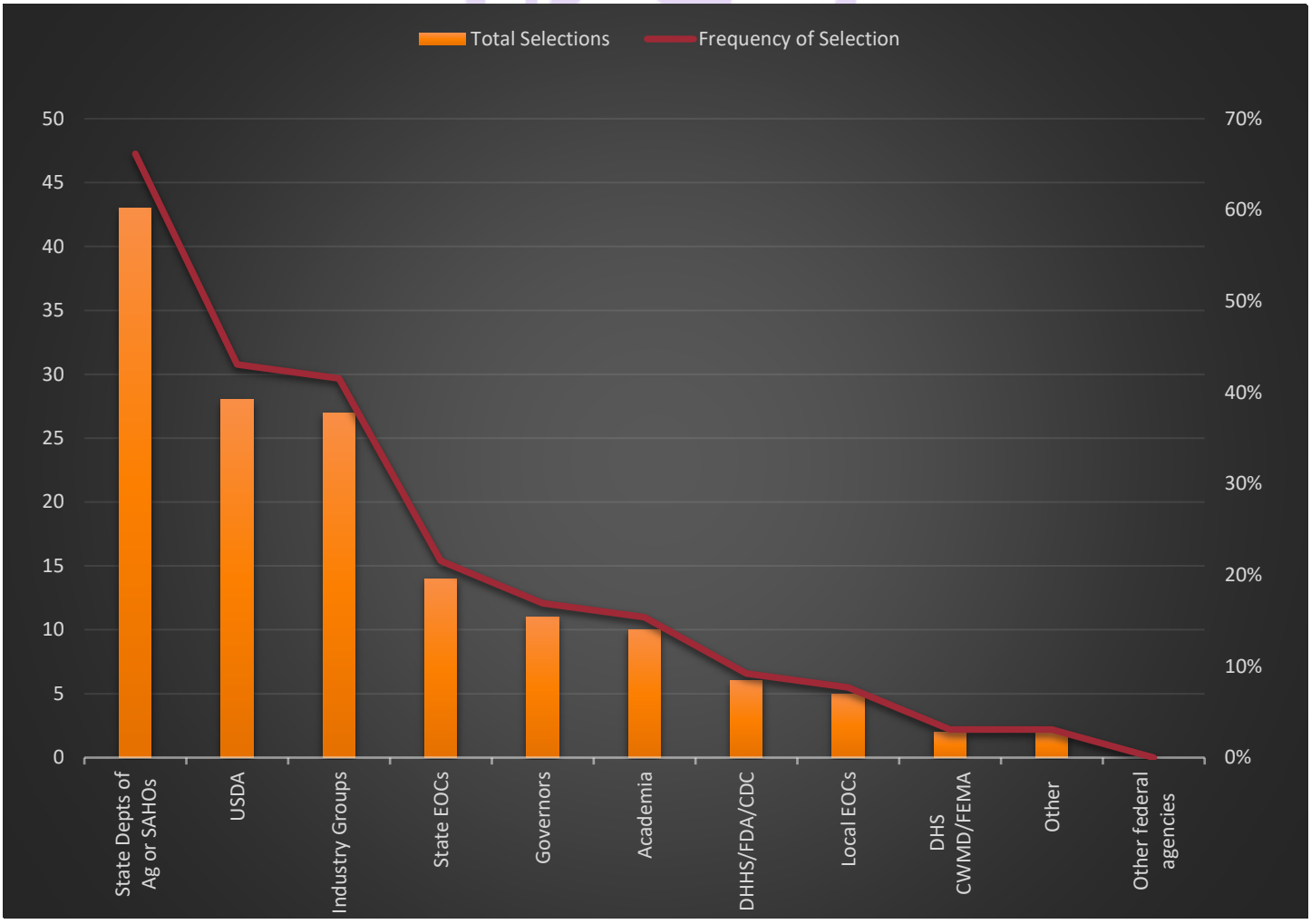
Summary of Comments:

- This is seen as a needed addition or update to state FAD plans across most respondents.
- In some cases, this topic is out of our control or lane; it should be addressed by different agencies.
- The primary area of concern for the livestock industry is public perception of food safety and consumer confidence.
- This is an area where collaboration and political leadership needs to be included in planning efforts.

Question (select all that apply): Messaging to the general public regarding food safety, food access, supply chain disruptions, animal welfare, and other societal aspects of a response will be most effective coming from what group?

Responses:

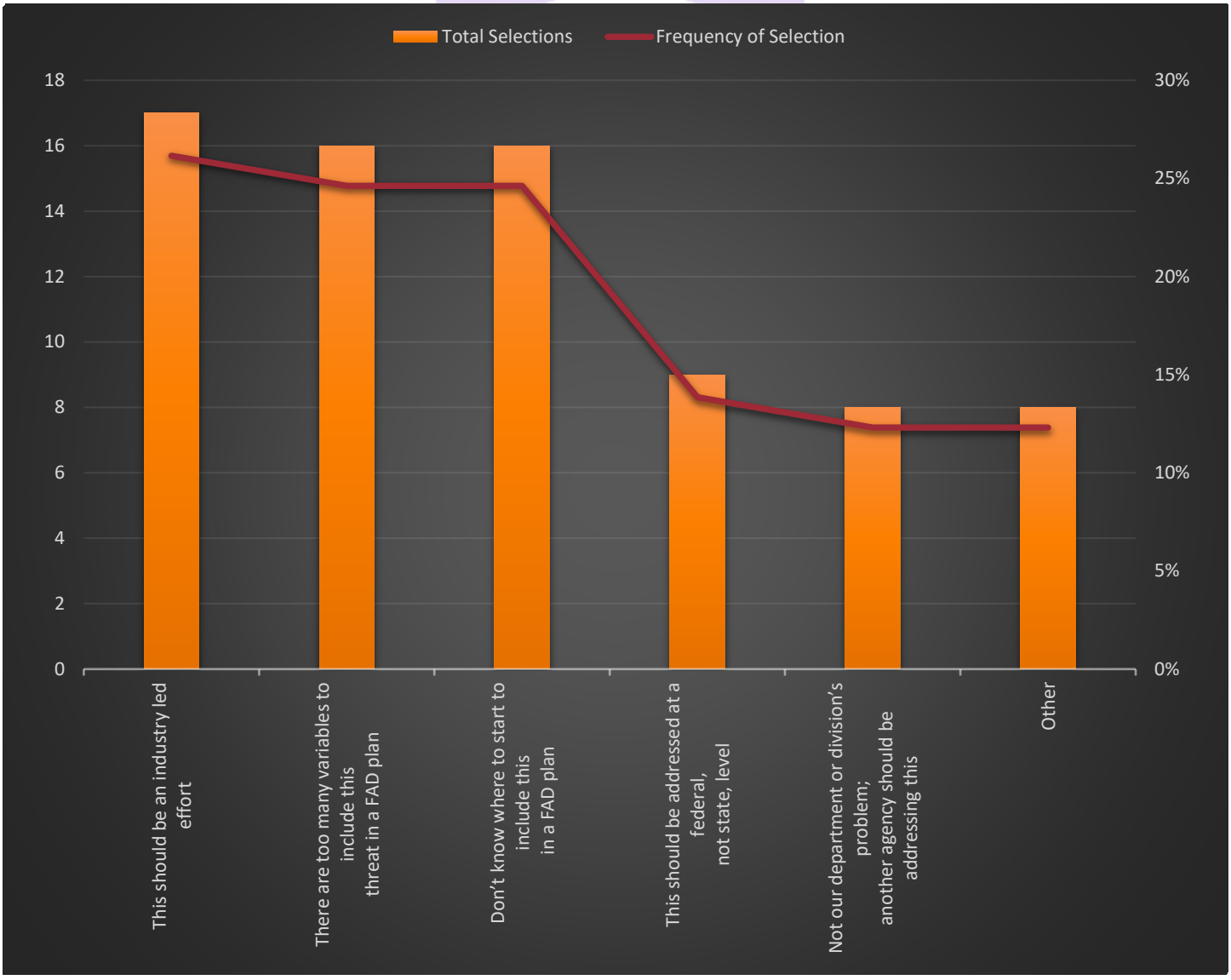
State Depts of Ag or SAHOs	43	66%
USDA	28	43%
Industry Groups	27	42%
State EOCs	14	22%
Governors	11	17%
Academia	10	15%
DHHS/FDA/CDC	6	9%
Local EOCs	5	8%
DHS CWMD/FEMA	2	3%
Other	2	3%
Other federal agencies	0	0%



Question (select all that apply): What best captures the challenge(s) associated with including plans that address the societal or political impacts of a food or agricultural incident?

Responses:

This should be an industry led effort	17	26%
There are too many variables to include this threat in a FAD plan	16	25%
Don't know where to start to include this in a FAD plan	16	25%
This should be addressed at a federal, not state, level	9	14%
Not our department or division's problem; another agency should be addressing this	8	12%
Other	8	12%



Theme #4 – Recommendations:

- Based on the responses to this survey, the problem of addressing societal issues through communications and public messaging seems to be something of a political football. Someone needs to clearly own this issue, either on a federal, state, or industry level. Clear communication without conflicting messaging needs to be the goal.
- States should work with existing PIO groups, both in house and across the emergency response spectrum, to plan for responsibilities and messaging strategies so that consistent messaging can occur.
- Guidance needs to be provided to local jurisdictions to clearly define the role and expectations of local PIOs in coordinating public messaging that is complementary to state or federal efforts but that also addresses specific local concerns.
- An effort to include industry, from producer to retailer, is critical to solve this potential problem. End users, including grocers and restaurants, particularly national brands, will play a major role in communicating either safety or concern to U.S. consumers.
- Pre-event message development on a federal level, particularly as it relates to different response strategies, could potentially provide state and local authorities with important resources and talking points for message consistency.
- Ramifications of societal disruptions and response to the incident need to be included in planning efforts, particularly in regards to the potential for violence toward responders, producers, animals, or general public unrest.

Theme #5 – Industry Cooperation for Preparedness and Response

Background: If looking for an analogy between the response to a high-consequence food or ag incident and a more traditional natural disaster, something of a parallel can be drawn between the calls for personal household preparedness before a flood or hurricane and the need for livestock industry preparedness before a FAD incident. This analogy falls somewhat short, however, in the recognition that livestock production, as part of the overall U.S. food and ag sector, is a key component of the nation's critical infrastructure. In that view, therefore, it is perhaps more appropriate to view individual producer preparedness more akin to plans for the energy sector. Even that analogy, however, fails to really capture the complexity of the relationship between producers and regulators. Perhaps it is easiest to simply recognize that the diversity of livestock operations across the nation makes a one-size-fits-all approach to disease preparedness challenging on both ends of the spectrum.

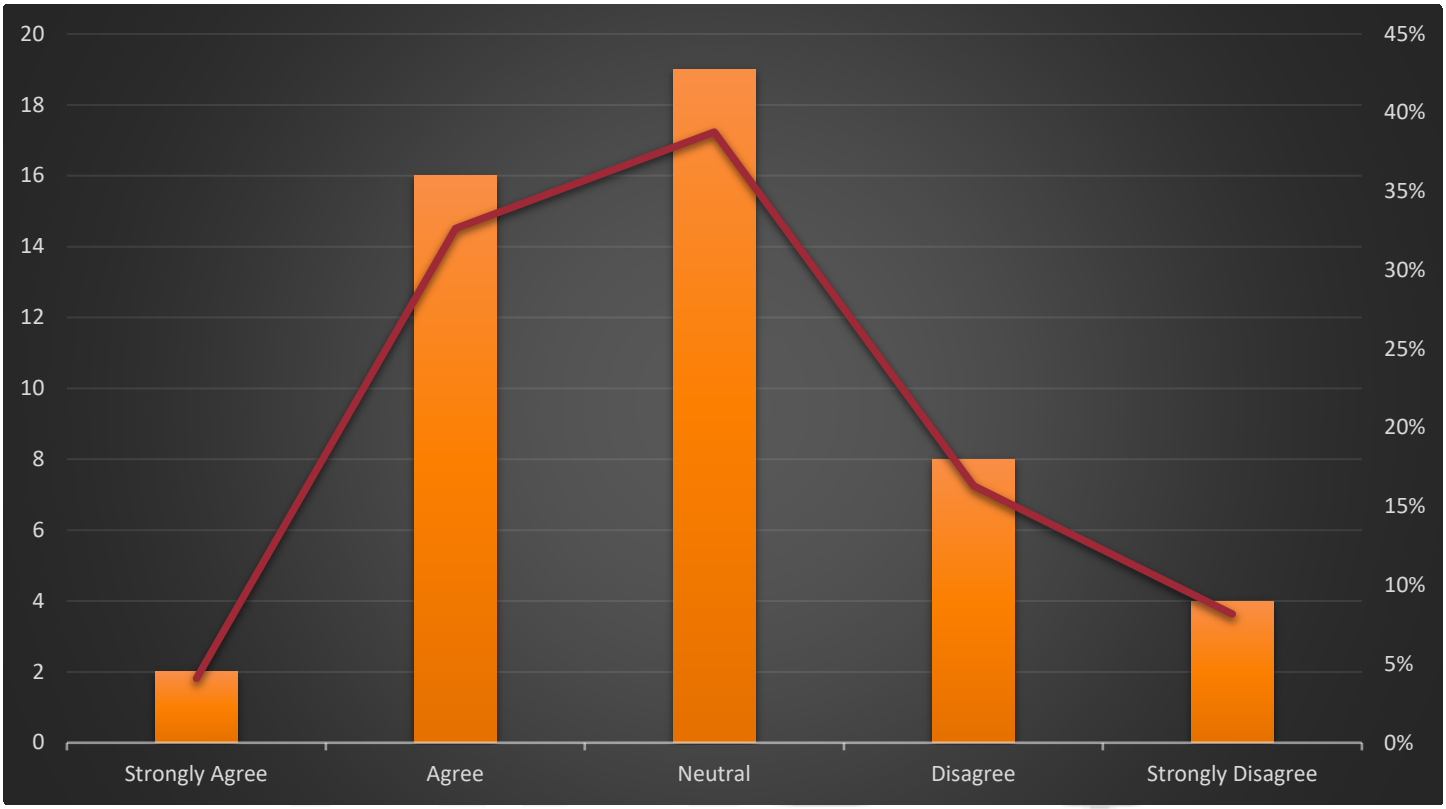
The above being recognized, it is still increasingly apparent that there is a need for a cooperative approach to incident preparedness. Whether this is classified as continuity of business planning or biosecurity planning, an on-farm, operation specific approach represents the most significant source of mitigation against rampant disease spread in the event that a FAD is introduced into the U.S. livestock sector. Similarly, plans for continuity of business will be critical in minimizing both the economic impact to the sector and, perhaps more importantly, in limiting the disruption of safe food products to consumers. This requires a collaborative approach wherein there are benefits to both producers and regulators/potential responders.

The Secure Food Supply program developed as an effort between USDA, industry representatives, state regulators, and academic experts, likely represents the most significant leap forward in this space in the last decade or more. Awareness of the importance of biosecurity, coupled with real-world resources to accomplish such a goal, and a platform for standardization across state lines, makes this effort a crucial component as the U.S. takes steps to prepare for a high-consequence incident.

Question: The response to agricultural concerns by federal and state leadership has strengthened the trust factor between the livestock production sector and regulatory officials.

Responses:

Strongly Agree	2	4%
Agree	16	33%
Neutral	19	39%
Disagree	8	16%
Strongly Disagree	4	8%



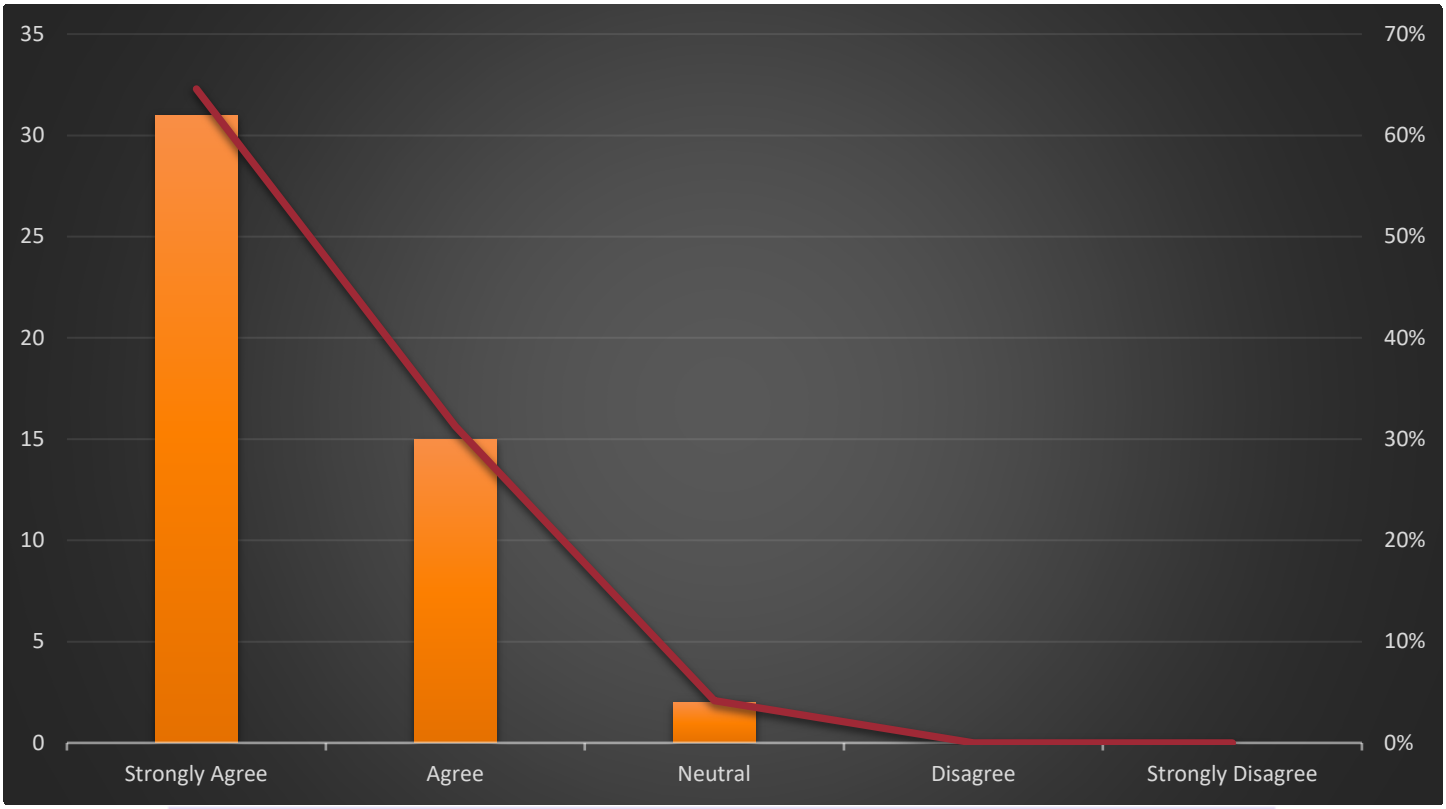
Summary of Comments:

- There is generally a positive relationship and trust between SAHOs and producers.
- The lack of consistent guidance from state and federal officials undermined trust in the overall response.
- Some producers exhibit behavior that undermines trust because of their skepticism of government involvement.
- The planning for ASF has had a more important impact on industry trust than the response to Covid-19.

Question: As a result of the Covid-19 incident, I believe that the implementation of voluntary biosecurity plans (Secure Food Supply Plans) for livestock operations and other critical facilities (food processing, livestock markets, etc.) pre-FAD outbreak is an important part of overall FAD preparedness.

Responses:

Strongly Agree	31	65%
Agree	15	31%
Neutral	2	4%
Disagree	0	0%
Strongly Disagree	0	0%



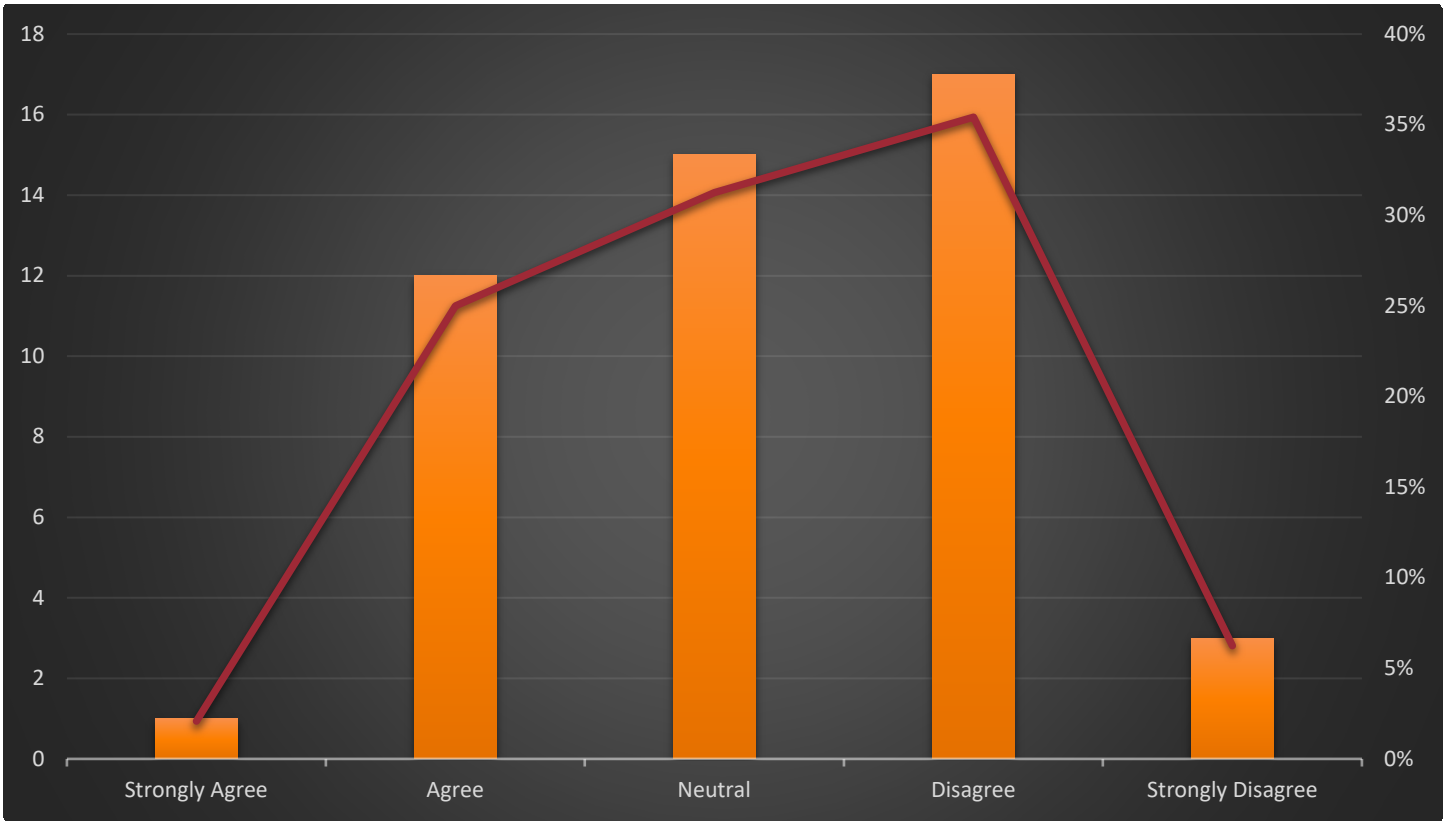
Summary of Comments:

- Producers must value plans and take personal responsibility for biosecurity to be impactful.
- Day-to-Day activities make biosecurity planning challenging.
- Some respondents would like to see mandatory biosecurity planning for operations.
- State adoption and education/outreach of plans is important.
- There is sometimes an industry reluctance or refusal to adapt to changing practices, thus impacting biosecurity planning acceptance.

Question: Based on the Covid-19 response, I am confident that federal economic support would be made available to support producers through the loss of production and markets during an FAD incident.

Responses:

Strongly Agree	1	2%
Agree	12	25%
Neutral	15	31%
Disagree	17	35%
Strongly Disagree	3	6%



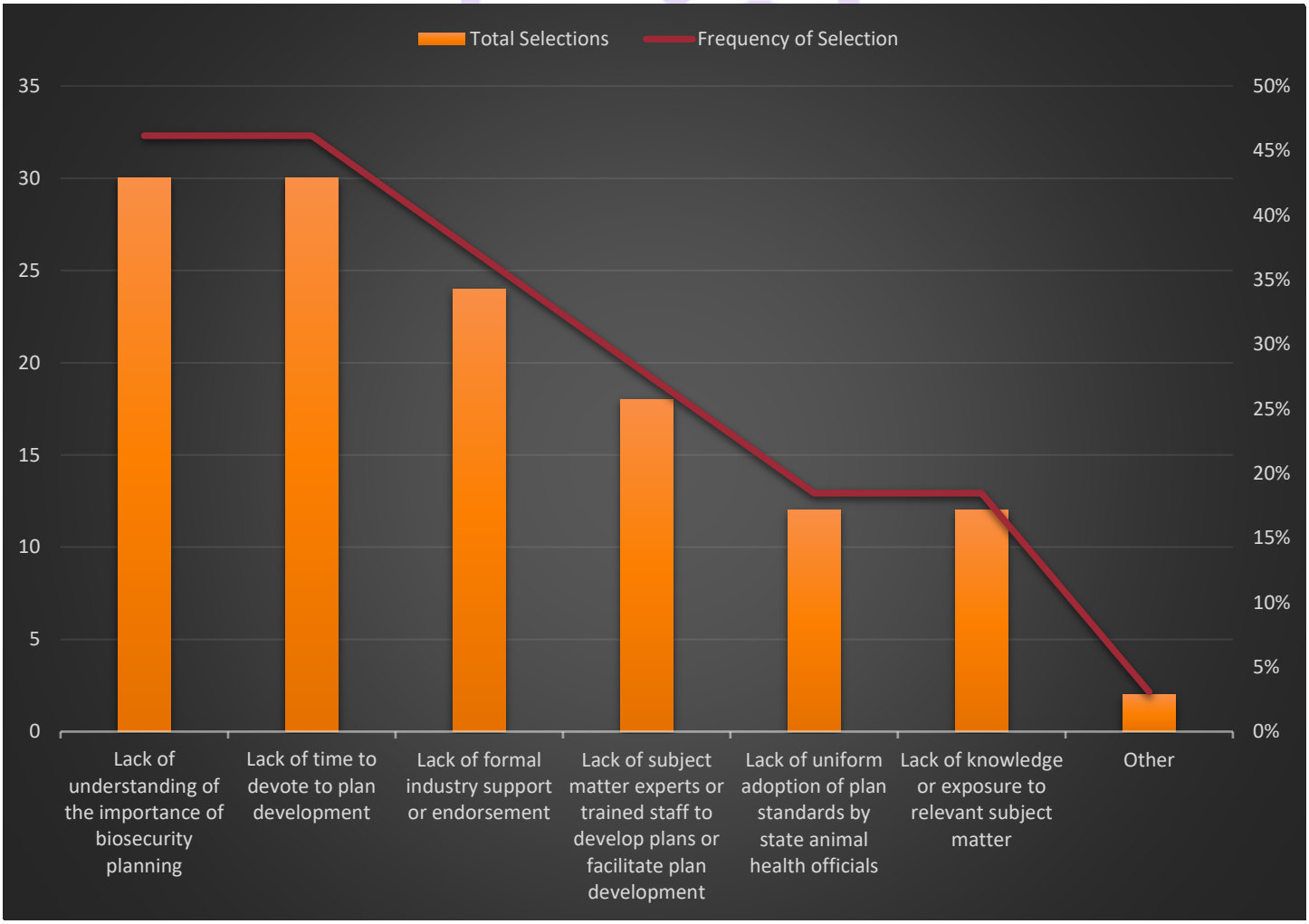
Summary of Comments:

- Recovery funds almost certainly won't cover all losses.
- There is a fear that recovery funds will become politicized.
- The results and long-term recovery of Covid-19 will make future funds for agriculture even less available.
- Recovery across industry segments and sectors may fail even with federal recovery support.
- Some producers may not be eligible for recovery funds, or receive them in a timely manner, to prevent economic failture.
- There is an overall lack of insurance support for producers in the area of FAD coverage.

Question (select all that apply): The biggest impediment(s) to widespread adoption and implementation of Secure Food Supply plans (or equivalent biosecurity plans) amongst livestock producers is perceived to be:

Responses:

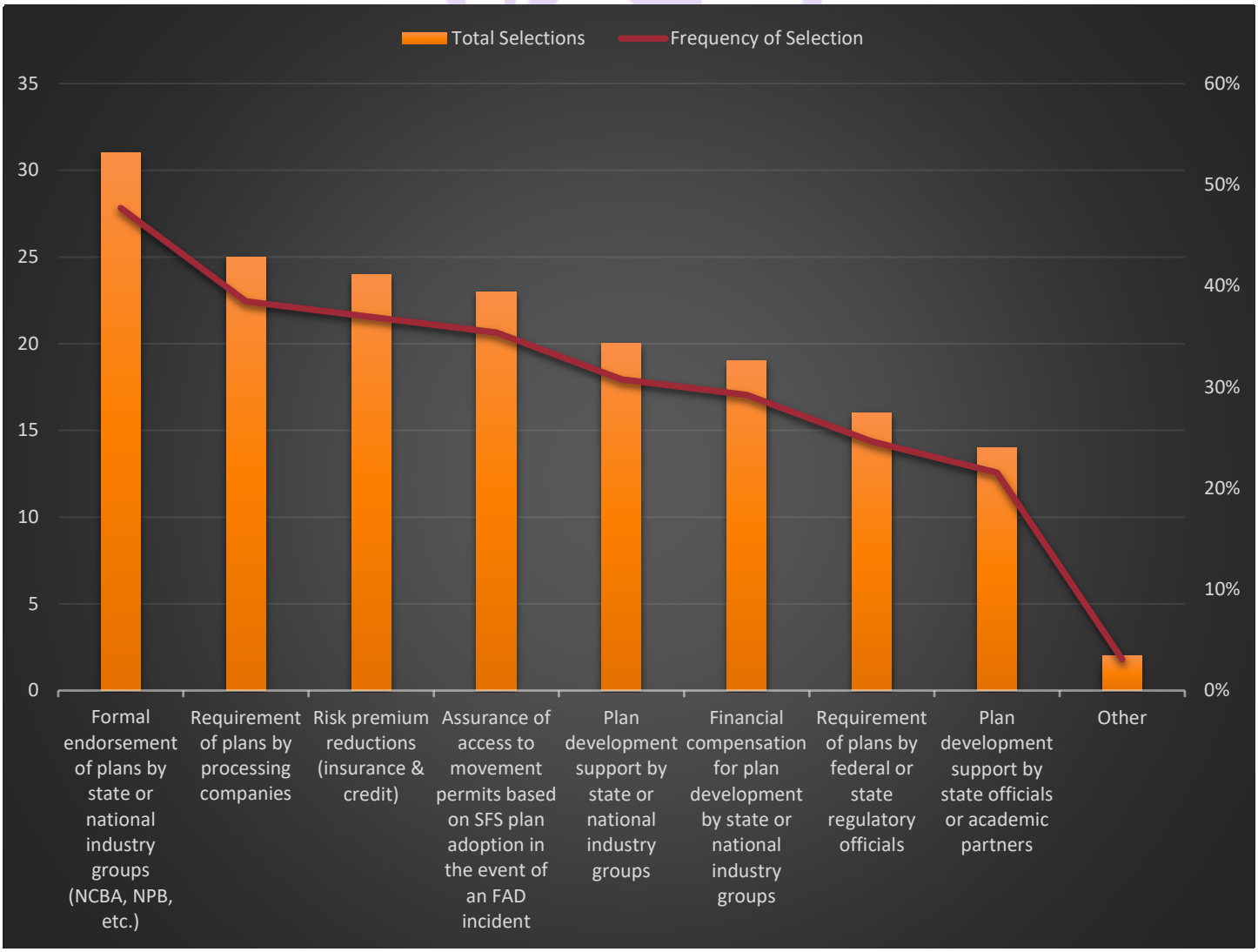
Lack of understanding of the importance of biosecurity planning	30	46%
Lack of time to devote to plan development	30	46%
Lack of formal industry support or endorsement	24	37%
Lack of subject matter experts or trained staff to develop plans or facilitate plan development	18	28%
Lack of uniform adoption of plan standards by state animal health officials	12	18%
Lack of knowledge or exposure to relevant subject matter	12	18%
Other	2	3%



Question (select all that apply): What action(s) would be most effective in encouraging livestock producers to develop and implement Secure Food Supply plans?

Responses:

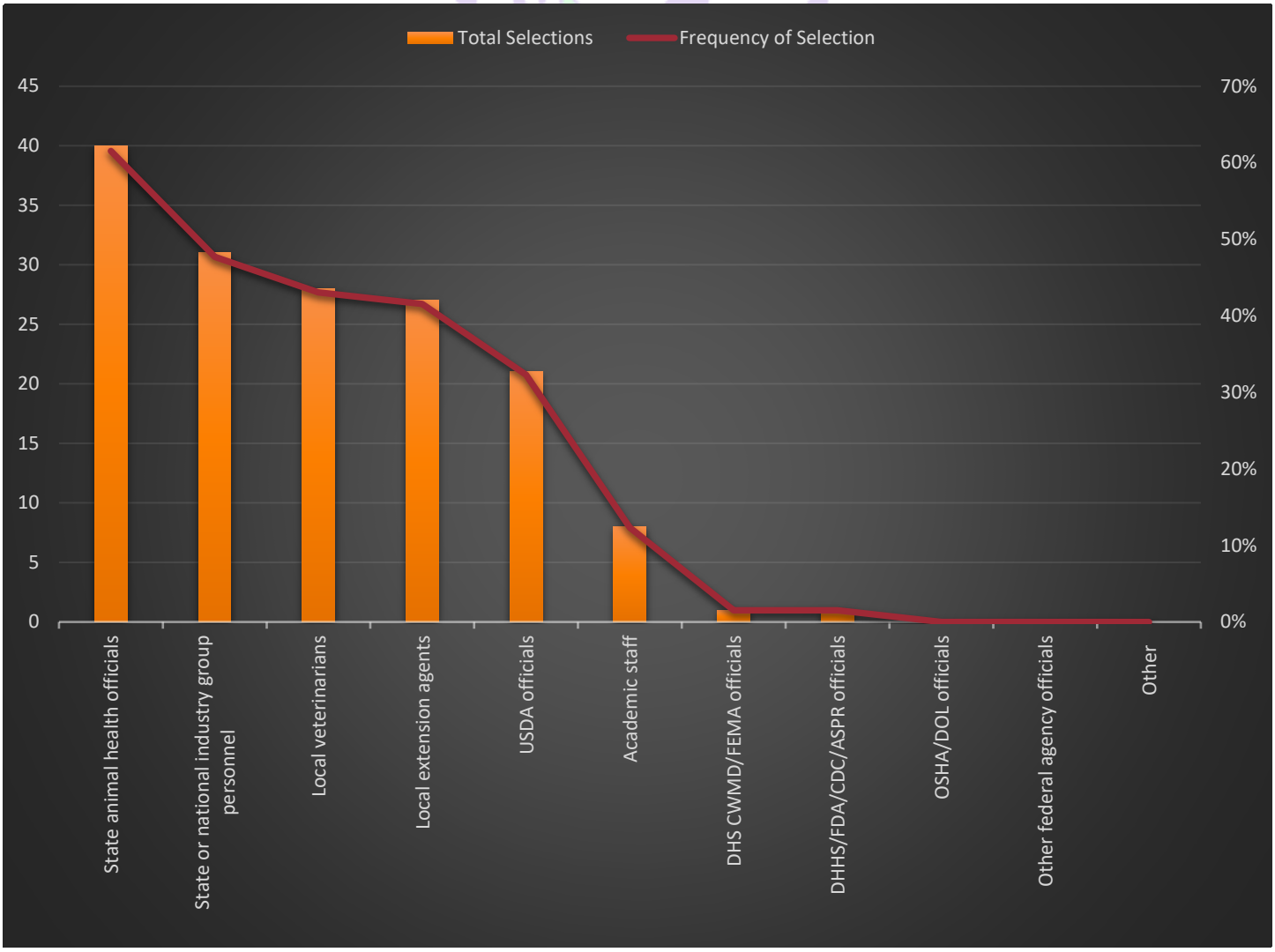
Formal endorsement of plans by state or national industry groups (NCBA, NPB, etc.)	31	48%
Requirement of plans by processing companies	25	38%
Risk premium reductions (insurance & credit)	24	37%
Assurance of access to movement permits based on SFS plan adoption in the event of an FAD incident	23	35%
Plan development support by state or national industry groups	20	31%
Financial compensation for plan development by state or national industry groups	19	29%
Requirement of plans by federal or state regulatory officials	16	25%
Plan development support by state officials or academic partners	14	22%
Other	2	3%



Question (select all that apply): Who would be most effective at communicating the importance of biosecurity planning and the process of developing a biosecurity plan to producers in your state?

Responses:

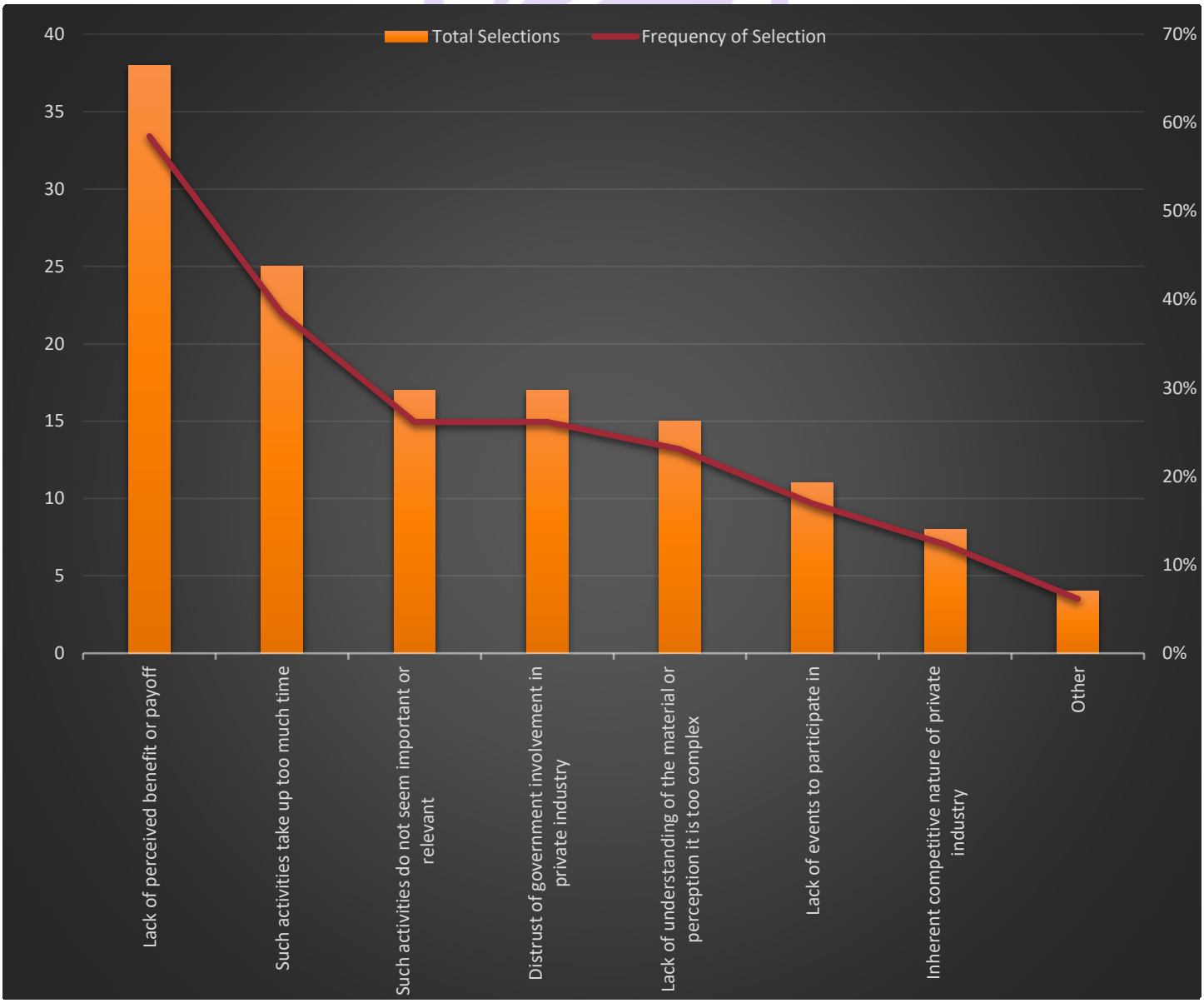
State animal health officials	40	62%
State or national industry group personnel	31	48%
Local veterinarians	28	43%
Local extension agents	27	42%
USDA officials	21	32%
Academic staff	8	12%
DHS CWMD/FEMA officials	1	2%
DHHS/FDA/CDC/ASPR officials	1	2%
OSHA/DOL officials	0	0%
Other federal agency officials	0	0%
Other	0	0%



Question (select all that apply): The biggest impediment(s) to producer and industry participation in state or county preparedness activities (trainings, exercises, planning, etc.) is perceived to be:

Responses:

Lack of perceived benefit or payoff	38	58%
Such activities take up too much time	25	38%
Such activities do not seem important or relevant	17	26%
Distrust of government involvement in private industry	17	26%
Lack of understanding of the material or perception it is too complex	15	23%
Lack of events to participate in	11	17%
Inherent competitive nature of private industry	8	12%
Other	4	6%



Theme #5 – Recommendations:

- The cooperative effort begun in developing the guidance and templates for Secure Food Supply plans between industry and government should continue to be supported through material and financial support by both industry and government sources.
- States should formally adopt and endorse SFS plans as part of both of preparedness and response efforts for a FAD incident.
- States should work to unify and formalize movement requirements for permitting and continuity of business purposes. Similarly, a USDA supported permitting system should either be adopted or developed to allow for safe continuity of business.
- Livestock industry groups should formally adopt and endorse SFS plans and provide support to producer members to accomplish SFS plan development.
- Engagement should occur with food processors to encourage SFS adoption by producers as a means of decreasing risk of product interruption in the event of a FAD incident.
- Insurance underwriters should consider SFS plans as a means of risk reduction, resulting in a potential premium reduction serving as an incentive for producer participation in SFS plan development.
- Clear expectations of indemnity processes and procedures, in the event of a high-consequence FAD, need to be clearly communicated to state regulators, industry leaders, and producers, to increase confidence in the federal response.

Theme #6 – Planning, Training, and Exercising Efforts

Background: Perhaps no single theme area better encapsulates the need for continued efforts to prepare for a high-consequence food or ag incident than planning, training, and exercising efforts. Thinking about such a wide-ranging topic as this can become disorienting simply because of the scope. Add to this challenge that, as previously mentioned, the SAHOs responding to this survey and who would be, in most cases, tasked with leading the incident response in their state in the event of a FAD introduction, are not traditional incident managers nor first responders. The reality is that each animal health office represented has daily tasks that often take precedence over disease preparedness efforts. Limitations related to budgets, staffing, mission scope, political will, lack of experience, or simply daily work flow can crowd disease preparedness to the fringes. The issue is not a lack of concern but, more often than not, a lack of time and resources.

This struggle to making disease preparedness a priority is not unique to SAHOs. It is also true of the industry that they work with on a daily basis. Within the livestock sector in particular, efficiency and the management of daily activities related to animal care can make disease preparedness feel like a far-off problem.

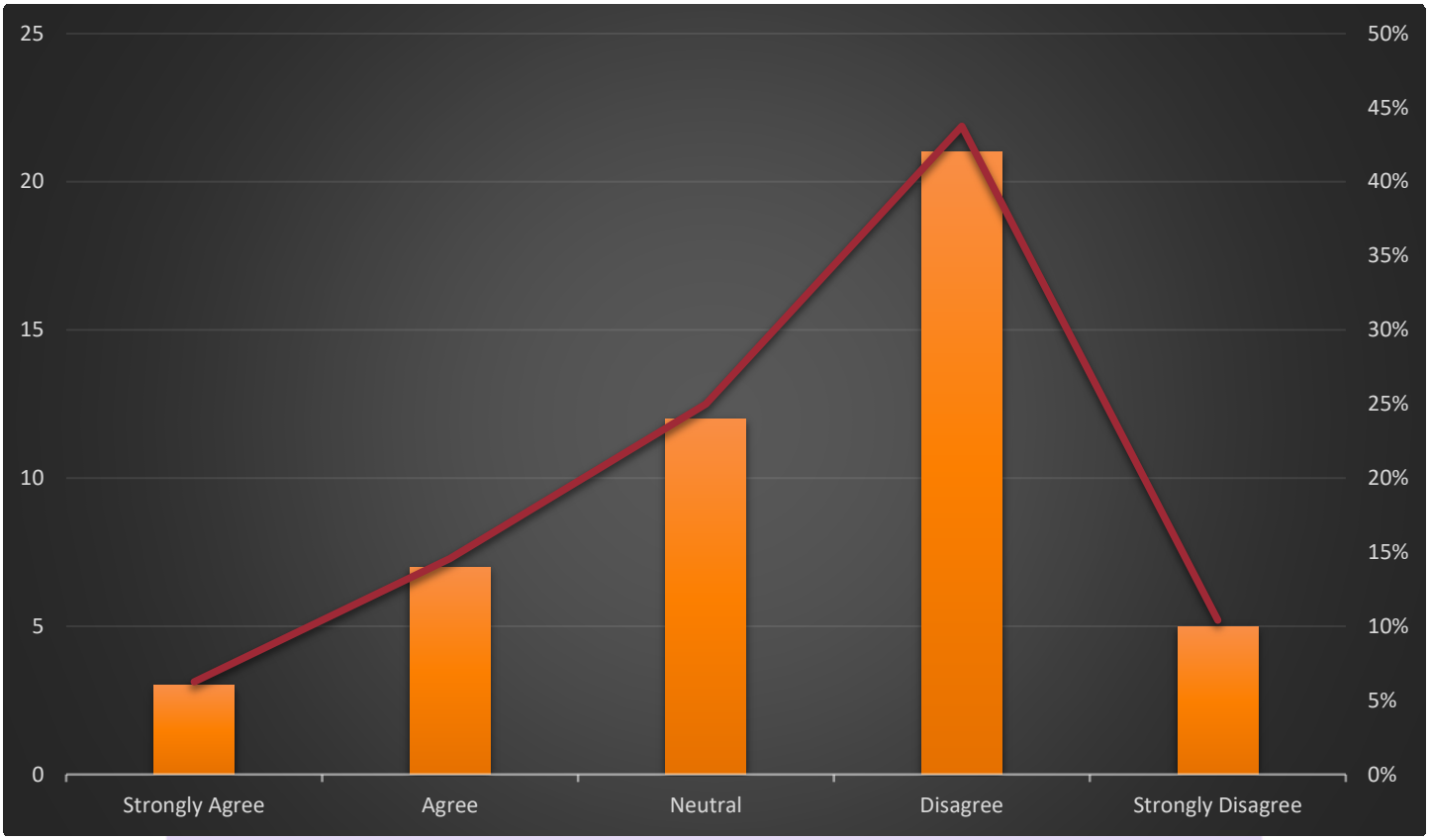
Finally, there is the factor of a false sense of security. Here we find Covid-19 being particularly useful in perhaps awakening industry and political leaders to the potential vulnerabilities and consequences of incidents that are, relatively speaking, infrequent occurrences. If the 1918 Spanish influenza pandemic is our closest analogue to Covid-19, then the last appearance of foot-and-mouth disease in the United State in 1929 becomes suddenly more relevant.

Because of these factors, it is imperative that efforts toward planning, training, and exercising in preparation for a high-consequence food or ag incident be highly effective. Limited time, limited resources, and limited budgets mean that, when efforts are dedicated to this topic, there is an outsized importance that they hit the mark of moving the entire country forward in a readiness to respond.

Question: Based on the Covid-19 response, I believe that current training and exercising efforts in preparation for an FAD incident on the **state** level have been adequate to build a prepared emergency response system.

Responses:

Strongly Agree	3	6%
Agree	7	15%
Neutral	12	25%
Disagree	21	44%
Strongly Disagree	5	10%



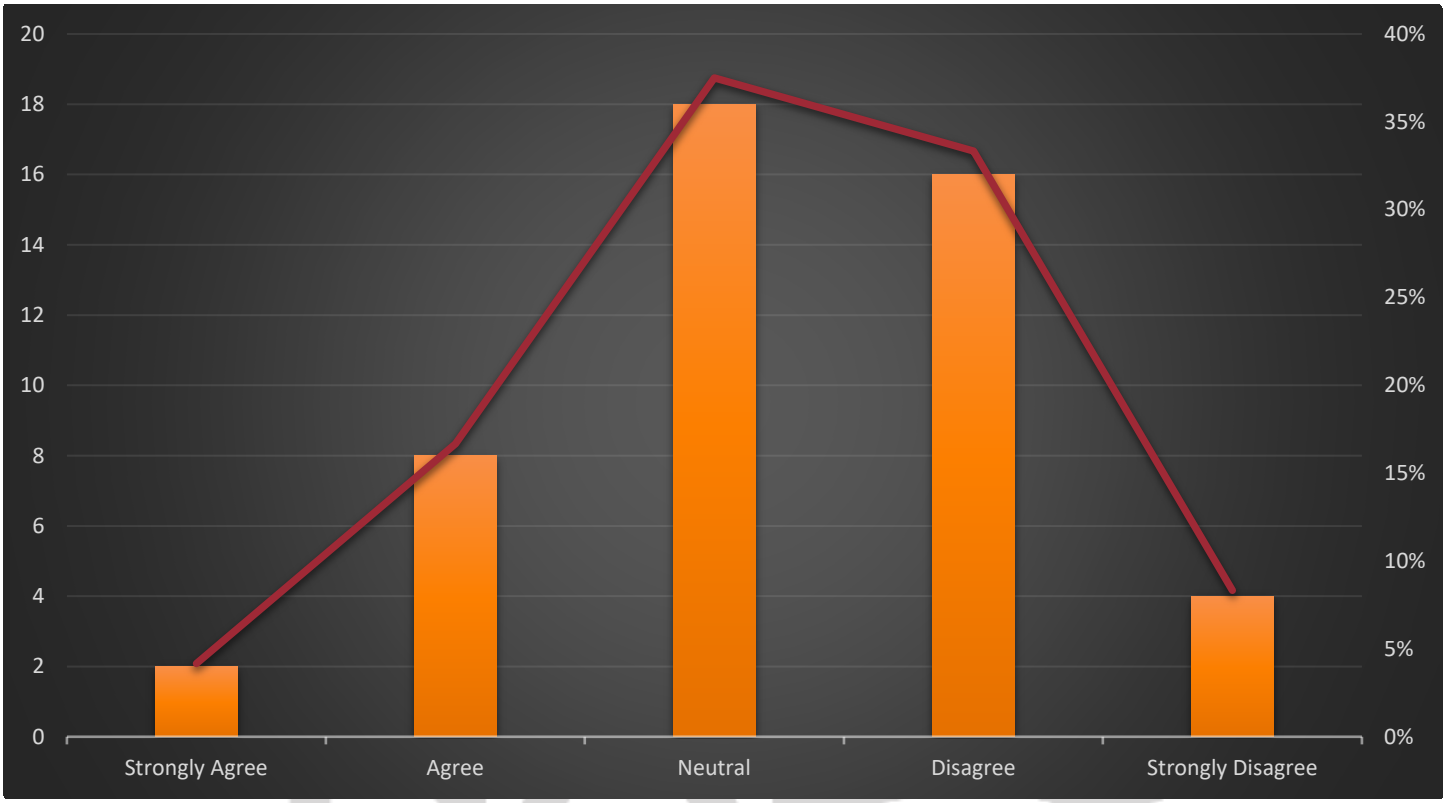
Summary of Comments:

- There is an overall need for more state level training and exercises
- State level political leadership often does not support or understand the need for food or agriculture emergency response training and exercise activities.
- Training and exercising is not a day-to-day priority for most SAHOs because of typical regulatory activities taking precedence both in time and budget.
- There is wide variability between states in the effort put toward training and exercising.
- Many states lack personnel to lead effort training and exercising efforts.

Question: Based on the Covid-19 response, I believe that current training and exercising efforts in preparation for an FAD incident on the **federal** level have been adequate to build a prepared emergency response system.

Responses:

Strongly Agree	2	4%
Agree	8	17%
Neutral	18	38%
Disagree	16	33%
Strongly Disagree	4	8%



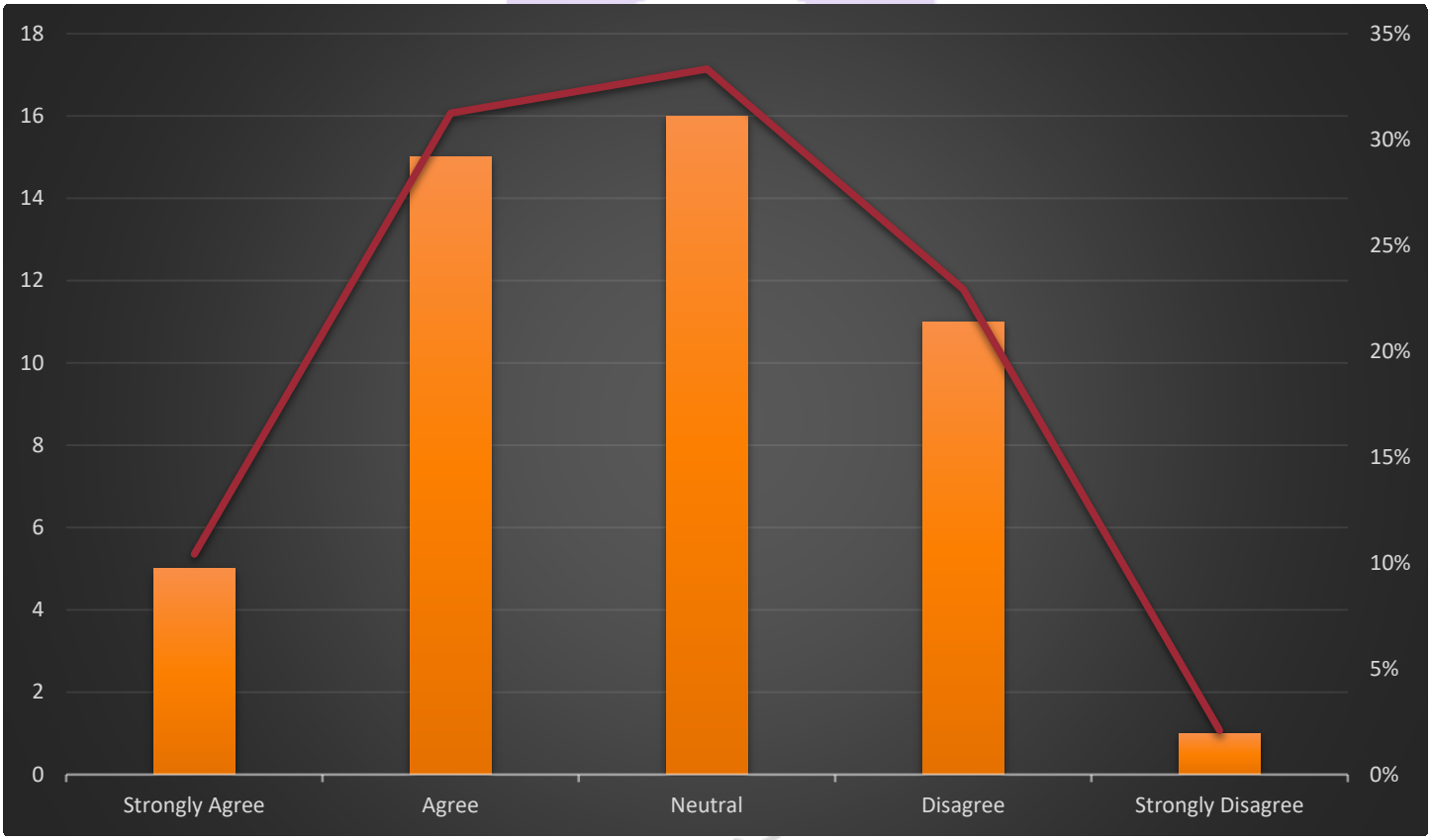
Summary of Comments:

- There is a need for federal exercises to be more integrated with participants representing multiple state and federal agencies and industry groups.
- The overall federal response staff to respond to a food or ag incident is lacking in personnel numbers.
- Food and ag is not currently seen as a federal priority.
- There is a fear that politicization of a response will hurt federal efforts.
- In some cases, federal agencies are better prepared than their state counterparts to respond.
- There should be an improved effort to capture and distribute lessons learned/feedback/AARs from federal exercising efforts.

Question: I believe that the resources that are available for training and exercising efforts in preparation for an FAD incident are effective at integrating agencies and individuals across the emergency response spectrum, especially at bridging the gap between agencies and stakeholders who are actively involved in animal agriculture on a daily basis and those response partners that would be needed who are not as familiar with animal agriculture.

Responses:

Strongly Agree	5	10%
Agree	15	31%
Neutral	16	33%
Disagree	11	23%
Strongly Disagree	1	2%



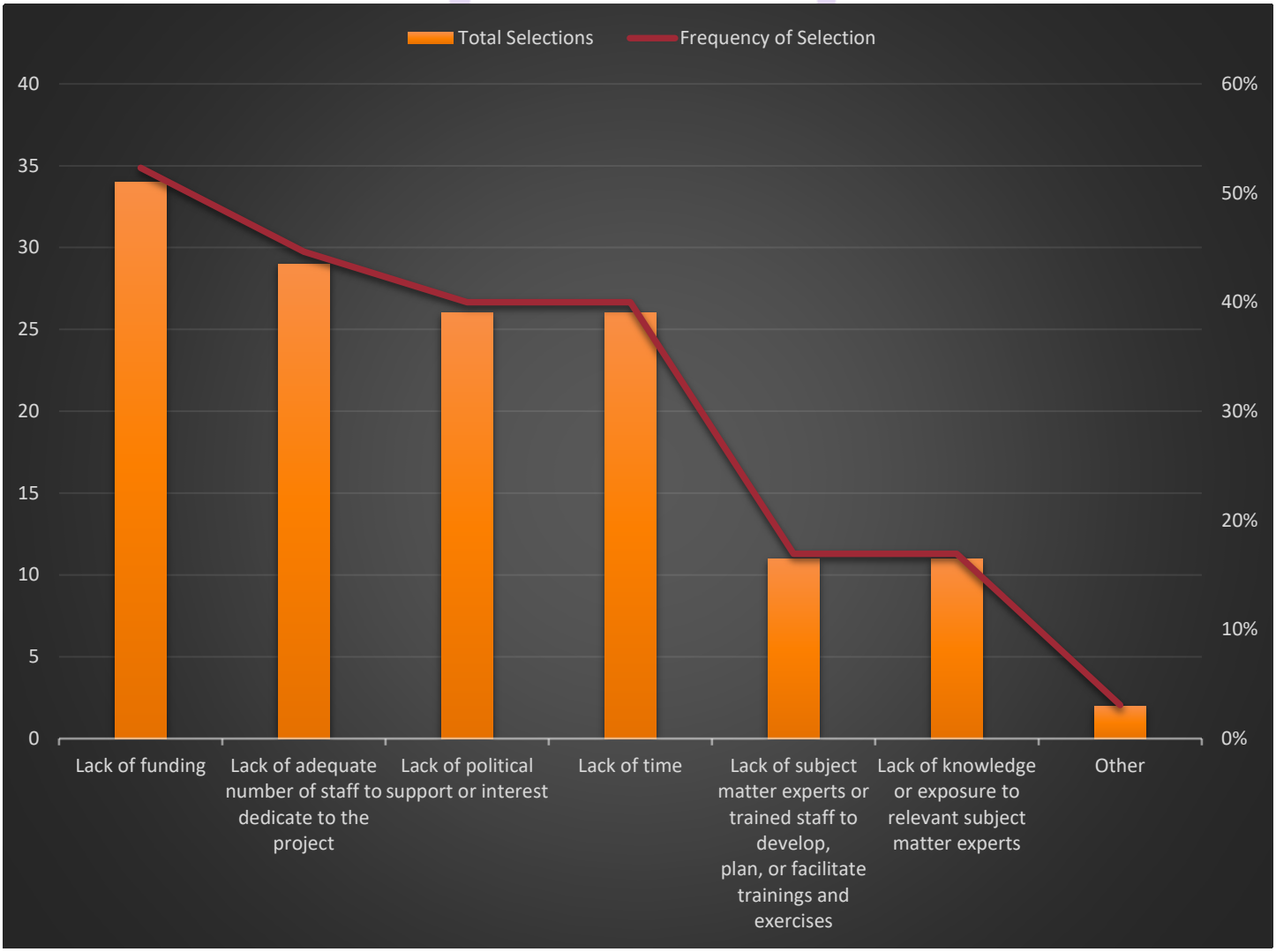
Summary of Comments:

- There is a greater emphasis needed to include other agencies that would be involved in a food/ag incident response across all governmental levels.
- Industry and producer participation is critical for effective preparedness.
- States need for personnel to act as trainers and facilitators.
- More total personnel need to be educated and trained to assist in this type of response.
- Day-to-Day activities make attendance at training or exercising events hard.
- There is great variance from state to state.
- The VS-NTEP has proven to be very important in getting training and exercise materials into the hands of SAHOs.

Question (select all that apply): The biggest impediment(s) to implementing a training and exercise program for state and local jurisdictions is perceived to be:

Responses:

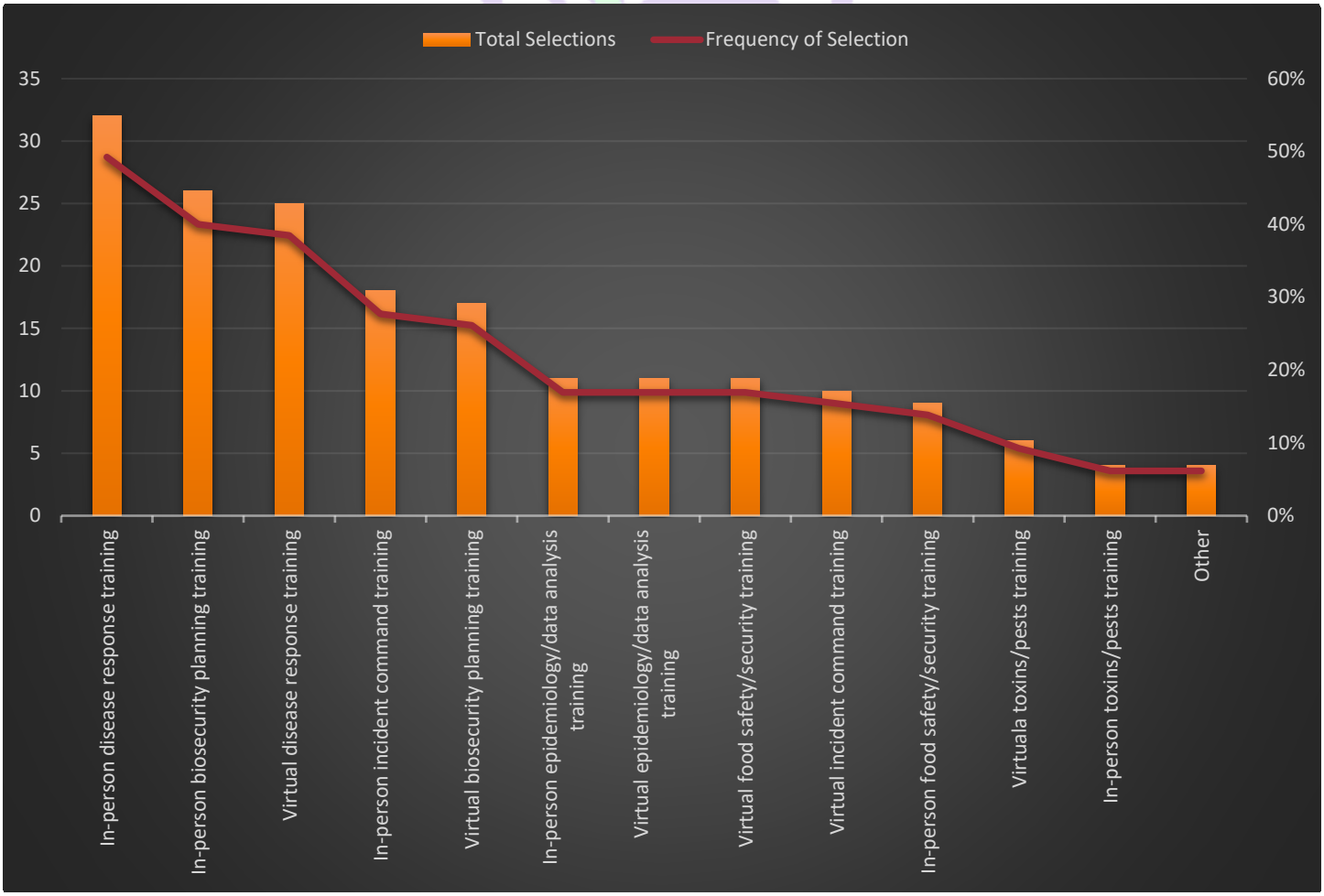
Lack of funding	34	52%
Lack of adequate number of staff to dedicate to the project	29	45%
Lack of political support or interest	26	40%
Lack of time	26	40%
Lack of subject matter experts or trained staff to develop, plan, or facilitate trainings and exercises	11	17%
Lack of knowledge or exposure to relevant subject matter experts	11	17%
Other	2	3%



Question (select all that apply): What type(s) of training would be most effective at increasing state and local awareness and readiness for responding to a food or agricultural incident?

Responses:

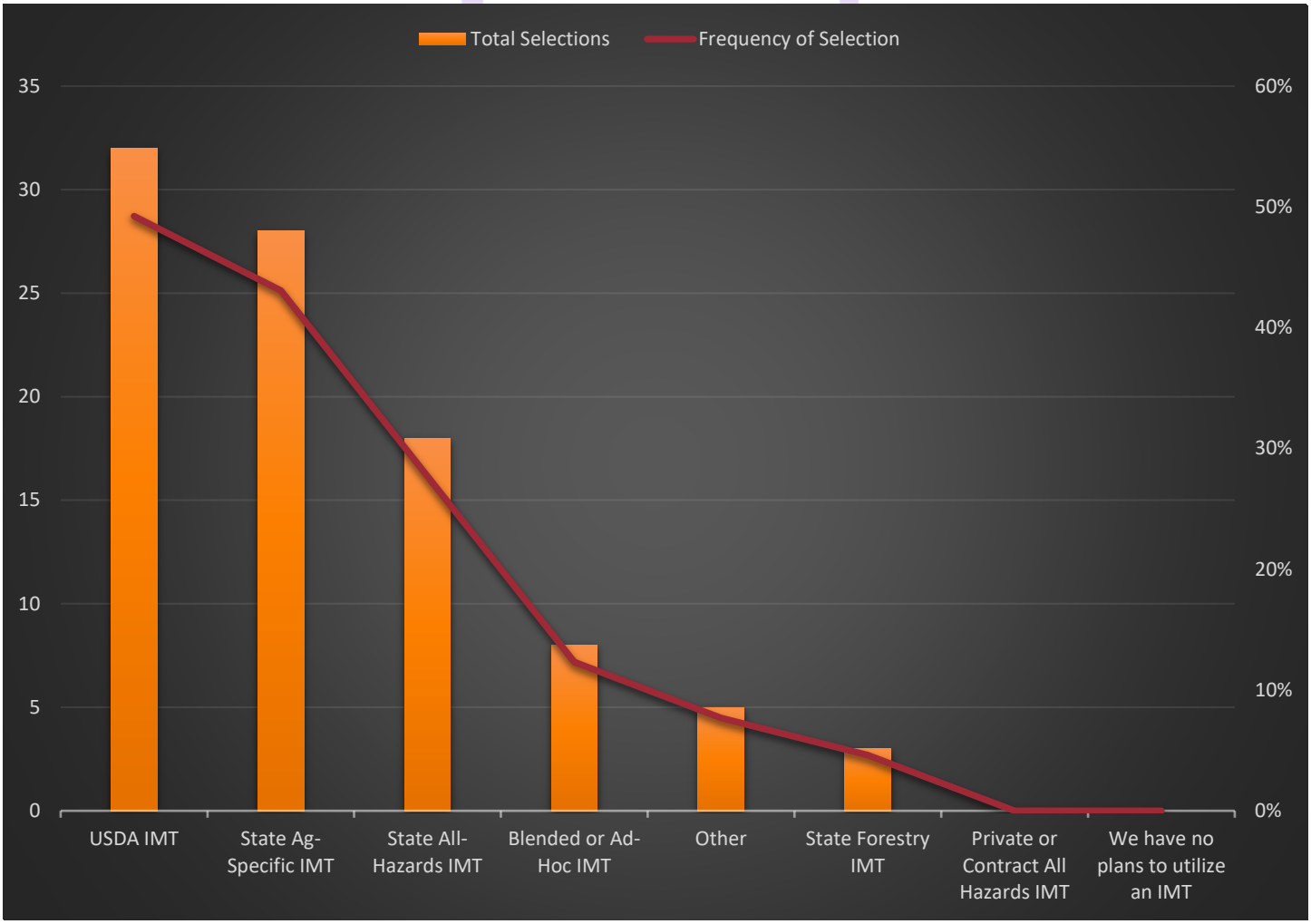
In-person disease response training	32	49%
In-person biosecurity planning training	26	40%
Virtual disease response training	25	38%
In-person incident command training	18	28%
Virtual biosecurity planning training	17	26%
In-person epidemiology/data analysis training	11	17%
Virtual epidemiology/data analysis training	11	17%
Virtual food safety/security training	11	17%
Virtual incident command training	10	15%
In-person food safety/security training	9	14%
Virtual toxins/pests training	6	9%
In-person toxins/pests training	4	6%
Other	4	6%



Question (select all that apply): In the event of a high consequence disease outbreak, our state will most likely utilize an incident management team to manage the incident from the following sources:

Responses:

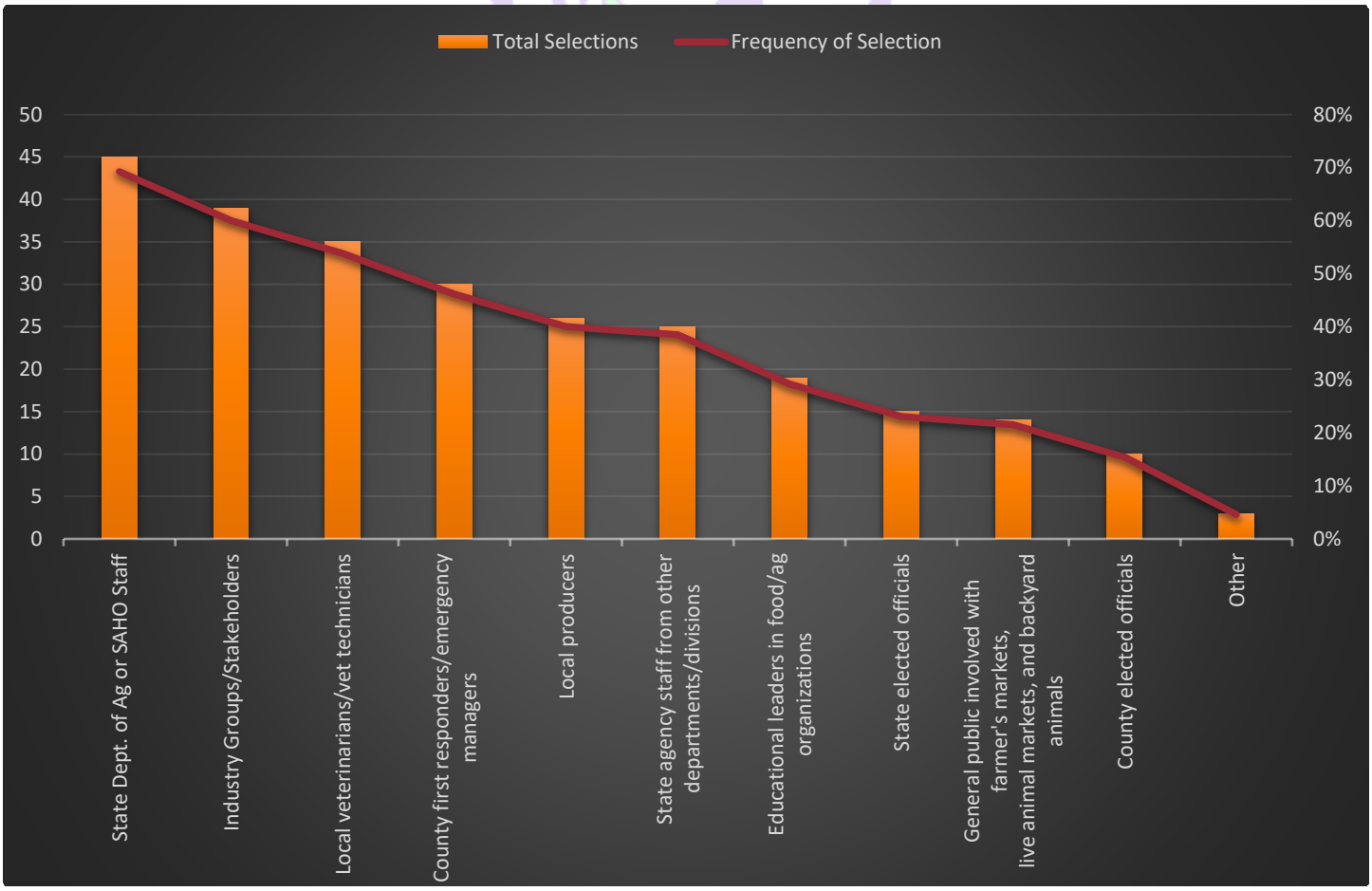
USDA IMT	32	49%
State Ag-Specific IMT	28	43%
State All-Hazards IMT	18	28%
Blended or Ad-Hoc IMT	8	12%
Other	5	8%
State Forestry IMT	3	5%
Private or Contract All Hazards IMT	0	0%
We have no plans to utilize an IMT	0	0%



Question (select all that apply): Who would be the appropriate or desired target audience for a food or agricultural emergency response training program?

Responses:

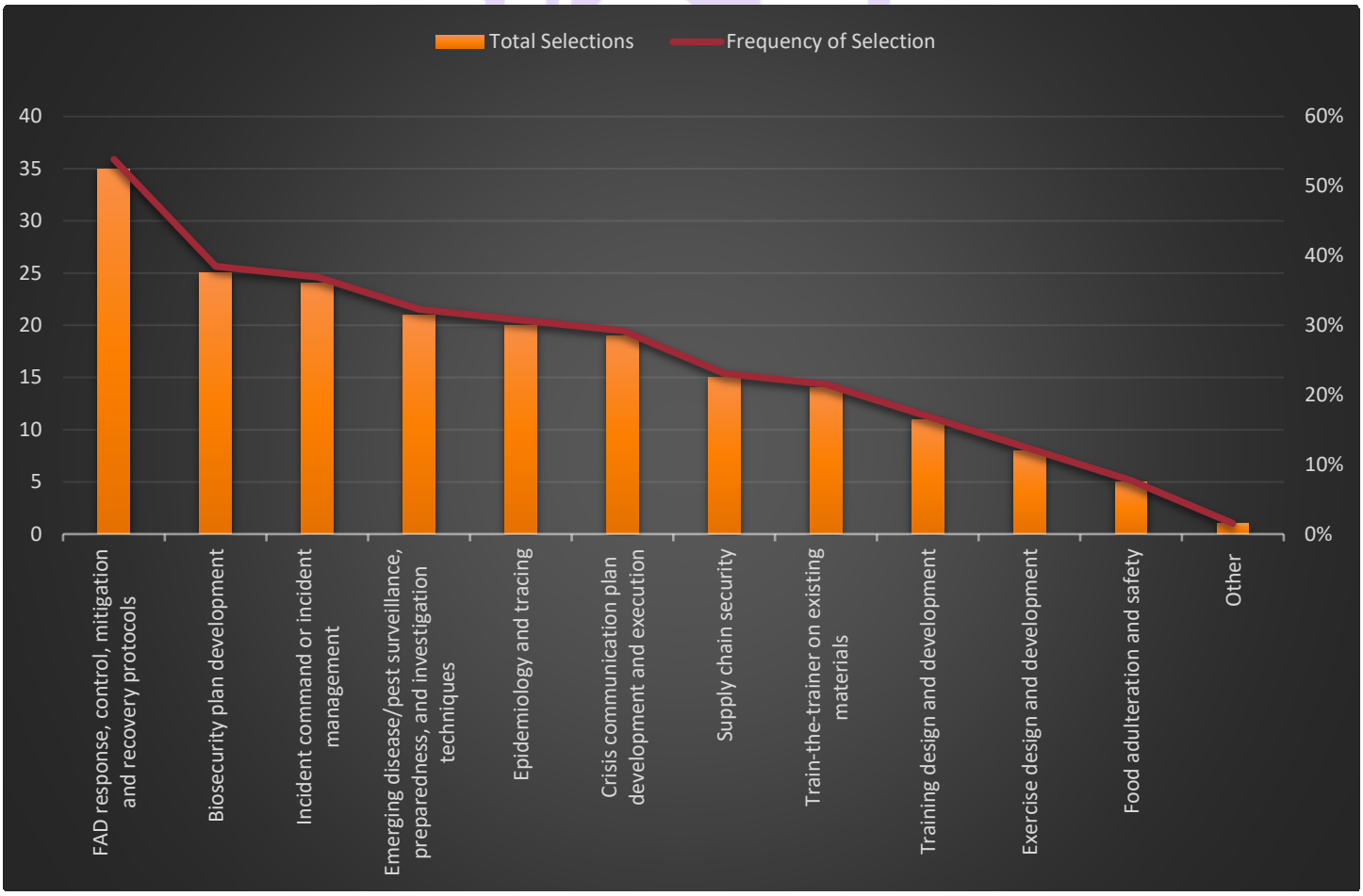
State Dept. of Ag or SAHO Staff	45	69%
Industry Groups/Stakeholders	39	60%
Local veterinarians/vet technicians	35	54%
County first responders/emergency managers	30	46%
Local producers	26	40%
State agency staff from other departments/divisions	25	38%
Educational leaders in food/ag organizations	19	29%
State elected officials	15	23%
General public involved with farmer's markets, live animal markets, and backyard animals	14	22%
County elected officials	10	15%
Other	3	5%



Question (select all that apply): What type of training(s) would be most beneficial for staff within your own department or division?

Responses:

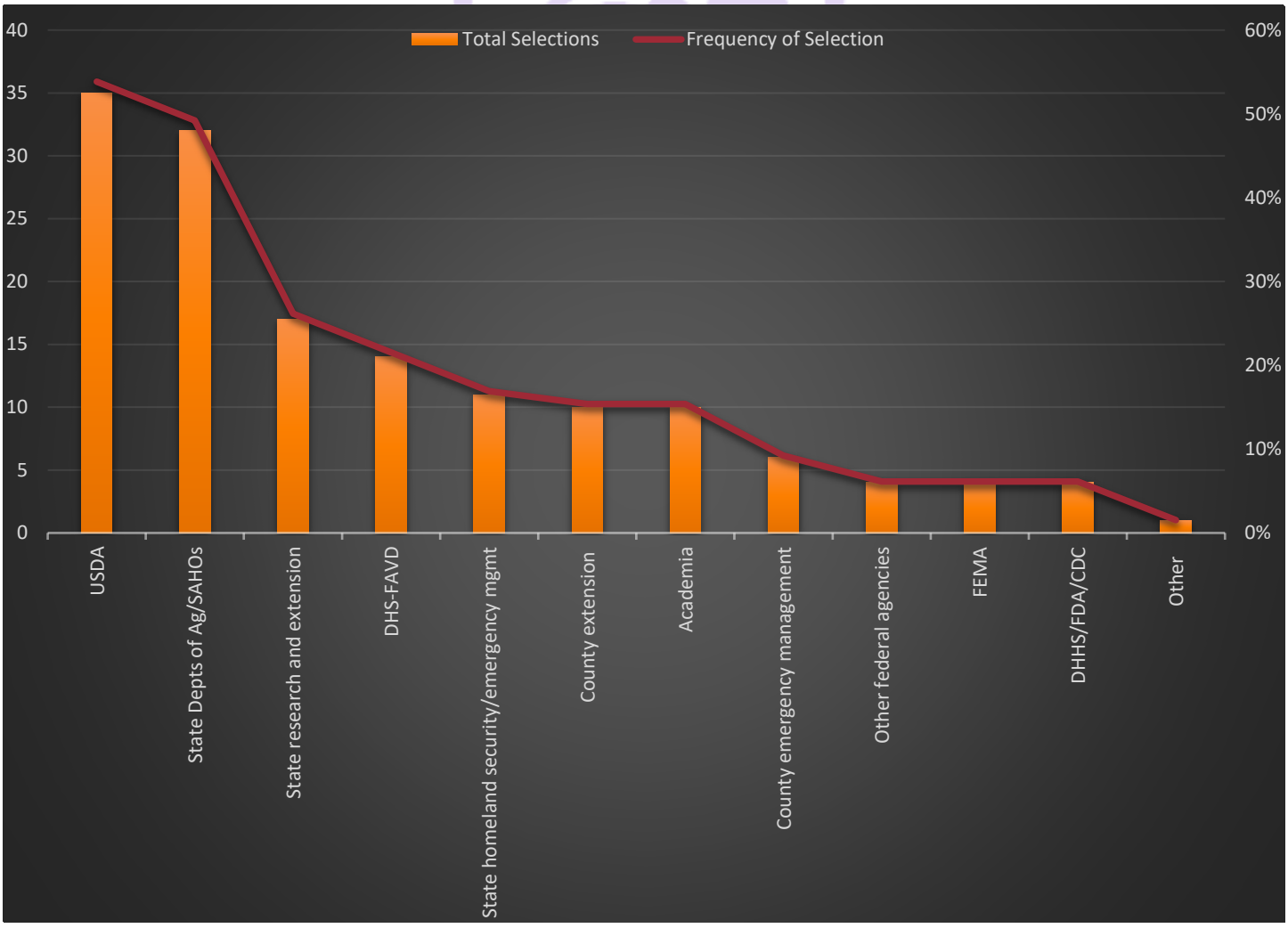
FAD response, control, mitigation and recovery protocols	35	54%
Biosecurity plan development	25	38%
Incident command or incident management	24	37%
Emerging disease/pest surveillance, preparedness, and investigation techniques	21	32%
Epidemiology and tracing	20	31%
Crisis communication plan development and execution	19	29%
Supply chain security	15	23%
Train-the-trainer on existing materials	14	22%
Training design and development	11	17%
Exercise design and development	8	12%
Food adulteration and safety	5	8%
Other	1	2%



Question (select all that apply): Who would be the ideal group(s) to deliver training materials in your state?

Responses:

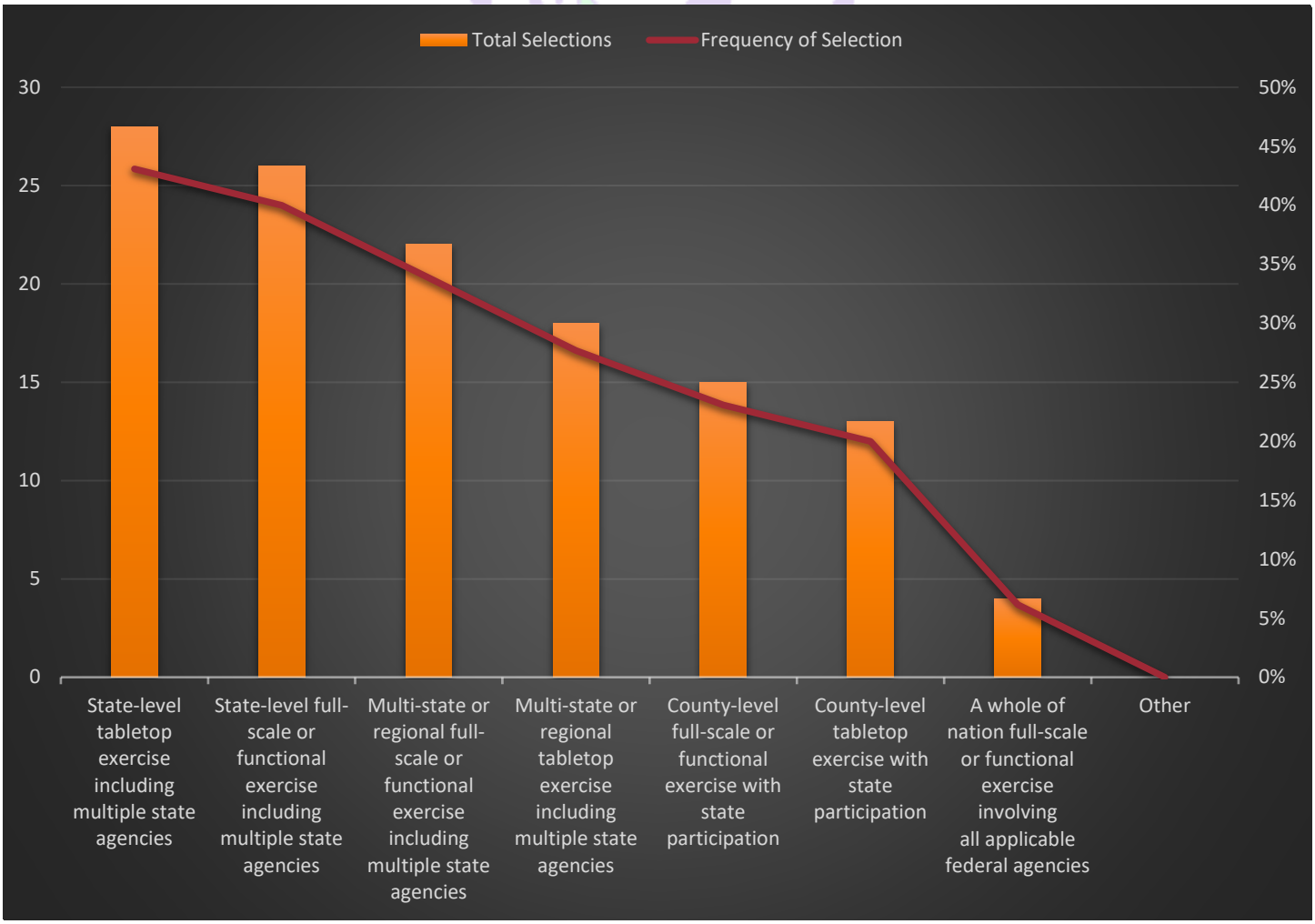
USDA	35	54%
State Depts of Ag/SAHOs	32	49%
State research and extension	17	26%
DHS-FAVD	14	22%
State homeland security/emergency mgmt	11	17%
County extension	10	15%
Academia	10	15%
County emergency management	6	9%
Other federal agencies	4	6%
FEMA	4	6%
DHHS/FDA/CDC	4	6%
Other	1	2%



Question (select all that apply): What type of exercise(s) would be the most effective at increasing state and local awareness and readiness for a response to a food or agricultural incident?

Responses:

State-level tabletop exercise including multiple state agencies	28	43%
State-level full-scale or functional exercise including multiple state agencies	26	40%
Multi-state or regional full-scale or functional exercise including multiple state agencies	22	34%
Multi-state or regional tabletop exercise including multiple state agencies	18	28%
County-level full-scale or functional exercise with state participation	15	23%
County-level tabletop exercise with state participation	13	20%
A whole of nation full-scale or functional exercise involving all applicable federal agencies	4	6%
Other	0	0%



Theme #6 – Recommendations:

- The USDA-NADPRP program introduced in the 2018 Farm Bill is an important source of funding for states to access planning, training, and exercising resources and should be, at a minimum, maintained in future budget cycles.
- The USDA-VS National Training and Exercise Program has been generally well-received by SAHOs and should be, at a minimum, maintained as an important resource for training and exercising materials.
- There is a need for engagement on multiple levels of government – federal, state, and local – to convince agencies who are not immediately engaged in the agricultural context to participate in planning, training, and exercising efforts.
- Planning, training, and exercising efforts should be made available specifically targeting local jurisdictions to better build human personnel capacity for assisting with a state or federal led response.
- There is an outsized reliance on USDA-IMT personnel to manage an incident when compared to the actual amount of resources that the USDA-IMT teams currently have. A joint effort between USDA, FEMA, DHS, and state emergency management agencies should work with SAHOs to develop state level IMT resources that can manage or, at a minimum, assist with incident response in the event that USDA-IMT resources are stretched too thin.
- State should formalize agreements related to typing and sharing personnel and resources during an identified incident, ideally through the EMAC process.
- Industry should support exercising efforts, both materially and financially, as it is in their best interest to understand response actions while also being able to understand their role in supporting a response before an incident occurs.
- A clearly defined national strategy should be developed to address gaps in planning, training, and exercising, with multiple federal agencies, industry groups, state leadership, and academic resources all providing input and solutions.

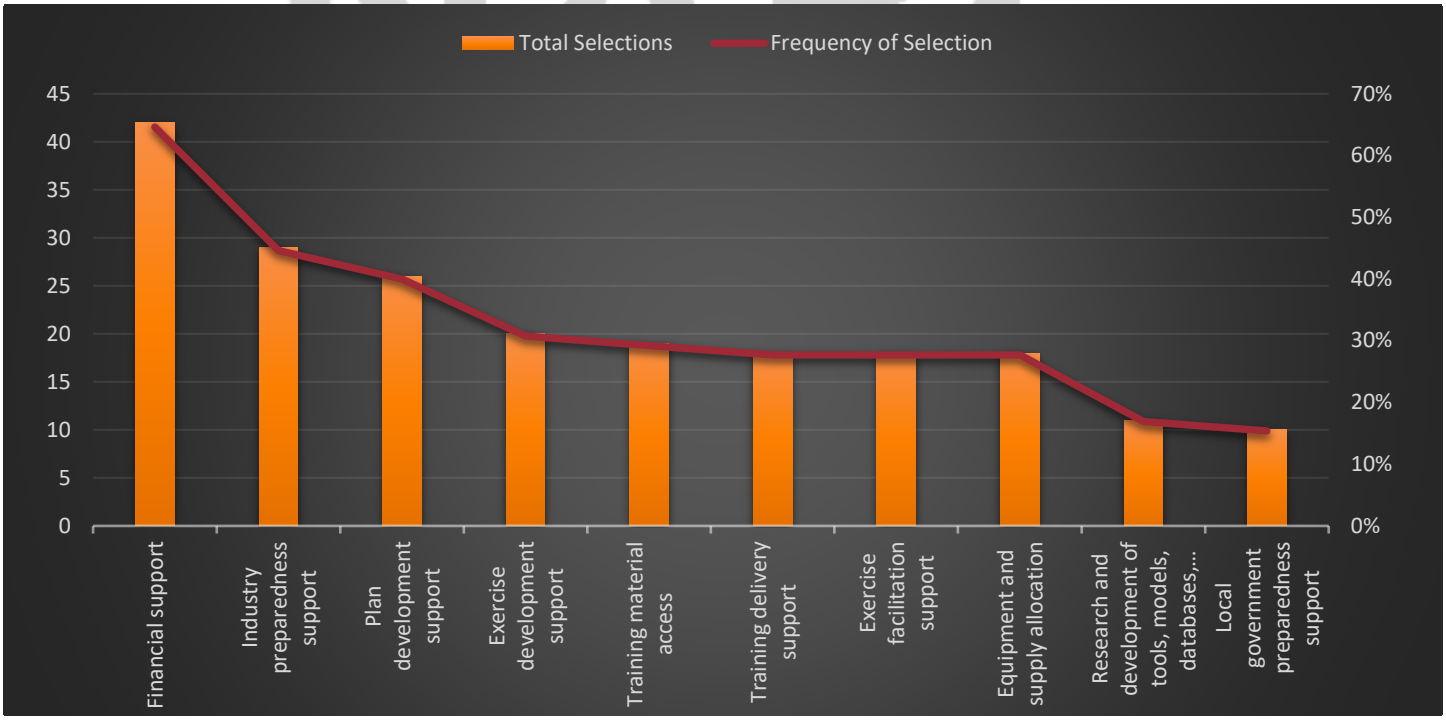
Conclusion

Background: In closing this summary document, the final question to SAHO respondents asked what they would find most effective from their federal partners. This largely manifests itself in two ways, and perhaps illustrates two different but complimentary approaches to solving the problem of staffing challenges. First, financial support was clearly the most popular ask. This would seem to indicate a desire for an internal solution to challenges, by which state animal health offices bolster their staffing levels to appropriate levels to deal with planning and preparedness, and eventually response, challenges. Second, and somewhat conversely, specific types of support from federal agencies were also frequently selected, with outreach, planning, training, and exercising support all relatively equally popular. Such support would seem to indicate the openness to allowing for outside support to find solutions to such gaps.

Question (select all that apply): What type of support from combined the federal agencies would be the most effective to facilitate overall food and agricultural incident preparedness in your state?

Responses:

Financial support	42	65%
Industry preparedness support	29	45%
Plan development support	26	40%
Exercise development support	20	31%
Training material access	19	29%
Training delivery support	18	28%
Exercise facilitation support	18	28%
Equipment and supply allocation	18	28%
Research and development of tools, models, databases, equipment, and countermeasures	11	17%
Local government preparedness support	10	15%



Recommendations:

- Federal funding from a number of sources should, at a minimum, not be decreased and ideally be increased to address food and agriculture preparedness concerns. A concerted effort between groups such as USDA, FEMA, DHS, FDA, DHHS, and others to increase collaboration in this space and provide a positive blueprint for analogous state agencies to follow.
- State emergency management agencies, homeland security agencies, legislators, and governors should recognize the importance of providing support to their partner state agencies to prepare for a future high-consequence food or ag incident.
- Funding should also continue to be provided to academic institutions to identify best practices, counter measures, scientific breakthroughs, and overall cross-discipline breakthroughs to ensure that as new threats or hazards are identified to the food and ag sector.
- Industry groups and producers need to play an active role in the planning, training, and exercising efforts of their state or national regulatory agencies, providing both subject matter expertise and resource support to protect the industry and their stakeholders.
- A collaborative approach of sharing information and resources across all levels of government and industry to protect the economic and physical security of the United States should be the primary motivating factor to take food and ag threats seriously.

Definitions

APHIS	Animal and Plant Health Inspection Services
ASPR	Assistant Secretary for Preparedness and Response
CAFO	Confined Animal Feeding Operation
CDC	Centers for Disease Control
CWMD	Countering Weapons of Mass Destruction
DHHS	Department of Health and Human Services
DHS	Department of Homeland Security
EOC	Emergency Operations Center
FAD	Foreign Animal Disease
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
IMT	Incident Management Team
MSP	Multi-State Partnership for Security in Agriculture
NADPRP	National Animal Disease Preparedness and Response Program
NAHLN	National Animal Health Laboratory Network
NASAHO	National Assembly of State Animal Health Officials
NASDA	National Association of State Departments of Agriculture
NIMS	National Incident Management System
NRF	National Response Framework
NTEP	National Training and Exercise Program
NVS	National Veterinary Stockpile
PPE	Personal Protective Equipment
SAADRA	Southern Agriculture and Animal Disaster Response Alliance
SAHO	State Animal Health Official
SFS	Secure Food Supply
USAHA	United States Animal Health Association
USDA	United States Department of Agriculture
VS	Veterinary Services